Imperfect Democracy and the Political Economy of Land Acquisition

BY

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0.1 Acknowledgement

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0.2 Abstract

The thesis characterises conditions under which holdout and violence in land acquisition for industrial progress arise precisely because of the interplay between imperfections like bureaucratic corruption, legal and extra-legal influence of political parties and motivated civic societies, that are endemic to LDCs and distort property rights. At first, it introduces and characterises conditions for buyer-induced holdout in which a buyer’s optimal acquisition design strategically implements holdout as a response to these imperfections. Among other results, it develops testable hypotheses suggesting that buyer-induced holdout (i) increases with a reduction in bureaucratic corruption if the existing imperfections are significant, (ii) increases with an increase in ease of political opposition to land acquisition and (iii) is more likely to occur closer to elections than otherwise. If political parties can impose credible threats and act coercively, its impact on the size of sale and on price are interestingly nuanced. It then studies the implications of this holdout on sellers welfare and overall economic surplus, that shows (a) small improvements in institutions can have immiserising effect on economic surplus, (b) seller welfare decreases with worsening of political institutions, even though the very existence of opposition is good while the impact of fall in corruption is nuanced. The thesis then shows that, in democratic societies while property rights are legally provided so that land seizure is difficult and consent for sale is practiced through landowners voting, interplay between institutional imperfections infringe such decisions, creating potential for local political violence. While efficiency can still be achieved, there are possibilities of low level equilibrium trap and violent agitations, discarding industrialisation. But violence occurs only if there is early mobilisation of resources for post-voting violence. Interestingly, opposition may prefer a late mobilisation of resources even if the results go against its ideology.
“Wherever there is great property, there is great inequality.” “... in
the great chess-board of human society, every single piece has a
principle of motion of its own, altogether different from that which
the legislature might choose to impress upon it. If those two
principles coincide and act in the same direction, the game of human
society will go on easily and harmoniously, and is very likely to be
happy and successful. If they are opposite or different, the game will
go on miserably, and the society must be at all times in the highest
degree of disorder.”

Adam Smith, The Wealth of Nations.
0.3 Introduction

Democracy empowers eligible citizens to engage and participate in decisions that shape their society. Members of a democratic society are entitled to a rule of law that ensures legal equality amongst all its residents and the political freedom that authorises them to choose and replace their government without bringing in revolution. Such society adheres to the protection of individual rights, that not only ensures active and respectful participation of its civilians in politics and in public life but also shapes and mandates good governance. Thus democracy is constructive – on one hand it is moral as it allows citizens to express their opinion and on the other hand it is rational as it aggregates individual information that enhances efficiency of social decisions. But as Abraham Lincoln once famously quoted that “no man is good enough to govern another man without that other’s consent”, democratic governments are ought to enjoy such ‘consent’ with pragmatic mechanisms that otherwise results in imperfections in democracies with repercussion effects. This PhD dissertation is concerned about such aspects of democratic societies, which despite their constitutional provisions lead to imperfection as seen all over the less developed world, in light of the issues arising out of acquiring land for industrial development.

In the post liberalisation era, in its search for an optimal course of development for LDCs the traditional approach to industrialisation primarily focuses on the accumulation of physical capital which then gradually transferred to the accumulation of human capital\footnote{For example, literary works of Lewis (1954) and Dixit (1973) emphasise on the accumulation of physical capital and the works of Romer (1986,1990) and Lucas (1988) emphasise on the accumulation of human capital.}. Land as an impediment in the process was ‘safely ignored’ by both of these schools of thoughts as its relative availability for industry or infrastructure was often insignificant (Sarkar, 2007). However, with the ever rising population pressure and fragmented landholdings this eventually becomes a central issue in driving conflicts. Agreeably the use-value of land is expected to rise when used in a ‘developmental’ project ranging from building Special Economic Zones (SEZs), power plants, highways, dams to private indus-
tries, commercial agriculture, real estate and slum developments. But instead of passing on the promised ‘spill over’ effects onto the society, land transfers for these more often result in ‘land grabs’, forceful evictions, scams, perturbed deals, and even bloodsheds. These not only turned down the idea of this so called inclusive development but also demean the core elements of democracy – equality, responsiveness, accountability and transparency. It is so because while constitutions of these societies impart mechanisms to encourage impartiality and deliberative governance, it is their institutional infirmities that fail to uphold and complement these elements, resulting in what I term as imperfect democracy.

Conflicts over land-use changes that turned out to be the ‘biggest problem’ in African, Latin American, Central and Southeast Asian development, have been subjected to huge media coverage over the last two decades. Given the demand for vast area of well connected land for industrial development, that happens to be found in use for agriculture or forestry with large fragmentations in these heavily populated economies, acquisition of farmland has taken the centre-stage for such conflicts. The issue is intriguing for two reasons. First, that there is a lack of availability of land that can be readily transferred without affecting the lives and livelihoods of inhabitants. Second, that the numbers involved are rather astonishing – millions of dollars for a single acre of urban land which is multiple of its rural counterpart and hundreds of thousands of dispossessed and affected population from a single project. At the surface, the problem seems to confine to the inadequacy of compensation packages and the lack of options for the dispossessed occupants outside their traditional livelihood. But the root of the problem goes far beyond that, with the skewed land distribution, overlapping property rights, the expropriation and redistribution policies, improper adherence to the rule of law and bureaucratic corruption, that are more prominent in LDCs. Even the enactment of ‘eminent domain’ law that allows government to confiscate private land for public purposes in exchange of just compensation did not appear to be helpful, if

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To affine perfection in democracies it is not sufficient to build a static set of constitutional provisions, it requires continuous evaluation to identify ways in which the elements of democracy overlap and better complement each other so that improvement along one dimension brings along the improvement of others (Vermeule, 2007, Diamond and Morlino, 2004). This demands for an indisputable role of well functioning institutions, in particular legal and political institutions.
not have worsen the matter. It is fetching attention of not only politicians and policy makers but almost every spectrum of modern society – from environmentalists, developers, activists to agriculturists, rural wage-earners and urban elites.

In order to cope with it a surge of literary works have emerged towards understanding the determinants of just compensation and effective redistribution packages. But as the issue is clearly complex, overlapping and have multiple dimensions in a LDC framework, direction towards solving one aspect often raises many others, making once-and-for-all solutions inapplicable. Apparently as the value of land that is being acquired for industrial or infrastructure development manifolds with its commercialisation, farmers and landholders balk to exchange their land at a price based on its current ‘market value’. In fact in absence of well-functioning land markets such valuations becomes less credible due to the administrative inefficiencies resulting in outdated, inaccurate land records and distorted land prices. But there are also groups of landholders who refuse to sell their land at any price, primarily because land possesses history, security and high attachment value to them and secondly due to their untransferable skill set reducing future employability, their preference irrationalities or lack of financial inclusivity in rural areas. All these resulting in relatively inelastic supply of land and when set against the commercial gain from changing its current use, have led to proliferation of pitched clashes threatening both current and future flow of investments in these economies. However each clash seems to be different from the other – in the way they unfold, their history and political contexts, and with the non/involvement of outside intrusion. Thus while the consensus over land transfers, renegotiations over compensation or bargaining schemes seems to be successful in some cases, they fail to mitigate conflicts in others. Moreover these clashes often seek government mediation but evidences suggest that such involvement often turns into ‘wedge issue’ politics that the parties use to gain political mileage in upcoming elections (I will return to this point in Chapter 3 (Section 0.12)). Very few economic literature have considered inefficiencies in the land acquisition for industries in light of political imperfections. It is crucial to look beyond the issue of compensation and resettlement arrangements and dedicate research towards providing a ‘political economy based’ foundation of the land acquisition process.
Political intervention - Why, how and to what extent?

The political-economic context of this massive demand for land can be explained with the development model followed by developing economies in the post-liberalisation era. Extensive investment requirements for industry, power generation, ports, airports, telecommunications and real estates are factually inseparable from infrastructure development and investments undertaken in these sectors mostly follow the public-private partnership (PPP) model of development. For instance, Indian government anticipates that in order to stay away from bottlenecks in the country’s industrial growth and inflation, India’s investment in infrastructure should reach 7.6% of GDP, or around US$ 514.04 billion by the end of the Eleventh Plan (2007 to 2012) and grow a further of 1.5% during the Twelfth Plan (2012 - 2017). Since the resources required to meet such demand for investment exceed the capacity of public sector, it necessitate private investment through appropriate forms of PPPs. Report from planning commission of India suggests that the share of infrastructural investment by private corporations are on a rise in the country – from 36.61% of the required investment during the Eleventh Plan to a stunning 48.14% during the Twelfth Plan. The picture is not very different in other developing economies specially in the African and South American region.

Clearly, expansion of infrastructure through PPP models has transformed these traditional public goods, being provided by the state government, into profit-making ventures that renders ‘commodities’ to be transacted in the international financial markets. Thus infrastructural development schemes (such as SEZs) provide incentives for private corporations to develop land for industrial use and often

\[\text{See } \langle \text{http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v1/11v1_ch12.pdf}\rangle\text{ and }\langle \text{http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp_vol1.pdf}\rangle\]  
\[\text{Being the largest market for private investment in infrastructure amongst the developing world, it is not rare that in some sectors neoliberal India attracts even more than half of its share of investment from private corporations, largely in the form of PPP. For example, during the year 2011 alone it attracted 98% of the share of South Asian regional investments, that help implementing 43 new projects in the region and positioned India in the league of developed economies like Republic of Korea and Japan on implementation of PPP projects for infrastructure development. See }\langle \text{http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp_vol1.pdf}\rangle\]
facilitated them by allocating surplus land and/or by providing leniency in leasing land. The problem is, private accumulation of land is rather prolonged and costly as large chunk of land comes under small-holding peasantry and the landholders’ unwillingness to give up their traditional livelihood as discussed earlier. Thus while on one hand it is crucial to retain the inflow of investments to trigger the growth agenda, on the other hand an assurance is required that such schemes must resolve in principles. Thus the formulation and execution of projects must endure public interest in achieving additional capacity and deliver affordable and quality public service. But this calls for an environment where the market is itself competitive providing consumers a choice among alternative suppliers and vice versa, as well as the transparency in regulations to ensure standards of services, which the LDCs fail to deliver.

Outdated and inaccurate land records make land transfers further difficult generating issues with property rights. Fragmentation of land not only increases the cost of direct negotiations but almost inevitably induces the problem of holdout that strategically raises price of land resulting in inefficiency. Thus even if the government would prefer to refrain from the political cost of acquiring peasants’ land for large private enterprises, its mediation seems necessary to continue with this synchronous model of neoliberal development, aiming for broad-based inclusive growth and for bridging rural-urban divide. Finally, one cannot discard the possibility that the inefficiency in land administration, the prevailing communal conflicts over land, unavailability of land market would not create an information asymmetry, which the private investors will not exploit to make profitable land deals. Further while a regulatory watchdog for such development schemes is an absolute necessity, conflict resolution via court proceedings are rather prolonged owing to the endemic legal institutional inefficiencies in LDCs. All these put together therefore drive government intervention in the process of acquiring land for infrastructure development, that almost inevitably brings in political influence in the matter.

5This is supported by the report of Economic Intelligence Unit (EIU) commissioned by the Asian Development Bank (ADB), which shows private investment and PPP schemes for infrastructure development have been driven by strong political will in rapidly growing economies and have been successful in advancement of public capacity and processes. For detail refer to study by
Following the above discussion one can easily understands the associated revenue generating aspects for the state and the involvement of the state ruling party in the process. The fact that the affected people almost always belonged to the socially and economically marginal sections of the society, for example, tribes, etc. also induce such involvement. Agitations over land acquisition, both for and against, however have seen the involvement of several kinds of ‘agents’ including the ruling political party, buyers and sellers. In conflicting scenarios opposition may come from a much wider spectrum of stakeholders, that includes various interest groups like the civil society organisations (such as NGOs) and other political parties typically out of office. There are many instances when agitations are initiated and carried out by interest groups who are ideologically motivated and in others, while the issue may be initiated by one or more interest groups, political parties step in later, and either take over from these interest groups, or conduct the agitation in partnership with them. This is discussed further with examples in Chapter 1, Section 0.4. There are plenty of examples in the LDC context when political involvement appeared to have led to a grievances and pitched battles. All the next four chapters carry a detail discussion of many such scenarios while some of them are mentioned in the following section to develop arguments.

Besides these ‘growth’ and ‘social justice’ factors, there are other crucial factors to influence such political involvement (for a discussion of the Indian scenario one can refer to Chakravorty, 2013). First, is the active participation of media which would ensure greater political mileage in case of involvement, irrespective of whether in support or in opposition. Second, is the involvement and active participation of interest groups in the concerned area, who not only provide necessary

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6In the Indian context, in post-independence era there was a broad political consensus that land acquisition, be it for building dams and public sector factories or for expanding roadways and railways, had to be done for the sake of the nation despite being costly for those who are displaced.

7In Indian context, such examples include active involvement of state governments in land acquisition for industrialisation in West Bengal, Orissa, Jharkhand and Himachal Pradesh (this is detailed in Chapter 1). Pons-Vignon and LeComte (2004) suggest that in economies like Bangladesh, political interference follows when the differences between local and state politicians results in land disputes and violence.
information and support to the affected landowners, but also coordinate the initial resistance and creates potential ‘flash-points’ which political parties can readily exploit. Further, intervention becomes politically more attractive in presence of large land fragmentation which increases the number of affected people, and along with economic development this creates a need to acquire multiple pieces of land.

Motivation

The thesis is motivated by a number of recent incidents of acquiring land for industrial and infrastructural purposes, but there are some that need to be highlighted. One being the infamous incident in West Bengal, an agriculture based state in India, that was not only under continuous attention of media but also has contributed to turn the political fate of 34 years old state ruling party. In 2006 the state government (Left-wing) anticipated demand for industrialisation across the state and brought a leading industry (TATA) to build a car manufacturing factory in Singur. It claimed to have acquired 997 acres of prime agricultural land and the compensation package offered was according to the archaic Land Acquisition Act of 1894. The incident involves not only the attention of various interest groups that formed a rainbow coalition, namely Krishi Jomi Bachao Committee (Committee to Save Farmland), but also various political parties including the main local opposition party, the Trinamul Congress (TMC, largely driven by populist agenda). The resistance were initiated against the state involvement in the process and while poor land owners and sharecroppers fear losing out entirely, some locals and relatively richer land owners have supported the Left-wing party’s industrialisation agenda. The agitations were dominated by the inefficiencies in land assessments and lack of procedural consultation and took the form of bloody violence after being heavily politicised and with the misuse of government machineries. The project was eventually scrapped.

In the following year another incident took place in Nandigram, which becomes a ‘news’ that dominated the media and fetch international attention, when

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8I will return to this incident in Chapter 1, Section 0.4 and Chapter 3, Section 0.12.
the same state government of West Bengal, demanded 10,000 acres (4,000 ha) of agricultural land to develop a SEZ for the Indonesian-based Salim Group to build a chemical hub. This attempt at land acquisition was again backed by the ruling Left Front, a coalition of leftist parties, allegedly helped by the local bureaucracy and police. This results in massive violence, strikes and killings of farmers, threatening the potential investments not only in the state but across nation. Although the protest against this land conversion in Nandigram appears to be different from that in Singur, the common links between them are the political involvement, mis-utilisation of government machinery and the infirmities of legal institutions to tackle conflicts at the very first place. There have been many other incidents against land acquisition for infrastructure development across India in recent years which took the very similar framework. Protest in Raigad district of Maharashtra against Mahamumbai SEZ of Reliance Company that resulted in cancellation of the project and the protest against Himachal Pradesh government when land was being taken to build an international airport and air cargo hub at Gagret in Una district are only a few among them.

Similar conflicts in the process of land conversion are evident from across the LDCs. For example, in Tanzania, East Africa in 1993 a cement manufacturing company, Twiga Portland Cement Company (TPCC, formerly the Saruji Corporation) tried to acquire 61 square kilometre of land for their factory extension. Conflict arises when landowners refuses to vacate their land after being severely under-compensated and exempted from the promised resettlement area. Despite the constitutional provision of property rights, the Land Acts and the Physical Planning Acts, landowners were denied to get the right for being consulted or being given any chance to negotiate with any authoritative bodies. This took the form of violence when TPCC practiced a forceful eviction and triggered after being heavily politicised (Kombe, 2010). In 2009 Nuove Iniziative Industriali Srl (NIIsrl), an Italian company, propose to acquire 50,000 hectare of land with government help in Dakatcha Woodlands, Kenya, to develop a bio-fuel plantation and manufacturing hub. Although protests from local communities were primarily dominated

9See <http://www.livemint.com/Politics/11CAGbH2Uend58UkVcktVP/The--Nandigram--story--till--now.html>
by environmental concerns and were being carried out by environmentalists, this also indicatively get politicised and eventually get scrapped despite being granted licence from NEMA (Maggi and Veit, 2013)\(^\text{10}\).

Such disturbing incidents are becoming more challenging for developing world in recent decades not only to meet the demand for industrial development but also to meet the global food crisis and to produce environment-friendly fuel substitutes. On the onset of such developmental schemes there are interplays between imperfections like bureaucratic corruption and the extra-legal influence of various stakeholders including political parties and civil society organisations that can underpin each other and distort not only property rights but also human rights that democratic economies constitutionally provide. Thus while the effort of making land available for investors lays a fertile ground for economic growth, the procedural inefficiencies often turn this into social turmoil – resulting from violation of the fundamental rights of democratic citizens to even brutal killings. Although historically people from the lower socio-economic section pay the largest share of the ‘price’ for development, with the ease of availability of information, it is now crucial to have a framework in which development programs adheres to economic and social sustainability. Economic literature in this area is relatively new yet rapidly growing, working towards achieving alternative ‘formulae’ to ensure both equity and efficiency of these projects. But the main problem is the highly contextual nature of such conflicts that resulted in large but relatively segregated and case (at large by country) specific studies across literature. Moreover, there is lack of consolidated data on the components of imperfections which makes it harder for policy makers to form effective policy suggestions. I refrain from detail discussion of the literary work in the introduction and left it onto the successive chapters.

**What am I looking at?**

This PhD dissertation is concerned about aspects of imperfect democracy seen all over the less developed world in the context of acquiring land for industrial

\(^{10}\)I will discuss more examples from LDCs in detail in the subsequent chapters.
projects. I consider the essence of outside interference and institutional inefficiencies in validating electoral competitions, which is the most widely used mechanism for upholding democracy, and, their effect on decisions pertaining to the sale of private land. One advantage of this mechanism is that, it efficiently enables large societies to aggregate individual opinions, which would otherwise be a costly affair. For elections to be free, fair and purposeful the civil society must be entitled to some degree of freedom, both political and social, to articulate their political beliefs, ex-ante and ex-post elections. Even so, it is difficult to achieve the heights of all the dimensions of good democracy through one particular mechanism. Elections are not any different in this aspect as it naturally invites competitive politics that may distort aggregate decisions. In particular when motivations of political parties or ‘agents’ are diverse – they can be opportunistic where a ‘wedge issue’ can serve as an agenda for winning elections and thus their policy preference caters the same of the mass or special interest groups, or, they are ideologically driven where their policy preference is the reflection of their respective constituencies. Albeit, democracy is perfect where strong institutional support make the components of democratic system work efficiently, both before and after elections. Political parties of such democracies are largely unable to either affect outcomes directly or engage in rent seeking activities because of developed social, economic and legal institutions so that the mechanism of elections function efficiently and democracy seem perfectly sustained for these nations. Hence by definition the notion of democracy and development seem complementary, however there seems no establishment of this claim in empirical literature (Bardhan, 1999) although there is little doubt that democracy is fragile in less developed economies where institutions are imperfect (Przeworski, 2005).

Economic literature on land acquisition is nascent but there is not much theoretical work focusing on the impacts of such imperfections stemming from imperfect institutional support ex-ante and ex-post elections, leading to various illegal and unconstitutional acts that defy the basic philosophy of democracy. The present work is aimed at initiating a rigorous theoretical analysis of land acquisition issues by focusing on the aspects of political influence in the process. It considers the potential outcome of such imperfections that can range from promotion of
rent seeking behaviour to political violence both before (vote capture, rigging, threatening, etc.) and after (street protests, violence, strike, etc.) elections, be it countrywide or local. The thesis introduces a new notion of holdout that is ‘buyer-induced’ in such framework without geographic contiguity, preference irrationality and strategic bargaining, rigorously studied in economic literature. The thesis considers frameworks for two party competition where party strength is endogenous, decision follows from an apparent free and fair local voting and captures the essence of bureaucratic corruption and political clientelism which can result in holdout and violence. The issue is contemporary to the LDCs where on one hand property rights are constitutionally provided to poor farmers making land seizure by government legally impossible, while on the other hand, path to development calls for inevitable demand for land to build manufacturing hubs but efficient markets for land are hard to come by. Thus striking a balance becomes one of the central concern for policymakers where such problems of accumulating land for developmental projects persist.

An assorted repository

The discussion and incidents as mentioned above may primarily give an impression that ‘failure’ occurs in most of the projects that demanded accumulation of vast area of connected land. While it is easy to hold such perspective, owing to the relative absence of information on incidents that were not troublesome (such as resistance, violence, extended negotiation etc. that has been evidenced for the cases above) therefore less ‘newsworthy’, in practice neither the measure of land nor the size of project can held to be the most important determinant for the success or failure of land transfers (This is in line with the findings of Chakravorty, 2013). This can be testified with two categories of incidents: first, when large land transfers has been successful and second, when small portion of land transfer involved conflict. Example for the first category comes from the success of 302-km Agra-Lucknow Greenfield expressway project in India, for which nearly 3,000 hectares of fertile, multi-cropped land has been acquired successfully by the UP Expressway Industrial Development Authority (UPEIDA). Although there were
some initial discrepancies about the lack of consultation with the concerned land-holders, the project is considered to be a grand success where 30,074 farmers gave up their land willingly and in record time, in exchange of compensation through mutual agreement.\textsuperscript{11} Similarly, a total of 4,860 acres of land has been successfully acquired from 700 marginal farmers, over the years of 2007-'08 for a 10 million tons steel plant project by Jindal Steel in West Bengal’s Salboni village. Interestingly, the size of land being acquired in Singur was smaller and that of Nandigram was much bigger but both provoked conflicts and criticisms for the same left wing state government while the success in Salboni defended them.\textsuperscript{12} Example for the second category comes from Goa when conflict arises from allotting 613.41 acres of land by the state government for the development of SEZ in Verna Industrial Estate. Many other such incidents from India are enlisted in a Table format in the Appendix B (Section 0.20).

The second point that is worth mentioning here is that the predictability quotient for the outcome of such development schemes are rather low. It is not only for the fact that each project has its own history and dynamic, and conflicts are not sourced from definite factors such as size of project, number of affected people, the amount of land demanded, environmental concerns, government mediation or a lack of it, but also an onset to a broader spectrum. Each resistance is more likely to create an information loop that pertains to particular evocative, pointing towards the necessity of broader correctives in which the land transfer can be least detrimental.

The third point is, there are large number of cases where land-grab followed from commercialisation of agriculture by global capital (see for example Margulis


\textsuperscript{12}Although the terms of conflicts were different in each of these scenarios. There has been significant delay in Salboni because of continuing Maoist activities in the region, but the credit of success goes to the compensation scheme comprising a payment in the forms of cash and equity as well as a guarantee of one job per affected family. In Nandigram the farmers were entirely against the idea of departing from their land while in Singur only minority of farmers were against the sell owing to the inefficiencies in land assessment procedures resulting in discriminated compensations.
et al. 2013), by domestic transnational capital or in competition with them but in no way that saved farmers from losing their land and livelihood. Moreover catering the demand for land by foreign or transnational capital to some extent explains the ‘urgency’ for the LDC government to lend its support as it secures the much needed investments. However, it remains questionable when the urgency clause is applicable and given the politics and economics of land acquisition what exactly determines such urgency. It is also not clear whether there is any consensus between the land-acquirer, i.e., the government and/or the private buyer and the land-loser over such land transactions. There can be scenarios when industrial development is rather urgent for a state and landowners’ agreement can be achieved against suitable deals thereby can restore consensus between parties. Success of land transactions in Gujarat (India) fall in this category\textsuperscript{13} and arguably the case of Singur could have also included where a major share of the required land was transferred to TATA initially. The essence of such consensus is detailed in Chapter 1 (Section 0.4) and Chapter 2 (Section 0.9).

The conflicts often seemingly portray a picture where peasants are protesting against the private entities and government act as a mediator to sustain capital investments. But in practice land acquisition can entail conflicts even between government interests and peasants where land is acquired by government (state or central) or government-affiliated institutions.\textsuperscript{14} Acquisition of land for projects that are subjected to serve ‘public purpose’, are constitutionally given the support of eminent domain laws. But despite being its provisions and scopes it largely remains unclear what determines that a proposed land-use change will serve public interests and who to held responsible to determine its authenticity. Moreover in several occasions state governments has (mis)utilised the provision of eminent domain, which legally permits the takings of private properties in exchange of just compensation in the event of necessary and urgently required projects. However while such provisions are meant to be exercised with caution and under stringent conditions threatening the public welfare, it is often found to be used otherwise


\textsuperscript{14}In Indian context, state projects can be responsible for as much as 90 per cent of all land acquired that affecting and displacing people since 1947.
owing to the weaknesses of legal institutions. This eventually undermine the pro-
cesses of land assessments, necessary consultation and consents of the concerned
communities, scope for procedural negotiations over the rehabilitation and resettlement arrangements with affected people.

Lastly, many acquisition scenarios signal that a sufficiently high compensation package, that are mutually agreed upon between the land-acquirer and land-loser, mitigate conflicts and causes successful land transfers. But in such cases the conflict is over price and thus suitable negotiation and reconsideration over compensation is possible to settle issues. Even though price seems the most crucial part of a compensation package, it is not always the only determinant here. For example, there were violent protests against the giant oil producer Shell and the state government in Niger Delta when land is being claimed for development of a petroleum plantation, that could have an immense affect on the health and environment of local communities, forcing in demographic dislocation and material destructions. There were violent resistance against the establishment of oil plantations in Indonesia and Malaysia where the current land users were not ready to give up their livelihood from forestry, fishery and timber-extraction activities. In India, farmers refused to give up farming land for the development of a petrochemical hub (seeking 1,100 acre) in Belgaum, Karnataka, and refused to give up fertile, irrigated land in Maharashtra for the development of Videocon’s Pune-Ahmednagar highway and information technology SEZ (seeking 4,500 acres). Resistance to sale can also follow from preference irrationalities of the landowners driven by exogenous income and consumption shocks, owing to the missing financial markets in LDCs. For example, the studies on Singur farmers have revealed that a part of resistance came from their present-biased preference over expenditure of the lump-sum amount, to be gained by selling their land. These determinants of conflicts are discussed further in Chapter 4, Section 0.13.

Following the discussion so far there are three broader aspects over the spectrum of conflicts on land transfers:

- **Process failure**: There are incidents where resistance to sale is due to process
failure. This includes lack of consultation or consent for land-use changes, scope for negotiations over price, land assessments and property right issues, forcible acquisition practices, issues with availability for exchangeable nearby land, the assessment of the social and environmental impacts of the land-use change and tedious court proceedings over disputes. All these are concomitant to the poor land administration and legal institutional infirmities.

- **Price failure:** There are incidents where peasants are not at all ready to sell their plots to which no possibility of negotiation or reconsideration over price even exist. Historically, culturally or aesthetically preserved land are commonly agreed as priceless but conflict arises when such pricelessness is subjective to current land users. On a contrary there are conflicts when price being offered for land is inadequate, to which the possibilities of land auction or revised offers still exist. However whether such schemes will result in successful transfers or not, largely depend on the institutional (specifically legal and political) support ensuring equity and efficiency of such schemes.

- **Political tussle:** As discussed earlier, there are incidents such as Singur, Nandigram cases in India and the TPCC case in Tanzania, that suggest involvement of politics can evoke inefficiencies. Note that while involvement of media and civil society organisation influence political involvement, evidences such as in Kharagpur, India suggests it is not always true. Further, it is not clear whether involvement of politics has any necessary implication over problems like holdout and violence. Understandably while (mis)use of political power have resulted in massive violence, its impact on non-violent holdouts are not clear, where the inefficiency driven by the events of holdouts are more frequent.

It is crucial to understand that conflicts over land use changes have negative

\[15\text{In 1992, 217.23 acres of mono-crop land was acquired to build pig-iron manufacturing plant by Tata Metaliks, under the pro-peasant Left Front governance. No political opposition came to protect the unwilling farmers and the process was peaceful even if the land-losers were given a bare minimum monetary compensation, without any resettlement arrangement. Three years later when the company aimed to acquire another 525 acres of farmland there were weak protests from the landowners but even media coverage cannot fetch any political attention to the matter. The land transfer was successful and without any violence.}\]
impacts on productivity and welfare apart from threatening the flow of outside investments. Irrespective of whether land transfers are successful or not, insecurity and unpredictability arising out of these conflicts reduces the incentives of the landowners to carry on with productivity-enhancing investments on land. Delay in resolving conflicts may reduce the accessibility of land to either the landowners or the potential investors, leaving the piece of land partially or totally uncultivated. In presence of conflicting interests the fear of losing land or the inflicted crop damage, threat of potential violence, etc. affect the incentives to supply effort towards land’s productivity. Further the farmers who are participating in the protests, agitations or political rallies are likely to devote significant amount of time that could have been utilised in productive activities which then put additional ‘costs’ onto them even if they eventually could retain their plots. An essence of this is captured in Chapter 3.

**Structure of the Thesis and Main Results**

This PhD thesis begins with the analysis of the holdout problem in light of institutional imperfections, in particular bureaucratic corruption and the ease of opposition, that are endemic to LDCs. It characterises conditions under which a private buyer’s optimal acquisition design strategically implements holdout in land acquisition as a response to these imperfections. Interestingly in the framework delay, if any, is buyer-induced and not due to either complementarity in the number of plots, preference irrationalities or any last mover advantage, the key elements that generate holdout in the strategic bargaining framework. I call this feature as *buyer-induced holdout*. Chapter 1 (Section 0.4) includes the characterisation of this form of holdout. Among other results it shows that while an increase in bureaucratic corruption necessarily reduces the price of land that is sold through political mediation, such a change may either increase or decrease the price that is settled directly between the buyer and the sellers. Further, when a pro-industry party impose credible threats and coerce sellers, there may be instances where a rise in corruption may increase the price of land sold through them. Its impact on the size of holdout is also interestingly nuanced.
Chapter 2 (Section 0.9) examines the impact of corruption and ease of opposition on buyer-induced holdout, welfare of sellers and overall economic surplus, in the framework developed in Chapter 1. Among other results, I develop testable hypotheses suggesting that buyer-induced holdout (i) increases with a reduction in bureaucratic corruption if the existing imperfections are significant, (ii) increase with an increase in ease of political opposition to land acquisition and (iii) is more likely to occur closer to elections than otherwise. I also show the implications of buyer-induced holdout on the welfare of landowners and on economic surplus. While significant changes in institutions take long time, results show that small improvements in institutions can have an immiserising effect on economic surplus. Moreover, seller welfare decreases with worsening of political institutions, even though the very existence of opposition is good while the impact of fall in corruption is nuanced.

Chapter 3 (Section 0.12) presents a detail analysis of political competition in presence of legal and political hazards. It considers the mechanism for implementing informed consent from the landowners and captures the challenges of legal-institutional imperfections that breach democratic rights, leading to group-based agitations and violence. The theoretical framework shows that in democratic societies while property rights are legally provided that makes land seizure difficult, access to information is not an obligation and consent for sale is practiced through landowners voting, interplay between the legal-political institutions infringe such voting decisions. This creates potential for political violence at least at local levels. In presence of these institutional hazards there are possibilities of low level equilibrium trap and violent agitations, discarding industrialisation. But occurrence of such violence is subjected to local polity’s early or late mobilisation of resources for violence.

The thesis ends with a critical survey of the economic literature to carry a broader analysis of the causes and consequences of conflicting land conversion programs, showcasing their impacts on the success and failure of the projects. Following the diversity of conflicts over land-use changes this survey is necessary because: (a) it gives an insight of the responsible factors, often inter-linked and overlapped,
which play crucially to unfold conflicting scenarios and (b) to establish a possible link between the driving forces that goes beyond the rehabilitation and resettlement policies aimed to support the land losers and to restore efficiency. Given the multidimensional nature of land acquisition phenomena in LDCs, the survey broadly identified four crucial factors – the compensation and rehabilitation disarrangements, social wrecking from land conversions, environmental disruptions, and institutional infirmities – that drive conflicting scenarios. The two main aspects considered here are the ‘purpose’ of conversions and the ‘process’ of carrying this programs, and in light of several conflicting scenarios. Chapter 4 (Section 0.13) presents the survey. It establishes that a string that connects the causes of different conflicting scenarios is critically linked with the institutional infirmities and lack of good governance. This results in bureaucratic corruption, eases political interference and mobilisation of resources for violence, the features that have been studied in the first three chapters of the thesis. Section 0.18 includes conclusive statements.
0.4 Chapter 1 : Political Economy of Land Acquisition and Buyer-Induced Holdout

0.4.1 Introduction

The lack of availability of land is turning out to be the biggest obstacles for industrialisation in many countries. Protests and counter protests, agitations and counter agitations over the issue of land acquisition are an everyday feature in many LDCs that are seeking to industrialise, and this trend is observed in some parts of the developed world as well.\textsuperscript{16} The most common explanation that holds in its defense is the difficulty to agree on a fair price for land to all the stakeholders owing to the fact that land is a special asset with a fixed supply and very high attachment values. It is even more complex because of the fact that agricultural land owners have very few alternative means of livelihood. Thus many countries, including the US and India, have promulgated ‘eminent domain’ laws that allow acquisition of land for public purposes in exchange of fair compensation package. But the problem persists and thereby encourages research geared towards understanding the determinants of a fair compensation and redistribution package.

The purpose of the present chapter and this thesis is however to look beyond the issue of compensation. It attempts to provide a ‘political economy based’ microfoundation of the land acquisition process, which can help understand the causes and consequences of the various problems that seem endemic in land acquisition.

\textsuperscript{16}Even in authoritarian China, and in 2005 alone, there were over 60,000 local disturbances provoked by attempts at acquiring agricultural land (Banerjee et al., 2007). Cao et al. (2008) report that, in the first 9 months of 2006, there were 17,900 cases of “massive rural incidents” in China, involving around 385,000 protesting farmers. Further, between 1996-2005, 20 million farmers were evicted from agriculture due to land acquisition, with more than 21 per cent of arable land being converted to non-agricultural use between 1996-2005 (Goswami, 2007). In Brazil, protests against the acquisition of farmland between 2009-2011 delayed one of its most promising industrial projects, CISP A worth USD 40 billion (Pedlowski, 2012). According to Quartz India reports, around USD 9 billion worth of mega projects in India are being stalled merely due to land acquisition problems. See <http://qz.com/398151/modis-math-is-wrong-only-8-of-projects-are-actually-held-up-because-of-land-acquisition/>.

In Kenya, local community protests led to the eventual scrapping of a project by Nuove Iniziative Industrialis Sri (NIIsri) (Maggi and Veit, 2013).
Forms of outside interference

Agitations over land acquisition have seen the involvement of several kinds of ‘agents’ including of course buyers and sellers. In most countries, in particular in LDCs, acquisition of land involves some mediation by the local government. Most commonly the party that is in power supports land acquisition. The ruling party can lend its support either directly, or indirectly, involving the (mis)use of government machinery. In contrast, opposition can come from a much wider spectrum of stakeholders – including various interest groups such as the civil society organisations and the political parties that are typically out of office. In many cases such agitations are wholly carried out by interest groups, and in other cases, while the issue may be initially taken up by one or more interest groups, political parties step in later, and either take over from these interest groups, or conduct the agitation in partnership with them. It appears that political parties start to get involved when certain key conditions are met (for a discussion of the Indian scenario see Chakravorty, 2013). First, the media should become more active, which would ensure greater political mileage in case of involvement. Second, interest groups are active in the area, who not only provide necessary information and support to the involved landowners, but also coordinate the initial resistance. This creates potential ‘flash-points’ which can easily be exploited by the political parties. Further, intervention becomes more attractive if there is land fragmentation, which

\[\text{\footnotesize 17}\text{In the Indian context, following its independence in 1947, land acquisition was key to several large public projects, building of dams, expansion of roadways and railways, building of factories run by public sector firms, etc. At this point of time there was a broad political consensus that land acquisition, while costly for those displaced, had to be done for the sake of the nation. The fact that the affected almost always belonged to the marginal sections of the society, e.g. tribes, etc. also helped.}\]

\[\text{\footnotesize 18}\text{Often the ideologically motivated interest groups may carry out the initial agitations. In India, the growth of civil society has been astronomical, from around a few hundred thousand NGOs in the 1970s, to around 3.3 million by mid-2010. Jenkins (2012) argues that two separate strands of the civil society movement, those opposing large scale displacement, as well as those opposing ‘neoliberal globalization’ started coming together around mid-2010. Given that land acquisition is an emotive issue (especially in a LDC context since, in the absence of proper rehabilitation, it can lead to serious humanitarian tragedies), such ideological stances are easy to understand. Fernandez (2007), for example, argues that over the period 1947-2000, as many as 60 million persons were displaced for various development projects, many of whom were not properly rehabilitated.}\]
increases the number of affected people, along with economic development, which creates a need for land acquisition.

Motivating examples

There are a number of motivating cases from India that exemplify the broad dynamic patterns discussed above. Recall from Section 0.3 the incident of Nandigram in West Bengal, India that witnessed violent agitations. As mentioned in Section 0.3 this attempt at land acquisition was backed by the ruling Left Front, a coalition of leftist parties, allegedly helped by the local bureaucracy and police. The agitation was initially spearheaded by two interest groups, the Gana Unnayan O Jana Adhikar Sangram Committee (Committee for Public Development and People’s Rights Struggle) and the Nandigram Jomi Uchhed Birodhi O Jana Shakti Raksha Committee (Nandigram Committee to Resist Land Ousting and Save People Power). Later, several political parties, including the Congress and the Trinamul Congress joined the protests. The resulting agitations led to massive violence requiring police involvement, and even led to farmer deaths (Banerjee et al., 2007).

Now recall the incident of Singur in West Bengal, in continuation with what is mentioned in Section 0.3 where the state government attempt to acquire prime agricultural land for building an automobile factory. The process was not only championed by the ruling Left Front, it appears that, like in Nandigram, the ruling coalition used the bureaucracy and the police to further its cause in this case as well. Among other examples, one can mention that during this agitation the state government got the government machinery to impose Section 144 of the Criminal Procedure Code in parts of Singur, with Section 144 conferring several powers on the government aimed at restricting personal liberty. The opposition to land ac-

\[19\] In the context of the Nandigram agitation, one of the opposition leaders, Partha Chatterjee of the Trinamul Congress, stated that “the bureaucrats and top police officers are under tremendous pressure”, arguing that this “incident has exposed their ploy to use the government machinery for partisan purposes.” See <http://archive.indianexpress.com/news/trinamool-s-plea-to-bureaucrats-and-police/717234/ >.

quisition was organized around the Krishi Jomi Bachao Committee (Committee to Save Farmland) formed in 2006. Interestingly this was a rainbow coalition, consisting of various interest groups, e.g. the Uchchhed Birodhi Committee (Committee Against Forced Displacement), the Gana Unnayan O Jana Adhikar Sangram Committee, among others, but also various political parties including one of the main local opposition parties, the Trinamul Congress (TMC), as well as parties belonging to the extreme left, e.g. the CPI (ML) State Organising Committee. The resulting agitation led to fasts, highway blockades, strikes, and even alleged rapes and suicides. Ultimately the project had to be scrapped (see, e.g., Sarkar, 2007, and Ghatak and Banerji, 2009).

Another relevant example is the Vedanta project, seeking to develop an aluminum factory in the Kalahandi districts of Orissa in 2002. While the land acquisition process was supported by the ruling Biju Janata Dal (BJD) government, and their ally the Bharatiya Janata Party (BJP), it was opposed by a local organization, the Save Niyamgiri Group, later joined by others like Green Kalahandi, as well as some international organizations, including Amnesty International. Interestingly, while the Congress leader Rahul Gandhi was personally opposing this, much of the opposition was actually carried out by the government machinery of the Central Government (including the Ministry of Environment and Forests), then ruled by the Congress party.\footnote{I refer the readers to Chakravorty (2013) for a discussion of all these cases, as well as a broad survey of the land acquisition process in India.} Political interference was also evident in several other land acquisition processes in India, such as by the Orissa government for building a steel plant by Posco (Chandra, 2008), by the Jharkhand government for building a steel plant and also a power project in Khuntia district (Basu, 2008), by the Himachal Pradesh government for building an international airport along with air cargo hub at Gagret in the Una district (Panwar, 2008), among others. In Bangladesh, differences between local and state politicians often result in land disputes and violence, that lead to political interference (Pons-Vignon and LeComte, 2004).
Rationale for outside interference

The literature traces this connection to the imperfection of the institutional framework in LDCs, in particular to legal and political infirmities (this will be further discussed in Chapter 4, Section 0.13). Among legal weaknesses, it has been argued that weak property rights form a critical bottleneck, which in turn can be traced to outdated land records, poor land surveys resulting in improper identification of de facto, as well as de jure owners (Ghatak and Mookherjee, 2014, Lindsay, 2012, and Feder and Feeny, 1991) and mis-classification of land quality (Ghatak et al., 2013) These aspects of the land market, along with legal requirements that land sale must involve state-level bureaucracy (see Chakravorty (2013) for the case of India), and the fact that accessing the law is costly, exacerbates bureaucratic corruption and results in higher transaction costs.

Weak property rights, coupled with weak law enforcement can also create a space for activist groups to redress inequalities that are either perceived or has actually occurred. This in turn allows political parties to interfere in the process of land acquisition and exploit the movements to gain political mileage (Rodden and Rose-Ackerman, 1997). The ruling party can help reduce the high transaction costs resulting from bureaucratic corruption, thereby making their presence an attractive option for the buyers, as well as for the sellers who wish to sell their land. The incentive for such political intervention is greater in the presence of political parties who have a direct stake in the process and take sides depending, among other issues, on whether they are in power or in opposition. The party in power seems to typically support land acquisition, so as to satisfy the growing economic aspirations of the masses (since it is more accountable to develop industry, create jobs, etc.), that can only be met through industrialisation. Whereas the parties in opposition

\[22\] Such weak property rights is an important reason why land markets are thin in most LDCs (see Binswanger et al., 1995). As argued by Alston et al. (2012), the absence of de jure property rights – as was the case in frontier regions of several countries, including Australia, Brazil and the US – led to problems in land acquisition. Further, in case of private bargaining, ill-defined property rights force buyers to deal with non-owners, possibly leading to conflict (Banerjee et al., 2007). Relatedly, in Brazil, there were conflicts between landowners and squatters over property rights (Alston et al., 2000).
seem to typically oppose it, as they may see a scope for electoral gains from political obstructionism.\footnote{In the Indian context, for example, while the CPM (the principal Marxist party in India) supported land acquisition in West Bengal and Kerala when they were in power in these states, they opposed land acquisition everywhere else. Similar examples involving the two national parties of India, the Congress and the Bharatiya Janata Party, are also easy to find.} Moreover, opposition may also be ideologically driven and spearheaded by interest groups, as mentioned above. \textit{Outside interference} in this framework will therefore involve be two entities: (a) one that opposes and obstructs efficient economic outcomes from being implemented peacefully, and (b) another that helps economic agents fight against this opposition but engages in political rent-seeking in exchange.\footnote{Such outside interference - particularly by the entity opposing land acquisition - may also be triggered by behavioural reasons that ensure that the land valuations by the buyers exceed what may be expected from purely economic considerations. One reason could be present-biased preferences, an issue examined in Roy Chowdhury (2013). Another reason could be that the buyers value land for cultural and religious reasons, something that seems to have been of importance in the Vedanta case discussed earlier. In this thesis we however abstract from such issues.}

How does an apolitical and profit-maximising industrial buyer of land respond to outside interference? How does he use the pro-industry party in his fight against opposition forces or existing bureaucratic bottlenecks and how does that affect delay in industrialisation or welfare of the landowners? I address these questions in the following theoretical framework.

\textbf{Theoretical framework}

I consider an economy with weak institutions (that promote bureaucratic corruption and outside interference) comprising a buyer who needs plots of land from several sellers, with the profitability of the project being dependent on the number of plots the buyer manages to acquire.\footnote{In contrast to our specifications where sellers are sole beneficiaries of current usage of land, Ghatak and Mookherjee (2014) look at a scenario where a single landlord sharecrops with a number of poor tenant-workers and faces stochastic arrival of an industrial buyer. They study the impact of compensation rules adopted by the landlord (to pay the tenants) on the decision of the landlord to sell the land ex-post as well as the ex-ante incentives of both the tenants and the landlord to invest in land productivity.} There are two ‘parties’, one standing...
‘for’ land acquisition, called F, and the other ‘against’, called A. Following the preceding discussion, one shall interpret F as essentially the party in power, or elements in the government that are willing to follow the agenda of the ruling party. On the other hand, A can be interpreted as either an interest group, and/or a political party that opposes land acquisition, at least locally. Given the presence of bureaucratic corruption, party F has an incentive to step in, promising ‘help’ in resolving any problems arising out of such institutional weaknesses. To be precise, it can lower the transactions costs associated with land sale for both the buyer as well as the sellers by tackling bureaucratic corruption. Moreover, weak law enforcement allows A to possibly slow down the process through various means, legal or extra-legal, including violence. This enlarges the scope of party F since it can help overcome this opposition.

Thus the buyer rationally decides to involve party F in the process of land acquisition, and through F makes a take-it-or-leave it offer to the sellers. Of course, the sellers are free to bypass party mediation and approach the buyer directly. I embed this interaction within a larger game where A decides on its level of opposition that affects party F’s operation costs to fight against it. Party F decides on the rent it charges from the buyer in return for its participation in the process. Thus the extent of outside interference is endogenous in our framework, and is determined by deeper institutional parameters like level of bureaucratic corruption and ease of organising opposition.

Endogenizing this outside interference is important for several reasons. First, it allows us to examine if this buyer-induced holdout persists even if the degree of interference is endogenous and parties react to forthcoming economic activities that are shaped by the interference positions they themselves take. This enables one to also determine equilibrium interference and rent-seeking as a function of size of corruption and ease of opposing acquisition. Second, several key comparative

26Given our focus on building an institution-based theory of land acquisition, the model bypasses the otherwise well studied issue of unfair compensation whereby the sellers may be forced to sell at prices that are lower than their own valuation for the land. Our framework however allows for a limited role for such considerations in that the valuations can be interpreted as one that is set by some minimum price regulation aimed at protecting the sellers.
statics results with respect to the effects of institutional changes are sensitive to whether the interference levels are endogenous, or not. It shows that a framework where the interference contest is exogenous may yield misleading conclusions. The first part is included in this Chapter while the second part is included in Chapter 2.

Main Results

I solve for the equilibrium of this game. I say that the equilibrium involves holdout if there is a positive probability that party A manages to halt the project owing to unwillingness on part of some sellers to accept early offers from the buyer. The interesting feature of holdout in our model is that delay, if any, is buyer-induced and thus the central question is to characterise conditions under which it is in the best interests of the buyer to delay the process. I then examine how the magnitude of this buyer-induced holdout and price of land are related to the deeper institutional parameters of this economy, namely, the level of bureaucratic corruption and the ease of opposition.

Our first major result is a characterisation of conditions such that outside interference leads to buyer-induced holdout, where the buyer finds it in his best interest to reduce the powers of F and make initial offers to only a limited number of sellers for F to deal with. It is interesting that holdout obtains even though our framework does not allow for either complementarity in the number of plots, or any last mover advantage, the two key elements that generate holdout in the strategic bargaining framework (see sub-section 0.4.2 for more on this). Why does the buyer do this? First consider the late stage of the game where the level of opposition by A, as well as the rent being charged by party F is fixed. As expected, I have shown that the equilibrium implements holdout whenever the per seller rent charged by party F is significantly higher than the transactions costs due to bureaucratic corruption, which is intuitive since acquiring too many plots through F may be very costly for the buyer if the political rent is large. But then, why does not party F charge a lower rent, given that doing so leads to a greater
number of sellers under its control, thereby increasing party F’s political clout? I have shown that the equilibrium involves holdout as long as opposing is relatively inexpensive for A, and/or A is sufficiently motivated to gain political power. In that case A provides significant opposition to land acquisition, so that the pro-acquisition party, i.e. F, is forced to charge a high political rent. This in turn ensures that there is buyer-induced holdout.

The second set of result is interesting. I have shown that an increase in bureaucratic corruption necessarily reduces the price of land that is sold through party F. Depending upon the relative bargaining powers of the two sides, such a change may however either increase or decrease the price that is settled directly between the buyer and the sellers. Nevertheless, the dispersion in price across these two phases of land acquisition necessarily increases. These results remain qualitatively intact even if party F can impose credible threats and coerce sellers, except that now there may be instances where a rise in corruption increases the price of land sold through party F. Moreover, while the possibility of coercion increases both opposition and rent-seeking as expected, its impact on the size of holdout is interestingly nuanced, and can go either way.

I also show that this buyer-induced holdout is neither hostage to the simplified linear functions for F’s probability of winning the interference contest against A and buyer’s revenue from the project, nor dependent on the quadratic cost function. Buyer-induced holdout exists even with the generalised functions.

0.4.2 Related Research

Formal treatments of the holdout problem (using game theoretic arguments) were first provided in Eckart (1985) and Asami (1988). The theoretical literature was further developed in Cai (2000, 2003), Menezes and Pitchford (2004), Miceli and Segerson (2007) and Roy Chowdhury and Sengupta (2012).\textsuperscript{27} These models typ-

\textsuperscript{27}In the patents literature, Shapiro (2001) suggests that strategic holdout is a serious obstacle to R&D, and consequently long-run growth.
ically examine a strategic bargaining framework, with complementarity in the number of plots acquired. These two aspects generate a possible last mover advantage, which can generate inefficiency in the form of delay, as demonstrated by Cai (2003), Menezes and Pitchford (2004) and Miceli and Segerson (2007). Roy Chowdhury and Sengupta (2012) however demonstrate that there exist equilibria that are asymptotically efficient whenever the bargaining protocol is transparent, so that inefficiency does not necessarily follow.

In line with this literature, this chapter also shows that inefficiency can obtain even under complete information. However, in contrast, it provides a theory of holdout which does not rely on technological complementarity among plots for holdout to emerge, but rather on institutional weaknesses that allow various parties to intervene in the process. Interestingly, note that it employs a bargaining protocol which is transparent in the sense of Roy Chowdhury and Sengupta (2012), in that all offers are publicly observable. Nonetheless, in contrast to Roy Chowdhury and Sengupta (2012), I show that inefficiency continues to exist. Finally note that this literature, as well as the present chapter, contrast with the literature on bilateral trade problems considered in Chatterjee and Samuelson (1983) and Myerson and Satterthwaite (1983) (amongst others), where inefficiency is obtained under incomplete information.

This chapter also stands in contrast to several branches of the literature. Thus unlike Collins and Isaac (2012), it does not allow for contingent contracts. Moreover, in contrast to Ghatak and Ghosh (2011), Singh (2012) and Kominers and Weyl (2011), I show holdout even without invoking contiguity concerns. Finally, I obtain holdout in a framework with rational players, unlike Roy Chowdhury (2013), where preference irrationality, namely present biased preferences, is required.

Although the correlation between bureaucratic corruption, politics and economic development is well accepted, there are two conflicting strands in the literature on this issue. While one sees corruption as an obstacle to economic development (see for example Blackburn et al. (2006), Mauro (1995) and Murphy et al. (1993)), the other argues that corruption may ‘grease’ the process of de-
velopment, thereby facilitating beneficial trades and improving efficiency (see for example Levy (2007), Egger and Winner (2005), Beck and Maher (1986) and Leff (1964)). Turning to the empirical literature, there is anecdotal support for the latter viewpoint, at least in the context of less developed economies (see Aidt (2009)). Moreover, while the literature on how inefficiencies in democratic institutions affect the level of corruption is limited, there is some evidence that the political environment affects the likelihood of successful development (see for example, Svensson (2005), Paldam (2002), Ades and Di Tella (1997) and Bardhan (1997)). The theory presented in this chapter unifies these various strands in the context of land acquisition by providing conditions under which both these positions prevail. For example, I show that while a reduction in corruption reduces the holdout problem when corruption is not too large to begin with, it may increase holdout otherwise.

The remainder of the chapter is organised as follows. Section 0.5 presents the model, while section 0.6 studies how economic decisions are shaped by the degree of outside interference emerging in the early stages of the framework, and how that induces buyer-induced holdout. This leads to section 0.7 that studies how the two parties, foreseeing the actions of the buyer and the sellers, attempt to influence the outside interference climate. Sub-section 0.7.4 and sub-section 0.7.5 study the impact of political coercion, if practiced by F and A respectively, on price of land and size of holdout. Sub-section 0.7.6 shows that this buyer-induced holdout is not hostage to the simplified linear functions for F’s probability of winning interference contest against A and buyer’s revenue from the project or quadratic cost function by generalising them. All the proofs of this chapter are included in Appendix A, sub-section 0.19.1. The chapter concludes in section 0.8.

0.5 Theoretical framework

Local economy and the industrial project: A representative locality whose economy is based on land (agriculture, farming or forestry) consists of a continuum of sellers
of unit mass) holding identical plots of land all of which yield a non-negative return $v$ to their owners in their current uses. A buyer $B$ wishes to buy land in order to set up a project that yields a revenue of $V(x) = \lambda x$, where $0 \leq x \leq 1$ is the fraction of plots used, and $\lambda$ is the marginal productivity of land when used in the project.

**Bureaucratic corruption:** The process of land acquisition faces several institutional weaknesses. One such weakness stems from bureaucratic corruption associated with land transactions in general, and in offices dealing with land transactions in particular. As a result, any land sale between an individual seller and a buyer involves a transactions cost of $r_I \geq 0$, with the buyer bearing a fraction $\beta$, and the seller a fraction $1 - \beta$ of this cost, where $\beta$ is exogenous to our analysis. Thus in our model $r_I$ is an index of bureaucratic corruption, with a higher $r_I$ denoting higher bureaucratic corruption. I will assume throughout that $\lambda - v \geq r_I$, so that the project is economically viable even after accounting for this bureaucratic corruption.

**Outside interference:** The buyer and sellers confront an interference process that involves two ‘parties’ with opposing incentives, one that is for land acquisition (called $F$), and the other that is against such land acquisition (called $A$), with $F$ and $A$ being the obvious mnemonics for ‘for’ and ‘against’. $F$ typically represents not only the ruling political party, but also elements of the administrative machinery that can either gain directly from ‘helping’ the locality with industrialisation, or are simply required to follow F’s orders. Whereas $A$ comprises political parties in opposition or interest groups (or a combination of the two), whose main objective

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28 One can also interpret $v$ as arising out of some minimum price legislations, where this minimum price exceeds the sellers’ valuation for their land. Such enactments are now prevalent in many LDCs as well as developed nations in order to avoid problems arising from seller dissatisfactions. Thus this framework assumes that any problem concerning unfair compensation has been already resolved.

29 If $\lambda - v < r_I$, then one would simply look at mechanisms to reduce this corruption, something that is not the purpose of the present research.

30 In the Indian context, Gould (2011) writes about the “longterm customs of interactions between agencies of the state - government servants and police, and their engagement with local politicians”.

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is to obstruct the process of land acquisition. The outside interference process interacts with the process of land acquisition at several levels. First, if the project is to be undertaken in the area, land sale must involve the pro-industrial party F, as otherwise it becomes impossible for the buyer to overcome the opposition from A. Further, the bureaucratic corruption cost $r_1$ described earlier can be bypassed only if the sale is mediated by party F.

**Early offers:** Given that the involvement of party F is necessary for the project to go through, the buyer initially works through party F. He specifies a plot price $q \geq 0$ and a fraction $0 \leq k \leq 1$ of the plots that he wishes to buy through party F, which then approaches a fraction $k$ of the sellers with this price offer.

**Interference contest:** It is natural to assume that the larger the fraction of sellers who announce their willingness to sell early on in the acquisition process, the greater the probability that party F (and the buyer) is going to win against any opposition. I model this by assuming that if $k$ sellers agree to the buyer’s offer (intermediated by party F), then F wins the interference contest against A with probability $\pi(k) = k$. The formulation $\pi(k) = k$ is the celebrated Tullock lottery contest success function (see Corchon, 2007).

**Post-contest activity and late offers:** If party F wins the contest against party A, then these $k$ sellers commit to sell their plots at a price $q$, and party F leverages its connections (e.g., in the office of land transactions) to ensure that the additional corruption costs $r_1$ are waived. The remaining $1 - k$ fraction of sellers then jointly enter a bargaining process with the buyer that results in a Nash-bargaining outcome on the residual surplus. This determines a plot price $q_b$ at which all

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31In our model, geographical connectivity can be implemented for any $k$ given that all plots are identical and sellers are individually insignificant. When this is violated, the problem can become tricky and may require more careful selection and displacement mechanisms to execute partial land sale. For more on this see Ghatak and Ghosh (2011).

32In Subsection 0.7.6 I work out the case for general functions for $\pi(k)$ (as well as $V(x)$) to show existence of buyer-induced holdout.

33The modelling assumption here is that party F is not involved in the bargaining process once the interference outcome is decided. This point is discussed in greater details later in Section 0.6.3, where I also discuss what happens if in the late stage, all bargaining power is with
remaining plots are sold. As discussed earlier, each such transaction entails a transaction cost \( r_I \) due to bureaucratic corruption.

**Payoffs of F:** In exchange for getting involved in this process and agreeing to implement the buyer’s early offer \((k,q)\), party F asks for a political rent of \( r_P \) per seller conditional on success. The ‘economic rationale’ behind this rent lies in the fact that fighting A at the contest stage is costly for party F, both because of opposition from A, as well as because coordinating \( k \) sellers is costly, generating a cost of \( C(k) \) for party F, with \( C(k) \) being increasing and convex in \( k \). For presentational clarity and algebraic ease I will work with quadratic costs, in particular the cost function \( C(k) = ck^2 \) (the main results on existence of holdout reported here go through with general convex cost functions as proved in the Subsection 0.7.6). Party F cares not only about its political success, captured by the project’s success probability \( \pi(k) \), but also its net rental gains \( \pi(k)kr_P - ck^2 \). Thus the utility of F is given by

\[
\gamma \pi(k) + (1 - \gamma)[\pi(k)kr_P - ck^2],
\]

where \( 0 < \gamma < 1 \) measures how politically important it is for F to acquire land. I assume that the reservation payoff of party F is zero.\(^{35}\)

**Ease of opposition and payoffs of A:** From the utility function of F it follows that ceteris paribus, a higher level of \( c \) makes it costlier for F to win the political contest. By choosing a higher level of \( c \), party A can therefore ensure that F faces a higher degree of opposition. However, increasing \( c \) is costly for A and for simplicity I assume that the marginal cost of doing so is constant at \( \alpha > 0 \). The parameter \( \alpha \) is related to ease of opposition so that lower values of \( \alpha \) makes opposition easier. It has two possible interpretations. First, it is a measure of the robustness of the ‘rule of law’ in this economy. Thus a higher \( \alpha \) means better rule of law as

\(^{34}\)One can also consider the case that the buyer needs to pay a part of this rent upfront. This does not affect our results qualitatively as long as party F is a long term player and cares about its reputation.

\(^{35}\)While I will show that in equilibrium, F will indeed earn a strictly positive utility, the reservation payoff can in principle be even lower in case there are political costs for F from not participating in this process at all, as I discuss later in subsection 0.7.6.
that makes it harder for A to interfere with the process of land transaction once the project passes the interference stage. Alternatively it may mean that A has a smaller presence in the area under consideration (this is discussed in more detail in Chapter 2, Sub-section 0.10.3) and therefore less influence in the local land related bureaucracy. Like party F, the utility of A also has two parts, the direct political returns from stopping the land acquisition process and the costs incurred in doing so. Thus A’s utility is given by

\[ \delta(1 - \pi(k)) - (1 - \delta)\alpha c, \]  

where \( 0 < \delta < 1 \) is an index of A’s anti-acquisition conviction. It measures the relative importance of political power which in principle can be different from \( \gamma \). A’s reservation payoff is assumed to be zero as well. In Chapter 2 (Section 0.10) I will connect \( \delta \) and \( \gamma \) to elections by assuming that their values are likely to be higher during election times.

**Payoffs of Sellers and the Buyer:** If the project fails, then all sellers earn \( v \) and the buyer earns 0. Otherwise, if the project goes through and if \( k \) plots are acquired through early offers at price \( q \) (while the remaining are acquired at the bargaining price \( q_b \)), then the buyer’s payoff is

\[ \lambda - (q + r_P)k - (1 - k)(q_b + \beta r_I), \]

while the payoff to an early seller is \( q \) and that to a late seller is \( q_b - (1 - \beta)r_I \).

**Timeline:** These interactions yield a dynamic game of complete information, denoted by \( \Gamma_{\alpha,r_I} \), with the following timeline (schematically depicted in Figure 6):

- **Endogenous emergence of interference:**
  - **Stage 1.1:** Party A chooses its level of opposition, \( c \);
  - **Stage 1.2:** Party F selects the rent per seller, \( r_P \), that it demands from the buyer conditional on the project succeeding;
• Early phase of land acquisition:

  – *Stage 2*: The buyer announces a plot price $q$ and a fraction $k$ of plots
    it wishes to buy through party $F$, which then offers this price $q$ to $k$ of
    the sellers;
  
  – *Stage 3*: Party $F$ incurs a cost of $ck^2$ to organise $k$ sellers who are willing
    to sell through $F$ at price of $q$.
  
  – *Stage 4*: Contest between $F$ and $A$ takes place and the winner is decided;
    if the winner is $A$, the game ends and the project is scrapped; if the
    winner is $F$, then the project goes through and $F$ is paid the per unit
    rent of $r_P$ by the buyer;

• Late phase of land acquisition:

  – *Stage 5*: All sellers who are yet to sell their plots bargain with $B$
    and settle for a price $q_b$ at which all remaining plots are sold after the
    corruption cost $r_I$ is paid; the game ends.

I next turn to characterising the sub-game perfect Nash equilibrium (henceforth
SPNE) outcome of this extensive-form game. In this framework I say that the
outcome involves *holdout* if there is a positive probability that the project will be
scrapped altogether: larger this probability, greater is the holdout problem.

**Definition 1.** I say that $\Gamma_{\alpha, r_I}$ generates buyer-induced holdout of size $1 - k$ if in
the sub-game perfect equilibrium of $\Gamma_{\alpha, r_I}$ the buyer’s offer $(k, q)$ has $k < 1$.

A central objective of this chapter is to study conditions under which the
interaction between outside interference and bureaucratic corruption results in
buyer-induced holdout, and how such interactions shape the size of such holdout
and the price of land. In the next chapter I will analyse how such interactions
impact the welfare of sellers.

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30To remind the reader, when $F$ loses this contest, the payoffs are: sellers earn $v$, Buyer earns 0, party $F$ earns $-(1 - \gamma)ck^2$ and $A$ earns $\delta - (1 - \delta)\alpha c$. 

39
0.6 Optimal land acquisition design and buyer-induced holdout

In the framework under study, decisions relating to outside interference are made before economic variables like prices and amounts of sales in each period are determined. In this section I will assume that F participates and take the interference variables (viz. \( r_P \) and \( c \)) as given and examine the decisions made by the buyer and the sellers across the two phases of land acquisition. Albeit constrained by the activities of F and A and the incentives of the sellers, in our framework the buyer has the ability to design his acquisition mechanism and his principle instruments are \( k \) and \( q \).
0.6.1 Late phase of land acquisition

Suppose the game reaches Stage 5 with a fraction $0 \leq k < 1$ of sellers having already sold their plots. The remaining $1-k$ fraction of sellers enter into bargaining with the buyer (although an artefact of our modelling framework, note that since $\pi(0) = 0$, to reach stage 5 with positive probability, it must be that $k > 0$), with the payoffs being the outcome of a symmetric Nash bargaining process involving the buyer on one side, and all remaining $1-k$ sellers on the other. The Nash program is:

$$\max_{q_b \geq 0} [\lambda - (1-k)(q_b + \beta r_I) - \lambda k][(1-k)(q_b - v - (1-\beta)r_I)].$$

(3)

The following lemma is straightforward.

**Lemma 1.** In the late stage suppose a fraction $1-k$ of sellers bargain with the buyer to sell their plots. Then the Nash bargaining price $q_b = \frac{v+\lambda}{2} + r_I \left(\frac{1}{2} - \beta\right)$. Consequently, the price $q_b$ is (a) increasing in $v$ and $\lambda$, (b) decreasing in $\beta$, (c) increasing in $r_I$ iff $\beta < \frac{1}{2}$, and (d) unaffected by $\alpha$, $r_P$ and $k$.

As Lemma 1 indicates, once the project passes through the interference hurdles, the price settlement between the remaining $1-k$ sellers and the buyer is not affected by the fraction $k$ of land sold in the early phase. Neither is it directly affected by the degree of outside interference, but is affected by bureaucratic corruption. I next turn to determining $k$ and the first period price $q$.

0.6.2 Early phase of land acquisition: a first look at buyer-induced Holdout

I begin with stage 2 where the buyer must decide on $k$, the number of plots he would wish to buy during the early phase using party F as an intermediary. Of course, garnering more support for the project through a higher $k$ makes it easier for party F to win the interference game, thereby ensuring that the project goes
through. However, the buyer does not want to attract too many sellers in the early phase since these sales must go through party F for which the buyer will have to pay a per unit rent of \( r_P \). Keeping this in mind I now determine the buyers equilibrium choice of the pair \((q,k)\).

For a given choice of \( k \), the buyer needs to offer a price \( q \) to implement the desired \( k \). If he offers \((q,k)\) and \( k \) sellers agree to sell ‘today’ at price \( q \), then the payoff of each such seller is \( \pi(k)q + (1 - \pi(k))v \), whereas the payoff of any seller who delays sale equals \( \pi(k)(q_b - (1 - \beta) r_I) + (1 - \pi(k))v \). Clearly, if he sets a price such that \( \pi(k)q + (1 - \pi(k))v < \pi(k)(q_b - (1 - \beta) r_I) + (1 - \pi(k))v \), then the sellers would prefer to wait and he cannot implement \( k \). Thus, he would prefer to set the minimum possible price \( q \) such that, \( \pi(k)q + (1 - \pi(k))v \geq \pi(k)(q_b - (1 - \beta) r_I) + (1 - \pi(k))v \). Hence for any fixed target \( k \) of phase one sellers, we have

\[
q(k) = q_b - (1 - \beta) r_I.
\] (4)

The following lemma is then immediate.

**Lemma 2.** The early and late phase prices of land are, respectively, \( q = \frac{\lambda + v}{2} - \frac{r_I}{2} \) and \( q_b = \frac{\lambda + v}{2} + r_I \left( \frac{1}{2} - \beta \right) \) with \( q < q_b \).

Note that \( q \) and \( q_b \) are neither affected by any of the interference variables \( r_P \) and \( c \), nor by the parameters \( \gamma \) and \( \delta \), nor by the rule of law (or ease of opposition) parameter \( \alpha \). As we shall later find, the effect of these parameters are manifested only in the probability of holdout, i.e., \( 1 - k^* \).

Given F’s participation and Lemma 2, I now determine the buyer’s optimal choice of \( k \). The profit function of the buyer in stage 1 is

\[
\Pi(k) = \pi(k)[\lambda - k(q + r_P) - (1 - k)(q_b + \beta r_I)].
\] (5)

Substituting \( \pi(k), q \) and \( q_b \) in the above expression and simplifying further I obtain

\[
\Pi(k) = \frac{1}{2} \left( 2(r_I - r_P)k^2 + (\lambda - v - r_I)k \right).
\] (6)
If \( c \) is too high so that \( F \) does not find it profitable to participate, there will trivially be holdout as the project will be scrapped with certainty. Proposition 1 below is our first main result. It assumes that \( F \) participates and demonstrates the possibility of holdout whenever the political rent \( r_P \) is large.

**Proposition 1.** There is holdout with \( F \)'s participation in the land acquisition process if and only if the political rent \( r_P \) is significantly higher than the transactions costs, that is \( r_P > r_I + \frac{\lambda - v - r_I}{4} \). The number of plots sold in the early stage, i.e.

\[
k^*(r_P) = \frac{(\lambda - v) - r_I}{4(r_P - r_I)} ,
\]

whenever \( r_P > r_I + \frac{\lambda - v - r_I}{4} \), and \( k^*(r_P) = 1 \) otherwise. Moreover, the size of holdout increases in \( v \) and \( r_P \), but decreases in \( r_I \) and \( \lambda \).

From (13) it follows that in the continuation subgame that initiates economic activities, one obtains holdout in equilibrium whenever \( r_P \) exceeds \( r_I + \frac{\lambda - v - r_I}{4} \). Why does not the buyer seek to acquire more plots in equilibrium? Intuitively, \( r_P \) measures the marginal cost of acquiring one more plot at the early stage, whereas the expression \( r_I + \frac{\lambda - v - r_I}{4} \) measures the marginal benefit from doing so at \( k = 1 \). The expression \( r_I + \frac{\lambda - v - r_I}{4} \) is intuitive as the first term, \( r_I \), captures party \( F \)'s contribution in reducing transaction costs, whereas the second part, \( \frac{\lambda - v - r_I}{4} \), is a measure of party \( F \)'s contribution in fighting \( A \). In case I am in a continuation subgame where the demanded rent \( r_P \) exceeds the sum of these two contributions, there will be holdout. With the rent \( r_P \) being high, increasing the number of plots acquired is not profitable. Relatedly, why don’t more sellers try to bypass the interference process and approach the buyer directly? The benefit of doing so is that she can obtain a higher price, whereas the cost is that she will have to pay the corruption costs herself and increase the probability of the project getting scrapped due to opposition. In equilibrium these two forces are balanced. The proof of Proposition 1 is included in sub-section 0.19.1.

Proposition 1 generates several interesting and potentially testable implications. If the locality has land with high value (i.e. \( v \) is high), either because of close proximity to a large city, or because of high fertility of land, then from Propo-
sition \(1\) (see (13)) it follows that \(k^*(r_P)\) is smaller. The effect is similar when the productivity of the industrial project is small. Consequently, Proposition 1 suggests that urban vicinity, high land-fertility, and/or low project returns all make holdout more likely. These predictions are also consistent with the basic thesis in Chakravorty (2013) that increased land value was central to the problems of land acquisition.\(^{37}\)

I look at the pattern of land acquisition bids and their current status in Table 1 in Appendix B – successful, contested or failed – across 15 states and one union territory of India between the years 2006-2016.\(^{38}\) Table 1 draws on (a) tables A1 and A2 in Chakravorty (2013) that collate instances of land acquisition that were reported in the media for the first time between the years 2006-2011, and (b) further work in July, 2016, that updated the cases that were reported as contested in Chakravorty (2013). It should be pointed out that given that these cases were reported in the media, the sample is likely to be biased towards cases that are ‘newsworthy’. Thus, for example, there could be cases where land acquisition went through peacefully during this period, but were not reported by the media (either due to lack of any political interference, or because the amount of land being acquired was not large enough). As of now the other cases either continue to be contested, or there is little evidence to suggest that these have been resolved either way. Further it is not clear that in an event of delay, whether it was buyer-induced, seller-induced or due to procedural inefficiencies. However it is interesting that the data suggests that in the Indian context, land acquisitions, while often contested, and sometimes unsuccessful, also went through in many cases, as suggested by Proposition 1. Given the earlier caveat regarding the data and the fact that the data size is also not large, I refrain from undertaking any analysis to suggest any

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\(^{37}\)In the case of Singur, for example, one of the triggers was that the land was very fertile, implying a very high \(v\). Similarly, in the case of Vedanta, the tribals had a religious and cultural attachment to the proposed cite, which again implies that \(v\) is likely to be large. In case of the Jamuna Expressway in Delhi, the land acquisition process encountered several delays as it was hard to satisfy the owners to sell land that was of very high value, owing to the high fertility of land on the banks of the river.

\(^{38}\) The states reported are Andhra Pradesh, Chhattisgarh, Jharkhand, Gujarat, Goa, Haryana, Himachal Pradesh, Karnataka, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Chandigarh is the only union territory in the data sample.
0.6.3 A discussion on the modelling assumptions

It is straightforward to demonstrate that our analysis is not dependant on the sellers being risk neutral. All results go through even in the presence of risk aversion. I have also assumed that the reservation payoff of party F from participating in the land-acquisition process is 0. In reality this might seem to be a strong assumption as it can be politically suicidal for F to not help industrial buyers at all particularly in a developing country aspiring for economic growth. On the other hand not agreeing to oppose industrial projects (which is equivalent to setting \( c = 0 \)) may not be that costly for A. Hence it is natural to have an asymmetry in the two external players’ reservation utilities. It can be easily verified that with zero reservation payoff for A (which is a normalisation now), it will never set a \( c \) larger than \( \frac{\delta}{a(1-\delta)} \). Assuming a more general convex cost \( C(k) = k^m, m > 1 \) (used in the Subsection 0.7.6), it follows that F’s participation is guaranteed if its reservation payoff falls below \( \frac{\delta(1-\gamma)}{(1-\delta)a} \).

Next, how critical is the assumption that party F can help with reducing the transactions costs due to bureaucratic corruption? To address this issue, consider a scenario where these transactions costs have to be borne by the buyer and the sellers even if the transactions are mediated by party F. It is straightforward to show that in that case \( q = q_b = \frac{v+\lambda}{2} - r_I(\frac{1}{2} - \beta) \), and \( k^* = \frac{\lambda-v-r_I}{r_P} \). Thus the results are qualitatively similar in that holdout is still possible.

Finally, as mentioned in footnote 33 earlier, another implicit modelling assumption is that party F is not involved in the late stage of land acquisition. This is motivated by the fact that in this stage party F has much less bargaining power vis-a-vis the buyer (as well as the sellers) as compared to the early stage: with A now defeated, neither the buyer, nor the sellers need the backing provided by party F for the project to go through. Moreover, any further involvement by party F in the process of land acquisition may have costs. For one, rent-seeking even after
the interference battle has been won, might cast doubt on party F’s credentials as a pro-growth party, creating an adverse reputational effect. Further, for F, the opportunity cost of using up its bargaining chips with the administration in an effort to waive off the corruption costs \( r_I \) may be significant. Both these factors assume a greater urgency since getting involved may not yield any further political mileage to party F given that the political battle is already won. Given the trade-offs involved, I have chosen to focus on the case where the costs of getting involved outweigh the potential benefits for party F.

It may be of interest though to examine some alternative scenarios where the trade-off is not so adverse for party F, so that it gets involved in the late stage as well. While a complete analysis is beyond the scope of this chapter, I discuss some possibilities. Consider a scenario where, following a victory for party F in warding off opposition from A, it can continue demanding a rent in order to allow the buyer and the sellers to bypass bureaucratic corruption and the buyer-seller community has the option to avoid paying this rent and instead incur the corruption cost \( r_I \). Preliminary analysis suggests that our results on holdout go through; however the possibility of rent-seeking opportunity in the late phase has an ambiguous effect on the first period rent \( r_P \) when political variables are determined exogenously. Some of the analysis can be found in Section 0.7.7.

What if late stage price is settled through take-it-or-leave-it offers from the buyer? Then the second period price of land would be lower than under Nash bargaining. This would increase incentives of the buyer to reduce the number of period 1 offers, thus potentially increase holdout. In any event, the basic result on the possibility of buyer-induced holdout is certainly not hostage to the exact price-settling protocol in the late stage.
0.7  Emergence of outside interference

The purpose of the theoretical model goes much beyond Proposition 1, i.e. characterising the existence of buyer-induced holdout. I next embed the model examined in Section 0.6 in a broader framework and study the effects of changes in the deeper parameters of the environment on the level of holdout, and other variables of interest. For ease of exposition this part of analysis is captured in Chapter 2 where I will look into the effects of changes in these parameters on the level of buyer-induced holdout, sellers welfare and economic surplus. In particular I will be interested in the bureaucratic corruption parameter \( r \) and the ease of opposition parameter \( \alpha \). In addition, endogenizing \( r_P \) and \( c \) also serves as a robustness check for the preceding analysis. While all these are included in Chapter 2, in Chapter 1 I next turn to a study of important decisions, beginning with that of the pro-industrial party F who I will assume finds it rational to participate. This is captured in sub-section 0.7.1. I will then show in sub-section 0.7.2 that the equilibrium expected payoff of F will indeed be above its reservation utility, so that participation is guaranteed in equilibrium. Sub-section 0.7.2 includes the decision of the opposition A on the extent of its mobilisation against this project. It is of interest to see the effects of changes in the deeper parameters of the environment on the extent of such mobilisation. Theorem 1 in section 0.7.3 then summarises the results developed in these two sub-sections.

0.7.1  Equilibrium rent for support

Suppose A has announced its degree of opposition by committing to some \( c \), where \( c \geq 0 \). Party F now decides on the rent per seller, \( r_P \), that it would demand from the buyer in order to fight A, taking the level of \( c \) as given. The level of \( r_P \) will of course determine the number of plots that the buyer will wish to acquire through F’s mediation, which is something that party F factors in.

I need some notations before discussing my next result, namely Proposition 2.
Let $r_P^*$ denote the solution to party F’s problem. Further, let
\[
\hat{r}_P := \frac{(1 - \gamma)(2c - r_I)(\lambda - v - r_I) + \gamma r_I}{(1 - \gamma)(\lambda - v - r_I) + \gamma} \quad \text{and} \quad \bar{c} := \left(\frac{7}{8}\right) r_I + \frac{1}{8} \left(\frac{\gamma}{1 - \gamma} + (\lambda - v)\right)
\]

Proposition 2 below solves for the payoff-maximising choice of $r_P$, showing that, depending on the magnitude of $c$, the solution may or may not involve holdout.

**Proposition 2.** Consider a subgame initiated by $A$ through a choice of opposition level $c$. Then in the SPNE of this subgame

(i) if $c \leq \bar{c}$, then $r_P^* = r_I + \frac{\lambda - v - r_I}{4}$, and there is no holdout,

(ii) whereas if $c > \bar{c}$, then $r_P^* = \hat{r}_P > r_I + \frac{\lambda - v - r_I}{4}$, and there is holdout.

Proposition 2 is intuitive. Recall that party F derives its utility from two sources, political (defeating A) and economic (net monetary gains from rents). Whenever $c$, the degree of opposition from A is relatively weak (to be precise $c \leq \bar{c}$), the monetary benefits are sufficiently large so that the political benefits become relatively more attractive at the margin. In that case party F finds it optimal not to raise its demand for rent $r_P$ by so much that the buyer’s willingness to acquire land through party F is lowered. Thus it chooses the maximum rent $r_P^* = r_I + \frac{\lambda - v - r_I}{4}$ that ensures that there is no holdout (from Proposition 1 we know that the buyer finds it optimal to set $k^* = 1$). When $c$ exceeds this cutoff, party F finds this low rent unsustainable and raises it beyond $r_I + \frac{\lambda - v - r_I}{4}$. This makes the buyer set a lower $k^*$ and there is holdout. The proof of Proposition 2 is included in sub-section 0.19.1.

As Proposition 2 establishes, the degree of opposition $c$ chosen by A is critical to our analysis. The next sub-section is devoted to analysing A’s optimal choice of this opposition.
0.7.2 Equilibrium Opposition

Given that an industrial project may happen, A has to decide on the extent of its mobilisation against this project, i.e. $c$. This decision is critical to the success of the project as it determines the rent $r_P$ to be charged by party $F$ and consequently the size of holdout and the probability that the project goes through. If A foresees that conditions are such that the rent charged by party $F$ will be low (so that the buyer will opt to purchase all the plots), it would like to stay away from the contest (by setting $c = 0$). Otherwise it will oppose this project. The conditions that determine the extent of such opposition turn out to depend on the ease of opposition $\alpha$, as well as $\delta$, the motivation level of party A. Proposition 3 below deals with this. In order to state this proposition, define two critical values, one for the degree of opposition $c$ and the other for the ease of opposition $\alpha$:

$$c_f := r_I + \sqrt{\frac{\delta(\lambda - r_I - v)}{8\alpha(1 - \delta)}}$$

and

$$\bar{\alpha} := \left(\frac{\delta}{1 - \delta}\right) \left(\frac{\lambda - r_I - v + \frac{\gamma^2}{(\lambda - r_I - v + \frac{\gamma^2}{1-\gamma})^2}}{(\lambda - r_I - v + \frac{\gamma^2}{1-\gamma})^2}\right).$$

Proposition 3 shows that there is holdout if and only if $\alpha < \bar{\alpha}$ and $\delta$ is sufficiently large.

**Proposition 3.** In the SPNE of $\Gamma_{\alpha,r_I}$, the following hold:

(i) Suppose opposition is sufficiently difficult, formally $\alpha \geq \bar{\alpha}$. Then there is no opposition in equilibrium, i.e. $c^* = 0$.

(ii) On the other hand if $\alpha < \bar{\alpha}$ so that opposition is not very difficult, then there exists $0 < \tilde{\delta} < 1$ such that if $\delta \leq \tilde{\delta}$ then $c^* = 0$, while if $\delta > \tilde{\delta}$ then $c^* = c_f$, with $c_f$ being

(a) increasing in $\lambda$ and decreasing in $v$ and $\alpha$;

(b) decreasing in $r_I$ if and only if $(\lambda - v) - r_I$ is sufficiently high.

As is clear from Proposition 3 the fragility of the rule of law and/or strong local presence of A – as captured by a small $\alpha$ so that ease of opposition is high
– is of primary importance to A’s decisions. If $\alpha$ is very high, A finds it optimal to not oppose at all. This is because to generate any delay via holdout, $r_P$ has to be very large, which requires the level of $c$ itself to be very high as well. With a large enough $\alpha$ this becomes unsustainable for A. While setting a high $c$ becomes feasible for A when $\alpha$ falls, it should also be sufficiently motivated (that is $\delta$ should be sufficiently large). I have characterised a threshold value $\tilde{\delta}$ (obtained from \ref{eq:delta} in Appendix A) such that A mounts significant opposition and there is holdout only when the marginal returns from this opposition is large ($\delta > \tilde{\delta}$). The proof of Proposition 3 is again included in sub-section \ref{sec:proof}.

The interesting case is naturally when the parameters of the model allow for buyer-induced holdout. Now that we know the equilibrium amount of opposition $c^* = c_f$ in such situations, I use Propositions 1, 2 and 3, to compute the ‘overall’ equilibrium demand for political rent $r_P^*$ that induces holdout in the economy. It is also of interest to see how does the equilibrium $r_P^*$ get affected by the various parameters of the model. Corollary 1 deals with this.

**Corollary 1.** Suppose $\alpha < \bar{\alpha}$ and $\delta > \tilde{\delta}$ so that there is holdout. Then the equilibrium rent $r_P^*$ is given by

$$
\begin{align*}
    r_P^* &= \frac{(1 - \gamma) \left( r_I + 2 \sqrt{\frac{\delta(\lambda - v)}{8\alpha(1 - \delta)}} \right) (\lambda - v - r_I) + \gamma r_I}{(1 - \gamma)(\lambda - v - r_I) + \gamma},
\end{align*}
$$

where $r_P^*$ is

(i) monotonically increasing in $\lambda$ and monotonically decreasing in $v$ and $\alpha$;

(ii) increasing in $r_I$ if $(\lambda - v) - r_I$ is sufficiently high and decreasing otherwise.

It is straightforward to see that the rent per seller $r_P$ charged by F is increasing in $\lambda$, and decreasing in $\alpha$. Consider an increase in $v$. Following this, the buyer’s initial price offer $q$ (as well as $q_b$) must rise. This becomes economically infeasible for the buyer unless F provides room for the buyer by reducing $r_P$. These forces work in the exact opposite direction when $\lambda$ increases. Hence for projects where
land has high marginal productivity, rents are high as well. I now address the non-monotonicity of equilibrium rent in the degree of bureaucratic corruption \( r_I \).

Suppose \( r_I \) is large so that \( (\lambda - v) - r_I \) is small. A further increase in \( r_I \) makes it too attractive for the buyer to buy out more plots today as a rise in \( r_I \) increases the gap between \( q \) and \( q_b \) significantly (see Fig. 2 below). This increase in demand for F-administered sale gives room to party F to finance its war against A and earn enough returns from it so that it finds optimal to increase this demand optimally through a reduction in rent. On the other hand when \( r_I \) is small so that \( (\lambda - v) - r_I \) is sufficiently high, the buyer does not dislike second period purchase except that it still requires a sufficient amount of F-administered sales in order to overcome the period 1 political hurdle. Party F can therefore coerce the buyer with a higher rent knowing that this would not force the buyer to reduce first period purchase significantly. The proof of Corollary 1 is included in subsection 0.19.1.

Finally I demonstrate that Party F’s equilibrium payoff is positive, so that F finds it optimal to participate. Note that F’s payoff is zero at \( k = 0 \) and is increasing in \( k \) whenever \( r_P > c \). In equilibrium, \( c^* = c_f \) and \( r^*_P - c_f \) simplifies to

\[
r^*_P - c_f = \frac{(3(1 - \gamma)(\lambda - v - r_I) + \gamma)(\sqrt{\frac{\delta(\lambda - r_I - v)}{8(1 - \delta)}})}{(1 - \gamma)(\lambda - v - r_I) + \gamma} > 0
\]

since \( 0 < \gamma < 1, 0 < \delta < 1 \) and \( \lambda > v + r_I \).

### 0.7.3 Equilibrium buyer-induced holdout

I am now in a position to report the equilibrium of the full game by collecting the analysis in Sections 0.6, 0.7.1 and 0.7.2 in the following theorem.

**Theorem 1.** Let \( k^* \) denote the equilibrium fraction of land acquired through the intermediation of party F.

(i) \( k^* = 1 \) if either (a) \( \alpha \geq \bar{\alpha} \), or (b) \( \alpha \geq \bar{\alpha} \) and \( \delta \leq \tilde{\delta} \); otherwise \( k^* = \frac{(1 - \gamma)(\lambda - r_I - v) + \gamma}{8(1 - \gamma)(c_f - r_I)} < 1 \).
(ii) In the early phase, the fraction \( k^* \) of land is sold at price 
\[ q = \frac{\lambda + v}{2} - \frac{r_I}{2}. \]
In case party F wins the political contest against party A, then the remaining plots 
are sold in the late phase at price 
\[ q_b = \frac{\lambda + v}{2} + r_I \left( \frac{1}{2} - \beta \right); \] 
thus \( q_b = q + r_I (1 - \beta) \) so that \( q < q_b \) for all \( 0 < \beta < 1 \).

Theorem [1] provides an overview of the study so far. If it is hard for A to oppose, 
i.e. \( \alpha \) is high, or A’s ideological drive against industrialisation is not too strong, 
i.e. \( \delta \) is small, then A will not oppose land acquisition at all. In that case the rent 
demanded by party F is small, thus the buyer buys all land using party F and the 
project takes place with probability 1. Otherwise, A offers significant opposition 
to land acquisition, which forces party F to charge larger rents. This induces the 
buyer to acquire a smaller fraction of plots through party F, thereby opening up 
the possibility of A winning the political contest with F and stalling the project. 
In such a situation, the price offered in the initial phase, i.e. \( q \), is smaller than the 
eventual price \( q_b \). Interestingly, all sellers end up with equal payoffs irrespective 
of whether the project is stalled (in which case each earn \( v \)) or whether it goes 
through (in which case early phase sellers earn \( q \) while the late phase sellers earn 
\( q_b - r_I (1 - \beta) \) where equilibrium equalises these two quantities). However, there is 
land-price dispersion that increases with the degree of bureaucratic corruption (as 
is evident from Figure [2]) but remains unaffected with ease of opposition unless the 
.ease of opposition is small (viz. \( \alpha \) large) in which case all land is sold at a single 
price. As expected of course, the degree of price dispersion is also affected by the 
bargaining power of the buyer vis-a-vis the sellers once they are free to negotiate 
the price without involving party F. In particular, as the sellers’ power increases, 
the price dispersion increases.

Note that Theorem [1(i)] suggests that not all land acquisition processes lead to 
external opposition. There was none when the West Bengal government, then led 
by the Left Front, acquired 217.23 acres of mono-crop land in Kharagpur to build a 
pig-iron manufacturing plant by Tata Metaliks (Guha, 2007). Even media coverage 
did not provoke any opposition in support of the unwilling farmers. Considering the 
period 1994-2004, Guha (2007) argues that more than 70 percent of the displaced 
farmers were not properly rehabilitated and left with little monetary compensation.
There were some local protests from the landowners when the state government proposed to acquire another 525 acres of farmland in the same area, but these protests fizzled out due to the lack of strong political backing (Guha, 2007). In fact, even at the time the Singur agitation was alive, the Jindal group of companies managed to acquire land for their factory in West Bengal without any political intervention or external support.\footnote{See <http://archive.indianexpress.com/news/unlike-singur-salboni-farmers-look-forward-to-land-acquisition/> and <https://www.ukessays.com/essays/history/study-of-salboni-land-acquisition-history-essay.php>, accessed on 24.4.2016.} Further, in certain states of India like Gujarat, land acquisition, even in the absence of government intervention, seems relatively trouble free.\footnote{See <http://www.business-standard.com/india/news/land-acquisition-in-gujarat-less-bloody/>., accessed on 23.4.2016.} What can one say about conditions required for holdout to be absent in equilibrium? I have proved that if $\alpha \geq \bar{\alpha}$ or $\delta \leq \bar{\delta}$, then there is no opposition ($c^* = 0$), and so there will be no outside interference. These conditions that thwart opposition turn out to be both necessary and sufficient to have no
holdout in equilibrium.

0.7.4 Coercive pro-industrial party F: a digression

The above framework assumes that sellers are free to decide whether they want to sell their plots through party F, or wait and negotiate directly with the buyer once all interference hurdles are overcome. Note though that in our framework, party F has a strong incentive to coerce sellers to sell their plots early since, with more first period sales, the probability of victory increases for party F. Such coercion is widespread; there are many instances around the world where landowners were threatened by a political party to sell their lands.\footnote{The recent verdict by the Supreme Court of India is suggestive of coercive land sale in Singur. See for example \url{http://timesofindia.indiatimes.com/india/Supreme-Court-raises-questions-on-Singur-land-allocation-for-Tata-Motors/articleshow/52134670.cms}.} How would this possibility affect the equilibrium variables like rent, degree of opposition, price of land and the magnitude of holdout?

To address this issue, I look at a simple extension of our model in the following subsection where refusal to participate in the first period offer \((q,k)\), if approached by party F, results in a personal penalty of amount \(\chi > 0\) to the seller.\footnote{The analysis goes through without any modifications even if I assume that in case of even a single offer being refused, all the villagers would be punished. In this context we note that in Singur, the then industries minister of West Bengal threatened to cut off all developmental works in this region, which is a group penalty rather than a private one. See \url{http://www.mainstreamweekly.net/article101.html}.} Given the discussions above, it is only natural to assume that in an LDC, party F is typically endowed with the required political and state machinery to execute this threat costlessly.

Details on Coercion: Consider a scenario when the pro-industrial party F is coercive and coercion, if exercised, imposes a direct cost of amount \(\chi > 0\) on any seller who refuses to sell land in the early phase through the party. Proposition\footnote{The analysis goes through without any modifications even if I assume that in case of even a single offer being refused, all the villagers would be punished. In this context we note that in Singur, the then industries minister of West Bengal threatened to cut off all developmental works in this region, which is a group penalty rather than a private one. See \url{http://www.mainstreamweekly.net/article101.html}.} below captures report on the equilibrium under this possibility. It shows that while in equilibrium coercion will not be executed, credibility of the threat itself will affect
the size of holdout and price of land. This is because the buyer incorporates this aspect in his first period offer that makes the early sellers exactly indifferent between selling and refusing to do so, and then waiting to negotiate with the buyer. This of course affects the first period price which now depends upon both $\chi$, as well as the amount of first period sales $k$ (see Figure 3 below). In particular, this makes the relationship between the early phase price $q$ and the size of bureaucratic corruption $r_I$ non-linear. Otherwise, the possibility of coercion is analytically similar to the effect of a ‘jump’ in the value of $\lambda$ in the baseline framework (without coercion). It is this jump-effect that yields the interesting result that size of coercion may both increase or decrease the size of holdout (driven by the fact that size of coercion is non-monotonic in $\lambda$ (this part is detailed in Chapter 2 (section 0.9) and is reported in Corollary 3 there).

**Proposition 4.** Suppose the pro-industrial party $F$ is coercive and coercion, if exercised, imposes a direct cost of amount $\chi > 0$ on any seller who refuses to sell land in the early phase through the party. Then the following is true in equilibrium:

(i) If $\lambda$ and $\chi$ are sufficiently small, then the possibility of coercion reduces holdout. However, for sufficiently large $\lambda$, coercion increases holdout. For intermediate values of $\lambda$, holdout increases only if $\chi$ is sufficiently large;

(ii) Political rent-seeking ($r_P$) and degree of opposition ($c$) are both higher in the presence of coercion; however no seller pays the coercion penalty $\chi$;

(iii) (a) Land price in the late phase (as determined by direct bargaining between the buyer and the sellers, i.e., $q_b$) is not affected;

(b) Land price in the early phase (as settled through party $F$, i.e., $q$) necessarily falls when bureaucratic corruption is high (viz. high $r_I$) and may even fall below $v$;

(c) An increase in bureaucratic corruption, i.e., an increase in $r_I$, reduces $q$ for small level of corruption (viz. small $r_I$). However, this happens at a decreasing rate, and $q$ may even increase if the existing level of corruption is already very high and party $F$ is highly motivated.
Note that given \((q, k)\), if there is no refusal then the second period price remains \(q_b = \frac{\lambda + v}{2} + r_I \left( \frac{1}{2} - \beta \right)\) as before. So consider a unilateral deviation by a seller who now refuses when approached while a fraction \(k\) accepts. Then his payoff from this deviation is \(\pi(k) [q_b - (1 - \beta) r_I] + (1 - \pi(k)) v - \chi\), while by not deviating he obtains \(\pi(k) q + (1 - \pi(k)) v\). Thus for a fixed target of period 1 sales \(k\), a profit maximising price offer from the buyer must equalise these two expressions, yielding period 1 price equal to

\[
q_{\text{coercion}} = q_b - (1 - \beta) r_I - \frac{\chi}{k}.
\]  

(9)

Contrast (9) with (4). There is a fundamental distinction where although in equilibrium there is no refusal and therefore no seller incurs the cost \(\chi\) directly, the threat of coercion affects the buyer’s first period price offer, allowing him room to reduce it by an amount \(\frac{\chi}{k}\). Replacing the expression for \(q_{\text{coercion}}\) in the buyer’s profit function (see (6)), it is easy to verify that the impact of a positive \(\chi\) is equivalent to an increase in \(\lambda\) by an amount \(2\chi\). Hence, it follows from Proposition 1 that there is holdout if and only if \(r_P > r_I + \frac{(\lambda + 2\chi) - v - r_I}{4}\) with first period sales given by

\[
k_{\text{coercion}}(r_P) = \frac{(\lambda + 2\chi) - r_I - v}{4(r_P - r_I)}.
\]

Hence ceteris paribus, the size of holdout falls under coercion. Of course the possibility of coercion may now affect the equilibrium value of the political variable \(r_P\) directly as well as indirectly via a change in the equilibrium value of the other political variable \(c\).

Given that \(\chi\) is never exercised in equilibrium, irrespective of the source of this threat or the cost of administering it, the rest of the analysis turns out to be equivalent to what I have undertaken in Sections 0.7.1 and 0.7.2. Since the equilibrium response of \(r_P\) is positive with \(\lambda\) in our baseline model, introduction of coercion increases \(r_P\) (see Corollary 1). The same conclusion can be drawn about \(c^*\) (see Proposition 3 part 2(a)). Thus with the possibility of a coercive F party, it is clear that both political rent-seeking and political opposition rises.

What about holdout once political variables are chosen in equilibrium? We have seen that in the benchmark analysis, the impact of a rise in \(\lambda\) on \(k^*\) is non-
monotonic: it’s positively related if $\lambda < v + r_I - \frac{\chi}{1 - \gamma}$ and otherwise negatively related. *Hence I can conclude that if $\lambda$ and $\chi$ are sufficiently small, then the possibility of coercion increases $k^*$ thereby reducing holdout. However, for sufficiently large $\lambda$, coercion decreases $k^*$ thereby increasing holdout. For intermediate values of $\lambda$, holdout increases only if $\chi$ is sufficiently large.* The rest of the proof is moved to Appendix A, subsection [0.19.1](#).

![Figure 3: Effects of a change in $r_I$ on the price of land ($q_{\text{coercion}}$ and $q_b$) when party F is coercive and has a high $\gamma$.](#)

Fig. 3 depicts and compares the period 1 prices with and without coercion. As indicated in the figure, if party F is highly motivated, so that $\gamma$ is large, then, for very high values of $r_I$, the period 1 price can rise as corruption increases, i.e., $r_I$ increases. Also note that with the possibility of coercion, the price of land can be even less than $v$ whenever the size of corruption is large (larger than $\bar{r}_I$ in the figure) and $\gamma$ is high.
0.7.5 What happens when party A practice coercion?

Suppose once the game reaches the late phase of land acquisition, where a fraction of k sellers have agreed to sell in the early stage and the remaining (1-k) fraction of sellers can now enter into a bargaining with B, party A can be coercive and using its power can threaten these (1-k) fraction of sellers in case they decide to sell through bargaining. This incurs an individual cost d to the sellers for deserting party A and joining B in the event party F wins the contest so that the project takes place in the locality.

Suppose in the bargaining stage there is a fraction t of sellers who is ready to pay the cost d and forms a group of size $t(1-k)$ to bargain with the buyer over price $q_b$ while the remaining $(1-t)(1-k)$ fraction of sellers don’t. The outcome is determined through a symmetric Nash bargaining process involving B on one side and the $t(1-k)$ sellers on the other. The Nash program is: $\max_{q_b \geq 0} [(k + t(1-k))\lambda - k(q + r_P) - t(1-k)(q_b + \beta r_I) - (\lambda k - k(q + r_P))[t(1-k)(q_b - v - (1 - \beta)r_I - d)].$

This simplifies to,

$$\max_{q_b \geq 0} [t(1-k)\lambda - t(1-k)(q_b + \beta r_I)][t(1-k)(q_b - v - (1 - \beta)r_I - d)].$$  \hspace{1cm} (10)

The following lemma is then straightforward.

**Lemma 3.** In the late stage suppose a fraction $t(1-k)$ fraction of sellers bargain with the buyer to sell their plots. Then the Nash bargaining price $q_b = \frac{\lambda + v + d}{2} + r_I (\frac{1}{2} - \beta)$. Consequently, the price $q_b$ is (a) increasing in $v$, $d$ and $\lambda$, (b) decreasing in $\beta$, (c) increasing in $r_I$ iff $\beta < \frac{1}{2}$, and (d) unaffected by $\alpha$, $r_P$ and $k$.

Note that the results are similar to what we have obtained without such coercion by party A except that the bargaining price $q_b$ is now higher. This effect is very similar to a scenario when the productivity of the plots in industrial use, i.e., $\lambda$ rises.

Following Subsection 0.6.2, in stage 2 the buyer must decide on $k$ using the
intermediation of party F. For a given choice of $k$, the buyer needs to offer a price $q$ to implement the desired $k$. Following the same analysis as Subsection 0.6.2, each of the $k$ sellers who agree to sell at the early stage at price $q$, gets a payoff if $\pi(k)q + (1 - \pi(k))v$, whereas the payoff of any seller who delays sale equals $\pi(k)(q_b - (1 - \beta)r_I - d) + (1 - \pi(k))v$. Thus, if he sets a price such that $\pi(k)q + (1 - \pi(k))v < \pi(k)(q_b - (1 - \beta)r_I - d) + (1 - \pi(k))v$, then the sellers would prefer to wait and he cannot implement $k$. Thus, he would prefer to set the minimum possible price $k$ such that, $\pi(k)q + (1 - \pi(k))v \geq \pi(k)(q_b - (1 - \beta)r_I - d) + (1 - \pi(k))v$.

Hence for any fixed target $k$ of phase one sellers, I now have

$$q(k) = q_b - (1 - \beta)r_I - d.$$ (11)

This immediately follows that the early phase price is now smaller than the case with non-coercive A, as now $q = \frac{\lambda + v}{2} - \frac{r_I}{2} - d$.

Note that given this coercion by party A, I now have to consider the sellers’ payoff (when the project is taking place) from participating in phase 2 bargaining. The payoff of a seller from joining the bargaining group is $q_B - (1 - \beta)r_I - d$ while his payoff from non-participation is $v$. Clearly, if $q_B - (1 - \beta)r_I - d > v$ then it is individually profitable for the sellers to participate in the bargaining stage. Otherwise if $q_B - (1 - \beta)r_I - d < v$, then it is individually rational for them to stay out of it. Thus, for participation of all remaining sellers it must be that

$$q_B \geq (1 - \beta)r_I + d + v.$$ 

Substituting $q_B$ in the above expression yields the condition

$$d \leq \lambda - v - r_I.$$ 

Thus there are two possible cases: (i) the cost of coercion is relatively small such that $d \leq \lambda - (v + r_I)$ and (ii) the cost of coercion is too high such that $d \geq \lambda - (v + r_I)$.

**Case (i):** Suppose $d \leq \lambda - v - r_I$. Given F’s participation and the prices $q$
and \( q_B \), I now determine the buyer’s optimal choice of \( k \). The profit function of the buyer in stage 1 is thus

\[
\Pi(k) = \pi(k)(\lambda - k(q + r_P) - (1 - k)(q_b + \beta r_I)).
\] (12)

Substituting \( \pi(k), q \) and \( q_b \) in the above expression and simplifying further I obtain

\[
k\left( \frac{\lambda - v - r_I - d}{2} + k(r_I + d - r_P) \right).
\]

Lemma 4 below captures the conditions for HO. It assumes that F participates, considers that the cost of coercion by party A in phase 2 is relatively small such that \( d \leq \lambda - v - r_I \) and demonstrates the possibility of holdout whenever the political rent \( r_P \) is large.

**Lemma 4.** There is holdout with F’s participation and with relatively small cost of coercion such that \( d \leq \lambda - v - r_I \), if and only if the political rent \( r_P \) is significantly higher than the transactions costs, that is \( r_P > (r_I + d) + \frac{\lambda - v - (r_I + d)}{4} \). The number of plots sold in the early stage, i.e.,

\[
k^*(r_P) = \frac{\lambda - v - (r_I + d)}{4(r_P - (r_I + d))},
\] (13)

whenever \( r_P > (r_I + d) + \frac{\lambda - v - (r_I + d)}{4} \), and \( k^*(r_P) = 1 \) otherwise. Moreover, the size of holdout increases in \( v \) and \( r_P \), but decreases in \( r_I, d \) and \( \lambda \).

Note that for any \( r_P \) significantly higher than the transaction costs, the presence of \( 0 < d \leq \lambda - v - r_I \) increases the value of \( k^*(r_P) \) as compared to the scenario when such a coercive A was absent. This is intuitive. If party A becomes coerce so that it is more costly for the sellers to sell tomorrow, it drives up the price in the late phase. This takes away incentives of the buyer to buy land tomorrow and this drives up \( k^*(r_P) \). Moreover, when it comes to \( k \) this is similar to a rise in \( r_I \) in our initial framework with no coercion in the bargaining phase. Thus all results on F and A are valid by simply replacing \( r_I \) by \( (r_I + d) \) as \( d \) does not enter into party F and A’s utility functions.
Case (ii): Suppose \( d > \lambda - v - r_I \). Given F’s participation and the prices \( q \) and \( q_B \), I now determine the buyer’s optimal choice of \( k \). Recall that for such significantly high cost from coercion no rational seller is likely to participate in the bargaining phase. Given this the payoff of a seller from selling in phase 1 is \( \pi(k)q + (1-\pi(k))v \) while his payoff from delaying is \( \pi(k)v + (1-\pi(k))v \). Following the same analysis as earlier, setting a price such that \( \pi(k)q + (1-\pi(k))v < \pi(k)v + (1-\pi(k))v \), would not let B to implement \( k \) and thus, he would prefer to set the minimum possible price such that, \( \pi(k)q + (1-\pi(k))v \geq \pi(k)v + (1-\pi(k))v \). Hence for any fixed target \( k \) of phase one sellers, I now have

\[
q(k) = v. \tag{14}
\]

The profit function of B in stage 1 is thus

\[
\Pi(k) = \pi(k)(\lambda k - k(q + r_P)), \tag{15}
\]

that B wants to maximise w.r.t. \( k \). Substituting \( \pi(k) \) and \( q \) in the above expression yields

\[
\Pi(k) = k^2(\lambda - v - r_P).
\]

The first order derivative of the buyer’s profit function in [15] gives

\[
\Pi'(k) = 2k(\lambda - v - r_P), \tag{16}
\]

where note that \( \Pi'(0) = 0 \), and \( \Pi'(1) = 2(\lambda - v - r_P) > 0 \). Further, the second order derivative of the profit function gives

\[
\Pi''(k) = 2(\lambda - v - r_P),
\]

so that \( \Pi''(k) > 0 \) for all \( r_P < \lambda - v \). Let \( \tilde{k}(r_P) \) denote the choice of \( k \) that maximises \( \Pi(k) \). For \( r_P < \lambda - v \), \( \Pi(k) \) is increasing and convex. Thus \( \tilde{k}(r_P) = 1 \) and there is no HO.
I am now ready to examine the impact of changes in the deeper parameters of our framework on buyer-induced holdout and the key economic variables in our framework. While the sizes of these important parameters are not expected to change significantly in the ‘short run’, they may undergo small improvements or deteriorations. The next is to examine whether the existence of buyer-induced holdout is hostage of linearity of functions. The impact of changes in deeper institutional parameters is examined in Chapter 2, while in the present chapter I turn to examine whether the existence of buyer-induced holdout is subjected to the simplified linear functions for $\pi(\cdot)$, $V(\cdot)$ and quadratic cost function $C(\cdot)$.

### 0.7.6 Holdout with general $\pi(k)$, $V(k)$ and $C(k)$ functions

In the previous sections we have found robust sufficient conditions for which $k^* < 1$ (what I called the incidence of holdout). I now show that this result is not hostage to the simplified linear functions for $\pi(\cdot)$ and $V(\cdot)$ or quadratic cost function $C(\cdot)$.

I will assume that A’s reservation payoff is zero while that of F is not above $-(1 - \gamma)\delta\alpha$ which ensures F’s participation. Otherwise I retain all the basic features of the original model to characterise the problem of holdout except that now the $\pi(\cdot)$, $V(\cdot)$ and $C(\cdot)$ functions are more general. In particular, I assume that $C(k) = k^m, m > 1$ while $V(\cdot)$ and $\pi(\cdot)$ are at least twice differentiable and strictly concave with the following properties: $\pi(0) = 0$, $\pi(1) = 1$, $\pi'(1) \geq 0$, and $\frac{\pi(k)}{k^{\pi'(k)}} = \epsilon$, (i.e., $\pi(\cdot)$ exhibits constant elasticity, an example being $\pi(k) = k^\alpha$, $0 < \alpha \leq 1$); and $V(0) = 0$, $V(1) \geq V'(1)$.

Let

$$\psi(k) = \frac{V(1) - V(k)}{1 - k}.$$ 

Thus $\psi(0) = V(1)$ and $\psi(1) = V'(1)$. Note that given the concavity of $V(\cdot)$ function $\psi'(k) = \frac{V'(1) - V'(k)}{1 - k} < 0$ and $\psi''(k) = \frac{V''(1)(1 - k)}{(1 - k)^3} \geq 0$. Moreover $\psi'(0) = V(1)$ and $\psi'(1) = \frac{V''(1)}{2}$. 

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A buyer’s direct bargaining with $1 - k$ fraction of sellers in the second phase yields
\[ q_b = \frac{\psi(k)}{2} + r_I \left( \frac{1}{2} - \beta \right). \]

I now determine the fraction of sellers $k$ joining party F in stage 3 where the indifferent seller $k$ is again given by $q(k) = q_b - (1 - \beta) r_I$. Hence the profit function of the buyer in stage 2 is
\[ \Pi(k) = \pi(k) [V(1) - k(q + r_P) - (1 - k)(q_b + \beta r_I)]. \]

Substituting $q, q_b$ in the above expression I obtain
\[ \Pi(k) = \pi(k) \left( V(1) - \frac{\psi(k)}{2} - \frac{v}{2} - \frac{r_I}{2} - k(r_P - r_I) \right), \tag{17} \]
so that $\Pi(0) = 0$ and $\Pi(1) = \frac{2V(1) - V'(1) - 2r_P + r_I - v}{2}$.

The buyer’s objective in stage 2 is then to maximise $\Pi(k)$ by choosing $k$. Denote the optimal choice by $\tilde{k}(r_P)$. The first derivative of his profit function in (17) gives
\[ \Pi'(k) = \frac{1}{2} (\pi'(k)(2V(1) - 2k(r_P - r_I) - \psi(k) - v - r_I) + \pi(k)(2(r_P - r_I) - \psi'(k))). \]

Let $\bar{\epsilon} = \frac{\pi'(k)/k}{\pi'(k)}$. Note that given the concavity of $\pi(\cdot)$ we have $\bar{\epsilon} \leq 0$. Moreover $\bar{\epsilon} = \frac{\epsilon}{1 - \epsilon}$. Substituting $\epsilon$ in the first derivative of the buyer’s profit gives
\[ 2\Pi'(k) = \pi'(k)(2V(1) - 2k(r_P - r_I)(1 + \epsilon) - \psi(k) - v - r_I - \epsilon k\psi'(k)). \tag{18} \]

To obtain an interior solution for $k$ and thereby getting holdout I need to show that $\Pi(k)$ has the following properties: $\Pi'(0) > 0$, $\Pi'(1) < 0$ and $\Pi''(\cdot) < 0$. Using the properties of $\psi(\cdot)$ equation (18) yields
\[ 2\Pi'(0) = \pi'(0)(V(1) - v - r_I) > 0, \]
where
\[ \bar{\epsilon} = \frac{\epsilon}{1 - \epsilon}. \]
and

\[ 2\Pi'(1) = \pi'(1)(2V(1) - 2(r_P - r_I)(1 + \epsilon) - V'(1) - v - r_I - \epsilon \frac{V''(1)}{2} ). \]

The necessary FOC for an interior equilibrium is as follows and this implicitly gives the value \( k^*(r_P) \).

\[ 2V(1) - 2k^*(r_P - r_I)(1 + \epsilon) - \psi(k^*) - v - r_I - \epsilon k^* \psi'(k^*) = 0. \quad (19) \]

Further the second order derivative of the profit function gives

\[ 2\Pi''(k) = \pi''(k)(2V(1) - 2\psi(k) - v - r_I + 2\pi'(k)(-2(r_P - r_I) - \psi'(k)) - \pi(k)\psi''(k)). \]

Substituting \( \epsilon \) and \( \bar{\epsilon} \) in the above expression yields

\[ 2\Pi''(k) = \pi''(k)(2V(1) - \psi(k) - v - r_I - 2k(r_P - r_I)(1 + \epsilon)(1 + \bar{\epsilon}) - k\psi'(k)\epsilon + \bar{\epsilon}(1 + \epsilon) - \epsilon \bar{\epsilon} k^2 \psi''(k)). \quad (20) \]

Notice that given the concavity of \( \pi(\cdot) \), \( \Pi''(k) < 0 \) if and only if \( 2V(1) - \psi(k) - v - r_I - 2k(r_P - r_I)(1 + \epsilon)(1 + \bar{\epsilon}) - k\psi'(k)(\epsilon + \bar{\epsilon}(1 + \epsilon) - \epsilon \bar{\epsilon} k^2 \psi''(k))^2 > 0 \). Note that \( 2V(1) - \psi(k) - v - r_I > 0 \) since \( \psi'(k) < 0 \) and given \( \psi''(\cdot) \geq 0, \epsilon > 0 \) and \( \bar{\epsilon} \leq 0 \) we have \( \epsilon \bar{\epsilon} k^2 \psi''(k) \leq 0 \). Observe that \( 2k(r_P - r_I)(1 + \epsilon)(1 + \bar{\epsilon}) < 0 \) whenever \( r_P > r_I \) holds.

Consider the following set of conditions denoted by Condition \( \mathcal{P} \):

- \( \epsilon + \bar{\epsilon}(1 + \epsilon) < 0 \), and
- \( 2V(1) - V'(1) - v - r_I > 2(r_P - r_I)(1 + \epsilon)(1 + \bar{\epsilon}) + \frac{V''(1)k(\epsilon + \bar{\epsilon}(1 + \epsilon))}{2} + \epsilon \bar{\epsilon} k^2 \psi''(1). \)

This yields the following observation:

**Observation 1.** Suppose Condition \( \mathcal{P} \) holds. Then there is holdout if and only if
the size of political rents is significantly higher than the size of legal rents, that is $r_P > r_I + \frac{2V(1) - V'(1) - \epsilon - r_I - \epsilon V'(1)}{2(1 + \epsilon)}$.

To see this suppose $r_P < r_I$ such that Condition $\mathcal{P}$ is violated. Then $\Pi(k)$ is increasing and convex. Thus $\check{k}(r_P) = 1$. Otherwise if Condition $\mathcal{P}$ holds then $\Pi(k)$ is concave. Hence $\check{k}(r_P) = \min\{k^*(r_P), 1\}$. \hfill $\square$

Given the above analysis I now move to the activity of party F. For a given $c \geq 0$ by A, the objective of party F is to

$$\max_{r_P \geq 0} Z(r_P) = \gamma \pi(\check{k}(r_P)) + (1 - \gamma)[\pi(\hat{k}(r_P))\hat{k}(r_P)r_p - ck^m(r_P)]$$

(21)

where $m > 1$ so that the cost is convex. In the main text I have used $m = 2$.

Thus in case when $r_P$ induces no holdout so that $\check{k}(r_P) = 1$, then $Z(r_P) = \gamma + (1 - \gamma)(r_P - c)$ and $Z(r_P)$ is increasing in $r_P$. In case when $r_P$ induces holdout so that $\hat{k}(r_P) = k^*(r_P)$, then

$$Z(r_P) = \gamma \pi(k^*(r_P)) + (1 - \gamma)[k^*(r_P)(\pi(k^*(r_P))r_p - c^{m(k^*(r_P))}].$$

Note that for any $0 < \gamma < 1$, we get $Z(r_P) > 0$ if $r_P \geq \frac{ck^*(m-1)(r_P)}{\pi(k^*(r_P))}$.

Thus for any $r_P$ that induces holdout, we have

$$\frac{\partial Z(r_P)}{\partial r_P} = \frac{\partial k^*(r_P)}{\partial r_P}(\pi'(k^*(r_P))((1 - \gamma)k^*(r_P)(1 + \epsilon r_P)) - (1 - \gamma)mck^*(m-1)(r_P)).$$

Recall that the interior equilibrium $k^*(r_P)$ is implicitly obtained from the necessary FOC of the buyer’s profit function given in equation (19). Hence I take total derivative of this FOC to obtain

$$\frac{\partial k^*(r_P)}{\partial r_P} = \frac{2k^*(r_P)(1 + \epsilon)}{-2(r_P - r_I)(1 + \epsilon) - \psi'(k^*(r_P))(1 + \epsilon) - k^*(r_P)\psi''(k^*(r_P))\epsilon} < 0,$$

since $2k^*(r_P)(1 + \epsilon) > 0$ and $-2(r_P - r_I)(1 + \epsilon) - \psi'(k^*(r_P))(1 + \epsilon) - k^*(r_P)\psi''(k^*(r_P))\epsilon < 0$ for any $r_P > r_I$. Thus $\frac{\partial Z(r_P)}{\partial r_P} < 0$ if and only if $\pi'(k^*(r_P))((1 - \gamma)k^*(r_P)(1 + \epsilon) - \psi'(k^*(r_P))(1 + \epsilon) - k^*(r_P)\psi''(k^*(r_P))\epsilon < 0$.
\( \epsilon r_P \) \(-(1-\gamma) mk^*(m-1)(r_P) > 0. \) For ease of exposition I define \( Y \equiv \pi'(k^*(r_P))(\gamma + (1-\gamma) k^*(r_P)(1 + \epsilon r_P)) - (1-\gamma) mk^*(m-1)(r_P). \)

If \( r_P \) induces holdout then I denote the optimal choice of \( F \) by \( \hat{r}_P \) that solves \( Y = 0. \) This implicitly gives \( \hat{r}_P \)

\[
\hat{r}_P = \frac{c(1-\gamma) mk^*(m-1)(\hat{r}_P) - \pi'(k^*(\hat{r}_P))(\gamma + (1-\gamma) k^*(\hat{r}_P))}{(1-\gamma) \pi(k^*(\hat{r}_P))}.
\]

Let

\[
R_I = r_I + \frac{2V(1) - V'(1) - v - r_I - \epsilon V''(1)}{2(1+\epsilon)},
\]

and

\[
\hat{c} = \left( R_I + \frac{1}{\epsilon} \right) \frac{\gamma}{(1-\gamma) \epsilon k^*(\hat{r}_P)} \pi(k^*(\hat{r}_P)).
\]

Note that given the characteristics of \( V(\cdot) \) and \( \epsilon \) I have \( r_I < R_I < \hat{c}. \)

**Observation 2.** There is a unique SPNE for each subgame initiated by \( A \) through a choice of \( c. \) Let \( r^*_P \) denotes the optimal choice of party \( F, \)

(a) if \( c \leq \hat{c} \) and \( Y|_{r_P=R_I} > 0 \) then \( r^*_P = R_I, \) and there is no holdout,

(b) if \( c > \hat{c} \) and \( Y|_{r_P=R_I} < 0 \) then \( r^*_P = \hat{r}_P > R_I \) and there is holdout.

From Observation \( 1 \) we know that for any \( r_P \leq R_I \) there is no holdout on the equilibrium path. Thus party \( F \)’s utility is \( \gamma + (1-\gamma)(r_P - c) \) and it is increasing in \( r_P. \) I now argue whether \( Z(r_P) \) is decreasing for any \( r_P > R_I. \) To see this I first consider a small \( c \) such that \( \frac{\epsilon k^*(m-1)(r_P)}{\pi(k^*(r_P))} \leq R_I. \) If party \( F \) chooses any \( r_P > R_I \) then \( Y|_{r_P=R_I} = \pi'(k^*(r_P))(\gamma + (1-\gamma) k^*(r_P)(1 + \epsilon r_P)) - (1-\gamma) mk^*(m-1)(r_P). \) Consequently \( Z(r_P) \) is positive at \( r_P = R_I \) but is decreasing in \( r_P. \) Hence optimally party \( F \) sets \( r^*_P = R_I \) for this region and there is no holdout. I next consider \( c \)

\[\text{Note that here } R_I \text{ corresponds to } r_I + \frac{\lambda - v - r_I}{4} \text{ and } \hat{c} \text{ corresponds to } \hat{c} \text{ in the linear } \pi(\cdot) \text{ and } V(\cdot) \text{ case.}\]
is large such that \( \frac{ck^*(m-1)(r_P)}{\pi(k^*(r_P))} > R_I \). If \( Z(r_P) \) is increasing in this region, then party F optimally chooses \( r^*_P > R_I \) for this region. From Observation 1 for any \( r_P > R_I \) there is holdout, and the optimal \( r_P \) is then implicitly obtained from the necessary FOC. Note that if \( Y|_{r_P=R_I} = \pi'(k^*(r_P))(\gamma + (1 - \gamma)k^*(r_P)(1 + \epsilon R_I)) - (1 - \gamma)mck^*(m-1)(r_P) > 0 \), so that \( Z(r_P) \) is decreasing then optimally party F sets \( r^*_P = R_I \) and there is no holdout. Otherwise if \( Y|_{r_P=R_I} = \pi'(k^*(r_P))(\gamma + (1 - \gamma)k^*(r_P)(1 + \epsilon R_I)) - (1 - \gamma)mck^*(m-1)(r_P) < 0 \), so that \( Z(r_P) \) is increasing in \( r_P \), then optimally party F sets \( r^*_P = \hat{r}_P \) and the outcome involves holdout. Note that for sufficiently large \( c \) such that \( c > \hat{c} \) we have \( \hat{r}_P > R_I \). Hence if \( c > \hat{c} \) and \( Z(r_P) \) is increasing in \( r_P \) (obtained from \( Y|_{r_P=R_I} = \pi'(k^*(r_P))(\gamma + (1 - \gamma)k^*(r_P)(1 + \epsilon R_I)) - (1 - \gamma)mck^*(m-1)(r_P) < 0 \), then optimally party F sets \( r^*_P = \hat{r}_P \) and the outcome involves holdout. This verifies Observation 2. \( \square \)

Finally I consider the initiation of this whole game and find conditions under which A’s equilibrium choice of \( c \) yields a SPE with holdout. A’s objective is to

\[
\max_{c \geq 0} D \equiv \delta(1 - \pi(\tilde{k}(r_P))) - (1 - \delta)\alpha c,
\]

where \( \tilde{k}(r_P) \) is the buyer’s optimal choice of \( k \).

**Observation 3.** Suppose \( D|_{c=\hat{c}} > 0 \) and \( Y|_{r_P=R_I} < 0 \). Then a SPNE choice of opposition level by A is \( c^* = \hat{c} \) and the outcome involves holdout.

From Observation 2 we know that the region where \( c \leq R_I \) there is no holdout. Since \( \alpha > 0 \) it must then be optimal for A to choose \( c^*|_{c \leq R_I} = 0 \). In this case A’s payoff is 0. Now consider the region where \( r_P > R_I \) that induces holdout. From observation 2 we know that for a large \( c \) such that \( c > \hat{c} \) and \( Y|_{r_P=R_I} < 0 \) we have \( r^*_P = \hat{r}_P \). Thus party A’s payoff in \( c \) is

\[
D = \delta(1 - \pi(k^*(\hat{r}_P))) - (1 - \delta)\alpha c,
\]

and the necessary FOC: \( \frac{\partial D}{\partial c} = 0 \) implicitly gives the value of \( \hat{c}(k^*(\hat{r}_P)) \). The party’s payoff from choosing \( \hat{c}(k^*(\hat{r}_P)) \) is \( D|_{c=\hat{c}} = \delta(1 - \pi(k^*(\hat{r}_P))) - (1 - \delta)\alpha \hat{c}(k^*(\hat{r}_P)) \).

\(^{44}\text{This corresponds to } c_f \text{ in the linear } \pi(\cdot) \text{ and } V(\cdot) \text{ case.}\)
Note that if \( D|_{c>\hat{c}} > 0 \) then party A optimally chooses \( c^* = \hat{c} \). This holds true for \( \alpha \) sufficiently close to 0. Now \( \hat{r}_P > R_I \) if and only if

\[
\hat{c} = \left( R_I + \frac{1}{\epsilon} + \frac{\gamma}{(1 - \gamma) \epsilon k^*(\hat{r}_P)} \right) \frac{\pi(k^*(\hat{r}_P))}{mk^*(m-1)}.
\]

Since \( \frac{\partial k^*(\hat{r}_P)}{\partial \hat{r}_P} < 0 \) the above holds true for sufficiently large \( \hat{r}_P \). Since we are at the region when \( c > \hat{c} \), we have \( \hat{r}_P > R_I \). Hence we have sufficient conditions for holdout. □

0.7.7 Involvement of party F in late stage of land acquisition

Consider a scenario in which once the project passes through the political battle, party F can get involved in the bargaining that takes place between the buyer and the remaining \( 1 - k \) sellers if and only if all parties agree. Of course in this case party F leverages its connections in local institutions to ensure that the additional transaction costs \( r_I \) are waived in this stage as well. In return, it asks for a per-unit rent of amount \( b \) that is to be shared between the buyer and the sellers in the proportion \( \beta \) and \( 1 - \beta \) as was for the case of sharing \( r_I \).

Suppose the game reaches Stage 5 and party F sets this rent \( b \). Then Nash program is:

\[
\max \{ \lambda - (1 - k)(q_b + \beta b) - \lambda k)[(1 - k)(q_b - v - (1 - \beta)b)] \}.
\]

Also, it is easy to see that in equilibrium, party F will set \( b = r_I \) just to make all bargaining parties indifferent between paying \( r_I \), or paying party F to avoid paying \( r_I \). Hence, the two prices of land will remain as in the benchmark model (Lemma 2). It then immediately follows that with exogenous politics in the early stage (that is, when \( r_P \) and \( c \) are fixed), Proposition 1 remains intact.

Now consider the optimal demand for the first period rent by party F. The pos-
sibility of future involvement and the equilibrium behaviour in that continuation game changes F’s period 1 payoff from \( \Pi \) to

\[
\max_{r_P} Z(r_P) = \gamma \pi(k^*) + (1 - \gamma)[\pi(k^*) (k^* r_P + (1 - k^*) r_I) - c(k^*)^2],
\]

where \( k^* \) is as in Proposition \( \Pi \). It is again routine to show that for \( c \) large enough, this rent is given by

\[
r_P' = \frac{(1 - \gamma)(\lambda + 3r_I - v)r_I + 2c(1 - \gamma)(\lambda - v - r_I) - 4\gamma r_I}{(1 - \gamma)(\lambda + 3r_I - v) + 4\gamma}.
\]

Since the payoff function of A remains intact, the rest of the analysis is qualitatively identical. However, party F’s new political rent in phase one (i.e., \( r_P' \)) can be higher or lower than the rent it asked in the initial model (i.e., \( \hat{r}_P \)). For example, suppose \( \gamma = 0.8 \). Then \( r_P' > \hat{r}_P \) if \( \lambda - v + r_I > 10 \) and \( r_P' < \hat{r}_P \) if \( \lambda - v + r_I < 10 \).

### 0.8 Conclusion

Chapter 1 develops a theoretical framework that allows us to study how institutional infirmities, in particular bureaucratic corruption and extra-legal outside interference from political parties (and motivated civil society organisations), affect land acquisition. I characterise conditions under which these imperfections generate holdout, where, given these institutional constraints, the buyer in his own interests designs the acquisition process in such a fashion that there is some chance that acquisition may fail. Further, I demonstrate that urban vicinity, high land-fertility or low project returns, all add to the chances that outside interference of this nature will cause the buyer to induce holdout. In addition, whenever the buyer induces holdout, one also obtains dual pricing of land in that the price of land sold during the early phase of the acquisition process is necessarily lower than what sellers obtain at a later stage. Moreover these results are qualitatively robust to whether there is coercion by political parties or not.
Let us now discuss several aspects of the land acquisition process that the study has abstracted away from till now. It has assumed that the reservation utility from land is identical for all sellers. In reality, although one would not expect too much of a variation (since geographic vicinity largely determines the quality of land and thus plot value), there may be instances where this is violated. In that event one interesting issue is whether the buyer would target high yield plots for early acquisition through politics, leaving low yield plots for laissez-faire bargaining, or the other way around. Another important theme is the uncertainty that poor landowners face when they sell their plots and look beyond traditional means of livelihood. One can incorporate this aspect in our framework by assuming that the buyer will have to compensate for this additional cost borne by sellers. Hence all our results will go through qualitatively.

In the next chapter I will discuss the impact of relevant parameters on the size of buyer-induced holdout, sellers’ welfare and economic surplus. In this chapter, it is considered that opposition can come from a broader spectrum including civic-society organisation and local political parties that is typically out of office, who utilises the platform to gain the support of landowners. However, one can think of scenarios when local political opposition leads the movements against land acquisition ordeals to achieve greater political benefit beyond the scope of the success of these local movements. Keeping this in mind, Chapter 2 takes a brief look on the impacts of some short term institutional changes not only on the local sellers but also on non-local political constituencies. Chapter 3 then takes a detail look in the conflicting scenarios and analyses the importance of early or late mobilisation of resources for violence by the local polity in resulting violent conflicts.
0.9 Chapter 2: Impact Of Institutional Parameters On Buyer-Induced Holdout, Seller Welfare And Economic Surplus

0.9.1 Introduction

In the previous chapter I analysed a theoretical framework where weak institutions, specifically the ones that promote bureaucratic corruption and allow for outside interference, can result in delays in land acquisition programs. I see that the equilibrium involves holdout if in presence of an organised opposition there is a positive probability of the project being stalled, resulting from reduction of the number of sales through an initial take-it-or-leave-it offer, being proposed to the sellers. The interesting feature of holdout in this framework is that delay, if any, is buyer-induced. The previous chapter presents conditions under which it is in the best interests of the buyer to delay the land acquisition process. I then examine scenarios when political parties can impose credible threats and act coercively. Its impact on the size of sale of land as well as on price are then interestingly nuanced.

The present chapter is in continuation with this framework of buyer-induced holdout. In this chapter I examine how the magnitude of this buyer-induced holdout is related to the deeper institutional parameters of such an economy, namely, the level of bureaucratic corruption, the ease of opposition and timing of elections that may tilt preferences of political parties towards political gains. I also examine the impact of a change in these deeper institutional parameters on sellers welfare and overall economic surplus. Of course one understands that changes in institutions take long time and thus impacts of such changes are rarely visible with alteration of one policy. However one can expect to see changes in ‘short run’ and predict their impacts on an economy. In this chapter I attempt to examine such small changes in deeper institutional parameters. It is also of interest to see whether the effects of institutional changes are sensitive to whether the interference levels are endogenous or not.
Finally I want to examine the impact of nearby elections on the concerning variables, as with approaching elections it is more likely that political motivations increase. One can predict that in such a scenario there are two opposing effects on the size of holdout - while it would tend to decrease as the pro-industry party gets more motivated, it would tend to increase as opposition also gets more motivated. It would be interesting to see the net effect of these two forces.

The main questions that I ask here are as follows: how does a reduction in corruption affect the magnitude of buyer-induced holdout? Can one expect to see a rise in economic surplus as the bureaucratic corruption falls in an economy? Does the presence of organised opposition help sellers to gain more in land deals?

**Main Results**

Our first major result relates to the effects of changes in the degree of bureaucratic corruption on several measures of welfare, namely buyer-induced holdout, aggregate seller utility and economic efficiency. I demonstrate that a reduction in corruption affects both the magnitude of holdout, as well as the economic surplus in a non-monotonic fashion, with the results depending on whether I am dealing with a relatively developed nation (i.e., one with relatively low levels of corruption), or a LDC (where corruption is relatively high), to begin with. I have shown that while a fall in corruption reduces holdout when corruption is low, it necessarily increases holdout when corruption is high. This generates a testable hypothesis that one can potentially take to data. Why does the effect depend upon whether corruption is large or small to begin with? Intuitively, a reduction in transactions costs has two effects, one direct, in that it increases a seller’s incentive to sell her plot, and one indirect, in that it makes it less attractive for the buyer and the sellers to work through party F since F responds to a decrease in corruption by increasing the political rent it charges. This in turn reduces party F’s political clout in that a smaller number of sellers sell via political intermediation, making holdout more likely. If corruption is large to begin with, so that party F is more
motivated (relative to the net returns from the project), then the political considerations that drive the indirect effect becomes quite important, hence the indirect effect dominates.

The effects of a change in bureaucratic corruption on the economic surplus is also interestingly nuanced, with a decrease in corruption can reduce the economic surplus in a LDC where the existing levels of corruption is already high, whereas it can increase the economic surplus in a relatively developed economy. The result of course follows from the fact that a reduction in corruption in land sales can either increase or decrease holdout depending on whether it is easy to oppose due to institutional weakness, or not. The effects of an improvement in the rule of law on short term economic surplus is also interestingly nuanced and can go either way.

I then show that by and large, buyer-induced holdout is more likely to occur when elections are nearby and the concerned projects are large. I also find that typically seller welfare goes down for projects under acquisition in periods close to elections provided the projects are large.

I then turn to the implications of sellers’ welfare with respect to deeper institutional parameters and find that an increase in bureaucratic corruption or a decrease in ease of opposition unambiguously hurt sellers. However, there is a non-monotonic seller preference for opposition from A given that party F exists. They all want opposition, irrespective of whether this opposition enables them to retain their bargaining power with the buyer or not, but only up to existence; once opposition exists sellers want to minimise its presence.

I then consider a small extension of the model to find the effects of having organised political opposition, that typically comes from a local opposition party out of office who exploits the platform to extract greater political benefit, on the non-local welfare as well as on the total welfare of a LDC (where bureaucratic corruption are endemic and it is challenging for parties to reduce degree of corruption in short term). I aim to examine the impact of extortionary activities in
the institutions that rises level of corruption on different measures of welfare, in particular on non-local welfare and total welfare on the economy. While I show that the effects are non-monotonic, for both non-local welfare and total welfare, this non-monotonicity results from an interplay between political parameters such as the size of non-local constituencies, ideological motivations of the parties and the relative size of population of the non-sellers in the economy. A summary of results find that even if a party in power can make some institutional improvement to reduce bureaucratic corruption, it is hard to predict which party, being in power will make such incremental changes in corruption. Interestingly this result is irrespective of whether the party in power is pro-industry or not.

In Chapter 1 I mentioned the importance of endogenizing the outside interference. In this chapter I show that several key comparative statics results with respect to the effects of institutional changes are sensitive to whether the interference levels are endogenous, or not (this is examined in subsection 0.10.7). Thus a framework where the interference contest is exogenous may yield misleading conclusions.

This chapter is organised in the following manner. In Section 0.10 includes the analysis of how changes in the deeper institutional parameters and preference parameters of our framework affects several variables of interest, including the level of buyer-induced holdout, seller welfare and the economic surplus. This followed by an indirect empirical investigation on this form of holdout through a set of testable hypotheses. In sub-section 0.10.3 I include some crucial discussions on the existence and strength of local opposition. Sub-section 0.10.4 then includes the impact of having a coercive pro-industry party F on the sellers. Sub-section 0.10.5 and sub-section 0.10.6 include the impacts of changes in the deeper institutional parameters and preference parameters on economic surplus in different numerical examples. Section 0.11 and sub-section 0.11.2 include all results of an increase in bureaucratic corruption on non-local and total welfares. All the proofs are included in Appendix A, sub-section 0.19.2 Sub-section 0.11.4 concludes this chapter.
0.10 Impact of corruption and ease of opposition on holdout, seller welfare and economic surplus

I am now in a position to examine the impact of changes in the deeper parameters of our framework, namely the degree of bureaucratic corruption (viz. $r_I$) and ease of opposition (viz. $\alpha$) and the preference parameters of F and A (viz. $\gamma$ and $\delta$) on the key economic variables in our framework. While the sizes of these important parameters are not expected to change significantly in the ‘short run’, they may undergo small improvements or deteriorations. I now ask how small changes in these parameters affect the degree of hold out, welfare of the sellers and the overall economic surplus from land acquisition for industrial growth.

0.10.1 Impact on Holdout

Consider an economy where current levels of bureaucratic corruption and ease of opposition result in hold out. How does an improvement in either of these parameters affect the extent of holdout that makes the process of industrialisation uncertain? Theorem 2 deals with this.

**Theorem 2.** Suppose that $\alpha < \bar{\alpha}$ and $\delta > \tilde{\delta}$, so that there is holdout in equilibrium.

(i) The magnitude of holdout, i.e. $1 - k^*$, is non-monotonic in the level of bureaucratic corruption, i.e. $r_I$; to be precise, $1 - k^*$ is increasing in $r_I$ if $r_I < (\lambda - v) - \frac{\gamma}{1 - \gamma}$, but is decreasing in $r_I$ otherwise.

(ii) The magnitude of holdout decreases monotonically with a decrease in the ease of opposition, i.e. an increase in $\alpha$.

(iii) Further, if $r_I < (\lambda - v) - \frac{\gamma}{1 - \gamma}$ so that a fall in corruption reduces holdout, a simultaneous fall in ease of opposition dampens this reduction; if $r_I >$
So that a fall in corruption increases holdout, a simultaneous fall in ease of opposition dampens this increase. Formally, \( \frac{\partial(1-k^*)}{\partial r_I} > 0 \) if \( \frac{\partial^2(1-k^*)}{\partial \alpha \partial r_I} > 0 \), while \( \frac{\partial(1-k^*)}{\partial r_I} < 0 \) if \( \frac{\partial^2(1-k^*)}{\partial \alpha \partial r_I} < 0 \).

Figure 4: Size of holdout (viz. \( 1-k^* \)) as a ‘function’ of degree of corruption \( r_I \) and ease of opposition \( \alpha \).

Theorem 2(i) shows that while an increase in bureaucratic corruption \( r_I \) increases holdout when \( r_I \) is small, it decreases holdout when \( r_I \) is large, so that the impact is non-monotonic. Why does the effect of a change in \( r_I \) depend upon whether corruption is large or small to begin with? Suppose bureaucratic corruption \( r_I \) increases. From Proposition 1 in Chapter 1, note that the direct effect of this change in \( r_I \) will be to increase holdout. Moreover, there is an indirect effect stemming from the fact that an increase in \( r_I \) induces party F to reduce the political rent charged by it, and consequently induces A to reduce the level of its political opposition \( c \). This reduces the political space available to party F, and increases that for party A, so that holdout would tend to decrease. When
party F is very highly motivated relative to the net returns from the project, i.e.,
\[ \lambda - r_I - v < \frac{\gamma}{1-\gamma} \] (which is likely to be the case for LDCs where \( r_I \) can be expected to be large), then the indirect effect will be large enough to overturn the direct effect, so that holdout decreases. Otherwise, the direct effect dominates, so that holdout increases.

An increase in \( \alpha \) on the other hand reduces the space for opposition since it increases the marginal cost of increasing \( c \). Theorem 2(ii) suggests that this would reduce the magnitude of holdout, which is expected.

Theorem 2(iii) then demonstrates that the effect of a change in \( r_I \) on holdout is always enhanced when \( \alpha \) increases. Thus, if there is a lot of existing bureaucratic corruption in the system (i.e., \( r_I \) is large), then reducing corruption increases holdout to a greater extent if the rule of law is robust so that opposing land acquisition is costly. Whereas if there is not much existing bureaucratic corruption in the system (i.e., \( r_I \) is small), then reducing corruption further reduces holdout to a greater extent if the rule of law is robust. Figure 4 provides a graphical representation of Theorem 2, plotting the relation between \( 1 - k^* \) and \( r_I \) for two values of \( \alpha \), where the observed inflection point at \( \lambda - v - \frac{3\gamma}{1-\gamma} \) is easy to establish.

Finally, note that Theorem 2(i) and (ii) are both critically dependent on the fact that interference is endogenous. In case \( r_P \) and \( c \) are taken to be exogenous, then Proposition 1 of Chapter 1 shows that an increase in bureaucratic corruption necessarily increases holdout, which is exactly the reverse of our result in case of LDCs. The difference can be traced to the fact that with an endogenous \( r_P \), an increase in \( r_I \) reduces the political space available to party F (as clarified while discussing Theorem 2(ii)), so that there is an additional channel through which \( r_I \) affects holdout. Further, with an exogenous \( r_P \) and \( c \), the level of holdout does not depend on \( \alpha \) at all.

Remark 1 (Coase theorem). The theorem states that in absence of any institutional distortions (that affect transaction costs) an efficient solution towards resolving interdependent uses of resources is achieved through a bargaining process among the relevant property holders. In its full stretch, lower transaction costs
should result in Pareto improving resource allocations regardless of the initial distribution of property rights. Interestingly, in the present model such frictions have a non-monotonic impact on the efficiency of the equilibrium outcome (through a non-monotonic impact on holdout). As captured in Theorem 2, deterioration in institutions that increases transaction costs (viz. a rise in $r_I$) improves efficiency when the existing institutions are sufficiently bad, otherwise such an increase in transaction costs decreases efficiency. Although apparently this stands against the Coase theorem, the present model considers closely interlinked two institutions where worsening of the one leads to the improvement in other and the aggregate impact can improve the efficiency of the equilibrium outcome. In presence of high level of bureaucratic corruption in the system (viz. $r_I$ is large), reducing corruption increases holdout to a greater extent if the rule of law is robust so that opposing land acquisition is costly. Whereas with relatively small level of existing bureaucratic corruption in the system (i.e., $r_I$ is small), reducing corruption reduces holdout to a greater extent if the rule of law is robust. This is because while the direct effect of an increase in bureaucratic corruptions increases holdout, the indirect effect that comes from the political conflict tend to decrease holdout - higher transaction costs induces $F$ to reduce the political rent charged by it to facilitate land transfers and consequently induces $A$ to reduce its level of political opposition to thwart the project.

It is now straightforward to see the impact of motivation parameters of the interfering parties (viz. $\delta$ and $\gamma$) on the size of holdout. Corollary 2 is then immediate. The proofs of Theorem 2 and Corollary 2 are included in sub-section 0.19.2.

**Corollary 2.** Suppose that $\alpha < \bar{\alpha}$ and $\delta > \tilde{\delta}$, so that there is holdout in equilibrium. The magnitude of holdout, i.e., $1 - k^*$, is monotonic in the degree of ideological motivations of the interfering parties $F$ and $A$. To be precise, $1 - k^*$ is monotonically increasing in $A$’s ideological motivation i.e., $\delta$, but is monotonically decreasing in $F$’s ideological motivation $\gamma$.

Political motivations of party $F$ and $A$ (viz. $\gamma$ and $\delta$) also play an interesting
role in Theorem 2. This immediately gives Corollary 3 that mimics the arguments in Theorem 2.

**Corollary 3.** The level of holdout $1 - k^*$ is decreasing in $\gamma$, but increasing in $\delta$. Further, $1 - k^*$ decreases with $\lambda$ and $v$ if and only if $r_I < \lambda - v - \frac{\gamma}{1 - \gamma}$.

Given Corollary 3, consider the effect of elections being imminent on the size of holdout. If I assume, as seems natural, that political motivations increase as elections approach (viz. both $\gamma$ and $\delta$ rise), then there are two opposing effects on the size of holdout; while it would tend to decrease as $F$ gets more motivated, it would tend to increase as $A$ also gets more motivated. What is the net impact? Corollary 4 captured the results. The proofs of Corollary 3 and Corollary 4 are again included in sub-section 0.19.2.

**Corollary 4.** Suppose as elections approach, both $\gamma$ and $\delta$ rise proportionately, that is $\frac{d\gamma}{\gamma} = \frac{d\delta}{\delta}$. Then the following is true: (i) If $2\delta(1 - \delta) \leq \gamma(1 - \gamma)$ then buyer induced holdout increases unambiguously, and (ii) If $2\delta(1 - \delta) > \gamma(1 - \gamma)$ then there exists a threshold value $\Lambda > 0$ such that buyer induced holdout increases if and only if $\lambda - v - r_I > \Lambda$.

It is easy to verify that $2\delta(1 - \delta) > \gamma(1 - \gamma)$ whenever both $\gamma$ and $\delta$ lie in the interval $[0.15, 0.85]$, so that Corollary 4(ii) holds. Thus over a ‘large’ range of parameter values, one would expect approaching elections to increase buyer induced holdout provided the net returns from the project (viz. $\lambda - v - r_I$) is large enough.

**Empirical implications:** Identifying buyer-induced holdout in land acquisition requires one to observe more than the mere incidence of delay in a land acquisition process. It requires information about (i) whether there was outside interference even if sellers were willing to sell their plots, and if so, (ii) how the buyer had approached the outside party and (iii) what was the initial size of land purchased through the party in power. I recognise that data about these aspects are hard to
come by, and I leave such an important empirical study on buyer-induced holdout for future research. Nevertheless Theorem 2 and Corollaries 3 and 4 allow us to undertake indirect empirical investigation on this form of holdout through the following testable hypotheses:

**Hypothesis 1:** An increase in bureaucratic corruption, i.e., in \( r_I \), increases buyer-induced holdout if the economy is relatively developed, i.e., the existing value of \( r_I \) is relatively small, but decreases holdout if the economy is underdeveloped, i.e., \( r_I \) is relatively large to begin with.

**Hypothesis 2:** An increase in the ease of opposing land acquisition, i.e., a decrease in \( \alpha \), increases buyer-induced holdout.

**Hypothesis 3:** The incidence of buyer-induced holdout is larger for larger projects, i.e., larger \( \lambda \), as well as if land is more productive, i.e., larger \( v \), provided bureaucratic corruption is large.

**Hypothesis 4:** The incidence of buyer-induced holdout increases as an election becomes more imminent provided the net returns from the project is large enough.

One starting point for such an empirical exercise might be to develop a theoretical framework that allows for both buyer-induced, as well as seller-induced holdout, and compare the predictions across the two. One can then try and take these predictions to data. Again, I leave this for future work.

One can predict some general observations from the theoretical analysis in Chapter 1 and Chapter 2 though. For a less developed economy like India, one would expect that bureaucratic corruption (viz. \( r_I \)) is large enough to begin with across all states. Our theory then predicts that, *ceteris paribus*, the level of holdout would be lower in states within India where corruption is relatively higher (viz. Hypothesis 1), and that holdout should be more in states where it is relatively
easier to organise opposition (viz. Hypothesis 2). The idea is that if a state has a history of higher political violence, it suggests that institutions in these states are not effective enough in dealing with protests in general. Further, given that institutions change relatively slowly, this difference across states should persist over the period I would be interested in. One reason could be that the political violence measure used here is conflating two different aspects of political violence; while it captures the ease of opposition, which would tend to increase holdout, it may also capture the ease of coercion, which would tend to decrease holdout, rendering the net effect ambiguous. The theory presented here largely bypasses this possibility. In future work, I plan to extend the theory so as to allow for this and also take up the issue of empirically testing more nuanced versions of these hypotheses in greater depth.

0.10.2 Impact on seller utility

I next turn to an analysis of how changes in the degree of bureaucratic corruption and ease of opposition affect the welfare of the sellers. Theorem 3 deals with it.

Theorem 3. Suppose that $\alpha < \bar{\alpha}$ and $\delta > \tilde{\delta}$ so that there is buyer-induced holdout. Then a rise in bureaucratic corruption $r_I$ reduces seller welfare, while an increase in the ease of opposing land acquisition $\alpha$ increases it.

Interestingly, the result obtains despite the facts that (i) a higher corruption always reduces period 1 prices $q$, (ii) its impact on period 2 price $q_b$ depends upon the relative bargaining powers of the buyer and the sellers, and (iii) its impact on buyer-induced holdout depends upon the net productivity of the project (as obtained in Chapter 1). Intuitively, the extent of holdout is decreasing in $r_I$ iff party F is very motivated, i.e., $\frac{2}{1+\gamma} > \lambda - v - r_I$. In that case, holdout is unlikely to be too large in any case, so that the effect of any further decrease in the extent of holdout will be small. The proof of Theorem 3 is again included in sub-section 0.19.2.
In Section 0.10.7 I demonstrate that this result is critically dependent on the fact that interference activity is endogenized. I have shown that the result may in fact be reversed if this activity is frozen, in that an increase in $r_I$ increases seller utility whenever the political rent paid to F is at an intermediate level! This underscores why it is important to explicitly model interference in this context. As for the case of holdout, we have the following two accompanying Corollaries for Theorem 3.

**Corollary 5.** Sellers welfare is increasing in $\gamma$, the motivation of party F, and decreasing in the motivation of party A, i.e., $\delta$. It is increasing in the value of the project $\lambda$, and the value of land $v$.

Corollary 5 is intuitive. Sellers from more valuable regions are better off while higher is the buyer’s marginal revenue from the project, the overall payments are higher. Similarly, if the pro-industrial party cares more about industrialisation than the costs of fighting the political contest, it helps the sellers while the opposite is true when it comes to the opposition party. Turning to elections, we have Corollary 6. Proofs of both Corollary 5 and Corollary 6 are included in sub-section 0.19.2.

**Corollary 6.** Suppose as elections approach, both $\gamma$ and $\delta$ rise proportionately. Then the following is true: (i) If $2\delta(1-\delta) \leq \gamma(1-\gamma)$ then sellers’ welfare decreases and (ii) If $2\delta(1-\delta) > \gamma(1-\gamma)$, then there exists a threshold value $\Lambda > 0$ such that sellers’ welfare rises if and only if $\lambda - v - r_I < \Lambda$.

Our conclusion therefore is similar to those drawn from Corollary 4. Corollary 6(ii) applies for a large range of parameter values, so that the imminence of elections should by and large increase sellers’ welfare but only for relatively small projects.

I then discuss some additional nuances dealing with seller utility. Section 0.10.3 below shows that all landowners prefer that A exists, rather than it does not. At the same time, however, they do not like it to be too powerful, i.e., they don’t want $\alpha$ to be too small.
0.10.3 On existence (and strength) of opposition

The preceding discussions bring us to a fundamental question: Do the sellers benefit from, or are harmed by the presence of party A given that it opposes land sale? How does the absence of party A affect the relationship between the other stakeholders? It is possible that the bargaining power of the seller in the late stage actually derives from the presence of party A. In that case, the sellers have no bargaining power in the absence of party A, and the buyer can drive down the sellers to their reservation utility in the late stage. To check this suppose in such a framework, A is absent. Then the buyer’s choice is simple: if he involves F, then he offers \( v \) to each seller and the buyer’s total cost is \( v + r_P \); if he does not involve F then the buyer’s total cost is \( v + (1 - \beta)r_I + \beta r_I = v + r_I \). Knowing this party F demands \( r_P = r_I \) so that each seller receives \( v \). Since in our baseline model price is more than \( v \), it follows that A’s presence is good for the sellers.

Next suppose that sellers can retain their bargaining power even in absence of A in the locality. Suppose in such a scenario A is absent and party F announces an \( r_P \) to be paid by a buyer who wants to purchase land through party F. The minimum land price the buyer can offer at this stage is \( v \). Of course the buyer will involve party F if and only if \( v + r_P \leq q_b + \beta r_I \), otherwise he will directly bargain with the sellers for a unit price of land. Knowing this, F sets \( r_P = q_b + \beta r_I - v \) if it is positive. But \( q_b \) is as given in Chapter 1 (Section 0.6) and so replacing it in the RHS I obtain \( r_P = \frac{\lambda - v + r_I}{2} \) which is strictly positive given our assumptions. Thus, the price of land without A is simply \( v \). Arrival of A raises this price as both \( q \) and \( q_B \) are higher than \( v \). To see this, since \( q < q_B \) it suffices to note that \( q = \frac{\lambda + v - r_I}{2} > v \) since \( \lambda - v - r_I > 0 \). So opposition raises prices and therefore A has an indirect positive impact on the villagers; of course it also increases the chances of no sales at all. One can now compute the equilibrium expected benefit of A for the sellers, but since cancellation of the project yields \( v \) to each seller, introduction of A necessarily increases villagers’ welfare as well.

It is interesting to note that in this model although sellers want to sell – pro-
vided party F is not coercive – and A opposes any sale of land, *ex-ante*, the existence of opposition is unambiguously preferred by the sellers, irrespective of whether or not A’s presence provides the sellers with some bargaining power. As alluded to before in Chapter 1, \( \alpha \) can also be seen as a proxy for A’s local presence. Given \( \frac{\partial U_s}{\partial \alpha} > 0 \), this means that sellers would want \( \alpha \) to be as high as possible. Put together, this suggests a non-monotonic seller preference for opposition. Given that party F exists, interestingly, sellers prefer the presence of A when their bargaining power stems from the presence of A, it turns out that they never want it to be too powerful.

What if party F did not exist? Then no acquisition would take place if A still existed and in our framework that is strictly worse as discussed above. Finally if both parties were absent, then land acquisition would be fully successful but sellers would be made indifferent between selling and not so that their payoff would be \( v \) which is again strictly less than what they obtain in our equilibrium. Hence *outside interference in general is beneficial to the sellers*. This conclusion is irrespective of the size of bureaucratic corruption.

### 0.10.4 Impact of coercive pro-industry party F on sellers welfare

In Chapter 1, sub-section 0.7.4 we have seen that when party F has the ability to coerce unwilling sellers, hold out may fall, as does the early phase price, i.e., \( q \). While a reduction in holdout increases the probability that the project clears the interference hurdles and thereby increases expected seller utility, a fall in period 1 price hurts this welfare. What is then the net effect on seller welfare? I have shown that in the presence of coercion, the existence of party F is a mixed blessing for the sellers.

While they dislike coercion, the presence of party F does help with getting the project through. In relation with from sub-section 0.7.4 I look at a simple
extension of our model where refusal to participate in the first period offer \((q,k)\), if approached by party F, results in a \textit{personal penalty} of amount \(\chi > 0\) to the seller. The following analysis then easily show that there exists a unique \(\bar{\chi}\) such that if \(\chi < \bar{\chi}\), then sellers prefer to have F even if it is coercive; but if \(\chi > \bar{\chi}\), then they prefer not to have a party F to having a coercive F.

\textit{Detail on Coercion by party F:} I address this issue of having a coercive party F on seller utility in relation to the discussion in sub-section 0.10.3. In presence of coercive party F the welfare of the sellers is

\[ U_S(\text{coercion}) = \frac{\sqrt{2}((1 - \gamma)(\lambda + 2\chi - v - r_I) + \gamma)}{4(1 - \gamma)\sqrt{\frac{\delta(\lambda + 2\chi - v - r_I)}{2\alpha(1 - \delta)}}} \left( \frac{\lambda - 2\chi - v - r_I}{2} \right) + v. \]

Hence, \(U_S(\text{coercion}) \geq U_S\) iff

\[ \frac{(1 - \gamma)(\lambda + 2\chi - v - r_I) + \gamma}{\sqrt{\delta(\lambda + 2\chi - v - r_I)}} \left( \lambda - 2\chi - v - r_I \right) \geq \frac{(1 - \gamma)(\lambda - v - r_I) + \gamma}{\sqrt{\delta(\lambda - v - r_I)}} (\lambda - v - r_I). \]

Given that the LHS of the preceding expression equals the RHS at \(\chi = 0\), and that the LHS is decreasing in \(\chi\) while the RHS is independent of \(\chi\), the above is never true whenever \(\chi > 0\), that is, there is coercion. Thus it yields \(U_S > U_S(\text{coercion})\). This means that the seller’s benefit from a lower size of holdout is more than compensated by the drop in period 1 price (recall the impact of having a coercive party F on \(k^*\) and prices from sub-section 0.7.4 in Chapter 1). Thus no amount of coercion is liked by the sellers.
0.10.5 Impact of changes in corruption and ease of opposition on economic surplus

I next turn to analysing the effects of changes in corruption and ease of opposition on the economic surplus (ES) from land acquisition, where the ES is the sum of the buyer’s utility $U_B$ and the seller’s utility $U_S$, net of monetary costs $(k^*^2 + \alpha)c^*$ incurred by the society due to outside interference. Since $(k^*^2 + \alpha)c^*$ is a deadweight loss to the society, we have

$$ES(\alpha, r_I|\lambda, v) = U_B + U_S - (k^*^2 + \alpha)c^*, \quad (23)$$

where, the buyer’s payoff is

$$U_B = \pi(k)(\lambda - k(q + r_P) - (1 - k)(q_b + \beta r_I)).$$

Assuming that there is hold out, we have

$$U_B = \frac{\sqrt{2}((1 - \gamma)(\lambda - r_I - v) + \gamma)}{8(1 - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}} \left(\frac{\sqrt{2}((1 - \gamma)(\lambda - r_I - v) + \gamma)}{2(1 - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}} \left(r_I - \frac{(1 - \gamma)\left(r_I + 2\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}(\lambda - r_I - v) + \gamma r_I\right)}{(1 - \gamma)(\lambda - r_I - v) + \gamma}\right) + (\lambda - r_I - v)\right),$$

$$k^* = \frac{\sqrt{2}((1 - \gamma)(\lambda - r_I - v) + \gamma)}{4(1 - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}}$$

and $c^* = c_f > 0$.

An important distinction between relatively developed and under-developed economies is that both higher corruption and easier opposition, particularly through unconstitutional means such as armed agitation, are expected to be less in the former. Keeping this distinction in mind, how do the impacts on surplus compare across the developing and the developed world? The impacts of $r_I$ and $\alpha$ on the sellers’ utility $U_S$ is straightforward as shown in subsection 0.10.2 above. Their
impacts on the degree of opposition (that determines the deadweight loss to the
society due to interference) is also relatively simple as summarised in Proposition 3
(that characterises the equilibrium degree of opposition $c^*$). However their impacts
on the buyer’s utility $U_B$ depends on a far more complex interplay between the
preference parameters of the interfering parties (viz. $\gamma$ and $\delta$) and the economic
parameters of the industry and land use (viz. $\lambda$ and $v$). The extent of this com-
plexity is worsened by the fact that $k^*$ and $r_p^*$ are non-monotonic in $r_I$ so that a
general analysis of surplus becomes uninformative.

To obtain some clear insight with respect to the questions I ask above, I make
the following simplifications. I set $\lambda = 2$ and $v = 1$ (so that industry is twice as
productive as agriculture) that also means that the maximum degree of corruption
is normalised to 1 (viz. $r_I \leq 1$) to keep the problem interesting. Further, I
start with focus on a benchmark case where the relative weights on motivation
and economic returns are balanced for the interfering parties, i.e., $\gamma = \delta = 1/2$.
Observation 5 and 6 then consider scenarios where these preferences of interfering
parties are not balanced.

**Observation 4.** Suppose that $\lambda = 2$, $v = 1$ and both parties have balanced pref-
erences, i.e. $\gamma = \delta = 1/2$. Then in presence of buyer-induced holdout the short
term economic surplus is decreasing in both $r_I$ and $\alpha$, irrespective of the degree of
institutional imperfections. Thus while institutional improvements that decrease
the degree of bureaucratic corruptions (viz. a fall in $r_I$) increase economic surplus,
institutional improvements that decrease the ease of opposition (viz. a rise in $\alpha$)
dercrease economic surplus.

As argued earlier, both higher corruption and easier opposition are expected in
a LDC. Observation 4 then suggests that in LDC, economic surplus would decline
with an improvement in institutions that toughens opposition (i.e., increases $\alpha$)
but would increase with an improvement in institutions that decreases corruption
(i.e., declines $r_I$). The intuition for the effects of a change in $\alpha$ is interesting.
An improvement in rule of law that toughens opposition would decline economic
surplus, stemming primarily by the fact that in this case sellers welfare is going
to decline (see subsection 0.10.3) even when holdout is going to fall (see Theorem 2(ii)).

The possibility that institutional improvement that reduces bureaucratic corruption (viz. a fall in $r_I$) increases economic surplus while institutional improvement that reduces the ease of opposition (viz. a rise in $\alpha$) reduces economic surplus, as come out starkly in the benchmark reported in Observation 4 need not be a universal phenomenon. For example, one can show that when party F is highly rent-seeking and A is extremely motivated, reducing bureaucratic corruption even hurts short term economic surplus if existing corruption is high compared to the ease of opposition. In such a scenario increasing the cost of opposition also hurts short term economic surplus irrespective of the degree of bureaucratic corruption. Nonetheless, the possibility of immiserising institutional improvements in LDCs holds for a large class of parameter values, even if it is not universal. In contrast, when party F is extremely motivated but A’s motivation to oppose is low institutional improvement that reduces the ease of opposition (viz. a rise in $\alpha$) decreases short term economic surplus if the existing institution is relatively bad. In such a scenario institutional improvement that reduces bureaucratic corruption, increases short term economic surplus irrespective of the institutional imperfections. I collect these two cases under Observation 5 and Observation 6 below. The proofs of Observation 4, Observation 5 and Observation 6 are included in sub-section 0.19.2.

Observation 5 (Immisering Reforms). Suppose $\lambda = 2v = 2$ and institutional imperfections are such that there is buyer-induced holdout. If there is strong ideological local opposition and strong rent-seeking local support for the project ($\delta = \frac{8}{10}$ and $\gamma = \frac{2}{10}$) then:

(a) Economic surplus is rising in $r_I$ for relatively low $\alpha$ and is decreasing otherwise;

(b) Economic surplus is falling in $\alpha$ irrespective of the degree of bureaucratic corruption.

\[\] This can be compared with a scenario similar to the one in Salboni, West Bengal (as mentioned in Chapter 1) where opposition of farmers were segregated and not attracted any support from civic society organisations or political parties even if there were media coverage.
As argued earlier, both higher corruption and easier opposition are expected in LDCs. Observation 5 then suggests that, in LDC economic surplus would decline with an improvement in institutions that decreases corruption (i.e., declines $r_I$) and also with an improvement in institutions that toughens opposition (i.e., increases $\alpha$). What is the basic intuition? Consider a drop in bureaucratic corruption in an LDC, where $r_I$ has been large, and $\alpha$ is small. The decline in economic surplus is driven primarily by the fact that in this case holdout is going to increase (see Theorem 2(i)), which in turn is driven by the presence of adversarial interference, as brought out in the discussion following this theorem. The intuition for a rise in $\alpha$ directly follows from the discussion following Observation 4.

Observations 5 interestingly shows that this is not the case in relatively developed economy. Consider a drop in bureaucratic corruption where $r_I$ has been low and $\alpha$ has been high. The increase in economic surplus in this case is driven primarily by the fact that in this case holdout is going to decrease (see Theorem 2(i)). While the impact of improvements in ease of opposition remains similar to Observation 4, it is again not universal. This would be seen in Observation 6.

Observation 5 has interesting implications. Given that in less developed economies it requires a deterioration in the rule of law in order to make short term improvements in economic surplus, these economies might be in a trap in that they may have little incentive to encourage institutional reforms in the short-run and instead wait for a ‘big push’ to restore efficiency of land acquisition programs, that never comes by. This result is critically dependent on the fact that the level of interference is endogenous. In sub-section 0.10.7 I will show that keeping interference exogenous can yield misleading conclusions.

**Observation 6.** Suppose $\lambda = 2v = 2$ and institutional imperfections are such that there is buyer-induced holdout. If there is strong ideological local support for the project and relatively weak local opposition (viz. $\gamma = \frac{8}{10}$ and $\delta = \frac{2}{10}$) then:

(a) economic surplus is falling in $r_I$ irrespective of the degree of ease of opposition;
(b) economic surplus is rising in $\alpha$ when $r_I$ is sufficiently small and is decreasing otherwise.

Observation 6 has an interesting implication. The economies that are relatively more developed where the degree of bureaucratic corruption is not that severe and institutional reforms can start with improvements in the rule of law so that it decreases the ease of opposition (viz. an increase in $\alpha$), it improves the short term economic surplus. But for the severely underdeveloped economies where the degree of bureaucratic corruption is large to begin with, improvement in rule of law that decreases the ease of opposition, decreases the short term economic surplus. The intuition follows from Observation 4 that this decline in short term economic surplus with respect to the improvement in rule of law is primarily due to the decline in sellers welfare.

0.10.6 Impact of changes in preference parameters of interfering parties on economic surplus

In this section I turn to examine the impact of changes in preference parameters, namely the motivation parameter of the pro-industry party $F$ (viz. $\gamma$) and that of the opposition $A$ (viz. $\delta$), on economic surplus. I follow the approach used in sub-section 0.10.5 in order to find results for this. As explained in sub-section 0.10.5 that even if it is straightforward to show the impacts of $\gamma$ and $\delta$ on sellers’ utility $U_S$ (as captured in Corollary 5) and on the degree of opposition (that determines the deadweight loss to the society due to interference) as summarised in Proposition 3, their impacts on buyer’s utility $U_B$ depends on the institutional parameters (viz. $r_I$ and $\alpha$) as well as the economic parameters of the industry and land use (viz. $\lambda$ and $v$) so that a general analysis of surplus becomes uninformative. I have

$$ES(\gamma, \delta, \alpha, r_I|\lambda, v) = U_B + U_S - (k^{+2} + \alpha)c^*,$$
where $U_B$ and $U_S$ are as mentioned in sub-section 0.10.5. Moreover, $c^* = c_f$ and $k^* = \frac{\sqrt{2((1-\gamma)(\lambda-r_I-v)+\gamma)}}{4(1-\gamma)\sqrt{\frac{8(\lambda-r_I-v)}{\alpha(1-\delta)}}}$.

To obtain some clear insight on the impacts of interfering parties, I make the following simplifications. I set $\lambda = 3$ and $v = 1$ so that industry is significantly more productive as compared to agriculture. I consider a LDC scenario where the degree of corruption is normalised to 1 (viz. $r_I = 1$) and the ease of opposition is high (viz. $\alpha = 1/5$) to keep the problem interesting. Further, I first consider a case where the party F’s motivation and economic returns are balanced, i.e., $\gamma = 1/2$. The following observation then captures the impact of A’s preference parameter (i.e., $\delta$) on ES.

**Observation 7.** Suppose $\lambda = 3$, $r_I = v = 1$ and consider a LDC scenario when opposition is less costly (viz. $\alpha = 1/5$). Given this when party F’s motivation and economic returns are balanced (viz. $\gamma = 1/2$), then economic surplus is decreasing in $\delta$ whenever A’s motivation to oppose land acquisition is relatively high, such that $0.36 < \delta < 1$.

Observation 7 is intuitive. It considers a LDC framework when bureaucratic corruption is embedded in the system and small changes in institutions are ineffective to reduce corruption. In such a framework if institutions are inefficient to strengthen the rule of law so that opposition against land acquisition is easy, then economic surplus decreases when the opposition is strongly motivated to interfere in the process. This result is stemming from the fact that (i) a strongly motivated opposition increases buyer-induced holdout (as captured in Corollary 2) and (ii) higher presence of opposition in more valuable regions decreases sellers’ welfare (as shown in Corollary 5). In this case the second effect dominates the overall outcome.

I next turn to check the impact of the motivational parameter of party F (viz. $\gamma$) on economic surplus. For that I follow the example from Observation 7 where $\lambda = 3$, $v = 1$ so that the degree of corruption is normalised to 1 (viz. $r_I = 1$) and...
the ease of opposition is high (viz. $\alpha = 1/5$). In this I consider that the ideological motivation of opposition’s is sufficiently strong, such that $\delta = 8/10$. The following observation then captures the impact of $F$’s motivation parameter (i.e., $\gamma$) on ES.

Observation 8. Suppose $\lambda = 3$, $r_I = v = 1$ and consider a LDC scenario when opposition is less costly (viz. $\alpha = 1/5$). Given this when there is strong ideological local opposition (viz. $\delta = 8/10$), then economic surplus is increasing in $\gamma$ if $F$’s ideological motivation for industrialisation is sufficiently low, such that $0 < \gamma < 0.06$.

Observation 8 is intuitive. Following Observation 7 it also considers a LDC framework when bureaucratic corruption is embedded in the system and small changes in institutions are ineffective to reduce corruption. In such a framework if institutions are inefficient to strengthen the rule of law so that opposition against land acquisition is easy, then in presence of a highly motivated local opposition, economic surplus decreases when the local political support is relatively more motivated for industrialisation. This result is stemming from the fact that (i) a strongly motivated local support decreases buyer-induced holdout (as captured in Corollary 2) while (ii) highly motivated local support increases sellers’ welfare (as shown in Corollary 5). In this case as the opposition is highly motivated coupled with the fact that the inefficiency in the rule of law makes it easier for $A$ to oppose, it can now afford a higher cost of opposition (i.e., $c_f$) (see Proposition 3). This in turn put a pressure on $F$ to seek more rent that then induces the buyer to purchase less land through $F$. But as higher presence of local opposition is not preferred by the sellers, they want more presence of $F$ in settling land deal with buyer. Thus in order to have an industry in the locality buyer accepts a relatively higher political rent (i.e., $r_P$). Given that the marginal productivity of the project is sufficiently high, buyer can afford this higher $r_P$. Party $F$ exploits this opportunity and seek more rent. This higher rent-seeking by party $F$ in turn increases the overall ES.
0.10.7 Exogenous interference: a misleading specification for seller welfare and economic surplus

I begin with Seller utility. Consider a scenario where $r_p$ and $c$ are fixed. Recall that the sellers’ payoff is $\pi(k)(qk + (1 - k)(qB - (1 - \beta)r_I)) + (1 - \pi(k))v$. Substituting the values of $k^*$, $q$ and $qB$ from Chapter 1 I get

$$U_S = \frac{\lambda - v - r_I}{4(r_p - r_I)}(\frac{\lambda - v - r_I}{2}) + v = \frac{(\lambda - v - r_I)^2}{8(r_p - r_I)} + v.$$

Now,

$$\frac{\partial U_S}{\partial r_I} = \frac{(\lambda - v)^2 - r_I^2 - 2r_P(\lambda - v - r_I)}{8(r_P - r_I)^2}.$$

Note that $\frac{\partial U_S}{\partial r_I} > 0$ if and only if $r_P < \frac{(\lambda - v)^2 - r_I^2}{4(\lambda - v - r_I)}$. Next recall that there is holdout whenever $r_P > r_I + \frac{\lambda - v - r_I}{4}$. Thus both these inequalities hold iff

$$\frac{(\lambda - v)^2 - r_I^2}{2(\lambda - v - r_I)} > r_P > r_I + \frac{\lambda - v - r_I}{4}.$$

It is routine to check that $\frac{(\lambda - v)^2 - r_I^2}{2(\lambda - v - r_I)} > r_I + \frac{\lambda - v - r_I}{4}$ for any parameter configuration. Thus, whenever $r_P$ is neither too large, nor too small, an increase in bureaucratic corruption unambiguously improves seller utility.

Next consider the case of Economic Surplus. Consider $r_P$ and $c$ as given parameters. Using the expression for $U_B$ and substituting the values of $k^*$ (from (13)), $q$ and $q_b$ (from Lemma 2), I get

$$U_B = \frac{(\lambda - v - r_I)^2}{16(r_p - r_I)}.$$
so that

\[ ES = \left( \frac{(\lambda - v - r_I)^2}{8(r_P - r_I)} + v + \frac{(\lambda - v - r_I)^2}{16(r_P - r_I)} \right) - \left( \frac{(\lambda - v - r_I)^2}{4(r_P - r_I)} + \alpha \right) c. \]

For ease of exposition I analysis this section in relation to Observation 4. Thus I consider \( \lambda = 2 \) and \( v = 1 \) so that industry is twice as productive as agriculture and the maximum degree of corruption is normalised to 1 (viz. \( r_I \leq 1 \)). This yields

\[ ES = 1 + \frac{3(r_I - 1)^2}{16(r_P - r_I)} - c \left( \frac{(r_I - 1)^2}{16(r_P - r_I)^2} + \alpha \right). \]

Now, \( \frac{\partial ES}{\partial \alpha} = -c < 0 \) and

\[ \frac{\partial ES}{\partial r_I} = \frac{(1 - r_I)(2c(r_P - 1) + 3(r_I - r_P)(2r_P - r_I - 1))}{16(r_P - r_I)^3}. \]

Recall that there is holdout whenever \( r_P > r_I + \frac{\lambda - v - r_I}{4} \). Thus the term \( 16(r_P - r_I)^3 > 0 \). And for given \( r_I \leq 1 \) the term \((1 - r_I) > 0 \). Thus \( \frac{\partial ES}{\partial r_I} > 0 \) whenever \( 2c(r_P - 1) + 3(r_I - r_P)(2r_P - r_I - 1) > 0 \). Since \( r_P - 1 > 0 \) for given \( r_P > r_I \) so that holdout takes place, I get that for \( \frac{\partial ES}{\partial r_I} > 0 \) it must be true that \( 2c > \frac{3(r_P - r_I)(2r_P - r_I - 1)}{r_P - 1} \).

Note that if \( c = 0 \) (which is not equivalent to non-interference of A) the above condition never holds. But if the opposition choses a fixed \( c > 0 \) then for an optimal decision on \( r_P \) that is not very large (so that the above condition violates) I get \( \frac{\partial ES}{\partial r_I} > 0 \). This suggests clear impacts of change in \( r_I \) and \( \alpha \) on economic surplus when interference is exogenous. In particular, in an economy when conditions for buyer-induced holdout exist, worsening of institutions (a fall in \( \alpha \) or a rise in \( r_I \)) increase economic surplus. Such conclusions are clearly misleading. □
0.11 Welfare of the non-local constituency

Non-local welfare is essentially rooted in the ideological split within the population who are not involved in the local problem studied so far. The ideology there is either for industrialisation or against land-sale. I considered that the opposition can come from a broader spectrum of the society that includes civic-society organisations and political parties. In chapter 1 I mentioned examples when political parties that are typically out of office take over such opposition. In this section I take a look at a scenario when local political opposition (I now call them party A) interferes in the land acquisition process with an aim of exploiting the readily available information from the civic-society organisations (that initiated movement against acquisition) to gain political mileage. In here the non-local population that supports industrialisation forms party F’s non-local constituency while that against land sale forms party A’s non-local constituency. The importance of this non-local population is denoted by $\eta$ that is the fraction of the population in the economy who are non-sellers of land.

Note that the number of buyers in the total population is insignificant so that their payoffs are not considered in this welfare measure. For the same reason I do not consider the political parties in this welfare measure as their relative strength is also insignificant, especially under democratic provisions. In this section I analyse the welfare of this $\eta$ fraction of the population.

Thus the definition of the welfare of non-local constituency, as obtained from land acquisition ordeal is as follows:

$$W_N(k, q, q_b) = \phi \pi(k^*) + (1 - \phi)(1 - \pi(k^*))$$

where $0 \leq \phi \leq 1$ is the size of the constituency that supports the pro-industrial party F.

$W_N$ with no political interference: When there are no political hazards it follows that $k^* = 1$, the non-local welfare yields $W_N(k, q, q_b) = \phi$. 

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with both high bureaucratic corruption and ease of opposition: When there is no holdout then \( k^* = 1 \) and the non-local welfare \( W_N(k, q, q_b) = \phi \).

In what follows I will consider the case of holdout. From Theorem 1 we know that if there is buyer-induced holdout in the local land acquisition process then \( k^* = \frac{\sqrt{2(1-\gamma)(\lambda - r_I - v) + \gamma)}{4(1-\gamma)^\alpha(1-\delta)}} \). This yields the non-local welfare function,

\[
W_N(k, q, q_b) = \frac{\sqrt{2((1 - \gamma)(\lambda - r_I - v) + \gamma)}(2\phi - 1) + (1 - \phi)}{4(1 - \gamma)^\alpha(1-\delta)}.
\] (24)

The following two observations then immediately capture two alternative scenarios: one in which the marginal productivity of the industrial project is sufficiently small and/or the local unit of party F is sufficiently ideological, and, the other in which the marginal productivity of the industrial project is sufficiently large and/or the local unit of party F is sufficiently profit driven. Results show that the rise in the extortionary activities in the institutions can even enhance non-local welfare. The proofs of these two observations are included in sub-section 0.19.2.

**Observation 9.** Suppose there is buyer-induced holdout in local land acquisition (viz. \( \alpha < \bar{\alpha} \) and \( \delta > \tilde{\delta} \)) and the marginal productivity of the industrial project is sufficiently small and/or the local unit of party F is sufficiently ideological (i.e., \( \lambda - r_I - v < \gamma \frac{\alpha}{1-\gamma} \)).

(a) If the constituency that supports party F is larger than that supporting party A (i.e., \( \phi > \frac{1}{2} \)) then a rise in the extortionary activity in the institutions that rises level of corruption (i.e., rise in \( r_I \)), enhances non-local welfare.

(b) If the constituency that supports party A is larger than that supporting party F (i.e., \( \phi < \frac{1}{2} \)) then a rise in the extortionary activity in the institutions that rises level of corruption (i.e., rise in \( r_I \)), decreases non-local welfare.

**Observation 10.** Suppose there is buyer-induced holdout in local land acquisition and the marginal productivity of the industrial project is sufficiently large and/or
the local unit of party F is sufficiently profit driven (i.e., \( \lambda - r_1 - v > \frac{\gamma}{1-\gamma} \)).

(a) If the constituency that supports party A is larger than that supporting party F (i.e., \( \phi < \frac{1}{2} \)) then a rise in the extortionary activity in the institutions that rises level of corruption (i.e., rise in \( r_1 \)), enhances non-local welfare,

(b) if the constituency that supports party F is larger than that supporting party A (i.e., \( \phi > \frac{1}{2} \)) then a rise in the extortionary activity in the institutions that rises level of corruption (i.e., rise in \( r_1 \)), decreases non-local welfare.

I consider that there is holdout in the local land acquisition process and now ask whether the non-local welfare rises if there is an increase in the non-local support base of the pro-industry party. The following observation deals with this and the proof of this is again included in sub-section 0.19.2.

**Observation 11.** Suppose there is holdout in local land acquisition process. Then there exists a \( 0 < \delta' < 1 \) such that a rise in the non-local support base of the pro-industry party enhances non-local welfare if and only if the local unit of party A’s marginal returns from politics is relatively low such that \( \delta < \delta' \). Otherwise if the local unit of party A is sufficiently ideological such that \( \delta > \delta' \) then the non-local welfare falls with the non-local support base of the pro-industry party.

The next two observations then capture how the ideological motivations of local units of F and A affect the non-local welfare. The proofs are included in sub-section 0.19.2.

**Observation 12.** Suppose there is buyer-induced holdout in local land acquisition process. Then a higher degree of ideological motivation of the local unit of party F (viz. \( \gamma \)) enhances the non-local welfare if and only if the constituency that supports party F is larger than that supporting party A (i.e., \( \phi > \frac{1}{2} \)). Otherwise, if the constituency that supports party A is larger than that supporting party F (i.e., \( \phi < \frac{1}{2} \)) then a higher degree of ideological motivation of the local unit of party F decreases the non-local welfare.
Observation 13. Suppose there is holdout in local land acquisition process. Then a higher degree of ideological motivation of the local unit of party A (viz. rise in $\delta$) enhances the non-local welfare if and only if the constituency that supports party A is larger than that supporting party F (i.e., $\phi < \frac{1}{2}$). Otherwise if the constituency that supports party F is larger than that supporting party A (i.e., $\phi > \frac{1}{2}$) then a higher degree of ideological motivation of the local unit of party A decreases the non-local welfare.

0.11.1 Local Welfare

The local welfare involves the payoffs of the local landowners who are willing to sell their plot of lands for the industrial project, that is

$$W_L(k, q, q_b) = U_S(k, q, q_b)$$

(25)

Hence following sub-section 0.10.2 and sub-section 0.10.3 I get the following:

$W_L$ with no political interference: When there are no political interference it follows that $k^* = 1$ and the local welfare yields $W_L(k, q, q_b) = q = \frac{\lambda + v}{2} - \frac{r_I}{2}$.

$W_L$ with both high bureaucratic corruption and ease of opposition: When there is no holdout that follows $k^* = 1$, then the local welfare yields $W_L(k, q, q_b) = q = \frac{\lambda + v}{2} - \frac{r_I}{2}$.

So suppose there is buyer-induced imperfections holdout and recall from proposition 3 that in presence of both institutional imperfections holdout in the land acquisition process takes place if and only if $\alpha < \bar{\alpha}$ and $\delta > \bar{\delta}$. Then I get $k^* = \frac{\sqrt{2(1-\gamma)(\lambda - r_I - v) + \gamma}}{4(1-\gamma)\sqrt{2(\lambda - r_I - v)}}$, $c^* = c_f$ and $r^*_P = \hat{r}_P$. The local welfare thus yields
\[
W_L(k, q, q_b) = \frac{\sqrt{2}(1 - \gamma)(\lambda - r_I - v) + \gamma}{4(1 - \gamma)} \sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}} \left( \frac{\lambda - v - r_I}{2} \right) + v.
\] (26)

Remark 2 (Sellers’ ballot and holdout): As explained before, \( \alpha \) is a proxy for party A’s local presence. In a democracy, albeit imperfect, it is then natural to assume that \( \alpha \) is a falling function of the fraction of sellers who vote for party A. This remark is in relation with sub-section 0.10.2 and sub-section 0.10.3 where I have shown that \( \frac{\partial W_L}{\partial \alpha} > 0 \) and discussed that sellers like the presence of party A, it turns out that they never vote in a preceding election in order to keep \( \alpha \) as high as possible. This also implies that the constituency of party F is \( \phi \eta + (1 - \eta) \).

In sub-section 0.10.2 we have seen how the local welfare (\( W_L \) or \( U_S \)) changes with institutional parameters, in particular with the levels of bureaucratic corruption and ease of opposition (viz. with the changes in \( r_I \) and \( \alpha \)). I next turn to the analysis of total welfare of the economy that comprises all the landowners both local and non-local, who are non-sellers.

0.11.2 Total Welfare

For any given \( \eta \), the fraction of the population in the economy who are non-sellers of land, the total welfare is defined as follows:

\[
W_T((k, q, q_b)) = \eta W_N + (1 - \eta)W_L.
\]

When there is no holdout or when there is no political interference, \( W_T = \eta \phi + (1 - \eta)(\lambda - r_I) \) that unambiguously falls in \( r_I \). So suppose next that there is buyer-induced holdout.

I first analyse how the total welfare changes with the rise in the extortionary activity in institutions that increases corruption (i.e., with the rise in \( r_I \)) if the non-local constituency that supports party F is larger than that supporting party A. The following proposition deals with it.
Proposition 5. Suppose there is buyer-induced holdout in local land acquisition process and the non-local constituency that supports party $F$ is larger than that supporting party $A$ (i.e., $\phi > \frac{1}{2}$). Then a rise in extortionary activity in the institutions that increases corruption (i.e., increases $r_1$) enhances the total welfare if and only if the local unit of party $F$ is sufficiently ideological such that $\gamma > \hat{\gamma}$ for some $0 < \hat{\gamma} < 1$ and there is a larger population of the non-sellers in the economy such that $\eta > \eta'$ for some $0 < \eta' < 1$. Otherwise if $\gamma < \hat{\gamma}$ then a rise in extortionary activity in the institutions that increases corruption (i.e., increases $r_1$) reduces the total welfare.

The next proposition is then immediate.

Proposition 6. Suppose there is buyer-induced holdout in local land acquisition process and the non-local constituency that supports party $A$ is larger than that supporting party $F$ (i.e., $\phi < \frac{1}{2}$). Then a rise in extortionary activity in the institutions that increases corruption (i.e., increases $r_1$) enhances the total welfare if and only if

(a) either the local unit of party $F$ is sufficiently ideological such that $\gamma > \hat{\gamma}$ for some $0 < \hat{\gamma} < 1$ and there is a smaller population of the non-sellers in the economy such that $\eta < \eta'$,

(b) or the local unit of party $F$ is sufficiently profit driven $\gamma < \hat{\gamma}$ for some $0 < \hat{\gamma} < 1$ and there is a larger population of the non-sellers in the economy such that $\eta > \eta'$.

The analysis in subsections 0.11 and 0.11.1 obtains the following proposition that is now easy to prove.

Proposition 7. Suppose there is holdout in local land acquisition process.

(a) If the non-local constituency that supports party $F$ is larger than that supporting party $A$ (i.e., $\phi > \frac{1}{2}$) then
(a) a higher degree of ideological motivation of the local unit of party F unambiguously enhances the total welfare, and

(b) a higher degree of ideological motivation of the local unit of party A unambiguously decreases the total welfare.

(b) If the non-local constituency that supports party A is larger than that supporting party F (i.e., $\phi < \frac{1}{2}$) then there exists some $0 < \tilde{\eta} < 1$ such that

(a) a higher degree of ideological motivation of the local unit of party F increases the total welfare if and only if $\eta < \tilde{\eta}$, and

(b) a higher degree of ideological motivation of the local unit of party A enhances the total welfare if and only if $\eta > \tilde{\eta}$.

0.11.3 Identification of ruling party and Institutional improvements

Institutional changes can only be incremental in the short run. We end our analysis by asking the direction of change in $r_I$ that one would expect as a function of the identity of the party in power. In this regard, from Remark 2 it follows that in a simple-majoritarian democracy, party F is in power if and only if $\phi \eta + (1 - \eta) > 1/2$. Our final result is Corollary 7 that follows directly from the welfare analysis above.

**Corollary 7.** Suppose the political party in power can make incremental changes in $r_I$ and denote this by $\partial r_I$. If $\delta > \tilde{\delta}$ and $\alpha < \tilde{\alpha}$ then the following is true.

- Irrespective of which party is in power, $\partial r_I > 0$ if $\phi > \frac{1}{2}$ and $\lambda - r_I - v < \frac{\gamma}{1 - \gamma}$.

- Irrespective of which party is in power, $\partial r_I < 0$ if

  - either $\phi > \frac{1}{2}$ and $\lambda - r_I - v > \frac{\gamma}{1 - \gamma}$,
  
  - or $\phi < \frac{1}{2}$, $\lambda - r_I - v < \frac{\gamma}{1 - \gamma}$ and $\eta > \tilde{\eta}$ for some $0 < \tilde{\eta} < 1$. 

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• If \( \phi < \frac{1}{2} \) and \( \eta < \tilde{\eta} \), then (a) if \( \lambda - r_I - v < \frac{1}{1 - \gamma} \) then \( \partial r_I > 0 \) if \( F \) is in power but \( \partial r_I < 0 \) if \( A \) is in power and (b) if \( \lambda - r_I - v > \frac{1}{1 - \gamma} \) then \( \partial r_I > 0 \) if \( A \) is in power but \( \partial r_I < 0 \) if \( F \) is in power.

\[0.11.4 \quad \text{Conclusion}\]

In this chapter I retain the basic model of buyer-induced holdout and examined the impact of changes in deeper institutional parameters on the size of holdout, sellers welfare and economic surplus. Interestingly an increase in bureaucratic corruption has a non-monotonic effect on several measures of economic efficiency, in particular holdout and the economic surplus. I have shown that if institutions are weak to begin with, which is likely in LDCs, then a decrease in corruption may, in fact, increase holdout, and consequently reduce economic surplus, a phenomenon I call immiserising reforms, suggesting that LDCs may not have too much of an incentive to focus on institutional improvements. With a decrease in bureaucratic corruption, selling via party F is less attractive for the buyers, thus reducing party F’s political clout, which in turn may increase holdout. When it comes to seller welfare I have shown that an increase in bureaucratic corruption always makes them worse off; however, while the sellers prefer that the opposition party be there, they also prefer that this opposition is not too strong.

In a small extension of the model I have shown the effects of having organised political opposition, typically coming from a local opposition party out of office who exploits the platform to extract greater political benefit, on the non-local welfare as well as on the total welfare of a LDC. While the effects are non-monotonic, for both non-local welfare and total welfare, this non-monotonicity results from an interplay between political parameters such as the size of non-local constituencies, ideological motivations of the parties and the relative size of population of the non-sellers in the economy. Thus it is hard to predict that once a party in power can make incremental changes in the degree of bureaucratic corruption, it would bring institutional improvements to do so. Interestingly this result is irrespective of whether the party in power is pro-industry or not.
In the next chapter I will take a detail look at the interim competition between the political supports for industrial progress and the emerging opposition. It will provide a theoretical framework that considers mechanism for taking informed consent from the landowners on selling their plots. But in presence of institutional imperfections this results in group formation, agitation and can take the form of violence, that carries potential of discarding industrialisation.
Chapter 3
An Economic Theory of Agitation, Group Formation and Political Violence in Land Acquisition

0.12.1 Introduction

Land acquisition for industrialisation in LDCs becomes most challenging when legal-institutional imperfections breach the democratic rights, leading to group-based agitations, even violence. The previous chapters have provided framework to analyse inefficiency arising out of buyer-induced delay, where the focus has been on full characterisation of this new notion of holdout and its implications on two forms of welfare - sellers welfare and the overall economic surplus. In this chapter I abstract away from hold up problems and analyse a framework to help understand the interim political competition, resulting in another form of inefficiency - agitation, group formation and political violence. This chapter will show that in democratic societies while property rights are legally provided so that land seizure is difficult and consent for sale is practiced through voting by the landowners, interplay between the legal-political institutions infringe such decisions and creates potential for political violence, at least at local levels. It will also show that occurrence of inefficiency is subjected to early or late mobilisation of resources for violence by the local polity.

In the recent array of development, with the increasing population pressure and highly fragmented landholdings, availability of land for industry and infrastructure seem to take a central position in driving conflicts. As industrialisation is feasible in vast area of connected land with good infrastructural facilities, it is highly unlikely that such lands are left without any alternative use and more often those are found to be used in agriculture. Land acquisition for such projects thus

\[\text{Note that to an extent, the complementarity of industrial and infrastructural developments} \]
inevitably leads to eviction of people whose lives and livelihoods traditionally surround land, and this often attempted without prior consultation with the affected, resulting in a proliferation of pitched clashes challenging massive investments.\textsuperscript{47} This is because on one hand some of these nations provide efficient institutions to guarantee property rights to poor landholders (for example, India, Brazil) so that forced taking of land is prohibited by law but on the other, the landowners’ perception of having minimal outside option or their high attachment values to land raising concerns on inadequacy of the compensation packages, thereby questioning such redistributive schemes. This chapter however takes a look beyond the redistributive mechanisms and provide an analysis of the conflicts in the land acquisition process from a political economy perspective and in presence of informed consent contributing towards a better understanding of their causes and consequences.

\textbf{Land acquisition - a political issue}

Despite the constitutional provisions and amendments in attempt to resolve the conflicts arising out of land conversions (such as the ‘eminent domain’ laws in India, Brazil), they continually threaten the much needed pace of industrialisation. Evidences suggest that the conflicts are not always driven by the inadequacy of compensation amounts but also by the lack of consultation with the land-losers thereby threatening their democratic rights. The problem goes much deeper with the legal-institutional inefficiencies (in particular towards the adherence of property rights and enforcement of law and order), partisan politics and the provision of feasible ‘outside options’ for resettlement of the dispossessed. Moreover when such conflicts goes beyond the scope of negotiations and agitations take the form of (at least local) violences, highway strikes, suicides, bloodsheds and destruct-

\textsuperscript{47}As mentioned in Chapter 1, such examples include China’s 75,000 local conflicts during 2005 and 2006 and the eviction of 20 million rural farmers between 1996-2005. In India (see the list of incidents in Appendix B), Brazil and Kenya where massive protests impeded billions of dollars of investment from promising industrial projects (see Chapter 4 for details).
tion of properties, they put a serious threat for regional socio-economic growth by hampering future (local) investments.

Given the need for industrialisation, mediation by the local government is more commonly accepted in LDC context than promoting private bargaining. Interestingly the protests of the dispossessed and affected people are more against the mediating state than against the concerned private investors. On one hand this is because displacements for the projects under state-domains such as infrastructure or welfare developments are far greater than the displacements due to industries, and further, private industrial projects are often expedited by the state governments to ensure inflow of investments in states. Further an incumbent government’s support to acquire land comes with the state’s long-run growth agenda of generating income and employment opportunities that feed its political ideologies and partisan benefits, going beyond the scope of the project per se. On the other hand resistance to acquire land often becomes politically viable for some parties especially in attempts to gain political mileage in spaces dominated by other parties. Thus the party typically out of office often lend their support to even minority of resisting landholders, as evident in Singur. In line with Chakravorty (2013), in presence of ongoing information revolution, political agitations favouring the rights of minority of people (too small to win elections) with ‘wedge issues’ or ‘hot button issues’ plays a significant role in partisan politics. This counterintuitively explains the interchangeable roles of parties as well as political personalities as being pro-acquisition and anti-acquisition in favourable settings. In the present neo-liberalisation era land acquisition for industrialisation has become such a wedge issue.

In Chapter 1 (Section 0.4) I discussed involvement of various interest groups

\[48\] I will return to this point with greater detail in Chapter 4.

\[49\] Chakravorty (2013) suggested that in India only around 15 per cent of displacement-impact is due to private industrial and mining developments while 66 per cent of displacement-impact is due to water, transportation, welfare and administrative projects.

\[50\] This explains the partisan support for wedge issues such as immigration or sexuality in Australia and the US and anti-Muslim violence or caste-based reservations in India. For examples on Indian context see Chakravorty (2013).
and their evolution in Indian context, how political parties readily utilise information obtained by these interest groups and how the involvement of the party in power results in (mis)utilisation of government machinery to acquire land. Knowing that resistance involving interest groups (and/or nearby elections) can attract support from political parties which gets more organised with partisan support, the central objective of this chapter is to investigate whether such involvement of politics in the process increases the potential of agitations to turn into violence. Interestingly while agitations against such farmlands acquisition are more commonly turned into protests against the incumbent government, it counterintuitively testifies the motivation for involvement of out-of-office political opposition. Of course one can easily understand that the legal-institutional inefficiency, in particular towards the efficient enforcement of law and order, is critical for such violence to take place.

Motivating Examples

The practical motivation for this chapter comes from a number of recent incidents. First let us consider the case of Singur in West Bengal, an agriculture based state in India. Following from Section 0.3, the scenario evidenced group formation, agitation and political violence, that eventually moved the project from West Bengal to Gujarat. When the West Bengal government brings TATA to develop land in Singur and there were sparks of segregated conflicts, the then political opposition (some time driven by populist agenda) anticipated to gain rural poor support in upcoming Assembly elections (of the year 2011) through generating support of Singur landowners who may not want to sell their plots. Although the agitation was primarily organised by the Gana Unnayan O Jana Adhikar Sangram Committee (Committee for Public Development and People’s Rights Struggle) and the

51 For a detail discussion on this in Indian context one can also refer to Jenkins (2012).
52 It is easy to find that the incidents of politicised and violent land conflicts are typically seen in LDCs where inefficiency of the legal-institutions are endemic. Further, in contrast with the developed nations where land conflicts are being resolved through legal proceedings, number of court cases are significantly low in less developed ones where landowners often struggle to afford the litigation costs and/or prolonged periods of court judgements.
Nandigram Jomi Uchhed Birodhi O Jana Shakti Raksha Committee (Nandigram Committee to Resist Land Ousting and Save People Power), it took the form of violence after being heavily politicised and eventually scrapped despite being momentous for the state’s industrial development (see for example, Sarkar, 2007 and Roy Chowdhury, 2013).

Cases of such violent land conflicts are not new. It was evident in the century old enclosure movement or more recent protests in Tanzania, East Africa in 1993, when Twiga Portland Cement Company (TPCC) attempted to acquire 61 square kilometre of land in exchange of severely low compensation and denied the promised resettlement area. As mentioned in Section despite the legal provision of constitutional rights, the Land Acquisition and the Physical Planning Acts, landowners have not even received any chance to consult or negotiate with authoritative bodies. Further to this, TPCC practiced a forceful eviction. Consequently, landowners’ grievances turn into violent protests that trigger after being heavily politicised (Kombe, 2010). Similar incidents of violent land conflicts are evident from across the nations such as Kenya, Brazil and Cambodia. Remarkably in most of these cases, land conflicts turned into violence when the process of eviction was forceful (see for example Sarkar, 2007 and HRW, 2009).

53 There have been struggles against land acquisition that entails political involvement across India in recent years that inspire our current work. Political violence in Nandigram (2006), when the West Bengal State Government demanded 10,000 acres (4,000 ha) of land to develop a Special Economic Zone (SEZ) by the Indonesian-based Salim Group for building a chemical hub, gives us a very similar picture (See Chapter 1, Section for a detail on this or refer to for example Banerjee et al., 2007). Protest in Raigad district of Maharastra, against Mahamumbai SEZ of Reliance Company, protest against Himachal Pradesh Government when land was being taken to build an international airport and air cargo hub at Gagret in Una district (Panwar, 2008 and Roy Chowdhury, 2013) are only a few among them.

54 The rapid increase in price for wool resulted in large scale eviction of people from their traditional livelihood primarily to meet the rising demand of sheep-grazing land in pre-industrial revolution more than 100 years old England (see Fairlie, 2009).

55 In Kenya, in 2009, when Nuove Iniziative Industrials sri (NIIsri), an Italian company, propose to acquire 50,000 hectare of land in Dakatcha Woodlands, to develop a bio-fuel plantation and manufacturing hub. Protests from local communities and environmentalists scrapped the project despite being granted licence from NEMA (Maggi and Veit, 2013). In Rio de Janeiro during 2009, protests were reported when the State government expropriated around 7,200 hectares of productive farm land to build an industrial complex CISPA (Pedlowski, 2012). There are increasing number of protests against forceful evictions in recent Cambodia where families are evicted from their livelihoods even without compensation (Rudia et al., 2014).
Role of democratic institutions and political violence

It is commonly perceived that if democratic institutions are relatively less perfect to sustain the rights (property rights in concern) of its citizens, societies may end up in having more frequent incidents of violent conflicts. Of course the legal provisions of property rights are not identical in countries. While the constitution guarantees land ownership as a fundamental right in some countries such as in India, it is not well defined in others such as in China (see Li, 1996). Incidents across the nations suggest that the issue of land conflict is persistent irrespective of the extent of provision of property rights. In this chapter I thus restrain our focus from the inefficiency in property rights per se and focus on the interplay between imperfect legal and political institutions that fail to uphold these rights.

The other eminent factor of democratic societies is the freedom for expressing opinions. In this context it is crucial that landowners must be aware of the net local benefits of industrial projects and being consensual to it. But in conflicting scenarios it is often found that the landowners’ grievance pitch up in absence of any consultation regarding such conversions. This follows enactments of the ‘consent’ clause as part of social impact assessments in land acquisition processes. This chapter incorporated such phenomenon by considering that landowners’ informed consent on selling their land comes through voting. While the absence of voting rights empowers the Government to suppress the protesting voices, presence of it inevitably establishes landowners’ perceptions regarding development to be considered. However efficient enforcement of law and order is crucial to preserve this right as otherwise it is easy to distort an apparently free and fair voting system and even to execute violence, especially when industrialisation comes with partisan benefits beyond the implementation of a local project. This chapter includes such inefficiency of the institutions but restraint from any informational fallacies that distort landowners’ voting decisions.

Agitations in the process of land acquisition then boils down to two crucial issues: (i) the compensation package offered to the dispossessed landowners and

\[56\] I will discuss the social impact assessment programs in Chapter 4, Section 0.13.
the political influence on the issue. While in most scenarios the monetary compensation has been criticised as being the root cause, the problem often lies in the non-monetary provision of rehabilitation packages including support for resettlement of the dispossessed and lack of consultations with local self-governing entities and landowners. These raises concerns for policy makers and countries are undergoing continuous revisions of land acquisition processes to reduce inefficiencies but focusing mostly on the compensation mechanisms. However, renegotiations over compensations or its upscaling fails to establish a long run solution for such conflicting scenarios. As evident in India, scope of renegotiations over prices of land had resolved conflicts in Rampur Hydro Project in Himachal Pradesh, highway project in Gujarat or Yamuna Expressway project in Uttar Pradesh but an upscaled compensation cannot save the project in Singur, West Bengal. Owning to the violent land conflicts in recent India the parliament passed a new act on land acquisition in 2013, replacing the age old Land Acquisition Act of 1894, that includes the increment of legal limit on land prices and mandated consent of the project affected people (The Gazette of India extraordinary, 2013). But even such benchmark increment of monetary compensations fail to resolve conflicts as between 2013 and 2014 alone there were more than 250 conflicts at attempts of acquiring land with this increased compensation. This chapter aims to explore such phenomena in greater detail.

Amongst the fastest growing economies such as Africa, India and China where conflicts are rising (both in number and severity) proportionately with rising demand for land conversions, inefficiencies amid legal and political institutions have repetitively turned to be the central issue. Of course the revised laws are not perfect and their failure in providing definitive guide persists, it is crucial to analyse the inefficiencies in the enforcement of law and order that fails to uphold


the constitutional provisions. There have been multiple occasions when poor land registration and land development such as in Africa made land transfer both costly and time consuming affair, coercive land switches and absence of consequential payment schemes such as in China, restricted role of land markets and lack of scientific basis for land valuation such as in India, led to arbitrariness of the revised laws. In this present chapter I thus restrain my focus from determining any compensation mechanisms by considering an exogenous valuation procedure and concentrate to investigate on causes of such violent conflicts in light of political-economic construct.

This chapter thus analyse situations when (i) compensation amount is exogenously determined and is above a landowner’s reservation utility, (ii) the landowners’ informed consent to sell their plots of land are taken through voting. Since the acquisition of land is politicised, landowners must join a party that supports them in the cause. Thus landowners who agree to sale their plots of land have to vote for the pro-industry party that strengthen it to fight against the opposition. Otherwise the landowners have to vote for the opposition party to save their land. It is of interest to investigate whether such involvement of political parties leading to group formation result in violence in the process of acquiring land. As industrialisation has become an ‘wedge issue’ politics and parties’ political benefits go beyond the scope of project implementation in the locality, their commitment to approach such an issue contribute crucially in determining the extent of their support (both for and against such acquisitions). While the power of early and costly mobilisation of resources are the devices for parties to fulfil their commitments, I argue that it is the institutional infirmities especially towards the enforcement of law and order in implementing land acquisition programs result in inefficiency. This not only eases the politicisation of land acquisition process, if and when the

59 Failure to bring clarity in the definitions of ‘market value’ of land, limitations on the usage of ‘eminent domain’ law and the determinants of ‘public purpose’ of proposed projects have raised issues in several incidents in the LDCs where poor land administration, faulty land records and thin land markets are endemic. A greater detail on this has been included in Chapter 4.

60 In Africa only 10 per cent of rural lands are registered and more than 202 million hectares are left underdeveloped. See <http://www.business-standard.com/article/economy-policy/need-for-scientific-land-valuation-to-curb-realty-conflicts-study-114012200325.html>
political parties intend to do so, but also eases the mobilisation of resources for political violence to take place, at least at local levels.

Testimony for such political involvement comes with the following examples. In contrast with the evidences of Tata Nano project in Singur, SEZ project in Nandigram or the TPCC project in Tanzania where conflicting scenarios turn into armed violence after being heavily politicised (as mentioned earlier), evidences such as the cases of Tata Metaliks and Century Textiles and Industries Ltd. projects in India shows that even if the discrepancies in compensations and resettlement arrangements have raised media concerns, poll boycott and scattered protests, lack of political support reduced the intensity of these protests and did not turn into armed violence

Such incidents more prominently suggest that politicisation of the land acquisition process carries potential for violent land conflicts and our present work aims to explore this connection in some detail.

The objective of this chapter is to build a theory of land acquisition where the legal and political institutions are inefficient to uphold democratic decisions and studies the consequences of partisan commitment power on political violence in land acquisition processes where political competition leads to group formation in a locality in concern.

Theoretical Framework

I consider an economy with weak legal (fails to implement proper law and order) and political (fails to uphold democratic decisions) institutions whose economy

\[^{61}\text{In 1992, 217.23 acres of mono-crop land was acquired in Kalaikunda, near Kharagpur India, to build pig-iron manufacturing plant by Tata Metaliks (TML), under the pro-peasant Left Front governance. No political party came to support those farmers who were unwilling to give up their land and the acquisition process was smooth even with improper monetary compensation and without job or land as the promised resettlement arrangements. Three years later when Century Textiles and Industries Ltd. (CTIL) aimed to acquire another 526.71 acres of farmland to build a sponge and pig-iron industry, there were series of failed private negotiations, stiff resistance from the landowners, memorandum for upcoming parliamentary election boycott (of 1996), but due to lack of political support from any opposition parties and resistance from ruling left parties this brief yet significant localised peasant movement eventually lost its intensity (Guha, 2007a, 2007b).}\]
is based on land (for example agriculture or forestry), that comprises a private industrialist who wants to buy multiple plots of land to build an industrial hub where perfect complementarity is normalised to one. There is large fragmentation of land and each landowners possesses an equally productive piece of land in similar use where the use-value of these plots are identical to all landowners. Landowners are considered to have full property rights over land so that they can accept or deny sale of their plots when applies. The ruling (local) political party, aiming to achieve global political return that goes beyond the territory of any local success, brings the private investor to the village for building an industrial project that requires land.

The private industrialist has a positive return from the project with the price of land being exogenously determined by law and I assume that buyer is a non-actor when it comes to deal with the sale of land. However, the buyer affords to pay a price per unit of land that sufficiently covers the use-value of land to its current owner and for simplicity of the formal analysis this use-value of land is normalised to zero. Local political opposition supports the landowners who are against the sale of land and the party’s motivation to do so is again driven externally. Democratic rights are preserved in the locality in the sense that there is no forced sale and in absence of it landowners announce their decision of selling or retaining their plots of land by voting for either parties contesting over implementation of this project. Since the local industrialisation is subject to the outcome of political contest, this endogenised party strengths act crucially in parties’ decision to mobilise resources to fulfil their commitments. I rule out the possibility of abstention in this model. This ends up in group formation in the village and the decision of conversion of land is dependent on the relative strengths of these two groups.

This process of land conversion brings a potential for violence due to the legal-political imperfections in the economy when the local political opposition initiates it. Pursuance of violence yields a cost to the parties that is self-financed by them and this cost decreases higher the degree of imperfections. The violence is also privately costly to the villagers. This cost is normalised to zero if a concerned landowner is in support for the winning party and it is positive if he remains in
the party that loses in violence. I analyse such imperfections in two scenarios - one in which the local polity cannot mobilise resources for post-voting violence earlier in the process and such late mobilisation of resources makes the political decision to follow landowners’ voting decision, thereby the strengths of parties. The other is when the local polity can mobilise resources for post-voting violence early in the process, before the landowners even cast their vote for and against industrial progress, where parties’ early or late mobilisation of resources for violence is common knowledge.

Main Results

Our first main result shows that political violence in the process of land acquisition occurs only if the local political parties can indulge in early mobilisation of resources for post-voting violence. In presence of legal-institutional infirmities that eases such early mobilisation of resources, if democratic institutions are sufficiently imperfect and the local drive for industrialisation is sufficiently large so that the political rent achievable from violence exceeds its cost to the parties, then the equilibrium outcome involves violence. In such a scenario the equilibrium strength of the pro-industry party is higher, making industrialisation more probable in the locality. Otherwise if the legal-institutional infirmities are relatively low so that local polity cannot mobilise resources for post-voting violence early in the process but must wait to make their decision once the landowners have announced their support for either parties, then the equilibrium outcome never involves any armed conflict. In such a scenario, there is always a possibility that all the lands are being converted for local industrial use and the entire process is completed peacefully. Thus political parties’ resource mobilisation power, rather than the mere involvement of the ideologically conflicting political parties plays crucially in resulting political violence in equilibrium. In other words, if voters can use their votes to affect the incentives for violence then we show that group formation is such that violence is minimised. On the other hand, if parties carry their agendas of post-voting violence, then it is not clear that they can implement voting patterns that are successful in avoiding violence.
Our second main result shows that when legal-institutional imperfections are sufficiently low so that parties cannot mobilise resources for post-voting violence early in the process, then in presence of sufficiently large democratic imperfections there can be multiple equilibria. In such a scenario there exists a possibility of low-level equilibrium trap where conversion of land is significantly small, pointing out that even a sufficiently high monetary compensation cannot ensure efficiency in equilibrium (i.e., full conversion of land without any political violence).

The benchmark analysis establishes that a perfect institutional framework restores efficiency as expected. But efficiency can still be achieved with sufficiently perfect democratic institutions, irrespective of whether the legal-institutional infirmities make the local polity to indulge in early or late mobilisation of resources for post-voting violence. However, with parties’ power to mobilise resources for post-voting violence early in the process, even sufficiently perfect democratic institutions create possibilities of violent agitations that discard local industrialisation.

Among other results, I also show that given a choice the political parties do not always prefer to mobilise their resources early. There are scenarios when the local opposition can be indifferent between early or late mobilisation of resources for post-voting violence. Interestingly it can also choose a late mobilisation of resources even when doing so results in successful acquisition of land. This is because whether the local drive for industrialisation is large enough (determining whether the majority of landowners vote for or against the industrial project), crucially determines the parties’ political mileage from the project. Since in this framework landowners’ voting for the project determines the relative party strength in post-voting violence, landowners contribute crucially in parties’ decision to mobilise resources early or late in the process by forming groups for and against land acquisition. Further, since the threat from violence also puts cost to the landowners, it crucially determines whether efficiency will be achieved in equilibrium or not.

Related Literature

Inefficiency in land acquisition for infrastructure and industrial developments have
long been subjected to economic literature. The most crucial reasons for such inefficiencies have been the compensation mechanisms and the contiguity issue that attracted a great body of literary works including that of Cao et al. (2008), Keith et al. (2008), Kominers and Weyl (2011), Ghatak and Ghosh (2011), Singh (2012) and Ghatak and Mookherjee (2014). There is one strand of literature that considers endogenous price determination of land, where determination of compensation follows from direct negotiation as in Cao et al. (2008), through auction mechanisms and resolving further geographical disconnects as in Ghatak and Ghosh (2011). It also considers compensation rules with ex-ante incentives of tenants and landlords towards productivity enhancing investments that affect decision of selling land ex-post to an industrial developer as in Ghatak and Mookherjee (2014). The other strand of literature such as of Keith et al. (2008), highlights the importance of acquisition procedures including property valuations be it by independent agencies based on market value approach, through replacement cost model (especially for economies with thin land markets) or negotiations. This also includes Bhat-tacharya and Kundu (2014) that recommends minimum price legislative policy to submerge protests by land owners but that must effectuate communally to signal the demand for redistribution to the government. While my present work bypasses the former strand of literature by considering a compensation mechanism that is exogenously given, it captured the essence of the later by considering procedural mechanisms such as public declaration of land price and landowners’ informed consent towards the acquisition of land. In contrast to the empirical study by Ghatak et al. (2013) I show that in presence of legal-political institutional imperfections inefficiency can result even if there is no discrimination in compensations and in presence of consultation with landowners. This also stands in contrast with Ghatak and Ghosh (2011), Singh (2012) and Kominers and Weyl (2011) as it obtains inefficiency without concerning on contiguity issues.

Our present work considers the essence of group formation for and against land acquisition, as raised by Ghatak and Banerji (2009), by conceding that decision on the sale of land, amidst the uncertainty of institutional benefits from saving large cash or government’s monthly income schemes, divides landowners from the same locality into two groups. Due to missing financial markets in LDCs, lack of
complementary human capital, exogenous income and consumption shocks or a combination of any, landowners often differ in terms of their preference for non-cash payments over ‘any’ lump sum amount owing to the differing reservation utilities from current holdings. Studies such as of Ghatak and Banerji (2009) and Roy Chowdhury (2013) found that group of landowners even protest against acquisition of land to resist such lump sum cash inflow. While there exists a group of landowners’ concerning over financial security and rehabilitation such that land selling does not affect their future productivity, there is another group for whom land as an intrinsic asset carries huge potential for investment. Ghatak et al. (2013) found that those who inherited land rather than invested in it, are relatively more interested to sale their land. But unlike this stand of literature, I show that group formation is resultant of political intervention and partisan power of mobilising resources for post-voting violence towards industrialisation. Moreover in my framework it is shown that inefficiency is neither due to differentiated reservation utilities stemming from discriminated outside options (as studied in Ghatak and Banerji, 2009 and Ghatak et al., 2013) nor due to any preference irrationalities (as seen in Roy Chowdhury, 2013).

I share common perspective with Banerjee et al. (2007) that private bargaining has many inefficiencies and concurs to the crucial role of local or state government as a mediator, that has been increasingly exercised in many economies over the last two decades (see for example Sheshinski and Lopez-Calva, 2003, Bortolotti and Siniscalco, 2004, Cavaliere and Scabrosetti, 2008 and Estrin et al., 2009). As discussed earlier, acquiring land often becomes wedge issue politics that encourage political opposition to extend its support to unwilling and poor landowners even when the size of landowners are insignificant to build a winning constituency. While this essence is captured in our framework that aligned with the incidents discussed earlier, the present work differs from a number of political-economic studies, from Strom (1990) to Van-De-Wardt et al. (2014) and Hillygus and Shields (2014), who analysed the involvement of political opposition over wedge issues based on direct rewards and risks in forms of electoral outcome, government destabilization or strategic coalitions. It also differs from Roy Chowdhury (2013) that considers political parties to be decisive in membership sizes that affects
bargaining power over compensation with the buyer but does not address party competition or voluntary membership and certainly not violence. Instead I show the impact of such wedge issue politics on the violence over land acquisitions that the LDCs are facing currently and also consider party competition with voluntary membership. Also in contrast to Dixit (1987) I show that early mobilisation of resources in contests is not driven by a parties’ local popularity and such early mobilisation of resources to post-voting violence makes polity to lead decisions in fetching the fate of local industrialisation. In the present framework a party can prefer early mobilisation even when it is less probable to win in contest and it is legal institutional inefficiencies that makes it easier for parties to indulge in political violence.

In line with Ellman and Wantchekon (2000) I also consider a framework for two party competition. Ellman and Wantchekon (2000) consider a party to be ‘strong’ if its policy proposal faces no threat of disruption from an inside or outside agent, which otherwise weakens the party and suggested that if the strong party wins it sticks to its ideal policy but if the ‘weak’ party wins then it always implement a policy that is a compromise with the threatening agent. The present chapter has a flavour of it but unlike Ellman and Wantchekon (2000), in our framework party strength is endogenized. Further, while decisions follow from an apparent free and fair local voting in our model, it also captures the essence of political clientelism following a strand of empirical literature such as Kitschelt and Wilkinson (2007), Bardhan et al. (2009), and Bardhan and Mookherjee (2012) who found that politics in LDCs such as in (rural) India, exhibit clientelism where local voters join party clubs. Further in contrast to Ray (2007, Ch. 14) and Bhattacharya and Kundu (2014) I do not consider any information gap to play a role in the political economy of redistributions and/or in violent protests and show that inefficiency results even in absence of any informational discrepancies. This chapter also stand in contrast with the conflict literature such as Mitra and Ray (2014) where conflict is driven by economic changes such as varying land prices within the groups.

Finally the present work stands in contrast with the one developed in Chapter 1, Section 0.4, that shows how the interplay between imperfections in democratic
institutions like bureaucratic corruption and extra-legal influence of political parties, state machineries and motivated civic societies induces a buyer to strategically delay land acquisition processes. In the present framework buyer is inactive when it comes to determine price of land and the quantity of sale. It also abstracts away from any hold up issues resulting from strategic bargaining (seller augmented), inconsistency in bargaining protocols (buyer augmented), contingency issues or due to information asymmetry (the literature is captured in the literature review section of Chapter 1). Here I show that institutional imperfections that eases the mobilisation of resources for violence, not only can reduce the size of industrial land conversions but also result in political violence. I also show that resistance can occur without any rent-seeking motivation on the part of political parties, thereby sharing the premise of Bhatttacharya and Kundu (2014) but contrasting that of chapter 1.

The remainder of the chapter is organised as follows. In Section 0.12.2 I present the formal model, Section 0.12.4 comprises the analysis of the model by considering the scenario in which parties practice *late* mobilisation of resources for post-voting violence where political parties’ decision to indulge in violence follows the landowners’ voting outcome. The summary of results are given as propositions, followed by discussions and proofs. Section 0.12.5 considers an alternative scenario where parties pursue *early* mobilisation of resources for post-voting violence where landowners’ voting decision follows the strategy choice of the parties. In this section I analyse the framework of such early mobilisation of resources and then compare the results with the scenario when parties pursue *late* mobilisation of resources. All the results are then summarised as propositions and discussed along with the subsequent proofs. Section 0.12.6 concludes the chapter.
0.12.2 The formal model: Local economy and landowners’ reservation utility

The model considers a representative locality whose economy is based on land that comprises a set \( N = \{1, \ldots, n\} \) of landowners each holding a unit plot of equally sized land. These plots are privately productive (for example, agriculture, farming, etc.) to the landowners each of whom yields an identical utility \( v \) from their respective plots. This implies that (i) all lands are equally productive in agriculture, (ii) all landowners have same outside option, and (iii) all are equally skilled in farming (or in their respective professions). For simplicity of the model I normalise this utility to zero, i.e., \( v = 0 \).

Landowners’ property rights

The model assumes that the landowners have full property rights over land so that they can deny sale of their plots if and when a proposal for sale arises. This assumption is necessary to abstract away from land acquisition issues arising out of inefficient and overlapping land entitlements, forced sale and associated transaction costs. This model abstracts away from any such hold-up problems and denotes by \( k = \{0, \ldots, n\} \), the number of landowners who are willing to sell their respective plots.

Industrialisation and exogenous price of land

Industrialisation is a political process (as discussed in section 0.12.1) and the local polity involves two parties called \( P \) (who is a ‘pro-industrial’ party) and \( O \) (who

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\(^{62}\) One can consider \( v \) as the reservation utility of a landowner that equates the landowner’s valuation of his plot and an opportunity of sale must involve a price offer at least equal to this reservation utility. This is now enacted by many countries around the world, both developed and LDCs to avoid problems arising out of landowners dissatisfaction in an occasion of sale.

\(^{63}\) This is a simplifying assumption to abstract away from land acquisition issues arising out of locational and ecological variety of the land, lack of skill variety or skill formation programs that could result in hold-up problems.

\(^{64}\) More on this is discussed in Chapter 1 or see Alston et al. (2012).
‘opposes’ the sale of land). Party $\mathcal{P}$ brings with it a buyer who wishes to build an industrial project and is ready to pay a unit price $p > v(= 0)$ that is determined exogenously by legislation.$^{65}$

**Complementarity and buyer’s return**

In this framework perfect complementarity is normalised as the minimum number of plots that is required to build the project is one, so that the buyer’s return from the project, $V(k) = 0$ if $k < 1$. Otherwise if $1 \leq k \leq n$ plots are used to build the project, it gives a total return of $V(k) > 0$ to the buyer, where $V$ exhibits an increasing returns with respect to the plot-size to the buyer, in particular $V(k + 2) - V(k + 1) > V(k + 1) - V(k)$ for all $k = 0, 1, \ldots, n - 2.$$^{66}$ Of course the project is feasible for the buyer if and only if $V(k) \geq kp$ for all $0 \leq k \leq n$ and I assume that $V(1) > p$ for the project. These two together imply that the buyer wants to buy whatever number of plots are available for sale. Throughout the chapter I will consider that the buyer is a non-actor when it comes to deal with the sale of land.

**Group formation and political return for parties**

Incentive of local polity to involve in the land acquisition process comes from their respective political returns where party $\mathcal{P}$ earns a political return if the project takes place but this return is driven by some external inducement beyond the implementation of this project. Party $\mathcal{O}$ that opposes the sale of land, do so again

$^{65}$One can easily relate $p$ as arising out of a minimum price legislation, where this minimum price exceeds the sellers’ valuation for their land. Such enactments prevail in many developed and LDCs in order to tackle seller dissatisfactions due to inadequate compensations. Hence in this framework I assume that any problem regarding unfair compensation has been already resolved.

$^{66}$This framework allows for flexibility in terms of project implementation with any plot size $(k \geq 1)$ and thus abstracts away form the problems associated with assembling large scale land and the failure of the project due to partial acquisition of land. For discussions on such issues see for example Miceli and Segerson, 2007, 2011 and O’Flaherty 1994.
due to the political return earned elsewhere.\textsuperscript{67} \(O\) announces its presence in the village to support the landowners who are not willing to sell their plots. Whether the project will be implemented or not in the locality is decided over a contest between these parties. This ends up in group formation in this village where villagers announce their decision of selling plots by voting for either parties but cannot abstain from membership. The political return to the parties is denoted by \(b\) and I define \(b := b(k)\) where \(b(\cdot)\) is increasing with respect to party membership strength but the marginal return is constant, in particular \(b(k) = k\). If the project is implemented then party \(P\) receives a political return of \(b(k) > 0\) while party \(O\) receives \(-b(k)\). If the project is scrapped then party \(P\) receives a political return of \(-b(k)\) while party \(O\) receives \(b(k)\). An obvious assumption here is that the political returns are insignificant or null if no landowner wants to sell their plots, such that \(b(0) = 0\).

**Political violence and its costs**

Due to imperfections in the political market the matter doesn’t end there and in spite of apparent free and fair voting in the locality there is a chance of political violence, in particular once the villagers have made their choices. While the parties may or may not be able to mobilise resources early for the post-voting violence, the success of violence (if used) depends on the relative size of party memberships. If violence takes place then I denote by \(\pi\), the probability with which \(P\) wins in violence. I assume that \(\pi := \pi(k)\) with \(\pi(\cdot)\) increasing in party \(P\)’s membership strength. In particular \(\pi(k) = \frac{k}{n}\), for all \(k = 0,1,\ldots,n\) so that \(\pi(0) = 0\) and \(\pi(n) = 1\). As \(N\) is sufficiently large, let \(\pi(1) < \frac{1}{2}\). If \(P\) wins the project gets implemented with \(k\) plots that its member landowners then sell with the unit price \(p\), but if \(O\) wins then there is no land sale and the project gets scrapped. Of

\textsuperscript{67}The involvement of Indian National Congress party in the land acquisition in Yamuna Expressway project in Uttar Pradesh was one of their 2012 Assembly Election agenda (see <http://archive.indianexpress.com/news/from-bhatta-parsaul-to-dalit-homes-rahu.../921057/> or the involvement of Trinamul Congress (TMC) in cases of Singur and Nandigram in West Bengal have claimed to be given significant political mileage to the party in upcoming state assembly election (see for example Chakravorty, 2013).
course, any uncontested violence wins. Moreover, since there is no forced sale the project is automatically abandoned if no landowner agrees to sell their plots. Note that violence is costly to the parties as well as to the landowners. In this respect, let $c > 0$ be the individual cost of violence (if it takes place) to the parties that they finance themselves to pursue violence. Let $d \geq 0$ be the individual cost to landowners owing to the loss of welfare resulting from the violence. Precisely, $d$ is normalised to zero in case a landowner supports the winning party but $d$ is positive if he supports the party that loses in violence. Given these costs of violence both of the political parties can choose to accommodate (strategy $A$) with each other in consent to project implementation, otherwise, party $O$ can choose to initiate violence (strategy $F$ for fight) to which party $P$ can retaliate (choose $F$).

**Payoff of landowners**

In absence of any political violence, if $0 < k \leq n$ landowners agree to sell their plots then each of these landowners receives a price $p$ from the sale. Hence the net utility of an individual landowner who joins party $P$ is $p - v = p$ (since $v = 0$). A landowner who joins party $O$ continues to receive the utility $v = 0$ from keeping his plot. However, in presence of political violence the outcome is stochastic and the expected payoff of those $0 \leq k \leq n$ landowners who support party $P$ is $\pi(k)p + (1 - \pi(k))(-d)$ while that of the landowners support $O$ is $(1 - \pi(k))0 + \pi(k)(-d)$.

**Timeline**

The framework yields a dynamic game of complete information. This section considers that the parties cannot pursue an early mobilisation of resources for post-voting violence and the decisions then comply with the following timeline:

- *Exogenous price announcement:*
Stage 0: Unit price of land $p$ is announced exogenously by an authority who may not be directly involved in the land acquisition process;

- Voting phase:
  - Stage 1.1: Landowners independently and simultaneously determine party memberships where membership is irreversible and common knowledge.
  - Stage 1.2: Two groups are then formed - landowners who are willing to sell their plots join party $\mathcal{P}$, others who are not willing to sell join party $\mathcal{O}$;

- Political conflict phase:
  - Stage 2: Once the size of membership for each party is determined, party $\mathcal{O}$ chooses between $A$ and $F$;
  - Stage 3: Observing $\mathcal{O}$’s choice, party $\mathcal{P}$ chooses between $A$ and $F$;

- Outcome on local industrialisation:
  - Stage 4: Outcome is determined and if the project is implemented the unit price of land $p$ is delivered to each of the member landowners in $\mathcal{P}$, otherwise the project is scrapped and no land sale takes place. The game ends here.

In what follows I characterise the sub-game perfect Nash equilibrium outcomes of this dynamic game denoted by $G_{\pi,c}$. The central objective of the chapter is to find the conditions under which democratic imperfections lead to political violence where,

**Definition 2.** Political violence is a hostile or aggressive collective struggle persuaded to achieve political goals that involves strikes, riots or agitations and protest movements. In the game $G_{\pi,c}$ political violence takes place when both of the political parties choose to play $F$. Otherwise there is violent opposition when only one party plays $F$. 

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Voting Phase
Stage 1.1: Landowners independently and simultaneously determine party memberships where membership is irreversible and common knowledge.

Stage 1.2: Group formation - landowners who are willing to sell their plots join party P, otherwise they join party O.

Political Conflict Phase
Stage 3: Party P chooses between A and F - there is either violent opposition or political violence.

Outcomes on local Industrialisation
Stage 4: All landowners who agreed to sell their plots and joined party P are now paid the per unit price \( p \), there is either full or partial conversion of land, the game ends.

Figure 5: Timeline of the game \( G_{\pi,c} \)

Since execution of violence is a costly process for the parties, political violence is not worthy for the parties unless they get support from the local landowners. It is a collective struggle because the probability of any party winning in the conflict is directly related to the number of landowners support the party in conflict, while participation in conflict is as well costly to the landowners. However, legal-institutional inefficiency eases the execution of such violence for the parties. In this regards I say that,

**Definition 3.** Democracy is imperfect when political institutions are not strong enough to uphold the local electoral outcomes leading to possible violence where the degree of imperfections of democracy is inversely related to the cost of violence \( c \) to the political parties. Hence, democracy is perfect if \( c = \infty \).

In section 0.12.4 I analyse the above time frame when the legal-institutional infirmities are relatively low so that the local political parties cannot indulge in an early mobilisation of resources for post-voting violence but must wait to make their decision once the landowners have announced their support for either par-
ties. In such scenarios when mobilisation of resources for post-voting violence is late, parties’ decision follows their relative membership strengths stemming from landowners’ voting decision. In Section 0.12.5 I consider an alternative scenario where the legal-institutional infirmities are relatively large so that the local polity can easily afford to take their decision prior to landowners’ voting. Thus they pursue an early mobilisation of resources for post-voting violence.

0.12.3 Perfect Democracy

Democracy is perfect when political institutions strongly uphold the electoral outcome and/or the strong legal-institutional support makes political violence unaffordable for the parties. In this model where price is determined exogenously I use perfect democracy as a normalised benchmark where two things are granted: (a) it is rational for the buyer to buy all available plots and (b) it is individually rational for each landowner to sell his plot irrespective of the decisions of other landowners. The first one is guaranteed by the assumption that the project yields an increasing returns (with respect to the number of plots being sold for the project) to the buyer, which implies buyer’s average return from the project rises with the number of plots sold and the buyer’s minimum average return exceeds the unit price he pays for plots, i.e., $V(1) > p$. Hence it is a strictly dominant strategy for the buyer to purchase all available land. The following Lemma deals with perfectly democratic scenario.

**Lemma 5.** If democracy is perfect then the process of land acquisition is peaceful and the unique sub-game perfect equilibrium (SPE) is $k^* = n$ where all landowners unanimously decide to sell their plots of land.

Under perfect democracy, a single landowner sells his plot when no one else is selling if and only if the utility he gets from the sale is higher than what he gets from keeping the plot, i.e., $p > v$. I impose this condition that the unit price of land $p$ is sufficiently large to compensate the landowner for selling his land by normalising $v$ to zero. This condition then ensures that it is individually rational for all other
landowners to sell their plots for a higher payoff of \( p \) than resisting the sale and get 0. Hence under ideal circumstance (without any political imperfections) it is a strictly dominant strategy for any landowner to sell their respective plots. As the buyer is a non-actor in our model he earns a net profit of \( V(k) - pk \) from the successful implementation of the proposed project, otherwise he earns 0 in absence of any willing land-seller. Hence under perfect democracy the unique Nash Equilibrium denoted by \( k^* \) is achieved when all the landowners unanimously decide to sell their plots of land and \( k^* = n \). Given perfect democracy as a normalised benchmark I now turn to analyse the impacts of imperfect democracy on the equilibrium of the model. Given the outcome under perfect democracy, I ask how do post-electoral uncertainties due to the ease of executing violent opposition affect incidence of political violence and impact the size of industrialisation? Who is responsible for political violence? Is it economics driven by individual incentives or politics driven by party incentives?

0.12.4 Politics with late mobilisation of resources for post-voting violence

One of the endemic characteristics of less developed nations is their weak legal-institutional support that fails to enforce proper law and order in the society. Democratic rights that are more often than not provided by the constitution, fails to sustain in the less developed nations due to the inefficiencies in the legal-institutions - higher degree of inefficiency brings down the cost for the political parties to distort the democratic outcomes. As defined earlier, democracy is imperfect when political institutions fails to uphold the electoral outcome and/or the weak legal-institutional support reduces the cost of political violence for the parties. Under imperfect democracy whether the project is to be implemented or stalled is decided in the following game of conflict where each party can either choose to accommodate (strategy \( A \)) or to fight (strategy \( F \)). As mentioned in section 0.5 if both parties accommodate, then the project is implemented using \( k \) plots and the payoffs of parties \( P \) and \( O \) are \( b(k) \) and \( -b(k) \) respectively. Other-
wise, a party can indulge in a costly fight where cost of violence is a measure of the degree of legal-institutional imperfections. If party $O$ is the only party that fights then the project is scrapped and the respective payoffs of $P$ and $O$ are $-b(k)$ and $b(k) - c$. Similarly, if party $P$ is the only party that fights then the respective payoffs of $P$ and $O$ are $b(k) - c$ and $-b(k)$. Finally, if both parties fight then the outcome is stochastic and the expected payoff of party $P$ is $b(k)[2\pi(k) - 1] - c$ while that of party $O$ is $b(k)[1 - 2\pi(k)] - c$.

Denote the political rents from violence (net of costs) of party $P$ and $O$ by $R_P(k)$ and $R_O(k)$ respectively. In any sub-game perfect equilibrium, for violence to take place it is necessary that each party’s political rent from violence is strictly greater than its cost. Note that for party $O$ to initiate violence it must be true that $b(k)[1 - 2\pi(k)] - c > -b(k)$ and for $P$ to retaliate it must be true that $b(k)[2\pi(k) - 1] - c > -b(k)$. These yield

$$R_P(k) = \pi(k)2b(k) > c,$$

and

$$R_O(k) = [1 - \pi(k)]2b(k) > c.$$

Clearly given $\pi(\cdot)$ and $b(\cdot)$ these political rents have following characteristics: rent of the industrial party $R_P(k)$ is strictly increasing in $k$ for any $0 < k < n$ and its marginal rent from violence is also increasing in its own membership size so that $R_P(k + 2) - R_P(k + 1) > R_P(k + 1) - R_P(k)$, for all $k = 0, 1, \ldots, n - 2$. The political rent of the opposition party $R_O(k)$ is strictly increasing in $k$ for any $k < \frac{n}{2}$, maximises at $k = \frac{n}{2}$ and falling thereafter. Moreover, its marginal rent is diminishing with respect to $k$ (or increasing in its own membership) so that $R_O(k + 2) - R_O(k + 1) < R_O(k + 1) - R_O(k)$, for all $k = 0, 1, \ldots, n - 2$. Note that in presence of these political representations, if no landowner is willing to sell his plot then $R_P(0) = 0 = R_O(0)$, and if all villagers unanimously agree to sell their plots then $R_P(n) = 2n$ while $R_O(n) = 0$. This brings us to the following facts:

**Fact 1.** Assumption on $\pi(\cdot)$ and $b(\cdot)$ ensure that $R_P(1) < R_O(1)$ and there exists a unique $\hat{k} = \frac{n}{2}$ such that $R_P(\hat{k}) = R_O(\hat{k}) = \frac{n}{2}$.
Fact 2. Assumptions on $b(\cdot)$ and $\pi(\cdot)$ also ensure that there exists a unique $\tilde{k} = \frac{n}{2}$ that maximizes $R_O(k)$. Note that $\tilde{k} = \hat{k}$.

Fact 1 essentially implies that both the political parties are equally probable to win in violence at $\hat{k}$ since $\pi(\hat{k}) = 1 - \pi(\hat{k}) = \frac{1}{2}$. However, whether the project will be implemented in equilibrium and if so, whether the process will remain peaceful or not, depends on the relative membership strength of the two parties.

To analyse the impact of relative group sizes on the incentives of the parties at the post-electoral stage, the industrial party membership size $k = 0, \ldots, n$ needs to be categorised into four subsets such that $0, 1, \ldots, n = \{K^{--} \cup K^- \cup K^+ \cup K^{++}\}$. The sequence in which these subsets appear on the equilibrium path has consequence on the equilibrium outcome. These subsets are defined as follows:

(a) $\{K^{--}\} = \{\bar{k}^{--}, \ldots, \tilde{k}^{--}\}$, such that for all $k \in \{K^{--}\}$, $R_P(k) < R_O(k) < c$ that implies $P$ does not retaliate when $O$ initiates violence, but $O$ plays $A$ on the equilibrium path,

(b) $\{K^-\} = \{\bar{k}^-, \ldots, \tilde{k}^-\}$, such that for all $k \in \{K^-\}$, $R_P(k) < c \leq R_O(k)$ that implies $P$ does not retaliate when $O$ initiates violence, and $O$ chooses to fight $(F)$ on the equilibrium path,

(c) $\{K^+\} = \{\bar{k}^+, \ldots, \tilde{k}^+\}$, such that for all $k \in \{K^+\}$, $c < \min\{R_P(k), R_O(k)\}$ that implies $P$ retaliates when $O$ initiates violence, and $O$ initiates violence $(F)$ on the equilibrium path, and

(d) $\{K^{++}\} = \{\bar{k}^{++}, \ldots, \tilde{k}^{++}\}$, such that for all $k \in \{K^{++}\}$, $R_O(k) < c \leq R_P(k)$ that implies party $P$ retaliates when $O$ initiates violence, but $O$ plays $A$ on the equilibrium path.

I will assume whenever necessary that the relevant sets are non-empty. Our first main result is captured in Proposition 8.
Proposition 8. If democracy is sufficiently perfect such that the cost of violence exceeds the maximum political rent achievable by party O (i.e., $c > R_O(\tilde{k})$), then no party takes up arms and the unique sub-game perfect equilibrium (SPE) is $k^* = n$ where both parties accommodate to implement the industrial project.

Sufficiently perfect democracy puts significantly higher cost of violence to the political parties. Facts 1 and 2 establishes that when party O’s political rent is maximum (i.e., at $\tilde{k}$), both parties share equal membership strength so that each is equally likely to win in violence (if it takes place). Recall that given any cost of executing violence, whether the parties choose to indulge in violence or not is not only dependent on their respective membership sizes but also on whether it is politically rewarding for the parties to do so. With relatively small membership sizes $P$ never chooses to indulge in violence as in a democratic society (albeit imperfect) both its probability of success in violence and its political return are relatively low (resulting in its sufficiently low political rent). But since the political return of party O from opposing the land acquisition is also sufficiently low for such lower support for industrialisation in the locality, it is not worth for O to initiate violence even if its probability of success in violence is sufficiently high. Following the categorisation of industrial membership sizes all such membership sizes then fall in the subset $K^{--}$. Otherwise, with majority of the landowners’ support party P’s probability of success in violence is relatively high (if it takes place) and acquisition of land then becomes politically rewarding for the party. Since the marginal rents of the parties are rising with their respective membership strengths, for sufficiently high $k$ party P’s political rent from violence outweighs its cost to the party (it is reasonable to assume that $c$ is less than the maximum political rent achievable by party P as otherwise it is equivalent to perfect democracy) so that P can retaliate if the opposition initiates violence. But since such relatively high industrial support sufficiently weakens party O’s chances to win in violence and thereby reduces its political rent, political violence becomes unaffordable for the party. Any such $k$ then falls in the subset $K^{++}$. Hence there is no such membership sizes for which party O indulges in violence here. In absence of forced sale in the model as P never chooses the path of violence unless the opposition initiates it, on the equilibrium path of the conflict sub-game no party takes up
arms and accommodate with each other to implement the project peacefully.

Anticipating the outcome of the conflict sub-game the villagers now decide to join a party. Equilibrium in the voting sub-game is achieved when no member from either party has an incentive to deviate from party membership. In absence of violence any landowner who joins $\mathcal{P}$ in agreement to sell receives a net payoff equals the price of land $p$ while a deviation to $\mathcal{O}$ to retain his plot would fetch him a payoff of 0. Hence no individual landowner has an incentive to deviate from $\mathcal{P}$’s membership. Moreover, for a given $p$ it is always individually profitable for a landowner to sell his plot even when no one else in the village do. But these payoffs are reversed for any member landowner who joins $\mathcal{O}$ and as with the project being implemented in the village there is always an incentive for each of them to deviate from $\mathcal{O}$’s membership. Hence the size of industrial party membership rises continuously unless all landowners agree to sell their plots and the unique SPE is achieved with $k^* = n$. Note that in presence of very low degree of democratic imperfections, the outcome of the game is equivalent to that of perfect democracy where the event of full conversion is certain and peaceful. □

Sufficiently high democratic imperfections eases the execution of political violence for the parties as this imperfections shrink their cost of pursuing violence, $c$. For such lower $c$ party $\mathcal{O}$ can choose to initiate violence to which $\mathcal{P}$ can also retaliate with $F$ as and when it is affordable for them to do so. However the outcome of this conflict sub-game depends on the relative membership strengths of the parties as well as on their respective political returns. This scenario is captured in the following Proposition:

**Proposition 9.** If democratic imperfections are sufficiently large such that the maximum political rent achievable by party $\mathcal{O}$ exceeds the cost of violence (i.e., $c < R_{\mathcal{O}}(\tilde{k})$), then in every sub-game perfect equilibrium (SPE) there is no violence. While $k^* = n$ always constitutes a SPE, there can be multiplicity of equilibria. In particular there can be exactly one other SPE where no party takes up arms and makes the event of peaceful industrialisation certain, with $k^* = \bar{k}^-$. This occurs if and only if $|K^-| \geq 1$ and,
(a) either \( |K^-| \geq 1; \)

(b) or \( |K^-| = 0 \) and \( \tilde{d} > \frac{k^+p}{n-k^+} \).

Proposition 9 considers that \( c \) falls below the maximum political rent achievable by party \( O \). From Facts 1 and 2 this corresponds to the membership size \( \hat{k} \) (that equals to \( \hat{k} \)) with which both parties are equally likely to win in violence (if takes place). Following Proposition 8 for significantly small industrial support in the locality (such that \( P \) is highly unlikely to win in violence) it is not rational for the opposition to initiate violence as its political return from violence, \( b(\cdot) \), is then insignificant. This makes violence unworthy for the opposition party. Of course for such significantly low \( k \) party \( P \) never chooses to indulge in violence owing to its notably low political return and thereby rent from violence. Hence, for such industrial membership sizes no party takes up arms and the project is implemented peacefully. These membership sizes fall in the subset \( \{K^-\} \). Since losing in political conflict yields negative political return to the respective parties, no party indulges in violence unless they gain sufficient support from the landowners that then suffices their cost of executing political violence in the locality. Hence when majority of landowners are against the sale of land the political rent for \( O \) is relatively higher than the industrial party owing to \( O \)'s higher probability to win in the conflict. Thus there may exist some sufficiently small \( k \) for which it is rational for party \( P \) to not involve in a violent contest with the opposition. In such cases \( O \) initiates violence as it then wins the uncontested violence and discards the project from taking place. All such membership sizes (if exist) then fall in the subset \( \{K^-\} \). But \( P \)'s probability to win in violence rises with its membership size. If the membership strengths for both parties are relatively close, then it becomes politically rewarding for both the parties to cater their respective ideologies and sufficiently imperfect democracy (that brings down \( c \)) then makes it easier for the parties to pursue their ideologies by using legal or extra-legal means, even violence. Thus for such membership sizes both parties choose to fight and all such \( k \) then belong to the subset \( \{K^+\} \). However, if \( k \) is significantly large so that the probability of \( O \)'s win in violence is close to nil which makes its rent to fall significantly such that it does not suffices the cost of initiating violence, then it is

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rational for $\mathcal{O}$ to abstain from violence. Since there is no forced sale in the model for all such significantly large $k$ both parties accommodate with each other on the equilibrium path and the project is implemented peacefully. All such industrial membership sizes then fall in the subset $\{K^{++}\}$.

Anticipating the possible outcomes of the conflict sub-game the villagers now decide their membership through voting. Following Proposition 8 if no party takes up arms then each landowner who joins $\mathcal{P}$ in support of sale gets a payoff of $p$ while each of the rest of landowners who joins $\mathcal{O}$ gets 0. Note that these payoffs are unaltered for significantly small and large size of industrial memberships that fall in subsets $\{K^{-}\}$ and $\{K^{++}\}$ respectively. Hence in these two subsets each rational landowner from $\mathcal{O}$ has an incentive to deviate and join $\mathcal{P}$ but the deviation on the reverse direction is never rational. Hence $k$ continues to rise unless it reaches the upper bounds of the respective subsets, $\bar{k}^{-}$ and $\bar{k}^{++}$ respectively. I am now to check whether $\bar{k}^{-}$ and $\bar{k}^{++}$ are SPE. For $\bar{k}^{-}$ to be a SPE it must be true that there is no incentive for an individual landowner to deviate from his decision of retaining his plot which then strengthen party $\mathcal{O}$ to initiate violence. Knowing this if any landowner now chooses to deviate and sell his plot then industrial party membership rises to the lower bound of the following subset that is either $\{K^{-}\}$ (if it is non-empty) or $\{K^{+}\}$ (if $\{K^{-}\}$ is empty). Since for any membership size that belongs to $\{K^{-}\}$ there is violent opposition that scraps the project, a member in $\mathcal{O}$ rationally chooses to be in the opposition and save the cost $d$ for being in the losing party. Hence an equilibrium of the voting sub-game is $k^* = \bar{k}^{-}$ where the event of industrialisation is certain and peaceful with relatively small number of plots being sold for the project. Since $\mathcal{O}$ always wins for any membership size within $\{K^{-}\}$, none of the rational landowners ever has an incentive to support party $\mathcal{P}$ here and there is no equilibrium membership strength that belongs in subset $\{K^{-}\}$. Suppose, $k$ increases sufficiently such that the size of $\mathcal{P}$’s membership is now $\bar{k}^{+} \in \{K^{+}\}$. Since both parties can now indulge in political violence a landowner that supports the sale of land now fetches an expected payoff of $\pi(\bar{k}^{+})p + [1 - \bar{k}^{+}](d)$ while he gets 0 for keeping his plot. If the unit price of the plot is relatively small such that it cannot compensate their individual cost violence that crosses an upper limit of $\frac{k^{+}p}{n-k^{+}}$ then any rational landowner chooses
to keep his plot and \( k^* = \bar{k}^- \) remains an SPE. Note that if unit price of land is high enough to compensate this cost then it is worth selling one’s plot and the landowner chooses to join \( \mathcal{P} \). Obviously, in that case \( \bar{k}^- \) is not an equilibrium of the voting sub-game as \( k \) rises to the following subset \( \{K^+\} \).

Consider that the landowner’s individual cost from violence is sufficiently low (or the per unit price of land, \( p \), is sufficiently high to cross the upper limit of \( \frac{(n-k^+)d}{k^+} \)) such that \( k \) falls in the subset \( \{K^+\} \). It thus remains a question whether there is any industrial membership size for which violence exist as a SPE. A rational individual will remain in \( \mathcal{O} \) if and only if his expected payoff from being in the opposition party is strictly greater than the expected utility from being in \( \mathcal{P} \). But for sufficiently high \( p \) there is always an incentive for any landowner to join \( \mathcal{P} \) and sell his plot rather than opposing industrialisation. Thus the industrial membership size continues to rise and even if it reaches the upper bound of subset \( \{K^+\} \) it is individually rational even for the marginal seller to deviate from \( \mathcal{O} \) to support industrialisation as higher membership strength increases the chances of industrialisation in the locality. Hence \( k \) rises to reach subset \( \{K^{++}\} \) and there is no equilibrium \( k \) in \( \{K^+\} \). Hence violence does not exists as a SPE. As mentioned earlier once the size of \( \mathcal{P} \)’s membership reaches \( \{K^{++}\} \) it continues to rise as it is now individually rational for all the landowners to sell their land and thus here the only possible equilibrium is \( \bar{k}^{++} = n \).

Hence if the subsets are non-trivially non-empty then there are two SPE : one is a low-level equilibrium with \( k^* = \bar{k}^- \) and the other is \( k^* = n \). In both cases the event of peaceful industrialisation is certain. Note that if \( \{K^-\} \) is empty and \( d \) is sufficiently low such that \( k^* = \bar{k}^- \) is not an equilibrium then following the above analysis there exists a unique SPE with \( k^* = n \). In this case full conversion of land is certain and peaceful. Hence even in presence of political imperfections violence does not take place in the process of land acquisition if local political representations involve in late mobilisation of resources for violence.
0.12.5 Politics with early mobilisation of resources for post-voting violence

Subsection 0.12.4 analysed the scenario where political parties involve in late mobilisation of resources and thus their strategic decision follows the landowners’ voting decision. It showed that if local polity cannot indulge in an early mobilisation of resources and accepts to abide by the voting outcome then violence do not take place on the equilibrium path even in presence of institutional imperfections. In this section I therefore turn to analyse the scenario where parties can mobilise resources earlier and take their strategic decision ahead of the voting outcome so that landowners’ decision now follows the decision taken by the parties. From section 0.12.3 I know that if perfect democracy sustains then given the unit price of land the event of industrialisation remains certain and peaceful with \( k^* = n \). I retain perfect democracy as a normalised benchmark in this section as well and ask that given a choice does parties ever adopt late mobilisation over an early mobilisation of resources? To see this I first analyse to what extent democratic outcome is dampened when parties indulge in early mobilisation of resources and decide their strategies ahead of the voters decision? Does this political imperfection dampen the process of peaceful industrialisation? Is violence an obvious outcome when political parties involve an early mobilisation of resources? I then compare these results with the scenario analysed in section 0.12.4 when parties do not have the ability to mobilise resources early. All the results are then summarised in Propositions, followed by respective proofs. The characteristics of the original model from section 0.5 remains unaltered except the timing of the game as in the current framework decisions follows as is mentioned below.

Timeline with parties’ early mobilisation of resources:

- **Exogenous price announcement:**
  - Stage 0: Unit price of land \( p \) is announced exogenously by an authority who may not be directly involved in the land acquisition process;
• Political conflict phase:
  – Stage 1: party $O$ decides between $A$ and $F$;
  – Stage 2: Observing $O$’s choice, party $P$ decides between $A$ and $F$;

• Voting phase:
  – Stage 3.1: Once the parties choose their strategies, landowners independently and simultaneously determine party memberships where membership is irreversible and common knowledge;
  – Stage 3.2: Two groups are then formed - landowners who are willing to sell their plots join party $P$, others who are not willing to sell join party $O$;

• Outcome on local industrialisation:
  – Stage 4: Political contest takes place and the outcome is determined and if the project is implemented the unit price of land $p$ is delivered to each of the member landowners in $P$, otherwise the project is scrapped and no land sale takes place. The game ends here.

In the conflict sub-game each party can either choose to accommodate (strategy $A$) or fight (strategy $F$) that derives the decision of whether the project is to be implemented or stalled. However, the optimal strategy choice of the parties is driven by their respective anticipated membership strength to be achieved from the voting sub-game. Following section 0.5, if both parties accommodate then the project is implemented peacefully and a member landowner supporting $P$ receives the unit price $p$ by selling his plot while a member in $O$ receives a normalised payoff of 0 from retaining his plot. Since selling a plot gives any landowner a higher payoff than keeping that, it is always rational for any landowner to support $P$. Hence if both parties accommodate then in the sub-game perfect equilibrium all the landowners unanimously join the industrial party to support the conversion of land and $k^* = n$ holds. If $P$ is the only party that chooses $F$ then it wins the uncontested violence and implements the proposed project. Since supporting $P$
then fetches a landowner a payoff of \( p \) while supporting \( O \) fetches a net payoff of \(-d\), it is always rational for a landowner to support the industrial party. Hence in SPE all the landowners unanimously join the industrial party and \( k^* = n \) holds again. However, if \( O \) is the only party that fights then this uncontested violence discards the project and a supporting landowner receives a payoff of 0 from retaining his plot. But a landowner supporting \( P \) then receives a net payoff of \(-d\) for being in the losing party. Hence it is always rational for any landowner to join the opposition and in the SPE all the landowners unanimously join \( O \) resulting \( k^* = 0 \). Finally, if both the parties indulge in political violence then the expected payoff of a member landowner in \( P \) is \( \pi(k)p + (1-\pi(k))(-d) \) while that of a member landowner in \( O \) is \((1-\pi(k-1))0 + \pi(k-1)(-d)\). Since the outcome of the conflict sub-game is then stochastic, in a continuum of voters’ space an indifferent landowner’s expected payoff from joining either party is equal. Given the technical characteristics of \( \pi(\cdot) \), if an indifferent landowner supports industrialisation then the equilibrium size of industrial membership for which both parties choose to play \( F \), is denoted by \( k_F \) where \( k_F = \frac{d(1+n)}{p+2d} \). Note that \( k_F < n \) for any given \( p > 0 \) and it is rising in \( d \). Moreover, since \( k_F \) is falling in \( p \) this counter-intuitively implies
that $k_F > \frac{n}{2}$.

Both the parties can anticipate the voting outcome to decide their optimal strategies. Hence following the above analysis if both of them choose to accommodate then in the voting phase the payoff of parties $P$ and $O$ are $b(n)$ and $-b(n)$ respectively where the project is implemented with unanimous support of the landowners. If $P$ is the only one who fights then it receives a net payoff of $b(n) - c$ and $O$ receives $-b(n)$. However, if $O$ is the only one who fights then it receives a net payoff of $b(0) = -c$ and $P$ receives $b(0) = 0$. Finally, if both of the parties fight, then the expected payoff of party $P$ is $b(k_F)(2\pi(k_F) - 1) - c$ while that of party $O$ is $b(k_F)(1 - 2\pi(k_F)) - c$. Note that given $c > 0$, the industrial party never chooses to indulge in political violence unless the opposition initiates it.

Denote the political rents from violence (net of costs) of party $P$ and $O$ in this case by $P(k)$ and $O(k)$ respectively. In any sub-game perfect equilibrium, for violence to take place it is necessary that the political rent from violence is strictly greater than its cost to each party. Thus for party $O$ to initiate violence it must be true that $b(k_F)(1 - 2\pi(k_F)) - c > -b(n)$ and for $P$ to retaliate it must be true that $b(k_F)(2\pi(k_F) - 1) - c > b(0)$. These yield

$$P(k) = b(k_F)(2\pi(k_F) - 1) > c,$$

and

$$O(k) = b(k_F)(1 - 2\pi(k_F)) + b(n) > c.$$

Given the linearity of $\pi(\cdot)$ and $b(\cdot)$ in section 2, $P(k)$ initially decreases with the industrial membership, optimises when the membership size reaches $\frac{n}{4}$ and increases thereafter. The marginal rent from violence for party $P$ is increasing in its own membership strength so that, $P(k+2) - P(k+1) > P(k+1) - P(k)$ for all $k = 0, \ldots, n-2$. On a contrary, $O(k)$ initially increases with the industrial membership, optimises when the membership size reaches $\frac{n}{4}$ and decreases thereafter. The marginal rent from violence for $O$ is decreasing in industrial party’s membership strength (rising in its own membership strength) so that, $O(k+2) - O(k+1) <$
\(O(k + 1) - O(k)\) for all \(k = 0, \ldots, n - 2\). Note that in presence of local political representations in the village, if no landowner is willing to sell their plots then \(P(0) = 0\) and \(O(0) = n\). And if all villagers unanimously agree to sell their plots then \(P(n) = n\) and \(O(n) = 0\). This brings us to the following facts:

**Fact 3.** Assumptions on \(\pi(\cdot)\) and \(b(\cdot)\) ensures that there exists a unique \(\frac{n}{2} < \tilde{k} < n\) such that \(P(\tilde{k}) = O(\tilde{k})\) where \(\tilde{k} = \frac{n}{4} + \frac{n \sqrt{28}}{8}\).

**Fact 4.** \(P(\tilde{k}) < R_P(\hat{k})\), where \(\hat{k} = \frac{n}{2}\).

Recall from Facts 1 and 2 in section 0.12.4 that when parties cannot mobilise resources early then the political rents from violence for both the parties are identical at \(\hat{k} = \frac{n}{2}\) and \(R_P(\hat{k}) = R_O(\hat{k})\). It is now to analyse the scenario when local polity has power to indulge in early mobilisation of resources and whether it is always optimal for the parties to mobilise resources for post-vote violence early when they can choose to mobilise resources later. In a sufficiently perfect democratic society it turns out that the local polity rationally choses early mobilisation over a late mobilisation of resources for post-voting violence. The following Proposition deals with it.

**Proposition 10.** If democracy is sufficiently perfect such that \(c > R_O(\hat{k})\) and \(k_F < \tilde{k}\), then party \(O\) prefers the early mobilisation of resources over late mobilisation in the process to acquire land for industrialisation and the unique sub-game perfect equilibrium (SPE) is \(k^* = 0\) where violent political opposition stops the project from taking place.

The condition on \(c\) here is identical to the one captured in proposition 8. Recall that when parties cannot indulge in early mobilisation of resources then the maximum political rent from violence achievable by party \(O\) is \(\frac{n}{2}\) when both parties share equal membership strength, \(\hat{k}\). Proposition 8 shows that if democracy is sufficiently perfect such that \(c\) exceeds \(\frac{n}{2}\) then the unique SPE is achieved when all the villagers unanimously join the industrial party and full conversion of land for industrial use is conducted peacefully. Hence if the local political parties cannot
have an early mobilisation of resources then in a sufficiently perfect democratic environment party $O$’s welfare is $-n$.

If the parties can indulge in early mobilisation of resources then from Fact 3 both parties’ political rents from violence are equalised at $\bar{k}$. Now, in presence of sufficiently perfect democracy such that the cost of violence $c$ exceeds $\frac{n}{2}$ if party $P$ anticipates that its membership strength in violence will be relatively small such that $k_F$ will fall below $\bar{k}$ (that essentially means only minority of landowners are supporting the sale of land), then it never indulges in political violence owing to its low probability to win in the conflict and sufficiently low political return $b(\cdot)$ for such $k_F$. Hence party $P$ never chooses to fight as it is not rational for the party to do so. But with anticipated majoritarian support if party $O$ initiates political violence then this uncontested violence discards the industrial project in the locality. Hence the welfare it receives in this case is $-c$ since all the villagers then unanimously join party $O$ to avoid getting the individual disutility $d$ for being in the losing industrial party and thus in this case the SPE is $k^* = 0$. Given this $O$ rationally chooses to initiate violence as otherwise in absence of violent opposition the project is implemented in the locality which reduces the political return of party $O$.

If the opposition party is given the option to choose between the two approaches then it will choose to have an early mobilisation of resources if and only if the welfare from early mobilisation of resources is higher than that from late mobilisation of resources for post-voting violence. Since it is reasonable to assume that the cost of violence never exceeds the maximum rent achievable by any party and it is binding when $c$ is less than the maximum political rent achievable by party $P$ (which is $n$), party $O$ optimally chooses an early mobilisation of resources.

**Proposition 11.** If democracy is sufficiently perfect such that $c > R_O(\hat{k})$ and $k_F > \bar{k}$, then

(a) if $c > P(k_F)$ then party $O$ prefers to undertake an early mobilisation of resources over late mobilisation of resources in the process to acquire land for
industrialisation. The unique sub-game perfect equilibrium (SPE) is $k^* = 0$ where violent political opposition stops the project from taking place;

(b) if $P(\bar{k}) < c < P(k_F)$ then party $O$ is indifferent between undertaking early or late mobilisation of resources. The unique SPE is $k^* = n$ where both parties accommodate with each other to implement the project and make the event of peaceful industrialisation certain.

Similar to Proposition 10, Proposition 11 also considers the scenario of sufficiently perfect democracy that makes political violence sufficiently costly for the parties. Hence following Proposition 10 if parties do not undertake early mobilisation of resources then the unique SPE is achieved when $k^* = n$ and the event of peaceful industrialisation is certain. Here the welfare achievable by party $O$ is $-n$.

I now consider the scenario when political parties can undertake early mobilisation of resources. Given this if the cost of violence exceeds the threshold of $\frac{n}{2}$ and parties anticipate that the size of industrial membership will be large enough to exceed $\bar{k}$ then for any such membership sizes the political rent of party $O$ is relatively low owing to its lower probability to win in political violence (if takes place). But whether the opposition chooses to initiate violence or not depends on the strategic decision of the industrial party. If the anticipated industrial membership size in violence is such that the political rent of party $P$ cannot suffice for its cost from violence then $P$ does not retaliate with $F$ even when $O$ initiates it.

By history if there is a chance where the opposition can choose to initiate political violence then on the equilibrium path it never chooses to accommodate with the industrial party. Thus if $k_F$ is relatively small then it is optimal for party $O$ to initiate violence as an uncontested violence then stops the sale of land and fetches the opposition a higher welfare of $-c$ than it could receive from accommodating with the industrial party, that is $-n$. The situation then fetches the same outcome as proposition 10 where party $O$ prefers to undertake early mobilisation of resources. This is captured in the first part of proposition 11.
However, if the anticipated industrial membership size is significantly high such that it secures party $P$’s win in violence (if it takes place) then the political rent in violence achievable by party $P$ suffices for its cost from violence. Thus $P$ always retaliates with $F$ if $O$ initiates it. But in a sufficiently perfect democratic scenario, it is optimal for party $O$ to not indulge in violence when significantly low membership strength decreases its probability to win in violence and thereby making political violence unworthy for the party. Hence, $O$’s optimal choice is to play $A$ and thus in the equilibrium of the conflict sub-game there is no violence. All the landowners then unanimously join party $P$ as selling land gives them a higher payoff of $p$ than retaining the plots and get 0. Thus in the SPE we have $k^* = n$ and party $O$’s welfare is $-n$. Since full conversion of land to industry is achieved irrespective of whether parties undertake early or late mobilisation of resources and welfare of receivable by party $O$ is $-n$ in both scenarios, party $O$ is indifferent between undertaking early or late mobilisation of resources for post-voting violence.

**Proposition 12.** If democratic imperfections are significantly large such that $c < P(k)$ and $k_F \in (k_P, k_O)$ then party $O$ prefers an early mobilisation over a late mobilisation of resources. In the sub-game perfect equilibrium both parties indulge in violence with $k^* = \frac{d(n+1)}{p+2d}$ where the probability of industrialisation is more than $\frac{1}{2}$.

If democratic imperfections are significantly large such that the cost of violence to the parties falls short of $P(k)$, then the circumstance is very similar to the one captured in Proposition 9 as in this case $c$ falls short of $\frac{n}{2}$ as well. Following the analysis of Proposition 9 when parties cannot undertake early mobilisation of resources then in equilibrium the conversion of land is always peaceful as parties choose to accommodate with each other to implement the project. While there is always a SPE for which land is fully converted to industrial use and the welfare of the opposition party is $-n$. But there is a possibility of one other low-level equilibrium where relatively less number of plots are being sold for industrialisation and the welfare of party $O$ is $-\frac{n}{2} + \frac{\sqrt{n^2-2cn}}{2}$. Hence the maximum welfare achievable by party $O$ when it cannot undertake early mobilisation of resources is $-\frac{n}{2} + \frac{\sqrt{n^2-2cn}}{2}$.
\[
\sqrt{n^2 - 2cn} \over 2
\]

Consider now that the parties can undertake early mobilisation of resources. Then for significantly large political imperfection such that \( c \) is lower than \( P(\bar{k}) \) SPE is achieved when both the parties choose to indulge in violence and the imperfection dampen the possibility of full conversion of land. There exists an upper limit of the anticipated industrial membership strength denoted by \( k_O \), for which \( O \)'s cost of violence is just equal to its political rent such that it can afford to initiate political violence. There also exists a lower limit of the anticipated industrial membership strength denoted by \( k_P \), for which \( P \) can just afford to retaliate with \( F \) when the opposition initiates it. When the parties anticipate that in presence of political violence the industrial membership strength falls within these two limits then party \( P \) optimally chooses to retaliate with \( F \) when the opposition initiates political violence. From Section 0.12.3 we know that in presence of political violence the equilibrium membership strength of \( P \) is \( k_F = \frac{d(n+1)}{p+2d} \) for which the industrial party is more probable to win in violence. Since the incremental political rent of the opposition is falling for any such industrial membership sizes that exceeds \( k_P \), the maximum welfare from violence for party \( O \) is \(-2c\). But if the opposition chooses to accommodate with the industrial party then in absence of any forced sale industrialisation takes place in the locality and with full conversion of land party \( O \)'s welfare is then \(-n\). Knowing this party \( O \) optimally chooses to initiate violence to minimise its loss of welfare.

Note that when democratic imperfections are sufficiently large then given a choice party \( O \) prefers to undertake early mobilisation of resources than late mobilisation of resources since an early mobilisation gives party \( O \) a chance to win the conflict and thereby to discard the project in the locality. Otherwise the project is always implemented in the locality and the opposition has to accommodate with the industrial party.

**Corollary 8.** If democratic imperfections are significantly large such that \( c < P(\bar{k}) \) and

(a) \( k_F < k_P \) then the opposition party prefers to undertake early mobilisation of
resources for post-voting violence. In the SPE violent opposition stops the project from taking place and \( k^* = 0 \);

\( (b) \) \( k_F > k_O \) then the opposition party prefers to undertake late mobilisation of resources. In SPE both the parties choose to accommodate with each other and the project gets implemented peacefully with \( k^* \in \{k^-, n\} \).

Corollary 8 also considers significantly large democratic imperfections as considered in Proposition 12 that shows \( c \) is essentially less than \( \frac{n}{2} \). Following the proof of Proposition 12 if the opposition party cannot undertake early mobilisation of resources then in SPE the process of industrialisation remains peaceful and the maximum welfare achievable by party \( O \) is

\[
-\frac{n}{2} + \sqrt{\frac{n^2 - 2cn}{2}}.
\]

Suppose parties can undertake early mobilisation of resources. Following the proof of Proposition 12 if \( P \) anticipates that in presence of violence its membership strength will be less than \( k_P \) (for which \( P \) can just afford to indulge in violence) then owing to its sufficiently low membership strength \( P \) optimally chooses to not indulge in political violence even when the opposition initiates it. But this essentially implies that the membership strength of the opposition party is sufficiently high and thus it is easier for \( O \) to initiate political violence. As the uncontested violence discards the project in the locality all the landowners then unanimously join \( O \) to retain their land and thereby secure a higher individual payoff of 0 than to face an individual loss of welfare of \(-d\) from joining the losing party (following Section 0.12.5). Thus if \( O \) chooses to initiate violence then in the SPE violent opposition stops industrialisation with unanimous support from the landowners. The welfare gain for the opposition is then \(-c\). Otherwise if party \( O \) accommodates with party \( P \) then on the equilibrium path the project is implemented peacefully and following Section 0.12.5 all landowners then unanimously support \( P \) for which \( O \)'s welfare is \(-n\). Given this party \( O \) optimally chooses to initiate political violence and secures a higher welfare of \(-c\). Since by undertaking early mobilisation of resources, in equilibrium the party can stop the project from taking place in the locality while late mobilisation of resources always results in implementation of the project, given a choice party \( O \) prefers to undertake early mobilisation of
resources. This is captured in the first part of the corollary.

Suppose party $\mathcal{O}$ anticipates that undertaking early mobilisation of resources fetches an industrial membership size that now exceeds $k_O$ (for which $\mathcal{O}$ can just afford to indulge in violence). Following the proof of Proposition 12 for such significantly high industrial membership party $\mathcal{P}$ always chooses to retaliate with $F$ if the opposition initiates political violence. But for such high industrial support in the locality if the opposition initiates violence then its probability to win in the conflict is significantly low such that $\mathcal{O}$’s political rent does not suffice for the cost for conducting violence. Hence party $\mathcal{O}$ optimally chooses to stay away political violence. Since there is no forced sale in this model, in equilibrium both parties accommodate with each other and the project is implemented peacefully in the locality. Following Section 0.12.5 in absence of any violence the sub-game perfect equilibrium is achieved when all the landowners unanimously join the industrial party to secure a higher individual payoff of $p$ from retaining their plots of land. Hence the welfare of party $\mathcal{O}$ is $-n$ if it undertakes early mobilisation of resources. Note that given a choice between early and late mobilisation of resources for post-voting violence, party $\mathcal{O}$ prefers a late mobilisation of resources as in presence of multiple equilibria the maximum welfare achievable by party $\mathcal{O}$ is then $-\frac{n}{2} + \sqrt{n^2 - 2cn} > -n$. While there is always an equilibrium when full conversion of land takes place and $\mathcal{O}$ is indifferent between the two approaches, late mobilisation of resources gives $\mathcal{O}$ the chance of reducing the size of industrialisation in the locality. This is captured in the last statement of Corollary 8.

**Corollary 9.** If democratic imperfections are of intermediate level such that $P(\tilde{k}) < c < R_{\mathcal{P}}(\tilde{k})$ and

(a) if $k_F < \tilde{k}$ such that $P(k) < P(\tilde{k}) < c$ then given a choice party $\mathcal{O}$ prefers early over late mobilisation of resources for post-voting violence and in the SPE violent opposition stops industrialisation with $k^* = 0$;

(b) if $k_F > \tilde{k}$ such that $P(\tilde{k}) < P(k) < c$ then also party $\mathcal{O}$ prefers early mobilisation of resources over late mobilisation of resources and in the SPE violent opposition stops industrialisation with $k^* = 0$. But for significantly high $k_F$
such that $P(\bar{k}) < c < P(k_F)$ the opposition party prefers late mobilisation of resources and in SPE both the parties accommodate with each other to implement the project with $k^* \in \{\bar{k}^-, n\}$.

This intermediate level of democratic imperfections essentially implies that $c$ is less than $\frac{n}{2}$ (following the proof of Proposition 9). Thus following Proposition 9 if the opposition party cannot undertake early mobilisation of resources then in SPE the process of industrialisation remains peaceful and the maximum welfare achievable by party $O$ is $-\frac{n}{2} + \sqrt{\frac{n^2 - 2cn}{2}}$.

Suppose the parties now can undertake early mobilisation of resources and $P$ anticipates that the industrial membership size in presence of violence will fall below the threshold level of $\bar{k}$ for which both the parties are equally likely to win in the political contest. For such low membership strength party $P$ cannot indulge in violence as its political rent from violence does not suffice its cost from indulging in violence. Knowing this if the opposition chooses to initiate political violence as then it wins the uncontested violence with an unambiguous support from the landowners (following Section 0.12.5) and the welfare gain of party $O$ is $-c$. Since accommodating with party $P$ otherwise results in full conversion of land and thereby reduces the opposition’s welfare to $-n$, party $O$ optimally chooses to initiate political violence. Hence in SPE violent opposition stops the project in the locality. Given a choice the opposition chooses to undertake early over late mobilisation of resources, as early mobilisation leads to peaceful conversion of land. This is captured in the first part of Corollary 9.

Now consider the case where the anticipated size of industrial membership is relatively high so that it crosses the threshold level of $\bar{k}$. If the size of industrial membership is such that the industrial party’s political rent from violence cannot cover the associated cost then it is optimal for the party to not indulge in violence even when $O$ initiates it. Knowing this the opposition optimally chooses to initiate violence and in equilibrium the violent opposition stops the project from taking place in the locality. The outcome is then identical with that of the first part where the opposition again chooses to undertake early mobilisation over late mo-
bilation of resources. However, if the anticipated industrial membership strength is significantly large such that $P$’s political rent from violence fully cover the cost $c$ then it is optimal for $P$ to fight back (if needed so). Since such significantly high industrial membership strength reduces the probability of the opposition to win the political contest and thereby reduces $O$’s political rent significantly, it is optimal for $O$ to not initiate violence. Thus in equilibrium both parties accommodate to implement the project and all the landowners unanimously join party $P$. Thus the welfare gain of party $O$ is $-n$ if it undertakes early mobilisation of resources. Although probability of peaceful industrialisation is certain if $O$ chooses late mobilisation of resources, presence of multiple equilibria suggests that there can be a SPE where political rent achievable by the opposition increases as small number of landowners support the venture. Hence given a choice party $O$ prefers late mobilisation than early mobilisation of resources.

0.12.6 Conclusion

I develop a theoretical framework that allows us to study how institutional infirmities, in particular inefficiency of the legal-institutions towards the enforcement of proper law and order and inefficiency of the political-institutions to uphold the democratic decisions that is constitutionally provided to the citizens through voting power. I characterise conditions under which these imperfections generate inefficiency in the land acquisition process where efficiency is achieved when there is full conversion of land without any political violence, that imposes threat to the landowners thereby distorts their rights to cast free and fair voting decision. Further I demonstrate that imperfections in political-institutions can result in low-level equilibrium trap thereby economic inefficiency, even when the inadequacy of the compensation packages are being resolved by legislation.

I further show that inefficiency and political violence can occur even when landowners’ property rights are constitutionally provided. This is because those are institutionally distorted especially in presence of legal-institutional inefficiencies, which makes it easier for the local polity to indulge in post-voting violence. Such
imperfections not only can dampen the possibility of full conversion but also can completely discard the industrial project from being taken place in the locality. I further show that the possibility of political violence arises only when the local political opposition is relatively more aggressive, such that it undertakes early mobilisation of resources. But interestingly, given that forced sale is prohibited by law, if given a choice the local opposition does not always prefer to undertake early mobilisation of resources even knowing that being indifferent or preferring a late mobilisation of resources can lead to acquisition of farmland. Of course these decisions depend on the local presence of the parties. In our framework while such decisions are dependent on the relative group sizes of the parties and group formation is by voting for either parties, landowners indirectly yet crucially determines political violence.

Let us now discuss some aspects of the land acquisition process that the chapter has abstracted away from till now. It has assumed that the reservation utility from land is identical for all landowners. In reality, although one would not expect too much of a variation (since geographic vicinity largely determines the quality of land and thus plot value), there may be instances where this is violated. In that event one interesting issue is whether the landowners with high yield plots opposes industrialisation or supports it and whether the demographic distribution of high yield plots affects the group formation and thereby political violence. Another important aspect is the uncertainty that poor landowners face when they sell their plots and look beyond traditional means of livelihood. One can incorporate this aspect in our framework by assuming that the compensation has to be high enough to keep the landowners from supporting violence. All our results thereby will go through qualitatively.

In the concluding remarks let us reconsider the effects of violent conflicts, politicisation and aggression associated with land acquisitions in recent era. In many occasions where land owners have successfully made their decision to sell their lands in attempt to have a lifestyle that would have been unachievable with their traditional means, the prominence of good rehabilitation and resettlement package have most certainly played a crucial role. On a contrary violence in the process of
acquiring land have resulted in loss of communal harmony, livelihoods and even lives of many who would have otherwise could reap the benefits of such development agendas. Given such humanitarian tragedies, while improved compensations and clarifying property rights cannot ensure a peaceful solution, this theoretical construct is a first attempt at understanding agitation, group formation and violence as a result of legal and political-institutional infirmities. Keeping the complexities of such issues in mind, I thus refrain from providing any simplified policy suggestions.

The thesis so far has focused on providing a ‘political economy based’ micro foundation of the land acquisition process that help understand the problems of holdout and violence seen in all over LDCs in their industrial progress. However, the causes and consequences of the problems associated with land acquisition are multi-dimensional and often overlapping. Given this it is necessary to take a broader look at the problem by considering all the factors that have direct implications on the causes and consequences on the matter and find a possible link that goes deeper than enactments of compensation, rehabilitation and resettlement schemes. The following chapter thus takes a broader survey of existing economic literature on such land acquisitions and studies multiple conflicting scenarios to reach the crux of the matter. It will show that deeper institutional parameters like bureaucratic corruption, ease of opposition, government machineries in mobilising resources for violence, stemming from institutional imperfections and lack of good governance, that the thesis studied in the previous chapters, plays crucially in unfolding conflicting outcomes.
Chapter 4: A Critical Survey On Conflict Over Large Scale Land Acquisition

0.13.1 Introduction

Conflict is an outcome of inconsistency between multiple interests and beliefs that individuals or entities hold among themselves. Non-violent conflict is constructive for societal change and development in democracies as it entails interaction of opinions. Nevertheless, it works best when the governing bodies and institutions can efficiently manage such inconsistencies. Otherwise it shatters the trust of conflicting individuals that lays ground for protests and agitations, even violence. Economies that consist of weak institutions, fragile political and social structures are more vulnerable to the negative spiral of conflict and violence. Consequently they attract literary works towards mitigating the risks of conflicts, with recommendations on aspects of ‘good governance’ to ensure inclusive and sustainable development in these economies. In a democratic society, elements of good governance include participation of citizens in decision making processes where decisions must be consensus oriented. It is crucial to ensure accountability of private and government institutions to the stakeholders and to the public, responsiveness of governing institutions to serve the stakeholders, transparency in terms of the decision making tools, and their implementation process must be aligned with the rule of law. It also demands assurance over equity and inclusiveness to ensure social sustainability and the effective and efficient use of resources that adheres to the economic and environmental sustainability. Conflict arises when these components, either individually or jointly with others, fail to comply with the expectations from ‘good governance’. We captured this in the last three chapters in light of deeper institutional parameters that result in inefficiencies in land acquisition for industrial progress. However, sources of such conflicts in LDCs are diversified in nature, its phenomena is being rapidly evolving and have drawn “increased international attention due to the changing nature of armed conflict and as a result of a variety of longer-term, global trends” (UN-HABITAT, 2012). Since
enactments on compensation, rehabilitation and resettlement policies have not yet resorted efficiency; it is crucial to take a broader look of the problem. In this attempt, this chapter aims to provide a critical survey of the emerging economic literature on such land ordeals, analyses and classifies the crucial factors to help understand possible link between them that goes at the core of the issue.

Disputes over acquisition of land has long been debated worldwide but the recent two decades have been more prominent, as the demand for land is rising to meet the aspiring goal for industrialisation and urbanisation. While the nexus between industrialisation, urbanisation and economic development is established with common consensus, with rising population and fragmentation of land it propels the demand for large-scale land conversion - from agriculture to industrial use - uprooting landowners from their traditional livelihood, in which conflict seems unavoidable (as explained in the Introduction), even in authoritative societies. Recall from Chapter 1 that in China, between 1996-2005, nearly 20 million farmers were evicted from their farmlands when more than 21 per cent of these lands are being converted to non-agricultural use. Government report admits that this rapid pace of ‘development’ triggered grievances over resentful conversion of farmland, corruption and arbitrary evictions, so much so that even authoritarian China experienced 74,000 riots in the year 2004 alone (see Goswami, 2007). But grabbing private land has been well evidenced under democratic governments. Reports from FAO, World Bank, Human Rights Watch and GRAIN summarises that during 2008-2010 at least 30 million hectares of fertile agricultural land in Africa were already sold or leased out for commercial production, and a further of 83.2 million hectares of farmland were awaiting to be converted over 1200 land deals in the year 2012. The reports suggest that companies and wealthy individual land-acquirers not only bypass the thorough due diligence process for such conversions, they often carry illegal practices for eviction of de-facto owners by deploying private security

68Studies found that in most of these cases the acquisition process was forceful and without proper resettlement and rehabilitation arrangements. For more discussion on this see e.g., <https://www.grain.org/article/entries/5336> and <https://www.grain.org/article/entries/4929>
forces, fencing off public lands and obtaining property titles to connivance local notaries and government officials. The resistance by local landowners are least effective, as the local authorities such as police, politicians and even local judicial members often found to support the land-acquirer, either directly or indirectly, instead of protecting the poor peasants.

The scenario is very similar in a number of countries from Sub-Saharan Africa, Latin America, central and Southeast Asia where large scale land acquisitions follow from the sharp increase in land based investments - domestic transnational capital or in competition with them and FDI, that have made headlines in media reports worldwide. While the skewed land distribution, overlapping property rights, the expropriation and redistribution policies, improper adherence to the rule of law, bureaucratic corruption and corrupted land administration are perceived to be the major contributing factors, the lack of consolidated data on such components makes it harder for policymakers to form effective policy suggestions. Moreover these factors are not independent by virtue and sourced from the interplay between the infirmities in legal and political institutions. There is little doubt that changing use-value of land requires the adherence to an efficient process that includes timely consultation, legitimate impact estimations and local direct purchases. Otherwise, these large-scale profitable land deals raise questions on economic, social and environmental sustainability and in its worst form can result in dozens or even hundreds of demises. There is one strand of literature that analyses populated economies that inherited large discrepancies in ownership rights and land distribution policies such as Brazil, El Salvador, Guatemala, Zimbabwe and South Africa (Moore, 1966, Wickham-Crowley, 1991, and Kriger, 1992). The other relatively recent strand of literature identifies the economic and political importance of such conflicts, analyse and pertain them to more sensitive issues including that of gender inequality and environment sustainability. These issues are complementary to the provisional legal proximity and are evident even in countries including Rwanda, Burundi, Ghana and Uganda, the African economies where

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69 These contexts are studied theoretically in the earlier chapters. In this chapter we consider a broader spectrum of the problem, bypass detailing its individual features and corresponding literature that has already been discussed earlier to avoid being repetitive.
population density is relatively scant and land access follow relatively egalitarian approach (see Deininger and Castagnini, 2006, Kairaba, 2002, and Firmin-Sellers, 2000).

As mentioned earlier, reasons for conflicts arising at the event of land transfers are many. Further, the way cases are being unfolded are unique in nature. This increases the complexities of analysing such land acquisition conflicts in specific frameworks, thereby resulting in large but relatively segregated and case (at large by country) specific studies across literature. Economic literature in this area is relatively new yet rapidly growing, often pointing out the inefficiencies of the compensation mechanism. No doubt, compensation is one of the most crucial issues, but determining right compensation is much more complex and goes far beyond the determination of a price for land. Let alone the poor land administration system, there are also irrational preferences resulting even in ‘pricelessness’ of land. There are instances where the conflict is over price and thereby possibilities of reconsideration over price through direct negotiations or through court proceedings exist, even if this can delay the proposed project. However, there are instances where land seems priceless owing to the land-losers outright denial to depart from their land and conflict is then over land-use change. This is an important issue and is detailed in Section 0.14.

The next critical issue is over land entitlement in such scenarios and as the strands of economic and political literature suggests, it is owing to the legal weaknesses resulting in irregular land surveys, improper and ambiguous identification of the de-facto and de-jure property rights as well as prolonged and inappropriate land entitlement programs (Lindsay, 2012, Li, 1996 and Feder and Feeny, 1991). Given the poor land markets in LDCs, the legal requirements for involving state-level bureaucracy in cases of land sale (for Indian context see Chakravorty, 2013), augments bureaucratic corruption and increments in transaction costs. Further, weak property rights, along with the weak enforcement and adherence to law also create avenues for political interference in the process. Note that while state/local governments are largely accountable for land-use decisions, presence of political competition can significantly impact the success for land-use changes, where a
local government can be heavily influenced and accord with the land developer’s interests. Legal infirmities in LDCs that makes it even easier for the local parties to use their power with various legal and extra-legal means both ex-ante and ex-post elections, it can result in humanitarian tragedies (as in cases mentioned in earlier chapters). There are very few economic theory on land acquisition that focuses on democratic imperfections in LDCs resulting due to institutional fragilities.

Next is the issues over environmental sustainability in land conversions progress that also play a significant part in success or failure of such economically promising projects. Evidences suggest that legally mandated environmental assessments programs are often being suppressed to grant licence to proposed projects. Conflict arises due to the health and environmental hazards following the land-use change. While legal measures towards environmental sustainability are integrally imparted in almost any land acquisition programs, it is lack of institutional support to adhere to the rigorous impact assessments. One such example is the Meta Strips agitation of the late 1990s in Verna Plateau region of Goa in India, at attempts to develop an Rs. 250 crore plant for processing scrap materials into valuable metals to be exported to Europe. The project got approval from the state government in 1996 in a record time of six days without any high power co-ordination committee meeting as was legally required for clearances. In turn the mandatory Environmental Impact Assessment was shortened and mystified regarding the potential hazards including the discharge of intolerable levels of toxic and carcinogenic metal fumes and groundwater pollution. The protests went violent with national highway blockage, police repressions, midnight arrests of activists, bloodsheds and death. Eventually the company was ordered to holdup the project until they get expert committee confirmation on environmental hazards and take measures appropriately (for more

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\[70\] This is mentioned in Chapter 1 and also seen in Spanish context by Sole-Olle and Viladecans-Marsal, 2012.

\[71\] This is in sharp contrast with the developed nations where relatively improved judicial systems decrease a stakeholder’s ability to bribe regulators and increases the ability of local population to contribute in project development decisions and development leads to regulatory stringency in the process of land conversion (see Hilber and Robert-Nicoud, 2009 and Glaeser et al., 2005).
on this see Sampat, 2015). Protests arising due to environmental issues are most prominent against the renewable energy plantation development programs such as evident in Nigeria’s Niger Delta region or against the production of crude palm oil as seen in Indonesia and Malaysia. Such examples and related literature are discussed further in section 0.16.

Social sustainability is inevitably another crucial issue raised here. But a project’s social viability has always been severely under-valued when compared with its economic and financial viability, even if the project’s present and future success cannot bypass its impact on that society. While local communal tensions over the access of land are not rare in LDCs, the land rush of recent decades have promulgated these tensions as land deals often induce communities in more contesting situation. This can be devastating when local elites or wealthy farmers try to hoard prime land (with greater infrastructural facilities, geographical advantages and/or high fertility soil) with expectation to make profit from sales in future, leaving the already improvised small farmers and tenants to toil over inferior land. The socio-economic impacts of acquiring agricultural land are most vulnerable to conflicts as in such cases poor land-losers are forced to exchange their lands with relatively less productive lands (with poor infrastructure, lack of complementary resources such as river or canals nearby and lack of natural habitats essential for cattle growing or food supplies).\textsuperscript{72} The spiking food and commodity prices, following from global food crisis of 2007-2008, often held responsible for the recent global land rush. This is being subjected to a huge attention from international organisations, NGOs and media, as the economically capable but land-poor

\textsuperscript{72}This is evident in many rural sectors of LDCs. For example, in Cambodia this includes the acquisition of 3000 hectare of farmland in Koh Kong province in 2006 for sugar plantation, the acquisition of 7,972 hectares and 6,592 hectares in 2010 respectively for Dau Thieng (Cambodia) Rubber Development Co. Ltd. and Dau Thieng (Kratie province) Rubber Development Co. Ltd. Likewise there were institutional imperfections, like lack of preparations for appropriate land transfers such as land entitlements, notice for acquisitions, obtaining collective opinion and lack of social impact assessments. Moreover the acquisitions were forceful with police and military enforcement resulting in socio-economic dismal including armed violence, minimal compensation, mass displacement and loss of livelihood, as well as specific impacts on women (see <https://ejatlas.org/conflict/land-grabbing-and-forced-evictions-by-koh-kongs-sugar-industry-cambodia> and <ic.fsc.org/download.vrg-complaints-panel-evaluation-report-public-version.2462.htm>).
countries aim to occupy vast area of relatively cheap foreign land (in economically poor countries), not only for large scale agriculture but also for commercial productions to substitute for their expensive imported supplies (See Zoomers, 2010 and Cotula et al., 2009). While this increases the FDI flows in the host nations and encourages flow of transnational and competing capital in that economy, it costs in terms of loss of income and livelihood. A study by Davis, D’Odorico, and Rulli (2014) summarises the total loss of income and affected population in 28 LDCs that are most targeted by large-scale land acquisitions (see Table 1) where more than a quarter of land deals are for industry and infrastructure development. This has become a major concern for the recent emerging body of economic literature as such globalised structure of development questions the social sustainability of mega projects. This is further detailed in section 0.15.

Acquisition of fertile agricultural land is being repetitively questioned the ‘morality’ of distributive policies. But counter argument is being raised for the inability of the government in allocating non-fertile or non-agricultural land fearing the deterrence of any poverty alleviation programs. Note that while the negative impacts such as loss of income, employment and displacement by rural land-losers are critical issues to consider, one cannot deny that each land deal comes with a unique set of benefits to the concerned locality, as well as having distinctive impacts on and responses by the affected people (Borras and Franco, 2013). Industry and infrastructure development as the means for supporting the rapid pace of modernisation with presumed trickle down effect is thereby one of the primary instruments used by governments to meet the development components of an economy. However, while arguments against the trickling down phenomena pose questions on the equity and efficiency of such agenda and the (mis)use of government machinery becomes a regular practice, they uncertain the sustainability of these programs and carry potential for violent conflicts at least at local levels. The contextual and rapidly evolving nature of land dynamics makes it even more complex to systematise the root causes of land conflicts arising out of such acquisitions. Therefore to move forward towards an efficient solution, it is required to put a step back and enlighten the components of such land ordeals in order to establish a possible causality amongst them and this survey is an attempt towards that. The survey
<table>
<thead>
<tr>
<th>Country</th>
<th>Total lost income ($)</th>
<th>Total people affected</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>79,337,812</td>
<td>15,383</td>
<td>0.08</td>
</tr>
<tr>
<td>Argentina</td>
<td>345,949,205</td>
<td>22,342</td>
<td>0.06</td>
</tr>
<tr>
<td>Benin</td>
<td>16,783,119</td>
<td>10,614</td>
<td>0.12</td>
</tr>
<tr>
<td>Brazil</td>
<td>454,969,840</td>
<td>41,386</td>
<td>0.02</td>
</tr>
<tr>
<td>Cameroon</td>
<td>203,675,121</td>
<td>90,845</td>
<td>0.46</td>
</tr>
<tr>
<td>Colombia</td>
<td>403,308,909</td>
<td>44,722</td>
<td>0.10</td>
</tr>
<tr>
<td>Congo</td>
<td>13,127,064</td>
<td>4,136</td>
<td>0.10</td>
</tr>
<tr>
<td>DRC</td>
<td>105,572,483</td>
<td>319,605</td>
<td>0.02</td>
</tr>
<tr>
<td>Colombia</td>
<td>403,308,909</td>
<td>44,722</td>
<td>0.10</td>
</tr>
<tr>
<td>Gabon</td>
<td>1,440,146,140</td>
<td>110,167</td>
<td>0.72</td>
</tr>
<tr>
<td>Ghana</td>
<td>332,672,327</td>
<td>206,456</td>
<td>0.85</td>
</tr>
<tr>
<td>Guatemala</td>
<td>68,573,647</td>
<td>14,817</td>
<td>0.10</td>
</tr>
<tr>
<td>Indonesia</td>
<td>7,736,024,665</td>
<td>1,847,699</td>
<td>0.77</td>
</tr>
<tr>
<td>Liberia</td>
<td>225,161,293</td>
<td>478,476</td>
<td>11.98</td>
</tr>
<tr>
<td>Madagascar</td>
<td>158,298,340</td>
<td>165,997</td>
<td>0.80</td>
</tr>
<tr>
<td>Malaysia</td>
<td>8,956,266,573</td>
<td>608,958</td>
<td>2.14</td>
</tr>
<tr>
<td>Morocco</td>
<td>926,336,692</td>
<td>201,836</td>
<td>0.63</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2,443,013,473</td>
<td>2,710,813</td>
<td>11.59</td>
</tr>
<tr>
<td>Nigeria</td>
<td>331,781,421</td>
<td>153,439</td>
<td>0.10</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>3,758,184,784</td>
<td>1,564,440</td>
<td>22.81</td>
</tr>
<tr>
<td>Peru</td>
<td>119,124,632</td>
<td>13,524</td>
<td>0.05</td>
</tr>
<tr>
<td>Philippines</td>
<td>804,018,409</td>
<td>203,256</td>
<td>0.22</td>
</tr>
<tr>
<td>Russia</td>
<td>27,585,683</td>
<td>1,423</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>501,467,190</td>
<td>610,031</td>
<td>10.40</td>
</tr>
<tr>
<td>South Sudan &amp; Sudan</td>
<td>3,561,260,372</td>
<td>1,731,108</td>
<td>3.97</td>
</tr>
<tr>
<td>Tanzania</td>
<td>305,055,452</td>
<td>215,955</td>
<td>0.48</td>
</tr>
<tr>
<td>Uganda</td>
<td>19,237,881</td>
<td>15,379</td>
<td>0.05</td>
</tr>
<tr>
<td>Uruguay</td>
<td>115,090,195</td>
<td>8,483</td>
<td>0.25</td>
</tr>
<tr>
<td>Total</td>
<td>34,262,003,020</td>
<td>12,196,904</td>
<td>–</td>
</tr>
</tbody>
</table>

Table 1: Summary of countries that are most targeted by large-scale land acquisitions. Around 36% of these land deals involve plantations for non-food items including industry, energy and infrastructure development. Source: Davis, D’Odorico and Rulli (2014).
therefore identifies the two following critical aspects of land acquisition programs:

**Purpose**: Large scale land acquisitions are not restricted to the sole purpose of building industries or developing urban real estates but also to stimulate agribusiness. The investors include economically empowered national and international agents, from the multinational corporations, banks or equity fund holders to the regional and national governments, local industrialists who are interested in purchasing, licensing or leasing in (generally for 30 to 99 years) vast area of land (see GRAIN, 2008). What is the purpose of acquiring such vast area of land? This includes massive cultivation of commercial agricultural produce, renewable energy productions, infrastructure developments and to use for industrial purposes. These endeavours are indeed profitable for the local or regional governing bodies as these compile large spillover effects that provide opportunity for economic development of the concerned territory, thereby bringing in political mileage to the ruling party. Moreover, under the new PPP model of development (as mentioned in Introduction in section 0.3) such programs have become profit-making schemes for both investors and government. Thus there are huge incentives for the government to facilitate such investment schemes even at a cost of invading into farmland or destroying natural resources that are either already in use by traditional farmers with little or no outside option, or risking the ecosystem with far-reaching environmental impacts that more generally remain unpredictable at the beginning. But then the question remains whether such developments are needed ‘urgently’ or not. While emergency land acquisitions are legally amended in land acquisition laws of virtually all countries and to be implemented only when abandonment can entail welfare loss, it is frequently practiced to facilitate the flow of profit-making investments. While the presence of legal-institutional infirmities makes it easier for the political parties to mis-use government machineries, unclear provisions of such clauses attract controversies in a number of occasions. Eventually countries have undertaken amendments in their land acquisition laws to improve efficiency but almost none discarded the ‘emergency’ clause.

**Process**: Since land attributes history and security to its owners the compensation
paid to the dispossessed are more often criticised for its inadequacy which lays a fertile ground for political and social fallout risking the political sustainability of such programs. But how should the compensation be determined? How the rehabilitation and redistributive policies ensure equity? How to take consent from the landowners to sell their property? Process for determining price, redistributive packages raises conflicts owing to the dependence on faulty land records, market valuations processes and poor land administrations. The process for eviction often relies on applications of power and forces leaving no room for consultation. A report by Nolte, Chamberlain and Giger (2016), as presented in figure shows that in LDCs as high as 66% of the land deals are finalised without consulting the affected population.

Figure 7: Report of community consultation in the process of acquiring land based on Land Matrix, 2016 data. Source: Nolte, Chamberlain and Giger, 2016.

While informed consent can be practiced with votes from affected land-losers, its efficiency can only be restored with uninterrupted and independent voting sys-

\[73\text{Based on tangibility of the asset.}\]
tems. Procedural inaccuracies, owing to the institutional inefficiencies (especially legal and political) are prominent in countries that opted for rapid industrialisation such as India and China (for example see Ding, 2003). There are ample evidences where the determination of the compensation package offered or paid to the dispossessed farmers are being considered as arbitrary, unjustified and ad hoc. The lack of transparency in the finalisation of land deals topped with lack of consultation with the concerned parties (as mentioned earlier) are commonly attributed to the land conflict. But recall that price is not an issue when landowners refusal stems from their non-acceptance over land-use change, preference irrationality and lack of transferrable skills. What are the procedural remedies to tackle such situations?

Finally, in terms of locational preferences, while land-grabbing is evident from across the globe, countries in sub-Saharan Africa this is predominantly by the foreign countries for both agricultural and non-agricultural purposes (Maggi and Veit, 2013). In contrast land acquisitions for infrastructure development, industrial purposes and/or real-estate expansion is more prominent in emerging economies such as India and China. The reasons for the changing land-use across the world may vary but what is common in all these is the treatment of land as being a ‘commodity’, whose exchange price is determined by considering the tangible aspects and disregarding the intangibles such as security, history, culture and livelihood of the project-affected people. As land becomes scarcer with increased heterogeneous entrants, there is spiral up pressure by the claimants for good governance that not only suffice to limit “dissipation” but at a large extent can also alleviate potential for violent conflicts (Alston et al., 2012). But it is more often than not that the economic rents for the emergence of efficient rights fail to suffice for its political rent thereby leaving the door of conflict wide open. Thus, the issues of land or any natural resources can never be the sole reason for conflict and in line with the report by UN-HABITAT (2012) they commonly occur and turn into violence when “linked to wider processes of political exclusion, social discrimination, economic marginalisation, and a perception that peaceful action is no longer a viable strategy for change”.

\footnote{This possibility is examined in earlier chapters}
Clearly, a case or country specific study is not sufficient to ensure sustainability of any land-augmented development and suggest suitable policy for its adherence. It is important to look into the root causes of land conflicts, not only by taking into account either the economic, environmental or social aspects of it but also by establishing interlinks amongst them. What is certainly a complex task, this article scratches the surface by categorising the responsible factors of this multidimensional issue and attempts to find the links among them. The rest of the chapter takes the following structure: Subsection 0.14 focuses on the compensation issues, Subsection 0.15 focuses on social impacts of large scale acquisitions, Subsection 0.16 focuses on the environmental consideration and Subsection 0.17 focuses on the institutional failures to uphold efficiency. While each section is developed in light of evidences from around the world in recent decades, it identifies that interplay between administrative inefficiency, bureaucratic corruption and politicisation (that are endemic to LDCs) that eases the extra-legal influences on land acquisition issues is at the core of distorting developmental aspects of aspiring projects. Section 0.18 includes the conclusive statements.

0.14 Compensation for acquiring land

In cases where large scale acquisitions of land by government and corporates has drawn resistance, the most prominent reason for grievance turns out to be the inadequacy of compensation and the involuntary displacement without suitable rehabilitation. This implicate concerns on both equity and efficiency grounds. In absence of any social welfare measures when the dispossessed and unemployed landowners are inadequately compensated and left on the “mercy of market forces”, it not only threatens the political sustainability of such programs but also deteriorates their economic efficiency (Ghatak and Mookherjee, 2014, Bardhan 2011). There is a rapidly growing body of economic literature concerning the compensation package paid to the displaced landowners that can ensure efficiency, specially when industrialisation is an unavoidable agenda for the long-run solution of social and economic backwardness. However the existing literature is more inclined
towards the failure of procedural mechanisms of such packages and their subsequent effects, as compared to the design of compensation itself. One can argue that in presence of a dire need for industrialisation, amidst of the informal and overlapping land entitlements, fragmentations and high transaction costs, it is rational to accept a standardised ‘market price’ of land as the basis for compensation. But the question remains to determine this price in absence of land markets. Roy Chowdhury (2013) studies that resistance due to preference irrationalities can cause insufficiency even when the price of land is multiple times of the market rate. It is thus necessary to look at the parameters of the compensation packages that not only include the valuation procedure, time gap of contract settlement and actual payment, sunk investments in the concerned piece of land, quality and purpose of the land, the ownership status of the affected people (such as the tenants whose livelihood is dependent on a piece of land which he doesn’t own) but also the preference, access and choice of the financial services for the fungibility of the exchanged asset. Clearly the task is more complicated than determining a ‘price’ for land, even severe in less developed economies where land markets are thin and administrative inefficiency and corruption are serious concerns.

The legitimacy of compensation mechanisms often becomes subject to conflicts. On one hand the legal constitution equips state governments with ‘eminent domain’ laws to acquire necessarily required lands with fair compensation\footnote{we will return to the discussion on this law in section \textsection{0.17}} on the other, it provides democratic rights to owners that inevitably necessitates their perceptions and protesting voices to be considered in decisions. Hence striking a balance between the conflicting interests is crucial and institutional efficiency is required for such growth agendas to be consensus oriented and according to the rule of law. Ideally compensation is adequate when it ensures that the claimants are neither impoverished nor enriched irrespective of whether it is paid monetarily or in the form of alternative land and/or job (Keith et al., 2008). But interpretations of adequacy varies across the nations. By principles adequacy can be achieved in three ways: (i) By “value to the owner” principle, as used for example in Aus-
tralia\textsuperscript{76} and Japan\textsuperscript{77} that not only considers the market value of the land but also the other losses that a claimant faces. (ii) By “just compensation” principle, as used for example in UK\textsuperscript{78} Philippines\textsuperscript{79} India\textsuperscript{80} and Brazil\textsuperscript{81} This ensures a financial compensation that enables a private landowner to purchase a similar land (both in terms of physical geography and quality). (iii) By “reasonable compensation” principle, as used for example in China\textsuperscript{82} and British Columbia\textsuperscript{83} that considers only direct losses when market price of land remains the yardstick for compensation. Although the principles for resettlement of dispossessed owners may vary in both quantity and quality grounds and have respective pros and cons, market value of land remains an underlined basis for its determination, thereby necessitates the requirement of efficient valuation process\textsuperscript{84}. However, in line with Lindsay (2012), this legal approaches are best suited the developed nations that attributes to relatively well-defined and standardised land rights, well-functioning land markets and credible land records. Owing to the administrative inefficiency, that resulting in rare occurrence of such attributes, implementation of the law is rather complex in developing nations where compensation issues can be broadly divided into two overlapping problems: first, is the identification of the receiver of compensation and the administration procedure of distributing them, and second, is the design of compensation - quantitative and qualitative - with consideration of all losses due to large-scale acquisitions. We continue with the analysis of the second issue here while the first is analysed in sub-section 0.17.

An one-off compensation can trigger two serious consequences: first, a time lag between the agreement and the actual payment can significantly swing the

\textsuperscript{76}Land Acquisition Act 1969.
\textsuperscript{77}Land Expropriation Act Japan, see <http://www.hosyoukikou.jp/zisyakenkyu/CONTENTS/2013-12forCambodia.pdf>.
\textsuperscript{78}Land Expropriation In Europe, see <http://www.mreza-mira.net/wp-content/uploads/Expropriation-in-Europe-Jan-2013.pdf>.
\textsuperscript{79}Republic Act No. 1400: Philippine Laws, Statutes And Codes.
\textsuperscript{80}The Right to Fair Compensation and Transparency in a Land Acquisition, Rehabilitation and Resettlement Act, 2013.
\textsuperscript{81}Constitution of Brazil, Article 153.
\textsuperscript{82}Land Administration Law, 1988, Peoples Republic of China.
\textsuperscript{83}British Columbia Expropriation Act, RSBC 1996.
\textsuperscript{84}For more on this see Mahalingam and Vyas, 2011.
compensation value even with a sufficiently small variance in the projected rate of inflation. Second is, being a replacement for continuous flow of income can be devastating especially when alternative investment options like alternative lands or financial securities are scarce. It should thus be considered whether compensations can be linked with future use value of land that secures a share to the land seller for his future benefits\(^{85}\) and if so to what extent. While there are practices of providing industrial employment for at least one member from the dispossessed families as a part of the compensation program, there exists potential for having alternative auxiliary businesses surrounding the proposed industry as part of the resettlement program. But these industrial jobs are fewer in number and subject to employability concerns\(^ {86}\). Apart from the fact that such programs can be grievous in absence of any legal time limit being imposed on the industrialists to set up their factories, there should be a mandated reverse sell of the acquired plots in case of failure to adherence to it. Clearly both legal and bureaucratic efficiency is required for effectiveness of such compensation programs.

Coase Theorem restores the efficiency of land transactions through negotiation between the concerned parties, but in practice, land deals in the LDCs are often being finalised with government mediation\(^ {87}\). It may then seems a viable question that why should land transformation involve government mediation replacing direct dealing of investor-buyer and the concerned landowners? We discuss the phenomenon in continuation with the earlier chapters. Economic literature seems to advocate such government involvement in LDCs (See Levien, 2011, Sarkar, 2007; Banerjee et al., 2007) primarily due to the high transaction cost of private bargaining (as mentioned earlier) that makes land purchase both difficult and undesirable for the investor. Secondly, to minimise a buyer incentive to reap benefits from the already existing intra-group conflicts by settling multiple group-specific (secret)

\(^{85}\)For example, options of allotting company shares to the dispossessed landowner as proposed by JSW steel company to landowners in Salboni, in West Bengal India. See <https://www.ukessays.com/essays/history/study-of-salboni-land-acquisition-history-essay.php>

\(^{86}\)This issue is further discussed in sub-section 0.15.

\(^{87}\)Evidences suggest that land deals that are settled without government mediation or experience peaceful transformations, are less attractive to media and thus remains largely unknown. We will return to this in sub-section 0.17.
deals with the landowners. Thirdly, geographical contiguity, technological complementarity among plots, preference irrationalities, sentimental values towards land induce sellers strategically bargain and hold-up land to extract greater surplus (for example see Cai, 2000, 2003, Menezes and Pitchford, 2004, Miceli and Segerson, 2007 and Roy Chowdhury and Sengupta, 2012). In line with Banerjee et al., 2007, government’s mediation seems unavoidable not only for economies that cannot afford to lose the pace of industrialisation but also for the strong financial and infrastructural support required for successful project implementation. Moreover, information asymmetry on bilateral trade problems as considered in Chatterjee and Samuelson (1983) and Myerson and Satterthwaite (1983) (amongst others) also causes inefficiency. Seemingly these issues can be bypassed with a legislated price of land as compensation, although it is hardly considered to be mitigating the crux of the issue. The following section put some detail on such dilemma in light of conflicts that took place in the last two decades.

0.14.1 Conflict: income instability

In presence of unequal and inequitable land and asset distribution, weak institutions and market, when land reforms are not the prime-most objective, conflicts arising over land-use changes are significant. There are a number of studies in economic literature when in such environment resistance at acquiring land resulted in unemployment, displacements and income instability. This include the studies by Deininger and Castagnini (2006) that focuses on Africa, Cao et al. (2008) and Chakravorty (2013) that focus on Asia, in particular on China and India respectively, Alston, Libecap, and Mueller (2000, 2010) and Barros et. al (2012) that focus on Latin America, particularly on Brazil. These cases align with at least one common factor: the inadequacy of the compensation. In addition to that there is trust deficit, following from irregularity of compensation amount, unfulfilled promises regarding rehabilitation and resettlement arrangements. For example in Indian context, there are scenarios when compensation has been due for more than three decades and the beneficiaries involve absentee landlords and intermediaries.

To progress further on this, let us reflect on some detail of two such cases. First consider the conflict that arises between the farmers and the industrial development authority Jaypee Infratech Limited (JIL) in the northern Indian state Uttar Pradesh that resulted in a series of agitations during 2009-2012 concerning the compensation paid to landowners for building a 165.4 km long Yamuna Expressway and business zone, worth more than USD 25 billion. This instigated controversies across the country and turned into bloody violence during 2011 causing delay in this development aspiring project.\footnote{See <http://www.bbc.co.uk/news/world – south – asia – 13330343>} The matter took six long years to reach an agreement when the state government during 2014 order an enhancement of compensation by 64.7 per cent to the affected farmers at which all deals have then settled.\footnote{This decision on additional payment was taken on two grounds: one being the enforcement of new land acquisition law (2013) that amends a payment of four times the market price of land to rural farmers which the protesting villagers from Bhatta Parsaul demanded. Other being the fact that the new act was implementable to the projects commencing after the first day of 2014, that makes ground for the authority to disagree with such increase in initial compensation (which was the market price of land according to the previous land acquisition act 1894). See <http://timesofindia.indiatimes.com/city/noida/YEIDA – settles – farmers – issues – realtors – hails – from – the – development/articleshow/45239109.cms>}

Further, the issue was highly politicised as the opposition, Indian National Congress party made this one of its upcoming Assembly Election agenda but lost against the incumbent BSP party in the state assembly election of 2012\footnote{see <http://archive.indianexpress.com/news/from – bhatta – parsaul – to – dalit – homes – rahu.../921057/>}

The second major controversy poses contrast with the above scenario and ought to mention in this section, is the case of Singur in the eastern Indian state West Bengal. It (in continuation with the information provided in earlier chapters) started when the incumbent government, communist party of India (Marxist) in 2006 used the Land Acquisitions Act, 1894, to help a leading private firm Tata Motors to acquire 997 acres of prime agricultural land for building an automobile factory. The process met with resistance from not only the land owners who were against this sale (irrespective of the compensation amount) but also those who
claimed to have inadequate compensation even after accepting the initial offer\(^{92}\) where the inadequacy is largely driven by the fact that the land being taken were qualitatively different but a proposed flat price for all plots failed to incorporate this in the compensation package (Ghatak et al., 2013). The issue raises further controversy and turned into massive violence when the state government practiced forceful eviction using bureaucracy and the police. The opposition was organised by forming a Committee to Save Farmland with various interest groups including the opposition party Trinamul Congress (TMC), several legal and human right activists and draws huge national and international media coverage. The protests that led to strikes, highway blockage, bloodsheds and suicides, finally resulted in complete abandonment of the project from West Bengal and moved to a western state Gujarat (see, e.g., Sarkar, 2007, and Ghatak and Banerji, 2009). The opposition party TMC who made this as one of its upcoming state assembly election agenda, won over CPM’s more than three decades of incumbency.

The above two examples strike an important point: a scale increment of the market price based compensations seem to settle down land deals in some cases as indicated in the example of Yamuna Expressway, but the same practice for other cases like Singur doesn’t work. Despite the price offered were sufficiently higher than the ‘market price’ with the inclusion of solatium, tree and structure values, values for damage of outstanding crops and annuity, it could not settle the deal in West Bengal but settled without any trouble in Gujarat where the price was nearly 6 times higher (Ghatak et al. 2013 and Chakravorty, 2013).\(^{93}\) If one thinks that the resistance was from the majority of the landowners while only a few agreed with the initial price offer, the picture was exactly the opposite.\(^{94}\) Clearly this Singur issue was more complex and one cannot guarantee that if the compensation was more than what was being offered, the story would have been different. Further it poses the question whether for some owners land is rather ‘priceless’.


\(^{93}\)Note that the market price for land varies between states and due to location-based factors but the price offered in Gujarat was even higher compared to the international standards (For more detail see Chakravorty, 2013).

\(^{94}\)see <http://www.economist.com/node/12010079>
Theoretically the possibility of a sale of land arises when a willing buyer’s offer of the present discounted value of land matches or exceeds the reservation price of a willing seller. But in reality this reservation price almost invariably crosses the present value of land. Firstly, because it not only includes the objective components such as productivity or income generated from land, but also the subjective (and contextual) components such as value of land as being an asset, insurance, status good for landowners. Secondly, with the fact that the piece of land is typically their only source of income, many of which, as highlighted by Kombe (2010) are scarcely appreciated by the valuers. Further in line with Chakravorty (2013) the value of land, although possesses both ecological (directly proportionate with the productivity components) and locational (directly proportionate with the urban vicinity) components, tend to outweigh ecology-based prices when location-based price becomes high enough. Only in such settings market price near-equalises the reservation price. Irrespective of this, as industrial development is complementary to the infrastructural development (at least at the local level) and the fact that urban areas are not mono-centric anymore, market price remains a constitutional benchmark for compensation in many LDCs around the world. Further, a discrete variation of market prices (even without additional non-monetary resettlement packages) have been proven successful in multiple occasions, strengthening the retention of ‘market price’ as a basis for compensation in virtually all constituencies.

However, setting market value of land as the basis for compensation can be useful only when the valuation procedure includes detailing of the current characteristics of affected properties instead of abiding by the unreliable and misleading official records (typically holds for LDCs). Then only it can reveal the actual transaction prices and refurbished land grades. Thus an effective land survey, addressing not only the objective characteristics of compensations (like locational factors, financial considerations, occupational skills), but also the subjective characteristics (like preference for diversified non-cash compensations, financial securities, time preference) can provide crucial information to determine offers. Such surveys in combination with price offers for a randomised sample of landowners

\footnote{For examples in Indian context see, e.g., Chakravorty (2013).}
can estimate the acceptability quotient, thereby determine the final compensation package minimising the likelihood for resistance (see Ghatak et. al., 2013). Alternatively there are auction-based methods (see for example Zhan, 2008 and McAfee et al., 2002), and direct bargaining (see Chapter 1 and related literature). Properly designed auctions tools that minimise incentives for owners overstating their true valuation, yet ensuring voluntary participation from majority of the landowners can effectively replace the ad-hoc scale variation of offers. Properly designed bargaining protocols can minimise the hold up problems, but efficiency of this is dependent on institutional perfections (see Chapter 1 and its literature review section). Otherwise, compensation possesses risks of being either too low with an induced bias towards excessive industrialisation or too high to lower the pace of industrialisation, thereby growth. Over-compensation can arguably favours economic efficiency as reducing under-compensation induces productivity-enhancing investments on land by both farmers and government. This not only reduces over-industrialisation but also ensures more equitable sharing of benefits from such growth programs (Ghatak and Mookherjee, 2014 and Miceli, 1991). However exactly how these compensations are ought to be set, whether and when non-cash options accompanied by rehabilitation, training programs etc. are justifiable to improve efficiency remains unresolved by a large extent. There are a growing body of economic literature that entreat contiguity concerns (Ghatak and Ghosh, 2011, Singh, 2012 and Kominers and Weyl, 2011) and usefulness of contingent contracts (see Collins and Isaac, 2012) to restore efficiency but without institutional efficiency none of these can achieve success.

0.15 Social Impact and Consent

As industrialisation is a process of changing the socio-economic structure by shifting focus from being agro-dependent to ponder on manufacturing commercial produce with technological upgrade, acquisition of land for this bound to impact

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96 For discussion on these see Bardhan, 2011, and the symposium in Economic and Political Weekly, 2011.
lives of the converting society. As stated in sub-section 0.13.1 such social impacts has always been underrated. Land, in general have three categories: agricultural land comprising of forest, irrigated and unirrigated land; cultivable waste land comprising of paddock, grazing land and groves; and non-cultivable land comprising of building sites, roads, railways, rivers, ravines and hillocks. Naturally and evidentially when ‘agricultural’ land is being acquired for conversion, the socio-economic impacts are the deepest and thus attracts large body of literature. In a democratic environment where ‘good governance’ is demanded by its modernising society, evidences indicate that collective opinion\(^97\) and assessment of societal impacts are necessary components for the success of land conversion, as otherwise it could have significant contribution to conflict (and often to violence). This section highlights the potential social impacts and failure of adherence to collective opinion as a major sources of land acquisition conflict, thereby showcasing the importance of social impact assessments (SIA) to reach efficiency and effectiveness of development programs.

Ideally the components of SIA\(^98\) studies include social analyses, socio-economic assessments, communal and social impact assessments to evaluate or estimate the consequences of specific project or policy actions on human environment in the context of pertinent national, state or provincial environmental policy legislations (see Burdge and Vanclay, 1996). SIA or more specifically socio-economic impact assessment (SEIA)\(^99\) is to be conducted prior to the commencement of a proposed industrial project focusing on the people who are to be affected directly (often short-term and particular to the industry in concern) and indirectly (long-term general consequences of industrialisation) by the industrial development. It is to make them aware of the project, assess their perception on it with consideration

\(^{97}\)Alternatively known as “social consent”, implicating towards a free, prior and informed consent of the affecting communities, agreeing to sale their resources and permitting business in their community.

\(^{98}\)Introduced in 1970s in the US as a part of US National Environmental Policy Act (NEPA) legislation.

\(^{99}\)Impacts on the project-affected people include possible social and cultural consequences starting from the changes in their day to day activities, occupations, communal pursuits to the alterations of communal norms, beliefs that “guide and rationalise” their individual and societal perceptions (Burdge and Vanclay, 1996).
of problems they faced in similar past projects (Ramanathan and Geetha, 1998). While the importance of SIA as a tool for grievance management is accepted worldwide and legally mandated (although with varying degrees) in most of the countries undertaking such conversion process such as US, UK, New Zealand, India, Malaysia and African nations, the implementation of these assessments are persistently disputed especially in LDCs. Although the most crucial factor stands against acquisitions is perceived to be the compensation amount, social and communal disruptions are proven to be of no less importance in resulting violent conflicts between participating agents.

The most important factor impacting the social sustainability of such acquisitions is employment and employability of the traditional agriculturalists and agricultural labourers who have minimal outside option owing to severe skill shortage. Development economics advocates for industries that can create employment opportunities to absorb local labourers, including skill generation programs to increase the employability of host communities, contributing to improve their socio-economic conditions. Although potentially this increases stability of local business operations and success of industries, a study by Idemudia (2010) indicated that employment generation as a tool for preventing conflicts is not an effective option. This is because the lack of available local skills makes such programs expensive for the industries who then pass on a large share of it to the government that lacks the required fund to sustain such programs. In order to prevent conflicts and to ensure sustainability of development, a global initiative has been taken under the banner of corporate social responsibility (CSR). It provides a framework for the industries to contribute in improving the socio-economic, ethical and environmental conditions without hurting the religious, historical and cultural factors of the host communities. Nevertheless, effective implementation of CSR is crucial for the most lucrative growing markets of the rapidly expanding economies where

\footnote{This is a social issue as lack of it results in migration of locals with local jobs being offered to expatriates with suitable technical skills that induces social inequality (see Burdge and Vanclay, 1996, and Idemudia, 2010). Burdge and Vanclay (1996) studies that, each time when a “wave of new settlers arrives” they typically either aspire for further development of income generating activities or stalls the process to obstruct the folk of new settlers, each having significant social impact.}
social and environmental crises are usually most acute. Economic literature seems a little scarce in producing and examining the efficiency and effectiveness of CSR performance. In line with Visser (2008) it is firstly because a large component of CSR performance is location rather than country or region specific and thus an extensive coverage is required for measuring and improving the effectiveness of CSR, and secondly, because of the fact that it is politically contested instead of being ideationally neutral. Moreover, while ‘good conduct’ and ‘transparency’ are essential aspects for superior performance of CSR, the legal responsibility (in particular with concerned human and property rights) always comes at the end. In the developing nations this fails to provide legal infrastructure to support an independent, resource efficient and administratively effective CSR program (Visser, 2008). The gap between legal provision and implementation of such programs are even more complex in developing economies such as India, China, Malaysia, Indonesia and South Africa, and are subject to a large body of development literature. However, while the failure of peaceful coherence is stemming from bad governance, there are arguments in literature that despite the interest of corporations and government bodies’ in promoting social stability (from both ethical and business perspectives) and lending hands to encourage community involvement and development, it is sometimes the local demographic inability that constraints the government, inducing resistance to such projects. The following section put some detail on such dilemma in light of related conflicts from recent era.

0.15.1 Conflict and social tension

For further analysis, it is important to note two crucial points. First, that individual or communal grievances are more important than a large-scale outbreak of the society (or nation). Primarily this is because communities differ in terms of culture, history, perception and occupation differing the root causes of their grievances. And secondly, communal grievances significantly impacting the business operations are more common in practice. As a result, the literature have focused on this issue in light of segregated incidents (country, state or province specific), but the common drivers being the failure of CSR and resettlement pro-
grams that promised to provide employment, inequality in treatments and insufficient social services. The second point is that while compulsory (alternatively used as ‘urgent’) land acquisition is legally meant to serve for public purpose, its definition and inference often blamed to be unjustified, complicating the issue further (see Ghatak and Ghosh, 2011). Moreover, evidences indicate that whenever the process of acquiring land is not bounded by clear, institutionalised and inclusive protocols adding transparency and predictability for the project affected people (PAP), it potentially induces communal grievances, “escalate and assume political dimensions” undermining the socio-economic sustainability, peace and stability of such programs (Kombe, 2010). Also note that corporate/state-community conflicts arises from attempts of acquiring customary and ancestral lands of the local communities, or child and forced labor are used in projects, such as in Indonesia and Malaysia (Rainforest Action Network, 2014).

To progress further in this section let us consider the following examples. Note that economic literature agrees that already existing social tensions aggravates the degree of conflict when the land under acquisition are being shared communally for living. This is exemplified in African countries when the land under acquisition comprises vast area of community/government land, that is being utilised by several communities (with social division) for generations possessing customary rights over these land. Events of and acquisition does not impact them equally. Our first set of example comes from Kenya. A report by Maggi and Veit (2013) suggests that in Kenya many among the 35 per cent of population living in arid or semi-arid land and practicing pastoralism are relatively more vulnerable when it comes to claim land and related rights than the sedentary groups (e.g., small-scale farmers) holding individual plots, in control of the usage and operations of their plots, even without any formal entitlement. This division comes from the social division where pastoralism is considered as backdated, “antithetical to the western model of property rights”, slows down economic development due to its mobile and communal nature. This topped with government mismanagement of resources, resulting in poverty stricken, undernourished and food insecure society in Kenya. Maggi and Veit (2013) further reports that during 2003-2005 when US based Dominion Farms signed MoU with the Lake Basin Development Author-
ity (LBDA) and the county councils to have acquired more than 9000 hectares land for development of rice plantations in the Yala Swamp Wetlands, the local residents initially welcomed the venture with the hope of having job opportunities, infrastructure and communal development including health, education and financial services that the farm promised to get licence.\footnote{Around 700,000 local people whose domestic and occupational living was depended on this wetland has been assured to have mass provision of direct and indirect local employment with preference given to former land users; bringing in outside expertise for training, technical support, equipment management, farming and healthcare services; preparing local stuffs to take over farm consultancy and management services; finance community development services such as income generating activities, schools, churches, clean water and sanitation, etc.}

The second example is from Pakistan when the Water and Power Development Authority (WAPDA) attempts to acquire 9000 acres of land for the Diamer Basha Dam Project on the River Indus. The foundation stone was laid in 2011 for the worlds highest Roller Compacted Concrete Dam, estimated to cost over US$8.5 billion, with the capacity to provide 4500 MW of electricity to the national grid. With China being the major source of financing this promising Hydropower project, series of protests arises primarily due to lack of consent from the local villagers and land-losers and delayed the process. With the inadequate assessments of impacts on socio-economic and environmental factors, the affected people claimed that while the energy produced will not benefit the mass population, including farmers and riverine communities and will damage the heritage of culture and exchange of the Indus Valley regions, portion of the Silk Road. Moreover, World Banks rejection to finance this project due to its location on a territory claimed by both India and Pakistan, further ignited the protests as it might impact the politically contested Northern Areas and could contribute to further unrest in the region. Protests include sit-ins, appeal to the Asian Development Bank to cut financing the project, road blockades, marches, police firings and deaths.\footnote{see < https://ejatlas.org/conflict/diamer − bhasha − dam − pakistan >, < http://www.firstpost.com/india/after − world − bank − adb − refuses − to − fund − pakistans − dam − project − on − indus − river − in − pok − 3076512.html > and < http://www.dawn.com/news/1300579 >}

These studies suggest that assessments reports are produced merely to get project approval, involve inefficient feasibility studies and disregard many poten-
tial hazards, that brings in social conflict (almost immediately after its commence-
ment) and unsuccess to the project. Social sustainability requires financial alloca-
tion for ongoing monitoring activities, location preference of land-losers, prevention
of health disorders, management of resource conflicts. Note that the private in-
terests of the few individuals representing the entire community can outweighed
communal benefit/harm that perpetuated the social division and thereby ignited
the conflict. A more intense social conflict is also studied by Maggi and Veit, (2013)
in Kenya’s Tana Delta Region[103] where socially divided multiple communities have
been “accessed, utilised, and even settled” for generations in the vast area of public
land. Conflict arises when Bedford Biofuels Tana Delta Ltd. attempts to have ac-
quired 64,000 hectares of this land to develop a jatropha plantation. Despite being
prospective for the socio-economic development for Kenya, the project was stalled
due to lack of consultation and consent from the de-facto and customary land
owners. The study reported that while the oil MNC attempted to negotiate leases
with the local ranches (even with the associated huge transaction cost), there was
diversified interest of the stakeholders and non-ranch settlers who claimed to have
superior right over land, followed by filing of lawsuits that further delayed acqui-
sition. The project was eventually scrapped although having legal approval from
environmental ground (by NEMA), whose authenticity was also being questioned
in the process. Absence of free, prior and informed consent from the stakeholders
that often results from social class divisions, non-recognition of customary prop-
erty rights and complex tenure systems have been significantly contributed to such
conflicts around the world such as Papua New Guinea, India, Brazil, US and Aus-
tralia (see Rainforest Action Network, 2014, Bhaduri and Patkar, 2009, Alston et
al., 2012).

An efficient SIA study is not only a matter of time and money but also associ-
ated with the interest of the concerning parties like investors, government and the
stakeholders themselves. The task is complex in presence of conflict of interests
and effective implementation of SIA/SEIA/CSR requires strong institutional sup-
port (for detail on this see, e.g., Cernea, 2000 and Vanclay, 2003). Cernea (2000)
studies resettlement mechanisms in a risks-and-reconstruction-oriented framework.

[103]With over 70 per cent poverty rate.
It shows that a socially responsible resettlement program, that is guided by an 'equity compass’ benefits both local and national economy. Further, it is of foremost importance to gather land data which in most of the LDC contexts are inadequate, improperly collected or being ignored. This is largely due to the lack of knowledgeable and trained surveyors/consultants regarding scientific methodologies of obtaining and interpreting information (see UN-HABITAT, 2012, and Burdge and Vanclay, 1996). But providing such facilities beforehand is neither a priority of the administrators nor the investors, due to the high associated cost and risks of losing the opportunity to reap the benefits of these economically and politically aspiring projects. Interestingly, even in the countries where undertaking SIAs are among the statutory requirements, there is hardly any obligation for taking the results pivotally in decision making process (see Burdge and Vanclay, 1996). Consequently, reports and mitigation measures often remain unread or unheeded, even falsified. For example, the case of land acquisition by oil-MNC Kuala Lumpur Kepong in Papua New Guinea’s Collingwood Bay (see Rainforest Action Network, 2014).

The second most important aspect is the implementation of SIA/CSR measures and the provision of services for communal development. In this regard, employability of local people remains questionable, firstly owing to industry’s capital intensive nature (for example oil plantations or car manufacturing industries) and secondly due to the lack of local technical skills. The leasing contract often involve the provision of schools and training centres as a potential long term solution for this issue. But lack of acceptability and understandability of these provisions often restrict the locals to actively participate in these programs. Thus schools go unattended by local students, university graduates avoid gaining ‘technical’ skills despite being provided by CSR programs (see for example Idemudia, 2010). Moreover, whilst competition for the communal development proposals further stimulates “intra and inter-community violence”, corporate-community/NGO (mostly local) partnership schemes also fail to act as an effective measure. Communal development programs also involve hospital or health care services but for the same reasons fail to occupy with resident doctors or nurses inducing division between corporate and communities.
The third aspect comes from an extension of land acquisition arguments, raising question on the choice of land given to the industries. A common perception is that state should allocate industries to the previously occupied and currently closed industrial locations. This can have two primary benefits: firstly, it gives a solution to the acquisition of lands that are presently in agricultural use or being used by customary land owners or indigenous people, thereby reducing the conflicts over property rights and employability of the locals. And secondly, acquisition of abandoned land minimises the pressure on agricultural land, thereby reducing the food crisis due to the land use change. Otherwise it can continually raise food prices, severely impacting the poverty-stricken societies questioning on equity and sustainability grounds (for example see report by OECD, 2007). A counter argument to the first is that the choice of land is not always in a state’s hands especially when it is in desperate need for industrialisation and is in competition with other states for fetching investments (see Banerjee et al., 2007 and Sarkar, 2007 for Indian context). Moreover, taking an abandoned factory site may put an additional pressure on the industrialist to employ the local workers who lost their jobs for the closing down of previous factory. These, coupled with the rising population pressure induces the decision of occupying vast area of land that more often happens to be in agricultural use. Regarding the mitigation of food crisis, a part of literature argues in fact on the viability of this food crisis issue. For example Sarkar (2007) points this as “baseless” as the relative land requirement for industrialisation is too small as compared with the land being used in agriculture. It argues that while the long-term solution for “poverty and backwardness” is industrialisation and states have a choice to freely import foods from neighbouring states, industries should be welcomed as it would in turn increase agricultural productivity by raising the average landholding of the rural population and by stimulating the use of modern technology. However, distribution of property rights, consolidation of landholders’ opinion, their identification, consent and participation is accepted almost unanimously in the economic literature for efficient implementation of industrial projects which is possible with effective performance of social assessments.
0.16 Environmental Impacts

The environmental impacts of alternative land-uses have long been debated but when it comes to the search for factors responsible for ongoing global conflicts arising out of large-scale land acquisitions, environmental issues seem to take a backstage. Predominantly it is due to the fact that the land-rush is a relatively recent trend and as large proportion of land acquisition proposals remains at their primary stage of implementation (if not forsaken any earlier), there is a significant shortfall of information that can confirm environmental impacts of these proposed projects. The other being lack of availability of strong environmental measurements and compliance systems to assess environmental sustainability of such programs. While in most developing nations government-enforced environmental monitoring systems do not exist or weakly enforced by law, owing to the dearth of resource and technical support to carry on required audits, it is troublesome for the non-government entities to conduct effective inspections due to lack of cooperation from regional government bodies and investors. But potential environmental impacts of such land-use changes have been evidentially contributed to conflicts, if not, as a sole contributor. It is also not rare that local government practices leniency on the environmental regulations to keep an uninterrupted inflow of capital. In turn it bears the costs and consequences in terms of extensive environmental degradation and inevitably passes them on to the communities, at least locally. In cases when environmental assessment reports are available, unless the proposed projects are being materialised, it undermines the “most egregious” environmental impacts (Maggi and Veit, 2013). This section aims to survey the literature and highlight the potential environmental impacts that play crucially to unfold conflicting land acquisitions.

Large-scale land-use changes more often than not endanger the already scarce natural resources and species as it puts a threat of transforming and polluting the surrounding air and water resources, destroying forests, wetlands and savannahs which impact the natural habitat. Eventually it can have detrimental effects, risking the environmental sustainability of such programs unless precautionary
measures are taken. The affected and fragile ecosystem may percolate down to not only serious environmental consequences, impacting the crop yield and fish life cycle but also a chain effect on the local communities whose livelihoods are dependent on farmland cultivation and fisheries. While such impacts are hard to measure at the time when a proposed project is due to implement or at the very beginning of its operation, its extent is also unimaginable. However, risking environments is not always deliberate as the availability of vast area of land that is either unused for human survival or deprived of natural resources, are sharply declining. The UNECA’s Economic Report (2009) suggests that Africa is the most rational destination for investors owing to its abundance of land, cheap labour resources, copious water reserves, vast natural and mineral resources. It is then followed by other LDCs like Brazil, Indonesia, Cambodia, Kazakhstan and Malaysia that are relatively rich in natural resources and cheap human resources, especially for outright purchase, concession or long-term leasing in land by the economically wealthy but land-poor foreign countries and investors (GRAIN, 2008).

Conflicts regarding environmental issues are most prominently associated with land developments for renewable energy plantation programs. Because, modern societies are increasingly concerning the environmental implications of fossil fuels on global climate that makes them strive for renewable energy resources, thereby fuelling the increasing demand for large scale land to stabilise the source of energy. Globalisation facilitates investments on foreign land, a cheaper option than importing the biofuels from producer country to meet national demand for renewable energy. A recent rise in fossil fuel prices perpetuated the ever rising demand for renewable energy that contributed in the incidents of land acquisition worldwide (FAO, 2008). Although the developed nations like European Union (EU) and United States of America (USA) topped the list of renewable energy markets and related investments, the emerging economies like India and China also constitute strong markets and gearing up such investments. This as well explains the demand for farmland conversions. Since food crops including wheat corn, rice, maize, sugar cane and soybeans can be converted into biofuels, higher prices of oil increases the profitability of converting farm commodities into automotive fuel. Thus the countries with ample arable land are becoming primary targets for the
oil investors to produce the required feedstock for biofuel. In 2010, Africa alone contributed for 13 per cent of global oil production, with major supply from the sub-Saharan Africa, contributing 7.25 per cent (Baumuller et al., 2011). Brazil not standing too far, forecasted to be one of the world’s largest biodiesel suppliers by 2020 owing to its agricultural capacity. Other countries such as Argentina, Laos, Malaysia, Indonesia, Madagascar, Mali and Tanzania are also emerging as the potential target for renewable energy producers. The initial excitement over the potential growth factors from such investment flows and clean source of energy soon turns into concerns, owing to their severe environmental impacts, that resulted in series of empirical literature (see for example Maggi and Veit, 2013, Baumuller et al., 2011 and Cotula et al., 2009). This eventually forces countries in the EU to have adopted sustainability standards such as Renewable Energy Directive (RED) to safeguard their consumption, production and trade of renewable energy, irrespective of whether those are produced domestically or being imported (see Obidzinski et al. 2012).

0.16.1 Conflict and unrest

Our first example in this section comes from Sub-saharan Africa (SSA), supplier of a major share of global oil and gas, with nearly 500 oil companies in operation. Their exporters include the EU (the world’s largest among developed nations), Spain, Germany, France, the UK, Portugal, the Netherlands and Italy as well as the emerging economies like China (the world’s second largest), India, Malaysia, South Korea and the Gulf states (Baumuller et al., 2011). According to Baumuller et al. (2011) in 2010 alone SSA has been accounted for 314 million barrels of oil worth US$65 billion to the EU, with Nigeria and Angola being the major suppliers of production. While the economic importance of oil and gas industry is huge for SSA, effects of oil spills and gas flaring pose high direct risks not only to the environment by contributing dangerously to greenhouse gas emissions, impairing fishing and farming livelihoods and biodiversity, but also impacting health and well-being of local communities. Niger Delta, in particular is affected by the industry as large part of production happens onshore resulting in an estimated gas
flaring of 20-76 per cent as compared with a worldwide average of only 4.8 per cent (UNDP, 2006). It follows the sufferings from pollution-associated health disorders such as gastrointestinal and respiratory ailments, skin diseases and cancers, severely impairing coastal and inland ecosystem. The severely affected local communities often indulge into violent protests against the oil producers and/or the state government that values profitability of these massive projects over the immensity of human and material destruction and the demographic dislocation. There are many incidents from Niger Delta of such environmental conflicts that result in violence and bloodshed of local people. The first reported major clash was between the multinational oil company Shell and local host community of Iko in July, 1987 when around thirty youths from the village of Iko attacked the Utapete oil flow station, drove away the workers and occupied it for three days disrupting the flow of crude oil from the ten oil wells located in their village (Okwechime, 2013). Shell’s operations resulted in closure of creeks used for fisheries and was causing health hazards due to the gas flares. The locals demanded for compensation in terms of jobs and general improvement of the local environment conditions. This led to police intervention resulting in massive violence, mass destruction of village houses and displacement of hundreds of villagers without any assistance from government or any other oil companies nearby. However the grievances continued and embarks again into protest with an expansion of Shell’s operations in August 1995 leading to police intervention, bloodshed and burning down of village houses (Okwechime, 2013). A number of similar bloody massacre was reported in literature such as the clash of the host community of Egi with the French-owned oil company ELF in 1993, the clash of Umuechem community against the oil giant Shell in 1990 etc. (see Okwechime, 2013).

The second is the most discussed Ogoni-Shell conflict that initially started with

\[104\] It is important to note that the impact of such decisions on the ecosystem is not binding to the vicinity of the acquired land, but rather vast. As the displaced farmers, being forced out of their traditional livelihoods move to the frontiers and transform natural forest land for cultivation and animal grazing which in turn affects the natural habitat of forest.

\[105\] Most of the protests were initially non-violent with repetitive petitions to state government, against the oil companies’ consistent negligence over environmental degradation, ecosystem, community health and well-being. These turned into brutality after being invaded by military operations, resulting from prioritising inflow if investments over communal well-being.
a non-violent resistance campaign, supported by an umbrella organisation of the Movement for the Survival of the Ogoni People (MOSOP) in 1993 and climaxed in 1995 with the murder of author and activist Ken Saro-Wiwa along with eight other fellow members. This followed by the gruesome murder of four honoured Ogoni Chiefs in May 1994. Series of studies including Okwechime (2013) and Idemudia (2010) reported many such protests in Nigeria that brought this West African country and the operating oil companies into international disrepute. A detail survey on local communities by Idemudia (2010) found that around 90 per cent of the conflicts arises against the operation of MNCs that resulted in gas flaring damaging the zinc roofing local houses that then require frequent repairing, acidification of rain water that makes it undrinkable and stunts crop yields, pollution from carbon emissions. Further, oil spills pollutes the water affecting the natural habitats and fish life cycle where agriculture and fisheries are the main livelihoods in Niger delta. To prevent and manage such situations a framework of CSR has been incorporated in the host community by the oil-MNCs that involves environmental impact assessment (EIA) study and proliferation of communal support in terms of schools, hospitals, job training centres etc. However, despite of the provision of such highly cost incentive programs, its success has never reached the expected level as these private companies are more inclined towards making profit, and pass on the responsibility of managing these programs to the poor government. Reportedly more than half of the cost of CSR programs are being passed on to the state government by the MNCs. The government then passes it on to the local communities by giving leniency in the environmental regulations such as fixing a significantly low penalty for violating the environmental regulations. But lack of funding and difficult research environment for conducting epidemiological studies makes it harder for the researchers to fully reveal situations in the Delta. This is also misleading for both private companies and government to rely on existing data to take any appropriate measure even when it is intended. Thus even though some of micro-CSR issues address few aspects of host community’s grievances, it

\[106\] One can refer to the studies mentioned in these reports. Those are not mentioned separately here.

\[107\] For example, to manage the increased community violence between 1989 to 1998 Shell raises spending on corporate-community relations from $330,000 to $43 million (Idemudia, 2010).
remains at a surface level as the root causes remain unsolved. Hence, the resultant incidents of corporate-community violence are not solely due to action or inaction of private industries, instead it is due to the failure of good governance that the strategic decision of industries have accentuated.

It is important to note that violent conflicts are not always driven by private industrialists, they can also result from high aspirations of economically poor governments. This third set of examples thus are from Indonesia and Malaysia, whose tropical environments naturally blessed them with rich soil suitable for producing several food and forestry commodities, but their governments intended to grow upon the economically promising palm-oil. Owing to the high economic prospects of palm oil, both the governments are likely to ponder on becoming the key world suppliers of crude palm oil (CPO). So much so that in Indonesia there is 75 per cent rise in palm oil plantation between 2006 to 2010 accounted for nearly 46 per cent of the world’s CPO (Obidzinski et al., 2012) while jointly with Malaysia they account for 86 per cent of the world’s palm oil exports. A large part of this goes to China and India, the fastest growing economies of the world today (Coxhead and Jayasuriya, 2010). Consequently, these oil plantations resulted in deforestation, threatening the rainforests and carbon reserves resulting in green house gas (GHG) emissions, changes in land cover and endangering the biodiversity, affecting local as well as the global environment. A large body of literature dealing with environment and sustainability are devoted to analyse such issues. Coxhead and Jayasuriya (2010) studied that deforestation also makes land vulnerable to flash floods, endangering the livelihood of local communities that are dependent on forestry and fishery, timber-extraction activities and impacts the health and well-being of the residents in plant locality by polluting the surrounding air and water. Consequently there are communal protests against these oil companies interrupting their production and operations. Reportedly, in Indonesia in 2010 alone there were more than 630 land disputes between palm oil companies and local communities. UNDP (2012) reports conflicts in Papua New Guinea’s Collingwood Bay.

\footnote{China topped the list of palm oil importers in the world followed by EU and India in second and third position respectively. Between 1990 to 2005 Chinese and Indian imports have grown steeply from 1,291,000 MT to 4,500,000 MT and 209,000 MT to 3,800,000 MT respectively (Coxhead and Jayasuriya, 2010).}
area, during 1995-2002 when 262,000 hectares of tropical forest, forming the watershed of five major rivers were brought into stake. The local Maisin community in support of Conservation Melanesia, a local environmental NGO fights against private industries and ruled out their operation through court order of returning the land title to the community. They also impose self-operated innovative and effective environment conservation programs in order to have “environmentally sound, economically viable, culturally appropriate, and socially equitable” sustainable development. This active communal attempt to save local environment and entail sustainable development has attracted national, international and media support that poses an example of communal strength in preserving local well-being. This communal initiative poses a good example for many others in similar situation thus research on finding the detail of such stories are worth working on.

Similar scenarios of violent conflict is not new. An example comes from India, when in 1989 Goa Industrial Development Corporation (GIDC) acquired 123,200 square metres of land in Bhutkhamb plateau for the chemical giants DuPont, the Thapars group of India and Mitsui of Japan to produce Nylon 6,6. The $190m plantation was initially declared as pollution free and was hugely promoted by Politicians and officials as one of the most promising SEZ in the state history. But the industrys production of Nylon with two hazardous chemicals adipic acid and Hexamythelene Diamine, was causing concerns for environmentalists that resulted in several agitations and protests against its operations. It turned violent when in 1995 police open fired at protestors and killed one. In retaliation protestor beat up the police, stripping and chasing them into the woods, burnt cash and properties of the companys local office. The intensity of conflicts gradually forced the company

\textsuperscript{109}Conservation Melanesia and local Maisins successfully formed a local community-based organisation, the Maisin Integrated Conservation and Development (MICAD) association, that guided the locals through business workshops for project identification, prioritisation, development, and evaluation. It has not only been successful in alternating their primary source of income utilising their traditional occupation (of making tapa cloth), rather than solely relying on large-scale cultivation or timber harvesting, but also been successful in marketing it to urban and international consumers. Consequently this helps in funding their means for protesting and protecting their local livelihood from being expropriated by any industrial investors (UNDP, 2012).
to relocate to a neighbouring state, Tamil Nadu.\footnote{See <http://www.indiaenvironmentportal.org.in/content/9062/a−shredded−project/> and Sampat (2015).}

The evidences discussed above shows that environmental issues are closely linked with societal gains, state machineries and legal issues that fails to mandate and implement the required EIA studies. However the causality relation between these are not very clear. For example, while deforestation resulting from industrialisation negatively impacts the socio-economic well being of the PAP, the displaced communities may prefer to move to the frontiers to resettle even when resettlement arrangements are provided as part of CSR programs. This in turn adversely impacts the local biodiversity with this changing land use. The ecological effect of deforestation, desertification, land-cover and land-use change are similar across the nations although its extent is highly nuanced. Thus studies on environmental impacts have been specific to the country or location proposed for plantation. In order to mitigate issues most of the countries (both developed and developing) such as EU, Australia, New Zealand, Sri Lanka, India, China, South Korea, Nepal and Malaysia have enacted Environmental Impact Assessment (EIA) studies.\footnote{EIA was introduced late 1960s and with the increasing global awareness on the climatic issues countries are becoming more frequent in mandating and producing the reports and introducing punishments for negligence.}

While it is supposed to be conducted prior to the commencement of a project to forecast its plausible positive and negative impacts on environment, there are loopholes in the adherence of the study especially in LDCs, due to lack of administrative efficiency, lack of political and financial support and ease of breaching. Although the notion of environmental impacts are commonly perceived and subjected to an emerging body of development literature, there is argument over the consensus of climatic disorders with violent resource conflicts as the link has not been successfully established by factual evidence or quantitative research (OECD, 2013). Theoretically scarcity of resources questioning environmental security has potential for civil conflict, insurgencies and ethnic clashes. But in practice, such incidents are more often combined with other socio-economic and political parameters, resulting in small-scale violent conflicts in arid and semi-arid areas rather than full-blown...
violence with involvement of the state government. For example, drought may be a
direct impact of climate change or series of rainfall shortage that may have caused
indirectly due to deforestation resultant from industrialisation but violent conflict
primarily arising out of it is often hard to establish. As reported by FAO (2008),
large-scale mono-cropping practices, cultivation of genetically modified materials
or feedstocks are highly water intensive and thus expansion of such economically
promising industries imposes greater competition for this already scarce resource
that ‘may’ negatively impact agricultural biodiversity but that, to a very large
extent, depends on the geographical and methodological implementation of such
projects.

0.17 Institutional failure: policy disputes and
implementation failure

Institutional success and failure is essentially a combined performance of legal,
political and social entities. As evident from the discussion so far, conflicts arise
from their interplays. In this section, we elaborate our views by subdividing the
elements of institutions that directly plays in conflicts arising out of large-scale land
acquisition programs for industrial progress. This include constitutional provision
of Eminent Domain and Public Purpose laws, legal provisions for property rights,
takings on Environmental Protections and Social Consent laws, role played by
media and the role of outside Interference and politicisation.

0.17.1 Legal disputes

_Eminent Domain and Public Purpose Laws:_ Land acquisition for industrialisation
is commonly facilitated by the law of _eminent domain_\textsuperscript{112} which empowers

\textsuperscript{112}Alternatively termed as expropriation, takings and compulsory purchase, compulsory acquisition in different legal frameworks.
government to acquire land for “public purposes” and “public uses” in exchange of adequate compensation. While this is virtually enacted in all constitutional frameworks (as discussed in section 0.14), it is the improper definition of these principles along with the inefficient establishment of legal systems that persistently raises controversy in the economic and land policy debates (see Lindsay, 2012, Ghatak and Ghosh, 2011 and Miceli, 2011 and Munch, 1976). The definitive use of these laws for projects that are in “public purpose” or in “public interest” is a controversial issue raising concerns for policy makers. Blume et al. (1984) suggests that when land acquisition follows eminent domain laws (thus acquisition is not independent of land use), even a full compensation may be inefficient, since there exist moral hazard problems. Thus it is crucial to define when land acquisition must follow eminent domain laws. Although there is a variety of its definition across national laws, including both itemised list of purposes and open ended definitions, neither of them seem to have achieved efficiency. Because while itemised list of purposes imposes a degree of certainty and limits discretion, its potential of being too rigid and inflexible can cause problems, especially when such a purpose remains unanticipated when the law was made (see Keith et al., 2008 for more on this). National laws in most of the countries including US, UK, regions of sub-Saharan Africa and India allows the government to exercise this ‘extraordinary’ power (in varying degrees) not only for government projects but also in cases of private investments and public-private partnerships that potentially increase economic growth.\footnote{A detail on this can be found in Lindsay (2012) and the associated references.} This leaves room for further debate on which project can truly serve the ‘public’ and in their interest. On one hand, by law it is left on the discretion of the local government. On the other hand it is inviting challenges from the resentful political or non-political bodies that more often found catering their own incentives towards implementation of large-scale projects.

Property Rights: The principle of equivalence insists that both \textit{de facto} and \textit{de jure} owners are entitled for equitable compensation. But in absence of any recognisable legal right or claim to the land, occupants and poor squatters who should be entitled to monetary or any alternative forms of compensation and resettlement assistance, become informal victim of the necessity (for discussion on
this see Alston et al., 2012, Keith et al., 2008 and Alston et al., 2000). Sharing the compensation with non-owners whose livelihood is equally impacted as that of an owner by the eviction process, is much broader than the scope of economics or the law as it subject to both ethical and political aspects. Limiting compensation to the owners and including non-owners in a broader social insurance programme as suggested by Banerjee et al. (2007) seems a just scheme but as pointed out in their study, may not be affordable by economies burdened with overpopulation and less wealthy government. An alternative can be short-term transition assistance programmes which seems a viable option but subject to fall in the vicious cycle of administrative inefficiency and corruption (typical in developing economies) besides giving privilege to “newly poor over the long-term poor”. Theoretically ownership rights entails possession of \textit{ex ante} and \textit{ex post} bargaining power but absence of complete contracting programs gives rise to informational rents and exploit poor land-users (for detail see Mookherjee, 1997). Moreover, political institutions that often lend hand to fix the issues of property rights impeding the acquisition process are often influenced by their political mileage from these sensitivities

\textbf{Environmental Protections and Social Consent Laws:} A number of measures have been undertaken in attempt to minimise the negative effects of industries on society and environment. Some of the more pertinent ones include the World Bank’s Global Gas Flaring Reduction Partnership (GGFR) that provides a platform for oil producers and importers to increase the use of natural gas associated with oil production, thereby reducing flaring and venting. The United Nations Global Compact framework (UNGC), the OECD Guidelines for Multinational Enterprises are among those international guidelines that set out standards and principles for responsible business conduct adhering to not only to environment, information disclosure and human rights but also in combating bribery. But this

\begin{footnotesize}

\footnote{For the cases of West Bengal, India see < http://archive.indianexpress.com/news/india-nirman/25736/>}

\footnote{Launched in August 2002, the GGFR is a public-private partnership designed to bring together representatives from all the stakeholders including Government (including Angola/Songangol, Cameroon, Chad, Equatorial Guinea, Gabon and Nigeria/NNPC in Africa), oil importers (including the EU, the US, Norway and others) and major oil companies.}

\footnote{For detail on measures and guidelines to prevent such conflicts one can also refer to Ochieng, 2011.}

\end{footnotesize}
voluntary measures should be seen as complementary to local and (inter-)national regimes and legal instruments. These are subject to the enforcement of monitoring instruments to mandate the demonstration of progress and adherence.\footnote{For detail on this a reader can refer the discussions in the reports from OECD (2013), UNRISD (2009), USAID(2011) and Baumuller et al. 2011}

Regarding the protection of socio-economic factors most national constituencies incorporate Socio Economic Impact Assessment (SEIA) as part of their land acquisition law (as discussed in section \ref{sec:seia}). However its complementarity with national regimes and legal instruments is required to fulfil its purpose. For example, in its attempt to minimise inefficiency, in 2013 a bill named Land Acquisition, Rehabilitation and Resettlement Bill has been enacted in India. This bill has been set in place along with the National Rural Employment Guarantee Act (arguably the most crucial pro-rural and pro-poor legislation of the post-liberalised era), and the Right to Education Act, although may subject to various improvements but provides a ‘legislative template for framing new legislation on land’ (Jenkins, 2012).

\section*{0.17.2 Role of Media}

Media as an institution plays a role in imparting information that becomes public knowledge, feeding into decision making. Thus sensitive issues such as acquisition of land in LDCs requires responsibility and accountability of the media, rather than having it sensationalised to make it ‘newsworthy’. The role of media in increasing government responsiveness and accountability has been massive (for example see Besley and Prat, 2006 and Basley and Burgess, 2000), while the political orientation of interest groups and their role in manipulating media information by using sparse yet powerful resources such as Landless Peasants Movements, Save Farmland Committee, Committee Against Forced Displacement, etc. has been critical in many instances (for discussion on this in Brazilian context see Barros et al., 2012 and Alston et al., 2012). It is not impossible that media hype is feeding the recent land rush. As more reports come out, they increase the interest of the
key players to strike a profitable deal from seeking to acquire large areas of land. Therefore there is an increasing importance of media reports with careful and detached analysis of factors influencing land investments in developing economies. Issues of image and reputational risks are important aspects. Thus investors who are dealing with bureaucratic corruption that results in violation of environmental laws and human rights should be subjected to unbiased attention. In a scenario of controversial acquisition it is often found that facts pertaining commerce and the government are over-presented than the deeper reasons for grievance of the landowners, potentially distorting opinions.\textsuperscript{118} Moreover, when media attention is biased towards troublesome acquisitions and scale coefficients of the projects, this results in relative absence of information on cases concluded without ‘trouble’ (resistance, violence, extended negotiation, and so on). But in reality it is neither the size of land nor the scale of project that ensures conflict in the process (Chakroborty, 2013). Media reports on ‘peaceful’ land transfers can impart information on more accepted norms of successful deals thereby increase efficiency of development programs.

0.17.3 Outside Interference and Politicisation

The impact of government involvement in acquiring land for massive state projects are two-fold: On one hand it keeps the interest of an investor in states where it is needed the most, serving an effort of having equitable distribution of such development phenomena. But on the other hand it almost inevitably encourages political interference in the matter especially when conflict of interests persists in the crux of the matter. Government intervention over private purchase of land can be justified on many grounds. One, fragmented land holdings in LDCs make private negotiations costly and intensifies strategic delays in the process as a result of landowners monopoly power, strategic bargaining, non-cooperative bargaining protocols and associated transaction costs that put buyers at bargaining disadvantages vis-a-vis

\textsuperscript{118}Readers can refer the role of media in Singur, India case in <https://www.ukessays.com/essays/history/the-tata-nano-singur-controversy-history-essay.php>
sellers (see Miceli and Segerson, 2007, 2011, Menezes and Pitchford, 2004, Posner, 2003 (p. 55), Cooter, 2000 (p. 289) and Munch, 1976 (p. 474)). Chapter 1 discusses how in presence of institutional infirmities a buyer can strategically involve the government in the process. Second, as discussed earlier, the presence of inappropriate property rights, communal land disputes and corrupt land administration can create potential ground for wealthy private buyer to exploit poor landowners and make profitable land deals. And third, the PPP model of development whereby industrial and infrastructure projects have been transformed into profit making ventures for the state governments, as explained earlier. While these mandate government mediation to restore efficiency, fabricated utilisation of eminent domain laws and misuse of government machineries grease forced sale of land.

As the land markets are reforming in LDCs, the information asymmetries facilitating the historical abusive acquisitions are fading away with the emerging active and aggressive civil society as well as political parties, using disruptive land acquisition issues to garner votes. It therefore invokes a deeper question of what makes land acquisition disputes worthy of political attention? This is in continuation with the discussion in earlier chapters. Certain key factors provide incentive for political involvement: First, active participation of various interest groups who provide all necessary information, support the project affected people and coordinate an initial resistance. Second, active participation of media ensuring greater political mileage from involvement. Third, greater fragmentation of land, increasing not only the number of victims but also contributing to the need for acquiring multiple pieces of land for development, entailing higher transaction costs. As these create potential ‘flash-points’ and emerge as wedge-issues for parties in upcoming political events, whose benefits can go far beyond the land acquisition per-se, intervention of outside agents becomes more lucrative.

This feature is typical of developing nations, as in the developed countries land

\[119\] Comprising of NGO’s, national and/or international (non-profit) organisations that are ideologically motivated to protect poor peasants, whose striking emergence is noted during and post mid-2010 (see Chapter 1 or Jenkins, 2012).

\[120\] This has been evident in the different cases discussed earlier.
disputes arising out of large-scale acquisitions are resolved using legal machineries owing to their relative efficiency of the legal-institutional framework. The study so far suggests that imperfections in the institutional framework, especially regarding the legal and political infirmities result in inefficiency in the industrialisation process. Urgency of states for bringing in economic growth and employment, the transition to new PPP model of development, that put too much risk on losing inflow of investments has fuelled government involvements. But imperfections bring in inequality in the involvement - while private investors has been facilitated with liberalised licensing schemes, affected communities are facing suppression of voices, using state machineries. The inefficiency of the legal institutions resulting in unclear and overlapping property rights (as mentioned earlier in this section) combined with the fact that land transactions must involve a state-level bureaucracy (as discussed in Chakravorty, 2013), make room for bureaucratic corruption, thereby increasing transaction costs. In such a scenario when rule of law is weakly enforced it is easier for the outside agents to interfere in the resentful land acquisition process and use legal or extra-legal means to fulfil their own agendas. Of course, the decision of political parties for giving support or to oppose the land acquisition process is largely dependent on their respective political status and associated gains.

There is a large body of literature that establishes an undeniable correlation between bureaucratic corruption and economic development. As mentioned in Chapter 1, there are two strands of scholarly articles holding rather contradictory views: one, that sees corruption as an obstacle to economic development or ‘sands’ the process by critically contributing in generating poverty traps (see for example Blackburn et al., 2006, Mauro, 1995 and Murphy et al., 1993). The other sees that corruption as an ‘greasing’ element, facilitating beneficial trades and improving efficiency of bureaucratic procedures (see for example Levy, 2007, Egger and Winner, 2005, Beck and Maher, 1986 and Leff, 1964). In terms of empirical literature, anecdotal evidences support the later argument in context of less developed economies (for more on this see Aidt, 2009). While economic literature connecting the inefficiencies of democratic institutions with the extent of corruption is weak, it is agreed that such inefficiencies play a crucial role to
foster political transitions, thereby increase the chances of economic development (see for example Svensson, 2005, Paldam, 2002, Ades and Tella, 1997 and Bardhan, 1997). Economic theory in context of land acquisition programs that trace the role of politicisation on restoring efficiency in such programs is rather scarce. Roy Chowdhury (2013) shows that politicisation cannot improve efficiency if it is landowner-induced, when landowners’ have present-biased preferences. In the first two chapters of the thesis we show that inefficiency in land acquisition results precisely because of the interplay between legal and political infirmities, that an industrial buyer can strategically utilised. We show that inefficiency can take place even without strategic bargaining, geographical contiguity or preference irrationalities and a reduction in bureaucratic corruption may in fact increase inefficiency if these imperfections are significant and small improvements in institutions can hurt economic surplus. Further, the study shows that sellers are worse off when institutions fail to control excessive opposition. The third chapter shows that political intervention does not always result in inefficiency. It shows that when consent for selling land is practiced through landowners’ voting, inefficiency occurs if institutional inefficiencies make parties indulge in an early mobilisation of resources for post-voting violence.

0.18 Conclusion

Management of land is becoming the most critical challenge for the developing economies today. On one hand there is ever rising aspiration for industry and infrastructure development that demands for land-use changes, coupled with the new PPP model of development that are mounting competition over this diminishing resource. On the other hand there is lack of outside option for the ones who loses their traditional livelihood and lifestyle. In presence of institutional infirmities resulting in bureaucratic corruption, infringement of rule of law and distorted political motivations, exploitation of this high value resource is more likely. Imperfections like bureaucratic corruption and extra-legal influence of var-

\footnote{Chapter 1 put more details by unifying these views.}
ious stakeholders, including political parties and civic-society organisations, can reinforce one another and distort property rights in LDCs. In such environment when corrective measures for land acquisition acts, compensations and rehabilitations fail to restore efficiency on a large scale, it is necessary to look beyond such schemes. In light with anecdotal evidences from LDCs, the thesis is thus a first cut attempt to provide an institution-based explanation of the land acquisition problems.

This thesis ends with a solemn reminder regarding the violence, suppression and coercion associated with land acquisition. Many land owners have lost their lives and livelihood, while many are still engaged in battles against a powerful nexus of buyers and various parties with vested interests. At the same time, many land owners have successfully sold their lands and have a lifestyle that would not have been achievable by them otherwise. Given the complexity of the issue, and the humanitarian tragedies involved, we point out that our theoretical construct is a first cut aimed at understanding the trade-offs involved between economic and political considerations, and, consequently, we refrain from providing any facile policy recommendations.
0.19 Appendix A

0.19.1 Proofs of Results from Chapter 1

Proof of Proposition 1: The buyer’s objective in stage 2 is then to maximize $\Pi(k)$ by choosing $k$. The first order derivative of the buyer’s profit function in (6) gives

$$\Pi'(k) = \frac{\lambda - v - r_I + 4k(r_I - r_P)}{2},$$

where note that $\Pi'(0) = \frac{\lambda - v - r_I}{2} > 0$, and $\Pi'(1) = \frac{\lambda - v - r_I + 4(r_I - r_P)}{2}$. The FOC in case of an interior equilibrium is given by

$$k^*(r_P) = \frac{(\lambda - r_I - v)}{4(r_P - r_I)}.$$ 

Further, the second order derivative of the profit function gives

$$\Pi''(k) = 2(r_I - r_P),$$

so that $\Pi''(k) < 0$ if and only if $r_I < r_P$. Let $\tilde{k}(r_P)$ denote the choice of $k$ that maximizes $\Pi(k)$. For $r_P < r_I$, $\Pi(k)$ is increasing and convex. Thus $\tilde{k}(r_P) = 1$. Whereas for $r_P > r_I$, $\Pi(k)$ is concave. Thus $\tilde{k}(r_P) = \min\{k^*(r_P), 1\}$. □

Proof of Proposition 2: Fix some $c \geq 0$ chosen by A. The lottery contest success function $\pi(k) = k$ means that the party F’s problem is

$$\max_{r_P} Z(r_P) \equiv \gamma \tilde{k}(r_P) + (1 - \gamma)(r_P - c).$$

Thus, $Z(r_P) = \gamma + (1 - \gamma)(r_P - c)$ in case $r_P$ induces no holdout (i.e. $\tilde{k}(r_P) = 1$), and $Z(r_P) = \frac{\lambda - r_I}{16} \left[ \frac{4\gamma}{(r_P - r_I)} + \frac{(1 - \gamma)(\lambda - r_I - v)(r_P - c)}{(r_P - r_I)^2} \right]$ otherwise. Thus, for any $r_P$ that induces hold out, we have that

$$\frac{dZ}{dr_P} = \frac{(\lambda - r - v_I)}{16(r_P - r_I)^3} \left[ (1 - \gamma)(\lambda - r_I - v)(2c - r_I - r_P) - \gamma(r_P - r_I) \right].$$

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For ease of exposition I define $Y \equiv [(1 - \gamma)(\lambda - r_I - v)(2c - r_I - r_P) - \gamma(r_P - r_I)]$.

Let $\hat{r}_P$ solves $Y(r_P) = 0$, so that

$$\hat{r}_P = \frac{(1 - \gamma)(2c - r_I)(\lambda - v - r_I) + \gamma r_I}{(1 - \gamma)(\lambda - v - r_I) + \gamma}.$$ 

Let

$$\bar{c} := Y|_{r_P = r_I + \frac{\lambda - v - r_I}{4}, k=1} = \left(\frac{7}{8}\right) r_I + \frac{1}{8} \left(\frac{\gamma}{1 - \gamma} + (\lambda - v)\right). \tag{30}$$

Note that $r_I < \bar{c}$. Also note that for any $r_P \leq r_I + \frac{\lambda - v - r_I}{4}$, from Proposition 1 the equilibrium does not involve any holdout and party F’s utility is $\gamma + (1 - \gamma)(r_P - c)$, so that it is increasing in $r_P$. Thus it is sufficient to consider $r_P \geq r_I + \frac{\lambda - v - r_I}{4}$.

To prove the first part of the proposition, suppose $c$ is small, i.e. $c \leq r_I$. Consider $r_P$ such that $r_P \geq r_I + (\lambda - v - r_I)/4$. I argue that $Z(r_P)$ is decreasing for all $r_P \geq r_I$ whenever the outcome involves holdout. Given that $Y$ is decreasing in $r_P$, it is sufficient to establish this for $r_P$ close to but greater than $r_I$. Since

$$Y|_{r_P = r_I} = 2(1 - \gamma)(\lambda - r_I - v)(c - r_I) \leq 0,$$

it follows that $Z(r_P)$ is decreasing for all $r_P$ greater than, but sufficiently close to $r_I$. Thus optimally party F sets $r_P^* = r_I + \frac{\lambda - v - r_I}{4}$. From Proposition 1 it then follows that $k^* = 1$ and there is no holdout. So suppose $c$ is large, i.e. $c > r_I$ and $4(1 - \gamma) \left(2(c - r_I) - \frac{\lambda - v - r_I}{4}\right) - \gamma \leq 0$ that implies $c \leq \bar{c}$. Note that

$$Y|_{r_P = r_I + \frac{\lambda - v - r_I}{4}} = \frac{\lambda - v - r_I}{4} \left(4(1 - \gamma)(2(c - r_I) - \frac{\lambda - v - r_I}{4}) - \gamma\right) \leq 0.$$ 

Consequently, in this case $Z(r_P)$ is also decreasing in $r_P$ for all $r_P \geq r_I + \frac{\lambda - v - r_I}{4}$. Thus the outcome involves $r_P^* = r_I + \frac{\lambda - v - r_I}{4}$, and for same reasons there is no holdout.

To prove the second part of the proposition, consider the case where $c > r_I$ and $4(1 - \gamma) \left(2(c - r_I) - \frac{\lambda - v - r_I}{4}\right) - \gamma > 0$. This implies $c > \bar{c}$ by the fact that
Recall that
\[ Y_{I+\frac{\lambda - v - r_I}{4}} = \frac{\lambda - v - r_I}{4} \left( 4(1 - \gamma)(2 - r_I) - \frac{\lambda - v - r_I}{4} - \gamma \right). \]

Consequently, in this case \( Z(r_P) \) is increasing in \( r_P = r_I + \frac{\lambda - v - r_I}{4} \). Thus \( r_P^* > r_I + \frac{\lambda - v - r_I}{4} \). In particular, \( r_P^* = \hat{r}_P \). Note that, here the profit of the buyer remains positive for all values of \( r_P^* = \hat{r}_P \). To see this consider the buyer’s profit function when \( r_P^* = \hat{r}_P \) given by
\[
\Pi(k^*(r_P)) = \frac{\lambda - r_I - v}{8(r_P - r_I)} (r_I - r_P) + (\lambda - r_I - v).
\]

Note that \( \frac{\lambda - r_I - v}{8(r_P - r_I)} \) is positive for any \( r_P > r_I \) and \( \left( \frac{\lambda - r_I - v}{4(r_P - r_I)} (r_I - r_P) + (\lambda - r_I - v) \right) > 0 \) as well since \( \lambda > r_I + v \). Finally, note that as \( r_P^* > r_I + \frac{\lambda - v - r_I}{4} \), from Proposition 1, \( k^* < 1 \) so that the outcome involves holdout. □

**Proof of Proposition 3**: Let
\[
L := \left( \frac{\delta}{2\alpha(1 - \delta)} \right) \left( (\lambda - r_I - v) + \frac{v}{1 - \gamma} \right),
\]
\[
X := \left( \lambda - r_I - v + \frac{\gamma}{1 - \gamma} \right)^2.
\]

From Proposition 2 we know that in the region \( c \leq r_I \) there is no holdout. Since \( \alpha > 0 \) it must be that \( c^*|_{c \leq r_I} = 0 \) in that region. Similarly in the region \( r_I < c \leq \bar{c} \) we have \( c^*|_{r_I < c \leq \bar{c}} = 0 \). This is because from Proposition 1 we know that for any \( c \leq \bar{c} \) we have no hold out in which case A will save this cost. In both the above cases A’s payoff equals 0.
Now consider the case when $c > \bar{c}$. Here $r_p^* = \hat{r}_p$ and the consequent $k^*(r_p)$ is

$$k^*|_{\bar{c} < c < G} = \frac{(1 - \gamma)(\lambda - r_I - v) + \gamma}{8(1 - \gamma)(c - r_I)}.$$ 

Hence in this region, A’s payoff in $c$ is

$$D = \delta \left(1 - \frac{(1 - \gamma)(\lambda - r_I - v) + \gamma}{8(1 - \gamma)(c - r_I)}\right) - (1 - \delta)\alpha c.$$ 

Now

$$\frac{dD}{dc} = \frac{\delta((1 - \gamma)(\lambda - r_I - v) + v)}{8(1 - \gamma)(c - r_I)^2} - (1 - \delta)\alpha,$$ 

and

$$\frac{d^2D}{dc^2} = \frac{\delta((1 - \gamma)(\lambda - r_I - v) + v)}{4(\gamma - 1)(c - r_I)^3} < 0$$

since $c > r_I$ in the case under study. Consider first the free solution from the FOC: $dD/dc = 0$. This yields two roots, namely

$$c = r_I \pm \sqrt{\frac{\delta(\lambda - r_I - v)}{8\alpha(1 - \delta)}}.$$ 

Since I am in the zone $c > r_I$, it follows that the free solution must be

$$c_f = r_I + \sqrt{\frac{\delta(\lambda - r_I - v)}{8\alpha(1 - \delta)}}.$$ 

(31)

Next note $c_f > \bar{c}$ if and only if

$$\left(\frac{\gamma}{1 - \gamma} + (\lambda - v - r_I)\right)^2 < \frac{\delta(1 - \gamma)(\lambda - r_I - v) + v}{\alpha(1 - \gamma)(1 - \delta)},$$

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that yields
\[
\left(\frac{\gamma}{1-\gamma} + (\lambda - v - r_I)\right)^2 < \left(\frac{\delta}{\alpha(1-\delta)}\right) \left(\lambda - r_I - v + \frac{v}{1-\gamma}\right).
\] (32)

Following the notations, Eq. (32) is equivalent to having \(X < 2L\). Thus \(c^* = c_f = r_I + \sqrt{\frac{\delta(1-\gamma)(\lambda-r_f-v)}{8\alpha(1-\gamma)(1-\delta)}}\) if and only if \(X < 2L\) (that is equivalent to \(\alpha < \bar{\alpha}\)), provided the payoff to \(A\) is positive as otherwise it will never set a positive \(c\). Now, \(A\)'s payoff from \(c_f\) is positive if and only if
\[
\delta \left(1 - \frac{\lambda - r_I - v}{4(r_P - r_I)} + \alpha r_I\right) > \alpha r_I + \sqrt{\frac{\alpha(1-\delta)\delta(\lambda - r_I - v)}{8}}.
\] (33)

It is straightforward to verify that there exists a \(0 < \tilde{\delta} < 1\) such that the above inequality holds if and only if \(\delta > \tilde{\delta}\). Thus for all such values of \(\delta\) we have \(c^* = c_f\) while for all \(\delta < \tilde{\delta}\) we have \(c^* = 0\).

Given Eq. (32) if \(c_f \leq \bar{c}\) then it must be true that
\[
\left(\frac{\gamma}{1-\gamma} + (\lambda - v - r_I)\right)^2 \geq \left(\frac{\delta}{\alpha(1-\delta)}\right) \left(\lambda - r_I - v + \frac{v}{1-\gamma}\right).
\]
But this gives \(X \geq 2L\) that is equivalent to \(\alpha \geq \bar{\alpha}\). Then the constrained optimum \(c^* = 0\) as there will be no eventuality with holdout.

To prove the comparative static results, recall that
\[
c_f = r_I + \frac{\delta(\lambda - v - r_I)}{8\alpha(1-\delta)}
\]
Clearly \(\frac{\partial c_f}{\partial \alpha} < 0; \frac{\partial c_f}{\partial v} < 0; \frac{\partial c_f}{\partial \lambda} > 0\) and \(\frac{\partial c_f}{\partial \delta} > 0\).

\[
\frac{\partial c_f}{\partial r_I} = \frac{\sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}{8(r_I + v - \lambda) + 1}
\]
Note that for given \( \lambda - v - r_I > 0 \) we have \( \frac{\partial c}{\partial r_I} < 0 \) if and only if \( 32(\lambda - r_I - v) > \frac{\delta}{\alpha(1-\delta)} \). □

**Proof of Corollary 1.** Recall that

\[
\hat{r}_P = \hat{\lambda} = \frac{(1 - \gamma) \left( r_I + 2 \sqrt{\frac{\delta(\lambda - v - r_I)}{8\alpha(1-\delta)}} \right) (\lambda - v - r_I) + \gamma r_I}{(1 - \gamma)(\lambda - v - r_I) + \gamma}
\]

Clearly \( \frac{\partial \hat{r}_P}{\partial \alpha} < 0 \).

It is straightforward to verify that

\[
\frac{\partial \hat{r}_P}{\partial \lambda} = \frac{\sqrt{2}(1 - \gamma)((1 - \gamma)(\lambda - v - r_I) + 3\gamma)\sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}{4((1 - \gamma)(\lambda - r_I - v) + \gamma)^2}
\]

Note that \( \frac{\partial \hat{r}_P}{\partial \lambda} > 0 \) for any \( 0 < \gamma < 1 \).

\[
\frac{\partial \hat{r}_P}{\partial v} = \frac{\sqrt{2}(\gamma - 1)((1 - \gamma)(\lambda - v - r_I) + 3\gamma)\sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}{4((1 - \gamma)(\lambda - r_I - v) + \gamma)^2}
\]

Note that \( \frac{\partial \hat{r}_P}{\partial v} < 0 \) for any \( 0 < \gamma < 1 \).

Finally, we have

\[
\frac{\partial \hat{r}_P}{\partial r_I} = \frac{\sqrt{2}\left( (\gamma - 1)((1 - \gamma)(\lambda - v - r_I) + 3\gamma)\sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1-\delta)}} + 2\sqrt{2}(1 - \gamma)(\lambda - v - r_I) + \gamma)^2 \right)}{4((1 - \gamma)(\lambda - r_I - v) + \gamma)^2}
\]

Then, \( \frac{\partial \hat{r}_P}{\partial r_I} > 0 \) if and only if

\[
2\sqrt{2}(1 - \gamma)(\lambda - v - r_I) + \gamma)^2 - (1 - \gamma)((1 - \gamma)(\lambda - v - r_I)) + 3\gamma)\sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1-\delta)}} > 0.
\]
Define \( A := (1 - \gamma)(\lambda - v - r_I) + \gamma \) and \( B := \sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1 - \delta)}} \). Then the above expression can be written as

\[
\hat{r}_{pr_I}(A, B) := 2\sqrt{2}A^2 - B(1 - \gamma)A - 2B(1 - \gamma)\gamma > 0.
\]

One can check that the function \( \hat{r}_{pr_I}(A, B) \) is concave with two roots of \( A \). I denote them as \( a_i \) for \( i = 1, 2 \) where \( a_i \) is as follows:

\[
a_i = \frac{B(1 - \gamma) \pm \sqrt{B^2(1 - \gamma)^2 + 4.4\sqrt{2}B(1 - \gamma)\gamma}}{4\sqrt{2}}
\]

Since we have \( \lambda - v - r_I > 0 \) and \( 0 < \gamma < 1 \) by assumption, we always have \( A > 0 \). Thus \( \frac{\partial \hat{r}_{pr_I}}{\partial r_I} > 0 \) whenever \( A > a_i \) and \( \frac{\partial \hat{r}_{pr_I}}{\partial r_I} < 0 \) whenever \( A < a_i \). It is now routine to check whether both the roots are positive. For given \( 0 < \gamma < 1 \) there is only one root of \( A \) that is positive and it is given by \( a_2 = \frac{B(1 - \gamma) + \sqrt{B^2(1 - \gamma)^2 + 16\sqrt{2}B(1 - \gamma)\gamma}}{4\sqrt{2}} \).

Hence we have \( \frac{\partial \hat{r}_{pr_I}}{\partial r_I} > 0 \) whenever \( \lambda - v - r_I \) is significantly bigger than \( \frac{\gamma}{1 - \gamma} \) and \( \frac{\partial \hat{r}_{pr_I}}{\partial r_I} < 0 \) whenever \( \lambda - v - r_I \) is significantly smaller than \( \frac{\gamma}{1 - \gamma} \). □

**Proof of Proposition 4.** In general one obtains a qualitatively identical result as reported in Theorem 1 except that now the expression for period 1 equilibrium price is different. In particular, if political weakness is high (meaning \( \alpha \) small) and the motivation parameter \( \delta \) of \( A \) is large so that there is holdout, it follows that the equilibrium period 1 price equals

\[
q_{\text{coercion}} = \frac{\lambda + v}{2} - \frac{r_I}{2} - \frac{\chi}{k_{\text{coercion}}},
\]

where

\[
k_{\text{coercion}} = \frac{\sqrt{2}((1 - \gamma)(\lambda + 2\chi - r_I - v) + \gamma)}{4(1 - \gamma)\sqrt{\frac{\delta(\lambda + 2\chi - r_I - v)}{\alpha(1 - \delta)}}}.
\]

Thus I have shown that with coercion, first period price is unambiguously lower (viz. \( q_{\text{coercion}} < q \)). We have seen that without the possibility of coercion, an increase in legal weakness (i.e., a rise in \( r_I \)) reduces period 1 price of land linearly (at a rate equal to \(-1/2\)). I now show that linearity of this relationship is
unambiguously destroyed and worsening of legal weakness arrests this fall. More interestingly this convexity of period 1 price in the degree of legal weakness gives rise to generic instances where increase in this weakness can even increase $q_{\text{coercion}}$.

To see this, note that provided there is holdout,

$$\frac{\partial q_{\text{coercion}}}{\partial r_I} = -1/2 + \frac{\chi}{k_{\text{coercion}}^2} \frac{\partial k_{\text{coercion}}}{\partial r_I}.$$

Next check that

$$\frac{\partial k_{\text{coercion}}}{\partial r_I} = \sqrt{2} \alpha (1 - \delta) \sqrt{(1 - \gamma)(\lambda + 2\chi - r_I - v)} \sqrt{\frac{2(\lambda + 2\chi - r_I - v)}{\alpha(1 - \delta)}},$$

using which it can be verified that $\frac{\partial k_{\text{coercion}}}{\partial r_I} < 0$ if $r_I < \lambda + 2\chi - v - \frac{\gamma}{1 - \gamma}$ and $\frac{\partial k_{\text{coercion}}}{\partial r_I} > 0$ if $r_I > \lambda + 2\chi - v - \frac{\gamma}{1 - \gamma}$. Hence $k_{\text{coercion}}$ is convex in $r_I$. From (34) it then follows that $q_{\text{coercion}}$ is convex in $r_I$ as well so that as the legal institution deteriorates further, the period 1 price under the threat of coercion falls at a decreasing rate.

To show that $q_{\text{coercion}}$ can be upward sloping for high values of $r_I$, we know that $\frac{\partial q_{\text{coercion}}}{\partial r_I} = 0$ if and only if $\frac{\partial k_{\text{coercion}}}{\partial r_I} = \frac{k_{\text{coercion}}^2}{2\chi}$. Now, note that with $r_I = \lambda - v$, its maximum value, we have

$$\lim_{\gamma \to 1} \frac{\partial k_{\text{coercion}}}{\partial r_I} = \frac{\sqrt{2} \alpha (1 - \delta) ((1 - \gamma)2\chi - \gamma) \sqrt{2\chi}}{8\delta(-2\chi^2)(\gamma - 1)} = +\infty.$$

Since the maximum value of period 1 sales is 1, it follows that for $\gamma$ high enough, $\frac{\partial k_{\text{coercion}}}{\partial r_I} > \frac{k_{\text{coercion}}^2}{2\chi}$. Hence for $r_I$ and $\gamma$ high enough, we have $\frac{\partial q_{\text{coercion}}}{\partial r_I} > 0$. □
0.19.2 Proofs of Results from Chapter 2

Proof of Theorem 2 and Corollary 2: Recall from Chapter 1 that

\[ k^* = \frac{(1 - \gamma)(\lambda - r_I - v) + \gamma}{4(1 - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}} \]

if there is holdout where \( c_f = r_I + \sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}} \). Substituting \( c_f \) yields

\[ k^* = \sqrt{2((1 - \gamma)(\lambda - r_I - v) + \gamma)} \]

4(1 - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}. (35)

Now the comparative statics are as follows:

\[ \frac{\partial k^*}{\partial \alpha} = \sqrt{2(1 - \delta)((1 - \gamma)(\lambda - r_I - v) + \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}} > 0. \]

Note that \( \frac{\partial k^*}{\partial \alpha} > 0 \) for given \( 0 < \gamma < 1 \) and the assumption of \( \lambda > r_I + v \).

\[ \frac{\partial k^*}{\partial \gamma} = \frac{\sqrt{2}}{4(\gamma - 1)^2\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}} > 0. \]

\[ \frac{\partial k^*}{\partial \delta} = -\frac{\sqrt{2}\alpha((1 - \gamma)(\lambda - r_I - v) + \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}}{8\delta(1 - \gamma)(\lambda - v - r_I)}. \]

Note that \( \frac{\partial k^*}{\partial \delta} < 0 \) for given the assumption of \( \lambda > r_I + v \).

\[ \frac{\partial k^*}{\partial \lambda} = \frac{\sqrt{2}\alpha(\delta - 1)((1 - \gamma)(\lambda - r_I - v) - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}}{8\delta(r_I + v - \lambda)^2(\gamma - 1)}. \]

Note that given \( 0 < \gamma < 1 \) and \( 0 < \delta < 1 \), \( \frac{\partial k^*}{\partial \lambda} > 0 \) if and only if \( (\lambda - v) - r_I > \frac{\gamma}{1 - \gamma} \).

\[ \frac{\partial k^*}{\partial v} = \frac{\partial k^*}{\partial r_I} = \frac{\sqrt{2}\alpha(\delta - 1)((1 - \gamma)(\lambda - r_I - v) - \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}}{8\delta(r_I + v - \lambda)^2(\gamma - 1)}. \]

Note that given \( 0 < \gamma < 1 \), \( 0 < \delta < 1 \) both \( \frac{\partial k^*}{\partial v} < 0 \) and \( \frac{\partial k^*}{\partial r_I} < 0 \) if and only if \( (\lambda - v) - r_I > \frac{\gamma}{1 - \gamma} \). Finally, the cross partial derivative of \( k^* \) with respect to the
parameters $\alpha$ and $r_I$ gives us the following,

$$\frac{\partial^2 k^*}{\partial \alpha \partial r_I} = \sqrt{2(1 - \delta)((1 - \gamma)(\lambda - r_I - v) - \gamma)} \frac{\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}}{16\delta(r_I + v - \lambda)^2(\gamma - 1)}.$$

For given $0 < \gamma < 1$, $0 < \delta < 1$ and the assumption $\lambda > v + r_I$, I have $\frac{\partial^2 k^*}{\partial \alpha \partial r_I} > 0$ if and only if $(1 - \gamma)(\lambda - r_I - v) - \gamma < 0$ that gives $\lambda - r_I - v < \frac{\gamma}{(1 - \gamma)}$. This proves Theorem 2.

Proofs of Corollary 3 and Corollary 4: Equation 35 gives the size of $k^*$ if there is holdout. Now the comparative statics are as follows:

$$\frac{\partial k^*}{\partial \delta} + \frac{\partial k^*}{\partial \gamma} > 0 \text{ iff } \frac{\alpha((\gamma - 1)^2(r_I + v) + \gamma^2(1 - \lambda) + \gamma(2\lambda - 1) - 2\delta^2 + 2\delta - \lambda)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1 - \delta)}}}{r_I + v - \lambda} < 0$$

For given $0 < \delta < 1$ and the assumption $\lambda > r_I + v$ the above is true whenever $(\gamma - 1)^2(r_I + v) + \gamma^2(1 - \lambda) + \gamma(2\lambda - 1) - 2\delta^2 + 2\delta - \lambda > 0$. This simplifies to $-(\gamma - 1)^2(\lambda - v - r_I) - \gamma(1 - \gamma) + 2\delta(1 - \delta) > 0$ and boils down to $2\delta(1 - \delta) > (1 - \gamma)^2(\lambda - v - r_I) + \gamma(1 - \gamma)$. Let $L = \lambda - v - r_I$. This yields the following condition

$$2\delta(1 - \delta) > (1 - \gamma)((1 - \gamma)L + \gamma). \quad (36)$$

Note that (36) is never satisfied when $2\delta(1 - \delta) < \gamma(1 - \gamma)$. So suppose otherwise. Then condition (36) holds if and only if $L < \Lambda := \frac{2\delta(1 - \delta) - \gamma(1 - \gamma)}{(1 - \gamma)^2}$. The rest of the proof that yields Corollary 4 is now straightforward.

Proof of Theorem 3: Recall that the equilibrium payoff of the local landowners under holdout (denoted by $U_S$ below) is simply a markup over and above their
reservation utility \( v \). Straightforward calculations yield that

\[
U_S = \frac{\sqrt{2}((1 - \gamma)(\lambda - r_I - v) + \gamma)}{4(1 - \gamma)} \left( \frac{\lambda - v - r_I}{2} \right) + v. \tag{37}
\]

Given (37), it immediately follows that \( \frac{\partial U_S}{\partial \alpha} > 0 \), so that sellers would prefer the ease of opposition \( \alpha \) to be large. This is intuitive since with an increase in \( \alpha \), there is a decrease in holdout (as seen in Theorem 2(ii)).

A fall in bureaucratic corruption however unambiguously benefits the sellers. In particular,

\[
\frac{\partial U_S}{\partial r_I} = -\frac{\sqrt{2}(3(1 - \gamma)(\lambda - r_I - v) + \gamma)}{16(1 - \gamma)\sqrt{\frac{2(\lambda - v - r_I)}{\alpha(1 - \delta)}}} < 0. \tag{38}
\]

□

Proofs of Corollary 5 and Corollary 6: Consider the equilibrium payoff of the local landowners (when holdout takes place) as denoted by \( U_S \) in equation 37. Straightforward calculations yield that,

\[
\frac{\partial U_S}{\partial v} = 1 - \frac{\sqrt{2}(3(1 - \gamma)(\lambda - v - r_I) + \gamma)}{16(1 - \gamma)\sqrt{\frac{2(\lambda - v - r_I)}{\alpha(1 - \delta)}}} > 0
\]

if and only if

\[
\Delta = 9L^2 + L(6G - \frac{4J\alpha}{3}) + G^2 < 0,
\]

where \( L = \lambda - v - r_I \), \( G = \frac{\gamma}{1-\gamma} \) and \( J = \frac{\delta}{1-\delta} \). Clearly if \( 6G - \frac{4J\alpha}{20} > 0 \) then \( \Delta \) cannot be negative. Thus, I conclude that if \( 3\alpha\gamma/(1 - \gamma) > \delta/(1 - \delta) \), then \( \partial U_s/\partial v < 0 \). So suppose \( 3\alpha\gamma/(1 - \gamma) < \delta/(1 - \delta) \). Then, as \( \Delta \) is convex in \( L \), it follows that the two roots of the equation \( \Delta = 0 \) determines the bounds of \( L \) for which \( \Delta < 0 \) holds. The higher root of \( L \) is

\[
\frac{(4D - 6G\alpha)}{2} - \frac{(4D - 6G)^2 - 36G^2}{18}
\]
which can be easily shown to be negative. Given \( L > 0 \), there is no value of \( L \) for which \( \Delta < 0 \) holds. Hence \( \frac{\partial U_S}{\partial v} > 0 \). Also,
\[
\frac{\partial U_S}{\partial \lambda} = \frac{\sqrt{2}(3(1-\gamma)(\lambda - v - r_I) + \gamma)}{16(1-\gamma)\sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}} > 0
\]
for any \( \delta < 1, \gamma < 1 \) since \( \lambda - r_I - v > 0 \). Next,
\[
\frac{\partial U_S}{\partial \gamma} = \frac{\sqrt{2}\alpha(1-\delta)\sqrt{\frac{\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}{8\delta(1-\gamma)^2} > 0
\]
and
\[
\frac{\partial U_S}{\partial \delta} = -\frac{\sqrt{2}\alpha((1-\gamma)(\lambda - v - r_I) + \gamma)\sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1-\delta)}}}{16\delta^2(1-\gamma)} < 0.
\]
Finally, upon simplification, one obtains
\[
\frac{\partial U_S}{\partial \gamma} + \frac{\partial U_S}{\partial \delta} = \frac{\alpha [(1-\gamma)^2(r_I + v) + \gamma^2(1-\lambda) + \gamma(2\lambda - 1) - 2\delta^2 + 2\delta - \lambda] \sqrt{\frac{\delta(\lambda - r_I - v)}{\alpha(1-\delta)}}}{16\delta^2(1-\gamma)^2}.
\]
Now \( \frac{\partial U_S}{\partial \gamma} + \frac{\partial U_S}{\partial \delta} > 0 \) if and only if condition 36 holds. This means if \( 2\delta(1-\delta) > \gamma(1-\gamma) \) and \( L < \Lambda = \frac{2\delta(1-\delta) - \gamma(1-\gamma)}{(1-\gamma)^2} \) then \( \frac{\partial U_S}{\partial \gamma} + \frac{\partial U_S}{\partial \delta} > 0 \). \( \square \)

**Proof of Observation 4.** Suppose \( \gamma = \delta = 1/2 \). If there is holdout, as assumed, then the following two conditions must be satisfied. The first condition comes from the requirement that \( \alpha < \bar{\alpha} \) yielding
\[
\Delta_1(\alpha, r_I) := \frac{(3 - r_I)}{(r_I - 2)^2} - \alpha > 0,
\]
while the second condition comes from the fact that \( \delta = 1/2 > \tilde{\delta} \), yielding
\[
\Delta_2(\alpha, r_I) := 1/2 - \frac{1 - r_I}{8 \left( \sqrt{\frac{2(1-\gamma)(2(1-\gamma) - 2\gamma(r_I - 2))}{2(r_I - 2)^2}} - r_I \right)} - \frac{\alpha r_I}{2} - \sqrt{\frac{\alpha(1-r_I)}{32}} > 0.
\]

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Consider Figure 8 that plots these two conditions and shows that for given \( \alpha > 0 \) there exist pairs \((\alpha, r_I)\) that falls in the area to the right of \( \Delta_1(\alpha, r_I) = 0 \) for which \( \Delta_1(\alpha, r_I) > 0 \) is satisfied and there exist pairs \((\alpha, r_I)\) that falls in the area below the curve \( \Delta_2(\alpha, r_I) = 0 \) for which \( \Delta_2(\alpha, r_I) > 0 \) is satisfied. It shows here \( \Delta_2(\alpha, r_I) > 0 \) is the binding constraint unless the existing institution is very good for which \( \Delta_1(\alpha, r_I) > 0 \) is the binding constraint.

Now consider the expression for economic surplus given by

\[
ES(r_I) = \frac{\sqrt{2}}{32(1-r_I)} \left( \alpha(r_I^2 + 6r_I - 8)\sqrt{\frac{1-r_I}{\alpha}} - \sqrt{2}(2(1-r_I)\frac{3}{2}(r_I - 2) - 19r_I^2\alpha + 2r_I(11\alpha + 8) - 16) \right).
\]

Then, \( \frac{\partial ES(r_I)}{\partial r_I} > 0 \) if and only if

\[
\Delta_3(\alpha, r_I) := \alpha(3r_I^2+2r_I-4)\sqrt{\frac{1-r_I}{\alpha}} -2\sqrt{2}(1-r_I)^\frac{3}{2}(3r_I-4)-\alpha(19r_I^2-38r_I+22)) < 0.
\]

Figure 8 plots \( \Delta_3(\alpha, r_I) = 0 \) so that \( \Delta_3(\alpha, r_I) < 0 \) holds true for \( \alpha > 0 \). It shows that the zone where \( \frac{\partial ES(r_I)}{\partial r_I} > 0 \) is the area to the right of \( \Delta_3(\alpha, r_I) = 0 \) that consists of pairs \((\alpha, r_I)\) such that \( \alpha > 0 \) and \( r_I \geq 1 \). But in our example the maximum degree of corruption is normalised to 1. Thus for given \( 0 \leq r_I \leq 1 \) and \( \alpha > 0 \), the area under consideration is to the left of \( \Delta_3(\alpha, r_I) = 0 \) that consists of pairs \((\alpha, r_I)\) for which \( \frac{\partial ES(r_I)}{\partial r_I} < 0 \).

The figure pinpoints two critical values of \( r_I \). One is when \( r_I = 1 \) and the other is when the lines \( \Delta_1(\alpha, r_I) = 0 \) and \( \Delta_2(\alpha, r_I) = 0 \) intersect. I label this value as \( r_{I,1} \). Note that in this example \( r_{I,1} \approx 0.08 \).

To elaborate, take two zones into consideration:

- if the degree of bureaucratic corruption is relatively small (viz. \( 0 < r_I < r_{I,1} \))
then the area that is bounded by $r_{I,1}$ and $\Delta_1(\alpha, r_I) = 0$ yields $\frac{\partial ES(r_I)}{\partial r_I} < 0$.

- if the degree of bureaucratic corruption is relatively large (viz. $r_{I,1} < r_I < 1$) then the area below the line $\Delta_2(\alpha, r_I) = 0$ that is bounded by $r_{I,1}$ yields $\frac{\partial ES(r_I)}{\partial r_I} < 0$.

Thus when institutional imperfections are such that there is buyer-induced holdout in the locality, then small improvement of institutions that deteriorates the degree of bureaucratic corruption (viz. a fall in $r_I$) improves economic surplus, irrespective of the existing degree of institutional imperfections.

Next consider the impact of a change in $\alpha$. Then, $\frac{\partial ES(\alpha)}{\partial \alpha} < 0$ if and only if

$$\Delta_4(\alpha, r_I) := (r_I^2 + 6r_I - 8)\sqrt{\frac{1 - r_I}{\alpha}} + 2\sqrt{2}r_I(19r_I - 22) < 0$$
Figure 9: Effect of change in $\alpha$ with balanced party preferences.

Figure 9 plots the condition $\Delta_4(\alpha, r_I) < 0$ and shows that for given $0 \leq r_I \leq 1$ and $\alpha > 0$ there exist pairs $(\alpha, r_I)$ to the left of the line $\Delta_4(\alpha, r_I) = 0$ for which there is $\frac{\partial ES(\alpha)}{\partial \alpha} < 0$. The figure also pinpoints three critical values of $\alpha$. One is when $\alpha = 0$ (with $r_I = 1$), the second is when the lines $\Delta_1(\alpha, r_I) = 0$ and $\Delta_2(\alpha, r_I) = 0$ intersect that is labelled as $\alpha_1$ and the third one is when $\Delta_1(\alpha, r_I) = 0$ intersects the y-axis that is labelled as $\alpha_2$. Note that in this example $\alpha_1 \approx 0.80$, $\alpha_2 \approx 0.75$ and for buyer-induced holdout to take place it must be that $\alpha < \alpha_1$. Thus the following must be true:

- if the existing institutions are relatively bad such that the ease of opposition is relatively high (viz. $0 < \alpha < \alpha_2$) then the area that is bounded by $\alpha_2$ and $\Delta_2(\alpha, r_I) = 0$ yields $\frac{\partial ES(r_I)}{\partial \alpha} < 0$.

- if the existing institutions are relatively good such that the ease of opposition is relatively low (viz. $\alpha_2 < \alpha < \alpha_1$) then the area that is bounded by $\alpha_2$, $\Delta_1(\alpha, r_I) = 0$ and $\Delta_2(\alpha, r_I) = 0$ yields $\frac{\partial ES(r_I)}{\partial \alpha} < 0$. 

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Hence when institutional imperfections are such that there is buyer-induced holdout in the locality, small improvement in the rule of law that decreases the ease of opposition (viz. a rise in $\alpha$) deteriorates economic surplus. □

**Proof of Observation 5**: Suppose $\delta = \frac{8}{10}$ and $\gamma = \frac{2}{10}$. In this case if there is holdout as assumed, then the following two conditions must be satisfied. As before, the first condition comes from the requirement that $\alpha < \bar{\alpha}$ yielding

$$\Delta_1'(\alpha, r_I) := \frac{16(9 - 4r_I)}{(4r_I - 5)^2} - \alpha > 0,$$

while the second condition comes from the fact that $\delta = \frac{8}{10} > \tilde{\delta}$, yielding

$$\Delta_2'(\alpha, r_I) := 4(1 - r_I) + 4(\alpha r_I - 4)\sqrt{\frac{2(1 - r_I)}{\alpha}} - 4r_I + 5 < 0.$$

Figure 10: Effect of change in $r_I$ with strong ideology and rent-seeking parties.

Consider Figure 10 that plots these two conditions and shows that given $\alpha > 0$
by assumption, condition $\Delta_1'(\alpha, r_I) > 0$ is satisfied for pairs $(\alpha, r_I)$ that falls in the area to the right of $\Delta_1'(\alpha, r_I) = 0$ and there exist pairs $(\alpha, r_I)$ that falls below $\Delta_2'(\alpha, r_I) = 0$ for which $\Delta_2'(\alpha, r_I) < 0$ is satisfied. It shows here $\Delta_2'(\alpha, r_I) = 0$ is the binding constraint unless the existing institution is very good, as in that scenario $\Delta_1'(\alpha, r_I) = 0$ is the binding constraint.

The expression for economic surplus in this example is given by

$$ES(r_I) = \frac{\sqrt{2}}{5120(1 - r_I)} \left(5\alpha(80r_I^2 + 336r_I - 417)\sqrt{\frac{1 - r_I}{\alpha}} + 8\sqrt{2}(332r_I^2\alpha - 5r_I(67\alpha + 64) + 320)\right).$$

Then $\frac{\partial ES(r_I)}{\partial r_I} > 0$ if and only if

$$\Delta_3'(\alpha, r_I) := 5(240r_I^2 + 16r_I - 255)\sqrt{\frac{1 - r_I}{\alpha}} + 16\sqrt{2}(332r_I^2 - 664r_I + 335) < 0$$

Figure 10 plots the condition $\Delta_3'(\alpha, r_I) < 0$ that holds true for pairs $(\alpha, r_I)$ that falls in the area below $\Delta_3'(\alpha, r_I) = 0$. The figure shows that in this example for given $0 \leq r_I \leq 1$ there are two critical values of $r_I$ to be considered. One is when $r_I = 1$ and the other is when the lines $\Delta_1'(\alpha, r_I) = 0$ and $\Delta_2'(\alpha, r_I) = 0$ intersect. I label this as $r_{kink}$ with $0 < r_{kink} < 1$. In our example $r_{kink} \approx 0.03$.

Thus there are two zones to consider:

- If the existing institution is relatively inefficient so that bureaucratic corruption is relatively large (viz. $r_{kink} < r_I < 1$) then there are two possibilities: the zone above $\Delta_3'(\alpha, r_I) = 0$ that is bounded by $\Delta_2'(\alpha, r_I) = 0$ and $r_{kink}$ I get $\frac{\partial ES(r_I)}{\partial r_I} < 0$, while the zone below $\Delta_3'(\alpha, r_I) = 0$ that is bounded by $r_{kink}$ I get $\frac{\partial ES(r_I)}{\partial r_I} > 0$;

- If the existing institution is sufficiently efficient so that bureaucratic corruption is sufficiently small (viz. $0 \leq r_I < r_{kink}$) then there are two possibilities:
the zone above $\Delta'_3(\alpha, r_I) = 0$ that is bounded by $\Delta'_1(\alpha, r_I) = 0$ and $r_{kink}$ I get $\frac{\partial ES(r_I)}{\partial r_I} < 0$, while the zone below $\Delta'_3(\alpha, r_I) = 0$ that is bounded by $r_{kink}$ I get $\frac{\partial ES(r_I)}{\partial r_I} > 0$.

Next consider the impact of a change in $\alpha$. Then, $\frac{\partial ES(\alpha)}{\partial \alpha} > 0$ if and only if

$$
\Delta'_4(\alpha, r_I) := 5(80r_I^2 + 336r_I - 417)\sqrt{\frac{1 - r_I}{\alpha}} + 16\sqrt{2}r_I(332r_I - 335) > 0
$$

Figure 11: Effect of change in $\alpha$ with strong ideology and rent-seeking parties.

Figure 11 plots the condition $\Delta'_4(\alpha, r_I) > 0$ that holds true for pairs $(\alpha, r_I)$ that falls to the right of $\Delta'_4(\alpha, r_I) = 0$. It shows that for any non-negative $r_I$ the zone to the left of the curve $\Delta'_4(\alpha, r_I) = 0$ that consists of pairs $(\alpha, r_I)$ such that $0 \leq r_I \leq 1$ and $\alpha > 0$ I get $\frac{\partial ES(\alpha)}{\partial \alpha} < 0$. The figure pinpoints three critical values of $\alpha$. One is when $\alpha = 0$ and $r_I = 1$. The second is when $\Delta'_1(\alpha, r_I) = 0$ intersects with the y-axis that I label as $\alpha_2$. In this example $\alpha_2 \approx 5.75$. The third one is when $\Delta'_1(\alpha, r_I) = 0$ and $\Delta'_2(\alpha, r_I) = 0$ intersect that I label as $\alpha_1$. In this example
The rest of the proof then follows from Observation 4. It shows that for any pair of $(\alpha, r_I)$ such that $0 \leq r_I \leq 1$ and $0 < \alpha < \alpha_1$ (so that holdout takes place), the area below $\Delta'_2(\alpha, r_I) = 0$ that is bounded by $\Delta'_1(\alpha, r_I) = 0$, I have $\frac{\partial ES[\alpha]}{\partial \alpha} < 0$ irrespective of the level of corruption. □

Proof of Observation 6: Suppose $\gamma = \frac{8}{10}$ and $\delta = \frac{2}{10}$. In this case if there is holdout as assumed, then the following two conditions must be satisfied. As before, the first condition comes from the requirement that $\alpha < \bar{\alpha}$ yielding

$$\Delta''_1(\alpha, r_I) := \frac{6 - r_I}{4(r_I - 5)^2} - \alpha > 0,$$

while the second condition comes from the fact that $\delta = \frac{2}{10} > \tilde{\delta}$, yielding

$$\Delta''_2(\alpha, r_I) := (1 - r_I) + \sqrt{\frac{2(1 - r_I)}{\alpha}}(4r_I\alpha - 1) - r_I + 5 < 0.$$

Consider Figure 12 that plots these two conditions and shows that given $\alpha > 0$ by assumption, condition $\Delta''_1(\alpha, r_I) > 0$ is satisfied for pairs $(\alpha, r_I)$ that falls below $\Delta''_1(\alpha, r_I) = 0$ and there exist pairs $(\alpha, r_I)$ that falls below $\Delta''_2(\alpha, r_I) = 0$ for which $\Delta''_2(\alpha, r_I) < 0$ is satisfied. It shows here $\Delta''_2(\alpha, r_I) = 0$ is the binding constraint unless the existing institution is very good, as in that scenario $\Delta''_1(\alpha, r_I) = 0$ is the binding constraint.

The expression for economic surplus in this example is given by

$$ES(r_I) = \frac{\sqrt{2}}{80(1 - r_I)} \left( 5\alpha(5r_I^2 - 24r_I + 3)\sqrt{\frac{1 - r_I}{\alpha}} + 4\sqrt{2}(19r_I^2\alpha - 5r_I(11\alpha + 2) + 10) \right).$$

Then $\frac{\partial ES(r_I)}{\partial r_I} > 0$ if and only if

$$\Delta''_3(\alpha, r_I) := 5(15r_I^2 - 44r_I + 45)\sqrt{\frac{1 - r_I}{\alpha}} + 8\sqrt{2}(19r_I^2 - 38r_I + 55) < 0.$$
Figure 12: Effect of change in $r_I$ when there is a stronger ideological support for the project and weaker ideological opposition.
Figure 12 plots the condition $\Delta''_3(\alpha, r_I) < 0$ that holds true for pairs $(\alpha, r_I)$ that falls to the right of $\Delta'_3(\alpha, r_I) = 0$ such that $r_I > 1$. But in this example the maximum value for $r_I$ is normalised to 1. Thus for given $0 \leq r_I \leq 1$ in our example the zone to be considered is to the left of $\Delta''_3(\alpha, r_I) = 0$ and there is only one critical point, when $r_I = 1$ and $\alpha = 0$.

Given that there is holdout in the locality, this part of the proof follows from Observation 4. It shows that the zone below $\Delta''_2(\alpha, r_I) = 0$ that is bounded by $\Delta'_1(\alpha, r_I) = 0$ I get $\frac{\partial ES(r_I)}{\partial r_I} < 0$, irrespective of the level of institutional inefficiencies.

Next consider the impact of a change in $\alpha$. Then, $\frac{\partial ES(\alpha)}{\partial \alpha} > 0$ if and only if

$$\Delta''_4(\alpha, r_I) := 5(5r_I^2 - 24r_I + 3)\sqrt{\frac{1 - r_I}{\alpha}} + 8\sqrt{2}r_I(19r_I - 55) > 0$$

![Diagram showing effect of change in α with stronger ideological support for the project and weaker ideological opposition.](image-url)
Figure 13 plots the condition $\Delta''_4(\alpha, r_I) > 0$ that holds true for pairs $(\alpha, r_I)$ that falls to the left of $\Delta''_4(\alpha, r_I) = 0$. It shows that for any non-negative $r_I$ the zone to the left of the curve $\Delta''_4(\alpha, r_I) = 0$ that consists of pairs $(\alpha, r_I)$ such that $0 \leq r_I \leq 1$ and $\alpha > 0$ I get $\frac{\partial ES(\alpha)}{\partial \alpha} > 0$. The figure pinpoints two critical values of $r_I$. The first is when $r_I = 1$ and $\alpha = 0$, the second is when the line $\Delta''_4(\alpha, r_I) = 0$ intersects the x-axis. I label this as $r_{I,2}$ with $0 < r_{I,2} < 1$. In this example $r_{I,2} \approx 0.05$. Thus there are two zones to consider:

- if the existing institution is relatively inefficient so that bureaucratic corruption is relatively large (viz. $r_{I,2} < r_I < 1$) then the zone to the right of $\Delta''_1(\alpha, r_I) = 0$ that is bounded by $\Delta''_2(\alpha, r_I) = 0$ I get $\frac{\partial ES(r_I)}{\partial r_I} < 0$;

- if the existing institution is relatively efficient so that bureaucratic corruption is relatively small (viz. $0 \leq r_I < r_{I,2}$) then the zone to the left of $\Delta''_1(\alpha, r_I) = 0$ that is bounded by $\Delta''_1(\alpha, r_I) = 0$ I get $\frac{\partial ES(r_I)}{\partial r_I} > 0$.

\[\square\]

Proof of Observation 7: Suppose $\lambda = 3$, $r_I = v = 1$, $\alpha = 1/5$ and $\gamma = 1/2$. If there is holdout, as assumed, then the following two conditions must be satisfied. The first condition comes from the requirement that $\alpha < \bar{\alpha}$ yielding

$$\Delta_{1,1}(\delta) := \frac{3\delta}{4(1-\delta)} - \frac{1}{5} > 0,$$

while the second condition comes from the fact that $\delta > \bar{\delta}$, yielding

$$\Delta_{2,1}(\delta) := \sqrt{5}\sqrt{\delta(1-\delta)} - 12\sqrt{2}\delta + 2\sqrt{5}\sqrt{\delta(1-\delta)} + 2\sqrt{2} < 0.$$

Note that $\Delta_{1,1}(\delta) > 0$ is satisfied if and only if $0.21 < \delta < 1$ and $\Delta_{2,1}(\delta) < 0$ is satisfied if and only if $0.36 < \delta < 1$. Thus in this example $\Delta_{2,1}(\delta) < 0$ is the binding constraint and buyer-induced holdout takes place for any $\delta$ such that $0.36 < \delta < 1$. 

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Now \( \frac{\partial E_S(\delta)}{\partial \delta} > 0 \) if and only if
\[
\Delta_{3,1}(\delta) := -\frac{\sqrt{10} \sqrt{\frac{\delta}{1-\delta}} - 3(1-\delta)}{40\delta^2(1-\delta)} > 0.
\]
Thus \( \Delta_{3,1}(\delta) > 0 \) whenever \( \sqrt{10} \sqrt{\frac{\delta}{1-\delta}} - 3(1-\delta) < 0 \). But this holds if and only if \( \delta \) is significantly low such that \( 0 < \delta < 0.30 \). But then there is no holdout.

Hence, for a relatively higher value of \( \delta \) such that \( 0.36 < \delta < 1 \) there is holdout and \( \frac{\partial E_S(\delta)}{\partial \delta} < 0 \). \( \Box \)

**Proof of Observation 8**: Suppose \( \lambda = 3, r_I = v = 1, \alpha = 1/5 \) and \( \delta = 8/10 \). If there is holdout, as assumed, then the following two conditions must be satisfied. The first condition comes from the requirement that \( \alpha < \bar{\alpha} \) yielding
\[
\Delta_{1,2}(\gamma) := \gamma(3-\gamma) - \frac{39}{20} < 0,
\]
while the second condition comes from the fact that \( \delta > \tilde{\delta} \), yielding
\[
\Delta_{2,2}(\gamma) := \frac{\sqrt{10}}{50(\gamma - 1)} - \frac{\sqrt{10}}{50} + \frac{19}{25} > 0.
\]
Note that for given \( 0 < \gamma < 1 \), the first condition \( \Delta_{1,2}(\gamma) < 0 \) is satisfied if and only if \( 0 < \gamma < 0.95 \) and the second condition \( \Delta_{2,2}(\gamma) > 0 \) is satisfied if and only if \( 0 < \gamma < 0.91 \). Thus in this example \( \Delta_{2,2}(\gamma) < 0 \) is the binding constraint and buyer-induced holdout takes place for any \( \gamma \) such that \( 0 < \gamma < 0.91 \).

Now \( \frac{\partial E_S(\gamma)}{\partial \gamma} > 0 \) if and only if
\[
\Delta_{3,2}(\gamma) := \frac{\sqrt{2}(\gamma(3\sqrt{5} - \sqrt{2}) - 2\sqrt{5} + \sqrt{2})}{160(\gamma - 1)^3} > 0.
\]
For given \( 0 < \gamma < 1 \) I get \( \Delta_{3,2}(\gamma) > 0 \) whenever \( \sqrt{2}(\gamma(3\sqrt{5} - \sqrt{2}) - 2\sqrt{5} + \sqrt{2}) < 0 \). But this holds if and only if \( \gamma \) is significantly low such that \( 0 < \gamma < 0.06 \). Thus in
an economy when there is holdout and \(0 < \gamma < 0.06\) I get \(\frac{\partial E_S(\delta)}{\partial \delta} > 0\). \(\square\)

**Proofs of Observation 9 and Observation 10**: Suppose there is buyer-induced holdout in local land acquisition and given equation (24) I ask whether \(W_N(k, q, q_b)\) decreases with the rise in extortionary activity in the institutions so that there is a rise in corruption (i.e., with the rise in \(r_I\)). To see this I differentiate the non-local welfare function with respect to \(r_I\) to obtain

\[
\frac{\partial W_N}{\partial r_I} = \alpha (1 - 2\phi)(\delta - 1)((1 - \gamma)(\lambda - r_I - v) - \gamma)\sqrt{2\delta(\lambda - r_I - v)\alpha(1 - \delta)}
\]

I consider a scenario when marginal productivity of the industrial project is sufficiently small or the local unit of party F is sufficiently ideological such that \(\lambda - r_I - v < \frac{\gamma}{1 - \gamma}\). Thus the term \((1 - \gamma)(\lambda - r_I - v) - \gamma < 0\). Then for given \(\gamma < 1\) and \(\delta < 1\) I have \(\frac{\partial W_N}{\partial r_I} > 0\) if and only if \(1 - 2\phi < 0\) that gives \(\phi > \frac{1}{2}\). This proves the first part of observation 9. Otherwise for given \(\lambda - r_I - v < \frac{\gamma}{1 - \gamma}\) I get \(\frac{\partial W_N}{\partial r_I} < 0\) if and only if \(1 - 2\phi > 0\) that gives \(\phi < \frac{1}{2}\). This proves the second part of observation 9. Observation 10 is then immediate. \(\square\)

**Proof of Observation 11**: Differentiation of the non-local welfare function in equation (9) with respect to \(\phi\) gives

\[
\frac{\partial W_N}{\partial \phi} = \frac{\sqrt{2}((1 - \gamma)(\lambda - r_I - v) + \gamma)}{2(1 - \gamma)\sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1 - \delta)}}} - 1.
\]

Given \(\delta < 1\), \(\gamma < 1\) and the assumption of \(\lambda > r_I + v\) I have \(\frac{\partial W_N}{\partial \phi} > 0\) if and only if \(\frac{\gamma}{1 - \gamma} + (\lambda - r_I - v) > \sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1 - \delta)}}\). Note that there exists some \(0 < \delta' < 1\) such that if \(\delta < \delta'\) then the above condition holds true and \(\frac{\partial W_N}{\partial \phi} > 0\). Otherwise if \(\delta > \delta'\) such that \(\frac{\gamma}{1 - \gamma} + (\lambda - r_I - v) < \sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1 - \delta)}}\) then it yields \(\frac{\partial W_N}{\partial \phi} < 0\). \(\square\)

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**Proof of Observation 12**: Differentiation of the non-local welfare function in equation (9) with respect to $\gamma$ gives

$$\frac{\partial W_N}{\partial \gamma} = \frac{\sqrt{2}(2\phi - 1)}{4(\gamma - 1)^2 \sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}.$$ 

Note that given the assumption of $\lambda - v - r_I > 0$ we have $\frac{\partial W_N}{\partial \gamma} > 0$ if and only if $2\phi - 1 > 0$ or $\phi > \frac{1}{2}$. Otherwise if $\phi < \frac{1}{2}$ then we have $\frac{\partial W_N}{\partial \gamma} < 0.$ □

**Proof of Observation 13**: Differentiation of the non-local welfare function in equation (9) with respect to $\delta$ gives

$$\frac{\partial W_N}{\partial \delta} = \frac{\alpha(1 - 2\phi)((1 - \gamma)(\lambda - r_I - v) + \gamma)\sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}{8\delta^2(r_I + v - \lambda)(\gamma - 1)}.$$ 

Note that given $\gamma < 1$, $\delta < 1$ and the assumption of $\lambda > v + r_I$ we have $\frac{\partial W_N}{\partial \delta} > 0$ if and only if $1 - 2\phi > 0$ or $\phi < \frac{1}{2}$. Otherwise if $\phi > \frac{1}{2}$ we have $\frac{\partial W_N}{\partial \delta} < 0.$ □

**Proof of Proposition 3**: To see the impact of a rise in $r_I$ on the total welfare I differentiate the total welfare function in equation to obtain

$$\frac{\partial W_T}{\partial r_I} = \left( \frac{\alpha(1 - \delta)\sqrt{\frac{2\delta(\lambda - v - r_I)}{\alpha(1-\delta)}}}{16\delta(r_I + v - \lambda)^2(\gamma - 1)} \right) ((1 - \eta)(1 - \gamma)(3(\lambda^2 + v^2 + r_I^2) + 6\nu r_I - 6\lambda(r_I + v))$$

$$-\gamma(1 + r_I + v) - \eta(\lambda - v - r_I + \lambda(1 - \gamma)(1 - 4\phi)) - 2\eta\gamma(2\phi - 1).$$

Note that for $\gamma < 1$, $\delta < 1$ we have $\frac{\partial W_T}{\partial r_I} > 0$ if and only if

$$(1 - \eta)(1 - \gamma)(3(\lambda^2 + v^2 + r_I^2) + 6\nu r_I - 6\lambda(r_I + v)) < \gamma(1 + r_I + v) + \eta(\lambda - v - r_I + \lambda(1 - \gamma)(1 - 4\phi))$$

$$+ 2\eta\gamma(2\phi - 1).$$

Note that the term on the LHS of the above condition $3(\lambda^2 + v^2 + r_I^2) + 6\nu r_I -$
$6\lambda(r + v) > 0$ given the assumption of $\lambda - v - r_I > 0$. Moreover, the LHS is decreasing in $\eta$ and $\gamma$. Suppose $\phi > \frac{1}{2}$. Then there exist some $0 < \gamma < 1$ such that for any $\gamma > \gamma$, the RHS $\gamma(1+r_I+v)+\eta(\lambda-v-r_I+\lambda(1-\gamma)(1-4\phi)) + 2\eta\gamma(2\phi-1) > 0$.

Also note that for $\phi > \frac{1}{2}$, the RHS is rising in both $\eta$ and $\gamma$. Hence there exist some $0 < \eta' < 1$ such that for any $\eta > \eta'$, the RHS is rising in both $\eta$ and $\gamma$. Hence there exist some $0 < \eta'' < 1$ such that $\frac{\partial W_T}{\partial r_I} > 0$ if and only if $\eta > \eta''$. Otherwise if $\eta < \eta''$ and $\lambda - v - r_I > \frac{\gamma}{1-\gamma}$ we have $\frac{\partial W_T}{\partial r_I} < 0$. □

**Proof of Proposition 6:** Following Proposition 5 we have $\frac{\partial W_T}{\partial r_I} > 0$ if and only if

$$(1-\eta)(1-\gamma)(3(\lambda^2+v^2+r_I^2)+6vr_I-6\lambda(r_I+v)) < \gamma(1+r_I+v)+\eta(\lambda-v-r_I+\lambda(1-\gamma)(1-4\phi)) + 2\eta\gamma(2\phi-1).$$

From Proposition 5 recall that the LHS of the above condition is falling in both $\eta$ and $\gamma$. Suppose $\phi < \frac{1}{2}$. Given this, the RHS of the above condition is rising in $\gamma$ if and only if $\eta < \eta'$ for any $0 < \eta' < 1$. Hence there exist some $0 < \gamma < 1$ such that I have $\frac{\partial W_T}{\partial r_I} > 0$ if and only if $\gamma > \gamma$. Otherwise if $\gamma < \gamma$ then we have $\frac{\partial W_T}{\partial r_I} < 0$. This proves the first part of Proposition 6.

Similarly if $\lambda - v - r_I > \frac{\gamma}{1-\gamma}$ then $\frac{\partial W_T}{\partial r_I} > 0$ if and only if $\frac{1}{\sqrt{\alpha(1-\delta)}} < \left(\frac{\eta}{1-\eta}\right) \left(\frac{1-2\phi}{\lambda-v}\right)$. This holds for given $\phi < \frac{1}{2}$ whenever $\eta > \eta$. Otherwise if $\eta < \eta$ and $\lambda - v - r_I > \frac{\gamma}{1-\gamma}$ we have $\frac{\partial W_T}{\partial r_I} < 0$. □

**Proof of Proposition 7:** We know from Corollary 5 that $\frac{\partial W_L}{\partial \gamma}$ is unambiguously positive and from Observation 12 that $\frac{\partial W_N}{\partial \gamma}$ is positive if and only if $\phi > \frac{1}{2}$. Hence we get $\frac{\partial W_T}{\partial \gamma} > 0$ whenever $\phi > \frac{1}{2}$. We also know from Corollary 5 that $\frac{\partial W_L}{\partial \delta}$ is unambiguously negative and from Observation 13 that $\frac{\partial W_N}{\partial \delta}$ is negative if and only if $\phi > \frac{1}{2}$. Hence we get $\frac{\partial W_T}{\partial \delta} < 0$ whenever $\phi > \frac{1}{2}$. This proves the first part of Proposition 7.
The derivative of the total welfare function with respect to $\gamma$ gives

$$\frac{\partial W_T}{\partial \gamma} = \frac{\sqrt{2}((1-\eta)(\lambda - v - r_I) + 2\eta(2\phi - 1))}{8(\gamma - 1)^2 \sqrt{\frac{3(\lambda - v - r_I)}{\alpha(1-\delta)}}}.$$ 

Given that $\lambda > v + r_I$ I have $\frac{\partial W_T}{\partial \gamma} > 0$ if and only if $(1-\eta)(\lambda - v - r_I) + 2\eta(2\phi - 1) > 0$. Suppose $\phi < \frac{1}{2}$ that gives $1 - 2\phi > 0$. Given this I have $\frac{\partial W_T}{\partial \gamma} > 0$ if and only if $\eta$ is sufficiently small such that $\eta < \hat{\eta}$ (where $0 < \hat{\eta} < 1$). Otherwise if $\eta > \hat{\eta}$ then for $\phi < \frac{1}{2}$ I have $\frac{\partial W_T}{\partial \gamma} < 0$.

The derivative of the total welfare function with respect to $\delta$ gives

$$\frac{\partial W_T}{\partial \delta} = \frac{\sqrt{2}\alpha((1-\gamma)(\lambda - v - r_I) + \gamma)((1-\eta)(\lambda - v - r_I) + 2\eta(2\phi - 1))\sqrt{\frac{3(\lambda - v - r_I)}{\alpha(1-\delta)}}}{16\delta^2(1-\gamma)(r_I + v - \lambda)}.$$ 

Given that $\gamma < 1$, $\delta < 1$ and $\lambda > v + r_I$ we have $\frac{\partial W_T}{\partial \delta} > 0$ if and only if $(1-\eta)(\lambda - v - r_I) + 2\eta(2\phi - 1) < 0$ that gives $\frac{(1-\eta)(\lambda - v - r_I)}{\eta} < 2(1 - 2\eta)$. Suppose $\phi < \frac{1}{2}$ so that $1 - 2\eta > 0$. Given this we have $\frac{\partial W_T}{\partial \delta} > 0$ if and only if $\eta$ is sufficiently large such that $\eta > \hat{\eta}$ (where $0 < \hat{\eta} < 1$). Otherwise if $\eta < \hat{\eta}$ we have $\frac{\partial W_T}{\partial \delta} < 0$. This completes the proof of Proposition 7. □

0.19.3 Proofs of Results from Chapter 3

Proof of Proposition 8: The proposition considers significantly low degree of democratic imperfections such that $R_O(\tilde{k}) < c$. Given Facts 1 and 2 I know that $R_O(\cdot)$ is maximised at $\tilde{k} = \frac{n}{2}$ and $R_O(\tilde{k}) = R_P(\tilde{k}) = \frac{n}{2}$. Recall that $R_P(\cdot)$ is maximum for $k = n$ and I reasonably assume that $c < 2n$ where $R_P(n) = 2n$. Given the properties of political rent functions for relatively small $k$ such that $0 \leq k < \frac{n}{2}$ I get $R_P(k) < R_O(k)$. Since $R_O(\tilde{k}) < c$ this essentially implies that $R_P(k) < R_O(k) < c$ for any $k < \frac{n}{2}$. Following the definitions of the subsets of the industrial membership sizes all such $k \in \{K^{-}\}$. For relatively large $k$ such that $k \geq \frac{n}{2}$ I get
\( R_{O}(k) \leq R_{P}(k) \). Given that \( R_{O}(\tilde{k}) = R_{P}(\tilde{k}) < c \) there exist a \( \frac{n}{2} \leq k^{\geq} \leq n \) such that I have \( R_{O}(k) < c < R_{P}(k) \) whenever \( k > k^{\geq} \). Following the definitions of the subsets of the industrial membership sizes all such \( k \in \{K^{++}\} \). Otherwise for any \( k < k^{\geq} \) I have \( R_{O}(k) \leq R_{P}(k) < c \) and all such \( k \in \{K^{--}\} \). Hence the sequence in which the subsets appear on the equilibrium path is such that \( 0, 1, \ldots, n = \{K^{--}, K^{++}\} \). Note that none of these subsets are empty here since \( 0, 1, \ldots, \frac{n}{2} \in \{K^{--}\} \) and \( n \in \{K^{++}\} \). Moreover, following the definition of these subsets, there is no violence on the equilibrium path of the conflict subgame. Considering these subsets to be non-trivially non-empty, the sequence of \( P \)'s membership sizes can be expanded as:

\[
\{0, 1, \ldots, \bar{k}^{--}\}, \{k^{++}, \ldots, \bar{k}^{++}\},
\]

where \( |K^{--}| > 1 \) and \( |K^{++}| \geq 1 \).

Suppose there exists a \( k' \) such that \( 0 \leq k' \leq \bar{k}^{--} \). Since for such a membership size no party indulges in violence, a landowner who supports \( P \) receives \( p \) from selling his plot of land and who supports \( O \) receives \( v \) from retaining his plot. Given \( v = 0 \) I have \( k' \) as an equilibrium if and only if no landowner has an incentive to deviate from their respective membership. Hence for each of \( k' \) member landowners in \( P \) it must be true that \( p > 0 \) and for each of \( n - k' \) members in \( O \) it must be true that \( 0 > p \). Not only that the conditions are contradictory to each other, it is also that the former is ensured by the assumption of \( p > v \) while the latter is violating the same. Hence, it is always individually rational for any member in party \( O \) to deviate and join \( P \). As the condition holds for any \( 0 \leq k' < \bar{k}^{--} \), the industrial membership continues to rise unless it reaches \( \bar{k}^{--} \). Since the current subset is then followed by \( \{K^{++}\} \), if any one from \( O \) further deviates then \( P \)'s membership increases to \( k^{++} \). Since no party indulges in violence for a membership size that falls in subset \( \{K^{++}\} \), we never have \( k' \) as an SPE. Suppose there exists a \( k'' \) such that \( k^{++} \leq k'' \leq \bar{k}^{++} \). For any such membership sizes the payoffs for both party members remain unaltered irrespective of the size of subset \( \{K^{++}\} \). Hence members in \( O \) will continue to deviate to join the industrial party unless \( k \) reaches \( \bar{k}^{++} - 1 \) where all members but one has joined
Given $p > 0$ it is rational for the remaining landowner to join party $P$ as well. Hence $k$ rises to $\bar{k} = n$. As the reverse deviation is never possible here the unique Nash Equilibrium is $k^* = n \in \{K^- \cup K^+\}$ where all villagers eventually join party $P$ and the probability of full industrialisation is 1. This completes the proof for proposition 8 and the condition on $c$ provides a sharp lower bound on this institutional strength in order to make democratic imperfections outcome-equivalent to perfect democracy. □

Proof of Proposition 9: The proposition considers significantly high degree of democratic imperfections such that $c < R_O(\hat{k})$. This essentially implies that $c < \frac{n}{2}$ where $\hat{k} = \bar{k} = \frac{n}{2}$ (From Facts 1 and 2). From the technical characteristics of $\pi(\cdot)$ and $b(\cdot)$ we know that for any industrial membership size such that $k < \frac{n}{2}$ we have $R_P(k) < R_O(k)$. For given $0 < c < R_O(\frac{n}{2})$ and sufficiently large $N$, there exists some $0 < \frac{n}{2} < \frac{n}{2}$ such that for any $k < \frac{n}{2}$ we get $R_P(k) < R_O(k) < c$. Following the categorisation of industrial membership sizes any such $k$ belong to the subset $\{K^+\}$. Since both of the political rent functions are increasing in $k$ and $R_P(k)$ is convex while $R_O(k)$ is concave with respect to $k$ there are some relatively large $k$ such that $\frac{n}{2} < k < \frac{n}{2}$ for which we have two possible cases: if $R_P(k) < c < R_O(k)$ then all such $k$ belong to the subset $\{K^-\}$, and/or if $c < R_P(k) < R_O(k)$ then all such $k$ belong to the subset $\{K^+\}$. Now for given $\pi(\cdot)$ and $b(\cdot)$ we have $R_O(k) < R_P(k)$ for any $k > \frac{n}{2}$. Hence for given $c < R_P(\frac{n}{2})$ there exists some $\frac{n}{2} < \frac{n}{2} < n$ such that we get $R_O(n) < c < R_P(n)$ if and only if $k > n^2$. Following the definitions of the subsets all such $k$ belong to the subset $\{K^+\}$. Otherwise if $k < \frac{n}{2}$ then we get $c < R_O(n) < R_P(n)$ and all such $k$ belong to $\{K^-\}$. Hence these subsets appear sequentially on the equilibrium path such that $0, 1, \ldots, n = \{K^-, K^-, K^+, K^+\}$. Note that subsets $\{K^-,\}, \{K^+\}$ and $\{K^+\}$ are non-empty since $0, 1 \in \{K^-,\}, \frac{n}{2} \in \{K^+\}$ and $n \in \{K^+\}$. Considering all these subsets to be non-trivially non-empty, the sizes of membership on the equilibrium path can be expanded as:

$$\{0, 1, \ldots, \bar{k}^-,\}, \{\underline{k}^-, \ldots, \bar{k}^-,\}, \{\underline{k}^+, \ldots, \bar{k}^+,\}, \{\underline{k}^{++}, \ldots, \bar{k}^{++}\}.$$  

• Suppose $\{K^-\}$ is non-empty. Following the analysis of proposition 8 there
is no other possible equilibria in this subset unless \( \mathcal{P} \)'s membership reaches \( \bar{k}^- \) as it is always individually profitable for any members in \( \mathcal{O} \) to deviate and join the industrial party as \( p > 0 \) while the reverse deviation is never plausible. Once \( k \) reaches \( \bar{k}^- \) any single deviation from \( \mathcal{O} \) will increase the size of industrial membership to the lower bound of the following subset \( \{K^-\} \) as \( \bar{k}^- + 1 = \bar{k}^- \). Recall for any membership size that belongs to \( \{K^-\} \), the cost of violence is such that \( \mathcal{P} \) never retaliates with \( F \) even when \( \mathcal{O} \) initiates it. Since any uncontested violence wins for any \( k \in \{K^-\} \) the violent opposition puts an end to the proposed project. Thus if \( k \) reaches \( \bar{k}^- \) then a member in \( \mathcal{P} \) receives a net payoff of \(-d\) while deviation to \( \mathcal{O} \) gives him 0. Hence none of \( n - \bar{k}^- \) members in \( \mathcal{O} \) chooses to deviate from his membership. Thus we get a SPE where the process of land acquisition is peaceful where relatively less number of plots are sold for the project, in particular \( k^* = \bar{k}^- \). This equilibrium remains unaltered whenever \( K^- \) is non-empty and irrespective of the size of \( K^- \). Note that there is no equilibrium size of \( k \) that belongs to \( \{K^-\} \) as for any arbitrary \( k' \in \{K^-\} \) such that \( \bar{k}^- \leq k' \leq \bar{k}^- \) an industrial party member will receive a payoff of \(-d\) while joining party \( \mathcal{O} \) will get him 0. Since \( 0 \geq -d \) for any such \( k' \in \{K^-\} \) it is always plausible for any member in \( \mathcal{P} \) to deviate to join \( \mathcal{O} \) and \( k^* = \bar{k}^- \in \{\{K^{-}\} \cup \{K^-\}\} \).

- Suppose \( \{K^-\} \) is empty. If any one from \( \mathcal{O} \) now choose to deviate then \( k \) increases to \( \bar{k}^+ \in \{K^+\} \) as now \( \bar{k}^- + 1 = \bar{k}^+ \). For \( \bar{k}^- \) to remain a SPE it must be true that none of the \( \bar{k}^- \) members in \( \mathcal{P} \) has an incentive to deviate from the industrial party and none of the \( n - \bar{k}^- \) members in \( \mathcal{O} \) has an incentive to deviate from the opposition party membership. Since \( p > 0 \) a deviation for a member in \( \mathcal{P} \) is never plausible here. Recall that for any size of industrial membership that belongs to subset \( \{K^+\} \) both the parties choose to play \( F \). Hence for \( \bar{k}^- \) to remain a SPE it must simultaneously be true that for each member in \( \mathcal{O} \) the expected payoff from violence is less than the payoff he receives from retaining his plot of land, i.e.,

\[
0 > \pi(k^+)p + (1 - \pi(k^+))(-d).
\]
This gives
\[ d > \frac{k^+ p}{n - k^+}. \]

Hence for given \( p > 0 \) the SPE is achieved with \( k^* = \bar{k}^- \in \{ \{K^-\} \cup \{K^-\}\} \) if and only if \( d \) crosses its upper limit denoted by \( \bar{d} \), such that \( \bar{d} > \frac{k^+ p}{n - k^+} \). \[\text{\textsuperscript{122}}\]

Consider \( |K^+| \geq 1 \). Suppose there exists a \( k^* \in \{K^+\} \) such that \( k^* \leq k^+ \leq \bar{k}^+ \). Following the above analysis for \( k^+ \) to be an equilibrium it must be true that \( \pi(k^+)p + (1 - \pi(k^+))(-d) > 0 \) which implies \( d < \frac{k^+ p}{n - k^+} \) so that no member from \( P \) has an incentive to deviate from industrial membership (irrespective of whether \( \{K^-\} \) is empty or not). This essentially puts a sharp lower bound on the unit price of land, \( p \), such that
\[ p > \frac{(n - k^+)}{k^+}d. \]

But it must also be true that none of the \( n - k^+ \) members in \( O \) has incentive to deviate from opposition membership and for that it must be true that
\[ (1 - \pi(k^+))0 + \pi(k^+)(-d) > \pi(k^+ + 1)p + (1 - \pi(k^+ + 1))(-d). \]

This provides a sharp upper bound on the price per plot of land, \( p \), such that
\[ p < \frac{(n - (2k^+ + 1))d}{(k + 1)}. \]

Given \( p > 0 \) the above condition is non-empty if and only if \( n > 2k^+ + 1 \). Otherwise \( k^+ \) is not a SPE. So let \( n > 2k^+ + 1 \). Then for \( k^+ \) to be a SPE it must be true that \( \frac{n - k^+}{k^+} < \frac{n - (2k^+ + 1)}{(k + 1)} \). But this is never true for given \( k^+ < n \). Hence \( k^+ \) is not a SPE.

I am now to check whether there is any other SPE in the subset \( \{K^+\} \). To see this suppose \( k^+ \) be an arbitrary membership size for \( P \) such that \( k^+ < k^+ < \bar{k}^+ \). Following the above analysis for \( k^+ \) to be an equilibrium it must be true that the expected payoff of any \( k^+ \) industrial party member outweighs his expected payoff

\[\text{\textsuperscript{122}}\text{Note that if } d \leq \frac{k^+ p}{n - k^+} \text{ then it is always individually profitable for a member in } O \text{ to deviate from its membership and then } k \text{ rises to } k^+. \text{ Obviously in that case } k^- \text{ is no longer a SPE even if } p > 0 \text{ holds true.}\]

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from being in the opposition party and the expected payoff of any \( n - k^+ \) opposition party member outweighs his expected payoff from being in the industrial party. Hence for an individual member in \( P \) it must be true that

\[
\pi(k^+)p + (1 - \pi(k^+))(−d) > (1 - \pi(k^+ - 1))0 + \pi(k^+ - 1)(−d),
\]

that gives \( p > \frac{d(n+1-2k^+)}{k^+} \) and for an individual member in \( O \) it must be true that

\[
(1 - \pi(k^+))0 + \pi(k^+)(−d) > \pi(k^+ + 1)p + (1 - \pi(k^+ + 1))(−d),
\]

that gives \( p < \frac{d(n-1-2k^+)}{k^+ + 1} \). Note that for given \( p > 0 \) an individual member in \( O \) always deviates to join \( P \) whenever \( n < 1 + 2k^+ \) and then \( k^+ \) is never a SPE. So let \( n > 1 + 2k^+ \). Thus for conditions 39 and 40 to hold together we must have

\[
\frac{n + 1 - 2k^+}{k^+} < \frac{n - 1 - 2k^+}{k^+ + 1}.
\]

But this condition is never true. Hence \( k^+ \) is never an equilibrium of the voting sub-game since this holds in general for any industrial membership size such that \( k^+ < k^+ < \bar{k}^+ \).

Suppose condition 39 holds. Then the size of industrial membership continues to rise unless it reaches \( \bar{k}^+ \) and if any individual member in \( O \) now deviates then \( P \)'s membership size increase to the lower bound of the following subset \( \{K^++\} \) since \( \bar{k}^+ + 1 = \bar{k}^+ \). Proceeding through the same analysis \( \bar{k}^+ \) is an equilibrium if and only if for any of the \( \bar{k}^+ \) members in \( P \) it is not individually profitable to deviate from industrial membership. The condition for an individual member in \( P \) is just identical with the one mentioned above if \( k^+ \) is replaced by \( \bar{k}^+ \). This gives a sharp lower limit on the proposed price per plot of land such that

\[
p > \frac{d(n + 1 - 2\bar{k}^+)}{k^+}.
\]

But for \( \bar{k}^+ \) to be a SPE it must also be true that none of the \( n - \bar{k}^+ \) opposition party members has an incentive to deviate and join \( P \). Following the definition of
\{K^{++}\} it must then be true that

\[(1 - \pi(\bar{k}^+))0 + \pi(\bar{k}^+)(-d) > p.\]

But this can never be true as \(p > 0\). Hence there is no SPE size of membership in the subset \(\{K^+\}\)\(^{123}\).

Suppose \(|K^{++}| > 1\). Following the above analysis the lower bound of this subset is never a Nash equilibrium of the voting sub-game as for any of the \(n - k^{++}\) members in \(O\) it is always individually rational to deviate to get industrial membership given \(p > 0\). Following the proof for proposition \(^8\) there is no other possible equilibrium in this subset unless the industrial membership size reaches \(\bar{k}^{++}\). Given \(p > 0\) it is always individually rational for any member landowner to remain in \(\mathcal{P}\) and all member landowner in \(O\) to deviate to the industrial party. Hence equilibrium in the voting sub-game is achieved when \(k = \bar{k}^{++}\). Note that \(\bar{k}^{++} = n\) and hence the SPE is \(k^* = n\)\(^{124}\). This completes the proof for Proposition \(^9\) \(\Box\)

**Proof of Proposition 10**: Proposition 10 considers a scenario that is similar to the one considered in Proposition \(^8\). Recall that when parties cannot indulge in early mobilisation of resources then following Proposition \(^8\) there is no violence on the equilibrium path if \(c > R_O(\hat{k}) = R_P(\hat{k})\) and the unique SPE is achieved when \(k^* = n\). Since in this case both the parties choose to accommodate with each other there is no violence on the equilibrium path and the project gets implemented peacefully in the locality. Hence from Section \(^{0.12.5}\) the welfare of party \(O\) is \(-b(n) = -n\) if it does not undertake an early mobilisation of resources.

Now I compare the above welfare of the opposition party with its welfare achievable in case it undertakes early mobilisation of resources. Recall from Fact 4 that \(P(\tilde{k}) < R_P(\tilde{k})\). Since I have \(R_P(\hat{k}) = \frac{n}{2}\) from Fact 1 the condition \(c > R_P(\hat{k})\) nec-

\(^{123}\)Note that if \(n > 1 + 2k^+\) such that condition 40 holds then the size of industrial membership continues to fall unless it reaches \(k^{--}\) which is an SPE. Hence there is no equilibrium in \(\{K^+\}\) irrespective of whether \(\{K^+\}\) is empty or not.

\(^{124}\)this equilibrium persists irrespective of the size of subset \(\{K^{++}\}\)
necessarily implies that \( P(\bar{k}) < \frac{n}{2} < c \). Also recall that from Fact 3 I have \( P(\bar{k}) = O(\bar{k}) \) where \( \bar{k} > \frac{n}{2} \). Hence for given the concavity of \( O(\cdot) \) function and the convexity of \( P(\cdot) \) function for any \( k_F \) such that \( k_F < \bar{k} \) we must have \( P(k_F) < O(k_F) \). Given that \( c \) is sufficiently high, then we have \( P(k_F) < P(\bar{k}) < c \) and thus for such anticipated membership strength \( \mathcal{P} \) does not afford violence. Hence it is rational for \( \mathcal{P} \) to not retaliate with \( F \) even if \( \mathcal{O} \) chooses to initiate it. For this to be true it must be that for party \( \mathcal{P} \) we have

\[
c > b(k_F)(2\pi(k_F) - 1)
\]

and for party \( \mathcal{O} \) we have

\[
c < b(n) + b(0).
\]

For these two to hold simultaneously it must be that \( b(k_F)(2\pi(k_F) - 1) < c < b(n) \). This is true whenever \( c < O(k) \). Thus when the opposition anticipates that \( k_F < \bar{k} \) such that \( P(k_F) < P(\bar{k}) < c < O(k_F) < n \) (it is reasonable to assume that \( c \) does not exceed the \( \min\max\{P(\cdot), O(\cdot)\} = n \) then it is optimal for party \( \mathcal{O} \) to initiate violence to which \( \mathcal{P} \) does not retaliate. Hence in the equilibrium of the conflict subgame the uncontested violence stops the project from taking place in the locality.

As mentioned in section 0.12.4 it is then individually rational for any member in \( \mathcal{P} \) to deviate to support party \( \mathcal{O} \) as by doing so he can save the cost \( d \) of being in the losing party. Hence in the SPE all the landowners unanimously join party \( \mathcal{O} \) and \( k^* = 0 \). Hence the welfare of party \( \mathcal{O} \) from being able to undertake early mobilisation of resources is \( b(0) - c = -c \). Since \( c < n \) for given a choice it is always optimal for the opposition to undertake early mobilisation of resources. This completes the proof for Proposition 10.

\[ \square \]

**Proof of Proposition 11**: The condition on \( c \) here is identical to that considered in Proposition 10 but now the anticipated membership size of party \( \mathcal{P} \) in violence is such that \( k_F \geq \bar{k} \). Following the proof of Proposition 10 if parties cannot undertake early mobilisation of resources then for sufficiently high \( c \) such that \( c > R_P(\bar{k}) \) there is no violence on the equilibrium path and the unique SPE is achieved when \( k^* = n \) and the project is implemented peacefully. As mentioned
earlier that the welfare of party $O$ in this case is $-b(n) = -n$ if it does not undertake early mobilisation of resources.

Suppose the parties now undertake early mobilisation of resources. From Fact 4 here also we have $P(\bar{k}) < \frac{n}{2} < c$ for given $c > R_P(\bar{k}) = \frac{n}{2}$ and given the technical characteristics of $P(\cdot)$ for any anticipated $k_F$ such that $\bar{k} \leq k_F$ we have $P(\bar{k}) \leq P(k_F)$. Given this there exists a $\bar{k} \leq k'_F \leq n$ such that we have $P(\bar{k}) < c < P(k_F)$ if and only if $P$’s anticipated membership strength is significantly high such that $k_F > k'_F$. Otherwise if $k_F < k'_F$ we have $P(\bar{k}) < P(k_F) < c$.

First consider the case when $P(\bar{k}) < P(k_F) < c$. Given this it is optimal for $P$ to not indulge in political violence even when $O$ chooses to initiate it. Following the proof of Proposition 10 for $O$ to initiate violence when $P$ does not retaliate with $F$ it must be that $b(k_F)(2\pi(k_F) - 1) < c < b(n)$. Since it is reasonable to assume that $c < n$, the above holds true for $\bar{k} \leq k_F < k'_F$. Given this it is optimal for the opposition to initiate violence as in that case all the landowners will unanimously join the winning party $O$ and as the opposition party’s welfare is then $-c > -n$, given a choice party $O$ always prefers to undertake early mobilisation of resources (This follows from the proof of Proposition 10). This proves the first part of Proposition 11.

I now consider the case when $P(\bar{k}) < c < P(k_F)$. Given this party $P$ can choose to retaliate with $F$ when $O$ initiate violence. Note that for $O$ to initiate political violence it must be that

$$c < b(k_F)(1 - 2\pi(k_F)) + b(n)$$  \hspace{1cm} (41)

and for $P$ to retaliate with $F$ it must then be that

$$c < b(k_F)(2\pi(k_F) - 1).$$  \hspace{1cm} (42)

Note that from Fact 3 we have $\bar{k} > \frac{n}{2}$ that essentially implies that $1 - 2\pi(k_F) < 0$ for sufficiently large $k_F$ such that $k_F > \bar{k}$. Hence given $c > \frac{n}{2}$ for condition 41 to hold it must be true that $c > b(k_F)(2\pi(k_F) - 1)$. But this contradicts condition
Thus for given $c > \frac{n}{2}$ and sufficiently large $k_F$ it is rational for party $O$ to not initiate political violence since for such $k_F$ party $P$ chooses to retaliate with $F$. Thus it is rational for the opposition to accommodate with party $P$. Since there is no forced sale in our model the party $P$ never chooses $F$ in the conflict sub-game. Note that for both parties to accommodate simultaneously it must be true that $2b(k_F)(1 - 2\pi(k_F)) < -b(n)$. This condition holds only if $\pi(k_F) > \frac{1}{2}$ which is true for significantly high membership strength for party $P$. Hence equilibrium of the conflict sub-game is achieved when both parties choose $A$ and in the SPE $k^* = n$. Hence party $O$’s welfare gain is $-n$. Hence given a choice party $O$ is indifferent between undertaking late and early mobilisation of resources for post-voting violence. This proves the second statement of proposition 11.

Proof of Proposition 12: This proposition considers a situation where democratic imperfections are sufficiently large such that $c < P(\bar{k})$. This essentially implies that $c < R_P(\hat{k}) = \frac{n}{2}$ (From Facts 1 and 4). If the political parties cannot undertake early mobilisation of resources then this scenario follows the analysis of Proposition 9 that shows that if $c < R_P(\hat{k}) = R_P(\tilde{k})$ then in every SPE there is no violence and the project is implemented peacefully. Considering the subsets of industrial memberships to be non-trivially non-empty this leads to two possible equilibria, one is a low level equilibrium with $k^* = \bar{k}^{-}$ and the other with $k^* = n$. Hence if parties cannot undertake early mobilisation of resources then party $O$’s welfare is $-b(\bar{k}^{-})$ for $k^* = \bar{k}^{-}$ and is $-b(n)$ for $k^* = n$.

Suppose the parties now undertake early mobilisation of resources. We know that for given Fact 3 and the technical characteristics of $P(\cdot)$ and $O(\cdot)$ we have $P(k) < O(k)$ for any $k < \bar{k}$. Hence for given $c < P(\bar{k}) = O(\bar{k})$ there exist some $\frac{n}{2} < k_P < \bar{k}$ such that $P(k) < c < P(\bar{k}) < O(k)$ if and only if $k < k_P$. Otherwise if $k > k_P$ then we have $c < P(k) < P(\bar{k}) < O(k)$. But we have $O(k) < P(k)$ for any $k > \bar{k}$. Hence for given $c < P(\bar{k}) = O(\bar{k})$ there exist some $\tilde{k} < k_O < n$ such that $O(k) < c < P(\bar{k}) < P(k)$ if and only if $k > k_O$. Otherwise if $k < k_O$ then we have $c < O(k) < P(\bar{k}) < P(k)$. Given $c > 0$ this
essentially implies that $\frac{n}{2} < k_P < \bar{k} < k_O < n$\textsuperscript{125}. Recall from Section 0.12.5 that on the equilibrium path of the conflict sub-game violence is possible if and only if $c < \min\{O(\cdot), P(\cdot)\}$. Hence for violence to exist as an equilibrium there must be some anticipated industrial membership size $k_F$ such that $k_P \leq k_F \leq k_O$ for which both the parties optimally choose $F$. Following sub-section 0.12.5 if there is political violence then the equilibrium size of industrial membership is $k^* = k_F = \frac{d(1+n)}{p+2d}$. Hence for both parties to indulge in violence it must be that $k_P \leq k_F \leq k_O$. This essentially implies that $\frac{n}{2} < k_F < n$ which always holds for any non negative $n$. Hence for anticipated industrial membership $k_F \in \{k_P, k_O\}$ it is always rational for party $P$ to retaliate with $F$ whenever $O$ initiates it where $\pi(k_F) > \frac{1}{2}$. Note that the expected welfare gain of party $O$ from violence is $(1 - \pi(k_F))b(k_F) - \pi(k_F)b(k_F) - c = O(k) - (n + c)$ which is falling for any anticipated $k > \frac{n}{2}$. Hence if party $O$ chooses to initiate violence then its expected welfare is maximised at $k_P$ and that is $-2c$. Otherwise if it chooses to play $A$ then in absence of any forced sale in our model there is no violence on the equilibrium path and $k^* = n$ for which $O$ receives $-n$. Hence $O$ chooses to play $F$ if any only if $-2c > -n$ and for given $c < \frac{n}{2}$ it is always optimal for $O$ to initiate violence. Hence violence exists as a SPE where $k^* = \frac{d(1+n)}{p+2d}$.

If parties do not undertake early mobilisation of resources then party $O$’s welfare achievable here is $-\frac{n}{2} + \frac{\sqrt{n^2-2cn}}{2}$ for $k^* = \bar{k} = \lceil K^- \rceil$ and is $-n$ for $k^* = n$. While the maximum welfare achievable by $O$ when it cannot undertake early mobilisation of resources for post-voting violence is $-\frac{n}{2} + \frac{\sqrt{n^2-2cn}}{2}$ (since $\bar{k} < n$), given a choice it always prefers to undertake early mobilisation of resources even when $-\frac{n}{2} + \frac{\sqrt{n^2-2cn}}{2} > -2c$ holds true (for $c < \frac{3n}{8}$). This is because by history if there exists a scenario where violence is affordable for the opposition (to initiate with $F$) then on the equilibrium path $O$ never chooses to play $A$. This completes the proof for Proposition 12. □

Proof of Corollary 8: From Proposition 12 we know that $c < P(\bar{k})$ essentially implies that $c < \frac{n}{2}$ and also that if the political parties cannot undertake early

\textsuperscript{125}Note that $P(\cdot) > 0$ for any anticipated industrial membership strength that exceeds $\frac{n}{2}$.
mobilisation of resources then in every SPE there is no violence and the project is implemented peacefully for given \( c < \frac{n}{2} \). Considering the subsets of industrial membership to be non-trivially non-empty this fetches two SPE, one with \( k^* = \bar{k}^{-} \) and the other with \( k^* = n \). Since \( \bar{k}^{-} < n \) the maximum welfare achievable by party \( O \) if it cannot undertake early mobilisation of resources is \( -\frac{n}{2} + \frac{\sqrt{n^2 - 2cn}}{2} \).

Consider now that the parties can undertake early mobilisation of resources for post-voting violence. As shown in the proof of proposition \([12]\) if \( c < P(\bar{k}) \) and \( k_F \leq k_O \) then in the SPE both parties optimally chooses violence and \( k^* = \frac{d(1+n)}{p+2d} \). Suppose in presence of violence the anticipated size of industrial membership is such that \( k_F < k_P \). Following the proof of Proposition \([12]\) this essentially implies that for any such \( k_F \) we have \( P(k_F) < c < O(k_F) < n \). Therefore, owing to \( P \)'s sufficiently small probability to win in violence it is optimal for the industrial party to not retaliate with \( F \) as its political rent then cannot cover the cost from violence. But for such membership strength \( O \) can initiate violence as it is affordable for the party to do so. Thus in the equilibrium of the conflict sub-game violent opposition stops the project from taking place in the locality and following Section 0.12.5 in equilibrium of the voting sub-game all the landowners unanimously join party \( O \) as retaining their plot of land then give them a higher individual payoff of 0 than to support the losing party to get \( -d \). Hence in the SPE violent opposition stops the project from taking place with \( k^* = 0 \). The welfare of the opposition party is thus \(-c\) if it can undertake early mobilisation of resources. Note that for given a choice between early and late mobilisation of resources party \( O \) prefers to undertake early mobilisation of resources as otherwise \( O \)'s welfare is always \(-n < -c \) for \( k^* = n \) (if it undertakes late mobilisation of resources). However the presence of multiple equilibria suggests that \( O \)'s welfare is \(-\frac{n}{2} + \frac{\sqrt{n^2 - 2cn}}{2} > -c \) for \( k^* = \bar{k}^{-} \) but in that case the project is implemented in the locality. Since by undertaking early mobilisation of resources, in equilibrium the party can always stop the project from taking place in the locality it prefers to undertake early mobilisation of resources. This proves the first statement of the corollary.

Suppose in presence of violence the anticipated size of industrial membership is such that \( k_F > k_O \). Following Proposition \([12]\) this essentially implies that for
any such \( k_F \) we have \( O(k_F) < c < P(k_F) \). Hence party \( \mathcal{P} \) can now afford to retaliate with \( F \) if the opposition initiates violence. But such significantly high \( k_F \) decreases party \( \mathcal{O} \)'s probability to win in violence (if it initiates violence) such that its political rent cannot suffice for its cost from violence. Hence it is optimal for party \( \mathcal{O} \) to not initiate political violence. In absence of any forced sale in our model then there is no violence on the equilibrium path of the conflict sub-game. From Section 0.12.5 we know that in absence of violence all the landowners unanimously join \( \mathcal{P} \) to receive a higher individual payoff of \( p \) than to receive 0 by joining the losing party. Hence in the SPE both parties choose to play \( A \) and the project is implemented with \( k^* = n \) and following proposition \[12\] party \( \mathcal{O} \)'s welfare is \(-n\).

Note that when \( \mathcal{O} \) does not undertake early mobilisation of resources, then its maximum welfare achievable is 
\[-\frac{n^2}{2} + \sqrt{\frac{n^2 - 2cn}{2}} > -n.\]
Hence given a choice party \( \mathcal{O} \) prefers late mobilisation of resources to get the chance of reducing the size of industrialisation in the locality. This completes the proof for Corollary 8. \( \Box \)

Proof of Corollary 9: The condition on the degree of democratic imperfections here follows from Proposition 9. Hence following the proof of proposition 9 here also I have \( c < \frac{n}{2} \) and if the parties cannot undertake early mobilisation of resources then the maximum welfare achievable by party \( \mathcal{O} \) is 
\[-\frac{n^2}{2} + \sqrt{\frac{n^2 - 2cn}{2}} \text{ when } k^* = \lceil K^{-} \rceil \]
(considering all the subsets of \( k \) to be non-trivially non-empty).

Consider now that the parties can undertake early mobilisation of resources and suppose that in presence of political violence the anticipated size of industrial membership is such that \( k_F < \bar{k} \). Then I have \( P(k_F) < P(\bar{k}) \) since \( P(\cdot) \) is increasing \( k \) and this essentially implies that \( P(k_F) < P(\bar{k}) < c < \frac{n}{2} \). Thus for such low \( k_F \) party \( \mathcal{P} \) never chooses to retaliate with \( F \) even if \( \mathcal{O} \) chooses to indulge in political violence, owing to \( \mathcal{P} \)'s sufficiently low probability to win in violence. Following the proof of Proposition \[12\] for given the concavity of \( O(\cdot) \) we then get \( P(k_F) < P(\bar{k}) < c < O(k_F) \) as the membership strength of party \( \mathcal{O} \) is sufficiently high now. Hence optimally party \( \mathcal{O} \) chooses to initiate violence for which in equilibrium of the voting sub-game we get \( k^* = 0 \) (follows from Section 0.12.5). Thus the welfare gain for party \( \mathcal{O} \) is \(-c\). Following proof of the first part of Corollary 8.
if given a choice party $O$ prefers to undertake early mobilisation of resources since by early mobilisation it can stop the project from taking place. This proves the first part of Corollary 9.

Suppose parties undertake early mobilisation of resources and anticipate that in presence of violence $k_F > \bar{k}$ so that $P(k_F) > P(\bar{k})$. Following the proof of Proposition 11 then there exists a $\bar{k} \leq k_F' \leq n$ such that we have $P(\bar{k}) < c < P(k_F)$ if and only if $P$’s anticipated membership strength is significantly high such that $k_F > k_F'$. As for such significantly high membership strength $P$ optimally chooses to play $F$ if $O$ initiates it then party $O$ optimally chooses to accommodate with $P$ owing to $P$’s significantly high probability to win in violence. Thus in equilibrium both the parties then optimally choose to accommodate to implement the project and since $k^* = n$ here the welfare of party $O$ is $-n$ if it undertakes early mobilisation of resources. Note that since in presence of multiple equilibria the maximum welfare achievable by $O$ from late mobilisation of resources is $-\frac{n^2}{2} + \frac{\sqrt{n^2 - 2\alpha n}}{2} > -n$, given a choice party $O$ prefers late mobilisation of resources to get the chance of reducing the size of industrialisation in the locality. Otherwise if $k_F < k_F'$ we have $P(\bar{k}) < P(k_F) < c$ for which $P$ optimally chooses to refrain from violence, $O$ initiates it and in equilibrium violent opposition stops the project from taking place in the locality and then the result is identical with the first part. This completes the proof for Corollary 9. □
0.20 Appendix B
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<th>Source for updated status by authors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Komaramad, Vizianagaram district (Private thermal power plant)</td>
<td>2010</td>
<td>Contested</td>
<td>2016</td>
<td>In Process</td>
<td>Ministry of Environment re-visited and extended the validity of environmental clearance till 2020 to start production operations</td>
<td><a href="http://environmentclearance.nic.in/writereaddata/Form-1AEC/20120908ECB02790103-2007-PDF">http://environmentclearance.nic.in/writereaddata/Form-1AEC/20120908ECB02790103-2007-PDF</a></td>
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<tr>
<td></td>
<td>Mahbubnagar district, Polkapally (State Government, SEZ)</td>
<td>2009</td>
<td>Contested</td>
<td>2014</td>
<td>Successful</td>
<td>Acquisition was forceful targeting mostly backward classes to avoid strong resistance, discriminated compensation scheme</td>
<td>Rawat et al., 2011, retrieved from <a href="http://www.indiaenvironmentportal.org.in/files/WEB_SDF_India_final_benouf.pdf">http://www.indiaenvironmentportal.org.in/files/WEB_SDF_India_final_benouf.pdf</a></td>
</tr>
<tr>
<td></td>
<td>Rajaiahpet village, Vishakhapatnam (Anrak Aluminium, Port for aluminium plant)</td>
<td>2010</td>
<td>Contested</td>
<td>2010</td>
<td>Successful</td>
<td>Landowners offered only price for land but no compensation for displacement as homestead land plots have been strategically avoided</td>
<td>Oskarsson, P. 2009 Retrieved from <a href="http://www.indiaenvironmentportal.org.in/files/WEB_SDF_India_final_benouf.pdf">http://www.indiaenvironmentportal.org.in/files/WEB_SDF_India_final_benouf.pdf</a></td>
</tr>
<tr>
<td>Chandigarh</td>
<td>Marnimapa (UT Government, Technology Park)</td>
<td>2007</td>
<td>Contested</td>
<td>2012</td>
<td>Contested</td>
<td>Initially acquired but the Supreme Court quashed the land acquisition as it violated the Law</td>
<td>The Tribune, October 12, 2012, retrieved from <a href="http://www.thetribune.com/2012/10/12/issue52012/030.htm">http://www.thetribune.com/2012/10/12/issue52012/030.htm</a></td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>Rajgarh (Nawin Jindal Group, Power plant)</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
<td></td>
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</tbody>
</table>

Table 1: The status of land acquisition as per Sanjoy Chakrabroty's book and as updated land acquisition status for erstwhile 'Contested' cases.
<table>
<thead>
<tr>
<th>Location/Project</th>
<th>Year</th>
<th>Outcome 1</th>
<th>Outcome 2</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jangal-Champa district (NTPC, KSK Energy; Thermal power plant)</td>
<td>2011</td>
<td>Contested</td>
<td>2016</td>
<td>Successful</td>
</tr>
<tr>
<td>Goa</td>
<td>2010</td>
<td>Successful</td>
<td>2010</td>
<td>Successful</td>
</tr>
<tr>
<td>Navelin (NHA; Highway widening)</td>
<td>2010</td>
<td>Contested</td>
<td>2010</td>
<td>In Progress</td>
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<tr>
<td>Gujarat</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
</tr>
<tr>
<td>Location</td>
<td>Year 1</td>
<td>Status 1</td>
<td>Year 2</td>
<td>Status 2</td>
</tr>
<tr>
<td>-------------------</td>
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<tr>
<td>Yamunanagar</td>
<td>2009</td>
<td>Contested</td>
<td>2014</td>
<td>Successful</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>2009</td>
<td>Contested</td>
<td>2009</td>
<td>Contested</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
</tr>
<tr>
<td>Yamunanagar</td>
<td>2009</td>
<td>Contested</td>
<td>2014</td>
<td>Successful</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>2009</td>
<td>Contested</td>
<td>2009</td>
<td>Contested</td>
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<tr>
<td>Jharkhand</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
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<tr>
<td>Polka (Bhawan steel; Steel plant)</td>
<td>2011</td>
<td>Contested</td>
<td>2016</td>
<td>Contested</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>2009</td>
<td>Contested</td>
<td>2009</td>
<td>Contested</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>2008</td>
<td>Failure</td>
<td>2008</td>
<td>Failure</td>
</tr>
<tr>
<td>Sarakanda (Tata Steel; Steel plant)</td>
<td>2011</td>
<td>Contested</td>
<td>2014</td>
<td>Contested</td>
</tr>
<tr>
<td>Puruli Singbhum</td>
<td>2010</td>
<td>Contested</td>
<td>2016</td>
<td>Leading to success</td>
</tr>
<tr>
<td>Karnataka</td>
<td>2010</td>
<td>Contested</td>
<td>2014</td>
<td>Successful</td>
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<tr>
<td>Belgaum district, Huli kale taluk</td>
<td>2010</td>
<td>Contested</td>
<td>2014</td>
<td>Contested</td>
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<tr>
<td>Karnataka</td>
<td>2009</td>
<td>Contested</td>
<td>2011</td>
<td>Contested</td>
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For more details, please visit the following links:
- [http://www.gazette.kar.nic.in/2013/06/11/31855_Summary_Advt_Not_Inc._Vol_50_no_30.pdf](http://www.gazette.kar.nic.in/2013/06/11/31855_Summary_Advt_Not_Inc._Vol_50_no_30.pdf)
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<tr>
<th>State</th>
<th>Project Description</th>
<th>Year 1</th>
<th>Outcome 1</th>
<th>Year 2</th>
<th>Outcome 2</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maharastra</td>
<td>Lower Penganga valley (State Government; Irrigation)</td>
<td>2009</td>
<td>Contested</td>
<td>2016</td>
<td>Contested</td>
<td>Feasibility of the project has been questioned</td>
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<td></td>
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<td></td>
<td><a href="https://sandrp.wordpress.com/2015/07/15/lowerpenganga-project-he-against-land-acquisition-now-continuous/">https://sandrp.wordpress.com/2015/07/15/lowerpenganga-project-he- against-land-acquisition-now-continuous/</a></td>
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<tr>
<td>Jalapur, Ratnagiri district (State Government; Nuclear power plant)</td>
<td>2010</td>
<td>Contested</td>
<td>2015</td>
<td>Contested</td>
<td>Consistent protests due to livelihood and environmental concerns</td>
<td><a href="http://www.hindustantimes.com/india/ratnagirivillagers-fight-on-against-jaitapur-nuclear-power-project/story-GQCXJgpYKbOkaZnvbYyJVL.html">http://www.hindustantimes.com/india/ratnagirivillagers-fight-on-against-jaitapur-nuclear-power-project/story-GQCXJgpYKbOkaZnvbYyJVL.html</a></td>
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<tr>
<td>Odisha</td>
<td>Gopalpur (Tata Steel; Steel plant)</td>
<td>2008</td>
<td>Failure</td>
<td>2008</td>
<td>Failure</td>
<td></td>
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<tr>
<td>Odisha</td>
<td>Paradeep (Essar Group; Steel plant)</td>
<td>2011</td>
<td>Successful</td>
<td>2011</td>
<td>Successful</td>
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<tr>
<td>Odisha</td>
<td>Kalinganagar (Tata Steel; Steel plant)</td>
<td>2008</td>
<td>Failure</td>
<td>2008</td>
<td>Failure</td>
<td></td>
</tr>
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<td>State</td>
<td>Location</td>
<td>Year 1</td>
<td>Outcome 1</td>
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<td>Outcome 2</td>
<td>Notes</td>
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<tr>
<td>Rajasthan</td>
<td>Barmer (Sajjan Jindal Group; Power plant)</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
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<td></td>
<td>Bagru (Mahindra Group; SEZ)</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
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<td>Tamil Nadu</td>
<td>Vungathavalai (Hyundai Motors; Car plant)</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
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<td></td>
<td>Maraimalainagar (Mahindra group; SEZ)</td>
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<td>Successful</td>
<td>2008</td>
<td>Successful</td>
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<td></td>
<td>Tuticorin (Tata Steel; Titanium dioxide project)</td>
<td>2008</td>
<td>Failure</td>
<td>2008</td>
<td>Failure</td>
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<tr>
<td>Uttar Pradesh</td>
<td>Peelamedu, Chinnapalayam, Chennai (Aeronautics Authority of India; Airport expansion)</td>
<td>2010</td>
<td>Contested</td>
<td>2012</td>
<td>Successful</td>
<td>Higher amount of compensation paid</td>
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<td></td>
<td>Ulsnap (UP State Industrial Development Corporation; three SEZs)</td>
<td>2007</td>
<td>Contested</td>
<td>2015</td>
<td>Successful</td>
<td>Peaceful negotiation and higher amount of compensation</td>
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<td></td>
<td>Yamuna expressway (State Government; Highway)</td>
<td>2010</td>
<td>Contested</td>
<td>2012</td>
<td>Successful</td>
<td>Peaceful negotiation and higher amount of compensation</td>
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<tr>
<td>West Bengal</td>
<td>Salboni (Sajjan Jindal Group; Steel plant)</td>
<td>2008</td>
<td>Successful</td>
<td>2008</td>
<td>Successful</td>
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<td>Andal, Burdwan (State Government; Airport expansion and industrial hub)</td>
<td>2010</td>
<td>Contested</td>
<td>2013</td>
<td>Successful</td>
<td>Better compensation offered</td>
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<tr>
<td></td>
<td>Burdwan district, Burnpur-Purushottampur (ISCC; Steel plant expansion)</td>
<td>2008</td>
<td>Contested</td>
<td>2015</td>
<td>Successful</td>
<td>Better compensation offered</td>
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<td>Location</td>
<td>Year 1</td>
<td>Status 1</td>
<td>Year 2</td>
<td>Status 2</td>
<td>Reason/Notes</td>
<td>Links</td>
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