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Colonial and Post-Colonial Origins of Agrarian Development: The Case of Two Punjabs

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**THE COLONIAL AND POST COLONIAL ORIGINS OF
AGRARIAN DEVELOPMENT: A CASE OF TWO PUNJABS**

A Dissertation Presented

By

SHAHRAM AZHAR

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 2016

Economics

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by

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For Stephen Resnick; a teacher, mentor, and comrade.

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ABSTRACT

THE COLONIAL AND POST-COLONIAL ORIGINS OF AGRARIAN DEVELOPMENT: A CASE OF TWO PUNJABS

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This study explores the colonial and post-colonial origins of agrarian development by looking at the role of historical institutions, class formations and the state (ICS) in shaping the process. It contributes to the “divergence debates” in economics, which make an attempt to explain the ‘fundamental causes’ of divergence between countries. While one strand of the divergence literature presents the process as being functional to ‘geography’, a second strand focuses on the institutional legacies of colonialism; what is common to both sets of explanations, however, is the view that future outcomes are completely pre-determined by one or another time-invariant factor, leading implicitly to the view that third-world countries are in fact prisoners of birth. This study challenges this assumption by pointing to the crucial role that is played by a third factor--- the agency of the post-colonial state and agrarian public policy---in mitigating the negative impact of inheriting a particularly bad geography or the misfortune of being colonized at a point in history.

To do this, the study utilizes the natural experiment of the partition of the Punjab region in South Asia between India and Pakistan in 1947. While the two sides inherited relatively

similar initial conditions---and hence must have converged given the ‘geography’ or ‘colonial institutions’ models of economic development---yet, a reversal of economic fortunes has taken place, so that the districts assigned to Indian Punjab systematically outperform the districts that were assigned to Pakistan at the time of partition. What explains this divergence? The study provides an answer to this conundrum by examining the evolution of institutional structures in each Punjab during the two qualitatively distinct periods, and in particular paying attention to the differential paths of post-colonial public policy across the two sides.

The two-dimensional framework---with two distinct time periods (pre and post independence) and two states (Indian and Pakistani Punjab)--- allows me to build a much more holistic understanding of ICS and their colonial and post-colonial origins than is possible by looking at individual social formations without a counterfactual. Specifically, the study borrows an analogy from the empirical behavioral sciences where “twin studies” are often employed to differentiate between the impacts of “nature versus nurture”. Here, I employ a similar technique to separate out the impact of ‘historical’ and ‘geographical’ factors, from the role played by ‘post-colonial state policy’ in shaping current agricultural outcomes in the two Punjabs.

Using this research design and original archival research on colonial records and statistical manuals, I design an exceptionally long panel data set on district-wise agricultural production and acreage, along with data on colonial transformation, infrastructural development, market formations and property rights, to show how colonial institutions shaped class structures in the twin states, and how these react back on the economy and the post-colonial state by shaping the investment choices (and yield achieved per unit land) of farmers in each Punjab. I pay specific attention to the institutional structure as being shaped by a “colonial entitlement system”: a complex product of class (as the organization of surplus in an economy) and power (organization of power) relations distributed by the colonial state.

The study points to two ‘critical junctures’ in institutional history that shaped the evolution of the entitlement system during and after the colonial period. The first, beginning with the American Civil War in 1861 led to a severing of the existing global supply chain of cotton, which in turn, led to the emergence of Punjab as an alternative feeder of raw cotton to the empire. An ‘institutional apparatus’ was required to achieve this aim. The evolution of this apparatus came about, I argue, as a result of the contradictory goals of economic transformation (in infrastructure) and the maintenance of political order. The second period begins in 1947, where the Indian side of Punjab was exposed to a series of land reforms while the Pakistani side was not. In addition, the political structure across the two states varied substantially, with the Indian side having a much more democratic structure than its Pakistani twin. As a result of these differences, the two sides can essentially be seen as being divided into two ‘institutional islands’ with the people on each side having access to the institutions of just one of the two states.

This produced two qualitatively different ‘class controls’ over the post-colonial states in each case, and its economic impact is assessed in the study by devising a Difference-in-Difference strategy to ask: To what extent are differences in the post-independence agricultural yield per unit land of *districts* assigned to one of the two Punjabs by the Boundary Commission of 1947 shaped by 1) their colonial history, specifically the institutional structures and class-formations inherited due to colonial transformation and 2) the set of post-colonial developments, respectively, that these districts were exposed to as a result of them being assigned to one of the two *states*, while holding the effects of agroclimatic variables and geography constant. The study concludes that it is a combination of ‘institutional’ reform and the ‘class essence’ of that reform that determines agrarian performance in post-colonial societies.

Keywords: Economic divergence, Institutional Development, South Asian Economic History, Colonial Institutions, Post-Colonial Development

JEL subjects: F54 Colonialism; Imperialism; Postcolonialism;

Q15 Land Ownership and Tenure; Land Reform; Land Use; Irrigation; Agriculture;

O10 Economic Development General

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SECTION I

THE REVERSAL OF FORTUNES IN PUNJAB

CHAPTER 1

INTRODUCING THE STUDY

1.1 The Conundrum

1.1.1 The Setting and Overview of Study

The boundary line that divides the South Asian region of Punjab represents a natural experiment in economic history. Two states that were a part of the same country for centuries, prior to being partitioned by the Radcliffe¹ Line of 1947, lie on either side of this wall: on the eastern side lies the state of Punjab, India; to the west, its Pakistani namesake.

Figure 1.1 Map of Punjab



Source: Punjab Social and Economic Indicators Report
Government of India, 2015

¹ Named after the colonial administrator Sir Cyril Radcliffe who was assigned the task of coming up with a ‘partition plan’ for India in barely the two weeks that he spent in the country. For a recent historical exposition of ‘partition’ see Gandhi (2013)

Partitioned economies, such as the two Punjabs, provide researchers with an ideal setting to examine competing theoretical claims about economic development. Their proximity and similarity to one another--- a shared historical past, similar geographical, and cultural legacies---on the one hand, and their subsequent subdivision and assignment to different political environments after independence on the other, allows for an engagement with many questions that are central to the current debates in the development literature: what matters---geography, institutions, or culture---for long-term economic development? How do historical colonial institutions impact the development prospects of peripheral economies? What are the determinants of state structure and policy in post-colonial economies and how does it impact economic growth? Partitioned economies are interesting because they allow us to answer these questions with the aid of a counter-factual.

There are many examples of such ‘partitioned’ economies in history. They include countries in the Middle East that were formerly a part of the Ottoman Empire and were divided after World War I by the victorious Allied powers. Other notable examples include the “Scramble for Africa”, which led to its partition between 1881 and 1914 into various countries, the partition of Korea in 1949, the partition of Bengal in 1905/1947, and Punjab in 1947 to name just a few.

In this study I conduct a comparative analysis of the two sub-regions of Punjab during the colonial and post-colonial period. I seek to build a framework that allows us to understand the ‘colonial’, as well as the ‘post-colonial’ *institutional* origins of long-run comparative development in peripheral agriculture. I explore the process of colonial institutional formations, following the work of Sen (1981), as being derived from the colonial “entitlement system”; a system legitimized by what Mamdani (2012) describes as a discursive distinction between “Natives” and “Settlers” via a policy of ‘indirect-rule’. I show how the changes brought about in the ‘entitlement’ system that each side inherited after independence impacted comparative development in the two regions.

I examine this process of institutional change and its impact on agrarian outcomes² in the two sub-economies of Punjab across a century of data, and explore the set of political and economic interests that underlie their differences. Using recently mined colonial archival datasets on ‘infrastructural development’, ‘land-revenue tenures’, ‘institutional structures’, ‘commodity-flows’, ‘agrarian class structures’, and ‘agricultural productivity’, I seek to develop an understanding of: a) how colonial infrastructural transformation reflects the state’s response to specific capitalist economic crises in the ‘center’, leading to ‘uneven development’ (as in Baran, 1957; Frank, 1966) in the ‘periphery’; b) how this ‘uneven development’ across sub-regions within the same administrative framework shapes peculiar kinds of political and economic institutional structures in each sub-region; c) how these initial institutional structures interact with new political formations and coalitions after independence, and how the variation in these ‘political settlements’ (as in Olson, 1998) in turn impacts policy, and as a result, real economic outcomes in the periphery.

The study is situated in, and seeks to make a contribution to, the ‘New’ Divergence Debates in economics. The debates deal with the question of long-run comparative development and seek to understand the set of factors that separate success stories from failures. As Roy (2013) points out, while a greater part of the debate revolves around explaining differences between rich and poor countries, to ask why for example, European countries and ‘settler’ colonies perform better than others, a subset of the studies also deals with comparisons between peripheral economies. These consist on the one hand of inter-country comparisons such as Chang (2002, 2010) who examines the case of East Asian economies, Sen (1981) who looks at case studies from Bengal, Ethiopia, and the Sahel region of Africa, and Mamdani (1978) who compares the case of Uganda and Tanzania; or smaller units of analysis, such as inter-regional comparisons within a large peripheral entity such as India (Banerjee and Iyyer, 2005; Roy, 2013;

² I explain the reasons for focusing on the agrarian sector in Section 1.1.5 of this chapter.

Bayly, 1976). The present study engages with this sub-strand of the research and extends it by providing a framework to approximate partitioned economies as a ‘twin-study’ (a ‘two-state’ model), using the case study of the two Punjabs.

As Acemoglu (2002) points out, the New Divergence Debates offer three competing “fundamental” channels to explain differences in long-run comparative development: 1) Colonial Institutions, 2) Geography, and 3) Culture. As many scholars who study inter-regional differences in the Sub-Continent point out, there is deep heterogeneity in all three senses within India. These differences are so significant that "the question why India stayed poor while Europe became rich cannot have a single answer"; the answer depends "on which part of India one considers" (Roy, 2013, p.2). As a result, as one reviewer points out, “social and agricultural regions both smaller and larger than provinces have increasingly seemed appropriate units to scholars" (Bayly, 1985; page 584). Roy also points towards recent work in the economic historiography of India, which similarly notes that "South Asia possessed" not one or two, but in fact “multiple regional economies" (Washbrook, 2001, page 373). The seminal contribution by Banerjee and Iyyer (BI, 2005) ---explained in greater detail below--- exploits these regional dissimilarities and designs a framework that empirically explores the impact of differential legacies of colonial land-revenue institutions on regional inequality in India, today.

The case study of Punjab is an intriguing point of entry (and extension of the BI model) into the New Divergence Debates. Its two halves seem to share all three ‘fundamental’ features that have been identified by the divergence literature: a similar ‘geography’, an almost identical ‘language’ and ‘culture’, and a qualitatively similar ‘historical legacy of colonial institutions’. In this precise sense, West Punjab (in Pakistan) is a better counter-factual for East Punjab (in India), than Kerala, or West Bengal for the latter, or Sindh or Baluchistan, for the former. Given these desiderata, the comparative evolution of these economies not only allows us to assess the relative importance of the three existing ‘fundamental’ channels but also allows for a new understanding of the process, in pointing towards the possibility of a fourth and possibly crucial ‘fundamental’ channel that has been under-theorized in the New Divergence literature: the agency of the

post-colonial state. As we will see, a ‘one-region’ and ‘two-state’ model reveals that the manner in which colonial institutions impact current outcomes is neither pre-determined, nor static, but is rather completely contingent on the post-colonial political and state structure.

The New Divergence literature, in positing a set of ‘time-invariant’, ‘unchangeable’, ‘exogenous’ factors as the final arbitrators in separating success stories from failures negates human agency and presents third-world countries as ‘prisoners of birth’. This is because future outcomes are completely pre-determined in these models by ‘inherited factors’ (geography or colonial institutions) As Chang and Evans (2005) argue:

“In mainstream theory of institutional change, there is no ‘real’ human agency”. Since “material interests”---which result in institutional change or persistence---are shaped by ‘structural’ factors, the long-run development outcome is already structurally determined” and hence there is “no meaningful choice” (Chang and Evans, 2005; p. 9).

Thus, if one were to predict the fate of the two Punjabs on the basis of the existing models in 1947, given the similar colonial institutions and geographies, one would have predicted long-run convergence in economic outcomes. But does this theoretical prediction explain the *actual* economic history of the two Punjabs?

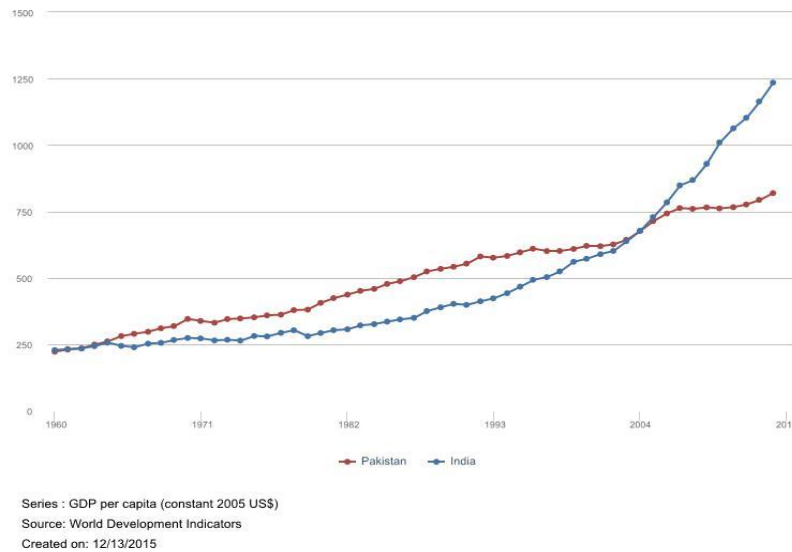
1.1.2 The Puzzle: Divergence in Economic Fortunes

Even a cursory comparative examination of development outcomes across the two Punjabs today reveals an intriguing paradox. Consider the fact that the two Punjabs are sub-regions of two *countries*. One would (quite reasonably) expect ‘sample’ (i.e. state-level) comparisons to reflect the broader differential in ‘population’ (i.e. country-level) economic trends, especially given the similarity of the two Punjabs. If one were to extrapolate about comparative development fortunes in the two Punjabs one would expect that these probably mirror the general, inter-country differences that have prevailed between the two states since independence.

This seemingly reasonable approach, however, simply does not work. According to the World Bank Development Indicators dataset India and Pakistan are both classified as ‘lower middle income’ countries. Pakistan’s GDP per capita has historically outstripped India’s for most of the seven decades that have elapsed since independence

(Figure 1.1) In fact, incomes per capita in India have only overtaken Pakistan as recently as 2006 and even now, the average income per person in India (as a whole) at \$1581 is just over two hundred dollars higher than Pakistan, which stands at \$1316 per person.

Figure 1.2: GDP per capita comparison India and Pakistan



Source: World Development Indicators

Extrapolating on the basis of this inter-country comparison one would expect the Pakistani side of Punjab to have historically performed much better than its Indian counterpart, or at the very least, similar levels of economic development to have prevailed across the two Punjabs; it is fairly well-known that in both countries Punjab is one of the better developed regions: in terms of per capita incomes, Punjab is the richest ‘province’³ of Pakistan while being the fourteenth richest ‘state’ in India. Yet, when we compare the two Punjabs *with* one another we see a puzzling level of economic disparity: the income of an average Punjabi in India is approximately 400 dollars *higher* than his

³ Pakistan continues to hold onto the colonial administrative term of “provinces” while India has changed the classification to ‘states’.

neighbors in Pakistan. This is *twice* the difference that would be predicted by a simple, inter-country comparison.

The divergence in other development indicators is even more perplexing: infant and maternal mortality rates are 50% *lower*, and literacy rates are 18% higher on the Indian side of Punjab. While just over 8% of the population is below the poverty line on the Indian side, the rate is twice as higher (measured at \$1.25 a day), at 19% on the Pakistani side of Punjab (Table 1.1).⁴ While barely half the adult females on the Pakistani side can read or write, in contrast, the female literacy rate on the Indian side of Punjab stands at 70%. The life-expectancy on the Indian side is also five years longer. Thus, by any measure of economic development, there has been a radical *divergence* in economic fortunes: the exact *opposite* of what existing theories---premised on ‘geography’, ‘colonial institutions’, and ‘culture’--- should have predicted.

⁴ The national percentages for poverty rates are approximately the same, at 21% in both countries.

Table 1.1 Comparison of Selected Development Indicators

	Punjab, India	Punjab, Pakistan
Area (sq km)	50,362	205,345
Population	27 million	101 million
GDP per Capita (current \$)	2178	1682
Overall Literacy Rate	77%	61%
Male Literacy Rate	80.44%	71%
Female Literacy Rate	70.73%	52%
Infant Mortality Rate (per 1000)	26	77
Maternal Mortality Rate (per 1000)	155	300
Metaled Roads (KM)	47,605	38,000
Life Expectancy	69	64
Poverty Rate (% living below \$2)	8.02%	19%

Sources: Punjab Development Indicators Report, Government of Pakistan (2015)
Vital Statistics of Punjab, Government of India (2015)

The question is: how could two sub-regions of the same *region* become so different from one another, despite having identical historical and agro-climatic conditions? A neoclassical model with agricultural output on the one hand and ‘factors of production’ on the other would have predicted---much like the new divergence debates literature---convergence. Yet, in practice there has been a radical divergence. What explains it? This is the conundrum that motivates the present study.

Before we move on to present the central hypotheses and claims of the study, its position and contribution to the broader literature, the methodological tools employed, and the diversity and range of the rich new datasets constructed using colonial archives to conduct the study, let us briefly explore some of the ‘plausible’ explanations that emanate from the existing literature and could potentially present an answer to the puzzle. While these explanations do not work, this brief detour helps unearth further layers of the

problem. It reveals why it is important for us to look at this problem from a long-term perspective; that is, to not only look at the set of *post-colonial* differences but also the features that planted the seeds of subsequent divergence between the two parts during the colonial period.

1.1.3 Search for an Explanation

One explanation for the divergence could be sought in the ‘initial’ conditions that were inherited by each side at the time of independence (North, 1990). The differences today may just be reflections of an ‘earlier’ advantage. It may be the case, for example, that the districts that were assigned to the Indian Punjab were already more prosperous than the ones that became a part of Pakistan.

Unfortunately however, this line of reasoning not only leads to a dead-end, it confounds the problem even further. The Pakistani Punjab not only inherited the larger *area* of the British province in 1947 it also inherited the more ‘developed’ part. For example, literacy rates, according to the Census of 1931⁵, were 16 and 19 percent respectively in the eastern and western districts respectively. The western part of Punjab had been, since the American Civil War of 1860, a ‘favored child’ of the British state (as we will see in the historical section of Chapter Four). State-led investments had developed an infrastructural apparatus that gave agricultural producers in the western part of the province privileged access to canal-irrigated water and global markets via railway lines directly connected to the nearest port (Chapter Four). An examination of trends in agricultural performance shows that in fact, ‘initial conditions’---as captured by yields per hectare--- were favorable to the part of Punjab that was assigned to Pakistan in 1947 (Chapter Three). Thus, a discussion of ‘initial’ conditions does not provide an explanation. In fact, it complicates matters further: what we have then, is not just a

⁵ The census of 1941, which was technically the last census of India before independence, was held at a time of war time exigencies and hence does not accurately give a good snapshot of social conditions.

divergence in comparative development outcomes; rather, what we are dealing with is a *reversal* of fortunes: the formerly more prosperous part is now lagging behind.

But perhaps the agro-climatic environment is so different that it could explain the difference in long-term development? As some scholars have noted, differences in the climate and/or the disease environment can contribute to comparative differences in outcomes (as in Sachs and Warner, 2004; Sachs, 1998; Diamond, 2007). Unfortunately, this line of reasoning too, does not go too far either for two very important reasons. First, as noted above, what we are dealing with is not just a case of divergence but a case of economic ‘reversal’, which is mortal to any story premised on geography: if geography were at the heart of the explanation it would have behaved similarly, regardless of which period (colonial or post-colonial) was under consideration (Acemoglu, 2002). Second, the climate and disease environment across the two Punjabs is very similar. While there are minor differences in soil quality and precipitation (mm), as we will see, these differences are not significant enough to explain the wide gap in agricultural productivities that we see in practice. While we examine the evolution of agricultural productivities in each region in greater detail in Chapter Three, a simple illustration here from the border districts of Amritsar and Lahore (that have practically identical climatic and soil conditions) should make the point vividly clear: at the eve of partition in 1947 an acre of land produced exactly the same amount of wheat and rice---the two major food crops---in the border districts. Today, the yield per acre of food crops⁶ in Amritsar, India is *twice* that in Lahore, Pakistan. Suffice it to say that when two identical pieces of land become so different in terms of their productive abilities, an explanation premised solely on a ‘geography story’ seems far-fetched and as a result, cannot be very convincing.

⁶ As we will see in Chapter Three, ‘cotton’ behaves differently, and the Pakistani Punjab equalized and even outcompeted for some years its Indian counterpart; I call this the ‘food-cotton’ paradox. The irony consists in the fact that food production lowers poverty while cotton production *increases* it (Chapter Three Appendix).

Perhaps there is a ‘cultural explanation’. What about the people who inhabit the two sub-regions, who may somehow, be culturally very different from one another? As we know, many studies have pointed towards ‘cultural’ and ‘religious’ differences as being the source of long-term divergence via its impact on worker’s productivity (Weber, 1930; Barro and McCleary, 2003; Campante & Drott, 2014). This explanation too, however, does not provide a convincing answer. As a matter of fact the people who live on either side of Punjab are linguistically and culturally very similar. Obviously, the two sides have a very different religious composition ---with the Pakistani side composed almost exclusively of Muslims and the Indian side of Sikhs and Hindus---but this is hardly surprising given the communal basis of Punjab’s partition in 1947. The ‘mono-religious’ demographic makeup of each Punjab is a *product* of partition and the associated forced migrations that ensued at the time rather than a historical fact that would inhibit cultural intercourse between people of different religious communities over the millennia that predate colonialism. The Muslims (53.2%), Hindus (29.1%) and Sikhs (14.9%) that made up the population of Punjab share common ancestors and have similar sociocultural norms and practices (Census of 1941, Punjab report vol. I, p.57-58). As the colonial administrator Sir Denzil Ibbetson noted in his *Manual of Punjab Castes* (1902), “conversions to Islam had little or no impact on the social or family system in Punjab, which remained largely identical before and after the rise of Islam in Punjab” (Ibbetson 1902, p. 174). These cultural similarities have also been surprisingly resistant to the partition of the two parts in 1947.⁷ Thus, cultural differences cannot account for the economic reversal of fortunes described above either.

Maybe an explanation for the divergence can be sought in the relative strength and importance of each Punjab *within* the two countries? It may be the case, for example,

⁷ For example, the caste system, which is an even stronger social identity marker in Punjabi society than religion, is very similar across the two sides. Even today, there is ‘caste’ solidarity across and beyond religious and national boundaries. The “prominent” castes in Punjab---“Jutts” for example---still hold annual conferences where participants from both countries participate enthusiastically and celebrate their similarities.

that the Indian Punjab---by some peculiar circumstance---was able to exhibit greater control over the ‘center’ while the same set of opportunities may not have been available to the Pakistani province in its own political context. But this line of reasoning too leads to a problem: Punjab is 52% of the entire population of Pakistan. A large part of the Pakistani civil-military elite comes from a Punjabi background. As a result, the ‘center’ is synonymous with ‘Punjab’ in the Pakistani context (Alavi, 1986; Jalal, 1995). In comparison, the Punjabi population in India is just 2.3% of the total population of the country. Unlike its Pakistani counterpart, the Indian Punjab has been---as at least one observer of the field notes--- “subservient to the center”, which has had an interest in maintaining Punjab as an ‘agricultural’ feeder for the rest of the country; in this sense, the federal center has played an active role in ‘curtailing’ the growth opportunities of Punjab (Singh; 2010). In relative terms therefore, the Pakistani Punjab exhibits greater political control over the ‘center’ than its Indian counterpart. Since the former enjoys a greater confluence of elite interests, these should have translated into the political ‘will’ that is necessary for pro-growth reforms in developing economies (Acemoglu, 2015; Chang, 2001). Thus, it seems that state-center relations were also comparatively more favorable to the Pakistani Punjab than its Indian neighbor and an explanation for the divergence cannot be sought here either.

To reiterate then: explanations premised on geographic factors, cultural differences, ‘initial’ conditions, or post-independence state-center relations do not provide a convincing answer to the economic divergence. In fact, they further complicate an explanation. The conundrum we find then, has two layers: it is not just restricted to the better performance of the Indian Punjab after independence; rather, an explanation must account for both, the better performance of the western part during the colonial period *as well as* the subsequent reversal of fortunes after independence. It must account for why the Pakistani Punjab was outcompeted *despite* being dealt the better hand: superior infrastructural development, better access to markets, and a greater confluence of state-center interests.

1.1.4 Research Questions

The broad research question that motivates the study, as has been identified earlier, is to provide an explanation for the reversal of fortunes in Punjab. To answer this broader conundrum I examine, in separate sections, the ‘colonial’ as well as the post-colonial origins of the differences. I seek to disentangle the independent effects of political and economic factors in each of the two periods, to see how the dialectic between them has contributed towards shaping the divergence in the long-run. We connect the process to the colonial transformation of Punjab in the late nineteenth century, its impact on early institutional formations, and how these in turn interacted with post-colonial politics and state formations in each sub-region to react back on the real economy.

To do this, we ask nine inter-related questions, each answered in subsequent chapters, in the following order: 1) what set of historical, economic imperatives in the capitalist core led to the colonial infrastructural development of Punjab? (Chapter Four) 2) what were the patterns of infrastructural development that emerged as a consequence of those economic objectives and how did they impact the articulation of agrarian production emanating from sub-regions in Punjab with internal and external markets? (Chapter Four) 3) what was the Punjab ‘system of rights’ via which the colonial state ‘distributed’ economic and political power in the agrarian society to achieve its imperialist economic objectives? (Chapter Five) 4) what kinds of political and economic institutions were established by the colonial state to achieve these objectives in the two sub-regions of Punjab? (Chapter Five) 5) what impact did these institutional variations have on the agrarian social structures of the two sub-regions at the time of independence? (Chapter Five) 6) how did these colonial institutional structures impact real agrarian outcomes---yields per hectare---in each of the two economies, during the colonial period itself (i.e. contemporaneously), and how do they impact outcomes today? (Chapter Six) 7) how did colonial social structures interact with the colonial administrative and *political* system to produce the complex political coalitions that acquired state power at the time of independence in each state? (Chapter Seven) 8) how did these political coalitions and structures contest and use state power to *change* (or maintain) the institutional apparatuses that they inherited, and further advance their economic interests via the newly won control over state policy? (Chapter Seven) 9) to what extent is the economic

divergence a result of inherited factors (such as geographic and historical institutional differences) versus endogenous factors (state policy after independence), respectively? (Chapter Eight)

We examine these questions (which have implications for economic development and economic history) from the standpoint of political economy; that is, by conducting an economic analysis of political decisions and then assessing their impact on the economy, in turn. Using colonial archival datasets on infrastructure and land-revenue institutions, we first assess the political basis and impact of colonial transformation on the institutional reorganization of the agrarian economy of Punjab in the late nineteenth century. Following the tradition of Baran (1957), Frank (1963) and Mamdani (1978), and combining these frameworks to the new economic history frameworks presented by Beckert (2014) and Banerjee and Iyyer (2005), we connect the colonial transformative process to the objectives of British capital and its political constraints in the aftermath of the American Civil War. These, the study shows led to peculiar patterns of ‘under-development’ in the Punjab region and to the formation of “extractive”⁸ institutional structures in the agrarian economy. In the concluding part of the study we show how these initial institutional structures interacted with different kinds of post-colonial politics in each state, leading to differences in the kinds of ‘political settlements’ (following Olson, 1998) that emerged in each state after independence. Finally, we assess the impact of these different kinds of ‘political settlements’ on the agrarian policies that emerged in each state; specifically, we compare policies pertaining to the ‘promotion of food crops’ (as opposed to cash crops), ‘land-ceilings’, ‘consolidation of holdings’, ‘changes in tenure and tenancy relations’, and ‘state-led input-support’ (water, electricity, fertilizers). Differences in these policies led to the radical divergence in comparative development outcomes, despite similar ‘geography’, ‘institutions’, and ‘culture’, in the long-run.

⁸ Acemoglu, Johnson, and Robinson, 2002

1.1.5 Focus on Agrarian Sector

We explore the divergence puzzle by focusing on one sector: the agrarian sector of the economy. There are three important reasons for this choice:

First, like most developing economies, over 60% of the population in both Punjab derives its sustenance from the agricultural sector. As a result, whatever goes on in this sector has a deep impact on overall development. Recent scholarship has provided incontrovertible evidence for the causal empirical relationships that exist between agrarian development--- in particular food productivity--- and poverty reduction in developing countries (Mellor, 1999; Thirtle et al, 2003; Datt and Ravallion, 1998; Anriquez & Stamoulis, 2007; Schneider and Gugerty, 2011). The consensus in these papers has been to show that agriculture is still the key to poverty reduction in the third-world (Anriquez & Stamoulis, 2007). These scholars point out that in problematizing the factors that influence agricultural productivity---output produced per unit land---we have a simple and potent instrument for enhancing the size of the *total pie* available to society. Moreover, since any conversation of poverty in third-world countries is incomplete without a discussion of *food* poverty, the factors that influence the productivity of food crops (wheat and rice for example) as opposed to non-food commercial crops (for example cotton, tobacco etc.) are central to the agenda of poverty alleviation, and hence overall development.⁹ As a result, differences in public policies' commitment to the former as opposed to the latter may reveal fascinating insights about the nature of the political elite that dominates a peripheral, agrarian state.

Second, the focus on the agrarian sector is particularly crucial for the specific objectives of this study, premised as it is on an examination of the *long-term* impact of colonialism on comparative development outcomes. Since over 90% of the population of Punjab was engaged in agriculture during the colonial period¹⁰, an understanding of the

⁹ This issue is taken up in Chapter Three, in what is called the "Foot Cotton Paradox" of Punjab.

¹⁰ Census of Punjab, 1931

initial institutional structures that emerged in different sub-regions must be sought in this sector. These colonial institutional formations structured the subsequent political economy of the two Punjabs in peculiar ways and it is thus the site of the ‘original sin’.

Third, an important reason to focus on this sector is the sheer size of the two agrarian economies. In both countries, Punjab is known as the “Granary of India (Pakistan)” or equivalently, its “bread-basket”. The Punjab¹¹ produces 45 to 75 percent of the total agricultural production of wheat and rice despite being 1.5% of the total geographical area of India; similarly, on the Pakistani side, Punjab accounts for 60 percent of the total agricultural production of the country while it constitutes 23% of the country’s landmass (Governments of Punjab; *Agricultural Profiles*, 2015’). The two Punjabs jointly represent one of the largest agrarian economies in the world, accounting collectively for 7% of the world’s cotton, 5% of the wheat, and 3% of rice production. A discussion of the determinants of agricultural productivity in Punjab, therefore, is not only relevant for South Asia but has greater implications as well.

1.2 Theoretical Framework and Hypotheses

1.2.1 Theoretical Framework

In Chapter Two, I conduct an extensive review of the literature and develop a theoretical framework by combining the New Institutional approach with earlier work by Marxian and post-Marxian theorists. The framework is then used to examine the historical conundrum. The theoretical framework can be briefly summarized as follows:

Political institutions shape the balance of power within a society and via this control, shape economic institutions (Acemoglu et al, 2000; Baran, 1954; Olson, 1998). Since ‘economic institutions’ have an impact on the *distribution* of economic gains, there is no ‘neutral’ way of setting up these institutions, such that they benefit all competing

¹¹ Punjab is derived from the words Punj=Five and Aab=Rivers; thus ‘five rivers’.

classes within a society. There is a political struggle over economic institutions precisely because of their impact on economic distribution (Marx, 1867; Acemoglu et al, 2000). As Marx says: “Between two equal rights *force* is the arbitrator”.

Thus, the balance of power in a society shapes the political structure and institutions of the state and hence economic policies. These policies in turn, react back on political institutions, further strengthening the economic victors of the earlier political process. It is this dialectical relationship between political and economic institutions that lies at the heart of the explanation that follows in the subsequent chapters. The ‘balance’ of political and economic power is not static or pre-determined. It is altered and rearranged at ‘critical junctures’.

1.2.2 Hypothesis- Institutional Change Before and After Two Critical Junctures

The explanation presented in the chapters that follow can be traced to the set of changes before and after two such “critical junctures”¹²: 1861 and 1947. The first juncture begins with the American Civil War (1861) which led to a severing of British textile’s supply of raw cotton. In response, the colonial state reshaped its global ‘empire of cotton’ (Beckert, 2014). Punjab was to play a crucial new role in the empire as a feeder of raw “American” cotton. This new role, however, could not be performed without a restructuring of the agrarian sub-economies of Punjab, which would require infrastructural development (railways and canals). This called for state investments, and the political security of these investments was to dictate the kinds of institutional structures that would emerge in the agrarian economy. To protect its investments, the colonial state distributed power via ‘entitlement systems’ (the terminology was originally employed by Sen, 1981) to create political and economic institutions that consolidated power in the hands of their traditional allies--- the landlords--- in areas with high infrastructural development. The two parts witnessed varying levels of infrastructural development and consequently, there

¹² The terminology has been used by Acemoglu et al (2005, 2011) to understand other case studies in a number of papers.

were differences in the kinds of institutional structures that emerged in each sub-region during the colonial period.

The second juncture begins in 1947, and deals with the manner in which politics and institutions at the end of the colonial period led to peculiar forms of state control in each part at the time of independence: military-landlord control on the Pakistani side versus ‘independent’ (self-cultivating) and rich-peasants control on the Indian side. Using research in South Asian history, in particular the work of Jalal & Bose (2004) and Alavi (1978), I argue that this led to *political* differences between the two states in three major dimensions: 1) the degree of development of democracy, 2) the relative strength of independent subaltern peasant movements, and 3) degree of state autonomy in the determination of agrarian policy. These political differences, in turn, led to a distinct set of economic policies that would differentiate the agrarian structures and outcomes in the two Punjabs in the long-run.

Thus, the very border that divides--- and ‘defines’---the two Punjabs, lies at the root of the economic divergence. The people who live on either side of this border have access to a very different set of political, and as a result, economic institutions as a consequence of being assigned to different countries for the past seven decades. The differences in economic outcomes are a result of the fact that the two halves were split in 1947 into two different ‘institutional islands’, with the choice of assignment being once-and-for-all, with no possibility of movement between the two islands after a certain point in time.¹³

¹³ By way of example compare just one concrete political institution: democracy. The Pakistani Punjab has been exposed to some kind of non-democratic regime for forty-four out of the sixty-eight years of independence since 1947. In contrast, the inhabitants of the Indian Punjab have had access to a stable democracy with a wide social net in which the army plays no major political role.

To sum up then, the study hypothesizes divergence between the two Punjabs can be explained by the combined effect of two sets of institutional reforms that took place before and after these two critical junctures. While the greater infrastructural development in west Punjab gave it a developmental ‘premium’ during the early period, the same colonial ‘development’ came at the cost of an institutional apparatus in which economic and political power was consolidated in the hands of a small agrarian elite with authoritarian forms of control, patronage, and power in its hands. It is these ‘political’ features that while being successful during the short-term (the colonial period itself), eventually led to a reversal of fortunes after independence.

1.3 Position in the Literature

1.3.1 Inter-Disciplinary Approach

The study adopts an inter-disciplinary approach, taking the New Institutional literature in the divergence debates (in particular, Acemoglu, Johnson, and Robinson, 2005, 2012; Banerjee and Iyyer, 2005) as the point of entry, as well as departure. The departure lies in two main dimensions. First, (as I explain in some detail below) in extending the BI (2005) framework to a two-state model (i.e. India and Pakistan) it derives an appreciation of how the impact of ‘initial institutions’ on current outcomes is completely contingent on ‘post-colonial’ state structures and policies. Second, in the attempt to synthesize the ideas presented in the New Institutional frameworks with the work of Marxian political economists, most notably, the work of Baran (1954), Frank (1966), and Mamdani (1978, 2012), we try to go beyond the narrow understanding of institutions as “security of property rights” that is prevalent in the recent institutional literature. While recent models such as Olson (1998) and Acemoglu et al (2000, 2005) understand power contestations over institutions in the purely ‘domestic’ sense as being products of group struggles within the same society, Marxian models build a much more realistic understanding by pointing towards the role played by ‘external agency’ (or imperialist power) in shaping institutions in peripheral economies, in addition to domestic interactions.

Two other important streams of the literature that the study interacts with are from economic history, and the anthropology of colonial development. Most crucially the work

of Beckert (2014) and Austin (2010, 2008) informs the historical framework that is used to examine colonial infrastructural development in Punjab in Chapter Four. The analytical frameworks of Mamdani (1978, 2012), Sen (1981), and Bardhan (2010) are utilized to build an understanding of peripheral institutional structures as being a set of “legitimizing” or “enabling” systems of rights in Chapter Five, and not just a “system of property-rights” as has been the pervasive assumption in the recent institutional literature. The historical work of Blyn, (1967), Jalal and Bose, (1999), Jalal (1995), Alavi (1978), and Talbot (1988, 2005) are used to examine the concrete colonial economic history of the Indian Sub-Continent in general, and Punjab in particular. Finally, the work of Chang (2005, 2010) and Bagchi (1988) allows us to build a theoretical framework that explores the role of the state---which is another invisible in New Institutional literature--- in institutional formation and economic development in Chapter Seven and Eight.

1.3.2 Point of Entry: The BI Model and its Critiques

A new line of research has reopened the discussion on Indian economic historiography via archival datasets and unique identification strategies using cliometric techniques. These studies seek to empirically test the channels that have been proposed by the ‘new divergence debates’ to see how well they explain inter-regional inequality within India.

This line of research has been introduced by a series of papers authored by Banerjee and Iyyer (BI, 2005; 2008; 2010) who test the relationship between the disparate institutional legacies of colonialism in different regions of India and the variation in economic outcomes today. One key contribution uses data for over 400 districts in India to show that regions that were exposed to ‘non-landlord’ revenue institutions as opposed to landlord (‘*zamindari*’) institutions during the colonial period have a higher agricultural productivity in the post-independence period (BI, 2005). Another contribution, BI (2010), uses the difference between districts that were formerly ‘princely states’---that is states that were not directly under British rule---and directly colonized districts to show that the provision of public goods was lower in the latter (directly ruled) as compared to the former (indirectly ruled). Thus, the crux of the BI studies is to show how colonial institutions---particularly those pertaining to land-

revenue---created institutional islands in different regional economies and how these initial differences persist till today. Other scholars have used the BI framework and applied it to different settings. For example, a recent study by Cheema et al (2012) uses village-level data from a primary survey to compare villages exposed to different colonial institutions in district Sargodha, Pakistan, and finds confirmation for the BI framework.

Other studies have been less confirmatory. Two studies from the geography camp present critiques of the BI study. The first critique, by Iverson et al (2012) argues that the “formal institutional type” described by a land-revenue institution may not correspond with the “substantive institutional” form in a region. They show for example that the Central Provinces---coded as ‘landlord’ areas in the BI study---were actually mixtures of landlord and non-landlord institutions (known as *Malguzari system*. See Chapter Four) when seen in terms of the relationship of the producers with the land and its produce. Using an alternative specification to measure the substantive institutional form, and recoding the values for these districts to accord with these, significantly reduces the predictive power of the BI model. Geographical factors gain in importance (Iverson et al, 2012).

At the heart of Iverson’s argument is the idea of ‘non-comparability’ of land-revenue institutions across different regions of India. As I also argue in Chapter Five, these institutions were not just *quantitatively* different but were also *qualitatively* so, thus rendering inter-institutional comparisons essentially invalid. Take the example of the term “*zamindari*” which has been translated as “landlord” in the BI paper. As many scholars know, while this translation may be correct for the case of Bengal, the term means something radically different in other contexts. It could refer for instance to an independent or family farmer who works on his own land in North-West India.

Another recent study by Tithankar Roy (2013) challenges the BI (2005) model and argues that it systematically “understates” the effect of geography on economic outcomes. He points out that BI fail to distinguish between the *contemporaneous* ‘impact’ of institutions (i.e. during the “colonial period itself”) versus the ‘long-term’, post-colonial impact. The question ‘how colonial institutions impact long-term outcomes’, Roy argues, should be preceded by an understanding of whether or not, and

how, these institutions impact outcomes *during the colonial period itself*. He postulates, and confirms using spatial analysis, that ‘geographic environments’ may behave differently in different time periods, owing to the impact of changes in global trade regimes and prices during the last century. In Chapter Six, we extend Roy’s critique to distinguish between the contemporaneous and long-run impact of colonial institutions to show how the nature and magnitude of their impact varies substantially across the two periods.

1.4 The Contribution of the Study

The methodological and empirical design of the study enables it to contribute to the new divergence debates in five ways:

1. Extension of the BI framework to look at partitioned economies

The first contribution of the study stems from an intriguing extension of the BI (2005) model to evaluate the impact of colonial institutions on long-run outcomes using a *counter-factual* design, which is only possible with partitioned economies such as Punjab, or Bengal. This is to point to the possibility of examining regional economies in colonial India---or by extension in other post-colonial countries --- that were partitioned between different *states* at independence, using the BI framework as a control for ‘initial institutions’, to see how they have fared after independence.

As pointed out earlier, partitioned economies were exposed to similar colonial histories while being under *different* post-colonial institutional regimes after independence. This can allow researchers in the area to create a two-dimensional framework---as I do with the two Punjabs in this study--- with two states in two qualitatively distinct time periods (colonial and post-colonial). While another intriguing possibility could have been to look at the case of Bengal which was partitioned between India and Pakistan in 1947, I focus on the Punjab region in this study, leaving the much more complicated case of Bengal (which was further partitioned between Pakistan and Bangladesh in 1971) for a later study. This two-dimensional framework allows us to build a much more general understanding of the relationship between class, institutions and state in developing countries, and the impact that these have on economic outcomes

in the agricultural sector than is possible by looking at individual social formations without a counter-factual.

2. Agency of the Post-Colonial State

A second contribution lies in having given theoretical as well as empirical visibility to an important channel that has been undertheorized by the recent institutional literature: the agency of the post-colonial state. The Punjab is a particularly interesting case to examine the divergence debates since the two sub-regions share all three features that have been identified by the recent literature (a common colonial history, a similar geography, and an identical culture). A deterministic reading of any of the three strands of the theoretical debate should therefore have implied long-term *convergence*. Yet, we see the opposite result in practice. This discord between what the theoretical literature should have predicted (convergence) and what actually happened (divergence) points towards a larger problem within the debates: while many studies (referred to above) have firmly established the impact of colonial institutions on long-term economic development, what is generally missing---and this is one of the gaps that this study seeks to fulfil---is an answer to the question: what is to be done? This would require an understanding of the extent to, and the processes via, which the ill-effects of colonial institutions can be mitigated by the post-colonial state; to somehow separate the effect of ‘inherited’ factors (such as colonial history and institutions)---which cannot be changed---from the impact of the post-colonial ‘state’, which has the ability to conduct institutional ‘reforms’ and change.

As Acemoglu, Johnson, and Robinson (2002) also confess in the concluding remarks of their seminal paper:

“There are many questions that our analysis does not address. Institutions are treated largely as a “black box”: The results indicate that... improving the “cluster of institutions” would result in significant gains in income per capita, but do not point out *what concrete steps would lead to an improvement in these institutions*” (Acemoglu, Johnson, and Robinson, 2002; page 1395, emphasis added)

Such an analysis of the “concrete steps” cannot escape a discussion of the independent agency of the post-colonial state, which is repressed in existing frameworks. Separating the effect of ‘initial institutions’ (and ‘geography’) from the independent effect of the post-colonial state allows us to answer these questions.¹⁴ We do this, in Chapter Eight, by borrowing an analogy from the empirical behavioral sciences and approximating a ‘twin-study’ design that separates the effects of ‘inherited factors’ (geography, institutions) from ‘environmental factors’ (state policy in this case) using a ‘difference-in-difference’ (DID) strategy.

3. Incorporating Critiques of the Banerjee-Iyyer Model

A third contribution of the study to the debates lies in its incorporation of the two critiques of the BI (2005) story that were briefly discussed above. To briefly reiterate, critics have argued that the BI analysis suffers from the following problems: a) issues of ‘non-comparability of qualitatively distinct institutions’ (Iverson et al, 2011), b) the ‘inability to address relationship between colonial institutions and *colonial* outcomes’, and c) it ‘ignores the relationship between formal and substantive institutional-type’ (Roy, 2013).

I make an attempt to incorporate both of these critiques in my analysis:

a) Incorporating Roy’s (2013) Critique

In the literature---and this is the crux of Roy’s (2013) critique of BI (2005)--- an issue that has been altogether avoided is the implicit assumption that if colonial institutions can be shown to impact *post-colonial* (*i.e. current*) outcomes in a certain way then it must be equally true that they influence outcomes during the colonial period similarly. Yet, an examination of ‘initial conditions’ is central to the institutional story and/or any argument based on ‘path dependency’. Using the limited data points available for

¹⁴ I use a difference-in-difference strategy in Chapter Seven to isolate the impact of initial institutions (land-revenue, political, economic institutions) from the impact of differential post-colonial policy.

a few districts of Madras and Uttar Pradesh, BI contend that “yields were in fact lower in non-landlord areas during this period”. Unfortunately, “given the size of the sample”, BI concede that “these yield differences may therefore reflect differences in geography”, turning the argument on its head.

Roy further hammers out this point and gives visibility to a potential oversight. As he argues, and as I also confirm in Chapter Three, there is no necessity that the same institutional apparatus behaves the same way in different “environments” (colonial or post-colonial period). I address Roy’s concerns by using a newly constructed dataset that incorporates district-wise data from 1900-2015, that is the colonial (1900-1947), as well as the post-colonial (1947-2015) period. As a result, the study is able to examine and distinguish between the contemporaneous versus the long-term impact of colonial institutions, and confirm that the “environment” does indeed change the way institutions behave (Chapter Seven). The difference, however, is that in Roy’s case the differences in the ‘environment’ are a result of changes in the “way geography behaves” at different points in time. In this case, the difference arises from a change in the *political* environment, thus resurrecting the original case presented by AJR (2002) and BI (2005) using the theoretical arguments of Baran (1957).

b) Incorporating Iverson et al’s (2012) Critique

The Iverson et al (2012) critique is premised on two things: a) the non-comparability of qualitatively distinct institutions, b) the non-conformity of “formal” (zamindari, mahalwari, ryotwari) and “substantive” institutions. The study extends the latter critique to Punjab and points to a similar discrepancy between the formal and substantive institutional forms. As we see in Chapter Five, Punjab that was exposed to the *Mahalwari* land-revenue arrangement has been classified as a ‘non-landlord’ institutional formation in the BI paper. In contrast, if landlord areas are understood as areas where the economic relationship of ‘tenancy’ dominates social relations of production, so that the cultivators are not simultaneously the owners of their land and produce, and ‘non-landlord’ areas as ones where the converse is the case, it is simply not true that the Punjab can be classified as an example of non-landlordist social structures. For example, the *Land Revenue Administration Report of Punjab* for the

year 1938 shows that 58% of the cultivated land of the province was farmed by tenants (LRA report, 1938: page 32). This should not come as a surprise since by 1936, over 61% of the cultivated area of the province belonged to just 15% of the owners (*Punjab Board of Economic Inquiry, Rural Publication No.4, page 3*).

To account for Iverson's first critique, which pertains to the non-comparability of institutions, the study does two things. First, in addition to employing the formal "land revenue institutional type" (*bhaichara, pattidari, zamindari, as in the BI paper*) as one measure I also include two new 'substantive' institutional measures of political and economic power: a) the degree of 'non-occupant tenancy' in different districts of Punjab, which measures the respective bargaining powers of direct producers in different sub-regions viz. the landlords, b) the percentage of 'revenue-paid' (surplus appropriation) by the largest landlords in a given district, a measure of 'economic power'. The latter is calculated by borrowing a technique developed by Piketty (2014) who estimates inequality using tax returns. Similarly, I use *Land Revenue Reports*---which have information about the revenue paid by different classes of owners---to calculate the *actual* economic control exhibited by landlords in different districts of Punjab.

Second, by looking at quantitative variations of institutions *within* a qualitatively similar environment---as Iverson wants--- I address issues arising from 'non-comparability'. Unlike the BI study which compares qualitatively dissimilar institutions (in Punjab and Bengal, for example) we compare institutions in one regional economy. I show that even within a qualitatively similar institutional environment, differences in the *quantitative* aspects of these institutions---the distribution of political power, and control over economic surpluses--- have a long-term impact on economic outcomes, albeit the fact, that the nature and magnitude of the impact depends on the post-colonial state structure and politics, as explained below.

4. Colonial "Development" and "Institutions"

A fourth contribution lies in providing a new explanation for the emergence and formation of institutional structures in colonial India. We empirically capture the

relationship between the colonial state and its investments in particular areas (infrastructural development) as determinants of the political and economic institutions that emerged in different areas. Unlike BI (2005), who agree with Guha (1988) in pointing towards the ‘ideological dispositions of different colonial administrators’ as shapers of colonial institutions, I connect the formation of these institutions (following Baran, 1957 and Frank, 1966) with the economic objectives and political constraints on the power of the capitalist empire rather than individual ‘ideologies’ per se. I show how the emergence of institutions, as a result of economic crises brought about during the American Civil War, depended on the *state’s investments in a particular area*. This stems from a re-reading of colonial historiography in India as being governed by the conflicting and contradictory aims of “order and transformation which lay at the heart of the imperial enterprise” (Talbot, 1987: 3) As I show in Chapter Five political and economic power was consolidated in the hands of the agrarian elite in places where the state engaged in greater investment in large-scale infrastructural projects (such as canals). Thus, the study not only strengthens the case for the ‘colonialism’ camp, it also points to an ironic fact about the economic history of colonialism in Punjab, and possibly by extension, the rest of India: the same colonial transformative process that propelled greater productivity during the colonial period via greater infrastructural development, came at the ‘expense’ of an institutional system that promoted landlord control, and hence long-term retardation.

Such a reading contributes towards our understanding of the origins of colonial institutions. It shows that the ‘colonial institutions’ literature, while providing a better explanation than the ‘geography’ and ‘culture’ camps, nevertheless suffers from a theoretical blind spot: an absence of ‘the imperial relation of power’ between the colonizing state---which acts in the interest of metropolis capital--- and the peripheral state, which is subjected to that logic, by force.

A historical understanding of the ‘motives’ of the colonial state as emanating from capitalist economic crises in the center is crucial to building a concrete understanding of the kinds of institutions that emerged in different sub-regions. It is not sufficient to reduce all kinds of colonial states, as for example AJR (2002) do, to one

generalized “extractive” state. If one has to understand the variation in different institutional structures one has to inquire about the *purpose* and ultimately the *object* of extraction; whether for instance the colonial state would be used to extract ‘slaves’ (as in Sub-Saharan Africa), ‘raw material’, or ‘agricultural surpluses’; or whether the colonized lands and people would be used to build ‘imperial armies’; all of these questions are relevant to any discussion of the kinds of ‘institutions’ that emerged to achieve the specific imperial objectives (Dos Santos, 1977).

An understanding of this also points towards the sheer redundancy of the claim that comparative development “has something to do with geography” (Diamond, 1997). Of course it does. It is a truism to state that natural factors matter. But the infinitely more pertinent question is to ask how ‘human agency’ acts upon ‘natural factors’ and shapes them in accordance with ‘human’ needs. It immediately follows: Whose agency? Whose needs? In the case of colonized economies the answer is very simple: the capitalist core, albeit constrained by the degree of resistance and collaboration on the ground.

The fascinating tales of ‘statistically significant relations’ between ‘geography and outcomes’ suddenly seem less fascinating once one accounts for historical and experiential facts, which will tell us stories of how different geographical environments were molded by imperial states to serve metropolitan ‘capital’. A desert is a desert regardless of where it is located. But whether the desert is to be converted for strategic purposes into a mercantilist hub like Dubai or an impenetrably formidable, and hence underdeveloped barrier against invading armies like large parts of Sindh, depends on the historical objectives of the colonial state in a particular ‘geographical environment’. It is uninteresting to discover that ‘geography matters’, without asking ‘why’ (i.e. as a result of what kinds of human agency and via what social relations) it matters. The latter question is a historical question and must be answered individually for every concrete case of colonization.

5. Contribution to Economic Historiography in the Sub-Continent

A final contribution of the study is to the economic historiography of the Indian sub-continent. The study pays close attention to the actual political and economic history of the region and reopens discussion on some ‘settled’ questions.

A lively debate on the “mode of production” (MOP) in Indian agriculture took place in the 1960’s and 1970’s. The MOP debates took place in a series of polemical papers that were authored by Marxian economists and historians from the Indian sub-continent during the 1960’s, 70’s and early 80’s. These debates sought to understand how two decades of ‘independent’, post-colonial rule had shaped economic outcomes in India.

The focus of the discussions was on the development of capitalist production in Indian agriculture. Given its colonial history, it was natural for these theorists to examine the impact of colonialism in shaping the process of agricultural development in India. The broad question that these theorists sought to address is: how does one conceptualize the ‘mode of production’ in Indian agriculture and understand its transition—if any—from a colonial to a post-colonial economy. In this study, I reopen some of these discussions and make an attempt to contribute to our understanding of the “mode of production” in India and Pakistan. Thus, in addition to the overall contribution to the divergence literature, the study also contributes to an ever-growing and ever-contested understanding of colonial and post-colonial development in the Sub-Continent.

1.5 Methodology, Data and Plan of Study

1.5.1 Method: Political Economy, History and Econometric Analysis

The analytical method employed in different chapters will vary according to the needs of the argument. I use a combination of political economy frameworks, as well as historical and empirical analysis to establish the proposed theoretical relationships using archival research and datasets. Following recent cliometric approaches which examine historical questions using econometric techniques, I make an attempt to combine historical analysis with simple econometric models. Nearly every chapter begins with a brief historical context which is then used to build hypotheses that are empirically tested using econometric models.

To establish the proposed relationships I draw upon an ensemble of newly constructed archival datasets that have information about colonial institutions, commodity flows, land-revenue, class and power structures, and infrastructure

development. Some of the most prominent sources for these archival datasets are the following:

1) *District Settlement Reports:*

These have information about the ‘formal’ institutional type, e.g. *Zamindari*, *Pattidari*, *Bhaichara* tenures; these have also been used by Banerjee and Iyyer in their 2005 study. However, their study is an all-India study that excludes districts in India that were later assigned to Pakistan.

2) *Land Revenue Administration Reports*

These give more detailed information than the DS reports, especially about the “substantive” institutions, such as ‘tenancy’ relations, form of holding (joint versus single), land-revenue payments by ‘class’ of landowner.

3) *Census Reports*

The British conducted decennial censuses from 1861 to 1941. These give detailed information about the demographic makeup of India and its various ‘provinces’. The information includes data on ‘occupations’ and for ‘agriculturalists’ (which are 90% of the population) there is information about the ‘kind of work’ being performed (whether as an owner-cultivator, a tenant, or a capitalist farmer).

The census reports also have valuable maps of railway lines and canal irrigation patterns, as they evolved from 1881 to 1941. I use these to quantify and empirically analyze the degree of infrastructural development in different districts of Punjab.

4) *Season and Crop Reports*

To capture the ‘output’ side of the story I constructed a panel dataset of district-wise agricultural output and area of the three major crops---wheat, rice, and cotton--- from 1900 to 2015. The post-colonial data on agricultural outcomes is all government data from the two states. There are 43 districts in total, 29 of which are today in Pakistan and 14 are in India. The colonial data has been tabulated using *Season and Crop reports*, which were collected by the colonial government for every year from 1900 to 1947.

1.5.2 Data construction and issues

Two problems arise in constructing and using the aforementioned datasets. The first problem arises as a result of the fact that what was once “British Punjab” is today divided between two countries and four ‘states’/‘provinces’. After the partition between India and Pakistan in 1947, the Indian Punjab was sub-divided in 1967 to form “Punjab” and “Haryana”, while the state of “Himachal Pradesh” (also a part of British Punjab) was given union status in 1950 and state status in 1971.

I treat Haryana and Himachal Pradesh as a part of “Indian Punjab” throughout the study and in doing so run the risk of bypassing any peculiarities that may have arisen as a result of the aforementioned administrative changes. I try to mitigate these problems by focusing on subsets of the total dataset (such as border districts¹⁵, dummies for Haryana and Himachal etc.) in later chapters.

A second problem arises due to the fact that new districts have been added to each Punjab after independence. These ‘additions’ have come about because of one of two reasons: 1) old districts have been subdivided to form new districts. These ‘new districts’ were previously sub-districts (called *tehsils*) during the colonial period and have been granted ‘district status’ after independence. 2) ‘Princely states’ have been added to the list. These were ‘independent’ states ruled by native princes or rulers during the colonial period and were never ‘formally’ a part of *British Punjab*. After partition they were amalgamated into one or the other country.

If a district has been added because it was previously a princely state---problem 2 above--- I simply drop it from the sample. This is due to concerns of focus as well as practicality. In this study, I am primarily interested in conducting a sub-regional comparison with the aim of contrasting between the colonial institutional and post-colonial policy effects in each of the two Punjabs that were *directly under British rule*. Any differences that are due to variations in “Native rule” versus “colonial rule” can only

¹⁵ Consisting of the pairs Amritsar-Lahore, Firozpur-Kasur and Gurdaspur-Sialkot

complicate matters. A number of studies including Banerjee and Iyyer (2007) and Iyyer (2005, 2010) have pointed out that there are major differences between ‘directly ruled’ versus ‘indirectly ruled’ (or princely) states, especially in terms of the provision of public goods. An inclusion of these ‘districts’ (former princely states), therefore, runs the risk of obfuscating matters for the present study. By dropping these districts from the sample I avoid these complications altogether.

If on the other hand, the reason why a ‘new’ district has been added is that an old sub-district has been given the status of a full district after independence---problem 1 identified above--- I resolved the problem by comparing new maps with old ones. Using these maps, I first identify the ‘old district’ of which the ‘new district’ was formerly a tehsil (sub-district). Having made this identification then, I solve the problem through two ways depending on the situation. If sub-district (or ‘tehsil’) level data is separately available for the colonial period I treat the tehsil as if it were a district during the colonial period as well. This is reasonable as long as district-status does not *systematically* bias the results in any way.

If tehsil level colonial data is not available, I solve the problem by treating the “new district” as if it remained a ‘tehsil’ of the old district even in the post-colonial period. This avoids the data loss that would arise if I simply dropped these districts altogether since post-colonial data is available. I choose not to do so and adjust its ‘weight’ by the size of a districts area and contribution to production in the district. For example, the British district of Mianwali has today been sub-divided into three districts, namely Mianwali, Bhakkar, and Layyah. Tehsil-level data is not available for the latter two. As a result, the colonial data for Mianwali (which includes the weight of Bhakkar and Layyah as well) cannot be, strictly speaking, compared with the post-colonial data for what is today recorded as “Mianwali” (which only includes the weight of one of the three sub-districts) in the government data. To make them comparable I readjust the value for that district in the post-colonial period by adding the productions and acreages in Mianwali, Bhakkar and Layyah to calculate one value for “Mianwali district”. In other words, when tehsil-level data is missing I treat the district as if it were never partitioned

to form new districts. The details for the “tehsils” (that later became new districts), that were affected have been tabulated in an appendix at the end.

1.5.3 Organization of Study

The study is divided into three sections, sub-divided further into a total of nine chapters. This section (Section I) consists of three chapters that introduce the various dimensions of the problem and situates the study in the broader literature. The remaining two sections are devoted to building an understanding of the ‘colonial’ (Section II) and post-colonial (Section III) comparative development outcomes across the two Punjabs by examining the relationship between institutional formations and reform, the evolution of agrarian structures, and their impact on economic outcomes.

In Chapter Two, I review the relevant theoretical literature¹⁶ and develop a framework that will be used in subsequent chapters. In presenting this theoretical framework, we make an attempt to synthesize theories from two disparate, and possibly contradictory sources, the New Institutional and Marxian paradigms of political economy. Building on the work of Bardhan (2010), the chapter seeks to do four things: 1) disentangle the vast array of institutions that exist in an economy from the constricted, exclusive, and analytically limiting emphasis that the idea of “secure of property rights” enjoys in the recent literature; 2) critically examine the mechanisms via which ‘institutional change’, or the lack of it---institutional ‘persistence’---is posited in the literature in the context of peripheral economies; 3) point to the necessity of analyzing institutional structures as serving the purpose of codifying and reproducing dominant ‘social relations’, which are shaped by, what Sen (1981) calls “entitlement systems”, and 4) emphasize the role played by external agency (imperialism) as well as internal distributive conflict in shaping “political settlements” between competing groups, which in turn shape ‘institutional structures’ in the third-world.

¹⁶ Other literature that is relevant to the economic historiography of India and other issues is reviewed in subsequent chapters where it is relevant.

In Chapter Three, I conduct a comparative analysis of the evolution of agricultural productivity (yield per hectare) of the three major crops---wheat, cotton, and rice---in the two Punjabs over the course of the colonial (1900-1947) and post-colonial periods (1947-2015). This helps explain the broad contours of the ‘reversal of fortunes’ conundrum explained earlier. I compare the *crop-wise* trends in agricultural productivity, paying close attention to the decade-wise movements in this comparative performance and its turning-points, in each of the two periods.

In Chapter Four, I present a historical account of infrastructural development in colonial Punjab with an emphasis on its objectives and impact on sub-regions. Using archival maps and data, I show that the main thrust of this development came after the American Civil War, which threatened the supply chain of raw cotton to British textile industry. This led to a readjustment, reshaping, and redesigning of the colonial empire, within which the Punjab region---in particular its Western belt---acquired central importance in India. This mega infrastructural development led to the development of highly commercial agrarian zones which produced primarily for the export market leading to uneven development between the old, settled regions of east Punjab and the newly irrigated ‘canal’ colonies. Using commodity-chain analysis we show that as a result of these peculiar patterns of infrastructural development, the two parts became unevenly articulated with the internal and external markets, over time.

In Chapter Five, we explore the formation of agrarian institutional structures with an emphasis on understanding how the economic objectives and political constraints of the process of infrastructural development led to the formation of political and economic institutions at the village-level, i.e., the ‘site’ of production and appropriation. Using archival datasets on land revenue records and institutions, we look at the set of ‘land revenue institutions’, ‘forms of political power’, and assess their impact on ‘internal distribution’. We show that colonial infrastructural development represented a double-edged sword: on the one hand, it led to greater investments and productivity in the affected areas of the agrarian economy; a short-term gain. On the other hand, the ‘political constraints’ imposed by the ‘security’ of high-investment zones and associated

rents led to the development of extractive institutional structures in areas with high infrastructural development; a long-term loss.

In Chapter Six, we empirically explore the relationship between colonial institutional structures and short-run as well as long-run outcomes in the agrarian economy. Building on the earlier work of Banerjee and Iyer (2005), and the critiques of their work in Roy (2013) and Iverson et al (2008) I ask how the set of initial colonial institutions described in Chapter Five impact agrarian outcomes---specifically yield per hectare--- in each state in the colonial as well as the post-colonial period. The key difference with the BI study is the inclusion of contemporaneous impact of institutions (i.e. the colonial period), crop-specificities, and differences due to post-colonial policy. As we will see, inclusion of these three dimensions radically alters the way we understand institutional persistence in India. Unlike the BI study which postulates only a negative relationship between zamindari during the colonial period and agricultural outcomes, we show how the nature of this relationship (its magnitude as well as direction) is in fact totally contingent on other factors and can even be positive in some cases.

In Chapter Seven, we pick up the story at the eve of independence. We conduct a comparative analysis of the evolution of post-colonial politics and policy, and assess their impact on agrarian structures and investments in the two Punjabs since independence. I make an attempt to demonstrate how differences in three political elements--- ‘democracy’, ‘strength of peasant movements’, and degree of ‘state autonomy in the determination of agrarian policy’--- led to major differences in the evolution of the agrarian structure (land-holding and tenure patterns), and hence incentives for investments across the two halves. The ‘political coalitions’ that came to dominate each side at the end of the colonial period varied substantially from one part to the other. On the Indian side, an alliance of independent and rich capitalist peasants, working under the Shromani Akali Dal, incorporated challenges from subaltern classes, and demands by the federal center, within a democratic framework. In contrast on the Pakistani side the landlords, who made a temporary marriage of convenience at the eve of partition with the Muslim League to avoid land-reforms promised by the Congress-led center, came to form

an alliance with the military junta to thwart such movements in the early decade (Asdar Ali, 2015). This led, in the final analysis, to the creation of different kinds of post-colonial state structures, policy, and hence outcomes in each case.

This paves the way in Chapter Eight for a difference-in-difference experiment that makes an attempt to present an answer to the most crucial and provocative question of the study: how would a district that was assigned to one country have performed if it were assigned, instead, to the other country, given the same initial conditions (geography and institutions)? In other words, to what extent can the current differences in agrarian outcomes between the Indian and Pakistani Punjab be seen as being a product of the conditions that each side inherited versus the independent agency and impact of being assigned to one or another post-colonial ‘state’, and hence policy environment, after independence. Thus, in the chapter we are interested in exploring economic development from the perspective of ‘alternative history’.

Chapter Nine concludes the study by presenting some of its central claims, their implications, and avenues for further research in the area.

Let us now move on to examine the ‘theoretical framework’ employed by the study.

CHAPTER 2

THEORETICAL FRAMEWORK

2.1 Introduction

In the last chapter we pointed towards a conundrum. We saw how a sharp reversal of economic fortunes has taken place in the Punjab region of South Asia, between two halves of what is basically the same region: the eastern half that came to be a part of India far outcompetes its western twin, which came to be a part of Pakistan in 1947. In this chapter I review the relevant theoretical literature¹⁷ and develop a framework that will be used to examine this conundrum in subsequent chapters. In presenting this theoretical framework, we make an attempt to synthesize theories from two disparate, and possibly contradictory sources, the New Institutional and Marxian paradigms of political economy. A critique, and synthesis of these two theoretical streams is crucial to the structure of the arguments that follows in the rest of the study.

In Section 2.2, I spend some time reviewing the central arguments and theoretical claims of the New Institutional literature and how it posits current institutions as being endogenous to colonial institutions via the concept of “institutional persistence”. I examine this literature in the context of the ‘divergence debates’ and how the institutional camp presents a unique way of understanding long-run differences in comparative development outcomes between countries. I conclude the section by exploring the two major theoretical and empirical models that form the point of entry of the present study: 1) the theoretical models for institutional transformation developed by Acemoglu et al (AJR, 2000, 2002, 2008, 2012), which posit ‘economic institutions’ as being determined by forms of “de facto” power that exist in an economy at any point in time, and 2) the

¹⁷ Other literature that is relevant to the economic historiography of India and other issues is reviewed in subsequent chapters where it is relevant.

Banerjee and Iyyer (BI; 2005, 2008) model which examines the long-run impact of land-revenue institutions in colonial India, along with two recent critiques of the BI model, by Iverson et al (2008) and Roy (2013).

After reviewing the major themes within the recent Institutional literature, along with their debates with the ‘geography’ and ‘culture’ camps, in Section 2.3 I present a critique of the New Institutional literature. Building on the powerful critique of new institutional analysis by Bardhan (2010), I make an attempt to do four things: 1) As Bardhan calls it, “disentangling the vast array of institutions” that exist in an economy from the constricted, exclusive, and analytically limiting emphasis that the idea of “security of property rights” enjoys in the recent literature; 2) critically examine the mechanisms via which ‘institutional change’, or the lack of it---institutional ‘persistence’---is posited in the literature in the context of peripheral economies; 3) point to the necessity of analyzing institutional structures as serving the purpose of codifying and reproducing dominant ‘social relations’, which are shaped by, what Sen (1981) calls “entitlement systems”; 4) emphasize the role played by external agency (imperialism) as well as internal distributive conflict in shaping “political settlements” (Olson, 1998) between competing groups, which in turn shape ‘institutional structures’ in the third-world. I conclude Section 2.2 with a discussion of contributions by Marxian scholars including Baran (1957), Frank (1967), Dos Santos (1971) and other dependency theorists. This complements the institutional story by making the structure of ‘dependence’---the historical social relations, within and across countries--- visible. The analytics of ‘class’, ‘imperialism’, and ‘uneven development’ are a core feature of this theory, allowing for a much richer understanding of institutions in the third-world. In fact, as our reading of the pioneering work of Paul Baran (1957) suggests, the AJR (2002) model can be interpreted as a ‘Baran minus imperialism’ framework. This is also somewhat ironic given that any mention of Baran’s seminal contribution to the theory of ‘settler versus non-settler’ colonialism is conspicuous only by its absence in the prize-winning AJR (2002) paper.

I conclude the chapter in 2.4 by pointing out how the two theoretical paradigms inform the structure of the arguments that follows in the rest of the study. I derive three main theoretical conclusions:

- 1) The distribution of political power, and the “political settlements” it leads to at any juncture, determines political institutions which in turn, owing to their impact on the distribution of economic gains, shape economic institutions (Olson, 1982; Acemoglu et al, 1999; Baran, 1954)
- 2) The political settlements that give birth to colonial institutional structures, despite their heterogeneity across countries, share the common feature of being shaped by the combined effect of two sets of forces: a) the economic objectives of, and political constraints on, the imperialist state (Austin, 2010; Mamdani, 2012; Frank, 1966) and the set of “entitlement systems” that the colonial state creates in any economy (Sen, 1981); b) internal distributive conflict and forms of power in the periphery, during and after the post-colonial period (Acemoglu et al, 2000; Olson, 1982)
- 3) The critical juncture of ‘independence’ is crucial for subsequent post-colonial development, as it determines the complex array of political coalitions that contest state power once ‘Native-rule’ has begun, and sets the tone for the future policy directions that may emerge. These determine the degree to which ‘democratic’ institutions may or may not develop in a country, the degree to which power contestations from subaltern and poor classes are tolerated within a ‘democratic’ framework, and also the degree to which power is devolved to denominations within a state (such as provinces, districts, villages, and councils) (Olson, 1982; Mahmood Hassan Khan, 2004; Acemoglu et al, 2014)

2.2 New Institutional Literature: A Review

2.2.1 New Divergence Debates

The ‘reversal of fortunes in Punjab’ conundrum can be situated within a broader theoretical question: why do comparative economic fortunes *ever* diverge between two or more countries? The question is central to economic theory and practice. But like most crucial questions, economists have been unable to develop a consensus, and there is a lively debate on the issue. These debates have been summed up in what are known as the ‘divergence’ debates.

As Acemoglu (2002) points out, the ‘divergence debate’ revolves around three inter-related questions: 1) what explains differences in economic outcomes between countries? 2) What are the constraints that keep some countries poor while allowing others to prosper? 3) Is poverty and lack of development generally, at least in some countries, inevitable and immutable, or can it be eradicated? (Acemoglu, 2002). He rightly argues, that, in traditional neoclassical frameworks, answers to these questions are typically sought in factors such as ‘factor accumulation, ‘technology, ‘human capital accumulation’, and ‘innovation’ (Solow, 1956; Cass, 1965; Koopman, 1965; Romer, 1990). While these models may describe the ‘mechanics’ of growth, they do not address the question itself. To quote the institutional economists North and Thomas: “the factors we had listed (innovation, economies of scale, education, capital accumulation) are not causes of growth; they *are* growth” (North and Thomas, 1999; p. 2, emphasis in original)

As a result, in recent years, the emphasis within the discipline has shifted away from these ‘proximal causes’ to the identification of more “fundamental” causes (North and Thomas, 1999; Acemoglu, Johnson, and Robinson 2002; Acemoglu, 2005). The original question has been rephrased as such: if it is true that the mechanics of growth can be explained via one or more of the aforementioned *proximal* factors that lead to ‘accumulation’, what are the deeper, ‘*fundamental* causes’ that explain the variations in these proximal causes between countries in the first place? (Olson, 1984; North and Thomas, 1999; Acemoglu, 1999). As Acemoglu (2002) rightly points out, it is this distinction--- between the proximal and fundamental ‘causes’ of growth--- has given birth to the *New Divergence Debates*.

Following Acemoglu (2002), one can understand the recent scholarship as offering three contending, “fundamental” explanations for differences in comparative development outcomes between countries: 1) Colonial Institutions, 2) Geography, and 3) Culture. As Roy (2013) rightly points out, while a greater part of the debate focuses on explaining disparities between the European and non-European world, a part of the recent scholarship also examines “the heterogeneity of developmental experiences within the periphery” (Acemoglu, 2014; Banerjee and Iyyer, 2005; Iyyer, 2008; Roy, 2013; Iverson et al, 2011).

The first explanation posits differences in development outcomes as being attributable to good or bad ‘institutions’: good institutions promote productivity by shaping the incentives and constraints of economic actors. Since the gains from economic development are unevenly distributed within a society there is a conflict over the choice of institutions. This conflict is resolved in the favor of groups with greater political power (Olson, 1986; Acemoglu, 2002). Hence, economic growth is encouraged when “political institutions allocate power to groups with interests in broad-based property rights enforcement, when they create effective constraints on power-holders, and when there are relatively few rents to be captured by power-holders.” (Acemoglu, Johnson and Robinson, 2012, p.387).

But why do rich countries have better institutions than others? The answer cannot be ‘because they are rich’ since that would lead to a circular line of reasoning: this is known as the ‘endogeneity problem of institutions’ within the divergence debate. The Institutional literature responds to it by pointing towards the long-term impact of European colonialism, which is seen as an “agent of institutional change”, and is claimed to have produced “varied legacies on property rights and public goods” (Easterly and Levine, 2012; Engerman and Sokoloff, 2000; Acemoglu, Johnson and Robinson, 2002; La Porta, Lopez-de-Silanes, Shleifer, 2008; Austin, 2008; Banerjee and Iyyer, 2005 and 2008; Roy, 2013). This differential legacy is then used as a source of ‘exogenous’ change to explain current institutions and hence, economic outcomes.

While Institutional theories underscore the significance of man-made factors, a second set of explanations is pivoted on the role of “nature”. This consists of “geographic factors with direct economic consequences not mediated by institutions” (Diamond 2012). There are three channels through which the natural environment is claimed to have produced differential outcomes: a) climate, which can have an impact on ‘work effort’ and hence productivity (Montesquieu, 1748) ;b) choice of technology which is affected by the ecological and topographic characteristics of the natural environment. This can be seen in the development of military technologies that explain the conquest of the rest of the world by Europe (Diamond, 1997, p.358) or, in agriculture, by the fact that “temperate-zone technologies were more productive than tropical-zone technologies...”

at the beginning of the “modern era of growth” (Sachs, 2001, p.2), and c) disease burden, and the greater preponderance of infectious diseases in the tropics. Two representative studies in the geography camp claim that the high malaria prevalence in Sub-Saharan African countries leads to a yearly growth deficit in these economies of 1.3 percent every year (Sachs, 2000; Bloom and Sachs, 1998).

The third explanation for differences in economic outcomes has been sought in ‘cultural’ differences. ‘Culture’, it is argued, shapes beliefs, values and norms towards economic growth. Following Weber (1930), who emphasized the relationship between Protestantism and industrialization in Europe, recent theorists have also pointed towards differences in religious beliefs as influencing people’s attitudes towards “human endeavor” (Landes, 1998). A part of the literature has also presented empirical evidence in support of the hypothesis that the prevalence of religious beliefs is correlated with lower economic growth (Barro and McCleary, 2003; Campante & Drott, 2014). In a recent study, Easterly and Levine (2012) argue that the “share of European population” in a country has a positive impact on development; Europeans are seen as bringing with them a ‘culture’ of progress, which leads to a more prosperous economy. The Institutionalist camp responds to culture-theorists by arguing that culture is a subset of the institutional framework within a society and “can be thought to influence equilibrium outcomes for *any* given set of economic institutions” (Acemoglu, Johnson & Robinson, 2005).

2.2.2 Colonialism and Institutional Persistence: Four Channels

There has been a growing consensus in the Institutional literature in the last decade regarding the origins of institutional differences in colonial history. For these economists, colonialism represents a point of institutional departure, which can be used to derive the economic divergence between the developing and the developed world. Colonialism, it is argued, created certain permanent institutional features that continue to persist long after colonialism was officially replaced by the formal independence of these economies from colonial rule.

But why do colonial institutions themselves vary across countries? Four major classes of answers have been provided:

1- “Settler Mortality”

Acemoglu et al (2000) argue that European colonizers established two different types of colonial regimes in the world depending on the ease of settlements. In places where Europeans could settle they introduced European-styled property rights and institutions. Thus, “Neo-Europe’s”, like the United States, Canada, Australia and New Zealand inherited better and more secure property rights whereas “extractive states” were established in regions where Europeans faced higher mortality rates. Using settler mortality rates as an instrument for early institutions they show that the current economic differentials between countries can be accounted for via these early institutions. The source of institutional persistence is sought in the fact that the creation of institutions represents ‘a sunk cost’ that makes it undesirable for native elites to change them even after independence. I return to this model in greater detail, later.

2- Initial Endowments

Engerman and Sokoloff (2002) argue that factor endowments shaped early colonial institutions in North America and South American countries differently. They argue that Brazil’s geographic terrain was more amenable for sugar production, which required slave labor. As a result, the institutional arrangements that emerged from such a colonial economy led to a more unequal social structure as compared to North America. Thus, ‘initial endowments’ shaped the kinds of colonial institutions that emerged in the two Americas, leading to long-run disparity between the two.

3- Identity of Colonial Master

In another set of contributions, La Porta et al (2000, 2008) argue that the identity of the colonial master mattered for subsequent financial, and hence economic growth. They start from a proposition, standard in corporate law (e.g. Clark 1986) and emphasized by Shleifer and Vishny (1997) that “legal protection of outside investors limits the extent of expropriation of such investors by corporate insiders, and thereby promotes financial development.” (La Porta et al, 2008, p.286). From this, they extract two conclusions: 1) “legal rules governing investor protection can be measured and coded for many countries using national commercial (primarily corporate and bankruptcy) laws.” (Ibid). Using data

from forty-nine countries, they code rules for “both the protection of outside shareholders, and the protection of outside senior creditors” (Ibid). 2) “legal rules protecting investors vary systematically among legal traditions or origins, with the laws of common law countries (originating in English law) being more protective of outside investors than the laws of civil law (originating in Roman law) and particularly French civil law countries.” (Ibid) Since “legal traditions were typically introduced into various countries through conquest and colonization and, as such, were largely exogenous”, La Porta then utilize “legal origins of commercial laws” as an instrument for legal rules in a two stage procedure, where the second stage explained financial development. The evidence showed that legal investor protection is a strong predictor of financial development.” (La Porta et al, 2008; p. 286-288)

4- “Ideology of colonial administration”, and “timing of colonization”

In a seminal contribution Banerjee and Iyyer (2005, 2008) examine the impact of historically constituted colonial land revenue systems on differences in economic outcomes between Indian states today. The British colonial apparatus established tax liabilities on agrarian produce in different parts of India. In some areas the tax liability rested with the individual cultivator (Raiyatwari system), in others it rested with the landlord (Zamindari system). In other parts the revenue responsibility was placed on the village under the joint-tenancy system (Mahalwari system). This gave birth to divergent institutional arrangements and those early institutions set these areas on different paths of future economic development owing to differences in post-colonial investments. Using historical land-revenue data from British land settlement reports they argue that areas corresponding to landlord systems underperform the areas that were initially constituted under non-landlordist institutional arrangements in terms of agricultural productivity. But what determined the “choice of land revenue institutions” in different regions? Banerjee and Iyyer argue that the variation can be explained by “ideological” influences of administrators (as in Guha, 1963; and Stokes, 1959, 1978a), the “timing of colonization”, or the “pre-existing social structure”. We return to the Banerjee and Iyyer model and its two critiques (Iverson et al, 2008 and Roy, 2013) in greater detail later as it marks a major point of entry for the present study.

2.2.3 De Facto and De Jure Power: The AJR Model

Acemoglu (2000, 2002a) provides a general theoretical framework following Olson (1988) to examine the emergence and divergence, of political and economic institutions around the world. It is vital to understand this theoretical framework as it is then used in a number of studies by AJR (2002, 2005a, 2008, 2012, 2015) as well as Banerjee and Iyyer (2005, 2008) to examine concrete case studies.

The theoretical framework works in four steps, described by Acemoglu (2002a), as follows:

Step One: “Economic institutions matter for long-run growth because they shape the incentives of key economic actors in society, in particular, they influence investments in physical and human capital and technology, and the organization of production” (AJR, 2005).

Thus, economic institutions determine the growth potential as well as the future distribution of resources; that is, “they influence not only the size of the aggregate pie, but how this pie is divided among different groups and individuals in society” (Ibid). This can be summarized schematically as:

$$Economic\ Institutions_t \Rightarrow \begin{cases} Economic\ Performance_t \\ Distribution\ of\ Resources_{t+1} \end{cases}$$

Step Two: As a result of their impact on distribution, various groups within society contest these economic institutions. Institutions have their winners and losers, with the former usually being the ones who command political power in society. Efficiency, as an abstract ideal, has little or nothing to do with the choice of institutions, as power is the ‘ultimate arbiter’. Thus, the economic institutions at any given point in time are endogenous to the kind of political power that exists in society. Hence, the second building block of the framework is:

$$Political\ Power_t \Rightarrow Economic\ Institutions_t$$

Step Three: Political power is itself endogenous. AJR distinguish between de jure and de facto political power. The former refers to power that emanates from the “political institutions” in society and determines the constraints on and the incentives of the key actors in the political sphere while the latter is shaped by the distribution of resources.

(Ibid, p. 391) Groups in society, even if they do not have ‘legal’ power, can nonetheless revolt and impose their will by force. Their ability to do so depends, AJR argue, on two things. Firstly, it depends ‘on the ability of the group in question to solve its collective action problem’, as in Olson (1986). ¹⁸Secondly, the ‘de facto power of a group depends on its economic resources, which determines both their ability to use (or misuse) existing political institutions and also their option to hire and use force against different groups’. De jure and de facto political power are the two dynamic variables in the AJR framework that explain everything else (Ibid). Thus:

$$Political\ Institutions_t \Rightarrow de\ jure\ political\ power_t$$

$$distribution\ of\ resources_t \Rightarrow de\ facto\ political\ power_t$$

Step Four: The dynamics of the system are largely determined by the evolution of these two variables. This evolution is sluggish because political institutions and resource distribution show enormous inertial tendencies. The framework therefore “introduces a natural concept of a hierarchy of institutions, with political institutions influencing equilibrium economic institutions, which then determine economic outcomes” (Ibid, p.24). But where do political institutions come from? AJR argue that they are endogenous to political power. Thus, the balance of de facto political power at a given point in time determines the political institutions at any point in time. The chain of causality in the AJR framework runs from political institutions and distribution of resources at any given point in time, t , to the contemporaneous economic institutions and the future political institutions at $t + 1$, to the economic performance and distribution of resources at $t + 1$. Institutional persistence arises because of two reasons; firstly, because political institutions are durable and secondly, because wealth and resource inequalities--- measures of de facto power--- lead to further changes in political and economic institutions that benefit the wealthy.

¹⁸ This will be used to explain the political control of the military in Pakistan in Chapter Six.

As we can see, colonialism does not explicitly figure into the theoretical framework. It only enters into the *empirical* analysis as an instrument that captures *exogenous* institutional change in their applicative studies. For example, in their seminal paper, as discussed earlier, AJR (2002) solve the endogeneity problem between institutions and economic outcomes by taking recourse to an instrumental variable: ‘early settler mortality’. They argue that colonizers faced different kinds of disease environments in different parts of the world. This determined the probability of ‘settling’ in a particular country. In ‘settler colonies’, where Europeans faced a lower mortality rate, they created Neo-European, ‘inclusive’ institutions, by which they mean “security of private property rights”. In other places they created extractive states because the environment was not suitable for settlement. Thus, “geography mattered once upon a time, but now it does not” (AJR, 2002; 1164-65).

Given this model, it is intriguing that the agency, or “de facto power”, held by the conquering state does not explicitly enter the AJR analysis. This is somewhat ironic given the fact that the “extractive” state (the noun) is a meaningless concept unless it is actively engaged in *extraction* (the verb). The set of institutions that promote extraction---the structure of ‘dependence’---is completely absent from the framework. This may be crucial to the story of comparative development as the ‘historical relationship of dependence’ that this creates lasts well into the post-colonial period (Frank, 1966; Baran, 1954) with “native elites” working in alliance with the metropolitan elite to maximize their individual gains, often at the expense of the vast majority.

This is a theoretical, as well as an empirical problem for the AJR model. As Albuoy (2006) points out in his rebuttal of the AJR (2002) paper, the settler mortality data for at least half of the countries in their sample is not actually “settler-mortality” data. Rather, most data points are the mortality rates of *soldiers*. Although Albuoy does not extend the empirical argument to its theoretical implications, it follows that ‘soldier-mortality’ is an instrument for *conflict* and the degree of resistance offered by the native population, rather than a measure of ‘disease environment’ as is assumed by AJR (2002).

The question of ‘conquest’ and the set of institutions that emerge as a consequence of imperialist expansion is absolutely central to any discussion of peripheral

institutions. We return to this problem in the next section to see how an introduction of imperialist agency radically alters our understanding of institutional structures in the periphery.

2.2.4 Colonial History and Institutions in India: The BI Model

In their seminal study, Banerjee and Iyyer (BI, 2005) present a radically new way of looking at the economic history of India by empirically showing how its colonial past continues to shape real outcomes in the agricultural sector, even today. What is even more striking is the fact that institutions that were formally replaced after independence continue to have an impact on productive outcomes today.

They present a framework to examine divergence in economic outcomes between regions in India. The key insight in their analysis is to show that inter-regional inequality in post-colonial India can be explained by the differences in colonial *land revenue* institutions that were setup by the British nearly two hundred years ago. Using empirical estimates of these institutions, BI then estimate the relationship between early colonial land revenue institutions and economic development in different regions, today.

BI start with a historical fact: the British colonial regime setup three broad variants of land revenue institutions in India: 1) *Zamindari System*, under which land-revenue liabilities were placed with the landlords. This was the system of assignment in Bengal and Bihar; 2) *Ryotwari* system, which was the system followed in Madras, in which the individual peasant cultivator (the *ryot*) was responsible for paying the revenue; 3) *Mahalwari* system, which was followed in the North Western Provinces and Punjab, was a village based (*Mahal*-based) system in which a collective appointed by the regime at the village level was held responsible for paying the revenue.

Using this historical fact BI then use land-settlement archives and the voluminous Baden-Powell “*Land systems of British India*”, to calculate what they term the “non-landlord proportion” for every district of India. They show that the non-landlord proportion---after controlling for geographic variables such as rain, soil condition and latitude---explains up to 30% of the variation in yields per acre in agriculture across

districts, with zamindari areas lagging behind, even after seven decades of sovereign economic development.

But why do these colonial institutions continue to have an impact on current development outcomes? BI offer three possible channels through which a persistent impact of colonial institutions (operationalized as the ‘non-landlord’ proportion in their study) on current agricultural outcomes can be explained: 1) ‘land and wealth distribution’, 2) ‘the nature of political power’, and 3) ‘the relationship with the colonial state’.

The first channel is fairly self-explanatory and implies that landlord areas may lag behind non-landlord areas because landlords would appropriate any gains from improvements in productivity in the form of rents rather than allowing them to be reinvested in agrarian production.

The second channel proposes that in landlord areas there is a disincentive to make investments in improving land productivity due to the high risk of expropriation that arises from the asymmetry of power between landlords and tenants. As productivity increases, the rental value of the land increases, making it more lucrative for the powerful elite to expropriate the weaker peasants.

The third channel proposes that the colonial state was more incentivized to provide public goods (such as irrigation, railways, schools and infrastructure) in non-landlord areas because it was ‘easier for the state to raise rents in these areas’. BI do not explain why that may be the case but nevertheless conclude from this that non-landlord areas would be expected to have better public goods during the colonial period and that these initial advantages may still persist today (Ibid).

For BI, the major part of the story comes from the second channel: the ‘differences in the political environment’ of the two kinds of areas, *after independence*. In the post-independence period, they claim, when “landlord areas were busy carrying out land-reform the non-landlord states started focusing on development”. (Ibid) They dismiss an explanation based on differences in land and wealth distribution---channel one--- as “there is no significant difference in the proportion of extremely large land

holdings (between districts that inherited more or less non-landlord institutions) today”. This conclusion follows from their data which “does not suggest any relationship between initial land-revenue *institutions* and the kinds of land *distributions* that exist in different regions today’ (ibid). They also dismiss an explanation via channel three, even demoting it below in importance, to reason one. They argue, “Of the three classes of explanations discussed earlier, the explanation based on differential investment by the colonial state is probably the least compelling”. They provide an empirical reason for this dismissal, in that “dropping the ‘non-landlord districts’ (many in Punjab)---that benefitted from colonial infrastructural development the most---from the sample has the result of *increasing* the effect of the non-landlord proportion on current yields.¹⁹

Is it not somewhat surprising that an inclusion of the districts classified and coded as having the greatest ‘non-landlord proportion’ in the sample have the effect of *reducing* the proposed positive theoretical effect of initial non-landlord institutions on economic outcomes? If anything, an ‘inclusion’ of these districts---assumed to be ‘non-landlord’ districts because they happened to be “classified” as such---should have improved the predictability of the model (rather than weakening it).

While this should have raised alarm bells--- perhaps being suggestive of possibly intriguing theoretical effects specific to some states given the diversity of colonial experience in India--- BI (2005) do not take the issue up further and hence offer no explanation for this curious result. What explains it?

2.2.5 Critiques of BI Model

Two recent studies present critiques of the BI study that can possibly present an answer to this question. The first critique of the BI study is by Iverson et al, (2012) which states that the “formal institutional type” described by a land-revenue institution may not correspond with the “substantive institutional” form in a region. Iverson et al show for

¹⁹ Footnote number 28 on page 1209 of the BI paper.

the Central Provinces (C.P) that the ‘substantive’ institutional type there was neither *zamindari* nor *mahalwari* or *ryotwari*---the only three kinds in BI’s analysis---but a fourth type, *malguzari*, which is a “mixed landlord/non-landlord” institutional structure.²⁰ Recoding these districts to conform to the historical evidence, Iverson et al find that the BI study “rests on fragile historical and statistical foundations”. (Iverson et al, 2012; p. 4)

At the heart of Iverson’s argument is the idea of ‘non-comparability’ of land revenue institutions across different regions of India: these institutions were not just *quantitatively* different but were also *qualitatively* so, thus rendering inter-institutional empirical comparisons essentially invalid.

Take the example of the term “*zamindari*” which has been translated as “landlord” in the BI paper. As many scholars know, while this translation may be correct for the case of Bengal, the term means something radically different in other contexts. It could refer for instance to an independent, or family farmer who works on his own land in North-West India. We devote an entire section to this problem in Chapter Five.

The second critique, by Roy (2013) challenges the BI (2005) study and argues that they systematically “understate” the effect of geography over economic outcomes by failing to account for the *contemporaneous* ‘impact’ of institutions during the “colonial period itself”. Roy’s critique is valid since the question ‘how colonial institutions impact long-term outcomes’ should be preceded by the question ‘how colonial institutions impact outcomes *during the colonial period itself*’. It is entirely possible, as Roy argues, that different institutions or geographies behave differently in the two qualitatively

²⁰ As we will see in Chapter Five the critique is also valid for Punjab, where the ‘substantive’ institutional structure cannot be called a “non-landlord” structure if one understands ‘landlordism’---as a social relation--- to correspond with ‘tenancy relations’. Punjab may have been ‘formally’ classified as a ‘*mahalwari*’ (or as BI call it a ‘non-landlord’) region, in substantial terms, ‘tenancy’ relations accounted for 67% of the farm area in 1938. This can be confirmed by looking at Table 5.3 (Appendix) (*Land Revenue Administration Report, LRA, 1938*)

distinct time periods. Roy includes the colonial period in his analysis to show that the main explanatory variable----the non-landlord proportion---loses in magnitude as well as significance for the colonial period.²¹

Many of the problems in the AJR (2002) and BI (2005) model can be seen as a general and systemic flaw in the New Institutional analysis. Let us now turn to these broader issues and see how we can resolve them by incorporating ideas from Marxian frameworks.

2.3 A Critique of New Institutional Frameworks

2.3.1 Whither ‘old’ Institutional economics?

In his critique of New Institutional Economics, Bardhan (2010) starts with an interesting and somewhat quizzical fact: It has become customary in recent years to start any review of ‘Institutional’ economics with North (1990) or at best, Olson (1988). The discussion then swiftly moves on to the implications of these ideas to comparative development across the world. The latter jump is usually performed by pointing towards the cross-country comparative framework of AJR (2002) that was encountered earlier, hailing it as being the first such contribution in the field (as two representative examples of such reviews see Acemoglu, 1999; or Brousseau and Glachant, 2008).

The problem with this approach is that it ignores the extensive legacy of institutional approaches that predate ‘New’ institutionalism by a couple of hundred years by contributions that go as far back as the Historicist German School in the 19th century (Bardhan, 2010; p. 2). The new approaches are also oblivious to the Marxian and post-Marxian contributions to the discussion which also examine how ‘economic’ outcomes are shaped by political institutional structures: forms of power and social relations, internally and externally. ‘Class’ analysis, its contested meanings, and its implications

²¹ We take care of this argument and extend it by including the colonial period in our analysis in Chapter Five and Eight.

for poor countries is a central concern in these themes. (Resnick and Wolff, 1988; Baran, 1957; Bowles and Gintis, 2004). In addition to the Marxian tradition, any discussion of the pioneering work of Veblen is also curiously absent in most of the recent literature.

This is somewhat quizzical as North (1990) was preceded by “at least two decades of vigorous economic analysis of institutional arrangements in developing countries....(which) started with the literature on sharecropping, followed by a proliferation of analysis of institutions in rural land, labor, credit, insurance, and some general inter-linked markets.” (Bardhan, 2010; p. 3) Bardhan (2010) points out that two major contributions that preceded North (1990) are *The Economic Theory of Agrarian Institutions*, by Bardhan ed. (1989), and *The Economics of Rural Organization*, by Hoff, Braverman and Stiglitz eds. (1993). These examine agrarian institutions in third-world economies. In a third collection of essays, *The New Institutional Economics and Development*, Nabli and Nugent eds. (1989), apply ‘transaction cost analyses’ to development issues in Tunisia (Ibid). Unfortunately, any engagement with these contributions is completely missing from the recent discussions.

Bardhan (2010) speculates that the reason for this oblivion may lie in the fact that “while the earlier literature was to a large extent theoretical, the recent dominant trend is in the empirical direction in development economics (as in all of Economics)” (Bardhan, 2010; p. 4). But this too does not seem to be the reason as many aspects of the earlier work had cross-country as well as single country empirical models, with attempts to quantify ‘institutions’ as well as ‘institutional impact’. There are many examples of such empirical studies, from multiple countries. For example, Bell (1977), Shaban (1987), and Bardhan (1984) are empirical attempts to test different models of sharecropping, and explore the impact of land tenure on farm productivity. Morooka et al (1989) used farm-level village data from Java; Matoussi and Nugent (1989) used Tunisian household-level data; Roumasset (1984) uses micro data from the Philippines to examine contractual terms, differences in forms, and extent of tenancy. Feder and Onchan (1987) studied the impact of ‘ownership security’ on investment with farm-level data from Thailand; Migot-Adholla, Hazell, and Place (1991) used farm-level data from sub-Saharan Africa to examine the “impact of indigenous land rights on agricultural productivity”; and Udry

(1990) explored the role of credit arrangements in risk-pooling with household data from Northern Nigeria (Reviewed in Bardhan, 2010).

It is impossible to speculate about the reasons for the neglect that these important contributions face in the New Institutional literature. What is certain is that the net impact of this exclusion has been detrimental to the Institutional case for reasons discussed below.

2.3.2 Security of Property Rights

One of the central themes in the recent literature is the essentialist commitment to the idea of “security of property” rights. The argument runs as follows: ‘security of property rights’ boosts investment and innovations because they create the ‘right incentives’ for entrepreneurial activity (Acemoglu, 1999, 2002, 2012; North, 1990). As long as one gets the “right institutions”, by which is understood getting the “rule of law that protects property rights”, markets will magically get everything else right (Ibid, p.5).

The exclusivity of analytical focus on ‘property rights’ is extremely problematic, especially for issues concerning economic development. First, as Bardhan (2010) points out, “different social groups may be interested in different *types* of property rights” (Bardhan, 2010; p. 5); for example, the rural poor may be interested in “simple land titles or relief from the usual harassments by local goons or government inspectors”, while the “rich investors may care more for protection of their corporate shareholder rights against insider abuses or for banking regulations”. As a result a “general ‘rule of law’ (or ‘legal origin’) variable is too crude to capture these differences”. The “incentive structure” varies with the economic and political *status* of individuals, as shown by Pande and Udry (2005), in their case examination of Ghana.

Second, the ‘security of private property rights’ argument seems to be oblivious to the dialectic of ‘possession’ (for some) and ‘dispossession’ (for others). This operates within the complex array of what Sen (1981) calls “entitlement” systems. As Marx (1967) points out, the enclosure movement eliminated traditional entitlement regimes, leading to a redistribution of land away from the rural poor. Similarly, the establishment of “secure property rights” in the context of the United States came about as a result of

“superseding communal tribal rights in land traditionally enjoyed by the Native Americans” (Bardhan, 2010; Zinn, 1999). Other examples can be drawn from Africa, where in recent years the “land titling programs have sometimes dispossessed women of their traditional farming rights” (Bardhan, 2010; p. 7).

Third, the exclusive emphasis on “security of property rights” loses sight of the broader nexus of social relations within which economic outcomes are ‘produced’. An influential study by Sen (1981) presents an alternative framework to understand the institutional causes and symptoms of under-development: ‘poverty and famines’. He uses case studies from Bengal, Ethiopia, and the Sahel region of Africa to understand the set of ‘entitlement relations’ which have historically given birth to poverty in these peripheral economies. ‘Starvation’, Sen argues, “is the characteristic of some people not *having* enough food to eat.” ‘It is not’, he continues, “the result of there *being* not enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes.” (Sen 1981, p. 217, emphasis in original). To truly appreciate the problem of poverty then, Sen continues, “It is necessary to understand the *entitlement systems* within which the problem is to be analyzed” (ibid). He distinguishes between “supply statements” that “say things about a commodity (or a group of commodities) considered on its own” and “statements of entitlement”, that describe “entitlement relations”, such as those that emerge out of “exchange”, “production”, “own labor”, and “inheritance”²² (Sen, 1981 p. 217). When applied to entitlement systems pertaining to ‘ownership’ this simply refers to “a recursive relation and the process of connecting can be repeated”:

“I own this loaf of bread. Why is this ownership accepted? Because I got it by exchange through paying some money I owned. Why is my ownership of that money accepted? Because I got it by selling a bamboo umbrella owned by me. Why is my ownership of the bamboo umbrella accepted? Because I made it with my own labor using some bamboo from my land. Why is my ownership of the

²² In Chapter Five, I present three examples of entitlement relations that existed in colonial Punjab and the variations in these relations across the two sub-regions.

land accepted? Because I inherited it from my father. Why is his ownership of that land accepted? And so on. Each link in this chain of entitlement relations 'legitimizes' one set of ownership by reference to another" (Sen 1981, *ibid*)

Thus, neither the system of 'property-rights', nor the economic outcomes that it leads to, can be seen in isolation from these "social relations", or legitimizing 'entitlement regimes'. In many instances, therefore, it may be desirable *not* to enforce private property rights (Ostrom, 1978; Bowles, 2004). As Seabright (1995) and Bardhan (2011) point out, with incomplete contracts "attempts to enforce private property rights may weaken the mechanisms of prior cooperation among resource users" (say, of previously common or weakly-defined property) (*Ibid*). This stems from the fact that "a central characteristic of most private property rights is their tradability, and tradability (particularly to outsiders) may undermine the reliability of a long-term relationship among users of a resource" (*Ibid*, p. 8).

Fourth, as also pointed out by Bardhan (2010), in the recent literature the 'security of private property rights' argument is usually presented as a corollary to the "constraints on the state" view. This severely limits the richness of institutional structures, which include, not just 'constraining' but also "enabling institutions" which perform a very different role. For example "social networks, community organizations, network of government extension services and local experimental stations, a national innovation system that facilitates training and technology absorption, etc. are a few examples of many such enabling institutions" (*ibid*). Ostrom (1978) and Bowles (2004; 2012) give numerous examples of common-property resources (in fisheries in Southern Italy, irrigation in Nepal, forests in South America) which enable democratic management and participation. Many of these are sustained via non-market mechanisms that rely on 'other-regarding preferences' such as social trust, mutual reciprocity etc. One fascinating example of how these reciprocal institutions were sustained is given by Greif (1997) who shows how Mediterranean trade and commerce was sustained during the medieval period through the mutual trust of traders. Reducing the vast milieu of institutional structures to the "security of property-rights" completely loses sight of these 'enabling' social institutions.

Such a view, when transported into the domain of policy, leads to the obfuscation of many facts central to economic development in post-colonial countries. For example, Githinji and Perrings (1993) explaining why policies to alleviate the degradation of rangelands in Botswana and Kenya have not worked, argue that the reason why institutional reform has been unsuccessful is that they “took little account of the role of the institutions they were intended to replace in guaranteeing the social security of individual resource users” (Githinji and Perrings, 1993; p.110). In contrast, they argue that ‘institutional initiatives should address the needs satisfied by the structures they replace, if they are not to provoke conflicting evolutionary responses on the part of those institutions’ (Ibid).

In addition to such ‘enabling’ institutions there are also examples of what Bardhan (2010) calls “coordinating institutions”. He argues that poor countries “are beset with coordination failures of various kinds, and alternative coordination mechanisms -- the state, the market, the community organizations -- all can play different roles, sometimes conflicting and sometimes complementary, in overcoming these coordination failures, and these will remain important even if private property rights were to be made fully secure.” Consequently, to proclaim the “universal superiority of one coordination mechanism over another is naive, futile and a-historical.” (Ibid, p. 8)

Finally, the New Institutional commitment to the ‘security of private property rights’ and the mechanisms via which it promises economic development does not seem to explain the meteoric rise of East Asian economies, particularly China, South Korea, and Indonesia. As Chang (2010) rightly asks: “What is in fact a ‘good property rights system’?” “That it is not necessarily Western-style private property rights system”, Chang continues, “is clear from the excellent performance of China over the last two decades, where such a system simply did not exist” (Chang, 2010; p.31). In contrast, the East Asian miracle shows that ‘security of property rights’ and ‘formal law’ have often been had to sidestepped in the favor of creating a suitable state-led macroeconomic framework for economic growth (Chang, 2001).

2.3.3 Are Peripheral Economies Prisoners of Birth? The Agency of the Post-Colonial State

The New Divergence Debates (NDD) discussed earlier offer two contending explanations for the problem of comparative development, ‘colonial institutions’, and ‘geography’. In both classes of explanations, however, current economic outcomes are completely endogenous to an underlying, ‘time-invariant’ factor. This is fairly obvious in the ‘geography’ case, where ‘nature’---seen as ‘destiny’---constrains the abilities of economies to achieve economic growth. But it only takes a little thought to see that an explanation premised on ‘colonial institutions’, by taking recourse to ‘history’, in essence also makes a similar claim: current economic outcomes are pre-determined by institutions that were setup centuries ago. Since these ‘structural’ forces cannot be undone, peripheral economies are caught in a web of “bad institutions”. In other words, in both classes of models, peripheral economies are posited as ‘prisoners’ of birth.

In the Institutional story, this idea stems from an insufficient attention to a third channel that may very well explain the large differences in comparative development outcomes between countries: the agency of the post-colonial state. In fact, in a recent article, Acemoglu (2014) concedes that “much of political economy, including my own work, has ignored the dynamics of state building....” He argues further that these may be “as important for the emergence of inclusive political institutions” but “more theoretical and empirical work, informed by history, is necessary to address these questions” (Acemoglu, 2014; p.23)

This stems from the inability of the New Institutional analysis to incorporate the work of heterodox thinkers such as Chang (2011), Woo (2009), Karl O’ Brien (2009), David and Mach (2010), and Kiiza (2010), who have contributed towards building an understanding of ‘state’ formation and its implications for institutional formations in different countries. Let us see why these may be potentially crucial for institutional development and economic growth:

Chang (2011) sees ‘institutional’ development as being synonymous with “governance and political reform”. He argues that the lack of importance attributed to the latter in IMF and World Bank led ‘technocratic reform’ programs explains to a large

extent why these programs have been “universal failures” (Chang, 2011; p.2). This in turn, he argues, stems from the fact that “we are still some way away from knowing exactly which institutions in exactly which forms are necessary, or at least useful, for economic development in which contexts” (ibid, 23). Such an understanding, he argues, requires the “need to translate the abstract theoretical notions that underlie many discussions on the role of institutions in economic development into more practical terms”; the need to “develop new discourses on what may be called the “technology of institution building” cannot be ignored. According to Chang, the role of the state is crucial in developing this ‘technology’.

Following Chang (1995), Woo (2009) examines the case of Malaysia, where post-colonial state building played a crucial role in determining the path of economic development. She also points to issues pertaining to “compatibility” in examining “formal” as well as “informal” (that is, non-codified) institutions. She shows that “the formal legal system cannot determine how decisions are made and conflicts resolved”; the state has to play an integral role in mitigating conflicts and promoting informal institutions, often at the expense of “market efficiency”, and the “security of property rights”. (Woo, 2009, p.114)

Moreover, the state---as an instrument for developing the ‘technology of institutional reform’---is contested by politics. As Chang (2002b) points out: “All institutions, including the market (which is often assumed by mainstream economists not to be an institution) are defined in relation to the structure of the rights and obligations of the relevant actors. And as the definition of those rights and obligations is ultimately a political act, no institution, including the market can be seen as being free from politics.”

A number of studies have examined how politics at the level of the state shapes the agenda of institutional reform and ultimately the economy. Burlamaqui, Pereira de Souza, and Barbosa Filho (2011) explore multiple instances of institutional and fiscal reform in Brazil and how these reforms were contested by “distributional struggles between groups and how the political compromises made in one era critically affected the way the economy evolved later” (BPB, 2011). David and Mach (2011) explore the process of institutional formation in Switzerland in the early 20th century and examine

how political compromises over the ‘state’ and its policy determined the future course of the economy. In another contribution, O’Brien (2008) examined struggles over fiscal policy in Britain during the early colonial period to show how the “efficient tax institutions of Britain fueled its imperialist expansion and repression of lower classes at home in the name of protecting private property” (Chang, 2011; p. 12)

The key question is this: is state policy determined by ‘structure’ or ‘human agency’? As Chang (2011) argues, “In mainstream theory of institutional change, there is no ‘real’ human agency”. Since “material interests”---which result in institutional change or persistence---are shaped by ‘structural’ factors, “what a rational actor will choose is already structurally determined” and hence there is “no meaningful choice” (Chang and Evans, 2005; p. 9).

In contrast, there are many examples (including the East Asian miracle) which point towards the role of the state. As Kiiza (2011) argues, Botswana managed to mitigate the effect of being a landlocked country---a “natural” or “geographical” impediment”---simply because “its political leaders made deliberate political decisions about the appropriation of diamond rent and its use”. In this particular case, “developmental nationalism” was the key explanatory variable in the emergence of a “developmentalist bureaucracy” and not inherited factors such as “colonial institutions” or “geography” as has been the dominant theme in the New Divergence Debates.²³

Thus, the importance of the agency of the post-colonial state is central to the issue of institutional reform and change in the periphery. As Chang (2011) argues: “If human actors are not automata responding to structurally-determined incentives, their ideas---how they perceive their interests, what their moral values are, how they think the world works, what actions they think are possible and impossible, and so on---matter a great deal” (Chang, 2011; 256).

²³ As we will see in Chapter Six, the differences in political formations and policies in the two Punjabs are the key to the divergence

2.3.4 “Whatever happened to Imperialism?”²⁴

In February, 2015 the Greek electorate voted in the Syriza party; a far-left political tendency, which was elected on an anti-austerity and anti-neoliberalism agenda. Yet, despite having all the “internal commitment that is required for institutional change” (Acemoglu, 2000), in practical terms the party ended up having to accept the same terms of austerity as its predecessors. The reason, as most people agree, had little to do with “internal” balance of power, or domestic commitment to reform, but rather the *external* constraints on the ability of elected representatives to bring about *actual* institutional change (Varoufakis, 2016). This recent example is reminiscent of a deeper problem: in peripheral economies, ‘institutional change’ is not just determined by the distribution of power *domestically* but also the *global* distribution of power, that is, between former colonies and colonizers. The global inequality in power relations, in turn, stems from the ‘historical’ structures of dependence that poor countries have inherited from their colonial past (Dos Santos, 1976; Frank, 1967; Baran, 1954).

But these dynamics of global power are completely absent from the New Institutional frameworks. In addition to focusing almost exclusively on “property-rights” the recent Institutional literature pays almost no attention to the impact of external power relations in the determination of domestic institutions in peripheral economies. As pointed out earlier, while a discussion of the “extractive” state is central to the AJR (2002) analysis, the process of extraction, and the set of institutions that it gives birth to, is completely invisible in the analysis. This may be crucial to issues pertaining to comparative economic development for various reasons:

First, any discussion of the origins of differences in comparative development is incomplete without a discussion of contemporary global capitalism, which in turn, is inconceivable without an understanding of colonialism. The contribution of the colonized lands and the people who inhabit and derive their livelihoods from them to the process of

²⁴ Taking a line from an essay with the same title by Prabhat Patnaik (1993)

capitalist development and accumulation in the center, cannot be overstated. For example, it is impossible to explain the meteoric rise of the British economy during the 19th century without accounting for the fact that by 1914 British ownership of foreign assets was equal ‘to two years of national income or six times the total value of British farmland’. (Piketty, 2014: 44) This allowed Britain to run trade deficits amounting to 2% of national income with the rest of the world because the ownership of colonies allowed them to extract a net income from ‘foreign assets’ that was more than 5% of national income. (Ibid: 120-121)

While this ownership of foreign assets in the form of colonies was beneficial for the British state the same cannot be said about its effects on the development of the colonies whose national income flowed towards the British state and its citizens. India, for example, produced a quarter of global manufactures in 1750. The ensuing colonization and subsequent ‘de-industrialization’ reduced that percentage to 2% of global output: the decline came at the expense of productivity gains for British textiles (Clinginsmith and Williamson, 2005). It is obvious that the conflicting and mutually opposing nature of such capitalist development could not be sustained without *direct* political control. As Piketty (2014) so powerfully argues in his recent best-selling book:

“It is not an insignificant thing when one country works for another and pays out a substantial share of its output dividends and rent to foreigners over a long period of time. In many cases, such a system can survive (to a point) *only if sustained by relations of political domination...*” (Piketty 2014: 44, emphasis added)

One would suppose, given its observed significance in shaping the global political economy, that the concept of imperialism must be central to any serious theoretical treatment of capitalist development in the last two centuries. Yet, despite its practical relevance, it is perplexing that the role of imperialist agency in shaping peripheral institutions has received so little attention in recent theories.

What is even more ironic is the lack of importance attached to the analytic in recent Marxian discourse. In an appropriately titled essay, ‘*Whatever Has Happened to Imperialism?*’ Prabhat Patnaik (1990) points towards a “remarkable transformation that has taken place” in the last two decades: “hardly anyone talks about imperialism any

more”. Even more perplexing is the fact that this silence is not the result of any theoretical challenge that may have been posed to the concept or its central premises. Contemporary oblivion for imperialism in the Marxian political economic tradition is “not a theoretically self-conscious silence” (Ibid). In contrast the process seems to have been the result of a gradual, perplexing and mysterious onset of theoretical amnesia.

To address these problems it is vital to turn our attention to the earlier Marxian and Dependency tradition of political economy. The framework allows for a much deeper understanding of institutions as it allows for a discussion of “social relations”, “imperialism”, and “class structures”.

2.3.5 The Structure of Dependence

The dependency school of development presents a unique framework to understand the colonial economy and its articulation within the global capitalist framework. This vast body of literature is far from a monolithic set of ideas but rather an analytical framework that gives centrality to the historical relationship between the advanced capitalist economies and the newly independent states that emerged after World War II. It is this aspect that sets dependency theory apart from the various paradigms that have sprung up in the mainstream economics literature. The necessity of bringing back the dependency framework emerges as a result of the mainstream paradigms failure to address three key aspects: 1) Historical developmental experience and the divergence in economic fortunes; 2) Power relations latent in the relationship between advanced capitalist economies and developing economies; and 3) Eurocentric grand narratives that are premised on the circular logic that developing countries are underdeveloped because they are not mirror images of Western capitalist economies. These failures are directly attributable to the implicit assumption that development occurs on a linear teleological path that all countries must follow irrespective of the historical relations of power.

The dependency framework can be sub-divided into three main classes: 1) The Development of Under-Development School (DUS) that initially arose with a seminal contribution from Frank (1966) and its various expositions by Pizarro (1971) and Amin (1973, 1974, 1976); 2) A reformulation of the DUS hypothesis by Dos Santos (1971) that refers to the evolution of the ‘structure of dependence’; and 3) A ‘concrete situation

of dependency' (CSD) framework developed by Faletto (1970) and more fully by Cardoso and Faletto (1979) that zooms-in on the 'coincidental' nature of dependence.

The idea that colonial institutions had a long-term impact on economic outcomes is not a new one. The Marxian literature had long ago pointed towards the impact of colonialism on long-term development in the third world. Baran (1954, 1957) for instance proposes in a seminal account on the *Political Economy of Growth*, the idea that the variation in colonial institutions across "settler" and "non-settler" colonies provides "the key to understanding differences in comparative development across countries" (Baran, 1954; p. 144). Yet, Baran's contribution is so severely understated that it may even come as a surprise to those not familiar with this literature that the source of variation in Paul Baran's (1957) explanation is exactly the same as the one reiterated fifty years later by Acemoglu, Johnson and Robinson in 2002: settler mortality. It is curious then that Baran is conspicuous only by his absence in the latter's prize-winning study.

Frank (1971) is a seminal exposition of the DUS School of development theory that argues that under-development, far from being an original condition, is *produced* by capitalist development in the center. Using the concrete case of Chile and Brazil, Frank points towards the *qualitative* difference in the nature of economic development in the central and peripheral economies respectively via the 'metropolis' and 'satellite' distinction. He argues, "in contrast to the development of the world metropolis which is no one's satellite, the development of the national and other subordinate metropolises is limited by their satellite status." (Frank, 1970: 23)

Frank's idea is simple and provocative: development is fettered by the structural embedment of dependent countries in a system in which domestic elites act as "satellites" in peripheral countries and serve the interests of the 'metropolis', instead of the indigenous economy. As a result of the parasitic nature of these domestic elites capitalist *development* produces underdevelopment for the majority of the people living in these countries. For Frank, therefore, 'underdevelopment' is not a natural, intrinsic condition of existence for developing economies but is rather a product of the dependent nature of these economies in the global capitalist system. Thus, for the DUS school 'under-

development' must be examined in its causal connection with the dependent political character of these economies.

Following Frank, this thesis resonates with two noteworthy contributions from Dos Santos (1971) and Pizzaro (1971). These two contributions reach the same conclusion regarding the *development* of underdevelopment as Frank but via slightly different entry-points. Dos Santos (1971) finds Frank's explanation of the problem too simplistic. Instead, he formulates the problem in terms of the development of certain 'internal structures' that are "conditioned by international relations of dependence" (Dos Santos, 1971; p. 80). These, Santos argues, shape the 'structure of dependence' in Latin American countries and 'without a qualitative change in these internal structures and external relations' development would remain impossible for these economies. (Santos, 1971; p. 232) Thus, it is not the satellite elites per se that lie at the root of the problem but rather the 'structure' of the economy itself: a structure that is rooted in colonial history. The 'satellite' elite is itself a powerless agent in this framework and is subservient to the diktats of the 'structure of dependence'.

Santos goes further than Frank's initial framework and argues that dependency can take a variety of forms. An appreciation of the differences in these forms is central to the problem for Dos Santos. He defines dependency as 'a situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected' and distinguishes between three types of historical dependency arrangements: 1) "Colonial dependence" by which he understands the domination of world trade by Europe; 2) "Financial-industrial dependence" that is characterized by the domination of big capital in the industrial centers"; and a 3) "New dependence" that arises in the post-war period and is based on "multinational corporations which began investing in industries geared to the internal market of underdeveloped countries". (Ibid)

Thus, as opposed to Frank who focuses on generalizable similarities between economic structures in a dependent economy, Dos Santos is more concerned with the *dissimilarities* within the evolution of unique structures of dependence. In this sense,

Santos's contribution marks a break with the mechanical dependency analyses of Frank in which internal structures are completely determined by external forces.

In contrast to the DUS a slightly different entry-point to dependency analysis can be found in the works of those who construct the question in terms of the *constraints* upon development in concrete situations. This view, most notably expressed by Faletto (1970) and Cardoso and Faletto (1979) emphasizes the *coincidental* specificity of a particular dependency setting.

Cardoso and Faletto (1979) emphasize on the need to situate a given 'dependency arrangement' as a product of the "relationship between external and internal forces" that are "rooted in *coincidences of interests* between local dominant classes and international ones", and on the other side are challenged by locally dominant groups and classes" (Cardoso and Faletto, 1979; p. 15)

In this way, dependency analysis via Cardoso and Faletto (1979) acquires a unique framework that allows us to analyze the *evolution* of forms of dependency within an economy. For instance, as Faletto (1979) shows, the trade terms and agreements between central and peripheral countries were shaped by the degree of development of indigenous class forces in the peripheral economy. Countries that had a more developed and well organized national bourgeoisie could much more easily bargain for better trading agreements so that the terms of trade were better than countries that had less well-developed capitalist elites.

In conclusion, as these later dependency analyses showed, colonialism not only shaped the initial international division of labor but also reproduced itself in the post-colonial era. The degree to which colonial institutions could be reproduced depended on the manner in which power was reorganized in the post-colonial era. The persistence of colonial structures of dependence and as a result the outcomes that they produced---although contingent upon colonial history---nevertheless, reproduce themselves today because they continue to benefit particular social groups both in the peripheral economy and the center. As a result, these social groups are incentivized to form what Gramsci (1935) terms 'historic blocs' or political coalitions between social groups with seemingly diverse political and economic interests.

2.4 Conclusion

In this chapter we reviewed the recent Institutional literature and presented a critique of their central arguments. In their debates with the ‘geography’ and ‘culture’ camps, the present study concurs with the Institutionalists. Yet, despite this ‘overall agreement’ the chapter identified points of theoretical disagreement with the recent models. We argued that the robustness of these models can be enhanced by including the work of Marxian scholars into the analytical framework.

By combining these two frameworks to analyze the concrete context of the colonial economies of Punjab, and possibly by extension to other colonized countries, we seek to make the following four dimensions visible in the analysis:

- 1) An examination of the origins, and concrete nature, of the dependence relationship between Punjab and the global empire. I do this in the light of recent economic historiography that presents a new understanding of global capitalism by giving visibility to the reshaping of ‘empire’ that took place in the aftermath of the American Civil War. As we will see, the patterns of ‘infrastructural development’ that emerged in Punjab after the Civil War, and the political constraints on the state in carrying out these projects, explain the ‘institutional structures’ that emerged in each Punjab during the colonial period (Chapter Four and Five).
- 2) An examination of the colonial institutional apparatus as a “system of rights” stemming from the “entitlement regime” (Sen, 1981) in colonial Punjab, and ‘land-revenue’ institutional forms as being a concrete exercise of these entitlement systems. This allows us to focus on the actually existing social relations in the colonial economy, and explore the role played by institutions in reproducing them by allocating political and economic power within the society.
- 3) An investigation of the impact of colonial institutions in each Punjab on economic outcomes during the colonial as well as the post-colonial period. As we will see, an inclusion of the contemporaneous impact radically alters the way we look at colonial institutions and their long-run persistence in peripheral economies.
- 4) An investigation of what Chang (2011) calls ‘forms of power’ and ‘contestations over state policy’ in each of the two post-colonial states after independence. As we

will see in Chapter Seven, the radically different economic outcomes between the two Punjabs can be seen as a result of distinct sets of politics in the two countries after independence. These differences shaped the degree of “democracy”, ‘the strength of peasant movements’, and the degree of ‘state autonomy in the determination of agrarian policy’ in each region, which in turn led differences in ‘land-legislations’, ‘tenure policies’, and ‘support policies’ that were offered by each state to agrarian producers (Chapter Seven and Eight).

CHAPTER 3

AGRICULTURAL PRODUCTIVITY IN THE COLONIAL AND POST-COLONIAL PERIOD: A COMPARATIVE EXAMINATION

3.1 Introduction

In Chapter One, we conducted a brief overview of development outcomes across the two Punjabs, by comparing simple measures of ‘overall’ development such as ‘literacy-rates’, ‘poverty-rates’, ‘life-expectancy’, ‘infant mortality’, and ‘maternal mortality rates’. This revealed a paradox: while we expected the two sides to have converged---owing to similarities in historical institutions and agro-climatic conditions--- we saw that, in fact, there has been a divergence in economic fortunes.

In this chapter we focus on the agricultural sector and present a comparative analysis of agrarian yields in the two sub-regions across more than a century of data, from 1900 to 2015. The chapter shows that the divergence in overall development is a product of the divergence in *agrarian* performance. We explore generalizable trends--- turning-points, crucial decades, and crop-specificities--- that underpin the problem of comparative agrarian performance in each period. While this chapter identifies the broad patterns, it leaves an explanation of the trends, for subsequent chapters.

To do this, we compare the evolution of yields per unit land in the two regions for the two major food crops (wheat and rice), and the major cash crop (cotton) across the colonial and post-colonial period. Following a large body of research that has shown that food productivity is associated with a greater decline in poverty (since a large part of ‘poverty’ is in fact, ‘food poverty’. See Datt and Ravallion, 1994 for a review of this

literature) as compared to similar improvements in cash-crop productivities, I pay particular attention to the crop-specificities of relative performance in each part.²⁵

The chapter works in two steps. We first look at the evolution of comparative yields for the entire sample. This allows us to look at agrarian development from a birds-eye view, to see if there are any major differences between the two qualitatively distinct *periods* (colonial and post-colonial). On the one hand, we find confirmation for the earlier work by Blyn (1966, 1971) and the hypotheses of Patnaik (1972) about the ‘retarded’ nature of colonial agrarian development in India. In addition, however, we also identify that any ‘general’ understanding of colonial agrarian performance cannot be built without keeping in mind the ‘crop-specificities’ of the problem. Having examined the problem from a macro perspective, we then zoom-in to specific periods (colonial and post-colonial), and decades within each, to understand the unique dynamics of comparative agrarian performance in each period.

To do this, I constructed a dataset which records the acreage and production of the three major crops from 1900-2015 for every district of Punjab.²⁶ The large size of the dataset, and the partition of Punjab into India and Pakistan, allows me to setup a pre and post-partition periodic break at 1947; the year of independence, a ‘critical juncture’ in the institutional histories of the two agrarian economies. I also look at subsets of the dataset, specifically border districts, to better control for any confounding geographic factors.

The analysis identifies six important facts about the problem: 1) West Punjab (later Pakistani Punjab) outperforms the eastern half for a large number of years during the colonial period in terms of food as well as cotton production; 2) The decades of rising

²⁵ The chapter is complemented with an appendix that examines the empirical relationships between the poverty rate in a district and the yield per hectare of food versus cotton crops. The surprising result is that an increase in cotton productivity is associated with a higher level of poverty in a district; while food productivity tends to reduce it significantly.

²⁶ Data construction and issues are explained in Chapter One

international commodity prices (leading up to the First World War) significantly favor the western half, reflecting a greater export-price sensitivity; 3) A radical reversal of fortunes begins to take place after independence in food production. By 1967, food productivity in the Indian state of Punjab was already 45% higher on average than districts in Pakistani Punjab; 4) The divergence is impervious to cotton, which has not only kept pace, but the Pakistani Punjab has even outstripped its Indian twin for many years after independence, showing that the reversal cannot be explained as a result of a permanent shock at the time of independence, for such a shock would have impacted both kinds of crops (food and cotton) similarly. 5) Unlike the post-colonial period, which is marked by one-way divergence²⁷ in the favor of Indian Punjab, the differential trend is more volatile during the colonial period; 6) The divergence begins as early as 1952 but the year 1967, and the decades that follow, mark a period of intensive divergence, or the ‘long farewell’ that separates the two Punjabs today.

As subsequent chapters will reveal, each of these six facts have a political economic basis that is rooted in the colonial state and agrarian economy of the two Punjabs and their institutional transformation, after independence.

The rest of the chapter is organized as follows: in 3.2, I present a broad overview of the trends for the whole sample (1900-2015) to capture how, on average, each state has performed in the two periods in terms of each crop. In 3.3 and 3.4, I zoom-into each of the two qualitatively distinct periods in isolation, and capture the evolution of the ‘yield differential’---measured as the difference of yields per hectare in each sub-region for a crop, in a given year---over the colonial, and post-colonial period, respectively, with an emphasis on isolating crucial decades and turning-points in each period. I conclude the chapter with a brief discussion of the ‘implications’ that the analysis has for the overall problem.

3.2 Periodic Comparison of Agrarian Performance

The development of Indian agriculture in the colonial period is an important area of research. The evolution of agrarian productivity during this period has been the major focus in these studies. Two studies by George Blyn (1964, 1968) were the first to examine the evolution of agricultural productivities in ‘British India’. The first of these examined the ‘economic history of India’s agriculture from 1891 to 1947 by looking at the evolution of yields per acre for the eighteen major crops. Other studies looked at ‘undivided India’, as in Sivasubramanian, (1997, 2000), and confirmed some of the earlier insights of Blyn. Unfortunately, there are very few studies that include regions in the Sub-Continent that became a part of Pakistan. Sims (1988) makes an attempt to compare West Punjab and East Punjab, but only looks at the post-colonial period, and does not adjust her data for new districts after independence, thus rendering comparisons between the two qualitatively distinct *periods* impossible. ‘Inter-periodic’ comparisons are important, as they reveal facts about the nature of colonial agrarian development and transition (if any) to the post-colonial period.

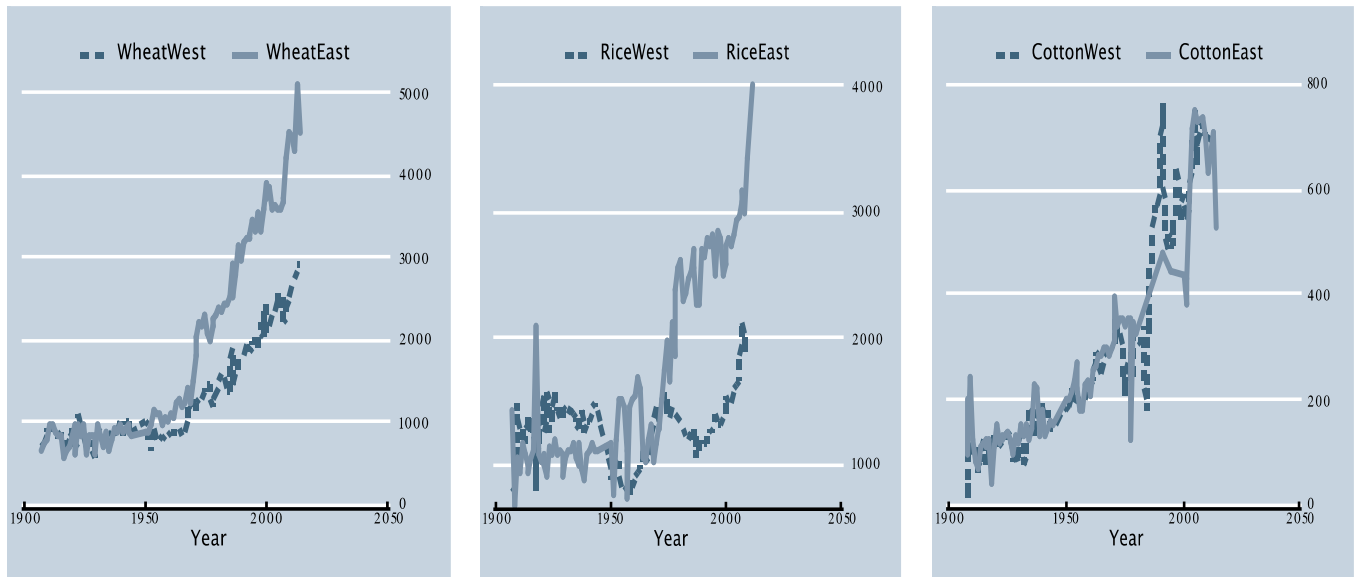
In Figure 3.1, panels (a) to (c) I plot the average yearly yield of wheat, rice, and cotton per hectare from 1900-2015, in each Punjab. The picture provides a bird’s eye view of the evolution of agrarian performance across the two periods. Four facts immediately stand out:

First, there has been a significant productivity spurt in both states after they gained their independence from colonial rule in 1947. As Baran (1957), and Patnaik (1971) hypothesize, a *qualitative* institutional shift takes place at independence, as alien extractions and direct siphoning comes to an end, and a greater proportion of the surplus appropriated by domestic elites is available²⁸ for productive reinvestments. The graph also confirms the pioneering results of Blyn (1968), whose overall assessment of the

²⁸ To what extent this ‘available’ surplus is reinvested in each state, obviously, varies and this variation (and its causes) is precisely what this study is exploring.

economic history of the colonial period in British India was one of ‘retarded development’.

Figure 3.1: Average Yield of Wheat, Rice and Cotton in East and West Punjab (Kilograms Per Hectare)



a) Yearly Average Wheat Yield

b) Yearly Average Rice Yield

c) Yearly Average Cotton Yield

The qualitative rupture at independence is so significant---in both countries--- that yields per hectare during the colonial period optically appear *stationary* when put into relief with the post-colonial performance on the same graph, as in figure 3.1. This, however, as we will see when we zoom-in to each period individually, is merely an optical illusion. The colonial period *appears* stationary---and similar across the two sub-regions---only because the performance, and the differential between the two states, *across* the two periods is so radically different.

Second, the graph reveals that the divergence in food productivity (fig. 3.1 panels a, b) began soon after independence. The Indian Punjab began outpacing its western twin as early as the 1950's. As we can see, wheat productivity remained stagnant in the Pakistani Punjab for the first two decades, and colonial levels persisted till 1966. The second major food crop, rice, took a dip in the Pakistani Punjab after independence, falling below even colonial levels during the 1950's, and rising thereafter. During the same time there is steady growth in yields per hectare on the Indian side so that the

divergence during the first two decades (1947-1967) is explained by the continuation of retarded colonial trends on the Pakistani side and an expansion on the Indian side. Although yields begin to rise on the Pakistani side after 1966, the divergence becomes accentuated since the rate of growth in the Indian Punjab leaps upwards after 1967: the start of the Green Revolution in India, which was launched from the state of Punjab.

Third, the graphs point to the peculiarity of cotton production. Unlike the food crops---that display retarded performance--the productivity of cotton was secularly rising, on both sides, even during the colonial period. The yields of cotton produced per hectare increased by 56% from 1900 to 1947. Thus, while ‘retarded’ development and stagnation were the norm for food crops, the same principles do not seem to apply to cotton production.

The graphs also reveal that the productivity of cotton in the Pakistani Punjab has-- - somewhat curiously--- managed to maintain parity with its Indian counterpart, despite the divergence in food performance. In fact, yields of cotton in Pakistani Punjab have even outstripped Indian Punjab for some decades after independence (as we will see below). This makes any explanation for the divergence premised on ‘plain bad luck’ impossible. It cannot be argued for instance, that a set of ‘permanent’ factors, such as a supply shock (for example an unequal ‘water distribution’, weak ‘state capacity’ etc.) may have arisen at the time of partition that systematically disadvantaged or privileged either side.²⁹ Such factors would not show ‘crop specificities’. They would not be innocent, as they are in this case, to the production of the latter while singularly retarding the productivity of the former. The fact that we see a retardation in food productivity at the same time as we see an expansion in cotton productivity reveals a deeper, political and policy matter, rendering a purely “technical” explanation simply impossible.

²⁹ This has been the narrative of nationalist historians on the Pakistani side who argue that an ‘unfair division of assets’ and ‘water resources’ explains the downfall of the Pakistani side. See Rabbani (1977)

The trends in Figure 3.1 are complemented by Table 3.1, where we present a simple pre and post-partition comparison of average yields per hectare obtained in east and west Punjab for each crop, in each period. The table reports the average productivity for the two regions as a whole in rows 1 and 2, respectively. The last two rows report the average values for the six border districts that consist of the three pairs Amritsar-Lahore, Firozepur-Kasur, and Gurdaspur-Sialkot. Lying on either side of the fence, these districts replicate identical geographic/agro-climatic conditions. In columns (7), (8) and (9) I report the ratio of average productivity in East Punjab to the corresponding value in West Punjab. A value greater than one reflects an advantage for East Punjab.

Table 3.1: Pre and Post-Partition Comparison of Average Yield Per Hectare in East and West Punjab

Region	East Punjab (Indian Punjab)			West Punjab (Pakistani Punjab)			Ratio of East Punjab to West Punjab		
	Wheat (1)	Cotton (2)	Rice (3)	Wheat (4)	Cotton (5)	Rice (6)	Wheat (7)	Cotton (8)	Rice (9)
Average Yield/H of Crop (1900-1947)	751.04	135.34	1085.9	839.05	121.2	1326.8	0.89	1.21	0.81
Average Yield/H of Crop (1947-2015)	2513.2	330.62	2113.6	1524.1	304.9	1753.3	1.69	1.08	1.68
Average Yield/H Border Districts (1900-1947)	1042	144.41	1394	1050	141.17	1440	1	0.97	1.25
Average Yield/H of Border Districts (1947-2015)	3892	268.19	2527	2003	276	1790	1.94	1.02	2.12

Sources: Dataset on Production and Acreage of Crops 1900-2015 constructed by author from Government sources.

Note: Yields are in Kilograms Per Hectare.

The table confirms that the average productivity is about equal for cotton while it is higher for food crops (wheat and rice) in West Punjab during the colonial period. The differences in food productivity imply that districts in the west produced approximately 88 kg per hectare more wheat and 240 kg's more rice than the ones in east Punjab during the colonial period (on average).

Now compare the same ratios in the post-colonial period. As we can see, the tables have radically turned: the Indian Punjab produced, on average, approximately 1.7 times more wheat and rice per hectare in this period. The differentials are not minor; they

imply that a hectare of land in the Indian Punjab produced in an average year, approximately 1000 more kilograms of wheat and rice in the post-colonial period than its Pakistani twin. Assuming that an average adult consumes half a kilogram of wheat every day, this means that a hectare of land in the Indian Punjab has managed to sustain two thousand more individuals, or approximately five hundred more families every year, in the post-colonial period.

We can also see that the average yields per hectares are about equal for the border districts in terms of wheat and cotton production and slightly higher for rice in East Punjab during the colonial period. In the post-colonial period, the border districts in Indian Punjab produce approximately *twice* the wheat and rice per hectare. This is a remarkable transformation by any measure. Thus, restricting the analysis to ‘border-districts’ *increases* our measure of the magnitude of the divergence in agrarian performance.

Finally, the same trends are confirmed if we look at the problem from the perspective of periodic ‘growth’. The yield of wheat, rice and cotton increased by 206%, 95%, and 110%, respectively in Indian Punjab from 1947 to the present. In Pakistani Punjab, the corresponding increase for wheat and cotton productivity is 82% and 108%, respectively, while rice yields have just improved by 16% in seven decades. Comparing border districts, we find that the average yield growth for wheat, rice, and cotton was 273%, 81.7%, and 86% in the border districts assigned to India while it was 138%, 17.4% and 95% for the ones assigned to Pakistan, from the colonial to the post-colonial period, respectively. Thus, growth comparisons also reveal, in relative terms, a food-bias in the Indian Punjab and a cotton-bias in the Pakistani Punjab. While the Indian Punjab has an absolute advantage in terms of all three commodities this advantage is more pronounced for the food crops as compared to cotton.

Let us now zoom-in to each of the two periods, separately.

3.3 Comparative Agrarian Performance in the Colonial Period (1900-1947)

While the picture presented above gives an overall comparison of the broad trends, there is nevertheless a lot of loss of information because we have simply averaged out the entire colonial (47 years) and the post-colonial (67 years) period in the dataset. Yearly and decade-wise variations, which capture crucial junctures, turning points, volatility, and important decades are lost. Let us now look at these more carefully: a zooming-in to the colonial (Figure 3.2) and post-colonial periods (Figure 3.3) individually and examining the decade-wise moving averages (Table 3.2) will enable us to map out the specificities and peculiarities of agrarian productivity in each period (colonial and post-colonial) more concretely.

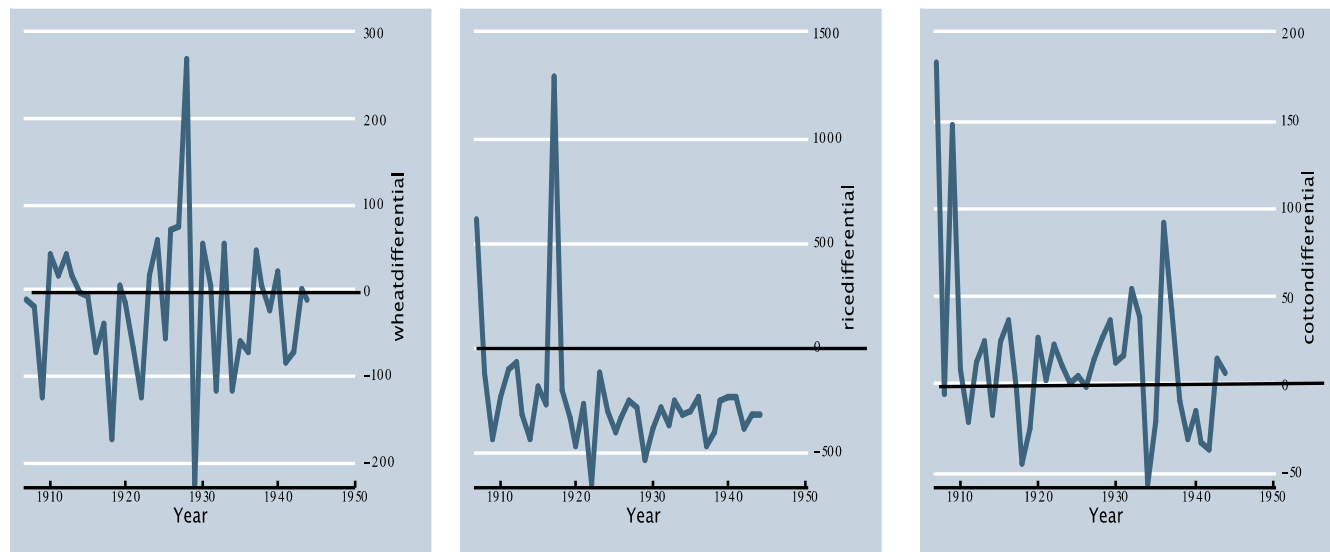
In Figure 3.2, panels (a) to (c) I plot the value of the “yield differential” for each crop from 1900-1947. For every year, the ‘yield differential’ is defined simply as the difference between the yield per hectare for each crop in East and West Punjab. It provides a convenient way of capturing what we are interested in: *comparative* agrarian performance. The value of the yield-differential-trend for any given year t and commodity i , is given by:

$$\text{Yield Differential} = Y_t^i = y_i^{\text{east}} - y_i^{\text{west}}, \text{ for crop } i \text{ at time } t.$$

The graphs have been defined so that whenever the trend takes a positive (negative) value it suggests a comparative advantage for East (West) Punjab in that year. Beneath each graph I report the mean and standard deviation to capture the volatility of the trend. The dark line represents the line of equality/convergence since the differential (by definition) equals zero here. Since the three graphs are not scale parallel this dark line (as opposed to the axis) will be our reference point as the line of zero differential.

Figure 3.2: Yearly Yield Differential (Kilograms Per Hectare) During Colonial Period

Note: Dark lines represents point of equality



a) Yearly Average Wheat Yield

Mean=-18, ST DEV=13.6

b) Yearly Average Rice Yield

Mean=-240, ST DEV=51.8

c) Yearly Average Cotton Yield

Mean=14, ST DEV=7.5

The trends reveal that during the colonial period the ‘comparative advantage’ seems to be oscillating in both directions, despite an overall advantage for West Punjab. This can best be seen by focusing on the ‘turning-points’ of the trend for each crop. The turning points are important because they either show that comparative performances are converging (towards the line of equality), or that an advantage has been turned in the favor of the opposite side. Let us examine these for each crop:

First, consider the differential trend for the wheat crop (3.2-a). We notice that while there is complete parity at the beginning (1900) and the end (1947) of the sample there are many turning points in between. From a point of relative parity in 1900, the west makes significant gains every year in the first two decades. By 1920, the west has almost doubled its initial advantage over the east. This is then suddenly reversed in 1920 after which---albeit oscillations from 1920-1923--- first convergence is established and then the eastern half begins to outperform the west till 1929. Here, the trend reaches its

maxima, where there is a sudden ‘crash’, recovery, and a cyclical oscillation that eventually fizzles out by the time of partition (1947) when parity is restored, again.

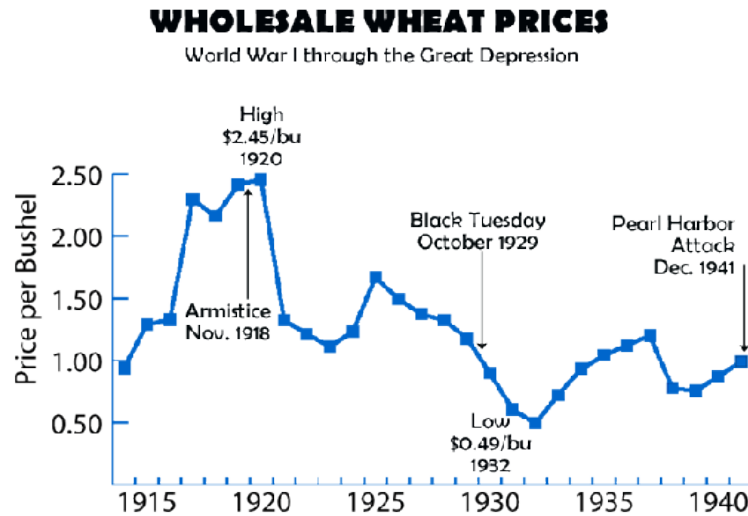
Similarly, for a large number of years during the colonial period, the west consistently outperformed the east in terms of rice productivity (Figure 3.2-b), despite some temporary movements towards convergence in some years. As with the wheat crop, these advantages were accumulated by the western part during the first two decades of the century, from 1900-1920.

Finally, focus on the differential in cotton yields. As we can see, the mean differential (+14) in this case is lower than the other two crops (reflecting, on average more ‘equality’ between the two regions for this crop) as is the standard deviation (reflecting a lower ‘volatility’ in this trend). Yet, there are periods of divergence that merit particular attention. Here too, the two decades from 1900 to 1920 are important as the west improves its position substantially. As with the food crops, from 1920 till about 1933, the East regains, but loses over the subsequent decade to produce parity by 1947.

To summarize the main findings for the colonial period: 1) The period is one of multiple turning points, but on the whole advantageous to West Punjab in terms of food (wheat and rice) productivity; 2) The two decades from 1900-1920 are especially important, where we see accumulating relative advantages for West Punjab in terms of all three crops; 3) From 1937-1947, East Punjab manages to significantly reduce the differential in terms of wheat, and also improves its position in terms of cotton.

The question is: what was going on in the first two decades of the century that could possibly explain the movements in favor of the west? Why did the advantage begin to fizzle out after 1920? These issues will be taken up in Chapter Four, where we connect the story to the peculiar patterns of ‘infrastructural development’ and its impact on internal and external market articulation in each region, before and after 1921. It will be shown that the advantage was accrued due to the greater articulation of the western districts with the export market. In the years leading up to, and during World War I, commodity prices were rising continuously (as shown by figures 3.3 and 3.4) and the western half stood better chances of reaping the gains from rising global prices.

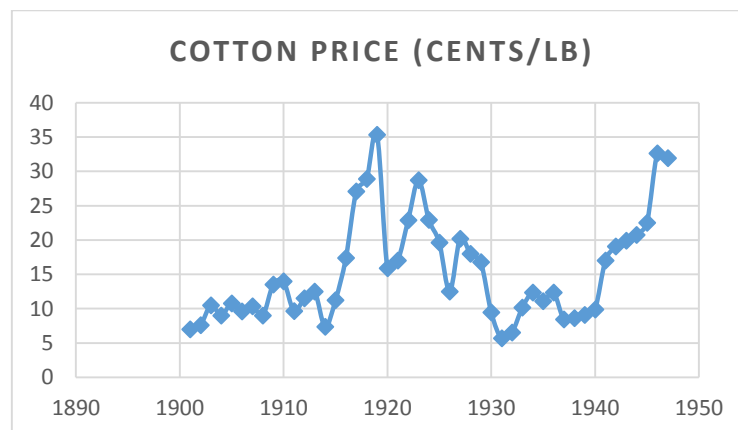
Figure 3.3: Wholesale Wheat Prices in Liverpool (\$/bushel)



Source: u-shistory.com
Original dataset: Price Survey Reports

As we can see, the years leading up to 1920 mark a steady increase in wheat and cotton prices; these reach a global maxima at \$2.45 per bushel for wheat in 1920, at which point they crash, fizzle out, and steadily decline to 1900 levels by 1947 (the year of India's independence). Similarly, as figure 3.4 (below) shows, the trend for cotton prices reaches its maximum value in the same year and follows a similar decline after the crash in 1920. As we can see, the movements in global prices seem to mirror the 'yield-differential' trend in Figure 3.2.

Figure 3.4: Cotton Prices in Liverpool



Source: Liverpool Price Survey Reports

This can also be confirmed by running a simple bivariate regression of the ‘yield differential’ on ‘Liverpool prices’. In Appendix Two, we find a statistically significant ‘negative’ relationship, which implies that a one cent increase in international prices led to a 1.4% improvement in yields in favor of the western half for food, and 1.7% gain for cotton yields, respectively. It seems therefore, that the ‘yield differential’ during the colonial period seems to follow the trends in international commodity prices. A rise in global prices moved the differential in the favor of the west, while a decline brings the trend back towards convergence.

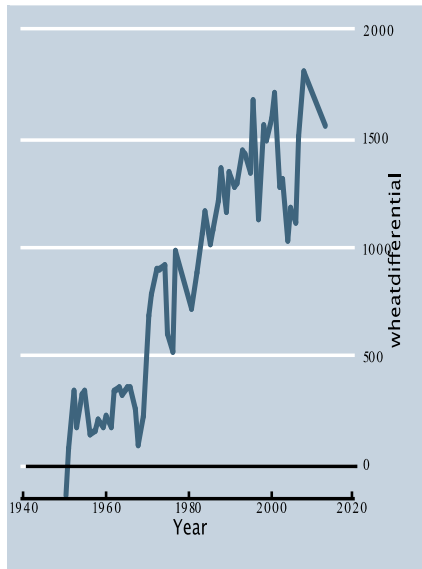
In subsequent chapters, the changes after 1920 will be explained by the set of dislocations brought about in the Indian economy after the First World War. As Bose and Jalal point out:

“The political economy of late colonialism was different in many respects from the ‘classical patterns’ established during its high noon. After the end of the First War the colonial state in New Delhi found it increasingly difficult to service the needs of the metropolis while holding on to vital attributes of Britain’s political and economic dominance in India. Already, the dislocations of the war had provided effective, though not formal, protection to India’s cotton textile industry, an opportunity this industry was quick to seize to the relative detriment of Lancashire. Import-substitution gathered momentum in India, displacing many of the traditional privileges enjoyed by British manufactured products. Lancashire decisively lost out to Bombay and Ahmedabad, whose cotton production outstripped British imports. In 1929 nearly twelve hundred million yards of British cloth had been imported into India; ten years later less than a hundred and fifty million yards of cloth came in.” (Bose and Jalal, 2004; p. 131).

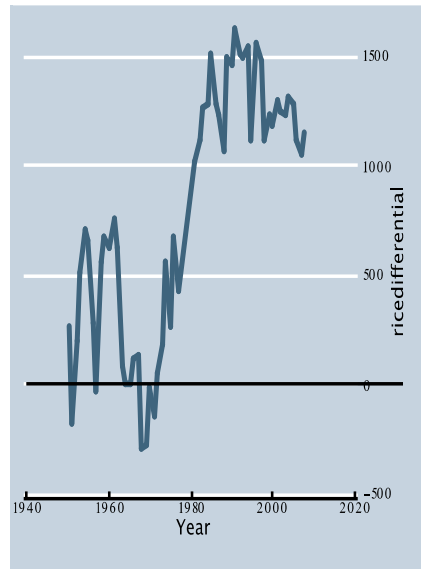
3.4 Comparative Agrarian Performance in the Post-Colonial Period

Let us now use the same empirical instrument---‘yield differential’--- to compare agrarian performance in the two Punjabs in the post-colonial period. A crop-wise analysis, complemented by a mapping of particularly crucial decades will help elucidate this. In Fig. 3.5 we plot the yearly differential trend from 1947 to 2015. As before, the dark line represents the point of equality.

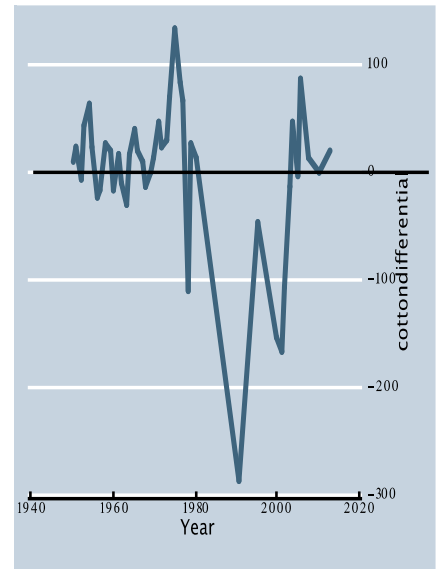
Figure 3.5: Yearly Yield Differential Between Indian and Pakistan Punjab (Kilograms Per Hectare)



a) Yearly Average Wheat Yield
Mean=505, ST DEV=61.4



b) Yearly Average Rice Yield
Mean=143, ST DEV=66



c) Yearly Average Cotton Yield
Mean=7, ST DEV=7

Notice first, an important difference between the ‘yield differential’ trends during the colonial and post-colonial periods: comparing figure 3.2 and figure 3.3 one can see that while the former period exhibits multiple ups and downs and movements towards parity, the latter period shows a clear unidirectional divergence towards the Indian Punjab. Table 3.2 captures the decade-wise evolution of the divergence.

Table 3.2: Decade-Wise Evolution of Yield Differential

Decade	Wheat Differential	Rice Differential	Cotton Differential
1900-1907*	-8.76	-75.31	-7.31
1907-1917	-14.18	-88.2	-20
1917-1927	-21	-333.5	+1.29
1927-1937	-7.95	-333.12	+23.58
1937-1947	-22	-306	-15.12
Average Differential	-18	-240.95	+14.18
1947 PARTITION OF PUNJAB			
1947-1957	+178	+304.46	+13.69
1957-1967	+279.9	+357.88	+9.16
1967-1977	+661.812	+143.02	+44.5
1977-1987	+1024.89	+1245.13	-24.2
1987-1997	+1347.36	+1435.4	-167
1997-2007	+1383.013	+1208.17	-45.29
2007-2015	+1626.6	+1099.4	+10.33

Note: Each value in the table represents the average yield/ha in East Punjab (India) minus the yield/ha for West Punjab (Pakistan) for each decade. A plus sign represents an advantage for Indian Punjab in that decade.

The difference in post-colonial wheat and rice productivity begins to emerge within a few years of independence. The major driving force in this is that the productivity of food crops fell for many years in the Pakistani Punjab after independence while rising simultaneously in the Indian Punjab. For example, in the first decade between 1947 and 1957, wheat productivity fell by 30% in the Pakistani Punjab while rising by approximately the same proportion on the Indian side. In fact, wheat productivity in the Pakistani Punjab only achieved its 1947 levels two decades later in 1967. During the same two decades, wheat productivity in the Indian Punjab grew by 134% over its value at partition. Even before the Green Revolution of the 1960's decade began--- wheat productivity was already 43% higher in the Indian Punjab as compared to Pakistani

Punjab, in 1960. Thus, the first wave of divergence begins in 1947 and ends before the Green Revolution, which was kick-started in 1967.

A second wave of divergence begins during the Green Revolution, which took place on both sides. This is much more intense than the divergence in the first two decades. In 1967, the yield/ha for wheat in the Pakistani and Indian Punjab was 1157 kg/ha and 1250 kg/ha, respectively, giving us a differential of 93 kg/ha. The very next year the two produced 1260 kg/ha and 1492 kg/ha, respectively, increasing the differential by 150% to 232 kg/ha. In the subsequent year the differential increases by 195% to 686 kg/ha and continuously expands throughout the subsequent decades. While the Green Revolution is hailed as a period of intensive yield improvements on both sides, it is clear that it was much more successful in the Indian state as compared to Pakistan.

In contrast, the trend for cotton productivity points to a different story. The lower mean difference (+7) and standard deviation clearly suggests a lower overall differential in yields per unit land for the cash crop. Curiously, the post-colonial difference in yields of cotton are lower than they were during the colonial period (+14). Thus, unlike the food crops, the differential for cotton oscillates very close to the point of perfect equality, confirming the fact that cotton productivity was maintaining parity across the two regions.

The parity, however, displays some interesting ups and downs after 1967. For slightly more than three decades after this year, the Pakistani Punjab steadily *gains* in comparative performance over the Indian Punjab in terms cotton productivity. In the last decade (2005 till about 2015), there has been a movement back towards convergence in cotton production, owing primarily to the introduction of the genetically engineered Bt cotton variety in the region (Sabir, 2011).

To summarize the main insights derived from an analysis of the post-colonial period: 1) The first wave of divergence in food productivity begins soon after independence and lasts till 1967, 2) The second wave---a period of intensive divergence--in food production begins in 1967 and lasts till the present 3) Cotton productivities, while equal on the whole, favor West Punjab during the same period (i.e. after 1967).

3.5 Implications for the Puzzle

The chapter conducted a comparative examination of agricultural productivities for the three major crops. It furnished a number of clues to understanding the problem of comparative agrarian development in the two Punjabs. Five important questions emanate from the foregoing analysis. Firstly, why was there a reversal of fortunes in food production? Second, why do rising international prices favor the west during the colonial period? Third, what accounts for the unidirectional movement in favor of Indian Punjab after independence? Fourth, why did the divergence begin so soon, within the first decade of partition? Finally, why is cotton production unhindered by the overall divergence in agrarian performance?

The next section begins to develop an explanation for the trends identified here. As we will see, these have to do with two ‘two critical junctures’ in the historical development of the Punjab economy: 1860, the American Civil War, and 1947, the independence and formation of two new states. The trends during the colonial period are explained by the patterns of infrastructural development---canal-irrigation and railway-port connections---that took place in each sub-region after the Civil War. Agrarian commodity production emanating from the west became relatively more articulated with (and hence dependent on) demand in the metropolis, and hence global prices. This will also explain the ‘peculiarity of cotton’, which played an integral role in the British Empire (Chapter Four).

The second juncture (the post-colonial period), which is examined in Section III (Chapter Six and Seven) will focus on the political and economic underpinnings of post-colonial agrarian policy, in each Punjab. This will reveal why it was in the interest of both the landlords and the military to maintain and promote cotton production in Pakistan (as the major source of ‘export-revenues’ which were used to finance the military arsenal) as in the colonial period. In contrast, on the Indian side, the demands made on Punjab by the center included most notably a promotion of ‘food’ production. This was triggered via a series of reforms pertaining to ‘land-ceilings’, ‘security of tenure’, and ‘consolidation of holdings’ on the Indian side, which led to the greater productivity of food crops on the Indian side.

SECTION II

INFRASTRUCTURAL DEVELOPMENT AND

INSTITUTIONAL FORMATIONS IN COLONIAL PUNJAB

CHAPTER 4

POLITICAL ECONOMY OF INFRASTRUCTURAL DEVELOPMENT IN COLONIAL PUNJAB

4.1 Introduction

In the last chapter we compared trends in agricultural productivity from 1900 to 2015 in the two sub-regions that would later become Indian and Pakistani Punjab. We noticed a number of peculiarities in these trends, for each period. The colonial period was on the whole advantageous to the western part of Punjab and these advantages seem to have been accrued in the years of rising global commodity prices (1900-1920), suggesting a greater export-sensitive demand in the west as compared to the east. We also saw that these initial advantages fizzled out after independence, leading to economic divergence between the two sides, over time. What set of factors account for the patterns in the two periods?

This chapter begins to build a political economic explanation for these trends by examining the historical roots, economic objectives, and patterns of infrastructural development in colonial Punjab from the start of the American Civil War in 1861, till the end of World War I, in 1919. A historical analysis of infrastructural development is linked to the overall story for three reasons: First, it reveals how agrarian production in the two sides became articulated with different destination markets, over time. The distinction between two kinds of commodity-production regimes---for the internal versus the export market--- is important as it leads to the emergence of different kinds of native political and economic interests, during and after the colonial period. Second, the historical account will also be useful as it explains the differential infrastructural development between the two sides, which can then explain the differential productivity between west and east Punjab discussed in the previous chapter, with the former having a higher level than the latter through most of the colonial period. Third, as we will see in the next chapter, the political economy of infrastructural development also explains the

development of institutional forms in agrarian Punjab. This will then motivate the study, in Section III, to explain how the initial advantage of the west was lost after independence, as it came at the cost of an extractive and unequal political and economic ‘institutional structure’ that would inhibit the post-colonial development prospects of the western half, after partition.

Keeping these objectives in mind the chapter does three things: In 4.2, it traces the historical roots of infrastructural development in colonial Punjab in the light of new economic history frameworks, presented by Beckert (2014), Austin (1997a, 2000, 2010), and Cypher (1998). The former examines the early history of capitalism from the perspective of its central commodity, cotton, and the set of changes brought about in its supply chain in the aftermath of a global economic shock—the American Civil War. The latter set of studies examine the broader theoretical aspects of colonial infrastructural development by comparing various peripheral economies, particularly in Africa. These frameworks distinguish between ‘infrastructural development’ in “settler-colonies” versus “peasant-economies”, to show how issues pertaining to the ‘politics’, and ‘financing’ of infrastructural projects varied in each case, and the differential impact that it had, in turn, on market formations in the colonies.³⁰

Next, given these historical frameworks, we then explain the economic and political logic of infrastructural development in Punjab, and its variation across the two halves, in Section 4.3. We see how---as in the African case--- the issues of financing were resolved through “native-taxation” (an expansion in land revenue), how railways were preferentially treated at the expense of roads, and how the patterns of railway and canal development were all geared towards connecting the economy ‘externally’ via ports. We

³⁰ These frameworks therefore provide an alternative explanation to AJR (2002) for why the “settler” versus “non-settler” distinction may have an impact on comparative development, by pointing towards a different channel: the differences in the kinds of “infrastructural development” that was pursued in the two kinds of colonies.

use colonial archival data and maps to capture the sub-regional variation from one part to another in terms of railway and canal development.

Finally, in Section 4.4, we explore the impact of the patterns of infrastructural development on the articulation of agrarian commodity production in the two sub-regions with internal and external markets, over time. Using archival data on the *Internal Trade of Punjab by River and Rail*, we capture the evolution of agrarian commodity-flows in Punjab. The analysis reveals that the eastern and western sub-regions of Punjab, over time, became connected with different markets. The western half saw the rise of export-centric production, while the eastern part gradually became articulated with the home market, with the embryonic forms of domestic manufacturing in other parts of India. The impact of the process on institutional formations is explored in the next chapter.

4.2 Historical Background: Global Transformation and the Role of Punjab

4.2.1 An Empire in Crisis

In a recently published historical account of the rise of global capitalism in the late 19th century, Beckert (2014) presents a new historical framework to understand the changes in the European capitalist ‘empire’ before and after the American Civil War of 1861. He argues that the ‘modern world’ was born out of the set of contradictions that emerged in the immediate aftermath of the Civil War, as the advanced capitalist economies of Europe reimagined and reshaped the role of their ‘colonies and possessions’ in the capitalist empire, while adjusting to the new global political and economic situation.

Beckert’s framework is simple. He argues that the empire and the results of its interventions can best be understood by focusing on its central commodity, cotton, and the political economy of its production, appropriation, and transport. This claim follows from the fact that the empire was literally, in his words, an “empire of cotton”. For nine hundred years (from 1000 to 1900 AD) cotton manufacturing was the primary capitalist industry in the world. “20 million people worldwide---one out of every sixty-five people alive---were involved in the cultivation of cotton or the production of cotton cloth”. (Beckert, 2014; p. 243) Thus, any changes in the networks of cotton production,

appropriation, distribution, and consumption, would produce a domino effect everywhere, leading to massive changes in the global economic order.

The focus on cotton and its “very concrete and often brute development casts doubt on several explanations (about early capitalist development) that all or many observers tend to take for granted” (Ibid). These have implications for some of the usual ideas presented by scholars in the ‘divergence debates’ as well. In traditional narratives, “Europe’s explosive economic development can be explained by European’s more rational religious beliefs, their Enlightenment traditions, the climate in which they live, the continent’s geography, or benign institutions such as the Bank of England or the rule of law.” (ibid, 25) For example, Acemoglu et al (2002) argue that the secret to the success of “settler colonies” versus “extractive colonies” lies in the development of ‘European styled property-rights’ in the former; the fact that European styled property regimes were everywhere, in settler as well as non-settler colonies, installed via bodily coercion and violence is completely invisible in the analysis.

In contrast to these usual narratives that extol capitalism’s commitment to ‘free labor’, ‘contracts’, ‘markets’, and ‘well defined property rights’--- Beckert’s historical study makes institutions pertaining to ‘bodily coercion’, ‘plunder’, and the project of ‘reshaping geographies and societies’ to meet the needs of capitalists in the metropolis, central to the analysis. He focuses on the role played in colonial state formation by the metropolitan textile manufacturers (Ibid, pg. 243-245).

While most Institutionalists today (encountered in Chapter Two) privilege capitalism’s commitment to property-rights, they display a strange amnesia for the “earlier moment” that “was characterized by massive expropriations” of property and people across the globe (Ibid, 223). Similarly, the assumption that capitalism rests upon the rule of law and private enterprise, breaks down when one appreciates the historical role that was played by colonial “*state* power to create world-spanning empires”. A focus on the political economy of cotton---and the violence associated with its procurement--- makes these issues central to the discussion: “This fluffy white fiber”, writes Beckert, “does not make history, but if we listen carefully, it will tell us of people all over the world who spent their lives with cotton”. (Beckert, 2014: pg. xii)

The ‘empire of cotton’ was, from day one, cursed by the following dilemma: the fiber is nowhere to be found or grown on the European continent. Consequently, from its very inception, British textile industry relied heavily for its supply of raw cotton on other places. This however was difficult to achieve ‘voluntarily’ for two reasons. Firstly, the difficulty of the concrete labor of picking cotton made it extremely difficult to make people do the work ‘voluntarily’. The first solution to this problem was found in slavery. Throughout much of the pre-War period, for nearly a century, the production and trade of the key input of raw cotton was secured through slave-trade and plantations from the American South.

Second, while cotton was traditionally grown in various parts of the world (including India) for thousands of years, most or all of this production was done for personal consumption. The networks of transportation that were necessary for commodity production simply did not exist. While the British had contemplated the use of Punjab as a feeder of raw-materials as early as the 1850’s, no serious attempts were made. Colonial administrators deemed the “the costs of execution in infrastructural development” to be too high, and unreasonable, given the availability of cheaper alternatives via the slave-plantations of the American South. (Logan, 1958: p. 23)

But as early as the 1850’s, cotton interests in Liverpool had been lobbying with the British state to find “alternatives in the case of a war in the Confederacy” (*Liverpool Mercury Journal*, 1853). The British finance minister, Samuel Laing, candidly explained that “the question of the abolition of slavery over the world, depends probably on the question whether cotton produced by free labor in India can undersell the cotton produced by slavery in America” (“The Cotton Question”, *Merchants’ Magazine and Commercial Review*; 45; October, 1861)

One representative of the colonial state had to assuage the representatives of the *Manchester Cotton Supply Association* by reminding them that “foreign places were governed by their own political states, which would either be unwilling to voluntarily concede to our demands”, or would at the very least “demand their own share in the economic pie”. It would be necessary ‘eventually’, but “inexpedient at this stage” to

challenge the political sovereignty of these states in order to gain access to the ‘white gold’ (*Cotton Supply Reporter*, June 15, 1861)

Thus, the colonial state understood that the only way that peripheral lands could be made to supply ‘commodified’ cotton was to first negate their political sovereignty, and then to “reshape” their geographies and societies so they could produce, and effectively supply raw material to capitalist industry in Europe. The former required ‘war’ while the latter required ‘infrastructural transformation’. Both things would require active intervention and state expenditures from the Treasury.

Thus, the capitalist empire during the late 19th century was carved through, what Beckert calls “war capitalism”. This kind of capitalism was forced to operate through one of two ways and both methods required the “forceful domination” of either: 1) “Masters over slaves”, or 2) “Frontier capitalists over indigenous inhabitants” (Beckert, 2014; p. 243).

Till the 1860’s the former method prevailed, as the empire was heavily reliant on the Southern states of the United States. A year before the outbreak of the American Civil War in 1860 cotton grown in the American South accounted for “77 percent of the 800 million pounds of cotton consumed in Britain”, “90 percent of the 192 million pounds used in France, and “92 percent of the 102 million pounds manufactured in Russia”(Ibid, 24).

Put simply, at the start of the Civil War the American South was central to the supply chain of the global cotton empire and as a result, the entire Atlantic world. Merchants, capitalists, statesmen, everyone seemed to be connected in one or another with the cotton business.³¹

³¹ Quite aptly, the poet John Greenleaf Whittier described cotton as the “Hashish of the West” while comparing the hallucinogen ‘of the east’ with the cotton fiber:

Such scenes that Eastern plant awakes;

4.2.2 Reshaping the Empire

The empire received a jolt on April 12, 1861 as the Confederate army launched an attack on the Fort Sumter garrison in South Carolina. The reverberations of this seemingly localized event were felt all across the world. The Civil War “severed in one stroke the relationships that had underpinned the worldwide web of cotton production and global capitalism since the 1780’s” leading to an economic crisis that would prove midwife to the “birth of the modern world” (Ibid; p. 246).

In the two years from 1860 to 1862, cotton exports had fallen from 3.8 million bales to zero (Ibid, p. 247). The ensuing crisis, which has been described as the “first raw materials crisis” in economic history (Isaacman and Roberts, 1995) had catastrophic effects. As imports from the United States began to fall, textile mills in Britain began shutting down. Within nine months of the start of the war, six percent of the manufacturers in Lancashire had shut down their businesses while seventy percent of them had reduced their working days (Ibid). In two years, i.e. by 1863, “a quarter of the inhabitants of Lancashire---more than half a million individuals---were out of work” (Ibid). The effects of the crisis were felt not just by British industry but industrial interests all across Europe and in each case the European power in question devised a somewhat similar response. As panic began to set in, textile manufacturing groups, in cohort with mercantile interests started making frantic appeals to their respective governments. “What are we to do”, asked the editors of the *Liverpool Mercury*, “if this most precarious supply of cotton should fail us?”

But we have one ordained to beat it;
The Haschisch of the West, which makes
Or fool or knave of all who eat it.

The preacher eats, and straight appears
His Bible in a new translation;
Its angels negro overseers,
And Heaven itself a snug plantation!

The answer was to be found in reshaping each empire. New supply chains had to be designed, which required new global networks of labor, capital, and state power. “The reconstruction of the empire of cotton”, at its core, “required the diligent effort of cotton industrialists, merchants, landowners, and state bureaucrats to sanction legal---and often illegal---coercion to make rural farmers into the cultivators and eventually consumers of commodities” (Ibid, 279). Coercive institutional forms were necessary, as “agricultural wages were too low and too insecure to entice rural cultivators to give up subsistence production” (Ibid). The colonial authorities ideologically thought of themselves as “revolutionizing the countryside” (Calvert, 1928; Darling, 1907), “by spreading capitalist social relations” including credit, private ownership in land, and contract law.

Earlier forms of global trade were premised on an exchange of goods produced in distinctly non-capitalist ways. But the post-Civil War period saw the emergence of a new paradigm: “Now the wealth and coercive might of globalizing entrepreneurs and imperial state was transforming the *production* regimes of people around the globe by commodifying both their labor and their land” (Ibid, 280).

4.2.3 Punjab: A New Economic Frontier

The annexation of Punjab, which started in 1806, was completed in 1849 with the defeat of the Sikh Confederation. Throughout most of the earlier period, Punjab had been important to the British state primarily for strategic reasons. Its geographic location provided a buffer zone between the western frontiers, in particular against threats from Tsarist Russia, and the rest of British India. It had never been a major source of land-revenue, raw-material, or labor till 1860. The American Civil War was about to change this role permanently.

Predicting the upcoming ‘cotton panic’ in the years leading up to the War, a number of surveys were sponsored by textile manufacturers in England to discover new avenues for securing an input supply chain. Two areas, Egypt (around the Nile delta) and

Punjab (the alluvial soils of its ‘central’ and ‘western’ belts) immediately emerged as suitable, potential candidates for this purpose on the colonial map (Logan, 1958: 472).³²

As Logan (1958) points out, “India was to become Britain’s substitute for cotton”. Although the initial impetus to the development of the new colonial policy was driven by cotton-interests, once the policy was emplaced, it led to the commoditization of other agricultural goods as well, in particular wheat. Wheat could be sold in Liverpool without ever looking at it, owing to its neat classification system, which allowed grades to be given to every batch (Calvert 1928). By the end of 1872, in addition to the export of cotton, wheat had also acquired a lot of importance for exporters, speculators, and merchants. In fact, in some years the “export of wheat overtook the value received from cotton production” and helped defray the costs incurred in the building of mega infrastructural projects (Ibid). Thus, while the process of converting subsistence-based agricultural production into export-oriented production was kick-started in the sphere of cotton production, once institutionalized, it spilled over to other agrarian commodities as well. We will return to ‘wheat’ when we examine internal and external trade flows and market formations in Section 4.4.

The initial constraint, however, was that the preexisting economy was simply not geared towards *market*-oriented production, let alone, export-oriented production. As a result, a number of infrastructural transformations were necessary in order to make export oriented commodity production feasible. The total supply of exportable-commodities had to be increased which could be done in two ways: 1) Improving the transport mechanisms for reaching the market, as many agricultural commodities are perishable; 2) Increasing the cultivable area and ensuring that the increased area is devoted to exportable commodities.

With these aims in mind the Viceroy declared, in a report addressed to the government: ‘England is calling aloud for the cotton which India does already produce in

³² India-Britain’s Substitute for American Cotton, 1861-65, Journal of Southern History

some degree, and would produce sufficient in quality, and plentiful in quantity if only there were provided fitting means of conveyance for it'. (GOI, 1863: 115) He continued that "the main consideration which should determine the selection of the railway network must be the extent of *political* and *commercial* advantages which it is calculated to afford" (Ibid, emphasis added).

The notable historian, Talbot (1988) explains how the entire process of Punjab's infrastructural development was governed by the contradictory aims of economic "transformation" on the one hand, and the maintenance of "political order" on the other. He shows how this contradiction displayed itself firstly, in the ownership and transfer of land, secondly, in agrarian development and social engineering, and thirdly, in the introduction of 'customary law'. The British government faced the stiff task of reconciling the economic objective of maximizing the rents that could be extracted from places where canals had been built on the one hand, and the political constraint of 'security' of rents. The latter was to be achieved by entrusting authority in areas with infrastructural investments to the "traditional allies": the agrarian elite. We return to these contradictions to show how they are connected to the kinds of 'institutional formations' and 'system of rights' that emerged in colonial Punjab, in the next chapter.

4.3 Patterns of Infrastructural Development in Punjab

4.3.1 Colonial Infrastructural Development: General Theoretical Considerations

A number of scholars have pointed towards the export-centric nature of colonial infrastructural development and its impact on 'monoculture' agricultural systems throughout the peripheral world. In a series of articles, Austin (1996a, 1997, 2010) conducts an authoritative examination of the imperatives of colonial infrastructural development in various parts of Africa. He explores not only the financing of these projects but also presents a framework to differentiate between success stories and failures. The distinction between what Austin terms the "peasant economies" versus the "settler colonies" (like South Africa) is central to his account, as he argues that these were exposed to infrastructural development, in uniquely different ways.

Hopkins (1973) and Cypher (2008) examine the question from a slightly different angle. The former looks at the fiscal perspective and explores the differences between the *financing* of projects in ‘settler’ versus ‘non-settler colonies’. The latter shows how “huge outlays, often supported with forced labor, were necessary to build an infrastructure of highways, irrigation, control systems, communication systems, and railways in the colonies” (Cypher, 2008, p. 37). In the context of India, Bagchi (1975) and Debdas Banerjee (1999)³³ are authoritative accounts that examine the process of colonial infrastructural development and its relationship with dependent trade.

Although there is deep heterogeneity across different regions and countries, some general considerations can nonetheless be derived from this literature about the project of infrastructural development in the colonies.

The project was constrained by three distinct set of factors: a) the financing of the projects, i.e. the fiscal aspect, determines to a great deal the *political, legal, and institutional* framework designed in the colony b) the efficient ‘marketing’ and ‘transport’ of the agricultural goods that are produced for the metropolis is key to the *patterns* of infrastructural development; while these were different for every region and country, the general principle seems to have been port connectivity; c) the forms of political control that would achieve the objectives in the *least cost way* prevailed in the final analysis. The manner in which these three concerns were addressed determine the impact of infrastructural development on the political economy.

Let us briefly review how different scholars have treated the aforementioned constraints on infrastructural development in other colonies before moving on to explain the patterns in Punjab:

4.3.2 Colonial Infrastructural Policy in Africa

The classical case, and best-researched, is that of Africa. Like India, there is enormous

³³ Colonialism in Action: Trade, Development, and Dependence in Late Colonial India

heterogeneity of colonial experiences within Africa. The heterogeneity seems to stem not only from the geographic differences of the areas, but also the specific alignment of political and economic interests in the export of agrarian commodities in each case. Austin (2010) shows that by the “eve of the European partition of the continent, Africa had already revealed an emerging comparative advantage in export agriculture.” He examines the case of Ghana, Kenya, Côte d’Ivoire, and South Africa to show how resources were mobilized by the colonial regime in each case to finance the infrastructural projects and develop transportation networks to expand exports.

In each case the relative success of the process depended on a number of factors: “In West Africa in particular”, Austin argues, the process was much more successful since it was in the joint interests of the population, European merchants and the colonial administrations to further it” (Ibid). In Ghana, Kenya, and South Africa a slightly different model was implemented. In Ghana for example, “British planters were initially allowed to enter to grow cocoa beans” to improve the export market. However, they lacked the “discriminatory support” that their countrymen enjoyed in South Africa and Kenya, and as a result “failed in commercial competition with African producers” (Austin, 1996a).

In Ghana and Nigeria, colonial export policy was very successful where colonial authorities relied on the efforts of “African small capitalists and peasants in the growing and local marketing of export crops”. These efforts paid off with “more than 20-fold increases in the real value of foreign trade between 1897 and 1960” from what would later become Ghana and Nigeria (Austin 2008a, p. 612), “benefiting British commercial interests as well as (via customs duties) the colonial treasury” (Ibid).

The primary interest of the colonial administration in the “peasant economies” (as opposed to the “settler-colonies”) was to expand the “exploitation of these economies’ comparative advantage in export agriculture” (Austin, 2010; p. 33). In the settler-colonies a part of the reason for engaging in infrastructural development was to “support the protectorates and generating jobs for the local merchants and landlords”, i.e. the European population. This was achieved through investments in infrastructure, in particular, “transport” infrastructure (Austin, 2007).

A second difference between “settler” and “peasant” economies was in the financing of the projects. In the latter case, colonial infrastructural “development” was intended to be cheap for taxpayers in Europe. The British state had promised its citizens that each peasant colony “should be fiscally self-supporting” (Hopkins, 1973). Thus, “any growth in government expenditure was supposed to be financed from higher revenues” from within the colony. This was not just restricted to productive infrastructure, like railways and canals. It was also true for public education and health; as an example, consider “the case in Ghana in the 1920s when Governor Guggisberg was able to fund the creation of what became the country’s best-known hospital and school, as well as a new harbor and more railways and roads, from customs proceeds that had been fueled by the colony’s increasing exports of cocoa beans.” (Austin, 2012. p. 53).

As Hopkins (1973) shows for the case of West Africa, the French were equally concerned about “balanced budgets” with the colonies. “In French West Africa too there was a major program of public works in the 1920s, although, as also in Ghana, within a few years expenditure had to be curtailed when export prices fell and the growth of revenue ended” (Hopkins 1973, p. 190). In each case, the investments on public goods were contingent upon the finding of new avenues of “Native-financing”.

Another contribution, by Cypher (1999) looks at the “logic” of colonial infrastructural development to explain its patterns. He explains that this “lacked a developmental rationality for the colonies themselves” since the purpose of “colonial infrastructure was to facilitate the movement of products to Europe” (Cypher, 1999; p. 89). The most prominent example of this is the privileged development of railways over roads. Infrastructure was not laid down to “facilitate the internal trade in African commodities. There were no roads connecting different colonies and different parts of the same colony in a manner that made sense with regard to Africa’s needs and development. All roads and railways led down to the sea”. (Ibid)

4.3.2 Colonial Infrastructural Development in Punjab

An analysis of colonial archival records confirms the “peasant-economy” aspects in the context of Punjab. “Native-financing” of infrastructural projects was the rule. The projects were financed through increased land-revenue taxation, which would require

surplus labor extractions from the peasants. Like the African case, the patterns in Punjab also reflect an export-oriented “colonial logic”, leading to the expansion of railways and canals at the expense of roads.

In this case, however, the “peasant-economy” was intermediated by the rule of those classified as “Natives” in ‘customary’ law³⁴. This distinction, and intermediation would have an impact on the politics of infrastructural development in the region. Indeed, the British colonial administrator M.R Darling in his magnum opus “*The Punjab Peasant in Prosperity and Debt*”, referring to Punjab as “our Prussia”, explained how a class of “rich capitalist farmers, loyal to the Majesty”, would propel the infrastructural transformation of the province (Darling, 1901; p. 175).

Table 4.1 gives information on the mileage of railways, canals, and roads, and also reports the land-revenue collections from Punjab, every year from 1870 to 1922. We see that in the five decades, railway mileage expanded exponentially, growing by approximately 1000 percentage points. Similarly, canal infrastructure witnessed nearly a 10-fold increase in mileage during this period. In comparison, the increase in road mileage was minimal, approximately 180% for the fifty years.

Table 4.1: Infrastructural Development in Punjab: 1872-1922

Year	Railway Mileage	Canal Mileage	Roads Mileage	Cultivated Area (Million acres)	Land Revenue* (Lakh Rs.)
1872	410	2744	1036	18.8	201
1882	600	4583	1467	29.4	306
1892	1725	12368	2142	36.7	423
1902	2025	16893	2268	26.8	630
1912	4000	16935	2614	29	1060
1922	4441	19664	2938	30	1400

Source: Compiled from Calvin (1924) and Census of India Punjab Report (1931)

*1900 as base year to control for inflation.

³⁴ We take this up in greater detail in the next chapter.

As in the African case, the development of railways was privileged over roads because the former improved the connections with the port from where commodities were shipped to the metropolis, while the latter improved market connectivity with nascent forms of domestic manufacturing, which were often seen as ‘competing’ with the former. The colonial logic of infrastructural development produced the paradoxical result in Punjab, as noted by the colonial administrator Calvert (1924), that in terms of transit costs, “5000 miles by sea may be less of an impediment to trade than 300 miles within the country” (Calvert: 1924). Export markets, at least for some producing zones in Punjab, were *cheaper* to access than internal markets a few miles away.

In colonial narrative this was justified by making pleas to “farmer interests”. For example, in a report that explores the causes of famine in a year where productions had hit a ‘bumper crop’, one colonial servant candidly retorted: “Why does the farmer produce? To make money. If it is more profitable to sell in Lancashire as compared to the transport cost to Amritsar, why should he be obliged to bear the weight of the rest of society?” (Calvert, 1924) The fact that ‘costs’ were functional to the patterns of infrastructural development, which in turn followed the “colonial logic”, does not enter the inquiry report.

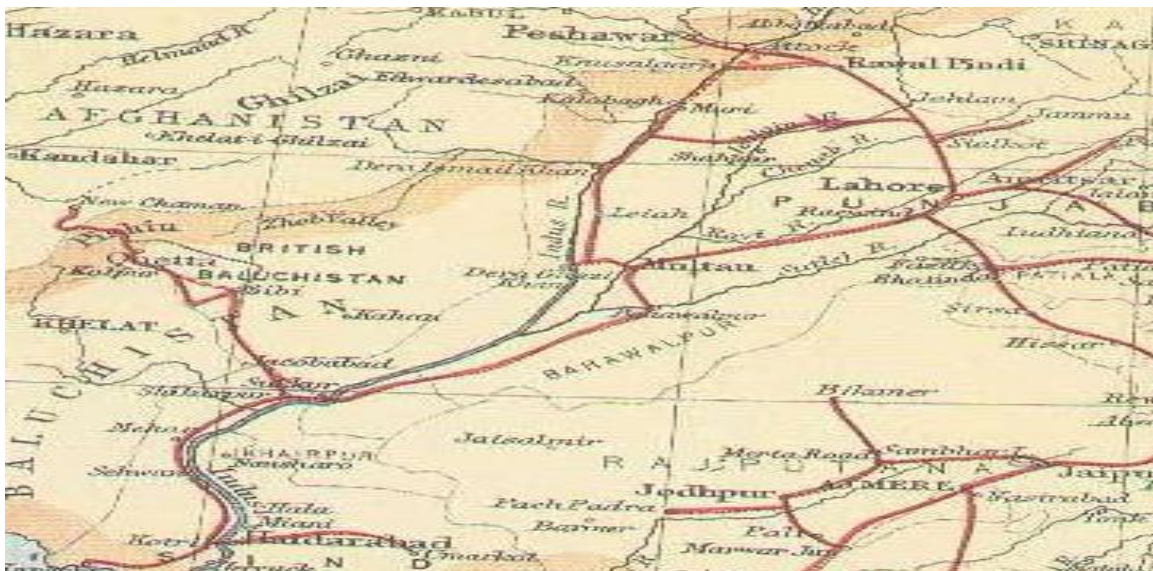
Table 4.1 also captures the ‘fiscal’ aspect of the equation. The main fiscal instrument for “Native-financing” in Punjab was land-revenue. Land revenue was a kind of a tax on land that varied with agricultural yields (defined as ‘net assets’ after defraying of costs according to the *Land Revenue Report, 1931*). In Chapter Five, we examine the associated institutional mechanisms that were used to extract the revenue in greater detail. It suffices to say over here that an expansion in land-revenue during the period from 1872 to 1922 was central to the financing of the infrastructural development of Punjab. As table 4.1 shows, the land revenue extracted from the region increased seven-fold, in real terms, during the fifty years. The cultivated area, during the same period, increased by 60%, reflecting a major increase in the land revenue collected per acre of cultivated area. Estimates from Calvert (1924) reveal that while there were some projects (particularly in the eastern belt) that were “unsuccessful” (in the sense that they did not generate enough revenues through land revenues as well as customs) in general---as the colonial

administrator triumphantly declared--- “the development of railways and canals has been very lucrative for us”, with an “average rate of annual return hovering around 45%, even after accounting for all the losses” (Calvert, 1924; p. 224)

4.3.3 Patterns of Railways in Punjab

Punjab is a completely landlocked region. Prior to British colonization, most of the international trade of the Sikh Confederation was restricted to Afghanistan and Central Asia, while the exports to the nearest trade ports, namely Karachi and Bombay, were practically negligible. (Calvert 1924; p. 52) In order to expand the exports of the region, the colonial state had to create a spatial network of railway lines to connect the province with Karachi, the nearest trading-port in Sindh. Railway lines were laid by private companies at a “guaranteed system” of profits; each company was ‘guaranteed’ a 30% rate of return, ‘regardless’ of the outcome by the British state.³⁵

Figure 4.1 Punjab Railway System



Source: Census of India, Punjab report 1921

³⁵ This led, on some occasions, to contradictions between these companies and colonial authorities; some of these debates have been documented by the imperialist historian Sir Moon Penderel in “The British Dominion and Conquest of India” (republished in 1989)

The first railway lines were opened in 1861 from Amritsar to Lahore and the ones connecting Lahore to Multan (North-South) were established in 1865. Multan was connected to Karachi via boats run by *Indus Flotilla*, a steamship company established in 1860 that was responsible for the navigation of vessels along the Indus River. The company was to develop these navigation systems in close connection with the development of the railways in Punjab. (*Census of India, Punjab report, 1921*)

The patterns of development of the railroad network (Fig 4.1) took place in the form of three 'Main Lines', with each main line then being connected to a number of branches and sub-branches.

During the first three decades of their development the spatial network was such that it connected districts in the eastern half of the province with a main 'dry port' in West Punjab, from where the railway lines go in a southward direction towards the port in Karachi. To see this, consider the fact that the main line connecting 'South to Lahore' in the Western hemisphere was opened in 1870 the branches connecting Punjab with the rest of India in an East-West direction did not become operational till 1911.

Thus, for a good five decades, the western half of the Punjab province was primarily connected with the trade port in Karachi and the eastern half was also---albeit much less so---connected with the same trading port. But as soon as the first lines connecting the eastern Punjab with the rest of India were opened, the eastern half increasingly became articulated with the domestic market. We will return to this, shortly.

Figure 4.1 shows the railway lines system of Punjab as it stood in 1921, that is, at the end of the period of major infrastructural development. The main line enters Punjab from Karachi (the nearest port) in the South. From here, the network expands in a fan-shape to serve the Western hemisphere with a 'triangle based on Cambellpur (now known as Attock, Pakistan) and Ferozpur with its apex at Samasata' in Bahawalpur (a princely state at the time, now in Pakistan). (*Punjab Census Report, 1921, p. 15*) There are three branches, with a number of sub-branches, that connect the apex with various districts in the Western hemisphere in a North-South direction while there is just one that expands

out from the apex towards the Eastern hemisphere that later became a part of Indian Punjab. The distribution of railway lines, especially in the Western hemisphere, clearly shows the North-South bias inherent in its development, and completely ‘lacks railway communication in the transverse direction’. (Ibid)

The only West-East rail that connected the two hemispheres till 1911 ran from Lahore to Delhi, and that too, had very few ‘branches’. Thus, the implication of the railway system was that a supplier of agrarian commodities in the eastern hemisphere who wanted to sell his products in the export market via Karachi port would have to first transport his goods from his eastern district to Lahore in the western part via roads, and from there onwards to Karachi port via rail. The bulk of the “external trade of Punjab passed down the North Western main line to Karachi” (Ibid, 16).

As a result, “farmers in the old (i.e. eastern, explanation not in original) districts faced, on average, higher costs of selling in the export market” (Calvin, 1928). The only reason why they continued to sell for export was due to the “lack of alternatives in the Indian market” (Ibid). This was to change radically after 1911, and the opening up of new lines which connected eastern Punjab with the rest of the Indian market (i.e. east of Punjab).

4.3.4 Development of Canal Infrastructure

Another major dimension of infrastructural development in Punjab was the setting up of a mega canal-irrigation network. This was consolidated in the formerly uncultivated lands in the central part of Punjab which are known, quite aptly, as the “canal colonies”. Unlike the rest of the Punjab (to the east and west of the canal colonies), these districts were actively engineered by the state in the dual sense that: a) labor was imported into these canal colonies as tenants from all across India, often under the promise that land ownership titles would be transferred to their descendants after 100 years; b) capitalists and “landowners” had to be imported from East Punjab; these, the British colonial regime believed would become the “class of efficient”, “Prussian-styled”, rich “capitalist farmers” that would be “loyal to the British regime” (Calvert, 1924). Ali (1988) conducts a detailed investigation into the historical development of the canal colonies in Punjab. He argues that the process represents the “greatest feat of human engineering” in

recorded agricultural history, where human agency traversed nature to permanently alter and mold geography.

What is central to our concern, however, is not their engineering achievements but rather the spatial distribution of these projects across the two Punjabs. This can be captured through two ways. First, by looking at the district-wise distribution of canal irrigation mileage and secondly, by asking which sub-regions saw the greatest expansion in “cultivated area” as a result of improvements in canal-irrigation. An empirical investigation via both methods confirms that state sponsored canal infrastructural development was heavily consolidated in West Punjab; that is, districts from which later Pakistani Punjab would be carved out in 1947 (table 4.2).

Table 4.2: Percentage of Matured Crops Irrigated by Source and Location

District	% of Matured Crops that are Irrigated By			District Location
	Canals	Wells	Total	
Lyallpur	97	1	98	West Punjab
Montgomery	64	23	87	West Punjab
Multan	73	14	87	West Punjab
Jhang	58	28	86	West Punjab
Lahore	56	22	78	West Punjab
Muzaffargarh	53	24	77	West Punjab
Gujranwala	55	21	76	West Punjab
Shahpur	64	11	75	West Punjab
Amritsar	40	30	70	East Punjab
Jullundur	0	54	54	East Punjab
Sialkot	48	5	53	West Punjab
Ferozepur	32	14	46	East Punjab
D.G Khan	32	11	43	West Punjab
Ludhiana	9	28	37	East Punjab
Karnal	22	14	36	East Punjab
Gujrat	21	15	36	West Punjab
Gurdaspur	11	17	28	East Punjab
Rohtak	19	8	27	East Punjab
Kangra	26	0	26	East Punjab
Gurgaon	6	11	17	East Punjab
Hissar	15	1	16	East Punjab
Mianwali	5	7	12	West Punjab
Hoshiarpur	2	9	11	East Punjab
Attock	1	8	9	West Punjab
Ambala	0	6	6	East Punjab
Jhelum	0	5	5	West Punjab
Rawalpindi	0	2	2	West Punjab

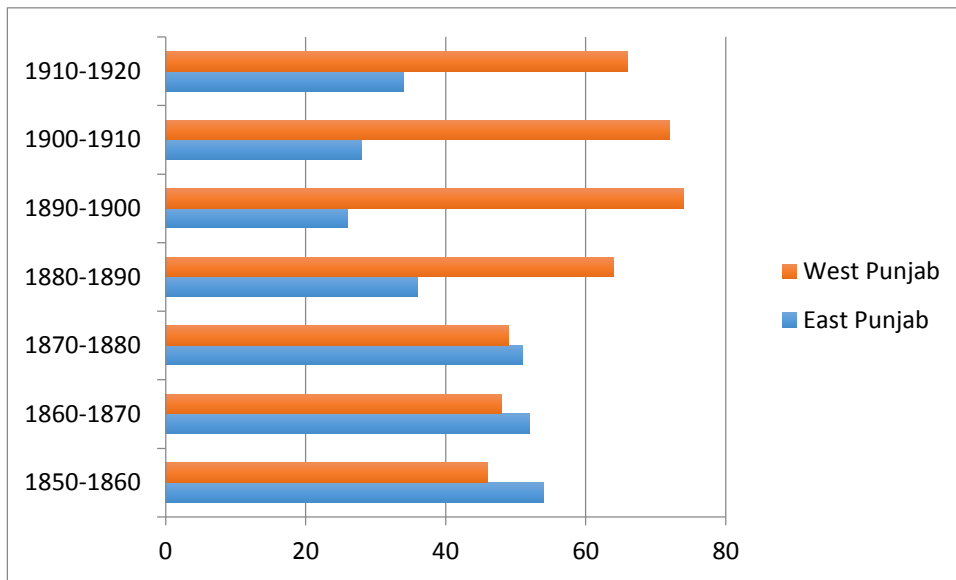
Source: Constructed from *Land Revenue Report*, Punjab, 1928

In table 4.2, we record the distribution of canal irrigation infrastructure in Punjab by looking at the percentage of ‘matured crops’ in different districts that are irrigated by canals (which were built by the state) versus wells (which were built privately). The table shows the district-wise distribution of irrigated versus non-irrigated crops in Punjab in 1920 by the source of irrigation. For ease of understanding the table has been sorted in descending order by the total percentage of irrigated crops in a district. The table shows

that of the ten most irrigated districts, eight were located in West Punjab and only two in the eastern half.

The impact of this unevenness can also be assessed by separating the increase in cultivated area by the two halves. In Figure 4.2, we plot the total percentage increase in the cultivated area of Punjab into its sub-regional components from 1850 to 1920. As we can see, from 1850 to 1880, the total increase in cultivated area was relatively evenly distributed between the two regions. This pattern changed in the 1880's with the 'canal colonization' of western Punjab.

Figure 4.2: Percentage increase in cultivated area of Punjab by sub-region



Source: Constructed from *Censuses of Punjab (1881, 1891, 1901, 1911, 1921 and 1931)*

As Figure 4.2 shows, a result of the uneven development of canal infrastructure across the two halves was that in the decade between 1880 and 1890, over 60% of the increase in the cultivated area was consolidated in the western half. Similarly, from 1890 to 1900, over 70% of the increase was attributable to areas in the west and the same trend is displayed in the next two decades.

4.4 Impact on Market Formations

So far in this chapter we have seen four things: 1) that there was a qualitative shift in the nature of colonial objectives in Punjab after the American Civil War; the new objectives of export-oriented raw material production led to the infrastructural development of the region, 2) infrastructural development in Punjab was geared towards the maximization of exports, particularly cotton and wheat; 3) that the railway lines system was constructed to connect Punjab with the Karachi port in a North-South direction without transverse movement till 1911 and 4) that the later, canal infrastructural development was also heavily consolidated in the western half.

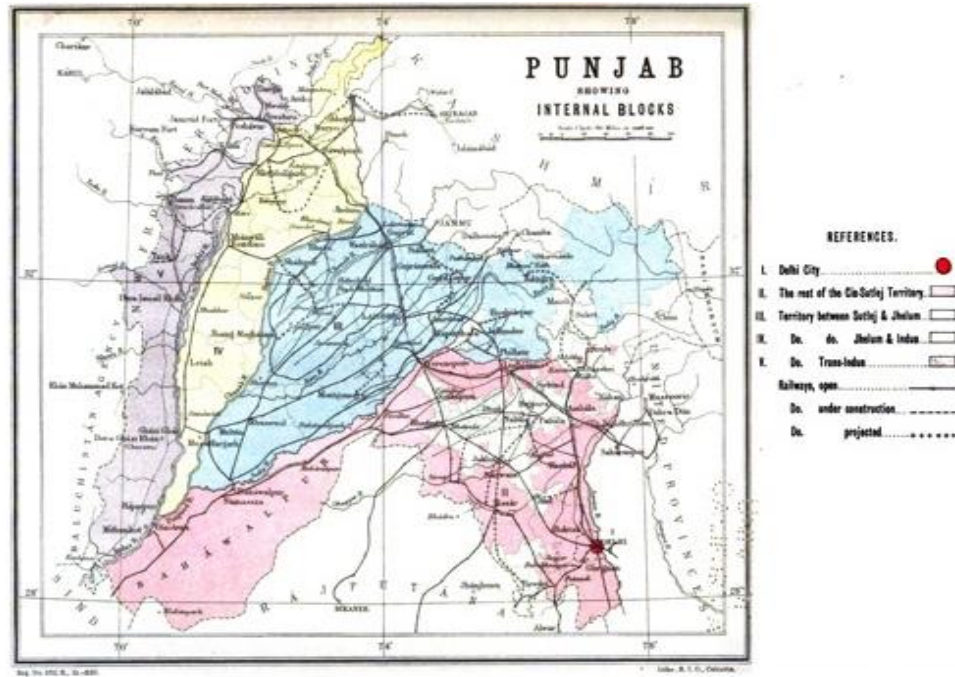
Now, we are interested in exploring the impact of the aforementioned patterns of development on two qualitatively different kinds of commodity production regimes, 1) internal, or home market-oriented production, and 2) external, or export-oriented production, in each of the two halves of Punjab. The distinction between the two kinds of commodity production regimes is important as it leads to the emergence of different kinds of native political and economic interests.

To see this, imagine that the total product produced in an origin (a district, a farm, i.e. any ‘site of production’), say x , can be sold in one of n destination markets and the share of value realized in any destination i is given by x_i . Then, we can define a hierarchy, from the perspective of the origin x , by comparing each x_i and its importance for the producing origin by looking at the amount of value *realized* at each destination market. The hierarchy is not static and changes in accordance with the development of infrastructure. Due to these changes, a previously unimportant market may suddenly gain in importance as costs of transporting commodities to that market change relative to other destinations, leading to a change in the economic incentives of social groups associated with the commodity trade (landlords, independent peasants, colonial administrators, merchants).

To empirically capture this dynamic process, I use data from a relatively less well-known colonial archive, known as the *Internal Trade by River and Rail*, which divides Punjab (and other parts in India) into various “internal blocks”, as shown by the

map below, and gives information on trade flows between them. The two agricultural commodities that are covered are ‘cotton’ and ‘wheat’.

Figure 4.3: Internal Trading Blocks in Punjab



Source: Report on Internal Rail and River-borne Trade of the Punjab for 1912-13

Using these reports, one can divide the producing ‘origins’ into two blocks: east and west Punjab, corresponding roughly to the split in 1947. The only exception to this rule are the districts Amritsar and Hoshiarpur, which are included in the western block in the dataset despite the fact that they were later assigned to India. There is, however, little that can be done to mitigate this problem as ‘district-level’ trade data is not available.

We can examine the percentage of produce from each block that ends up in one of eight ‘destination blocks’ or markets in the rest of India: 1) Bombay city (to be distinguished from Bombay port), 2) Sindh and British Baluchistan, 3) United provinces of Agra and Oudh, 4) Central Provinces and Berar, 5) Rajputana, 6) Bombay port, 7) Karachi port, and 8) Calcutta port. The first five of these destination markets are the ‘Indian’ or ‘home’ market while the last three capture the production for the overseas

market as practically all the commodities ending up at the ports left the country for the metropolis.

Using this scheme I capture the evolution of x_i ---the amount of crop produced in each block that is sold in each of the aforementioned eight markets---over the course of two decades, from 1900 to 1920. The evolution is recorded in Table 4.2 for cotton as well as wheat. Each entry of the table can be read as representing the percentage of export produced in an origin-block that is realized in one of the eight destination markets so that the vertical sum of each column always adds up to 100. For example, 8% and 21% of the wheat produced in East Punjab was realized in Rajputana in 1900 and 1921, respectively. Using this table we can see how different sub-regional producing zones within the Punjab became connected with different destination markets---home and overseas--- over time.

It is clear that the export market via Karachi port occupied primary importance as a destination for cotton and wheat produced in both regions of Punjab in 1900, as well as 1912. In 1900, 66% of the cotton produced in East Punjab, and 85% of it produced in West Punjab was exported via the Karachi port. 97% of the wheat of Western Punjab and 85% of the crops' produce from Eastern Punjab, respectively, ended up at the port of Karachi, and from there to the metropolis.

This corresponds with the fact mentioned previously, that the railway branches connecting Punjab with the rest of India in the east had not become fully operational till 1911 and it was therefore much more costly to produce in Punjab and sell in the rest of India, as opposed to selling in the metropolis. Thus, while some of the produce was still sold in the internal market, this 'home market' (categories 1 through 5) jointly received less than 2% of the cotton production emanating from both sub-regions till 1912. Similarly, less than 15% of the wheat produced in East Punjab and barely 3% of the wheat emanating from West Punjab ended up in the 'internal or home market' in 1900 and 1912.

In addition, the Bombay Port seems to have been an important destination for East Punjab, as it accounted for about 30% of the cotton, and 11% of the wheat, even in 1900. These patterns begin to change after 1912. We notice first, a gain in importance for the internal market (categories 1-5) for both sub-regions between 1912 and 1921, although

the increase is much more pronounced for wheat as it is for cotton. The amount of cotton produced for the home market increased from less than 2% to about 13%, on average, for both Punjabs. This is to be expected, as wheat is a staple crop of the Punjabi people, while cotton was primarily grown for the export market. Thus, for both sides the internal market gained in importance after the end of the First World War.

Second, the increase in importance of the internal market is much more pronounced for the eastern districts (i.e. those that would later become a part of India) as compared to the western districts; the amount of wheat produced in the east that was sold in the 'internal market' rose from 12% in 1900 (and 1912) to 67% in 1921, a five-fold increase. Similarly, the percentage increased from 3% to 30% for the districts in the western half. The burgeoning textile mills in Bombay during and after the First World War may explain the absorption of these commodities in the domestic market. By 1921, Bombay city (not the port), was receiving 14% of the wheat produced in East Punjab and 5% of the commodity produced in the west. Thus, while the internal market gained in importance for both blocks, the increase was much more pronounced in the case of the eastern districts.

Third, for exports to the metropolis---the external market--- Bombay port replaced Karachi port as the major destination for cotton producers operating in East Punjab. The share of cotton produced in the east that was sold at the Bombay port expanded from 30% in 1900 to 62% in 1921. In contrast, the Bombay port barely received 19% of the wheat exported from western districts. Thus, not only were the two sub-regions articulated differentially with the internal market, there were also differences in the *port* via which they were becoming articulated with the export market as well.

Table 4.3: Origin and Destination Map of Wheat and Cotton Produced in Different Parts of Punjab 1900 and 1921

Destination	Origin of Wheat Production in 1900		Origin of Wheat Production in 1921		Origin of Cotton Production in 1900		Origin of Cotton Production in 1921	
	East Punjab	West Punjab	East Punjab	West Punjab	East Punjab	West Punjab	East Punjab	West Punjab
1) Bombay	2%	0%	14%	5%	0%	0%	4%	6%
2) Sindh and British Baluchistan	2%	2%	3%	4%	0%	1%	0%	1%
3) United Provinces of Agra and Oudh	0%	0%	11%	14%	2%	0%	10%	5%
4) Central Provinces and Berar	0%	0%	18%	3%	0%	0%	0%	2%
5) Rajputana	8%	1%	21%	4%	0%	0%	2%	0%
Internal Market (Total)	12%	3%	67%	30%	2%	1%	16%	14%
6) Bombay Port	3%	0%	11%	5%	30%	13%	62%	19%
7) Karachi Port	85%	97%	18%	55%	66%	85%	25%	63%
8) Calcutta Port	0%	0%	3%	10%	2%	0%	1%	3%
External Market (Total)	88%	97%	32%	70%	98%	98%	84%	86%
Total Quantity	100%	100%	100%	100%	100%	100%	100%	100%

Source: Compiled from Reports on the Internal Trade of Punjab by Rail and River for the years 1900 and 1921

The change in the commodity-flows can be explained by the introduction of the North-West-East Rail connections from Punjab in 1911, as new ‘domestic’ markets became feasible destinations. Ultimately, the two sub-regions became articulated with different markets: East Punjab increasingly began to supply the home market while shifting its choice of port of export from Karachi to Bombay. While the western part also supplied a portion to the home market after 1911, the internal market never accounted for more than a third of its total produce.

4.5 Conclusion

The historical analysis presented in the chapter has two major implications for the trends in agricultural productivity that were discussed in Chapter Three. Firstly, as a result of the peculiar patterns of infrastructural development, the western side developed an agrarian economy that was more sensitive to global commodity prices. This explains why the rising prices of agrarian commodities during and leading up to World War I significantly benefitted districts in the western half in terms of improvements in yields per hectare as compared to districts in the east. Second, the west benefitted directly from the greater level of infrastructural development---and hence superior access to water and markets--- during the colonial period, which also led to an advantage in yields per hectares for all crops till 1919. These advantages were gradually depleted as new infrastructural arrangements, combined with broader dislocations in the colonial economy of India post-World War I, led to the emergence of an unwanted “import-substitution” to the “relative detriment of Lancashire” as forms of domestic textile manufacturing began to overtake British imports (Bose and Jalal, 2004; p. 131).

A third implication of infrastructural development will be explored in the next chapter, where we turn our attention to the deeper impact that the process had on “institutional structures” in the village economies. The impact of these institutional structures on agricultural yields, during and after the colonial period via “institutional persistence”, will then be examined in Chapter Six. As we will see, the variation in infrastructural development explains the variation in economic and political structures, which in turn can explain to a large

extent the variation in agricultural outcomes between districts during and after the colonial period.

CHAPTER 5

INFRASTRUCTURAL DEVELOPMENT AND INSTITUTIONAL FORMATIONS IN AGRARIAN PUNJAB

5.1 Introduction

In the last chapter we presented a historical account of the patterns of infrastructural development in colonial Punjab. We connected the process, and the ensuing state investments it would require, with the new imperatives of the British capitalist empire in the aftermath of the American Civil War. The goal in that chapter was to examine this process from a broader, historical perspective. We abstracted from the ‘microeconomic’ dimension of the process, i.e. the kinds of ‘institutional’ structures that would be required at the level of village-economies to achieve these broader aims.

In this chapter we explore the process of institutional formations in the colonial economy in greater detail. While agreeing with the AJR (2002) understanding of colonial institutions as *extractive* institutions, we build a framework that focusses on the set of institutions emerging from the *process of extraction*, rather than presenting it as an abstract noun: the ‘extractive state. This allows for the diversity of colonial experience to be brought to the fore. Following the work of Sen (1981), we develop such an understanding of the institutional process as being derived from an ‘entitlement system’, which delineates a ‘system of rights’; for colonized economies, this was based on what Mamdani (2012) has called a discursive distinction between “Natives” and “Settlers” via a policy of ‘indirect-rule’. We extend this argument to show how in agrarian Punjab, the “entitlement system” shaped the internal distribution of political and economic power--- between agrarian producers and surplus-appropriators--- that would be consistent with the macro objectives and constraints of the colonial state in infrastructural development.

The chapter argues that the colonial ‘entitlement system’ gave birth to institutional structures that were designed to facilitate the security of state investments and the rents that would be derived from infrastructural projects, while serving the dual objective of: a) Native-

financing of the projects, and b) Generating raw materials and export surpluses for the colonial state. By examining archival debates between colonial administrators, we develop an understanding of how the ‘native’ versus ‘non-native’ distinction informed the institutional process. Next, using *Land Revenue Administration Reports*, and *District Settlement Reports*, we construct quantitative measures of political and economic institutions at the level of districts, and show that state investments in a district led to the creation of extractive political and economic institutions, leading in turn, to a more unequal distribution of economic gains in these places.

As a measure of ‘economic’ institutions in the village economy, following Banerjee and Iyyer (2005), I look at variations in land revenue institutions between districts. Land revenue---being a tax on ‘land’---had to be appropriated by someone on behalf of the colonial state, and an institutional apparatus had to be put in place in order to achieve that aim. In Punjab, this took place via a village-body system (*Mahalwari*). I derive empirical estimates of the three major ways in which village-bodies were constituted---*zamindari*, *bhaichara*, and *pattidari*--- in each district of Punjab at the time of its ‘settlement’.

As a measure of ‘political’ institutions, we focus on the balance of power between the ‘direct producers’---i.e. the cultivating tenants--- and those ‘entitled’ to control these village-bodies. The former’s bargaining-power depended on the ‘system of rights’, which distinguished between “occupant” and “non-occupant” tenants, which in turn corresponded with the ‘native’ versus ‘non-native’ dichotomy. Using *Land Revenue Administration Reports*, I derive empirical estimates of the degree of ‘non-occupant’ tenancy in a given district. Using these estimates, we show that districts with greater infrastructural development were more likely to rely on ‘non-occupant tenancy’, reflecting on average, a lower bargaining power for the tenants in these areas.

Finally, as our measure of ‘economic distribution’, I use a method deployed by Piketty (2014) to calculate economic inequality via tax records. Since land-revenue, as a tax on *land*

was only imposed on landowners, and after 1929 was fixed at one-fourth of net profits³⁶, one can work backwards from these revenue records---classified by “class of landowner”--- to develop measures of economic inequality, in each district of Punjab.

We explore the empirical relationship between infrastructural development and our measures of institutions and income distribution using cross-sectional OLS regressions. The results indicate that a district with a one percentage higher level of canal-irrigation would produce: a) A 1.2 percentage higher level of non-occupant tenancy (and hence lower bargaining power of direct producers) than another district, b) A 15 percentage greater ‘*zamindari proportion*’, and as a result, c) 23 percentage points greater economic control in the hands of the large landowners. Put simply, the results confirm that districts with greater infrastructural development also inherited a more unequal economic, political, and social fabric, with greater control consolidated in the hands of the “allied” landlords.

The chapter is organized as follows: Section 5.2 presents an account of the colonial system of ‘rights’ in the Punjab agrarian economy. Using an understanding of this system, Section 5.3 examines the land revenue system of Punjab and captures its institutional variation across districts in the two sub-regions. In 5.4, we run OLS regressions to test the hypothesized empirical relationships between variations in infrastructural development and political and economic institutions.

5.2 Entitlement Systems in Colonial Punjab

5.2.1 The Colonial Entitlement System

Every state creates a system of ‘rights’ in order to secure and reproduce peculiar forms of control and ownership over the conditions of, and distribution of gains from, production. In each case, the system of ‘rights’ and ‘ownership’ is a product of concrete historical circumstances (Marx, 1968; Sen, 1981; Guha, 1966). In a pioneering study, Sen (1981)

³⁶ The word used in colonial records is ‘net assets’ which is a misleading term. I explain this in greater detail below.

describes the ‘system of rights’ as an ‘entitlement system’ that defines the “set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces” (Sen, 1981; p.487) In every agrarian economy, this system provides an answer to four important questions: ‘who produces the output?’, ‘who owns the produce?’, ‘who occupies the land?’, and ‘who controls it (i.e. the land)?’. The entitlement system not only provides an answer to these questions, it also legitimizes them.

This impacts economic outcomes, directly. Take any outcome, say poverty and starvation, as Sen (1981). The question why there is poverty or starvation cannot be answered in isolation from the entitlement system that gives birth to it. “Starvation”, Sen argues, “is the characteristic of some people not *having* enough food to eat.” ‘It is not’, he continues, “the result of there *being* not enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes.” (Sen 1981, p. 217, emphasis in original). To truly appreciate the problem of poverty then, he continues, “it is necessary to understand the ‘entitlement systems’ within which the problem makes an appearance” (ibid).

He distinguishes between ‘supply statements’ that “say things about a commodity (or a group of commodities) considered on its own” and “statements of entitlement”, that describe “entitlement relations”, such as those that emerge out of “exchange”, “production”, “own labor”, and “inheritance”. (Sen, 1981 p. 217). When applied to entitlement systems pertaining to ‘ownership’ this simply refers to “a recursive relation and the process of connecting can be repeated”. To quote Sen’s example:

“I own this loaf of bread. Why is this ownership accepted? Because I got it by exchange through paying some money I owned. Why is my ownership of that money accepted? Because I got it by selling a bamboo umbrella owned by me. Why is my ownership of the bamboo umbrella accepted? Because I made it with my own labor using some bamboo from my land. Why is my ownership of the land accepted? Because I inherited it from my father. Why is his ownership of that land accepted? And so on. Each link in this chain of entitlement relations ‘legitimizes’ one set of ownership by reference to another” (Sen 1981, ibid)

Thus, every ‘right’ within an entitlement system is legitimized, *relative* to another right and once the sequence is emplaced, the system of rights furnishes an economic structure corresponding to it. The question then, is to historically determine how an ‘entitlement system’ comes to be established in an economy in the first place.

For most countries the entitlement system has its roots in the colonial experience and the answer, therefore, depends on the *nature* of this experience. Marx (1974) presents a framework in the *Grundrisse* to understand this. He argues that the forceful conquest of a people by a conquering society can lead to a number of different scenarios. It is possible, for example, that “a conquering people imposes a certain distribution and form of property in land”, making ‘*agriculture*’ the basis of the entitlement system (Marx, 1974:196). Instead of redistributing the land, the conquerors could alternatively “enslave the conquered and so make *slave labor* the foundation of production” (ibid). A third possibility could be that “a system of law assigns property in land to certain families in perpetuity or distributes *labor as a hereditary privilege* and thus confines it *within certain castes*”³⁷ (Ibid).

As a result, “in all these cases, and they are all historical, it seems that distribution is not structured and determined by production, but rather the opposite, production by distribution”. (Ibid, 197) This ‘distribution’ according to Marx (1974), “before it can be the distribution of products”, is: 1) the distribution of the conditions of production, such as land, and water resources in the case of agriculture and 2) the distribution of the members of the society among the different *kinds of production* or the “subsumption of individuals under specific relations of production” (Ibid, 207).

Therefore, it is important to thoroughly historicize and grasp what various “rights” consist of in a particular colonial social formations--- how they are established, and to achieve what precise goals--- in order to understand the ‘institutional structures’ that emanated as a concrete *exercise* of these ‘rights’.

A new line of research led by Mamdani (1978, 2012) allows for such an understanding. In Mamdani (1978), he examines the social effects of British colonial administration on the kinds of entitlement systems that emerged in Uganda and Tanzania. He argues that the “primary division of the country was not between “ethnic” or “cultural” groups but between the ‘southern producers’ and the northern ‘non-producers’, who formed a ‘labor

³⁷ This was the entitlement system in Punjab, India.

reserve” (MacGaffey, 1978; Mamdani, 1978). Mamdani shows “how a series of decisions about *who should produce* what and *who should process* and market it...led to the differentiation of “class” interests among the Baganda (landlords and tenants) and between the Baganda and others” (MacGaffery, 1978; p. 82, emphasis added)³⁸

In a different set of contributions, Mamdani (2012) points towards the dichotomy drawn in colonial ideology, post-1857, between ‘native’ and ‘non-native’ as distinct political entities. This was prompted by a “mid-nineteenth-century crisis of empire”, which “attracted the attention of British intellectuals and led to a re-conception of the colonial mission, and to reforms in India, British Malaya, and the Dutch East Indies.” (Mamdani, 2012; p. 14). Mamdani argues that “the new politics, inspired by Sir Henry Maine, established that natives were bound by geography and custom, rather than history and law, and made this the basis of administrative practice.” (Ibid). In Mamdani (1997), he explores the case of Sudan to demonstrate “how colonial law established *tribal* identity as the basis for determining access to land and political power” (Ibid)

In the context of Indian agriculture during the colonial era scholars have pointed towards the importance of land-revenue institutions that were set up in the village economy in shaping certain permanent features of the social structure. This emphasis stems from the fact that by the end of the 19th century ‘land revenue’ was the chief source of all income appropriated from British India (Douis, 1931). To enable this extraction, the institutional mechanism was devised to set up a framework of rights and responsibilities between the state, the direct producers (i.e. cultivators), and the intermediaries over them.

But to conceptualize these institutions and their implications for the social structure we need to understand, as Mamdani (1978, 2012) points out, the precise manner in which the different kinds of “rights” were mapped onto the “native” and “settler” dichotomy described

³⁸ Review: Class and Politics: Tanzania and Uganda
Reviewed Works: Politics and Class Formation in Uganda by Mahmood Mamdani; Class Struggles in Tanzania by Issa G. Shivji

above. To my knowledge, such an attempt has never been made in the context of any region of India, i.e. to map the economic correspondence between the ‘native’ and ‘settler’ distinction with the ‘system of rights’ in general, and to present the institutional structure (land-revenue institutions in particular) as being derived from it.

Let us now look at the system of rights in Punjab more carefully before examining rights in ‘land-revenue’ (and ‘cultivation’, ‘occupancy’) as a concrete exercise of these rights.

5.2.2 Three Forms of Rights in Colonial Punjab

Much like the rest of the colonized world, the colonial government established a system of ‘rights’ in agrarian Punjab that was premised on a distinction between “Natives” and “Non-Natives” after 1857. The British state had begun to champion a new policy of “indirect-rule”, which was premised on ‘customary law’ and sought to rule the colonies via “Native” intermediaries. The indigenous population was discursively divided into two broad groups: the “allied and martial races”, who would rule over the “subordinate and menial” races (Ibbetson, 1861; *Punjab Manual of Castes*).

The system of ‘rights’ was premised on creating an internal distribution of political and economic power that would simultaneously be consistent with the overall economic objectives of the colonial state. To do this systematically, a *jamabandi* was prepared for every village, in every district of Punjab. The *jamabandi* was a book of records and accounts that recorded the “rights” of inhabitants in every village. It was updated every four years and recorded information about the kinds of rights (‘occupancy’, ‘cultivation’, ‘revenue collecting’, control over water, control over common lands known as *shaamilat*) each villager had, and whether these rights were held individually or jointly.

Three features of this system of rights merit our attention: 1) Difference between cultivating and occupancy rights, 2) Difference between complete/undivided ownership and incomplete/divided ownership, and 3) Difference between revenue-appropriating versus land-ownership rights. Let us explore these differences now.

-Difference between cultivating versus occupancy rights

The colonial government distinguished between five distinct kinds of rights connected to the land: a) the right to *cultivate* it, b) the right to *occupy* it, c) the right to appropriate land-revenues, d) the right to *own* it, and e) the right to *receive a share* of its produce. These rights were always seen as being derived from an exchange of ‘services’ between the natives and the colonial state.

According to the system ‘different people had different rights and responsibilities’ and these, it was argued, emanate from their “local customs” (Ibetzon, 1867; *Punjab Manual of Castes*). Everyone held *some* right. Even the provision of ‘labor services’ in the form agricultural labor constituted a ‘*privilege*’, a ‘right’, for those who performed it; a right, that as the *Inquiry Report for Disturbance in the Canal Colonies (1907)* reminded “could be rescinded at any time at the will of the Majesty” (*IRDCC, 1907; p. 44*)

The distinctions between the different kinds of rights emanated directly from the “native” versus “settler” dichotomy and permeated the “class” distinctions *within* each class. In every village some cultivators, known as ‘occupancy-tenants’ were declared to have a “permanent and heritable right of cultivation”, while others, “non-occupant tenants” enjoyed no such rights. Thus, while both were, strictly speaking ‘agricultural workers’, the former enjoyed a greater social, economic, and political status than the latter owing to them being classified as “one tribe superior” to the rest, in the official manuals.³⁹

As the Land Revenue Administration Report (1938) says, “an occupancy tenant enjoys a share of the *proprietary* right” in terms of “cultivating the land subject to his paying an amount---in cash or kind---equal to the land-revenue due to the state plus a ‘rent’ for the ‘owner’”. This must be set in contradistinction with ‘tenants-at-will’ who “enjoy no such

³⁹ This distinction is still important. In the case of Okara Military Farms in Punjab, Pakistan, the ‘movement of landless peasants’---“tenants”, or ‘mazareen’ as they are called in the language---was split into two factions: tenants from the “Muslim Arain” caste wanted to distinguish themselves from the “Christian Kammi” (or low-caste) tenants.

‘proprietary rights’ to occupy and cultivate the land”. (*LRA Report, 1938*, Government of Punjab, p.138).

-Complete versus Divided Proprietary Rights

The second point refers to the fact that all kinds of rights---revenue-appropriating, occupancy, cultivation, ownership--- could come in two forms: complete/undivided and incomplete/divided. This simply meant that a ‘right’ could be an individual right or jointly held by multiple individuals, often within the same ‘tribe’ or ‘caste’. For example, the *Land Alienation Act 1901*, precluded the entire group of “non-agricultural castes and tribes” from the ownership and sale of land. Another example is that of *joint* revenue appropriating rights. In many places, the *bhaichara* system (explained later) corresponded with a system where “entire tribes (*biradari*)---considered ‘Settlers’ in the official discourse---had formed a kind of ‘brotherhood’ in the village economy”, and were jointly put in charge of the village bodies. (*Punjab Tenancy Act, 1901, p. xiii*) The ‘brotherhood’ was one of joint ‘landlordism’ over everyone else---i.e. the tenants.⁴⁰

-Land-Revenue Collection versus Land-Ownership

The third point refers to the difference between ‘rights to collect revenue’ versus ‘ownership of land’. This distinction needs to be understood in order to correctly appreciate the land-revenue institutional mechanisms that underpinned the colonial, agrarian economy of India in general and Punjab in particular. Much of the confusion on the question is historically rooted in debates between colonial administrators who were also attempting to conceptualize these ‘rights’ in the colonized economy, as being analogous to the kinds of rights that existed in

⁴⁰ Thus, it is simply not the case, as BI (2005) claim, that ‘*zamindari*’ represents landlordism while forms of “non-zamindari”---i.e. *bhaichara* and *pattidari*---represent non-landlordism. If one has to rely on Eurocentric comparisons, one has to accept that both forms could be “landlordist”, the only difference being whether they were ‘joint’ landlords or ‘individual landlords’. We return to this later.

England. The Punjab Tenancy Act of 1887 refers to these debates explicitly, in the following words:

“In the time of Lord Cornwallis a very bitter controversy raged as to the rights of *zamindars*. The discussion continued in extremes for years. One class of officials held to the view that the sovereign ruler is the sole virtual proprietor of the soil, not in the European feudal acceptation of the term implying a fictitious tenure as lord paramount from whom all lesser holdings are supposed to be derived by all classes of subjects, but in right and fact the real acting landlord, entitled to, and receiving from, the *ryots* or husband men a certain portion of the gross yearly returns of the country in money or kind; that there is no intermediate class between the State and the peasant cultivator, and that ***the so-called zamindar is nothing more than a mere collector of revenue***. Mr. Grant was the chief exponent of this view. He employed much labor and ingenuity in *combating the prevailing idea that zamindars are proprietors of the land*.” (Punjab Tenancy Act 1887, Introduction, emphasis added)

Based on these debates, the Act concludes that the “relation of a *zamindar* to Government, and of a *ryot* to a *zamindar* is neither that of proprietor nor a vassal, but a compound of both.” (ibid, p. xiii). As a result, “the former (i.e. Government) performs acts of authority unconnected with proprietary right, while the latter (*zamindar*) *has rights without real property*. A *zamindar* does not possess the full rights of an English landlord.” (Punjab Tenancy Act, 1887, p 2-3, emphasis not in original)

Given this understanding of the colonial system of rights in Punjab, let us now turn our attention to the formation of land-revenue institutions.

5.3 Land-Revenue Institutions in Colonial Punjab

5.3.1 What is Land Revenue?

In legal terms land-revenue was understood as a “tax upon the *land and its produce* rather than a tax on *individuals*” (*Report on Land Revenue Administration*, 1938, p. 44). Its applicability to individuals was premised on the intermediation of other sets of rights and responsibilities, via the “entitlement system” described earlier.

The best way to understand what ‘land-revenue’ means is to see how it was *actually* calculated by the government. In concrete terms, *The Land-Revenue Act (LRA, 1901)* defined land revenue as a “percentage of the net-assets” of the landowner. ‘Net-assets’ were defined

as “the estimated average *surplus* produce of an estate or group of estates after deduction of the ordinary expenses of cultivation” (*Punjab Land Revenue Act, Section 3(18) Paragraph 68*). Put simply, land-revenue was simply a share of the surplus-produce, the “surplus left after the landlords had taken care of the costs” (*LRA, 1938:64*). The ‘ordinary expenses’ included the “customary share” of the tenant. The percentage share of the colonial state was set at 50% of net-assets from 1860-1928 and thereafter it was fixed, by statute, “at one-fourth of the estimated money value of the net assets”.

In order to determine the ‘amount payable’ by a village, the colonial state had to first make an estimate of the surplus. The revenue act explains the process in the following words:

“The Settlement Officers (SO) most important duty is to estimate this money value as correctly as possible. Since half the cultivated area of the land is held by tenants-at-will, most of whom pay *a fixed share of the produce* as rent, it is the practice in Punjab to *calculate net assets on the basis of these rents* and to check them by the cash rents prevailing in the circle.” (Ibid, emphasis added)

The empirical estimate made by the Settlement Officer (SO) for the land-revenue assignment to the village-body was conducted on the basis of an analysis of average yields, costs of production, and the customary share in that particular area that belonged to the tenant. The SO would visit a circle---defined as a set of villages within a district--- and would then make an estimate of the produce in that circle. The land-revenue estimation guidelines advised SO’s to base their “produce estimate... on a careful estimate of the following factors:

- (a) the average acreage of all crops sown and matured on each class of land for which it is proposed to frame separate assessment rates;
- (b) the average yield per acre of each of these crops, unless ordinarily subject to cash rents;
- (c) the average prices obtainable in the village for each of the crops referred to in (b)
- d) the actual share of the gross produce received by landowners who give their land out on rent”

(*Land Revenue Administration Report of Punjab, 1938, page 37*)

From this estimate the SO would then deduct an amount for “ordinary expenses of cultivation”. “Ordinary expenses of cultivation include payments, if any, which the landowner

customarily bears whether in kind or in cash either in whole or in part in respect of:

- 1) *water rates*
- 2) maintenance of means of irrigation
- 3) maintenance of embankments
- 4) supply of seed,
- 5) supply of manure
- 6) improved elements of husbandry
- 7) concessions with regard to fodder
- 8) special abatements made for fallows or bad harvests
- 9) cost of collection of rent
- 10) allowance for shortage in collection of rent
- 11) interest charges payable in respect of advances made in cash, free of interest, to tenants for the purpose of cultivation
- 12) wages or customary dues paid to artisans or menials whose products of labor are utilized for the purposes of cultivation”

(Ibid, Page 31)

Thus, the land-revenue institutional mechanism--- by bestowing rights to make revenue payments to the government---in fact allowed the individuals in command of the village-body the right to *appropriate* and distribute the surplus that was produced by the direct producers (Resnick and Wolff, 1988). The question then is: what determined the constitution of the village-body itself? There were three main ways of determining the composition of this village-body, and the answer depended on the “Native” versus “settler” dichotomy.

5.3.2 Land Revenue Institutions: Three Major Types

Throughout India, land revenue institutional mechanisms differed from one another in terms of who was assigned the ‘rights’ to collect and pay land-revenues to the government. These were, especially after 1857, natives who would be chosen to rule over everyone else. In the states of Bengal, Bihar, Orissa, Central Provinces, Tamil Nadu and Andhra Pradesh a system known as the ‘*zamindari*’ system was introduced under which a rich or influential individual was assigned the rights to collect land revenue from the peasants. In Madras, United Provinces, Assam, and Bombay Presidency, a ‘*ryotwari*’ system was established in which the

individual peasant-proprietor directly paid the revenue to the government; this system was mostly replaced after the War of 1857.

Unlike other parts of India where the colonial state assigned revenue-collecting rights to individuals (a *zamindari* landlord in Bengal and Bihar or a peasant-proprietor as in the *ryotwari* system of Madras and U.P) in Punjab, a third kind of system, known as the *mahalwari* system was introduced. Under this system the state, instead of assigning revenue liability on 'individuals', recognized a 'village-body' that would act as an intermediary between the colonial state and the direct-producers and be collectively responsible for the collection and payment of the land-revenue to the government.

The question was: how does one determine which group in a village gets to be on the village body? The answer again, has to do with which group (*biradri* or tribe) or individual came to be *defined* as a 'Native' in a particular village. There were three broad variants in determining the constitution of the village-body. These were the 1) *Pattidari* 2) *Bhaichara* and 3) *Zamindari* systems.

The first two are sub-variants of joint-ownership of the village-body in a coparcenary arrangement of members connected by one common male ancestor. This is also why *bhaichara* villages are often named after an old 'patriarch', a "great ancestor" (*Punjab Tenancy Act, 1901*)

In the *Zamindari* case an individual or a group of individuals within an influential family is put in charge of the village-body and everyone else is documented as a 'tenant' in the *jamabandi* (*record-keeping book*). In the *pattidari* and *bhaichara* cases, the village-body is considered the joint-property of those declared to be in 'cultivating possession' at the time of settlement and everyone else is documented as their tenant.

Tenants could be either 'occupancy' tenants or 'tenants-at-will' with the former having, as the name suggests, right to occupancy as long as they paid the revenues while the latter had no such rights. "Occupancy-tenants" were usually related to the *Bhaichara* tribe in some distant way, but had fallen in social rank due to "the inability to follow some custom", for example, something as simple as "allowing their widows to remarry" (*Ibetson, 1902*).

The difference between *pattidari* and *bhaichara* is that of how the revenue liability and landholding size, respectively, is determined. In the case of *pattidari* (*patti* literally means strip of land) the joint-owners divide their estate into individually operated fragments of land according to ancestral shares. The revenue liability of a joint-owner is determined by the size of the *patti* (that is the strip of land) that he operates. In the *bhaichara* system the *liability* set upon a person in the village-body determines the plot of land he can work with. Thus, in the former case, the size of the operated landholding (*size of patti*) determines revenue-liability while in the latter the liability determines the size of the landholding a joint-owner operates. What is crucial to understand is that these are both coparcenary arrangements, albeit, with different ways of determining the relationship between revenue liability and landholding.

5.3.3 Land Revenue Institutions and Control over Land

To add to the complexity of the institutional mechanisms, as explained earlier, ‘rights’ could be held individually as well as jointly. These differences led to variations in the manner in which revenue-appropriating rights map into control over the land. For example, ‘joint’ owners of a village-body faced a variety of different choices. They could choose to ‘divide’ the land into individually commanded strips. Alternatively, they could consolidate strips into some kind of ‘collective’ ownership. As the architect of customary law in India and the rest of the colonies, Sir Henry Maine pointed out: property rights in colonial Punjab could be conceptualized as being a “bundle of powers capable of being mentally contemplated” as collective but “capable of being enjoyed separately” (Henry Maine, 1887).

In the official colonial literature (such as *Land Revenue Administration Reports*) the following classification was employed to understand this:

Classification of tenures employed in official literature

- | | | | |
|-----|------------------|-----|----------------------------------|
| (1) | <i>Zamindari</i> | (a) | Landlord (<i>khalis</i>) |
| | | (b) | Communal (<i>mushtaraka</i>) |
| (2) | <i>Pattidari</i> | (a) | Perfect (<i>mukammil</i>) |
| | | (b) | Imperfect (<i>na-mukammil</i>) |

(3) *Bhaichara* (a) Perfect (*mukammil*).

(b) Imperfect (*na-mukammil*)

Zamindari Khalis is the only form in which a sole proprietor possesses full rights and is thus comparable to an English 'landlord'. The rest of the tenures are all different forms of coparcenary arrangements. *Zamindari Mushtarka* refers to a situation in which the male descendants of the original sole proprietor (at the time of settlement) are the joint-proprietors of the estate and collectively manage the land, after his death. In this situation "their rights are regulated by *customary* shares in the estate, both as regards the extent of the holdings they are entitled to cultivate and as regards the distribution of profits, and if the profits from land held by non-proprietary cultivators are not sufficient to pay the revenue and other charges, the balance would ordinarily be collected from the proprietors according to the same shares." (LRA report, 1938)

Similarly, perfect *pattidari* is a tenure in which the entire land is divided and held individually by the joint-proprietors of the village-body according to customary shares. Each person manages only his own strip of land and pays a fixed share in accordance with customary ancestral shares. However, in the event in which the individual is unable to pay his revenue-liability the entire village-body is jointly responsible for the deficit. In contrast to perfect *pattidari* a situation in which some part of the lands is held individually and another part held as 'common' property is called 'imperfect' or 'incomplete' *pattidari*. In this case, each individual's strip of land and also his right to access the common lands is a function of ancestral shares customary to particular clans and castes.

Under perfect *bhaichara* all the land is held individually. Ancestral shares have disappeared altogether and the revenue paid by a person is strictly a function of his *actual* possession (*Land Revenue Report, 1939*) An imperfect *bhaichara*, in contrast, is when a part of the land is held individually and part as common property and the rights of a person in the latter are determined as being functional to his actual holding. In both cases, however, the entire proprietary body is "jointly responsible if any individual share-holder becomes a defaulter." (Ibid)

This means that conceptualizing land-revenue institutions as property rights is not very simple. We cannot predict, for example, whether a *bhaichara* or *pattidari* institutional arrangement is a “non-landlord” arrangement as the joint-owners could---and did on many occasions---lease-out the estates under the command of their village-body to tenants and extract rents as joint “landlords”.

Now that we have examined the system of rights in Punjab and seen how it relates with the land-revenue institutions that were emplaced in different parts, let us return to the following question: why did these institutional structures vary from one part to another? The answer that we provide is connected to the imperatives of the colonial state in the aftermath of the American Civil War, and the ensuing ‘infrastructural’ developments.

5.4 Infrastructural Development and Institutional Formations: Empirical Analysis

5.4.1 Colonial State, Investments, and Institutions: A Hypothesis

The political security of the rents associated with state investments in canal infrastructure shaped the kinds of institutions---political order and class structure--- that were emplaced in the rural economy, given the system of rights described earlier, in different parts.

In order to achieve the twin goals of minimizing political volatility in high-investment regions on the one hand, and the economic objective of maximizing the rents that could possibly be extracted by the state from these areas on the other, led the colonial state to rely on its traditional allies, namely, the agrarian elite of Punjab which had so loyally stood beside the British during the War of 1857 (Talbot, 1988; Gandhi, 2012).

The colonial system of rights and revenue institutions described above was utilized to achieve these twin goals in the following way: firstly, the control over the surplus appropriating village-bodies was consolidated in the hands of the “settlers”, who eventually became the agrarian elite, in high-investment zones. These ‘settlers’ were usually brought in from other parts with guaranteed state support and patronage, and were compared in official discourse with the Junker’s in Prussia (See Darling, 1902).

It was argued that in addition to providing political security to the projects, the agrarian elite, by virtue of its “higher social status” and “higher capital endowments”, stood the best chance to reap the gains that would result from the improvements in transport (railways, roads and ports) and productivity (through canal irrigation) that infrastructural development promised (Calvin, 1924; Metcalf, 1967).

In order to maximize the exploitation of the direct producers---i.e. the tenant-cultivators---the state used its power to create an “entitlement system” that ensured a sufficiently low bargaining power for the tenants in high-investment zones. Consequently, the state relied more extensively on ‘tenancy-at-will’ instead of granting occupant tenancy in regions with ‘high-infrastructural’ development. As mentioned earlier, in areas where tenants had “occupancy” rights they could not be evicted without a process of litigation. Tenants-at-will enjoyed no such rights and consequently had a much lower bargaining power with respect to the “owners” (i.e. appropriators of land-revenue, not ‘land’) of the village-bodies.

If the aforementioned framework is correct we should expect areas with high infrastructural development to be associated with: 1) a higher level of tenancy-at-will, reflecting a lower bargaining power of direct producers; 2) a greater preponderance of *zamindari khalis* institutions, as compared to *bhaichara* and *pattidari* institutions; and consequently, 3) a higher level of economic inequality.

5.4.2 Empirical Methodology

To test these relationships empirically I test OLS regressions taking the form:

$$Z_i = \beta_0 + \beta_1 C_{it} + \beta_2 X_i + \epsilon_i,$$

For every district i , Z_i is one of two measures of ‘institutional outcomes’: a) *Zamindari proportion*, the proportion of *zamindari* estates in a district; or b) ‘Non-Occupant tenants ratio’, and a measure of economic distribution: c) ‘Percentage revenue paid/appropriated by large landlords’; X_i is the set of geography controls such as latitude, longitude, rainfall (mm), and a dummy for soil quality, in district I , while C_{it} is our measure of state investments in district i at time t .

Given the hypotheses above, we expect a strong positive association between the three kinds of Z_i and C_i .

5.4.3 Data

I use three different colonial reports to construct the variables used to test the model. The following variables are of interest for this exercise:

1) C_i : *Percentage of Matured Crops Irrigated by Canals*

Our main independent variable, C_i , proxies for the level of canal infrastructural investment in a given district. Since we do not have actual monetary values of district-wise expenditures by the state, we proxy for district-wise investments instead by looking at the ‘outcome’: the ‘percentage of matured crops’ that were irrigated by state canals in a given district in each of the censuses conducted decennially from 1901 to 1941. In addition, we have data points for irrigation from *Land Revenue Assessment Reports* for the years 1913, 1923, 1927, 1929, 1937, and 1939. The census reports give us information about the percentage of matured crops in every district under different kinds of irrigation schemes such as wells and canals. Using this, I calculate for every district, the percentage of matured crops that are irrigated by state canals. Table 5.1, in the appendices to the chapter enumerates these values for each district. As we can see from this table, on average, districts in west Punjab had superior access to state-canals than districts in the eastern half of the province. The average percentage of matured crops irrigated by canals is 57% and 18% in the two halves, respectively, reflecting the greater level of state investments---and hence canal infrastructure---in the western districts.

2) Land Revenue Institutions: *Zamindari Proportion*

The second variable of interest is the percentage of *zamindari* land revenue institutions in a district. This is one of the three Z_i 's tested in the model. Following BI (2005), it has been constructed from *District Settlement Reports*, for each district from the mid to late 19th century; i.e., the period in the aftermath of the colonization of Punjab. These reports tell us about the kinds of land-revenue institutional mechanisms that were established in a district at the time of its original settlement. For each district, we know how many villages (or estates) were under the *bhaichara*, *pattidari* and *zamindari* tenures,

respectively. Using this, for each district I calculate the *zamindari* proportion: the proportion of estates in a district that were under *zamindari* systems as opposed to the two other systems.

The values for this proportion in each district have been tabulated in Table 5.2 (Appendix) along with mean values for east and west Punjab in the last two rows. As we can see, the mean value of the *zamindari* proportion in west Punjab is approximately twice that of east Punjab.

3) Bargaining Power: *Non-Occupancy Tenants Ratio*

The third variable captures the ‘bargaining power of the direct producers’, i.e. the tenants: a measure of “substantive” ‘political institutions’. This is our second Z_i in the model. It has been derived from the *Land Revenue Reports* of Punjab. From these reports, for every district, we know the total area and number of holdings under owner-cultivation versus tenancy and also the type of tenancy arrangement (occupancy versus non-occupancy). I use this data to calculate the extent of tenancy versus owner-cultivation in each district and also the proportion of non-occupancy tenancy arrangements in terms of holdings and area.

In Table 5.3 (Appendix) I tabulate the district-wise holdings and area of cultivated lands by ‘owner-cultivated’ versus ‘tenant-cultivated’ (regardless of occupant or non-occupant status) farms using data from the *Land Revenue Report of Punjab (1938)*. The last three rows of the table show the averages for east, west, and united Punjab respectively. We can see that for the Punjab as a whole 60% of the holdings commanding 52% of the cultivated area were ‘tenant’ holdings. Comparing east and west Punjab we see that 56% of the holdings in the former and 62% of the holdings in the latter were tenant holdings commanding an area of 45% and 59%, respectively. The percentage of tenant holdings, and the area cultivated by these holdings, is higher in west Punjab as compared to east Punjab. In terms of average holding sizes, on average, an owner-cultivated farm was 4.7 acres in west Punjab and 3.2 acres in east Punjab, while a tenant-cultivated farm was 2 acres and 4.3 acres in the two sub-regions, respectively. Thus, in addition to a higher percentage of tenant holdings, west Punjab also had a higher average size of tenant holdings.

In Table 5.4 (Appendix), I tabulate tenant farms by ‘occupancy’ versus ‘non-occupancy’ status of tenants in each district. The table has been sorted on column (3) for ease of comparison and the last three rows capture sub-regional averages and totals for united Punjab. As we can see, for the Punjab as a whole, the overwhelming majority of tenancy arrangements (84% by holdings) were leased-out to ‘non-occupancy’ tenants. There was a greater preponderance of ‘non-occupant’ tenancy in west Punjab (86% of holdings and 87% of the area) as compared to east Punjab (81% of the holdings and 82% of the area). The difference in non-occupant tenancy was even more pronounced for the top six districts in the table. These are all the districts (located in the central belt of west Punjab) that witnessed high levels of infrastructural activity as discussed in the previous chapter.

4) *Economic Distribution: Percentage of Surplus Appropriation by Elite*

To calculate empirical estimates of internal inequality I used a method deployed by Piketty (2014) to calculate incomes from tax records. I used this method by drawing on data from the *Land Revenue Administration Report of 1938*. For every district the report gives information about the total number of revenue payers, the number paying revenues between different amounts, and the amount of revenue that was paid by each class. The data classifies revenue payers into various categories, ranging from those that pay an amount less than 5 rupees to those that pay revenue that exceeds 10,000 rupees. For ease of analysis I divide these revenue payers into the “small”, “medium” and “large” categories. I define a ‘small’ revenue payer as someone who pays an amount between 5 and 20 rupees, a medium payer as someone who pays between 20 to 50 rupees and a large payer as someone who pays greater than 50 rupees. This classification is not altogether arbitrary as the *Land Revenue Administration Report (1938)* itself claims that it is safe to assume that those paying in excess of 50 rupees are ‘large’ revenue payers. Using this classification I calculate the percentage of the total revenue that is paid by revenue payers in each category, for every district (Appendix 5-D)

This percentage can be interpreted as follows: Given that land revenue was calculated simply as a fraction of the surplus (‘net assets’), and was only imposed on those with ‘revenue-appropriating rights’, and ‘included a subtraction for the share of the tenant’, the amount of revenue paid actually reflects the proportion of the income *appropriated* by

small, medium and large landholders in every district.. Since revenue (a tax calculated as a share of the surplus) was paid after it was appropriated by a revenue-payer, his tax payment is simply a fraction of his total surplus appropriation. As a proportion, the revenue-paid to the state by a given class bracket is exactly the same as the fraction of total surplus produced that it appropriates. In Appendix 5-E I tabulate the incidence of land-revenue on ‘small’, ‘medium’ and ‘large revenue’ payers in each district.

As the table reveals there was massive income inequality in rural Punjab by the end of colonial rule. For the Punjab as a whole, 84% of all revenue payers were ‘small’; 87% and 79% of the revenue payers were small in east and west Punjab, respectively. Despite their greater preponderance in the total rural revenue-paying population, ‘small’ holders only accounted for just 35% of the total surplus appropriated. A tiny 6% of revenue payers appropriated 41% of the total surplus produced in Punjab.

Second, the ‘revenue-appropriation’ of large revenue payers was overwhelmingly higher in west Punjab as compared to east Punjab. If we focus on column (8)--- which shows the percentage of total revenue paid by ‘large’ revenue payers--- we find that in every case in which this number exceeds 40% the district is located in west Punjab. In seven of these districts, the fraction of surplus appropriated by the ‘large’ landowners exceeds half (50%) of the total surplus produced and in three cases exceeds 65%.

The trends shown by the descriptive statistics above reveal that there are indeed major differences between the two sub-regions in terms of institutional variables, rights in occupancy, and the economic control of the agrarian elite over the surplus. What is the source of this difference? Is there a relationship between the degree of infrastructural development of a district and the kinds of elite social, political and economic control that developed in that district, or can these merely be accounted for by geographic differences between the two sides? To see this I run a series of OLS regressions.

5.4.4 OLS Regression Results

The results of these regressions have been tabulated in Table 5.6 (Appendix) and confirm the hypothesized relationships between political and economic institutions, and state-led

infrastructural development. Districts that experienced higher levels of infrastructural activity were associated with a more unequal power structure and hence a more unequal economic distribution.

1) *Political Institutions: The greater reliance on non-occupant tenancy*

The results indicate a direct correspondence between the degree of state investments in a given district and the reliance on ‘non-occupant’ tenancy rights in that district. A one percentage higher level of ‘state canal infrastructure’ (the ‘percentage of matured crops irrigated by canals’) in a district corresponds with a 1.9 % greater reliance on non-occupant tenancy.

This confirms that districts that witnessed a greater level of infrastructural development also witnessed the formation of a political institutional structure which significantly reduced the bargaining power of the tenants with respect to the owners of the village-bodies.

2) *Economic Institutions: The greater dominance of ‘zamindari khals’*

The results also confirm the greater preponderance of ‘zamindari khals’ institutions in high infrastructural districts. Specifically, column (2) shows (after controlling for geography variables) that greater state investments in canal infrastructure in a district were associated with a 16 percentage point higher *zamindari* proportion in that district.

3) *Economic Inequality: The greater economic control of large landlords*

In the third specification I capture the degree of ‘revenue-incidence on rich farmers’ for a district, on the degree of infrastructural development. As explained earlier this variable captures the percentage of total surplus paid as land-revenue in a district that is appropriated by “large owners” and can therefore be used to proxy for the economic control of the agrarian elite in every district. The results reveal that a district with a 1% higher level of canal-irrigated crops also had a 28.4% higher surplus appropriation by elite as compared to a district with a lower level of state investments.

5.5 Conclusion

The chapter sought to achieve two objectives: 1) to reopen the discussion on land-revenue institutions by presenting them as being “entitlement systems” qua Sen (1981), in the light of recent anthropological work done by Mamdani (1978, 2012); 2) to connect the institutional process to the political and economic objectives and constraints that were emplaced by the British colonial regime in Punjab, to execute the project of export-oriented infrastructural development. We showed, using colonial archival data and OLS regressions that districts that witnessed greater level of canal development also witnessed the rise of a political and economic institutional structure that privileged large landlord control. This was done by: a) significantly minimizing the bargaining power of tenant cultivators, by making non-occupant tenancy the norm in places with high infrastructural development; b) by giving land-revenue appropriating rights to *zamindars*, or large landlords, and hence making everyone else a tenant under them. Finally, these forms of political and economic control, we saw, led to a highly unequal distribution of the economic surplus that was produced in the agrarian economies of ‘high-infrastructure’ districts.

This means that colonial state-investments represented a double edged sword: on the one hand, they came with the promise of “development”; improvements in “technical” conditions of production, which typically results in an expansion in yields in agricultural economies. However, and this is the key to the Punjab divergence conundrum, they also came with an extractive and elitist institutional structure which created ‘structural’ conditions and forces that would impede the prospects for long-term growth.

To see this, let us now turn our attention to the question: How did the colonial institutional structures described in this chapter impact agrarian *performance* during the colonial (i.e. contemporaneously) and post-colonial (i.e. long-term) period, respectively? Were there any major transformations in the *nature* of this impact after partition (i.e. the post-colonial period)? Were there any differences in the nature of this impact across the two states?

We take up these questions in the next chapter.

Appendices to Chapter 5⁴¹

Table 5.1: Percentage of Matured Crops Irrigated by Source and Location

District	% of Matured Crops that are Irrigated By			District Location
	Canals	Wells	Total	
Lyallpur	97	1	98	West Punjab
Montgomery	64	23	87	West Punjab
Multan	73	14	87	West Punjab
Jhang	58	28	86	West Punjab
Lahore	56	22	78	West Punjab
Muzaffargarh	53	24	77	West Punjab
Gujranwala	55	21	76	West Punjab
Shahpur	64	11	75	West Punjab
Amritsar	40	30	70	East Punjab
Jullundur	0	54	54	East Punjab
Sialkot	48	5	53	West Punjab
Ferozepur	32	14	46	East Punjab
D.G Khan	32	11	43	West Punjab
Ludhiana	9	28	37	East Punjab
Karnal	22	14	36	East Punjab
Gujrat	21	15	36	West Punjab
Gurdaspur	11	17	28	East Punjab
Rohtak	19	8	27	East Punjab
Kangra	26	0	26	East Punjab
Gurgaon	6	11	17	East Punjab
Hissar	15	1	16	East Punjab
Mianwali	5	7	12	West Punjab
Hoshiarpur	2	9	11	East Punjab
Attock	1	8	9	West Punjab
Ambala	0	6	6	East Punjab
Jhelum	0	5	5	West Punjab
Rawalpindi	0	2	2	West Punjab

Source: Constructed from *Land Revenue Report*, Punjab, 19

⁴¹ For tables 5.1 to 5.5, the percentage of irrigation by source is obtained by averaging for the census years 1901, 1911, 1921, and 1931.

Table 5.2 District-Wise Distribution of Land-Revenue Institutions

District	Zamindari Proportion	District Location
Hissar	0.41	East
Rohtak	0	East
Gurgaon	0.14	East
Karnal	0.19	East
Ambala	0	East
Simla	0	East
Kangra	0	East
Hoshiarpur	0.15	East
Jullunder	0	East
Ludhiana	0.04	East
Ferozepore	0.51	East
Lahore	0.3	West
Amritsar	0.073	East
Gurdaspur	0	East
Sialkot	0.33	West
Gujranwala	0.52	West
Sheikhupura	0.64	West
Gujrat	0.05	West
Shahpur (Sargodha)	0.08	West
Jhelum	0.04	West
Rawalpindi	0.05	West
Attock	0.05	West
Mianwali	0.17	West
Montgomery	0.59	West
Lyallpur	0.69	West
Jhang	0.08	West
Multan	0.62	West
Muzaffargarh	0.09	West
Dera Ghazi Khan	0.09	West
East Punjab	0.13	East
West Punjab	0.25	West

Table 5.3: Owner-Cultivation vs. Tenancy: % Holdings and Area

District	Owner-Cultivators		Tenancy		Location
	Holdings	Area	Holdings	Area	
Hissar	33.14%	40.72%	67%	59%	East
Rohtak	45.61%	62.50%	54%	38%	East
Gurgaon	46.13%	52.46%	54%	48%	East
Karnal	49.50%	63.75%	51%	36%	East
Ambala	46.59%	56.50%	53%	43%	East
Simla	73.05%	83.68%	27%	16%	East
Kangra	50.32%	64.30%	50%	36%	East
Hoshiarpur	33.05%	45.86%	67%	54%	East
Jullunder	43.66%	54.55%	56%	45%	East
Ludhiana	44.15%	57.31%	56%	43%	East
Ferozepore	37.19%	45.43%	63%	55%	East
Lahore	38.91%	43.16%	61%	57%	West
Amritsar	38.26%	46.44%	62%	54%	East
Gurdaspur	36.76%	47.36%	63%	53%	East
Sialkot	34.90%	45.56%	65%	54%	West
Gujranwala	28.80%	37.26%	71%	63%	West
Sheikhupura	31.26%	35.60%	69%	64%	West
Gujrat	43.22%	53.88%	57%	46%	West
Shahpur (Sargodha)	35.77%	38.32%	64%	62%	West
Jhelum	46.08%	54.51%	54%	45%	West
Rawalpindi	54.60%	60.34%	45%	40%	West
Attock	34.84%	39.69%	65%	60%	West
Mianwali	33.87%	38.55%	66%	61%	West
Montgomery	28.33%	20.14%	72%	80%	West
Lyallpur	43.45%	51.61%	57%	48%	West
Jhang	32.57%	34.50%	67%	66%	West
Multan	31.05%	25.34%	69%	75%	West
Muzaffargarh	44.41%	48.27%	56%	52%	West
Dera Ghazi Khan	34.54%	35.99%	65%	64%	West
East Punjab	44.42%	55.45%	55.58%	44.55%	East
West Punjab	37.29%	41.42%	62.71%	58.58%	West
Total	40.48%	47.71%	60%	52%	Total

Source: Land Revenue Reports Punjab

Table 5.4: Percentage of Tenants by Occupancy vs. Non-Occupancy Tenancy

District	Occupancy Tenants		Non-Occupancy Tenants	
	Holdings (1)	Area (2)	Holdings (3)	Area (4)
Lyallpur (W)	0.11%	0.03%	99.89%	99.97%
Jhang (W)	4.11%	5.32%	95.89%	94.68%
Sheikhupura (W)	5.09%	4.83%	94.91%	95.17%
Multan (W)	5.86%	6.27%	94.14%	93.73%
Gujranwala (W)	7.49%	6.08%	92.51%	93.92%
Montgomery (W)	7.89%	2.21%	92.11%	97.79%
Dera Ghazi Khan (W)	8.86%	6.20%	91.14%	93.80%
Shahpur (W)	9.15%	15.42%	90.85%	84.58%
Ludhiana (E)	9.37%	9.15%	90.63%	90.85%
Kangra (E)	10.88%	13.46%	89.12%	86.54%
Muzaffargarh (W)	11.60%	10.21%	88.40%	89.79%
Karnal (E)	12.03%	11.10%	87.97%	88.90%
Rohtak (E)	13.32%	12.30%	86.68%	87.70%
Gurdaspur (E)	14.73%	14.98%	85.27%	85.02%
Sialkot (W)	15.71%	13.30%	84.29%	86.70%
Amritsar (E)	16.09%	13.33%	83.91%	86.67%
Lahore (W)	16.63%	15.97%	83.37%	84.03%
Ambala (E)	17.43%	16.86%	82.57%	83.14%
Mianwali (W)	18.09%	11.22%	81.91%	88.78%
Jullunder (E)	18.26%	17.67%	81.74%	82.33%
Gujrat (W)	18.66%	12.73%	81.34%	87.27%
Gurgaon (E)	22.01%	21.04%	77.99%	78.96%
Jhelum (W)	25.74%	27.66%	74.26%	72.34%
Ferozepore (E)	29.53%	27.01%	70.47%	72.99%
Hissar (E)	32.96%	31.05%	67.04%	68.95%
Rawalpindi (W)	33.72%	33.74%	66.28%	66.26%
Attock (W)	37.16%	28.94%	62.84%	71.06%
Hoshiarpur (E)	41.59%	39.05%	58.41%	60.95%
East Punjab Average	18.56%	17.54%	81.44%	82.46%
West Punjab Average	14.12%	12.51%	85.88%	87.49%
Total	16.11%	14.93%	83.89%	85.07%

Source: Land Revenue Administration Report, Government of Punjab

Table 5.5: Percentage Surplus Appropriation by Agrarian Elite (District-Wise)

District (1)	Location (2)	% of Revenue Payers			% of Revenue Paid		
		Small (3)	Medium (4)	Large (5)	Small (6)	Medium (7)	Large (8)
Hissar	East	95%	6%	2%	43%	19%	38%
Rohtak	East	86%	12%	1%	53%	37%	10%
Gurgaon	East	84%	12%	4%	40%	29%	30%
Karnal	East	89%	8%	2%	50%	27%	23%
Ambala	East	84%	12%	3%	46%	30%	25%
Simla	East	99%	1%	0%	83%	9%	8%
Kangra	East	98%	2%	0%	75%	13%	12%
Hoshiarpur	East	88%	9%	3%	47%	27%	27%
Jullunder	East	73%	10%	2%	46%	32%	21%
Ludhiana	East	78%	10%	2%	48%	34%	18%
Ferozepore	East	87%	10%	3%	40%	26%	33%
Lahore	West	84%	10%	4%	34%	25%	42%
Amritsar	East	85%	11%	3%	49%	32%	19%
Gurdaspur	East	90%	13%	4%	36%	31%	34%
Sialkot	West	84%	9%	3%	48%	29%	22%
Gujranwala	West	78%	15%	7%	24%	25%	52%
Sheikhupura	West	51%	19%	15%	13%	19%	67%
Gujrat	West	89%	8%	3%	42%	23%	34%
Shahpur	West	82%	6%	12%	23%	11%	66%
Jhelum	West	96%	3%	1%	72%	15%	13%
Rawalpindi	West	79%	2%	0%	75%	15%	9%
Attock	West	93%	5%	2%	46%	18%	35%
Mianwali	West	95%	4%	1%	52%	17%	31%
Montgomery	West	59%	26%	15%	17%	27%	57%
Lyallpur	West	38%	32%	30%	8%	23%	69%
Jhang	West	80%	15%	8%	22%	24%	54%
Multan	West	70%	19%	11%	17%	21%	62%
Muzaffargarh	West	94%	5%	2%	47%	18%	34%
Dera Ghazi Khan	West	96%	3%	1%	44%	15%	41%
Total	Total	84%	10%	6%	35%	25%	41%

Source: Land Revenue Administration Report, Government of Punjab

Table 5.6: OLS Regression Results – Institutions and Canal Expenditures

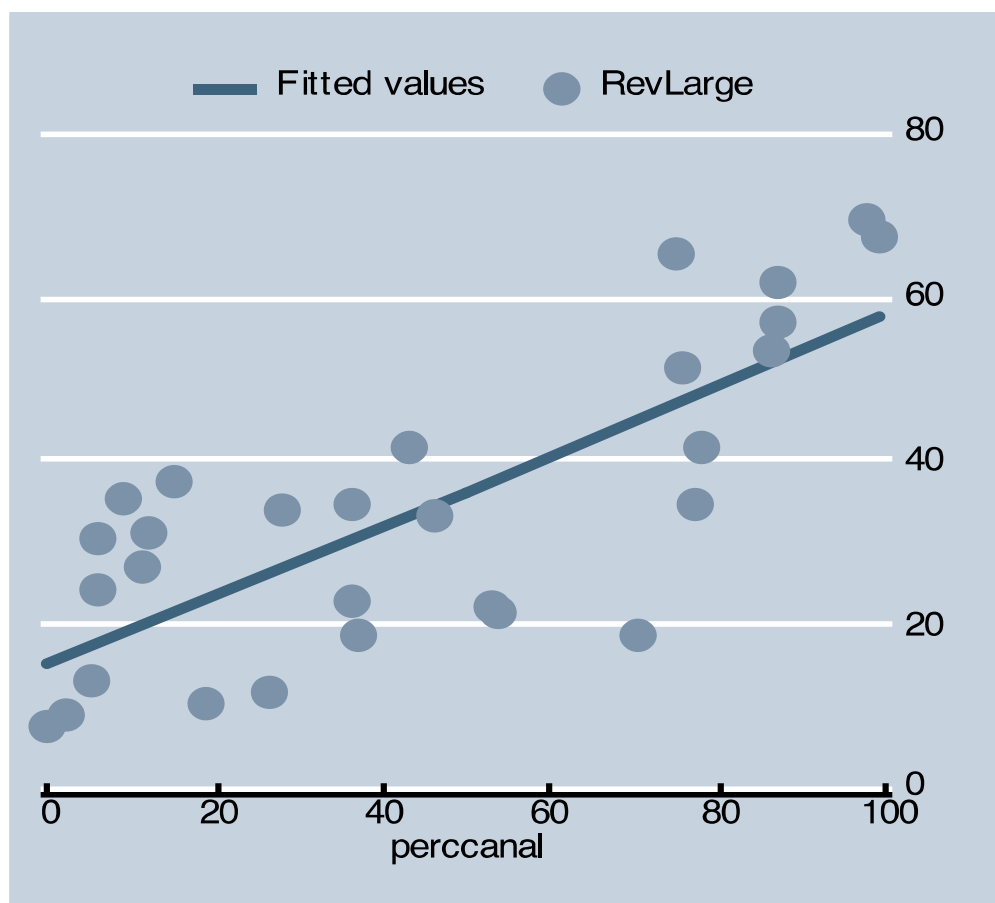
DEPENDENT VARIABLE: Zamindari Proportion, Non-Occupant Tenancy, Surplus Appropriated by Elite

	<i>Zamindari Proportion</i>	<i>% Non-Occupant Tenancy</i>	<i>% Surplus Large Landowners</i>
% Canal Irrigated	17.8* (2.27)	1.717*** (4.00)	31.4** (3.56)
Rainfall	-0.0292 (-1.94)	-0.0404* (-3.47)	-0.00291 (-0.17)
Longitude	0.615 (0.92)	0.569 (1.00)	0.222 (0.36)
Latitude	2.854 (0.71)	5.505 (1.60)	-0.0386 (-0.01)
Soil Dummy	0.038* (2.19)	0.047* (2.12)	0.027* (2.28)

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 5.1: Large Land Ownership and State Investments in Canals by Districts



CHAPTER 6

IMPACT OF COLONIAL INSTITUTIONS ON AGRARIAN OUTCOMES

6.1 Introduction

In the last chapter, we examined the relationship between institutional structures and infrastructural development in colonial Punjab. We saw how districts that witnessed higher levels of infrastructural development also saw the formation of extractive political and economic institutions, which in turn, led to a more unequal economic distribution in these districts.

In this chapter we empirically assess the impact of colonial institutional structures on agricultural *outcomes*, in the colonial as well as the post-colonial period. Building on the earlier work of Banerjee and Iyyer (BI, 2005), and the critiques of their work in Roy (2013) and Iverson et al (2012)⁴², I ask how the set of initial colonial institutions described in Chapter Five impact agrarian outcomes---specifically yield per hectare--- in each state, in each period. There are four main points of departure from the BI study: 1) the inclusion of contemporaneous impact of institutions (on outcomes during the colonial period), 2) the inclusion of ‘formal’ as well as ‘substantive’ institutions; 3) introduction of crop-specific effects, and 4) an examination of the impact of initial institutions on economic outcomes as being contingent upon developments in the *post-colonial period*. An inclusion of these dimensions alters the way we understand institutional persistence in peripheral agriculture in four important ways:

⁴² These were discussed in the literature review in Chapter 2

First, as Roy (2013) points out in his critique of the BI study, there is no necessity for the colonial institutional setup to impact outcomes *similarly* across the two *qualitatively* distinct time periods. Any changes in the nature of the impact across the two periods could point towards other mitigating factors that may have been overlooked. To account for the possibility of such jumps I run separate regressions of agricultural yields on measures of colonial institutions in each state, for each of the two periods (colonial and post-colonial).

Second, as Iverson et al (2012) point out, BI assume a correspondence between the “formal” and the “substantive” institutional types. The former is premised on using one of the three ‘official classifications’ ---*Zamindari, Ryotwari, and Mahalwari*---used to describe the land-revenue system, and then mapping them onto a ‘landlord’ versus ‘non-landlord’ binary. In contrast, the latter is premised on examining *actual* social relations, such as the existence of ‘tenancy’, ‘forms of power’, or the ‘distribution of surplus’ in the land economy. To take this into account, I use three different measures of institutional structure: one measure of ‘formal institutions’ (*zamindari* proportion) and two measures of substantive institutional type: i) Non-Occupants Tenants Ratio, a measure of political power; and ii) Surplus appropriated by large landlords, a measure of economic control, for every district.

Third, as argued in Chapter Four, different crops were viewed differently by the colonial state. By including crop-specific effects, we allow for the possibility that colonial institutional variables may impact yields of different crops, differently. For example, it is possible that a *zamindari khalis* institution may allow landlords to extract greater rents in cotton production owing to the greater state patronage offered to that commodity.

Finally, by contrasting between the short-run and long-run institutional impact in two different *state* environments (India and Pakistan), we can see if the nature of institutional impact varies not only across time (colonial versus post-colonial) but also space. This can reveal the intriguing possibility that the *long-term impact* of a colonial institutional structure depends not only on the past, but also the present; that is, it depends on how the post-colonial state reorganizes the initial institutional structure, after independence. Having shown that this does indeed seem to matter, we focus on the set of political and policy differences that differentiated the two Punjabs, *after* independence in the next chapter.

6.2 Rethinking Institutional Persistence in India

6.2.1 Theoretical Channels for Institutional Persistence

The most striking result in the BI (2005) study is to show that land-revenue institutions that were formally abolished after independence continue to have a differential impact on productive outcomes, even today. The question is: Why do such effects continue to persist?

BI offer three possible classes of explanations or channels through which a persistent impact of colonial institutions (operationalized as the ‘non-landlord’ proportion in their study) on current agricultural outcomes can be explained: 1) ‘land and wealth distribution’, 2) ‘the nature of political power’ and 3) ‘the relationship with the colonial state’.

The first channel is fairly self-explanatory and implies that landlord areas may lag behind non-landlord areas because landlords would appropriate any gains from improvements in productivity in the form of rents rather than allowing them to be reinvested in agrarian production.

The second channel proposes that in landlord areas there is a disincentive to make investments in improving land productivity due to the high risk of expropriation that arises from the asymmetry of power between landlords and tenants in these areas. As productivity increases, the rental value of the land increases, making it more lucrative for the powerful elite to expropriate the weaker peasants.

The third channel proposes that the colonial state was more incentivized to provide public goods (such as irrigation, railways, schools and infrastructure) in non-landlord areas because it was ‘easier for the state to raise rents in these areas’. BI do not explain why that may be the case but nevertheless conclude from this that non-landlord areas would be expected to have better public goods during the colonial period and that these initial advantages may still persist (Ibid).

For BI, the major part of the story comes from the differences in the political environment of the two kinds of areas. They contend that the “important difference in the political environment probably has to do with the nature of collective action in the two

areas”. In the post-independence period when “landlord areas were busy carrying out land-reform the non-landlord states started focusing on development”. (Ibid)

They dismiss an explanation based on differences in land and wealth distribution--- channel one--- as “there is no significant difference in the proportion of extremely large land holdings (between districts that inherited more or less non-landlord institutions) today”. This conclusion follows from the fact that the data “does not suggest any relationship between initial land-revenue *institutions* and the kinds of land *distributions* that exist in different regions today’ (ibid).

They also dismiss an explanation via channel three, even demoting it below in importance, to reason one. “Of the three classes of explanations discussed earlier, the explanation based on differential investment by the colonial state is probably the least compelling”. The reason that they offer for their dismissal is premised on the purely empiricist logic that “dropping the ‘non-landlord districts’ (many in Punjab)---that benefitted from colonial infrastructural development the most---from the sample has the result of *increasing* the effect of the non-landlord proportion on current yields.⁴³

Is it not somewhat surprising that an inclusion of the districts classified and coded as having the greatest ‘non-landlord proportion’ in the sample have the effect of *reducing* the proposed positive theoretical effect of initial non-landlord institutions on economic outcomes? If anything, an ‘inclusion’ of these districts---assumed to be ‘non-landlord’ districts because they happened to be “classified” as such---should have improved the predictability of the model (rather than weakening it).

While this should have raised alarm bells--- perhaps being suggestive of possibly intriguing theoretical effects specific to some states given the diversity of colonial experience--- BI (2005) do not take the issue up further and hence offer no explanation for this curious result. What explains it?

⁴³ Footnote number 28 on page 1209 of the paper.

First, as pointed out by Roy (2013) as well as Iverson et al (2008), it is not clear whether the areas classified as “non-landlord” areas (based on the land-revenue institutional mechanism) during the colonial period *were* actually non-landlord areas in the sense in which political economy understands the term. For example, Punjab that was exposed to the *Mahalwari* land-revenue arrangement has been classified as a ‘non-landlord’ institutional formation in the BI paper. In contrast, if landlord areas are understood as areas where the economic relationship of ‘tenancy’ dominates social relations of production, so that the cultivators are not simultaneously the owners of their land and produce, and ‘non-landlord’ areas as ones where the converse is the case, it is simply not true that the Punjab can be classified as an example of non-landlordist social structure.

For example, the *Land Revenue Administration Report of Punjab* for the year 1938 shows that 58% of the cultivated land of the province was farmed by tenants (LRA report, 1938: page 32). This should not come as a surprise since by 1936, over 61% of the cultivated area of the province belonged to just 15% of the owners (*Punjab Board of Economic Inquiry, Rural Publication No.4, page 3*).

Second, and this is also a part of the reason why BI are unable to provide an explanation is that their theory assumes that the impact of a greater landlord proportion on agricultural yields must be negative. There is no theoretical possibility, and hence no explanations are offered in the model, for a situation in which a landlord district may--- depending on *other* conditions--- in fact outperform a non-landlord district. Does such a theoretical possibility exist and if so, how?

6.2.2 Two Effects of a Zamindari Institutional Structure on Agricultural Productivity

Such a possibility does exist, at least in some conditions. One reason is provided by the discussion in Chapter Four and Five, where we had drawn a link between the economic objectives of the colonial state, its impact on state-led investments, and the relationship of the former with the institutional structure. To reiterate briefly, if the ‘formal’ institutional structure that was established in a particular district by the colonial administration was shaped by the level of state investments (canal irrigation) in that district, as we had seen, then a district with a *higher* level of state investments was also more likely to inherit a *more* landlord-based institutional structure. In addition to a greater proportion of the ‘formal’

institutional type (*zamindari*), we also saw that there was also the greater level of *substantive* economic and political control in the hands of the landlord class in districts with higher investments. The reason for this was the security of these mega investments in the hands of traditional allies, the landlords. Thus, the ‘economic’ objective of maximizing rents, that BI correctly identify, was weighed against the ‘political’ constraints of security of rents---which they ignore---and in the final analysis, the latter prevailed over the former (Talbot, 1998)

Given this understanding, what impact should the *zamindari* proportion---the percentage of estates within a district that were placed under the *zamindari* tenure---have on the variation in the yields per hectare across districts? A little analysis reveals that there should be two effects, working in opposite directions to one another.

The first impact---a positive one---can be called a ‘technical advantage’. It arises from the fact that a *zamindari* district can produce a greater output per hectare than a non-*zamindari* district due to the superior access to canal irrigation facilities, and export markets that it enjoys.

The second impact is a ‘structural impact’. For the same level of technical conditions of production, a district with a more landlord based social structure will have a lower yield per hectare, owing to the greater level of unproductive ‘rents’ that would have to be paid off. This can be explained by one of the three reasons already provided by BI (2005) or more simply by the higher level of tenancy in these areas (and hence the lower incentive to invest).

What is interesting to note, however, is that while the former effect can be resolved more swiftly---by equalizing access to irrigation facilities via active state intervention---the impact of the latter effect will be the source of ‘institutional persistence’. The source of this persistence is the greater consolidation of political, economic, and hence social power in the hands of landlords. As a result of their superior control over social forms of power, they will stand better suited to utilize state power post-independence, furthering their own group interests. We return to this point in Chapter Seven.

Thus, it may be possible that in the colonial period, the advantage accrued to *zamindari* districts due to superior canal irrigation (and hence ‘technical’ conditions) outweighs the negative effect associated with their inherent social structure. In the post-colonial world, the native elite may---under appropriate political conditions discussed in Chapter Seven--- invest

in under-developed areas and equalize the former effect. As a result, the negative effect due to social structure, which is much more persistent to change gradually begins to outweigh the positive effect.

6.2.3 Differences with the BI theory

Given the contradictory nature of the impact of the zamindari institutional type on agricultural productivity there are three major reasons why the hypothesized relationships between an institutional structure and agricultural yields may differ (in magnitude as well as direction) from the BI study. First, the BI study does not test for the impact of institutional structures *during the colonial period* itself. As Roy (2013) points out in his critique, while the impact of colonial institutions on the real economy is central to the BI thesis, the contemporaneous impact of these institutions on agricultural outcomes is absent from their analysis. To address these concerns, we include data for the colonial period as well as the post-colonial period allowing for a jump (if any) between a contemporaneous impact and a long-term impact to be empirically tested and captured.

Second, in the BI study, the cross-state comparisons across qualitatively incomparable institutions (Chapter Two) represses the ‘positive’ effect that landlord institutions may have due to ‘technical superiority’. ‘Zamindari’, as we had pointed out earlier, means different things in different parts of India. By regressing agricultural yields on institutional structures *across* states, and deriving empirical analysis from these, one is implicitly assuming that zamindari in Bengal is comparable to zamindari in Punjab and can hence be compared quantitatively on a continuum (non-landlord “proportion”). In contrast, as Iverson et al (2008) show in their critique, recoding districts in the Central Provinces (which had a third kind of system called Malguzari) completely changes the BI results. Here, we draw comparisons between the qualitatively similar institutional structures of Punjab. The institutional variance between districts *within* the same state are *quantitative* differences and hence can be reasonably approximated via real numbers as opposed to comparisons between what are essentially, apples and oranges.

Third, the main outcome variable---crop yields per hectare---cannot be seen in isolation from the larger social, political, and economic objectives that propelled it during the

colonial period. Different crops had different colonial *objectives* attached to them.⁴⁴ Cotton, as we know, had a privileged position in the colonial economic system due to historical reasons discussed in Chapter Four. These crop-specific institutional effects are missing in the BI analysis which looks at the “yields of crops” in abstraction from the ‘social’ role that different crops played in the colonial economy and state. Here, we allow these crop-wise effects to be tested, separately for each state, in each period. As we will see, the interaction between the ‘institutional structure’ and the ‘crop’ allows for intriguing possibilities.

Finally, there is the interesting possibility (from a theoretical standpoint) that the *long-term impact* of a colonial institutional structure depends not only on the past, but also the present; that is, it depends on how the post-colonial state reorganizes the colonial institutional structure, after independence. The existence of one region and two state environments (Pakistan and India) in the post-colonial era allows for this possibility to be explored.

6.3 Empirical Testing

6.3.1 Hypothesized Relationships and Model

We hypothesize that the effect of the colonial institutional structure on agrarian outcomes should be contingent on three factors: 1) the period under examination; so that the contemporaneous impact will differ from long-term impact; 2) crop-specificities; cotton is expected to behave differently than the food crops owing to its very different political economic history under colonialism (Chapter Four); and 3) the state environment which inherited a given institutional structure. The third point will only be treated here in the broad sense, as an ‘assignment to different state environments’. The dynamics of the political

⁴⁴ It is the same in colonized countries from other continents, such as Africa, where monocultural agrarian regimes were installed: tea from Kenya, rubber from Liberia, cocoa in the Gold Coast, palm produce from Dahomey and South Nigeria, cotton from Sudan and Uganda, and groundnuts from Senegal and Gambia. For a detailed discussion see Rodney (1972), “*How Europe Under-Developed Africa*”

transition at independence and the causes and impact of differential post-colonial state policy in each case will be the object of our investigation in the next two chapters.

To test these hypotheses, we will compare agricultural productivity across districts for *each state*, and each *crop*, in each period, respectively, by running regressions of the form:

$$Y_{cit} = \beta_0 Z_i + \beta_1 (Z_i * D1is) + \beta_2 (Z_i * D2t) + \beta_3 (Z_i * D1t * D2t) + \gamma X_{ist} + C_s + \delta t + \epsilon_{it} \quad (1),$$

where Y_{it} is the yield per hectare of crop C in year t , Z_i is one of three institutional variables used in alternative specifications (zamindari proportion, landlord economic control, landlord political control). $D1is$ and $D2t$ are dummy variables that identify the state and time period under consideration, respectively, with the following values: $D1is=0$ if district i is in Indian Punjab after partition, and $D1is=1$ if it is in Pakistani Punjab. The dummy $D2$ takes a value of 0 if the year is before partition, and 1 if it refers to the period after partition (1947). C_s and δt are state and period fixed effects, and X_{ist} is the vector of geographic control variables.

The model in (1) with the double interactions is a flexible specification to estimate the effect of Z on Y and also to see how the effect varies by state and period. We could also run four regressions separately to test the impact of institutions on yields in each period and each state, but this would reduce the sample size drastically. Instead, the model specified above allows for a much larger sample size. Evaluating this expression for the relevant values of $D1$ and $D2$ will provide estimates of interest. There are four possible combinations:

- 1) Effect of Institutions (Z) on Yields (Y) in districts in East Punjab Before Partition: for this case $D1=0$ and $D2=0$; hence, the relevant effect is β_0
- 2) Effect of Institutions on Yields in districts in Indian Punjab after partition: for this case $D1=0$ and $D2=1$; hence the relevant effect is $\beta_0 + \beta_2$
- 3) Effect of Institutions on Yields in districts in West Punjab before partition: for this case, $D1=1$ and $D2=0$; hence, the relevant effect is $\beta_0 + \beta_1$
- 4) Effect of Institutions on Yields in districts in Pakistani Punjab after partition: for this case $D1=1$ and $D2=1$; hence, the relevant effect is $\beta_0 + \beta_1 + \beta_2 + \beta_3$

I use three alternative specifications for the institutional variables. In addition to the ‘formal institutional type’ (‘zamindari proportion’), I also use the measures of landlord economic control (i.e. the percentage of surplus appropriated by large landlords in a district)

and political control (i.e. the percentage of non-occupant tenancy in a district) that were described in the previous chapter. As controls on geography, I use latitude, longitude, rainfall, and a dummy for soil quality.

6.3.2 Results

In Table 6.1 below, the coefficients on the institutional variable and its interactions with the state (where country code=1 refers to Pakistani Punjab/ Western Punjab) and period (where T=1 refers to the post-partition period) are reported in the three institutional specifications. As we can see, the coefficient on the institutional variable varies across all three dimensions discussed above: it shows crop-specificities, periodic-specificities, as well as state-specificities.

Let us start by looking at the first specification of the model, with the *Zamindari Proportion* in a district as our institutional variable. Comparing and adding relevant coefficients, we find that for the colonial period, the variation in yields between zamindari and non-zamindari districts is relatively similar across the two halves (east and west Punjab). Adding the coefficients for the institutional variable (Z) and the interaction terms we find that a *zamindari* district was associated with a 31% and 38% *greater* yield per hectare of wheat than a non-zamindari district, in the Indian and Pakistani Punjab, respectively. As expected, the superior ‘technical’ conditions resulted in greater yields, *despite* a regressive social structure.

But the nature of this impact changes radically in the post-colonial period. Even more interestingly, the nature of this change itself varies across the two states, reflecting a change in magnitude but also a change in the *direction* of the impact. For example, for the post-colonial period, a district that inherited a zamindari institutional structure is associated with a 16% *lower* yield per hectare of wheat on the Indian side; in contrast, a zamindari district on the Pakistani side was still associated with a higher yield of wheat than a non-zamindari district, albeit the fact that the magnitude of this impact has fallen---from 38% to 22%. The fact that the colonial structure continues to impact districts in the Pakistani Punjab *the same way* in the post-colonial period as it did in the earlier period reflects the greater level of institutional persistence on the Pakistani side.

In contrast to wheat, rice yields do not seem to be as sensitive to the institutional structure. But here too we find a jump in the direction of the impact from the colonial to the post-colonial period. For example, a zamindari district had a 9% and 13% higher yield per hectare in the Indian and Pakistani Punjab respectively during the colonial period for rice. While the direction of this impact becomes negative for the Indian Punjab after independence, the coefficient loses significance as well as magnitude for the post-colonial sample. The effect, while insignificant statistically, remains positive for the Pakistani Punjab.

Finally, cotton behaves differently than both of the food crops. Here the *direction* of the impact is similar across the two states and the two time periods. The difference lies in the *magnitude* of the impact. A zamindari district was associated with a 48% and 56% higher yield during the colonial period in the Indian and Pakistani Punjab, respectively. The magnitude of this impact falls sharply for the Indian Punjab, to 17%. In contrast, the coefficient falls only slightly for the Pakistani Punjab to 41%, reflecting once again, the greater level of colonial institutional persistence on the Pakistani side.

The results show similar trends with alternative specifications for the choice of the institutional variable, which reflects robustness of results. Using the “percentage of surplus appropriated by large landlords”---what Table 6.1 calls ‘landlord economic control’---the coefficient for wheat suggests that a district with a 1% greater landlord economic control during the colonial period is associated with a 1.3% and 1.4% higher contemporaneous yield of wheat per hectare in the Indian and Pakistani Punjab, respectively. As was the case with the ‘zamindari proportion’, however, the magnitude and direction of the coefficient reverses for the Indian Punjab during the post-colonial period, so that a district with a 1% higher landlord economic control is now associated with a 1.8 % *lower* yield. In contrast, on the Pakistani side, a district with a 1% higher landlord economic control continues to be associated with a 0.7% higher yield per hectare.

Table 6.1 Regression: Impact of Colonial Institution on Agricultural Outcomes			
Dependent Variable: Log Yield Per Hectare			
	Log Wheat Yield	Log Rice Yield	Log Cotton Yield
Specification 1: Zamindari Proportion			
Z	0.31*** (5.13)	0.09** (2.48)	0.48*** (7.04)
Z X CountryCode	0.07*** (7.83)	0.04* (1.85)	0.08*** (6.25)
Z X Time	-0.47*** (-4.66)	-0.15 (-0.34)	-0.31*** (-5.15)
Z X CountryCode X Time	0.13** (3.13)	0.06 (0.13)	0.16*** (4.61)
Specification 2: %Surplus Appropriated by Elite			
Z	0.0137*** (7.53)	0.004* (1.53)	0.026*** (11.42)
Z X CountryCode	0.0012*** (8.44)	0.003* (1.47)	0.007*** (9.38)
Z X Time	-0.0287*** (11.44)	-0.007 (-0.14)	0.044*** (7.54)
Z X CountryCode X Time	0.0218*** (7.66)	0.027 (0.11)	-0.06*** (8.51)
Specification 3: %Non-Occupant Tenancy			
Z	0.0142*** (8.19)	0.006* (1.39)	0.046*** (9.26)
Z X CountryCode	0.0008*** (7.61)	0.001 (0.64)	0.006*** (8.22)
Z X Time	-0.0471*** (9.05)	-0.009* (1.73)	-0.029* (1.46)
Z X CountryCode X Time	0.036*** (7.13)	0.0014 (0.08)	0.005*** (6.81)
Country Code=1 for West Punjab/ Pakistani Punjab Time= 1 for period >1947 <i>t</i> statistic in brackets; ***=significance at 1% level; N=86			

6.4 Conclusion

This chapter concludes our discussion in Section II on ‘infrastructural development’, its impact on ‘institutional formations’, and their impact in turn on real agricultural outcomes via contemporaneous effects and ‘institutional persistence’. The chapter showed three things:

1) It confirmed some aspects of the Banerjee and Iyyer (2005) framework, specifically by showing that historical colonial institutions still impact real agrarian outcomes, even today.

We showed that for both countries, the impact of the initial institutional variable, was significant: both statistically and in terms of magnitude.

2) It also pointed out the inadequacy of the BI framework that does not distinguish between the short-run and long-run impact of institutions owing to the qualitative shift that takes place at the time of independence. We empirically verified that such effects were very important in the context of Punjab, and possibly by extension, the rest of India. However, this needs to be explored further and nothing short of an all-India study that looks at the impact of land-revenue institutions on agricultural outcomes *during the colonial period itself* can answer the question, satisfactorily.

3) It showed how important it is to develop a state-specific and crop-specific understanding of the problem of institutional persistence. The first thing one notices when looking at the results of the regression reported in Table 6.1 is the relatively similar impact of institutional structures on agricultural outcomes across both Punjabs during the colonial period. But what accounts for the sharp reversal of the institutional impact on the Indian side? Why didn't a similar change take place on the Pakistani side of Punjab?

We return to these questions in the next chapter. Picking up the story at the eve of partition, we show how the forms of economic and political power inherited from the colonial period interacted with federal (or center level) politics to create different forms of controls over the state in each Punjab, and how it is *these*, newly formed, post-colonial political structures that explain the large differences in the content of the agrarian policies that were pursued in each case.

SECTION III

THE LONG DIVERGENCE

CHAPTER 7

POLITICS, POLICY, AND AGRARIAN STRUCTURES IN POST-COLONIAL PUNJAB

7.1 Introduction

Up until now our journey has focused on the ‘colonial’ aspect of the problem. In the last section, we examined the form of infrastructural development in each Punjab, and the corresponding political and economic institutions that emerged as a result of that development. In this section, which consists of two chapters, we turn our attention to the second part of the story: politics and policy differences in the two Punjabs *after* independence, and how these interacted with the former to produce the ‘long divergence’ between the two sides. I examine the set of historical factors at the eve of the partition of Punjab, the transition of power to different economic coalitions at this juncture, the relationship of the newly found ‘states’ to the central government in each case, the contestations over political structures, the formation of agrarian policies, and their impact on the evolution of agrarian structures after independence, in each Punjab.

In this chapter we conduct a comparative analysis of the evolution of post-colonial politics and policy, and assess their impact on agrarian structures, in turn. I argue that differences in three distinct, yet interrelated political conditions---‘the degree of democracy’, ‘strength of peasant movements’, and ‘state-center relations, in particular, the former’s autonomy in determination of agrarian policy--- led to major differences in the kinds of agrarian policies that were pursued in each case, and explain how these in turn, impacted the evolution of the agrarian structure that emerged in each case.

I start in Section 7.2, by conducting a historical analysis of political contestations at the eve of partition in Punjab. We show how late colonial politics led to the formation of peculiar kinds of political settlements and coalitions during this period. On the Pakistani side, an alliance of ‘salariat’, ‘landlord’, and ‘civil-military bureaucracy’ came

to dominate the state structure, while a coalition of rich and middle peasants in the Indian state of Punjab, captured state power and abolished landlordism (often popular with the subaltern classes) in alliance with a center committed to ‘industrialization’.

In 7.3, we examine how these differences in forms of class control over the state led to differences in agrarian policy. I examine four dimensions of agrarian policy: 1) Land legislations, in particular ceilings and abolition of intermediaries; 2) Tenancy reforms, in particular occupancy rights for landless tenants; 3) Support policies, in particular credit and pricing policies, and 4) Food versus Cotton policy. As we will see, the content and scope of these policies was radically different in the two states.

In 7.4, we capture the impact of these policy differences on the evolution of the agrarian structure in each case. I examine the evolution of landownership patterns, as well as the structure of tenures over the past seven decades. As expected, the patterns reveal a greater level of inequality in terms of land ownership on the Pakistani side, and also a higher reliance on ‘tenancy’ (which has been practically wiped out from the Indian state).

7.2 Political Power and Consolidation after Independence

Every economic system is embedded within a broader political system that both defines and constrains its possibilities. Political institutions matter. They are contested by different groups in a society because of their impact on economic distribution within a society (Acemoglu, 1999; Marx, 1867; Baran, 1954). They impact the latter because political power leads to legislations, policies, and other kinds of institutional changes in a society.

Following Poulantzas (1976) the state can be understood as being contested by competing groups and factions, each vying for political power which could then be used to further *individual* group interests within a capitalist state. As a number of studies have shown, every arena of public policy is impacted by the balance of power. Scholars have examined the impact of power relations on educational policy (Levinson, 2009; Bowles and Gintis, 1976), health policy (Maynard, 1995; Bossert and Mitchell, 2010), and exchange-rate formation (Kettell, 2012).

The case of the two Punjabs is an archetypical example of how differences in political structures can impact *agrarian* policies. As discussed in the last section, there were major differences in the political and economic institutional structures that were inherited by each side from colonial rule. In the post-colonial period, these initial structures interacted with new political and economic coalitions, to produce major differences in three key areas: 1) The relative strength of democratic institutions, 2) The relative strength of subaltern peasant movements, and 3) The relative degree of state autonomy in determining agrarian policy.

To understand how differences in these areas came about in the first place we must begin by looking at late colonial politics in Punjab at the eve of partition, before moving on to examine the set of differences that make the politics of each Punjab distinct from one another, after independence.

7.2.1 Political Economy of Late Colonialism in India

The years leading up to and right after the First World War witnessed major changes in colonial policy towards India. The War had brought about “severe dislocations in India’s economy and society” setting the stage for “mass nationalist movements in the early 1920’s” (Bose and Jalal, 2004; p. 126). As a result, Bose and Jalal argue, “some of the old axioms underlying the organization of the colonial state and economy since 1857 had to be abandoned on account of wartime exigencies” (Ibid).

The rise of the revolutionary nationalist movement had “persuaded the British that some initiative had to be taken to assuage public opinion” (Ibid, p. 129). Thus, “while continuing to take repressive measures against groups wedded to revolutionary violence, the British offered something to moderate nationalists”. In 1917, the secretary of state for India, Edward Montagu, declared that the ‘progressive realization of responsible government’ would be the goal of British rule in India” (Ibid). These were partially realized in the Montagu-Chelmsford reforms of 1919, which led to the introduction of “representative institutions”. However, “while broadening the basis of Indian political activity, the British retained the earlier policy of 1909, of balancing interests by creating separate categories for Muslims, landlords, and the Depressed Classes” (ibid).

Even the moderate nationalists were not satisfied by the scope of the reforms. As Bose and Jalal (2004) point out, “all that the 1919 reforms intended was to divert Indian attention away from the center and into provincial arenas. The new franchise, based on property and educational qualifications, was tilted in favor of the Raj’s friends, not its critics” (Bose and Jalal, 2004; p. 129). “Despite much song and dance about provincial autonomy, the center was equipped with all the authority necessary to curb powers in the provinces” (ibid).

Changes in the political sphere were a result of a broader set of changes that were taking place in the political economy of colonial India. As Bose and Jalal point out:

“The political economy of late colonialism was different in many respects from the ‘classical patterns’ established during its high noon. After the end of the First War the colonial state in New Delhi found it increasingly difficult to service the needs of the metropolis while holding on to vital attributes of Britain’s political and economic dominance in India. Already, the dislocations of the war had provided effective, though not formal, protection to India’s cotton textile industry, an opportunity this industry was quick to seize to the relative detriment of Lancashire. In 1922 London was forced to concede fiscal autonomy to the colonial government of India. This meant New Delhi could now impose taxes, including import duties, without having to seek permission from the metropolis. But if the fiscal authority and industrial dominance of Britain were being sapped during the 1920s, the shock of the Great Depression of the late 1920s and early 1930s overturned most of the equations of the metropolis–colony relationship. Import-substitution gathered momentum in India, displacing many of the traditional privileges enjoyed by British manufactured products. Lancashire decisively lost out to Bombay and Ahmedabad, whose cotton production outstripped British imports. In 1929 nearly twelve hundred million yards of British cloth had been imported into India; ten years later less than a hundred and fifty million yards of cloth came in.” (Bose and Jalal, 2004; p. 131).

7.2.2 Political Formations and Coalitions in Punjab

The changes in the broader dynamics of colonial India shaped the ‘provincial’ politics of each region. Jalal (1994, 1999) and Gandhi (2012) point out that the nature of colonial politics in Punjab changed dramatically after the introduction of ‘representative institutions’ in 1919. As pointed out earlier, the new legislations had made political representation contingent upon religious identities and electorates. The first provincial

assembly---virtually handpicked by the British themselves---consisted predominantly of those who had been fortunate enough to be classified as “Native elites” in the official *Caste and Race Manual* of the British Raj. As a result, once these ‘representative’ institutions had been introduced the politics of the region began to be articulated in terms of ‘religious’ constituencies.

Order was maintained within ‘representative’ institutions via one or two ‘favored parties’. For example, throughout the mid to latter part of colonial rule, Punjab was governed by a ‘secular’, feudal party known as the Unionist Party of Punjab. The Unionist Party was a party that was committed to the joint interests of the landed elite in the Sikh, Muslim and Hindu communities. The Unionists represented the traditional power base of British imperialism and remained faithful to colonial authority even at the peak of the anti-colonial movement (Talbot, 1985)

Meanwhile, the Muslim League (that demanded Pakistan later) had by the early 1940’s emerged in urban localities as a party that represented the interests of the salary earning classes of the Muslims in minority provinces such as U.P and C.P (Alavi, 1975). Hamza Alavi describes this class as the ‘salarial’, that is, the class in society that emerged in relation to the development of the colonial state in India; a class that was necessary for the functioning and running of the colonial state machinery. Put simply, the salariat was the class in society that was “responsible for the functioning and running of the colonial bureaucratic system” (Alavi, 1975).

The Muslim League, which had failed to gather the popular support of the Muslims in the Muslim majority provinces throughout the colonial period, had won a significant constituency in the salariat class during the late 1930’s and 40’s (Alavi, 1982). While it discursively claimed itself to be a party that represented the joint interests of *all* Indian Muslims, its message only acquired currency in Muslim *minority* provinces. Thus, the irony of the Pakistan movement lies in the fact that the provinces and regions that ended up becoming a part of the country never had any widespread support for the party that came to dominate its center later, i.e. the Muslim League, while the provinces where the demand for Pakistan was the most vociferous ended up in India (Ibid). How then did the League manage to win support for the idea of Pakistan?

Alavi explains that this would not have been possible without the crucial alliance between the Muslim sections of the Unionist party and the Muslim League at the eve of independence. When the Indian National Congress, led by Nehru, pre-committed itself to an “uncompensated land reform after independence” in 1946, Muslim landlords in Punjab, Sindh and Bengal decided to form an alliance with the Muslim league on Jinnah’s promise that a land reform would never take place in Pakistan (Alavi, 1985: 46-48).

Alavi describes this sudden shift in the attitudes of the Muslim sections of the landlords in the Unionist Party as a ‘temporary marriage of convenience’ between the Muslim League---the party of the salariat---and the Muslim section of the Punjab Unionist Party. This marriage of convenience was a result of a fear--- rampant amongst sections of Muslim landlords in the Unionist Party--- that a Congress-led center would engage in reforms that would permanently, or at the very least significantly, damage the power and influence of the landed gentry.

As a result of these fears the Punjab Muslim League incorporated the Muslim Unionists into their ranks and swept the 1946 elections in Punjab, beefing up the demand for its partition (Gandhi, 2014). Concurrently, and in the wake of the Second World War it had become increasingly impossible for the British to sustain such a massive colonial empire and plans were hastily made for a ‘transition’ to dominion status. Thus, a partition plan was devised for Punjab and Bengal with Sir Cyril Radcliffe as its head. The plan was supposed to submit its recommendations in less than two weeks.

Radcliffe had never been to India and had never deeply studied the geographical or historical aspects of the country. His findings were announced three days after the two states had already been partitioned, leading to chaos and anarchy in the province. The Punjab was divided between India and Pakistan in 1947 on a purely religious basis. The marriage of religious, ethnic, and class identities went far beyond the independence of the region; the Indian side of Punjab would soon come to be dominated by a self-proclaimed “Sikh nationalist party” representing the interests of middle and rich peasants known as the Shiromani Akali Dal. On the Pakistani side the Muslim section of the former Unionist

Party formed the Punjab Muslim League, which has since entrenched its power in the political system via the colonial political and bureaucratic system (Jalal, 1999).

The political coalitions that came to dominate each state used their power and control in different ways, leading to differences in political ‘conditions’ and structures between the two states, after independence.

7.2.3 Differences in Political Structures after Independence

Three major differences arose, first in the degree of development of democratic institutions, second, in the relative space that was accorded to independent political mobilization of the poor peasants, and third, the degree of state autonomy in the determination of agrarian policy.

Democratic Institutions

When we compare the post-independence political systems of the two Punjabs we see a major difference in the degree of development of democratic institutions in each case. A number of studies have pointed towards the positive impact of democratic institutions on the economy (Rodrik, 1999; Lindert, 2004; Perrson and Tabellini, 2003). At least one study by Lapp (2004) has also pointed towards a statistically significant relationship between democracy and land reforms for Latin American countries.

The question is: through what theoretical channels might democracy impact policy in general, and agrarian policy in particular? Johnson (2011) argues that even with the same kind of elite power a system premised on representative institutions will be compelled to cater to the interests of the popular electorate to keep its own narrow group-interests intact. In a recent paper, Acemoglu (2013) makes the case that regardless of the form (democratic versus non-democratic), every political group will need to make some expenditures to sustain its political power. The difference between the two forms arises in the *level* of expenditures. In the case of a non-democratic regime, he argues, these expenditures will be strictly speaking, lower than a democratic regime leading to the result that non-democratic societies will be more unequal than democratic societies (Acemoglu, 2013).

This seems to have been an important factor in the twin states. While the Akali Dal has ruled Punjab for many decades, and most of its members are typically inducted from the rich and middle peasantry, it has had to cater to the demands of the poor peasantry simply because of their sheer numerical strength, which can be crucial in determining election outcomes. These concerns seem to have been important in years when the Congress has managed to defeat Akali in the Punjab elections (Bhalla and Talib, 1976). It also seems to have been an important reason why Akali lost to the Congress and Aam Aadmi Party in many districts of Punjab in the 2014 Indian general elections. As Bhalla and Talib point out, electoral competition has meant that the ruling party has to “respond to the needs of the small peasants to make sure that they also obtain fertilizers, credit, irrigation and power at the prevailing price” (Bhalla and Talib, 1976; page 72).

In contrast, the experience of democracy has been much more abysmal on the Pakistani side. Democratic governments have been in power for barely 24 of the 69 years since the country gained independence. The roots of dictatorship, according to Jalal (1999) were sown in the very first decade. The first martial law regime was established even before the official coup in 1958 which was led by General Ayub Khan. Until then Pakistan was governed by the civil bureaucracy, which under President Mirza had explicitly stated that “Pakistan was not ‘ripe for democracy’, and needed a system of controlled democracy with real power for the head of the state so that if the train went off the rails somebody could put it back on the track once again” (Jalal, 1999; 197).

Jalal (1999) sees the lack of democracy in Pakistan as being a result of “an economy of alliance” between landlords in Punjab and the ‘upper echelons of the state apparatus, both civil and military’. These groups had “strong reservations about a general election” in Pakistan (Jalal, 1999; 235). “For these architects of state consolidation”, Jalal points out, ‘a compelling argument against allowing the political process its head’ was the question of “national security” connected with the “precarious condition of the “national economy” (Ibid).

The question of ‘national security’ and its relationship with the ‘national’ economy seems to have allowed, at least initially, a confluence of the economic interests

of the Punjabi landlords and the military. The Pakistan army was heavily dependent on “US technical, military and commodity aid” which in turn required export earnings. As Jalal points out, “building a state structure largely geared to sustaining a political economy of defense in a country where agriculture accounted for over 60 percent of the gross national income was not without attendant political risks”.

This led to a natural alliance between the civil-military bureaucracy on the one hand and the export-oriented landlords, who as we had seen in Chapter Four, had gained importance in the colonial state owing to their command over cotton production. The political coalition has successfully blocked the development of democratic institutions in Pakistan. The first democratically elected government (led by the Pakistan People’s Party) came into power in 1971, nearly twenty-five years after independence, with the promise of an extensive land reform package for the poor peasantry. However, soon after the second wave of land reform legislations in 1976, the democratically elected government was overthrown and all legislations quickly reversed.

Strength of Peasant Movement

A second major difference in the political structures of the two Punjabs lies in the relative strength of subaltern peasant movement, in particular, the formation of agricultural labor organizations that could articulate the interests of the small peasantry and rural proletariat, while remaining distinct from peasant organizations representing the interests of the middle and rich peasantry.

This is related partially with the relative strength of democratic institutions in each case, but goes beyond it in the sense that the Indian state, unlike its Pakistani counterpart, was willing to share power (however little) with workers and peasants movements within a constitutional framework. In India, the two major left parties (Communist Party of India and Communist Party of India-Marxist) have had an important role to play in electoral politics in Punjab. In contrast, the Communist Party of Pakistan was officially banned after the Rawalpindi Conspiracy Case in 1951 (For a detailed discussion see Asdar Ali, 2016).

Prior to partition, the Punjab region witnessed a number of peasant uprisings against colonial rule. Peasant militancy was led by groups such as the Kirtis and Akalis which revolted for the rights of tenants and poor peasants. Peasant groups led important struggles against the colonial government, rallying around issues of debt and land-revenue cancellation. These movements, in coalition with the communists, became so popular that in 1938 the British colonial authority had to concede to the demand of debt cancellation and the replacement of land revenue with an income tax (Bhalla, 1976).

After independence, the Indian Punjab continued to see a vibrant peasant uprising during the 1960's and 1970's. These were led by what was then the united Communist Party of India (CPI), which later splintered into the CPI and CPI (M). These communist parties were to form one of the largest peasant organizations in the world, namely the *All India Organization of Agricultural Labor* followed by the formation of the *Radical Peasants Union* (later the Punjab Naxalite movement).

The importance of the development and relative strength of independent peasant organizations representing the interests of the small peasantry cannot be overstated. For example, soon after independence, the issue of agricultural laborers and small landholdings became important in the light of the land allotment policy for migrants from both Punjab (*Punjab Human Development Report, p.21*). The central government in India had transferred 'evacuee property' (property left behind by people migrating to Pakistan) to the Punjab government in 1960 with the intention of transfer to landless tenants and small farmers. However, the state government of Punjab (led by Akali) argued for a policy of "open auction", which obviously led to the elite capture of these lands and eviction of agricultural tenants and workers (Talib, 1974).

This led to peasant struggles between the agricultural workers and tenants and the government in Jalandhar, Ludhiana, and Ferozpur. These struggles were led by the Joint Action Committee of the Kissan Sabha (Peasant Union) and Mazdoor Sabha (Worker's Unions) with lower caste Sikhs and Hindus comprising the leadership of these grassroots movements (Ibid, 23). The struggles coerced the state government to ensure the property rights of the small farmers.

In contrast, the experience of peasant struggles on the Pakistani side of Punjab has been negligible. As a result, little or no security exists for the property rights of small farmers. With the official banning of the Communist Party of Pakistan in 1951, its grass roots fronts (Kissan Union, Mazdoor Kissan Union) were also abolished and peasant leaders were heavily persecuted. Despite the heavy handedness of the state many grass roots movement have developed, most recently the *Anjuman-e-Mazaareen Punjab* (Union of Landless Peasants), which is leading a militant struggle against military farms in Okara since 1999. Given the lack of a constitutional framework guaranteeing freedom of association, peasant struggles are met with coercive power and eventually crushed.

State-Center Relations in Determination of Agrarian Policy

A third major difference in the political structures underpinning agrarian institutions in the two Punjabs has been the greater level of state autonomy in formulating agrarian policy on the Indian side as compared to the Pakistani side. This was important especially in the first two decades when ‘rapid industrialization’ had become the central goal of the two federal governments. State autonomy in agrarian policy meant that if states/provinces could decide their own agricultural policies, they could achieve some level of autonomy from the diktats of the central government. This was particularly crucial for states like Punjab where agriculture was the most pivotal section of the economy.

The Indian constitution guaranteed agriculture to be a ‘state subject’. This meant that that land legislations would be brought forth by each state, keeping its objective conditions and constraints in focus. Additionally, other aspects pertaining to agrarian policy, such as village administration, subsidies for electricity, and the provision of fertilizers and other inputs, were also handed over to the individual states.

In contrast, Pakistan could not develop a workable constitution for the first twenty-seven years of its existence. This was partially a result of the inability of nationalities within the federation (Sindhi, Baluchi, Pashtoon, Punjabi, Bengali) to come up with a mutually agreeable constitutional apparatus. The Punjab-dominated military and bureaucratic elite wanted to control the rest of the provinces from the center by extracting their resources (Alavi, 1979; Rais, 1999) and as a result could not devolve power to the decentralized provincial units. When a constitution was finally agreed upon,

in 1973, it promised a greater devolution of power to the provinces. Yet, it was not until 2011 that agricultural policy was finally declared to be a provincial matter via the 18th Amendment.

Policy makers in India had argued for greater autonomy of states in determination of agrarian policy because, they argued, in its absence agrarian policy would become completely subsumed to the interests of the center. This fear to a large extent explains what happened in Pakistan where the central government (led mostly by the military elite), led as it was by a policy of “national security”, pursued an export-oriented agricultural policy that would maximize foreign exchange earnings, which in turn could be used to fund imports to build the military arsenal. ‘Cotton’ was to play a major role in this agrarian policy as argued below.

7.3 Differences in Agrarian Policy

The differences in political structures described above led to major differences in the kinds of agrarian policies that were pursued in each Punjab. The differences in policy emerge because of the dual impact of the preferences and objectives of the central governments (‘food security’ in the case of India and ‘national security’ in the case of Pakistan) on the one hand, and the internal class structure and relations within each Punjab, on the other.

The combined effect of ‘democratic institutions’, ‘peasant struggles’, and ‘state autonomy in determination of policy’ can best be seen by examining three arenas of agrarian policy: 1) Legislations pertaining to land, such as the establishment of land ceilings, and the prevention of fragmentation and the consolidation of landholdings; 2) Support Mechanisms, such as the provision of credit, subsidized inputs e.g electricity and fertilizers, and 3) Cotton policy versus food policy.

As expected one finds major differences in the content as well as the execution of these reforms, with the Pakistani side showing a clear landlord and ‘national-security’ bias in agrarian policy, while the Indian side privileging the middle and rich peasants of the state to encourage capitalist farming on the one hand, and ensuring ‘food security’ on the other.

7.3.1 Land Redistribution and Tenancy Reforms

One of the major differences in the agrarian policies followed in the two halves was in the commitment, or the lack of it, to land and tenure reforms. The most striking example of this lies in the difference in the land ceilings that were established by the last round of reforms (1972) in the two Punjabs: 17 acres versus 150 acres of irrigated land, and 50 acres versus 300 acres of non-irrigated land, in Indian and Pakistani Punjab, respectively. How did such a large difference in ceilings come about?

The Indian reforms were to take place as soon as the early 1950's. As pointed out earlier, the Constitution of India declared 'land reforms' to be a 'state' subject; as a result, there were differences in the execution and effectivity of these reforms across the various states. There is little doubt, however, that the reforms in India were "the largest body of land reform legislation ever to have been passed in so short a period in any country" (Thorner, 1976).

Scholars disagree about the effectivity of these reforms; Bardhan (1970), for instance, argues that while many different levels of land legislation were introduced, the lack of 'seriousness' with which they were actually implemented significantly undermined the impact that they could have had on poverty reduction. Using 17th round of NSS data, he points towards an increase in the percentage of rentier households in the countryside. In contrast, Besley and Burgess (2000) use panel data from sixteen states from 1958 to 1992 to show that the reforms had an "appreciable impact on growth and poverty" (Besley and Burgess, 2000; 389).

Given the "mahal-based" (explained in the previous chapter) nature of landownership in Punjab, land ceilings were quoted in 'family' as well as 'individual' units. On the Indian side, two major acts were introduced within the first decade of independence; these were the *Punjab Security of Land Tenures Act, 1953* and the *Pepsu Tenancy and Agricultural Land Act, 1955*; two further acts were introduced in 1972 and 1973. The first two led to: 1) Abolition of all large estates; 2) Establishment of land ceilings at 30 acres of irrigated and 60 acres of non-irrigated land; 3) Rights of occupancy to non-occupant tenants. The subsequent acts of 1972 further reduced the land ceiling for a family to 17 acres of irrigated and 50 acres of non-irrigated land (*Punjab Land Reforms*

Act, 1972). The major impact on the agrarian structure was to come, as we will see in the next section of this chapter, from the tenancy reforms which completely abolished within the first three decades tenancy in general and non-occupant tenancy in particular from the Indian Punjab, resulting in a rapid improvement in the bargaining power of the agrarian poor.

In comparison, the experience of redistributive reform has been much different across the border, in Pakistan. The first martial law regime in 1958 sought to ‘modernize’ the country; as expected, given the limited level of state autonomy in the determination of agricultural policy, the ‘land reforms’ were to be a part of the ‘industrial policy’ of Pakistan, with the explicit aim of encouraging the extremely large landlords to expand their investments into the “modern sector”. This would be a part of the Green Revolution in Pakistan. From the political perspective, any ‘reform’ had to be conducive to the political elite, which was mostly composed of large landlords. Resultantly, a considerably favorable land ceiling of 500 acres of irrigated (more than 15 times higher than the Indian reforms of 1952) and 1000 acres of non-irrigated land was established. Landlords were compensated for the appropriated lands at the market value of their lands, with these values being often over-stated by the bureaucracy via the influence of the landlords. In any case, the extremely generous ceilings ensured that in terms of actual content, they would have very little to offer (Khan, 1987).

A second wave of land legislations took place in Pakistan under its first elected government in 1972. The new wave of reforms sought to bring down the land ceiling to 150 acres of irrigated and 300 acres of non-irrigated land. Actual implementation, however, was scarce as more than half (58%) of the landholdings over the established limit were never even appropriated (Nasr, 1996). The failure of the democratic regime in implementing the reforms was attributable to the resistance offered to them by the powerful landlords.

Given the failure of the first two rounds of land reforms in Pakistan, the elected government in 1976 announced a third wave of ‘radical reforms’; the aim of these reforms would have been to bring down the ceilings to 100 acres of irrigated and 200 acres of non-irrigated land. However, within a year of the Act being passed, its

implementation was preempted via a military coup supported by the landlords and traditional religious powers, who were organized under the banner of a “Pakistan National Alliance” (PNA). The PNA took the matter to the Federal Shariat Court, which would look into the matter of “whether or not land reforms were allowed by Islam”. The court gave a ‘landmark’ decision with the following judgement permanently vanquishing all attempts at future land legislation in Pakistan:

“Islam has imposed no quantitative limit (ceiling) on land or any other commodity that can be owned by a person. If the state imposes a permanent limit on the amount of land which can be owned by its citizen, and legally prohibits them from acquiring any property beyond that prescribed limit, then such an imposition of limit is completely prohibited by the Shariah.”
(Federal Shariat Court, Pakistan)

7.3.2 State Support Mechanisms

A second major difference in the agrarian policies of the two states lies in their commitment to support mechanisms, such as provision of credit and subsidies and support-prices. Here too, we find major differences in the class content of the agrarian policies in terms of the beneficiaries of the support mechanisms.

Institutional Support and Credit Mechanisms

A major difference in the content of agrarian policy pursued across the two states lies in each state’s commitment to the provision of credit. As pointed out by colonial administrators, the indebtedness of the peasantry was a major problem in agriculture throughout the colonial period in Punjab. In an influential study, Darling (1911) argued that the commoditization of land had led to the emergence of a class of rural money-lenders, who had assumed importance in the rural economy by virtue of their dual role as providers of credit on the one hand and trade intermediaries, on the other (Darling, 1911). Throughout the colonial period, a large number of agricultural households had become indebted to this class, and subsequently lost their lands to them. As political rebellions broke out throughout the Punjab in 1907, the problem had become so severe that the colonial government had to pass a bill---the *Alienation of Land Act, Punjab*---which stipulated that land could only be held by members of ‘agricultural castes’. In addition,

the colonial government had begun to initiate schemes for 'cooperative' borrowing and lending. These cooperative schemes were to remain the primary source of institutional credit for farmers throughout the latter half of the colonial period.

Even after partition, till the 1950's, 'cooperative credit societies' were the only source of institutional credit in both Punjabs. Thus, post-independence credit policy in the two sides differed in the degree to which existing cooperative institutional mechanisms were strengthened on the one hand, and other forms of credit for poor farmers were developed, on the other.

The Indian Punjab offered low-interest loans to a large body of farmers via one of two mechanisms: 1) Schemes for the establishment of cooperative credit societies, 2) Land Development Banks (LDB's). Credit from the former source required membership by individual households and within the first two decades a large percentage of rural households were members of a society (Table 7.1). These credit societies were designed to meet seasonal fluctuations in the demand for variable inputs; this was done to reduce the volatility associated with agriculture in Punjab where seasonal changes can rapidly alter the demand for such inputs. These credit societies typically provided farmers with short-term loans at low interest rates to meet such seasonal fluctuations. In contrast, LDB's provided credit for longer term investments, in particular sunk costs, such as the acquisition of machinery (such as tractors, threshers etc.) and/or the installation of tube wells and other automated water-delivery mechanisms. As table 7.1 shows, the amount of credit given by these sources almost doubled within the first two decades on the Indian side.

In comparison, on the Pakistani side loans provided by credit societies actually shrank in the first decade of independence, falling from Rs. 17 million in 1949 to Rs. 11 million in 1957 (Review of Agricultural Statistics of Punjab, Pakistan, 1985). While over 93% of the rural households on the Indian side were members of credit cooperatives by 1980, less than a fourth of the households on the Pakistani side were members of cooperative credit societies.

The Pakistani government established the Agricultural Development Finance Corporation⁴⁵ (later ADBP) in 1957, with the stated aim of ‘modernizing’ agriculture. The priorities of agricultural loans would be set by the aim of advancing long-term loans, typically to large owners, for mechanized farming. Barring the exception of the 1970-77 period in which Pakistan was under a democratically elected regime, and loans furnished to poor farmers saw an increase of 500%, the percentage of rural households with access to credit from the corporation has traditionally been very low. The failure of the ADBP in generating credit for poor farmers can be seen from the fact that in 2015, while almost half the rural households of Punjab were indebted, only a tiny fraction (0.7%) had taken the loan from ADBP and the overwhelming majority (92%) reported informal sources (friends, relatives, family) as their primary source of credit (Agricultural Abstract of Punjab Statistics, 2015).

Input-Support: Fertilizer and Electricity

One major difference in the agrarian policies of the two states lies in the set of mechanisms pursued for the provision of non-farm inputs to farmers. While the Indian side focused on ‘provision’ mechanisms in conjunction with its cooperative credit societies, the Pakistani side focused on ‘pricing’ mechanisms at the general level. In combination with the cooperative credit societies that were established, the Indian Punjab also introduced a federation that was designated to meet the supply needs for inputs (fertilizers) of members of its cooperative societies; by the early 1960’s nearly every rural household was a member of the federation.

In contrast, the fertilizer policy of Pakistan relied almost exclusively on the pricing side of the equation. The first fertilizer policy (issued at the central level in 1953) sought to insure that “fertilizers are provisioned at below import prices” to farmers. This policy remained effective until 1965, when a second policy was introduced, allowing for

⁴⁵ Renamed the Agricultural Development Bank of Pakistan in 1970

the gradual establishment of ‘market parity’ with international markets; a third and fourth policy, was introduced in 1989 and 2001, respectively; the latter policy sought to deregulate the fertilizer sector completely as to bring domestic fertilizer prices completely in line with global market prices to allow “free market forces to prevail” (Khan, 2006)

The impact of differences in fertilizer policies can best be seen by comparing the per hectare consumption of fertilizer (nitrogen) over time (Table 7.1). As we can see, the Pakistani Punjab in fact outstrips its Indian twin for the first two and a half decades. However, starting with the mid 1960’s, fertilizer use per hectare begins to grow exponentially in the Indian Punjab and the difference has grown substantially over the years. In 1963 (prior to the second policy), for example, the per hectare consumption of fertilizer was almost 20% higher on the Pakistani side; by 1969, the tables had completely turned in the opposite direction, so that the Pakistani side now lagged behind by 17% in terms of per hectare fertilizer consumption.

Table 7.1 Fertilizer Consumption (Nitrogen Kilograms per Hectares)

Period (Moving Average)	Indian Punjab	Pakistani Punjab
1955-60	1.8	2.8
’60-65	2.1	2.9
’65-70	18.7	15.4
’70-75	32.5	21.7
’75-80	57.4	35.3
’80-85	77.2	46.7
’85-90	93.6	66.1
’90-95	125.1	87.2
’95-2000	157.4	104.5
2000-05	184.1	132.5
’05-10	194	151

Source: Government of Punjab Agricultural Census Reports

In addition to fertilizer, an important non-farm input is the provision of rural electrification. Cheaper electricity provides farms with better access to tube wells, motorized pumping, and allows for the extensive use of threshers.

In 2003 while Pakistan provided no subsidies for electricity consumption in the agricultural sector, in the Indian Punjab the size of the subsidy stood at 7% of state expenditures (World Development Report, 2008: 116). The provision of subsidized or free electricity to farmers was a key component of the set of public policy reforms that took place in the early 1950's and 60's in Indian Punjab. As a result of those set of reforms the "share of electricity consumption by agriculture with respect to domestic, industry and commercial uses, increased from 3.9% in 1960, to 10% in 1970, to 18% in 1980, and to 32.2% in 1998" (International Food Policy Research Institute, 2007).

Electrification was negligible in the Punjab region during the colonial period, with the Indian side having slightly over 0.2 percent and the Pakistani side with slightly over 0.4 percent of villages with electricity.⁴⁶ As we can see from Table 7.2, however, within the first two decades nearly half the villages on the Indian side of Punjab had been 'electrified' as compared to barely six percent of Pakistani villages. Moreover, while complete rural electrification had been achieved on the Indian side by 1978, the Pakistani side has still not been able to deliver electricity to over 27% of villages.

⁴⁶ In the data, a village is deemed as being 'electrified' if at least 10% of the households in that village have access to electricity

Table 7.2: Percentage Villages with Electricity*

Period (Moving Averages)	Indian Punjab	Pakistani Punjab
1950-55	0.2	0.5
'55-60	14.5	1.1
'60-65	29.4	3.7
'65-70	47.1	5.7
'70-75	87.3	9.5
'75-80	100	10.6
'80-85	100	14.5
'85-90	100	24.1
'90-95	100	36.8
'95-2000	100	47.8
'2000-05	100	57.4
'05-10	100	73.4

Source: Agricultural Census Reports

Note: A village is deemed as 'electrified' if 10% of the households in that village have access to electricity

The difference in electrification can be potentially crucial for the cost structures of farmers, especially in terms of the application of farm machinery, leading to differences in the investments that farmers can make on equipment. As Table 7.3 shows, there is a wide gap in the use of electric equipment on the two sides, and as external effects, on other farm machinery. While the use of diesel tube wells is approximately the same, the Indian Punjab has a far higher number of electric tubewells, tractors, and other farm equipment. Combined with the fact that the cost of an electricity tube well is about half the cost of a diesel tube well, one can easily see why the costs of investing in machinery, per hectare, would be much higher on the western side of Punjab as compared to the east.

Table 7.3 Utilization of Farm Machinery (per 1000 acres)

Equipment	Indian Punjab	Pakistani Punjab
Electric Tubewells	70	1.57
Diesel Tubewells	14	14
Tractors	33	7
Threshers	28	2
Tillers	24	5.9
Disk Harrow	25	0.3
Seed Driller	16.9	1.24
Combined Harvesters	0.7	0.04

Source: Government of Punjab India Census of Farm Machinery 2012
Pakistan Bureau of Statistics, Census of Farm Equipment 2012

Cotton Policy in Indian and Pakistani Punjab

A final area of agrarian public policy that requires particular mention is the kinds of ‘cotton policies’ that were pursued in each state. As was argued in Chapter Four, one of the key areas of British imperial policy after the American Civil War was the degree of importance that was attached to cotton production and exports in Punjab. It would be interesting to see how this policy was altered after independence, in each case. In addition, as we seen in Chapter Three, while food production diverged significantly in the favor of the Indian side, cotton production in Pakistan remained similar and in fact outstripped the Indian side for many years.

While both countries have historically managed domestic prices to encourage the sector, the content of cotton policy has varied sharply between the two states. While India’s cotton policy was geared towards the support of the “handloom sector requiring that non-vertically integrated spinners supply 50 percent of their yarn output to this sector”, Pakistan’s policy has been set to promote the direct exports of cotton yarns (Gillham et al, World Bank Technical Number 27, p. 129)⁴⁷ Cotton exports (including

⁴⁷ Cotton Production Prospects for the Next Decade

apparel) account for two-thirds of Pakistan's export earnings. The Indian government, on the contrary, has institutionalized a tax on yarn; in addition, raw exports are also restricted via Multi-Fiber Agreements (ibid).

Both countries intervene in the pricing of cotton but with very different aims. On the Indian side, the policy is directed towards ensuring the three pronged result of 1) low cotton prices to "encourage value added textile exports instead of cotton exports", 2) controlling cloth prices, and 3) keeping yarn prices at low levels" (Ibid, 134).

On the Pakistani side, cotton policy has been connected to export earnings. Pakistan provides two prices, a Minimum Export Price (MEP) and a Benchmark Price (BP); the former represents the "cheapest value at which cotton could be bought for by the international market" while the latter refers to the "maximum internal price paid for cotton" (ibid, p. 131). The difference between the two prices is used to calculate the export-duty on cotton, which is the driving force of cotton policy in the country.

One major shift in Pakistan's cotton policy took place after the installation of the first democratic regime in 1970. In 1973, the exports of cotton were nationalized with the formation of a Cotton Export Corporation. This meant that private producers (mostly large landlords) could not export cotton without the governments' permission. This obviously did not sit well, either with the large landlords or the military elite, both of whom relied heavily on cotton exports: the former, directly as income and the latter, indirectly as foreign exchange was needed for the purchase of imported military supplies. Consequently, the martial law regime of Zia ul Haq (1977-1988) once again deregulated the exports of cotton in 1983.

On the Indian side, the Commission on Agricultural Costs and Prices (established in 1967) establishes minimum support prices for cotton. The policy seeks, on the one hand, to sustain the cotton farmer (by setting the price as a markup on production costs), and encourages the adoption of technology, on the other. Cotton marketing takes place via the cooperative credit and marketing federations (described above) or the publically owned Cotton Corporation of India (CCI) (Ibid, p. 133). The Indian Punjab (along with other states) introduced the Agricultural Markets Produce Acts to regulate pricing and discouraging "unfair trade practices"; these are managed by a "committee comprising

elected representatives of growers, buyers, and commission agents”; estimates show that “80 percent of the seed cotton sales occur in regulated markets” with the CCI accounting for over 30 percent of the total sales (ibid).

7.4 Impact on Agrarian Structure and Investments

In the last two sections, we made an attempt to demonstrate how after independence, different political structures came to dominate each state and how this in turn, led to differences in agrarian policies in the two states. Now, we focus on the impact that these state policies have had on the evolution of agrarian ‘structures’. By the agrarian structure here, we mean the structure of land ownership and the tenure arrangement (owner versus owner-cum-tenant versus pure tenant farming).

To capture this evolution I rely on government statistics from decennial agricultural censuses that were conducted in the two states. The data represents *operational* landholdings and not landownership per se since ownership data is not readily available. While there is some data available on landownership in the Indian context it is not reliable because landowners have, in both countries, avoided land ceilings by transferring titles to relatives.

7.4.1 Structure of Landholdings

In section 7.3, we compared the content and execution of land legislations (ceilings and consolidation) that were introduced in the two states after they gained independence. In Table 7.4, I present the evolution of the structure of these landholdings by class size over the course of 50 years for which decennial census data is available (1960 to 2010). Three major insights about the comparative evolution of the agrarian structure can be derived. First, it can be observed that while control over the land is highly unequal on both sides of the border, as expected the inequality is much greater on the Pakistani side.

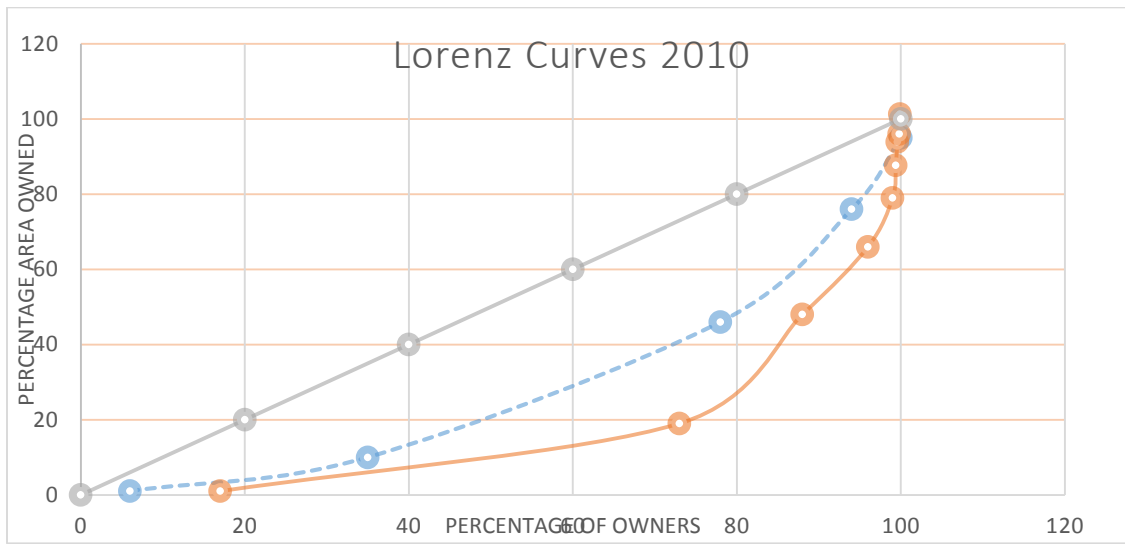
Table 7.4 Evolution of Landownership (Operational Landholdings)

Size Groups (acres)	Indian Punjab		Pakistani Punjab		Indian Punjab		Pakistani Punjab		Indian Punjab		Pakistani Punjab	
	% of owners	% Area owned	% of owners	% Area owned	% of owners	% Area owned	% of owners	% Area owned	% of owners	% Area owned	% of owners	% Area owned
	1960-61				1972-73				2010-11			
Less than 1	6.6	0.5	3.5	0.2	18.8	1.4	8.5	0.3	6	1	17	1
1-5	34.5	9.4	53.4	6.7	32.7	11.1	37.9	8.2	29	9	56	18
5-12.5	31.4	26.9	19.6	15.6	27.6	26.6	29.2	18.9	43	36	15	29
12.5-25	17.5	30.5	14	16.4	14.3	29.9	13.6	18.6	16	30	8	18
25-50	6.7	23.1	5.8	21.9	5.5	22	6.9	18.2	6	19	3	13
50-100	1.2	9.7	2.7	15.9	1	7.5	2.6	13.9	1	7	0.4	8.7
100-150	0	0	0.5	7.7	0	0	0.7	6.3	0	0	0.2	6.2
150-250	0	0	0.4	4.5	0	0	0.4	6	0	0	0.2	2.1
>250	0	0	0.1	11.2	0	0	0.2	9.5	0	0	0.1	5.3

Source: Agricultural Censuses of Punjab (Government of Punjab, India; Government of Punjab, Pakistan)

Figure 7.1 compares the Lorenz curves. The dashed line represents the Indian Punjab. As we can see, this is closer to the line of equality than the solid line that represents ownership patterns in Pakistani Punjab. One way of considering the magnitude of the difference is by comparing the top 1%. As we can see from Table 7.5, farms greater than 50 acres represent 1% of the landholdings on the Indian side and account for 7% of the farm area. There are no farms above the size of 100 acres on the Indian side. In contrast, on the Pakistani side, the 1% (those operating more than 50 acres) controls more than one-fifth (22.3%) of the operated area; 14% of this is controlled by just the top 0.5% (who control 100 acres of land or more) while the top 0.1% (who control 250 acres or more) control 5% of the total farm area.

Figure 7.1 Lorenz Curves for Landownership



Note: Dashed line represents Indian Punjab

Second, notice the greater preponderance of marginal and small landholdings on the Pakistani side as compared to the Indian side. 35% of all owners are small (those operating between 1-5 acres) or marginal owners (those who operate less than 1 acre) on the Indian side and they control 10% of the farm area. In comparison, small and marginal holdings represent a staggering 73% of all operational landholdings on the Pakistani side, while controlling less than one-fifth (19%) of all farm area. This is directly attributable to the Indian state's active policy of land consolidation and prevention of fragmentation due to inheritance (discussed earlier).

This can also be confirmed by considering that the percentage of 'marginal farmers'---those who own an acre or less---in Pakistani Punjab rose from 3.5% to 17% in the fifty years from 1960 to 2010. On the Indian side of Punjab, in contrast, the number of marginal farms *fell*, especially after the 1972 reforms, from 18% to 6% in 2010.

A third major difference between the two sides lies in the greater strength of the middle (5-12.5) and rich capitalist (12.5-50 acres) farmers on the Indian side of Punjab. These are typically the farms best suited to the application of capitalist methods of production (Kautsky, 1899; Lenin, 1904; Rudra, 1966; Patnaik, 1972). Major differences in the percentage and area of this category would be reflective of differences in the degree of capitalist development in farming (especially when seen in conjunction with the

tenure arrangement discussed later). Rich capitalist farms account for about 22% of all farmers and own half (49%) the farm area on the Indian side of Punjab. The fraction of rich capitalist farms within the 25-50 acres category is 16% as compared to 8% on the Pakistani side; these account for 30% and 18% of farm area, respectively.

Now compare the relative strengths of the middle peasants. As we can see, they represent 43% of the farms on the Indian side as compared to 15% on the Pakistani side and they control 36%, and 29% of the farm area in the two sides, respectively, reflecting that a typical medium farm is slightly larger on the Pakistani side.

Moreover, as a comparison of the 2010 and 1972 data reveals, the percentage and area operated by middle (5-12.5 acres) farmers on the Indian side has seen an expansion over the period; the percentage number of such farms increased from 27.6% to 43% while the area under this category of landholdings increased by 10%. This increase is attributable to the upward push received by marginal and small farmers after the 1972 reforms, which were implemented between 1972 and 1976. The consolidation and anti-fragmentation reforms were precipitated by a spike in marginal farms in Indian Punjab from 6% in 1960 to 18% by 1972.

The consolidation reforms seem to have worked well. As we can see, the number of marginal farmers (those owning less than an acre) falls from 18% to 6% within the first decade. Seen in conjunction with the rise in medium farms, this implies that one implication of the 1972 reform seems to have been an uplift for marginal farms to medium status. The increased area came from the large landholdings (greater than 50 acres), the area under which more than halved, falling from 16% in 1960 to 7% by 2010.

This seems to be in consonance with the generally accepted assessment amongst economic historians of the Indian land reforms in Punjab. As Alice and Thorner (1962, reprint 2005) had predicted in 1962, the reforms benefitted the medium and rich capitalist farmers at the expense of 'large landlords'. This explains why as the historian Tariq Ali (1985) points out 'they (the rich peasants) happily supported the curtailment of big landlords' (Ali, 1985: 87)

Thus, while the Indian land reform broke the large landed estates into smaller--- but sufficiently large to be classified as medium---capitalist farms operated by rich peasants, the lack of a significant land reform in the Pakistani Punjab left the social constitution of the countryside intact, and a gradual decay of small peasant property via fragmentation. Despite the limited scope of the Indian land reform (as compared to, say the Chinese land reform), some land reform proved to be better than no land reform (as in the Pakistani case).

7.4.2 Structure of Tenures

In Chapter Five, we had seen that a peculiar form of tenancy--- non-occupant tenancy--- was a major component of the colonial agrarian structure of Punjab. This was attributable to the fact that a large percentage of the farm area (67%) was owned by a tiny number of landlords during the colonial period.

The Indian side of Punjab started legislating for the security of tenures, first in 1953 and then in 1955. The Pakistani side, as we saw earlier, did not even start legislating before the early 1960's; it was only after the second round of land reforms led by the first democratically elected government in 1972 that some work began to be done. As a result, while we expect to find a decline in tenancy relations on both sides, the rate of decay should be swifter on the Indian side.

Table 7.5 captures the evolution of tenancy relations, measured as the percentage of farm area under tenant cultivation from 1955 to 2010.

Table 7.5 Evolution of Tenancy Relations (% of farm area under tenant cultivation)

	Year						
	1955	1960	1972	1980	1990	2000	2010
Pakistani Punjab	53.2	47.8	45.3	26	22	16	12
Indian Punjab	40	29	10	2	0.03	0	0

Source: Agricultural Census for Pakistani Punjab, NSS 8th, 16th 17th and 18th rounds for Indian Punjab

As we can see, the percentage of farm area under tenancy relations on the Indian side fell from 40% to 10%, between 1955 and 1972, and pure tenancy arrangements became practically non-existent thereafter. In contrast, there was just an 8% decline in tenancy

relations from 1955 to 1972 on the Pakistani side. It was only after the 1972 reforms that tenancy actually began to decline: it almost halved from 45% in 1972 to 26% by 1980. Even today, 12% of all farm area continues to remain under pure tenancy arrangements. A staggering 86% of all tenancy relations take place under sharecropping agreements (*Punjab Statistical Abstract, Pakistan Bureau of Statistics, p. 28*), reflecting the continuing domination of landlordist social relations on the Pakistani side of Punjab.

7.5 Conclusion

This chapter has been an attempt to demonstrate three things: First, that there were major differences in the kinds of political structures that came to dominate each state after independence. At the eve of partition, a political alliance took place between the Muslim sections of the landlords (organized till then under the Punjab Unionist Party) and the Muslim League-the party that was to inherit the center in Pakistan. On the Indian side, the predominantly Sikh party---Shiromani Akali Dal--- led by medium and rich capitalist farmers came to dominate the state politics of Indian Punjab, with the Indian National Congress at the center.

Three major differences emerged in the subsequent political structures of the two Punjabs; these were the differences in the development of democratic institutions (which would lead to more democratic policies in the economic sphere), peasant struggles (which would pressurize the state to pursue pro-poor legislations), and state autonomy in agrarian policy-making (which would ensure that agriculture is not completely subservient to the interests of the center).

Second, the chapter showed that the kinds of agrarian policies that emerged reflected the differences in these political structures. Agrarian policy was pro-landlord on the Pakistani side and geared to maximize export earnings for the 'security state'. On the Indian side, while the set of policies were on the whole more beneficial to rich capitalist farmers, they also benefitted (although to a much lower extent) the marginal and small farmers.

Finally, the impact of these policies can best be observed by examining the evolution of the agrarian structure in each Punjab. Firstly, as expected, land inequality is

much worse on the Pakistani side. Second, the lack of ‘consolidation’ policies has meant that an overwhelming majority of farm area on the Pakistani side consists of marginal and/or small farms; the small size made it extremely costly to invest in mechanization. Third, we saw that medium and rich capitalist farming thrives on the Indian side; these groups of peasants benefitted enormously from the land reforms in Punjab (especially after 1972). Finally, an analysis of the evolution of tenancy relations showed that while the Indian side of Punjab had completely eliminated tenancy relations by the late 1970’s, the Pakistani side still continues to suffer from traditional forms of tenancy (sharecropping).

The question is: to what extent are the outcomes that we see across the two Punjabs today a result of these policy differences---attributable to post-colonial politics and policy--- versus the set of ‘initial conditions’ (colonial institutions, geography) that the two sides inherited at the eve of independence? How would a district that was assigned to one country have performed if it were assigned, instead, to the other country, given the same initial conditions? Let us now conclude our discussion on the two Punjabs with this crucial and provocative question in the next chapter.

CHAPTER 8

HISTORY OR POLICY:

A DIFFERENCE-IN-DIFFERENCE EXPERIMENT

8.1 Introduction

In Chapter Six we examined the relationship between colonial institutional structures and agricultural outcomes in Punjab, during the colonial as well as the post-colonial period. We showed that initial institutions matter, as they continue to have an impact on real agrarian outcomes, even today. We noticed, however, that these institutions impacted each Punjab differently across the two periods, reflecting an intermediating impact of ‘state policy’ on the mechanism through which initial institutional structures impact agrarian outcomes in the long-run. This led us in Chapter Seven, to explore the differences in the politics and policy environments that districts assigned to each Punjab were exposed to, after partition.

Given the understanding of politics, policy, and agrarian structures developed in the last chapter, in this chapter, I make an attempt to present an answer to the most crucial and provocative question of the study: how would a district that was assigned to one country have performed if it were assigned, instead, to the other country, given the same initial conditions (geography and institutions)? In other words, to what extent can the current differences in agrarian outcomes between the Indian and Pakistani Punjab be seen as being a product of the conditions that each side inherited, versus the independent agency and impact of being assigned to one or another post-colonial ‘state’, and hence policy environment, after independence. Thus, we are interested in exploring this question of comparative economic development, from the perspective of ‘alternative history’.

In the theoretical framework (Chapter Two) we had argued for a reconceptualization of the ‘New Divergence Debates’ as consisting, on the one hand, of a

set of factors that a peripheral economy *inherits*, and thus cannot change---geography and colonial history---versus the set of factors that the post-colonial state can alter via its active agency. The former factors can be subsumed under the category “nature” (or inherited factors) while the latter can be seen as creating a new policy environment (or ‘nurture’).

In the current literature the post-colonial state and policy is completely endogenous, via ‘institutional persistence’, to ‘colonial history’ and inherited institutional structures, thus positing third-world countries as ‘prisoners of birth’. The theoretical framework in Chapter Two argued instead that an examination of the economic history of partitioned economies using cliometric techniques can reveal fascinating insights about the active agency of the post-colonial state, and its ability to mitigate (or in some cases, worsen) the ill-effects of colonial institutional structures.

To do this, I borrow an experimental design and methodology from the empirical behavioral sciences, which frequently use the tool of ‘twin studies’ to separate the effects on some outcome variable of inherited factors and nurture, from one another. We discuss the merits and demerits of using this analogy in 8.1. In the biological sciences, the mechanism via which ‘nature’ works is fairly clear (DNA); obviously the same cannot be said for social structures. Nevertheless, one can build an analogy based on historical reasoning so that in this experiment, the controls on geography and ‘initial institutions’ are seen as being analogous to a set of ‘inherited factors’ while the assignment to different states captures the effect of being assigned to different ‘policy environments’ (or ‘nurture’). Having presented the case for the two states as approximating a ‘twin study’, we then use a Difference-in-Difference (DID) Regression as our identification strategy using the partition of Punjab in 1947 as a pre and post-treatment trial, with one state acting as a ‘treatment’ while the other acts as a ‘control’ (or to be precise, ‘differential treatment’ group). The DID approach provides us with an ideal methodological tool to capture the differential impact of policy, while controlling for the effects of time-invariant factors (early institutions and geography), thus allowing us to separate the two effects from one another.

We use three alternative specifications to test the model: first, we compare districts assigned to one or the other Punjab. Second, we focus only on the three pairs of ‘border’ districts that lie on either side of the fence and approximate identical geographical conditions. Third, we use stratified subsamples, carefully chosen so that ‘high-performing’ districts during the colonial period that were assigned to Pakistani Punjab are compared against ‘low’ and ‘medium’ performing districts that were assigned to the Indian Punjab; this allows us to assess the intensity of the state effect (the effect of being assigned to India), that is, to see whether or not, and to what degree, state policy in the Indian Punjab has managed to uplift the status of areas that inherited worse than average initial conditions in 1947.

The results confirm that while colonial institutions matter, state policy matters even more. The two Punjabs were essentially assigned to two different ‘institutional islands’ at the critical juncture of independence, with assignment being once-and-for-all, and movement between the two islands, impossible.

8.2 Methodology

8.2.1 Approximating a Twin Study in Economic History

Twin studies have been an integral part of research in the empirical behavioral sciences since Galton (1875) first used data on identical twins to examine the role of ‘nature’ versus ‘nurture’ in determining ‘intelligence’. Subsequent research has contested many of Galton’s claims and has applied the methodological design to study intriguing questions about individual behaviors and traits.

In recent years, sociologists have imported some of these techniques into the social sciences to empirically assess questions pertaining to ‘returns to education’ (McGue M and Bouchard TJ 1998), ‘political choice’ (Medland, 2009), and other intriguing questions about social choices (for a survey of these studies see Felson, 2014). In general, these studies deal with the crucial question of whether a given observed outcome (or behavior) can be attributed to ‘natural’ or ‘inherited’ factors, or environment factors. The general theme is to examine ‘individual level data’ of identical or as a

second-best, non-identical twins, over a long period of time to separate the effect of ‘nature’, from ‘nurture’.

The question is: can we use a similar analogy to examine differential returns to economic policy? In the empirical behavioral sciences, the set of ‘inherited’ factors as well as the mechanism through which these inherited factors are passed on is fairly well-known; it is to be found in the genetic factors that individuals inherit. While the same cannot be said to apply in questions pertaining to the economic history of countries, there is, nevertheless, room for an *analogy* to be drawn.

Going back to our survey of the New Divergence Debates in Chapter Two, we recall that the terrain of these debates is contested by two ‘fundamental’ channels; ‘colonial institutions’ and ‘geography’, as having the final word in determining differences in long run comparative development outcomes between countries. In both cases, an ‘unchangeable initial condition’ is assumed to have the determining effect on real outcomes. Developing countries inherited these conditions at the time of their birth and it is these ‘fundamental factors’ (Acemoglu et al, 1999) that determine prospects of long-term growth. In such an analytical framework, the agency of the post-colonial state, or the ‘new policy environment’ is completely repressed.

Analogously to the twin-studies design, one can differentiate between the set of ‘inherited factors’ (time-invariant conditions) and the set of policy or ‘environmental’ factors that may influence economic outcomes in developing economies, today. The question is: to what extent can the state in a post-colonial society mitigate the impact of inherited factors such as extractive ‘colonial institutions’ or a ‘bad geography’? The best kind of empirical evidence for such a question can come from partitioned sub-economies, that is, economies that were divided between two or more political bodies at the time of their independence. While inheriting similar, or almost identical conditions initially, these sub-economies would later be exposed to differential treatment and can, as such, be viewed as ‘twins’ in the broader sense of the term.

There are many examples of such ‘partitioned’ economies. They include countries in the Middle East that were formerly a part of the Ottoman Empire and were divided after World War I by the Allied forces. Other examples include the “Scramble for

Africa”, which led to its partition between 1881 and 1914, the partition of Korea in 1949, the partition of Bengal in 1905/1947, and Punjab in the Indian sub-continent in 1947.

The case of East and West Punjab is similar to that of fraternal twins. As we have seen in Section II of this study, they are not complete duplicates in terms of their initial institutional make-up and are hence not like identical twins, who share the exact same “genetic” information. But they are not distant cousins either which would be the case if we tried to capture the impact of post-colonial policy by comparing districts in the Pakistani Punjab with districts in the Indian state of West Bengal, which would entail comparability issues since the institutional apparatus not only differed quantitatively but also qualitatively (as argued in Chapter Five).

The difference between the land-revenue institutions in Pakistani Punjab and Bengal is a qualitative one: while the former, like its Indian Punjabi twin, inherited the village-based *Mahalwari* tenure system the latter inherited the *landlord* based *Zamindari* tenure system. As a result the differences between the colonial land-revenue institutions of Pakistani and Indian Punjab are not one of quality but *quantity*, thus making comparisons a better approximation of a twin-study design.

To control for exogenous factors---the ‘nature’ side of the picture---I control for historic differences in the colonial institutions in these two Punjabs and also for the differences in the agro-climatic environment. To control for the former---colonial historical institutions---I include measures of land-revenue institutions, form of tenancy, and economic distribution, that were established by the British colonial state in different districts of Punjab. These were discussed at length in Chapter Five and Six. By controlling for these initial institutional differences along with geographic variables, I can focus on the effect of post-colonial state policy.

Thus the main assumption that governs the empirical methodology in this chapter is that once we control for dissimilarities in colonial institutions, geographic-climatic factors, the effect of post-colonial policy on the differences in outcomes will become discernable via the ‘state’ policy estimator (assignment to post-colonial India).

8.2.2 Identification Strategy: Difference-in-Difference Regression

Given a ‘twin study’ analogy, one can use the ‘difference-in-difference’ (DID) strategy to extract inference about the ‘nurture’ effect. The DID design is modeled along an experimental research design that calculates the effect of a treatment on an outcome by comparing the average change in the ‘treatment’ group with the average change in a ‘control’ group.

Starting off with the pioneering work of Ashenfelter and Card (1985), DID methods have become widespread in econometrics. The design is setup with some outcome variable being examined for at least two groups for two qualitatively distinct time periods. One of the groups is exposed to some differential treatment---a new policy, a new law---in the second period while both groups are exposed to a similar environment in the first period. The second group is not exposed to the ‘treatment’ in either period.

Given this setup, the average change in the treatment group is subtracted from the average change in the control group leading to a mitigation of any biases due to ‘permanent differences’ or biases from “comparisons over time in the treatment group that could be the result of trends” (Wooldridge, 2007). In this way the approach captures the evolution of the ‘differences’ in the means over time.

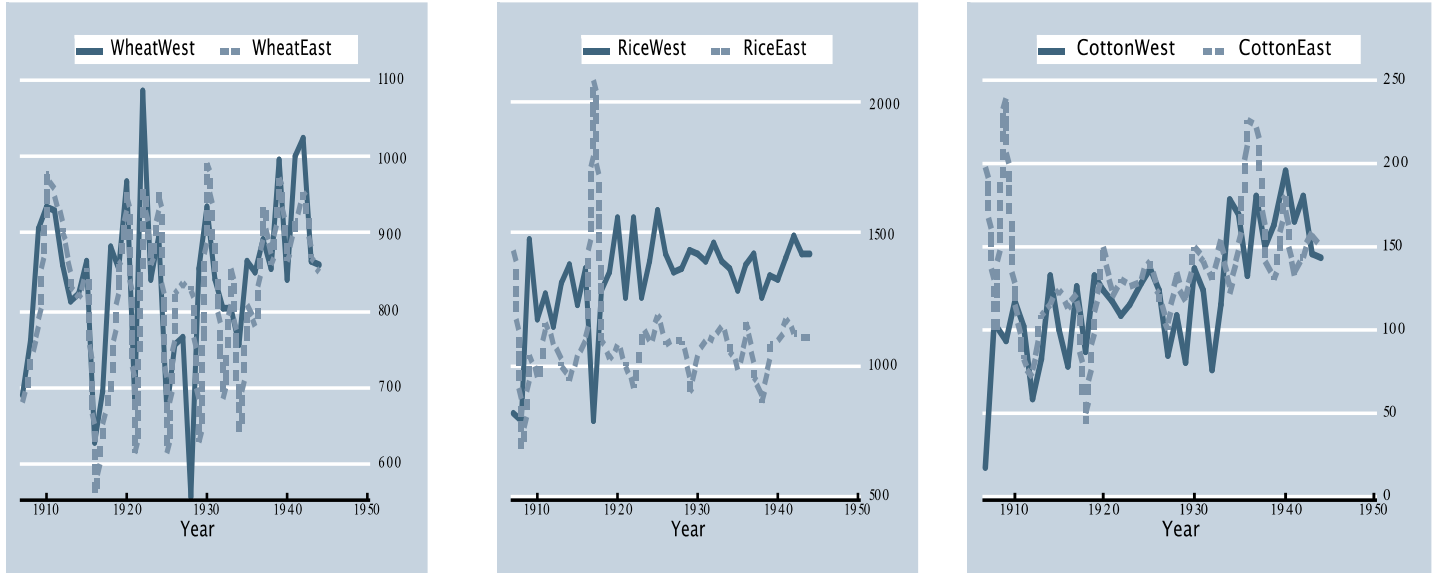
In our case, the goal is to capture the difference in outcomes in agriculture as a result of differences in post-colonial policy, holding the effect of colonial institutions and other non-policy related variables such as geography, climate and soil conditions constant.

8.2.3 Parallel Trends Assumption

A key assumption of the DID strategy is the ‘parallel trends assumption’. In order to approximate a DID design, one must show that prior to the treatment being induced the outcome variable to be assessed did indeed follow ‘parallel’ or similar trends in both the groups. Thus, if the two sides did not follow similar trends prior to being partitioned into the separate states of Indian and Pakistani Punjab, our entire methodological framework would produce biased results. In Figure 8.1 (below) I map the evolution of agricultural productivities for the three crops prior to partition (1947). Additionally, in the

regressions, I conduct robustness tests by running the DID experiment prior to the periodic break at 1947 to check if the results are robust.

Figure 8.1: Average Yield of Wheat, Rice and Cotton in East and West Punjab Pre-1947 (Kilograms Per Hectare)



a) Yearly Average Wheat Yield

b) Yearly Average Rice Yield

c) Yearly Average Cotton Yield

As we can confirm from Figure 8.1, agricultural yields per hectare for wheat follow almost identical trends prior to 1947 across both states. For rice, barring the exception of the year 1919 (an outlier), the trends across the two states are parallel, with the western districts enjoying a consistent and constant advantage over the eastern districts. For cotton, the parallel trends seem to be weaker than the other two commodities. However, even here we find that barring the exception of the years leading up to 1919, the trends across the two states seem to follow similar patterns. The divergence leading up to 1919, as explained in Chapter Three and Four, has to do with the difference in internal and external connectivity of the two producing zones (east and west) with the external markets. As argued in Chapter Four, prior to 1919, the difference in international and domestic prices accounts for the difference in cotton yields as this was the primary export commodity of agrarian Punjab.

8.2.4 The Model

State Policy Estimator

We run three specifications of the following regression model to capture the effect of differential state policy:

$$\text{Log } Y_{it} = \beta_1 + \beta_2 T_t + \beta_3 C_i + \beta_4 (T_t \cdot C_i) + \delta Z_i + \beta_5 X_i \quad (1)$$

where

$$T_t = \begin{cases} 0 & \text{if } t < 1947 \\ 1 & \text{if } t > 1948 \end{cases}$$
$$C_i = \begin{cases} 0 & \text{if } i \in \text{Pakistan} \\ 1 & \text{if } i \in \text{India} \end{cases}$$

In equation 1, $\text{Log } Y_{it}$ is our main outcome variable and it measures the yield per hectares of a crop in district i at time t ; Z_i is one of the three measures of ‘initial institutional structure’ that we use (described below) and X_i is the matrix of geography variables (Latitude, Longitude, Rainfall, and a dummy variable for soil quality); the time-dummy T takes a value of 1 if the period in question is post-partition ($t > 1948$) and 0 if it is from the colonial period; the country-dummy C switches on for districts assigned to India.

With such a specification, the coefficient β_4 is the ‘difference-in-difference’ estimator of the effect of the “treatment”. In this case, this would be the effect of being assigned to the post-colonial policies that were adopted in the Indian Punjab but were not implemented in Pakistani Punjab. The log-linear specification of the model implies that β_4 will capture the percentage effect on the yields per hectare of a crop of being assigned to India.

8.2.5 Specifications

We use three different subsets of the dataset to specify the model: 1) Whole sample, divided by districts assigned to Indian or Pakistani Punjab, 2) Border districts, consisting of the pairs Amritsar-Lahore, Ferozepur-Kasur and Gurdaspur-Sialkot, 3) Subsamples, carefully chosen so that ‘high-performing’ districts during the colonial period that were assigned to Pakistani Punjab are compared against ‘low’ and ‘medium’ performing

districts that were assigned to the Indian Punjab; this allows us to assess the intensity of the state effect (the effect of being assigned to India), that is, to see whether or not and to what degree, state policy in the Indian Punjab has managed to uplift the status of areas that inherited worse than average initial conditions in 1947. We assume that a district that had worse-than-average performance, i.e. below 1.5 standard deviations of the mean, inherited worse than average initial conditions (institutional structures and agroclimatic conditions).

8.3 Results

8.3.1 State-Policy Estimation

Table 8.1 shows the results of the regression in the three alternative specifications.

Table 8.1: Regression Results Difference-in-Difference Estimation

Dependent Variable: Log Yield Per Hectare

Crop	State Policy Estimator				
	Whole Sample N=43		Border Districts* N=6	High* vs. Low N=12	
	Geography Controls			Geography Controls	
	No	Yes		No	Yes
Wheat	0.53***	0.53***	0.49***	0.19***	0.14***
Rice	0.70***	0.68***	0.58***	0.22***	0.22***
Cotton	-0.19***	-0.18***	-0.37***	-0.11***	-0.09***

Notes: 1) High performance districts ($X > 1.5SD + u$) in Pakistani Punjab were: Lyallpur, Jhang, Sheikhupura, Gujranwala, Montgomery; Low performance districts ($X < u - 1.5SD$) in Indian Punjab were: Hissar, Karnal, Rohtak, Ferozpur

2) *There is no need to control for geography when looking at border districts

For the whole sample, the state policy estimator reflects profound differences due to the food-productivity bias on the Indian side of Punjab and the cotton-productivity bias on the Pakistani side. These stem directly from the policy differences that were discussed in the last chapter. For the whole sample (column 1), the results indicate that a district

assigned to the Indian Punjab has a 53% and 70% higher yield per hectare of wheat and rice, respectively, after controlling for the impact of initial institutions and geography; in contrast, the opposite seems to be true for cotton where the productivity of the crop in a district in the Pakistani Punjab outperforms its Indian twin by 19%.

When we restrict our analysis to the set of border districts (column 2), the coefficient on our state policy estimator falls in all cases, reflecting the mitigation of confounding factors from column (1). The set of Indian border districts are associated with a 49% and 58% higher yield per hectare of wheat and rice than the districts across the fence along the Pakistani border. Confirming the general trend, border districts on the Pakistani side *outperform* Indian districts by 37% in terms of cotton productivity. The results indicate that if the bordering district of Lahore had been assigned to India at the time of independence instead of Pakistan, it would be producing 0.53 tons more wheat, per hectare, than it does.

The most intriguing aspect of the results is their resistance to stratified comparisons. We compared formerly median-performance and below-par districts assigned to the state that went on to do better in terms of that crop, with formerly high-performance districts that were assigned to the other state. Thus, for food crops, high performance districts have been chosen from the Pakistani side and compared against median-performance districts that were assigned to the Indian state; for cotton, the converse was done. These subsample comparisons allow us to capture the *extent* of the impact of differences in policy. In a sense they capture the ‘reversal of fortunes’ that has taken place between districts purely by virtue of being assigned to a different policy environment, despite the fact that they had superior initial conditions. Such comparisons show that a median-performance district assigned to the Indian Punjab today has a 14% and 22% higher yield per hectare of wheat and rice, respectively; conversely, a high-performance district on the Indian side has had a 9% lower cotton productivity than a median-performance district that was assigned to Pakistani Punjab in 1947.

8.3.2 Discussion of the Results

The results presented above capture the impact of state policy on agricultural outcomes, after controlling for ‘inherited’ institutional structures and agroclimatic conditions. As

such, the results confirm the hypotheses: crop yields reflect the cumulative effect of the set of policies that were pursued in each state after independence. The set of land legislations, support mechanisms, and food-productivity enhancing reforms that took place on the Indian side have directly resulted in a 53% advantage in food production for the Indian state while the cotton-centric, landlord-oriented policies of the Pakistani Punjab have been much more amenable to the production of the main cash crop-cotton, which is 19% more productive on the Pakistani side on average than the Indian side. The set of policies, in turn, as we had argued in Chapter Seven, reflect the very different kinds of state-level and federal politics that emerged in the two sides after independence.

Inherited Factors or Policy?

State policy, or ‘nurture’, seems to matter much more than initial institutions or geography. The coefficient on two out of three of the geography variables (not reported in the table)---latitude and longitude--- are insignificant at the 10% level and are also negligible in magnitude. While rainfall (mm) and soil quality dummies are statistically significant, the magnitude of their impact seems to be negligible. This is also confirmed in the table when we focus on the set of border districts, restricting the sample to which, does not lead to a major reduction in the magnitude of the state policy estimator. Lying on either side of the fence, these six districts replicate identical geographic conditions (and institutions), and as the confluence between the results for the whole sample and the border districts in 8.3 shows, geography variables do not matter as much as the difference in the policy environment, via its direct impact on the agrarian structure (as argued in 7.4).

Moreover, as the subsample comparisons between historically more productive districts assigned to the Pakistani Punjab, with below-median productivity districts assigned to the Indian Punjab reveals, an activist state policy has the ability to ‘reverse’ and ‘mitigate’ the ill-effects of inheriting a worse-than-average initial conditions. Formerly less productive districts such as Hissar, and Ferozpur (which inherited large feudal landholdings) that were assigned to the Indian state of Punjab outperform even the formerly rich canal colonies that were assigned to the Pakistani Punjab such as Lyallpur

and Montgomery⁴⁸. While the size of the state policy estimator falls from 53% to 19%, when we restrict our regressions to such (unfair) comparisons it nevertheless shows, that despite the worse-than-average initial conditions, such districts were able to gradually become *better* solely due to being assigned to a different state.

Thus, third-world countries are not prisoners of birth as the existing literature implicitly assumes. An activist state policy can mitigate the impact of extractive colonial institutions and bad geography.

⁴⁸ Lyallpur is now known as Faisalabad; Montgomery is now known as Sahiwal

CHAPTER 9

CONCLUSIONS AND AVENUES FOR FUTURE RESEARCH

This study used the partition of Punjab in 1947 to understand, and distinguish between, the set of *colonial* and *post-colonial* factors that shape long-term economic performance in *peripheral* economies. The study sought to contribute to an understanding of the role of colonial and post-colonial institutions in shaping comparative development outcomes.

One major goal of this study was to switch the focus away from ‘unfair’ comparisons--- which compare colonizers with colonized--- towards comparative examinations of divergence within *peripheral* countries. The former kinds of comparisons run the risk of generating biased results, as they do not account for the dependent nature of development in the former colonies. The relationship with the colonial state is central to an understanding of the institutional milieu, and its evolution across the colonial and post-colonial period. In the case of Punjab, the relationship with the state was to be found in infrastructural development. This may be different for another economy, but the essential feature---‘relationship with metropolis state’---remains the same, and follows from the dependent logic of colonial development.

A second goal of the study was to connect the process of institutional formation in the colonies to the ‘entitlement’ system that was created by the colonial state. Drawing on the pioneering work of Mamdani (2012), and Sen (1981), I presented institutional formations in Punjab as arising out of the colonial “entitlement systems”. In the context of the Punjab, this was seen to be related to the Native versus Settler dichotomy, which described how political and economic control were to be distributed within the colonized economy via peculiar institutional mechanisms. Mapping the ‘entitlement system’ onto the institutional apparatus is key to understanding the process via which the former impacts economic outcomes in the long-run.

A third goal of the study was to make the agency of the post-colonial state visible. In the recent debates, post-colonial outcomes are seen as being pre-determined by one or another time-invariant factor: geography, or colonial history. As Chang (2011) argues, these models negate human agency by making economic outcomes completely functional to ‘structure’. For peripheral economies, this leads to the erroneous view that third-world countries are prisoners of

birth; prisoners, either of the geographic environment, or the colonial institutions that they inherited. Instead, an emphasis was placed in this study on the ‘enabling’ institutions that were created by the post-colonial state, and how these mitigated (in some cases) the ill-effects of being colonized. I argued in particular, for comparative examinations of partitioned economies: sub-regions that were exposed to the same colonial history but were subsequently partitioned into independent states at the end of the colonial period. While the evidence for such comparative examinations can only be built by looking at multiple pairs across time, I chose the Punjab region as a concrete example of the proposed methodology. As a matter of future research one can look at other pairs of such partitioned economies. These economies typically share all three “fundamental features”: a common colonial history, a similar geography, and an identical culture. A deterministic reading of any of the three strands of the existing theoretical debate should therefore have implied long-term *convergence*. Yet, as we saw in the case of the two Punjabs, there can be significant divergence of economic fortunes due to the effects of post-colonial state structure and politics.

With these goals in mind, I began by inquiring about the historical circumstances facing global capitalism in the aftermath of the American Civil that led to infrastructural ‘development’ in Punjab. I examined the spatial patterns of infrastructural development across the two sub-regions from 1860 to the First World War. Using archival colonial data I looked at railway and canal infrastructural ‘development’ at the sub-regional level and showed that 1) Railway development was biased in North-South direction whereas Punjab is geographically placed in an East-West direction, 2) State canal irrigation was concentrated in west Punjab. The spatial patterns led to the result that by 1921 the two Punjabs became unevenly articulated with the export versus home market.

In Chapter Three, I used a newly constructed dataset with district-wise information on output and acreage of the three major crops (wheat, rice, and cotton) and derived three important conclusions from the analysis and each ‘conclusion’, in turn, pointed to a new question (that is answered in subsequent sections). First, I identified a ‘food-cotton’ paradox: while food productivities have diverged significantly over the post-colonial period, cotton productivities have remained curiously similar across the two Punjabs. Since the former have a greater impact

on poverty-reduction than the latter, it follows that the divergence in overall living standards is partially a reflection of the radical divergence in food productivities.

Second, we saw that the western half began to outpace the eastern districts in terms of agricultural productivity during the first two decades of the colonial period. This was explained by the price hike in global commodity markets in the years leading up to the First World War. The western districts gained from these price hikes owing to the greater level of infrastructural development in these districts, and hence opportunities to access the export market. World War I brought about severe dislocations in the colonial economy of India, acting as a kind of ‘import-substitution’, leading to the rise of the nascent textile industry in Bombay and Ahmedabad. As a result, the eastern districts gradually became articulated with the ‘home market’. The latter replaced cloth imports from Lancashire, and consequently, the eastern districts of Punjab (that fed the home market) began to equalize with the western districts.

Third, we see that the post-colonial divergence in food productivities had started long before the Green Revolution, which has been seen by many as an important period in the agrarian transformation of the two Punjabs. This is due to the fact that the Indian Punjab embarked upon a series of land legislations as early as the first decade, while there were no such reforms in the Pakistani case. What the Green Revolution did was to intensify the divergence that had already begun.

I devoted Section II to building a historical understanding of the state, the political economy of colonial ‘development’, and the set of micro institutions dealing with the organization of ‘surplus’ and ‘power’ that emerged in agrarian Punjab during the colonial period. Much of the story in this section revolved, directly or indirectly, around state-led infrastructural development. While I did not focus on the cultural aspects of the problem---as Mamdani (2012) does for the case of Malaysia---I did examine the ‘system of rights’ that emerged in colonial Punjab as a result of the peculiar patterns of infrastructural development. We saw that in places where the state invested heavily in infrastructure, an extractive, pro-elite, landlordist agrarian structure developed. This is because the colonial state entrusted power---political and economic---into the hands of its traditional allies, the landlords.

In Section III, we saw how this led to peculiar political struggles in late colonial India. The Muslim landlords of Punjab joined hands with the Muslim League---a party representing the

interests of Muslim ‘salariat’ classes in minority provinces---to avoid the land reform that had been promised by the Congress Party in post-independence India. The partition of Punjab was a result of these political contestations, albeit expressed in ‘communal’ language, as a result of the introduction of religious electorates in representative institutions by the Montagu-Chelmsford reforms.

In the post-partition period, while the Congress led center in India engaged in a process of reform---in land ceilings, tenure, and devolution of power to the provinces/states---the reform package instituted by the Muslim League-Unionist center in Pakistan was significantly weak and further strengthened the ruling classes. As a result, on the Pakistani side, ‘democratic’ movements, ‘independent organizations of the peasantry’, and ‘movements for greater state autonomy in the determination of agrarian policy’ were brutally crushed via an alliance of landlords and the military. This led, in the final analysis, to a very different set of public policies in the two Punjabs and ultimately major differences in the agrarian structures.

In Chapter Eight, we conducted a difference-in-difference experiment to capture the differential impact of state policy on comparative outcomes, while controlling for initial differences between the two parts. We concluded that the differences between the two states cannot be reduced to geography or colonial institutions. Colonial history matters *indirectly* through its impact on the political contestations that gave birth to peculiar kinds of state power at the time of independence in each state. The differences in comparative outcomes are explained by the post-colonial state *policies* that were pursued on each side. While the results indicate that geography and initial institutions matter, what matters the most is the post-colonial state structure and the set of policies that are pursued, after independence. As an ‘alternative history’, if a district were assigned to the Indian Punjab at the time of independence, with the same geography and initial institutions, it would produce a greater yield of food crops per hectare that it does right now.

The main insights of the study are to show, firstly, that while colonial institutions matter, the *channel* through which they matter intermediates the concrete mode of dependence established by the colonizing regime via its hegemony over the state. In the case of Punjab, for example, what stands out is the infrastructural divergence between the two sides between 1870 and 1920. This directly impacted the degree of internal versus external connectivity of the two

sides. Most crucially, the degree of colonial state investments in the two regions had a permanent impact on the political economy of the two regions since the state introduced different forms of political and economic institutions to secure the extractions from high-investment zones.

Second, the study also showed that the impact of colonial institutions on current outcomes is completely contingent on post-colonial state policy, which in turn, depends on the degree of political (and economic) reform introduced. As shown in Chapter Six, while colonial institutions impact economic outcomes similarly across the two states during the pre-partition period, the nature and magnitude of the impact alters significantly *after* partition. Colonial institutions *still* matter across both sides, as can be seen from the fact that land revenue institutions setup by the British more than one hundred years ago continue to have an impact on agrarian yields. Yet, and this is the surprising element, the manner in which this impact takes place has changed on the Indian side while it remains relatively similar in the Pakistani case. This is because while the Indian side was busy ‘decolonizing’---on a relative scale---the institutional structure it inherited from colonialism, the Pakistani elite was further consolidating it.

Third, the study also pointed out the centrality of political power to any economic policy and reform. The greater agrarian development on the Indian side can be attributed to the political settlement that was made within a few years after partition between the various groups and classes. This is most reflective in the constitutional and democratic experience of the two countries. For example, while the Indian federation agreed to establish a new constitutional framework within the first few years of independence, Pakistan’s experience with constitutionalism has been extremely volatile, and the state could not agree on a constitution till 1973. Similarly, democracy has had a volatile fate on the Pakistani side, where only one democratic government in the last seventy years has been able to complete its term. This in turn is reflective of the fact that the form of political power---inherited from colonial rule---in each side was radically different. On the Indian side, middle peasants and to a lesser extent rich capitalist farmers were able to align against large landowners, who were already devastated by the partition of Punjab in any case; the former then pushed for land reforms that further eroded the power of the agrarian elite. In contrast, on the Pakistani side, the former Muslim landowners of West Punjab monopolized not only the agrarian infrastructure, but also most crucially,

controlled the important policy instrument: the state. The state was then used in the Pakistani case to further intensify the power of the victors of the colonial period.

The study pointed out the crucial role of political power and its influence on state formations in post-colonial reform. This has a political as well as an economic component. From the political perspective, the Indian case shows that a capitalist state can benefit from allowing independent subaltern movements (peasant unions in this case) and coalitions to coexist within a democratic framework. As shown in the Indian case, the fact that landless and poor peasants were allowed to form their own political movements and parties independently, and could also participate in the democratic process, meant that the parties dominated by well-to-do sections of society had to cater to the demands of the poorest of the poor; this is reflected in the kinds of credit policies, subsidies (fuel, electricity, seeds), and final commodity prices that were offered to poor farmers in the Indian Punjab. In contrast, on the Pakistani side, where independent subaltern movements were often crushed by brute force, such reforms could never be implemented.

The study also affirmed that economic institutions, which deal with the distribution of economic gains, are the result of political institutions, which deal with the distribution of power. The kinds of land legislations that were passed across the two states; in particular, the importance that was given to consolidating small landholdings, the tenure reforms introduced to support non-occupant tenants on the Indian side, have directly resulted in the divergence of economic fortunes between the two states.

Most crucially, the central claim of the study stands vindicated. The divergence between Indian and Pakistani Punjab, with the former outperforming the latter, shows that post-colonial countries are not prisoners of birth; they are not prisoners of the colonial history that they inherited, nor are they completely constrained by their geographies. An active policy of decolonization and state-led development can, and indeed does, mitigate the impact of extractive colonial institutions.

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