

# Law and Identity Manipulation: Evidence from Colonial Punjab.

## JOB MARKET PAPER

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November 1, 2011

**Abstract:** *I analyze the impact on identity manipulation of the creation of an “agricultural caste” category by the Punjab Alienation of Land Act (1901), the membership of which granted access to various advantages on the land market. Using original data built from the census of Punjab from 1881 to 1921, I show, using various double differences strategies, that caste groups manipulated their caste identity in order to claim an affiliation to the castes registered as agricultural, explicitly ruling out alternative demographic interpretations. This points to the ability of individuals to adapt their caste identity in response to economic incentives over the short run. More broadly, it questions the impact of ethnic based policies on the definition of ethnic groups themselves.*

**JEL Classification:** NM3; D74; O12.

**Keywords:** caste; institution; ethnicity; identity; colonialism.

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\*London School of Economics and Paris School of Economics. Former versions of this paper have circulated under the title “British law and caste identity manipulation: the Punjab Alienation of Land Act”. I am grateful to Véronique Bénéï, Luc Behaghel, Denis Cogneau, Dave Donaldson, Lakshmi Iyer, Eliana La Ferrara, Sylvie Lambert, Ian Talbot, Marie Anne Valfort and Ekaterina Zhuravskaya as well as several seminar and conference participants at Bocconi University, Delhi School of Economics, EUDN, Indian Statistical Institute Conference, Jawaharlal Nehru University, London School of Economics, Paris School of Economics, Paris 1 University and Pompeu Fabra University for helpful comments. I am grateful to the Laboratoire d’Economie Appliquée-INRA for funding the data collection. Email: [cassan@pse.ens.fr](mailto:cassan@pse.ens.fr). Address: London School of Economics, STICERD, Houghton Street, London WC2A 2AE, United Kingdom. Tel: +44 (0) 207 955 6110. This paper is produced as part of the project “Actors, Markets, and Institutions in Developing Countries: A micro-empirical approach” (AMID), a Marie Curie Initial Training Network (ITN) funded by the European Commission under its Seventh Framework Programme - Contract Number 214705 PITN-GA-2008-214705. The maps of this article are made with the Philcarto software: <http://philgeo.club.fr>.

## Introduction

Several countries use identity markers such as ethnicity or caste as a basis for positive discrimination policies. Most notably, the United States has an “affirmative action” policy for ethnic minorities, Brazil has quotas in certain universities by skin color, while India has the largest “reservation” program in the world for low castes and tribes (the “Schedules Castes” and “Scheduled Tribes”). Those policies take social identity markers as proxies for economic or social status: since the groups targeted are on average poorer/less educated/discriminated against, having policies based on those markers might be efficient in a context in which obtaining information on, say, income is costly. However, this type of policy relies on the assumption that those identity markers can not be manipulated. This paper questions this assumption, as large mistargeting of policies might be at play if it was to be wrong. While several anecdotal evidence point to identity manipulation<sup>1</sup>, very little systematic evidence has been collected on identity manipulation in response to ethnic based policies<sup>2</sup>. Moreover, in the case of India, the creation of the “Schedules Castes” and “Scheduled Tribes” categories had a far reaching impact, as it led to a strong political mobilization around this identity of “scheduled”, constructed by the administration ([Jaffrelot, 2003](#)). The “Scheduled Castes” parties are now at the center of the political arena, ruling important states such as Uttar Pradesh, while the category itself had no “real” existence as such prior its definition by the Indian administration. In particular, the efforts of untouchable castes leaders such as Ambedkar to unite the Untouchable castes seem to have been less successful than those policies to create a sense of self among the various castes constituting the Untouchable castes ([Jaffrelot, 2000](#)). Studying the role of the State in the evolution or the construction of social identities is a question that has been so far neglected by economists, with the notable exception of [Aspachs-Bracons et al. \(2008\)](#). This is somehow surprising, as those identities have been shown to be essential for various economic outcomes.

Taking the example of the colonial Province of Punjab, this paper analyzes the impact of a land policy reform, the Punjab Alienation of Land Act (1901) on caste identity. By creating an “agricultural tribes” category, the membership of which was almost compulsory to acquire land, this law created a very strong incentive to manipulate caste identity in order to claim membership to a caste actually considered as agricultural<sup>3</sup>.

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<sup>1</sup>See for example the recent scandal of fake caste certificates for admission in higher education institutions in Delhi ([The Hindu, 2011](#)).

<sup>2</sup>See [Francis and Tannuri-Pianto \(2011\)](#) for a case study on quotas in Brazilian universities and self identification as Black.

<sup>3</sup>The tendency of castes and caste associations to manipulate their caste names in colonial times has been widely studied by social scientists, and is presented in more details in the body of this paper.

Using caste census data from 1881 to 1921, I have built the first data set allowing to follow caste groups population over a long period. This allows me to evaluate the impact of the law on the manipulation of caste identity. In particular, I show that 20 years after the law was passed up to 3.9% of the population managed to pass as a member of an other caste. In other terms, among the targeted groups, up to 7.3% of the population was made of caste identity manipulators.

This paper is related to several strands of the economic literature. First of all, it is linked to the literature on the economics of caste initiated by [Akerlof \(1976\)](#) and on the economics of identity literature developed by [Akerlof and Kranton \(2000\)](#), who show that the choice of identity can be a crucial economic decision, in a model in which identity yields norms of behavior. It is also very close to the theoretical paper of [Caselli and Coleman \(2010\)](#) on ethnic conflict, which notably concludes that “passing” between ethnic group will take place once an ethnic group dominates the access to resources. More broadly, this paper is part of the study of ethnic identities that has become a very large strand of the mainstream economic literature. Indeed, ethnic “fractionalization” has been associated with lower provision of public goods ([Alesina et al. \(1999\)](#), [Miguel and Gugerty \(2005\)](#)), lower growth ([Acemoglu et al. \(2001\)](#), [Alesina and La Ferrara \(2005\)](#)) or lower quality of government ([La Porta et al. \(1999\)](#), [Easterly and Levine \(1997\)](#)), while ethnic “polarization” has often been associated with civil conflicts ([Montalvo and Reynal-Querol, 2005](#)). While most of this literature link ethnic diversity with negative outcomes, [Ottaviano and Peri \(2006\)](#) associate it with increased productivity. For India, more than ethnic identity, it is caste that has been at the center of attention. [Munshi and Rosenzweig \(2006\)](#) have for example shown how caste identity can be a strong determinant of economic decisions such as schooling. Studies such as [Banerjee and Somanathan \(2007\)](#), [Banerjee et al. \(2005\)](#) or [Chaudhary \(2006\)](#) have also taken caste as their object of interest. Those articles, in line with the research on ethnic fractionalization, typically find that caste fractionalization leads to lower public good access, both in colonial times and in more recent periods. According to this literature, ethnic or caste identity appears therefore to be a key aspect of economic development. Hence, studying the economic determinants of ethnic identity seems to be the logical next step for this literature. Due to lack of data, this dimension has been almost completely neglected so far, with ethnicity typically taken as exogenous, while it has been widely acknowledged in other social sciences that ethnic identity might not be as fixed as it is often assumed. The so called “constructivist” approach for example underlines that the ethnic composition of a region as well as individuals or groups ethnic identities might evolve in response to the context (see [Posner \(Forthcoming\)](#) or [Bossuroy \(2011\)](#) for a review). This paper contributes to

this literature by showing that caste identity can be formed in response to economic incentives.

This also raises the issue of the role of institutions in shaping ethnic or caste identities. In particular here, of British colonial institutions in the construction of caste as a salient identity in India. In this sense, this paper is also very close to the growing literature studying the role of the British institutions in India in several colonial and contemporary outcomes (Iyer (Forthcoming), Banerjee and Iyer (2005), Banerjee and Somanathan (2007), Chaudhary (2009)), and thus, more generally, to the literature focusing on the understanding of the long term determinants of development (Acemoglu et al. (2001), Engerman and Sokoloff (1997)). To my knowledge, this paper is the first one to empirically raise the question, and to demonstrate the link between colonial institutions and more “traditional institutions” (to use the words of Munshi and Rosenzweig (2006)), such as ethnicity or the caste system<sup>4</sup>. By showing how colonial institutions have contributed to reshape caste identity by aligning it to the understanding that the British colonial administration had of it, this paper documents a new channel through which colonial institutions may have a long term impact on development. It thus builds a bridge between the different strands of literature discussed above, and points to the need of addressing the issue of the role of the interaction of institutions and ethnicity in the development of a country.

Very few papers document the formation of ethnic identities, as it requires to follow ethnic groups over time in order to ascertain their evolution. For ethnic groups, the study of Michalopoulos (2008) demonstrates the link between ethnic group formation and very long term geographic determinants, while Francis and Tannuri-Pianto (2011) show that the implementation of quotas for Blacks in Brazil led to a tendency to self report as Black. Botticini and Eckstein (2007) have also studied the role of economic incentives in the conversions from Judaism to Christianity, while Bodenhorn and Ruebeck (2003) study self identification to a “mulatto” identity in the 19<sup>th</sup> century US South. In the Indian context, the only attempt to understand the evolution of the number of caste groups I am aware of is the one by Ban and Rao (2007), which points to a causal impact of the post independence land policy on the number of caste groups, using cross sectional data<sup>5</sup>. Very recently, a related literature has also tackled the question of the

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<sup>4</sup>This question has also been studied in other social sciences, see for example Posner (2005) for Africa, Bayly (1999) and Dirks (2001) for India.

<sup>5</sup>A relatively large sociological literature has documented abnormal variations of ethnic groups in Censuses: see for example (Lieberson and Waters, 1993) on American Whites, Nagel (1995) on Native American or Guha (2003) on the Scheduled Tribes of Maharashtra.

identification of migrants to their country of adoption (Casey and Dustmann (2010), Manning and Roy (2010), Bisin et al. (2010)). This paper is the first one to address the question of group identity manipulation using panel data, hence allowing more convincing econometric techniques to be used. Indeed, being able to follow caste groups populations at the district level both before and after 1901, I can evaluate precisely the impact of the Punjab Alienation of Land Act on the trend of the population of the caste groups affected by the law. The identification strategy used compares the growth rates of the population of the treated and not treated castes before and after the law. Thus, it does not rely on a common trend assumption, but on a weaker assumption of stability of the difference in trends. Several alternative interpretations of the results are specifically addressed. It is shown that neither migration nor fertility/death rate change or demographic shocks can explain the results. Additional robustness checks implement placebo tests and a triple difference using areas in which the law was not passed (the Princely States of Punjab) as counterfactual.

The first part of the paper presents the law and gives some historical perspective, the second part describes the data, the third part shows the causal impact of the Punjab Alienation of Land Act on caste demographics while the fourth part rules out alternative interpretations of the results, leaving caste identity manipulation as the only remaining plausible explanation. Finally, the fifth part concludes.

## 1 Historical background

### 1.1 The Punjab Alienation of Land Act

By the end of the 19<sup>th</sup> century, the debt of the landowners had become a concern for the British authorities: *“One of the most significant domestic problem confronting the Indian government [...] was the growing indebtedness of the cultivating classes and a concomitant transfer of landed property [...] to urban moneylenders.”* (Barrier, 1966). This concern was of particular importance in the Province of Punjab, since the Indian army was largely recruiting in the Province (Tai Yong, 2005), and particularly among the landowning castes. Hence, avoiding rural agitation in that Province was a prime concern and *“...the driving force behind government attempts to find a solution to debt and land transfer was fear for its own position [...]”* (Barrier, 1966), as *“widespread land alienations, many feared, would lead to rural revolt”* (Gilmartin, 1988). The act, which

was put in application in June 1901 creates an “agricultural tribe”<sup>6</sup> category for which the selling or buying of land was restricted: a member of an agricultural caste could transfer the property of his land (be it by sale or by mortgage) only to an other member of an agricultural caste<sup>7</sup>. As can be seen in Figure 1, the enactment of the act resulted in a dramatic decrease of land sales.

[Figure 1 about here.]

Indeed, as underlined by Barrier (1966), the law was successfully enforced: “*Sales to non agriculturists ceased after 1901.*”<sup>8</sup>. Moreover, since the members of the agricultural castes were in effect the landowning ones, as pictured in Figure 2, the members of the non agricultural castes willing to acquire land were almost totally prevented to do so, as only a very small amount of land was available for them to buy.

[Figure 2 about here.]

## 1.2 The Alienation Act and the canal colonies

In addition, the agricultural castes list created by the Act was to be used again to grant other protections on the land market. Indeed, the act was then reinforced by the Punjab Pre Emption acts of 1905 and 1913 who gave pre-emption rights on land sales to members of agricultural tribes. Even more importantly, “*[...]this categorization [...] became the basis for eligibility for land grants in the canal colonies. For land distribution after 1900, the administration did not need to nominate specific groups, but could simply rule that in each selected district the agricultural castes, and those castes alone, were eligible.*” (Ali, 1988). Indeed, from the 1880’s on, the colonial administration had dug canals, turning “*6 millions acres of desert into one of the richest agricultural regions in Asia*” (Talbot, 2007) (Figure 3 shows the districts in which they were located). As the government of Punjab was the owner of most of the new fertile land, it was to choose who was to become a “colonist”, and, from 1902 on, allocated the land grants on the basis of the agricultural caste status (Ali, 1988). It can be seen in Figure 4 that the amount of land distributed by the Punjab Government in the canal colonies was massive,

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<sup>6</sup>In colonial writings, the distinction between a “tribe” and a “caste” is very unclear, as underlined in Kaul (1912) “*...in vulgar parlance, the terms Caste and Tribe are used as synonyms*”. Throughout this paper, I will thus write caste or tribe indifferently, as they were treated so by the British administration, and can not be distinguished in the data.

<sup>7</sup>See Appendix B for the text of the Act.

<sup>8</sup>Other references emphasize the impact of the law on the non agricultural castes, such as : “*by means of this act moneylenders were practically wiped out of the land market*” (Mufakharul Islam, 1995)

and explained by itself the evolution of the land ownership of the agricultural castes in Punjab as the whole.

[Figure 3 about here.]

[Figure 4 about here.]

In a Province in which the population lived in rural areas in its vast majority, being considered as a member of agricultural tribes became critical after the enacting of the act, as it became essential to get access to land ownership in the canal colonies, and more generally, to benefit for the protection offered by the status. The law thus created a very strong incentive to be listed as an “agricultural caste”.

### 1.3 Impact on caste identity manipulation

Various reports of the administration mention the different manners in which attempts to avoid the act were made. The first and most obvious one was to lobby the authorities in order to include one’s caste in the list of “agricultural tribes”. Indeed, the number of castes considered as agricultural increased over time<sup>9</sup>. An other way to evade the act very often reported by the administration was the use of “benami transactions”: using a member of an agricultural caste to buy or mortgage land for a member of a non agricultural caste<sup>10</sup>. But administrative reports also emphasize caste identity manipulation, which is described at several occasions in the various Annual Reports on the Punjab Alienation of Land Act. Indeed, in the report for the year 1904-1905, it is written: “...menials that have acquired money are attempting to get themselves recorded as agricultural tribes with a view to acquiring land...” (Punjab Government, ed, 1906), while for the year 1906-1907, one can see mentions of “...cases of evasive attempt to change tribal designation from a non agricultural to an agricultural tribe in order to defeat the provisions of the Act...” (Punjab Government, ed, 1908). This tendency is reported to be due to individual action, as in the examples given here, but also sometimes to the mobilization of the caste as a whole: “Frequent cases arise in which application is made by tribes not included in the group notified for the district to have the tribal designation altered to one so included” (Punjab Government, ed, 1909). Those attempts can also be found in various Census reports, that underline a tendency from caste associations

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<sup>9</sup>See Appendix D.

<sup>10</sup>For example, in the Report on the Working of the Punjab Alienation of Land Act for 1908 : “What are called benami transactions are reported from most districts. The money lender induces a member of an agricultural tribe [...] to take land on mortgage for the would be borrower” (Punjab Government, ed, 1909).

to make claims towards the British administration in order to be considered as agricultural. In the Report on the Census of Punjab of 1911 (Kaul, 1912), it can be read : *“the introduction of the Punjab Alienation of Land Act [...] has naturally stimulated [...] a tendency to claim an affinity with one or the other of the castes declared by Government as agricultural”*<sup>11</sup>.

This takes place in a wider context of caste identity manipulation all across India. Indeed, it has been widely documented (from Ghurye (1932) and Srinivas (1966) to Dirks (2001) and Bayly (1999)) that far from being fixed, the caste system, under the British rule, was evolving under the action of the caste associations (or caste “sabhas”) which were formed in order to *“support social advancement”* (Assayag, 1995) and to gain access to the economic opportunities created by the British presence<sup>12</sup>. In particular, one of the form of their action was to try to change the behavior of the caste (adopting vegetarianism, forbidding widow remarriage...) as well as its name in order to be considered as part of the “highest” castes.

## 2 Data

### 2.1 Caste Census Data

To estimate the impact of the Punjab Alienation of Land Act on caste identity manipulation, I have collected caste census data from 1881 to 1921. Indeed, from 1871 to 1931, every decennial Census collected caste data, which was then tabulated at the district level. It has been widely documented that the Census was part of the mobilization strategies from caste associations, who were very often claiming for new caste names, making the following of each single caste very difficult across time, as both classifications and names might change across time<sup>13</sup>. However, the Punjab Census data is of very good quality from 1881 to 1921<sup>14</sup>: using the different Census reports<sup>15</sup> and the Glossary of the

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<sup>11</sup> This claims persisted through time and can also be found in the Report on the Census of Punjab, 1931: *“...on the present occasion more than ever before a tendency was noticeable in various localities,[...] to return a higher caste. One of the main reasons was a desire to be included in one of the agricultural tribes [...] to secure exemption from the provisions of the Punjab Alienation of Land Act.”* (Khan, 1933)

<sup>12</sup> *“the associations began to press for places in the new administrative and educational institutions and for political representation”* (Rudolph and Rudolph, 1960)

<sup>13</sup> See Conlon (1981) on that matter.

<sup>14</sup> The reason why I do not use the 1871 and 1931 Census is that they do not report castes at such a fine level as the other years, thus not allowing me to track all castes for those years.

<sup>15</sup> In particular, the Census report of 1911 contains an “Ethnographic glossary of castes” listing many caste synonyms.



Tribes and Castes of the Punjab and North-West Frontier Province (Rose, 1911), I have been able to track the hundreds of changes in classification and names, and merge the eventual newly created caste(s) entries into “caste groups” that are comparable across Censuses<sup>16</sup> and thus building what I believe to be the first dataset following caste groups demography over time at such a disaggregate level<sup>17</sup>. However, the various modifications of district borders and the partition of the North West Frontier Province from Punjab in 1901 as well as the creation of the Delhi Province in 1911 have led me to leave aside some districts while merging some others, in order to assure their comparability over time (see Figure 5).

[Figure 5 about here.]

Overall, I am able to follow 105 caste groups, 26 of which are agricultural<sup>18</sup> in at least one district, and which represent from 97.7% to 99% of the population of the 33 districts and states I am tracking over time, which themselves contain 88% of the population of the Province of Punjab. I have thus built a district level panel of caste composition allowing to study through time at a very fine geographical level the response of caste groups to the Punjab Alienation of Land Act. It is to be noted that Punjab became part of the British Raj in 1849, so the data used in this paper has been collected more than 30 years after the conquest of the Province, when the British administration had already acquired a good knowledge of the local conditions. Appendix A illustrates this point, by showing how the administration was very much aware of the different castes and sub castes, and that the Census administration was not easy to lie to.

## 2.2 Descriptive Statistics

The whole Province of Punjab had a population of 24.4 million in 1901, for an area of 354,634 square kilometers. It corresponds to the contemporary States of Punjab (Pakistan), Punjab (India), Himachal Pradesh (India) and Haryana (India). As for the

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<sup>16</sup>See Appendix C for the details of this grouping and its justification. It has also often been reported that Caste Census data is flawed due to people reporting their occupation or their region instead of their castes, but the Glossary and the Census reports do list those occupational and regional names, that I was thus able to identify and remove, and which account for a negligible part of the total population. Appendix C details the choices made and their potential impact on the results.

<sup>17</sup>Both geographically fine, at the district level, and fine at the caste level, since I follow caste groups, and not only “scheduled castes” and “scheduled tribes” as is usually the case in most datasets.

<sup>18</sup>More castes and tribes were actually considered as agricultural, but in order to be able to track them over time, I had to merge them either with other agricultural castes, or with non agricultural ones (which bias the results downward). I code as “agricultural” all caste or tribe entered in the “agricultural tribes” list before 1921. The source used for this classification is Lal (1937), see Appendix D for the list of agricultural castes.

rest of India, it was not entirely administered by the British, since some areas, the Princely States, were under the rule of local Princes, and as such, were not subject to British law (see Iyer (Forthcoming) for more details, and Figure 6 for their localization), the population of the Princely states was 4.4 millions, thus leaving 19.9 millions under direct British rule.

[Figure 6 about here.]

[Table 1 about here.]

The Province of Punjab was essentially rural, with 89% of the population living in a rural area<sup>19</sup>, hence most of its population is directly concerned by the act, while the urban population is also affected if it wanted to own land.

Within the British districts, the population was roughly cut in half between agricultural castes and non agricultural castes, as can be seen in Figure 7<sup>20</sup>. However, the differential evolution of the populations of the two groups is very striking: while the trends were very similar before 1901, after the enacting of the law, the share of the population of the agricultural castes begins to increase from 1901. One can also note that from 1901 on, the overall population did not increase as fast as it did before. This is due to several demographic shocks affecting the Province that will be discussed later on.

[Figure 7 about here.]

Overall, the evolution of the two caste group's population is coherent with the Alienation Act leading to a movement of caste identity manipulation: as the caste groups try to be included in the agricultural caste category, the share of the population of the agricultural castes increases from 1901 onwards, while no such trend could be seen before. The next section will explore further this evolution.

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<sup>19</sup>The Urban population is defined as “(1) Every municipality of whatever size.(2) All civil lines not included within municipal limits.(3) Every cantonment.(4) Every other continuous collection of houses, permanently inhabited by not less than 5,000 persons, which the Provincial Superintendent may decide to treat as a town for census purposes.” (Report on the Census of Punjab, 1901 (Risley, 1903))

<sup>20</sup>For the purpose of Figure 7 and Figure 10 only, I have separated the agricultural castes Dagi and Koli (which were 150,418 members in 1901) from the non agricultural Chamar (1,207,820 members in 1901), while I merged them (and consider the whole group as agricultural) in my data since in 1901, “some of [the Dagi and Koli] returned themselves as [...] Chamars” (Kaul, 1912). As the Dagi and Koli are not present in the Princely States of Punjab while the Chamars are, allowing the separation permits to give a clearer picture of the repartition of agricultural and non agricultural castes, especially in the Princely States.

### 3 Empirical Approach

#### 3.1 Non agricultural castes as a control group

The fact that only certain castes were considered as “agricultural” by the act does not allow to use a simple double difference strategy, as the common trend assumption can not be made here. Indeed, as “agricultural castes” were not randomly selected, they are likely to exhibit systematic differences from non agricultural ones, and in particular, the growth rate of their population might be on average different from that of non agricultural castes. As can be seen in Table 5, the average agricultural caste is for example much larger than the average non agricultural caste.

[Table 2 about here.]

To account for this, I will compare the growth rates of the populations of the two caste groups before and after the law. In this case, the identification relies on the much weaker hypothesis that the differences in the growth rates of the population of agricultural castes versus non agricultural castes before and after 1901 would have remained stable in the absence of the law, and not that their growth rates themselves were similar. Figure 8 summarizes graphically this identification strategy.

[Figure 8 about here.]

Hence, I will run regressions of the form :

$$\begin{aligned} \ln(pop_{idt}) - \ln(pop_{idt-1}) = & \text{constant} + \beta agr_i + \gamma post1901_t \\ & + \delta agr_i * post1901_t + \eta X_{dt} + \epsilon_{it} \end{aligned} \tag{1}$$

The growth rate (approximated by the difference in log) of the population of caste  $i$  in district  $d$  (if the regression is at the district level) during each of the periods  $t$  (1881-1901 and 1901-1921) is thus regressed on  $agr_i$  a dummy indicating whether caste  $i$  is an agricultural tribe,  $post1901_t$  a dummy taking a value of 1 when the period is in the 1901-1921 interval and 0 in the 1881-1901 interval, and  $X_{dt}$  a set of district dummies, and district dummies interacted with the  $post1901_t$  dummy, to control for any possible district specific change in trend (if the regression is at the district level). As small castes might tend to have more extreme growth rates, all regressions are weighted by the population of the caste in 1881<sup>21</sup>

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<sup>21</sup>The results are robust to the choice of an other year.

I use two main specifications of this regression. In specification 1, I regress the growth rate of the caste population at the British Punjab level, while in specification 2 and 3, I regress it at each British district level, which allows me to control in specification 3 for any district specific change in trend that might have been driving the results (for example, a district with a higher than average share of agricultural tribes that would have been less exposed to some negative demographic shock).

[Table 3 about here.]

As can be seen in Table 6 the very precisely estimated coefficient on the interaction between agricultural and post1901 is positive and significant in all specifications. Thus, the average agricultural caste saw its difference in growth rate with the average non agricultural caste increase by around 15 percentage points after 1901. This points to a very strong effect of the Punjab Alienation of Land Act on caste identity manipulation: while the growth rates of those two caste groups were similar before 1901 (with the non agricultural caste growing non significantly faster), by the moment the law was enacted, those similar trends were completely changed, with the agricultural castes exhibiting a massive change in their growth rate relative to the non agricultural castes. As can be seen in specification 3, this effect is not driven by an outlier district, as the results remain robust to including an interaction term of post with district dummies, controlling for any district specific change in demography. Appendix F proposes an alternative specification with four ten years periods instead of two twenty years periods, which give similar results. However, the negative coefficient on the post dummy underlines the fact that after 1901, the average caste tended to see its population increase on average less, leading us to suspect the existence of some demographic shocks that would affect Punjab after 1901.

### 3.2 Demographic shocks

Hence, one might argue that the results obtained are not due to the Act leading to caste identity manipulation, but solely that those demographic shocks affected more non agricultural castes than agricultural ones: for example, it could well be that the non agricultural castes members tended to live in more urban areas, in which the diseases might tend to spread faster. And as a matter of fact, the 1901-1921 period faced various episodes of epidemic, with plague, malaria and influenza killing millions, as can be seen in Figure 9.

[Figure 9 about here.]

To account for this, I will use two different approaches. First, the Census reports contain information at the district level on the number of deaths caused by each disease. I can then control by the extent to which each district was affected by the disease, and see if it is the districts that were the most affected that saw their agricultural castes have their share in the population increase the most. I create two measures of the impact, by reporting the number of death caused by those diseases to the district's population in either 1901 or 1921. I then create the variable "disease" which center and reduces those measures, allowing for an interpretation of the coefficient on "disease" as the effect of an increase by a standard deviation of the death rates caused by the diseases. Table 7 shows the results of the regression of the growth rates of caste groups on their agricultural status interacted with the difference with the average death rate. It can be seen that the coefficient on  $post1901 * agricultural$  is not affected, while the coefficient on  $post1901 * agricultural * dev$  is not significant pointing to the fact that the districts very much affected by the epidemics do not exhibit a significantly different pattern than those averagely affected.

[Table 4 about here.]

The second approach will resort to the neighboring Princely states. As underlined by Iyer (Forthcoming) all of India was not under direct British rule. Indeed, the Princely States were under the rule of local Princes, and as such, were not subject to the British legislation, and in particular, to the Alienation of Land Act. Arguably, the States of Punjab faced the same epidemics as the British districts, due to their close proximity (as can be seen in Figure 6), but were not concerned by the Punjab Alienation of Land Act, thus providing a counterfactual that allows me to control for the demographic shocks of the period. The castes located in the Princely States of Punjab are indeed similar to the castes of the British districts, are subject to the same epidemics, but are not concerned by the agricultural/non agricultural castes categories created by the law. Hence, if the variation in caste groups populations observed in British Punjab were to be attributed to the Alienation of Land Act, we would expect the Princely States caste groups not to exhibit any specific change around 1901 as was the case in British Punjab. Indeed, we can see in Figure 10 that the populations of both agricultural and non agricultural tribes exhibit relatively similar trends throughout the period in the Princely States. It is to be noted that the Princely States can not be considered as perfect counterfactuals: as the work of Iyer (Forthcoming) has shown, Princely States and British districts differed in systematic ways. However, as the identification strategy used does not rely on a common trend assumption, for the Princely States not to be a valid counterfactual,

one would need to argue that the difference in the growth's rates of agricultural and non agricultural castes populations would react differently in the British district and in the Princely States when confronted to similar shocks. Moreover, this triple difference strategy allows to control any trend in the quality of the data collection that might differentially affect the enumeration of agricultural and non agricultural castes.

[Figure 10 about here.]

I will thus estimate regressions of the form :

$$\begin{aligned} \ln(pop_{idt}) - \ln(pop_{idt-1}) = & constant + \beta agr_i + \gamma post1901_t + \delta agr_i * post1901_t \\ & + \rho british_d * agr_i + \pi agr_i * post1901_t * british_d + \eta X_{dt} + \epsilon_{itd} \end{aligned} \quad (2)$$

With the same notation as in Equation 1 and  $british_d$  a dummy indicating whether district  $d$  is a British district or a Princely State, with alternatively the interaction of  $british_d$  and  $post1901_t$  replacing the interaction of district dummies and  $post1901_t$ , when the regressions are at the district level. These sets of dummies allow me to control for the fact that the epidemics might not affect all districts in the same manner, as well as for any district specific change in trend that might drive the result, as in the first identification strategy. Appendix F proposes an alternative specification with four ten years periods instead of two twenty years periods, which give similar results.

One has to keep in mind that this identification strategy tends to bias the coefficient downwards, as it assumes that the law had no impact in the Princely States, which is far from being obvious: a person living in a Princely State but near a border with a British district would be affected by the law if it were to try to buy some land just on the other side of the border, and would thus face very similar incentives to that faced by a British district inhabitant.

We can see in Table 8 that the coefficient on  $post1901 * british * agricultural$  is significant and positive in all the specifications. Hence, it appears that the tendency for agricultural castes to grow relatively faster than the non agricultural ones after 1901 than before is specific to British districts, the districts where the law was passed. This confirms the fact that the results obtained are not driven by asymmetric demographic shocks but by the impact of the law itself. Even more so, the estimated impact of the Act with this identification strategy is roughly consistent with the results of first one, with an implied impact ranging between 20 to 25 percentage points. Hence, overall, depending on the identification strategy used, the causal impact of the Punjab Alienation of Land Act on the caste composition accounts for a variation in the difference in trends of 15% to 25%.

[Table 5 about here.]

### 3.3 Placebo tests

An other test for the causal impact of the Punjab Alienation of Land Act on the caste composition of Punjab is to resort to placebo tests: it might be the case that the difference in the growth rates of the population of the two caste groups often switches sign, and that it so happens that such a change happened around 1901. To test for this eventuality, I will resort to simple placebo tests, showing that the only time at which a significant change in the difference of the growth rates between agricultural castes and non agricultural castes happened was around 1901. In order to do so, instead of studying the 20 years growth rates centered around 1901, as was the case in the previous subsections, I will focus on the growth rates over 10 years, which allows me to test for three different turning points: 1891, 1901 and 1911. Hence, I will reproduce the same regression as described in Equation 1, but using three different time windows: 1881-1901, with the turning point put at 1891, 1891-1911, with the turning point put at 1901 and finally 1901-1921 with the turning point at 1911. If it is really the Alienation Act causing the change in the difference in the growth of the two caste groups, then only the coefficient on `post*agricultural` associated to the 1901 turning point should be positive and significant, while the two other turning points should have a small and non significant coefficient. Figure 11 pictures the three coefficients on `post*agricultural`, with a varying turning point. It can be seen that the only coefficient positive and significant is the one associated with 1901, in line with the Alienation of Land Act affecting the caste composition of Punjab.

[Figure 11 about here.]

Hence, it seems now clear that the law had a causal impact on the caste composition of Punjab. Under the assumption that, absent the law, the various caste groups would have had the same growth rate as during the 1881-1901 period, the share of the agricultural castes in 1921 would have been 49.5% instead of the observed 53.5%: up to 3.9% of the population (and 7.3% of the population of agricultural castes) managed to manipulate its caste identity to be recorded as a member of an agricultural caste.

## 4 Ruling out alternative interpretations

However, it is unclear how the impact of the law should be interpreted: while the anecdotal evidence taken from the Census and administrative reports point to caste identity manipulation, we can not yet rule out other interpretations. In this section, I propose to rule out the two main alternative interpretations of the results: first, that the caste composition of migration might have changed in reaction to the act, and second, that the law created better conditions of living for the castes it targeted, hence making those castes enter the demographic transition earlier than the other ones.

### 4.1 Change in the caste composition of migration

Indeed, a very plausible interpretation would be that the results are entirely driven by migration: after the law was passed, members of the castes that would be considered as agricultural in the British districts of Punjab faced an incentive to migrate from their place of origin to a British district of Punjab in order to benefit from the status that the law gives them. The symmetric case is more probable, with members of non agricultural castes leaving British Punjab, to find places in which they are allowed to buy land. To rule out this interpretation, I use the birth place statistics of the Census<sup>22</sup> summarized in Figure 12.

[Figure 12 about here.]

We can see that with around 5%, the share of the persons not born in a British district residing in such a district is relatively small. However, what can not be seen (as the birth place data is not detailed at the caste level) is whether the caste composition of migration has changed after 1901 towards more arrivals of members of agricultural castes. Moreover, the birthplace data does not allow to know when exactly the migration took place while it is the migration taking place between 1901 and 1921 which is likely to bias the results. In order to compute the migration taking place during this period, I would need to know how many of the persons not born in a British district and residing in such a district in 1901 were still present in 1921 (and symmetrically for the emigrants from British districts). The Vital Statistics of India provide yearly district level data on the number of death<sup>23</sup> in Punjab. Thus, I can compute the migration taking place between the Princely States and British districts of Punjab between 1901 and 1921 as:

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<sup>22</sup>I thank Dave Donaldson for having given me access to this data.

<sup>23</sup>I am grateful to Dave Donaldson for providing the data.



$$Imm_{jd} = pop_{21jd} - pop_{01jd} * \prod_{i=1901}^{1921} survivalrate_{id}$$

With  $Imm_{jd}$  the number of immigrants coming from district  $j$  to district  $d$  (with  $j$  a Princely States or a district located outside Punjab and  $d$  a British district of Punjab) between 1901 and 1921,  $pop_{21jd}$  and  $pop_{01jd}$  the number of persons born in district  $j$  and enumerated in district  $d$  in 1901 (resp. 1921), and  $survivalrate_{id}$  is 1 minus the death rate of district  $d$  in year  $i$ . Symmetrically, the number of emigrants from British districts to non British districts<sup>24</sup> can be calculated.

To check if migration is indeed driving the results, I then recompute the variations of population of each caste group, but this time subtracting the population of immigrants from the population of agricultural tribes and by adding the population of emigrants, assuming that the migrants are distributed across the different castes proportionally to their respective sizes<sup>25</sup>. Hence, I make the extreme assumption that after 1901 all immigrants into British Punjab are agricultural castes members while all emigrants leaving British Punjab are non agricultural castes members. Reproducing the first identification strategy (described in Model 1), but this time removing any influence that migration might have had, I am now able to check if the results obtained were or not only driven by migration. Table 9 reports the results and shows that even under the extreme assumption that all post 1901 immigrants to British Punjab are members of agricultural castes (and symmetrically for emigrants), the coefficient on post1901\*agricultural is still positive and significant.

[Table 6 about here.]

## 4.2 Better economic conditions for agricultural castes due to the Act

An other straightforward interpretation of the results would be that the fact that the agricultural castes grew faster than they used to after the law was enacted just shows that the law has attained its objective of giving better economic conditions to the agricultural castes. Indeed, this might result in a combination of increasing fertility rates

<sup>24</sup>As the district of birth of Punjabis enumerated outside of Punjab is not know, the Punjabis emigrants are allocated to each district proportionally to the district's share in the total population. Also, as the data on death rate is not available outside of British Punjab, the death rate of each Punjab's Princely State is assumed to be equal to British Punjab's average death rate, while outside of Punjab, it is assumed that all persons born in Punjab and enumerated in 1921 outside Punjab migrated after 1901.

<sup>25</sup>ie. I subtract x% of the population of a district's immigrants from the population of an agricultural caste representing x% of the district's agricultural tribes population, the opposite exercise being done for emigrants and non agricultural castes.

and/or decreasing death rates for the agricultural castes. To assess the validity of this interpretation, I will look at the age composition of each type of caste. If this interpretation was to be true, the structure of the age pyramid would appear to be different for each type of caste. Two scenarios (and/or any combination of the two) can be thought of: one in which the fertility rate of the agricultural castes increases dramatically (or the death rates of the children decreases dramatically), and one in which the death rates of the older population of agricultural castes decreases. The first scenario would result in the base of the age pyramid being relatively larger for agricultural castes, the second scenario with the top of the pyramid being relatively larger for agricultural castes.

The Census reports give the composition by age of certain castes for the whole Province for the year 1911<sup>26</sup>. The 58 castes for which this information is reported represent 90% of the total population of the Province of Punjab in 1911. One can see in Figures 13 that the age structures of the two caste groups appear to be very similar, pointing to the fact that the law seems not to have had a large impact on the fertility and infant death rates of the agricultural castes. Indeed, the share of children under the age of 11 (born from 1900 to 1911) in the agricultural castes is slightly lower than the share of the same age group in the non agricultural castes, thus invalidating the fertility rate/decrease in child death rate scenario to explain the increase in agricultural castes' share in the population. However, the top of the pyramid is slightly larger for agricultural castes than it is for non agricultural castes: with 22.93% of the agricultural castes population against 22.27% of the non agricultural castes population. A small back of the envelope calculation is sufficient to rule out any major role of this difference in the evolution of the share of the agricultural castes. Indeed, if the share of the persons aged 39 years old or more in the agricultural castes population was to be 22.27%, it means that this age group's population should be 104,000 smaller than it is<sup>27</sup>. Overall, this would mean a decrease of the total agricultural caste population for which the age data is available of 0.85%, or a decrease of the share of the agricultural castes total population in 1911 of 0.21 percentage points. However, the share of the agricultural castes population had increased by 1.75% between 1901 and 1911. The scenario of the Alienation of Land Act reducing the elderly death rate is thus not sufficient to explain the whole evolution of the agricultural castes' population.

[Figure 13 about here.]

<sup>26</sup>The data also exists for the year 1921, but is not reported here, as the age categories do not allow to distinguish the age groups born after 1901 from those born before as cleanly as the 1911 data allows.

<sup>27</sup>This amount is found using this calculation:  $Population_{CF39+} = Population_{39-} * 22.27\% / (1 - 22.27\%)$

It thus appears that the interpretations of the results in terms of migration or demographic changes can clearly not explain all the variation observed. Hence, and in line with the observations of the British Census administration, the only remaining explanation is caste identity manipulation.

## 5 Heterogeneity of the effect

### 5.1 Access to the canal colonies

We have seen that one of the main advantages given by the agricultural caste status was that it was compulsory to be a member of those castes in order to have access to the land of the canal colonies. One of the specificities of the canal colonies is that they were built in almost desert areas<sup>28</sup>. Hence, the grantees had to come from other regions, making migration play a big role in the development of the canal colonies<sup>29</sup>. Indeed, the Canal colonies have seen their population vastly increase between 1881 and 1921: the population of the districts in which they are located jumped from 5 million to 7.9 million (+57%), while the rest of Punjab remained relatively stable (+7%). This points to a vast migration movement within British districts towards the Canal Colonies<sup>30</sup>. An interesting feature of the process of the colonization of this area of Punjab is that not only did the Punjab Government chose the recipients of the land grants with respect to their caste identity from 1901 on, but they also chose the districts of origin of the “grantees” from the beginning of the colonization scheme. Indeed, among the objectives of the colonization was to “*provide relief from population congestion...*” (Ali, 1988). Hence, only certain districts had access to the canal colonies. Figure 14 presents the districts eligible to the canal colonies according to Ali (1988). Being a member of an agricultural caste thus granted different benefits depending on the district of residence, with the agricultural caste status granting a much larger economic advantage in the districts eligible to the canal colonies land.

[Figure 14 about here.]

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<sup>28</sup> “*These areas [...] were practically desert waste supporting no settled population*” (Paustian, 1930).

<sup>29</sup> “*According to the Chenab Colony’s final colonization report, the population of the area grew from 112,000 in 1891 to over 1.1 million in 1911, of which the majority were migrants from other parts of the Punjab.*” Gilmartin (2004).

<sup>30</sup> “*...the Punjab witnessed a major migration from Central Punjab into the newly opened canal colonies of Western Punjab*” (Gilmartin, 2004)

This suggests that the incentive to manipulate one’s caste identity was different across districts, and that the districts eligible should exhibit a larger tendency to caste identity manipulation. This calls for a specification separating the eligible districts from the others:

$$\begin{aligned} \ln(\text{pop}_{idt}) - \ln(\text{pop}_{idt-1}) = & \text{constant} + \beta \text{agr}_i + \gamma \text{post1901}_t + \delta \text{agr}_i * \text{post1901}_t \\ & + \rho \text{access}_d * \text{agr}_i + \pi \text{agr}_i * \text{post1901}_t * \text{access}_d + \eta \text{post1901} * \text{access}_{dt} + \epsilon_{itd} \end{aligned} \quad (3)$$

With the same notation as in Equation 1 and  $\text{access}_d$  a dummy indicating whether district  $d$  had access to the canal colonies, or was itself a canal colony. Table 10 shows the results of the regression. The first column at the “Access level” aggregates the population of each type of British districts, those that have no access to the canal colonies, and those that have access to them/are a canal colony, in effect splitting the British Punjab in two parts. It can be seen that while the movement of caste identity manipulation is widespread throughout the districts of Punjab, as indicates the coefficient on  $\text{post1901} * \text{agricultural}$ , it is much more important in the districts that have access to the canal colonies, as the positive and significant coefficient on  $\text{post1901} * \text{access} * \text{agricultural}$  indicates.

[Table 7 about here.]

## 5.2 Competition over agricultural caste status

While the former subsection was using the differences in the returns to the agricultural caste status to show that the intensity of caste identity manipulation was responding to the heterogeneity of the benefits offered by the status, this subsection will focus on the cost. Indeed, if pretending to be a member of an agricultural caste grants benefits, it also reduces the benefits shared among the “real” agricultural castes. Hence, it is to be expected that they would resist such a behavior. It is thus to be expected that the more a district is populated by agricultural caste members, the harder it is to pass as a member of such a caste, as they would prevent such “passing”. In order to check for that, I will interact the variable “share\_agr”, the district’s share of agricultural castes in 1901 center and reduced. Table 11 reports the results. It can be seen that in the districts in which the share of the agricultural castes in 1901 is higher than the average, the tendency to manipulate caste identity is smaller than in the other districts, suggesting that caste identity manipulation takes place in the districts in which agricultural castes are less present, and thus less able to prevent this movement from taking place. Indeed,

a standard deviation increase in the share of agricultural castes leads to a decrease of caste identity manipulation of roughly 6 to 7 percentage points (i.e. in districts with a standard deviation more agricultural castes than the average district, caste identity manipulation leads to an effect of roughly 8% as opposed to 14% in the average district).

[Table 8 about here.]

## 6 Conclusion

Using various identification strategies, this paper shows that the enactment of the Punjab Alienation of Land Act in 1901, by creating an “agricultural castes” category with almost exclusive access to the land market (a huge economic advantage in a Province of Punjab whose population was still rural at almost 90% in 1921) has deeply affected the caste system. Indeed, caste groups were given a very strong incentive to manipulate their caste identity in order to benefit from the Act, and from 1901 on, the trend of the population of agricultural castes exhibited a relative increase of 15 to 25 percentage points depending on the specifications, as compared to the trend of the population of non agricultural castes. As this effect only takes place in the British districts of Punjab and does not vary to the exposure of the various epidemics of the period, I can rule out that the various demographic shocks of the period drive the results. Moreover, I show that neither migration nor demography can explain this evolution, underlining that the results are mainly driven by the ability of caste groups to manipulate their identity in response to administrative incentives, and that up to 3.9% of the total population (7.3% of the agricultural castes population) manipulated its caste identity in order to benefit from the protection of the Punjab Alienation of Land Act. The law having been passed with the idea that caste was to define occupation, its effect has been to self fulfil this view, as the members of non agricultural castes willing to increase their landowning were pushed towards declaring themselves as members of agricultural castes. Thus it seems that it is occupation that has reshaped caste identity, resulting in a stronger correlation between caste and the traditional occupation of the caste that would have been the case without the legislation.

This paper is thus, to my knowledge, the first to convincingly document the permeability of caste groups and the ability of castes and caste associations to react and adapt their caste identity in the relatively short term to their environment. It shows that far from being negligible, this permeability can explain large variations in the caste structure of the population as measured by the Census.

It thus raises the question of the pertinence of ethnic or caste based policies that could lead to large mistargeting in the presence of identity manipulation. Moreover, it clearly points to the role played by the British administration in the evolution of the caste system, and in particular in the coincidence between caste identity and traditional occupation, suggesting that the “traditional institutions” (Munshi and Rosenzweig (2006)) might not be as stable as they seem, and are evolving in response to their institutional environment. This clearly points to the need to do further research on the question of how the behavior attributed to ethnic or caste identity can be linked to the contemporary or past institutions that shaped those identity or made them become salient in a particular context.

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# Appendices

## A The Census administration and caste manipulation

The Census caste data relies on self declaration of the respondent. So one could interpret the demographic evolution described in this paper as a result of misdeclaration to the Census that would not be linked to any “real” change in the caste of the respondent. However, the Census administration was very much aware of the possibility of misdeclaration, and was training its officers to avoid such possibility. For example, in 1921, the instructions given to the Census officers are *“When a person of low caste wishes to return himself as belonging to a high caste to which obviously he does not belong to [...] he should be shown as belonging to the caste or tribe to which he is generally supposed to belong to”*. It is to be remembered that the Census officers were not British, but were generally literate individuals from the locality (teachers or school boys), and as such, likely to be aware of the caste of the individual they were surveying.

To illustrate the ability of the Census administration to counter lies on the caste status, I will resort to an example. In 1911, two caste groups, the Kanets and the Nai, mobilize towards the Census administration in order to be considered as Rajput, and be called as such. Both demands are rejected. However, in 1921, the Census administration *“decided that there would be no objection to [the inclusion of Kanets] amongst Rajputs...”* while the *“claim [of the Nai associations to be classified as Rajput] was rejected”*. Hence, from the two groups wanting to be considered as Rajput since 1911, only one was accepted, in 1921. Figure 15 shows the evolution of the population of the Rajput, Kanet and Nai populations over time. It can be seen that after 1911, only the Kanet see their population decrease (with a symmetric increase of the Rajput), while no such evolution takes place for the Nai population. This clearly points to a very good capacity from the Census administration to control the declaration of caste as it is only the caste that was accepted as Rajput that manages to declare the name Rajput in 1921, and only after it was accepted by the administration.

[Figure 15 about here.]

## B the Punjab Alienation of Land Act

Extract of the Punjab Alienation of Land Act :

*Sanction of District Officer (Revenue) required to certain permanent alienations. Save as hereinafter provided a person who desires to make a permanent alienation of his land shall be at liberty to make such alienation where: the alienor is not a member of an agricultural tribe; or the alienor is a member of an agricultural tribe and the alienee is a member of the same tribe or of a tribe in the same group.*

## C Creating the Punjab Caste population 1881-1921 panel.

### Making caste population comparable over time

The identification strategy of this paper relies on the growth rate of each caste. Hence, the comparability of each caste over time is an essential requirement for the validity of the results. However, the Census data on caste population is confronted with two different evolutions making the comparison of the population of a caste recorded under the same name problematic across years. First of all, the way in which each caste is reported varies across Census: depending on the year, certain castes are considered as sub-castes of other castes, or synonym of the same caste are sometimes reported as being a different castes. In order to make caste names comparable, the different castes and sub castes have to be merged together. Table 1 relates all the merge made in the data, as well as their justification.

Table 1: Castes merging choices.

Caste merged with	Caste name	Quote	Source	Note
Ahir	Gadi/Garri	“Gadis [...] are, perhaps, a sub division of the Ahir”	Punjab 1911 Census report, p.455.	
	Hesi	“The entry [...] under Hesi [...] is a mistake [...]. The figures really belong to the Ahir Caste.”	Punjab 1911 Census report, p.457.	
Arain	Baghban	“Baghban has been included in Mali”	Punjab 1911 Census report, p.435.	
	Mali	“...it is synonymous with Baghban and Arain”	Punjab 1891 Census report, p.309.	
	Maliar	“...in 1891 Maliar was classed under Mali and in 1881 under Baghban”	Punjab 1901 Census report, p.345.	
	Saini	“The Mali and Saini are in reality one and the same tribe”	Punjab 1931 Census report, p.347.	
	Sahnar/Sansar	“...they rank with the Arains.”	Punjab 1911 Census report, p.474.	

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Caste merged with	Caste name	Quote	Source	Note
Bania	Mahajan/Mahajan Pahari	"[...] to count them as Banyas as was done in 1881"	Punjab 1891 Census report, p.309.	
Banjara	Naik		Punjab 1891 Census report, p.311.	[Not reported in 1881. Several quotes pointing to either Banjara, Dhanak, Rajput or Thori, but with majority for Banjara.]
Barwala	Batwal	"...they are akin to the Batwals"	Punjab 1911 Census report, p.449.	
Bazigar	Nat	"I have kept the figures distinct from those for Bazigars, though the difference between the two is doubtful"	Punjab 1891 Census report, p.311.	
Brahman	Bhojki	"They were recognised as Brahmins in Bhavishya Puran"	Punjab 1911 Census report, p.451.	
	Brahman (Muhial)	"Brahman muhial were not separately given in 1881"	Punjab 1901 Census report, p.346.	
	Dhusar	"I have included Bhargu Brahman and Brahman, Dhunsar Bhargu"	Punjab 1891 Census report, p.299.	
	Husaini	"Husaini [included] in Brahman"	Punjab 1911 Census report, p.435.	
	Padha	"Padhas are all Muhammadans who were converted sometimes back from Brahmins. [...] The Hindu Padhans have been returned as Brahmins."	Punjab 1911 Census report, p.470.	
Bhat	Bhatra	"The mixed caste of Bhat degraded into Bhatra"	Punjab 1911 Census report, p.450.	
	Kapri	"They also officiate as Bhats in weddings"	Punjab 1911 Census report, p.462.	
Biloch	Untwal	"Biloch includes Untwal in 1881."	Punjab 1901 Census report, p.345.	
Chamar	Chamrang	"Chamar included Chamrang in 1881."	Punjab 1901 Census report, p.346.	
	Dagi	"The Dagi Koli [...] in 1901, some of these returned themselves as weavers and Chamars"	Punjab 1911 Census report, p.440.	
	Jaiswara	"...entries of Chamar, jaiswara have been returned under Chamar..."	Punjab 1891 Census report p.302	
	Khatik	"Chamrang [included] in Khatik"	Punjab 1911 Census report, p.435.	
	Kori	"it is really a sub caste of Purbia Chamar"	Punjab 1911 Census report, p.464.	
	Pasi	"synonymous to Khatik, Chamrang"	Punjab 1911 Census report, p.471.	
Chhimba	Charhoa	"Charhoa in Dhobi"	Punjab 1911 Census report, p.435.	
	Darzi	"In some places members of occupational castes such as Darzi, Chhimba and Chhipi returned themselves as Tank Kshatriya"	Punjab 1931 Census report vol.2 p.281	
	Dhobi	"They are known in some parts as Chhimba."	Punjab 1911 Census report, p.453.	
	Tank	"In some places members of occupational castes such as Darzi, Chhimba and Chhipi returned themselves as Tank Kshatriya"	Punjab 1931 Census report vol.2 p.281	

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Caste merged with	Caste name	Quote	Source	Note
Chuhra	Kutana	"Kutana [...] were classed under Churha in 1881 and 1891."	Punjab 1901 Census report, p.346.	
	Mazhabi	"Mazabhi [...] were classed under Churha in 1881 and 1891."	Punjab 1901 Census report, p.346.	
	Musalli	"The Chuhras have decreased [...] during the past decade, but against this is to be set off the more than equal increase among the Musallis..."	Punjab 1911 Census report, p.440.	
Dagi	Chanal	"in 1881 and 1891 Chanal Hali and Sepi were included in Koli and Dagi"	Punjab 1901 Census report, p.346.	
	Gaddi	"I have therefore, classed the Hali and Sepi with the Gaddi"	Punjab 1891 Census report, p.301.	
	Hali	"in 1881 and 1891 Chanal Hali and Sepi were included in Koli and Dagi"	Punjab 1901 Census report, p.346.	
	Koli	"These two words [...] are used almost indifferently"	Punjab 1881 Census report, p.339.	
	Nar	"...it is a synonym for Dagi and Koli"	Punjab 1911 Census report, p.470.	
	Sepi	"in 1881 and 1891 Chanal Hali and Sepi were included in Koli and Dagi"	Punjab 1901 Census report, p.346.	
Dumna	Bhanjra	"in 1881 and 1891 Bhanjra and Sehnais were included in Dumna"	Punjab 1901 Census report, p.345.	
	Daoli	"a low caste of about the same status as Dumna"	Punjab 1911 Census report, p.453.	
	Kamachi	"Kamachi [included] in Mirasi"	Punjab 1901 Census report, p.345.	
	Mirasi	"The Dumnas [...] in the Gurdarpur District [...] were recorded in 1901 as Dums and classified under Mirasi"	Punjab 1911 Census report, p.440.	
	Rehar	"This caste appears to be closely allied to Dumna"	Punjab 1911 Census report, p.473.	
	Sehnai	"in 1881 and 1891 Bhanjra and Sehnais were included in Dumna"	Punjab 1901 Census report, p.345.	

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Caste merged with	Caste name	Quote	Source	Note	
Faqir	Abdal	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.		
	Bairagi	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.		
	Benawa			[Benawa is a Faqir sub caste from 1891]	
	Bhand	"I have also included [...] Abdal"	Punjab 1891 Census report, p.292.		
	Chisti	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.		
	Darvesh			[Darvesh is a Faqir sub caste from 1891]	
	Gosain	"Faqir: [...] the larger differences are due possibly to the inclusion or exclusion from time to time of Gosains..."	Punjab 1931 Census report, p.338.		
	Jalali			[Jalali is a Faqir sub caste from 1891]	
	Jogi	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.		
	Jogi-Rawal	"there has been a good deal of confusion between the term of Jogi-Rawal and Jogi"	Punjab 1911 Census report, p.459.		
	Madari			[Madari is a Faqir sub caste from 1891]	
	Nirmala			[Nirmala is a Faqir sub caste from 1891]	
	Qadiri			[Qadiri is a Faqir sub caste from 1891]	
	Qalandar	"most of this class call themselves Fakirs"	Punjab 1911 Census report, p.472.		
	Sadh			[Sadh is a Faqir sub caste from 1891]	
	Sannyasi			[Sannyasi is a Faqir sub caste from 1891]	
	Suthra Shahi			[Sythra Shahi is a Faqir sub caste from 1891]	
	Udasi			[Udasi is a Faqir sub caste from 1891]	
	Ghirath	Bathi	"in 1881 and 1891 Bathi and Chang were included in Ghirath"	Punjab 1901 Census report, p.345.	
		Chang	"in 1881 and 1891 Bathi and Chang were included in Ghirath"	Punjab 1901 Census report, p.345.	
Ghosi	Ghai	"It [...] is equivalent to Ghosi"	Punjab 1911 Census report, p.456.		

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Caste merged with	Caste name	Quote	Source	Note
Jat	Arab	"the group should apparently be considered as a sub caste of jat"	Punjab 1911 Census report, p.445.	
	Kanera	"... they are reckoned as a sub caste of Jat"	Punjab 1911 Census report, p.461.	
	Khokhar	"The Khokhars [...] have been returned as a sub caste of Jat"	Punjab 1911 Census report, p.440.	
	Lalla	"they possess the same status as Jats"	Punjab 1911 Census report, p.465.	
	Marth	"Marth [included] in Jat"	Punjab 1911 Census report, p.435.	
	Phiphra	"their status is similar to that of Jats, and are probably an isolated sub caste of that caste"	Punjab 1911 Census report, p.472.	
	Satiar	"Satiar [included] in Jat"	Punjab 1911 Census report, p.435.	
Jhinwar	Bharbunja	"term applied to Jhinwars or Bathiaras"	Punjab 1911 Census report, p.450.	
	Bhatiara	"...generally Jhinwars"	Punjab 1891 Census report, p.293.	
	Kahar	"Jhinwar who is also called Kahar..."	Punjab 1911 Census report, p.458.	
	Toba	"the Toba generally belong to the Jhinwar or Machhi caste"	Punjab 1911 Census report, p.476.	
Kanchan	Kanjar	"the corresponding term is [...] Kanchan"	Punjab 1911 Census report, p.456.	
Kalal	Ahluwalia		Punjab 1911 Census report, p.460.	[Given as a synonym of Kalal.]
	Kakkezai	"Kakkezai were included in Kalal in 1891"	Punjab 1901 Census report, p.437.	
Kumhar	Hadi	"They [...] are similar to the kumhar of the plains"	Punjab 1911 Census report, p.457.	
Khattri	Khakka	"khakhas are converted Khatris"	Punjab 1911 Census report, p.462.	
Labana	Banjara		Punjab 1911 Census report, p.465.	[Banjara listed as a synonym of Labana]
Lilari	Rangrez	"Rangrez [included] in Lilari"	Punjab 1911 Census report, p.435.	
Lodha	Kachhi	"They are also known as Lodha"	Punjab 1911 Census report, p.460.	
Lohar	Bot	"The may be placed in 4 classes [...]:Joch [...], Loppa [...], Chhazang [...], Loban [...]"	Punjab 1891 Census report, p.295.	[Not reported in 1881. Arbitrarily put in Chhazang.]
	Chhazang	"should a Chhazang take a Lohar woman..."	Glossary of Castes and Tribes in Punjab and NWFP	[Reported only in 1881.]
	Kamangar	"Khamangar were included in Tharkan in 1891"	Punjab 1901 Census report, p.347.	
	Ram Garhi	"the discarding of the term Tarkhan and more recently to the adoption of Ramghari as their caste."	Punjab 1931 Census report, p.346.	
	Saiqalgir	"Saiqalgir was included in Lohar in 1891"	Punjab 1901 Census report, p.348.	
	Tarkhan	"The figures of Lohars and Tharkans are better studied together"	Punjab 1931 Census report, p.346.	

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Caste merged with	Caste name	Quote	Source	Note
Maniar	Churigar	"are also known as Bangara, Maniar and Kachera"	Punjab 1911 Census report, p.453.	[no Bangara or Kachera in the data.]
Mahtam	Barhupia	"are said to have been really Mahtams"	Punjab 1891 Census report, p.291.	
	Mahton	"there can, I think, be little doubt as to the identity of those two names"	Punjab 1901 Census report, p.340.	
Mallah	Darein	"Darein [included] in Mallah"	Punjab 1911 Census report, p.435.	
Marija	Bagri	"they are sometimes called Marecha or Marija"	Punjab 1911 Census report, p.447.	
Meo	Jhinwar	"The loss in Jihnvars is ascribable to the Muhammadan Jhinvars calling themselves Macchis at the present Census"	Punjab 1911 Census report, p.440.	
	Macchi	"returns of Meo outside of Delhi division have been recorded as Macchi"	Punjab 1891 Census report, p.310.	
	Men	"Mens are also called Meuns and the latter term has been confused with Meo."	Punjab 1911 Census report, p.468.	
Nungar	Shoragar	"Shoragar was included in Nungar in 1891"	Punjab 1901 Census report, p.348.	
Od	Beldar	"in 1891 Beldar were included in Od"	Punjab 1901 Census report, p.345.	
Paracha	Khoja		Punjab 1911 Census report p.471	[Khoja listed as a synonym of Paracha.]
Pathan	Deghan	"...included in the last census with Pathan"	Punjab 1891 Census report, p.298.	
Purbia	Gurkha	"I include [...]Purbia, Nipalia..."	Punjab 1891 Census report, p.301.	
	Kurmi	"It is as caste of Purbia cultivators"	Punjab 1911 Census report, p.465.	
	Lodha	"...also returned as Purbia, Lodkhe or Purbia, Lodhi..."	Punjab 1891 Census report, p.309.	
Raj	Batera	"...Were included in 1881 with Raj"	Punjab 1891 Census report, p.292.	
	Thavi	"Thavi [included] in Raj"	Punjab 1911 Census report, p.435.	

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Caste merged with	Caste name	Quote	Source	Note	
Rajput	Bodla	"it is a section of Wattu Rajput"	Punjab 1911 Census report, p.451.		
	Dhund	"Dhund includes Rajput Dhund in 1881, 1891 and 1901"	Punjab 1901 Census report, p.346.		
	Dogra	"Dogra [included] in Rajput"	Punjab 1911 Census report, p.435.		
	Gara	"the term gara denotes a cross breed and is applied particularlu to the issue of a Muhammadan Rajput by a wife of another caste"	Punjab 1911 Census report, p.455.		
	Janjua	"Rajput includes Janjua [...] in 1891"	Punjab 1901 Census report, p.348.		
	Kahut	"...obviously of Rajput origin"	Punjab 1911 Census report, p.460.	[Abnormal population in 1891 and 1921.]	
	Kanet	"A deputation of Kanets, Rathis etc., which wished themselves to be styled as Rajputs was received, and it was decided that there would be no objection to their being included amongst Rajputs..."	Punjab 1921 Census report, p.342.		
	Karral	"...also returned as kharral and rajput kharral"	Punjab 1891 Census report, p.307.		
	Kathia	"it is a tribe of Rajput origin"	Punjab 1911 Census report, p.462.		
	Khattar	"the tribe is held by some to be of Rajput origin; other [...] Awan..."	Punjab 1911 Census report, p.463	[Abnormal population in 1881 and 1921. arbitrarily put in Rajput. 1911 population: 14,817.]	
	Khanzaha	"the term denotes an honorific title among the Rajput converts to Islam"	Punjab 1911 Census report, p.463.		
	Mahtam	"...a number of them have [...] returned themselves as a sub caste of Rajput"	Punjab 1911 Census report, p.467.		
	Pachhada	"Rajput includes[...] Pachhada in 1891"	Punjab 1901 Census report, p.348.		
	Rathi	"The large increase among the Rathis si the results of correct classification, particularly in Kangra, of the members of the caste, who were formerly included in Rajput"	Punjab 1911 Census report, p.440.		
	Reya	"Reya [included] in Rajput"	Punjab 1911 Census report, p.435.		
	Satti	"Rajput includes [...] Satti [...] in 1891"	Punjab 1901 Census report, p.348.		
	Thakkar	"The two words Thakkar and Thakur are often confused"	Punjab 1911 Census report, p.476.		
	Thakar		Punjab 1911 Census report, p.476.	[Rajput listed as a synonym of Thakar]	
	Thakur	"thakur is now being adopted by high castes Rajput as a title of honour"	Punjab 1911 Census report, p.476.		
	Sansi				
		Gedri	"they are allied to Sansis"	Punjab 1911 Census report, p.456.	
	Sheikh				
		Qureshi	"Qureshi were included in Sheiks in 1891"	Punjab 1901 Census report, p.348.	
Tamboli					
	Tanaoli	"tamboli: the word is likely to be confused with Tanaoli"	Punjab 1891 Census report, p.317.		
Thathiar					
	Thathera		Punjab 1911 Census report, p.476.	[Thathiar listed as a synonym of Thathera]	

## Dropping geographical and functional caste names

A second matter relates with the difficulty to define caste itself: while the Census is interested in the precise name of the individual (its “jati”), what was meant by caste was not obvious to everyone in Punjab, leading some to answer with their occupation name, or with a name related to their country or region of origin. Those caste entries are to be dropped, as they do not relate to real castes. However, due to their large population and to the fact that they do not exhibit abnormal variations in population across years, the entries Kashmiri (169,761 individuals in 1921), Purbia (3,150 individuals in 1921), Raj (12,938 individuals in 1921) and Ulema (16,508 individuals in 1921) are kept in the data. Removing them does not alter the results. Table 2 lists all the caste dropped as well as the justification. The 1921 population of each dropped caste is given, or, if this caste is not reported in 1921, its maximum population in the other years is given. Dropping castes might be an issue for the results presented in this paper. Indeed, if there is any correlation between the castes dropped and the agricultural status, and that the share of dropped caste varies over time, the results might be driven by this selection of dropped castes. Figure 16 pictures the evolution of the share of the non dropped castes in the total population of the districts used in the paper.

[Figure 16 about here.]

If it is reassuring to see that the non dropped castes represent at least 97.7% of the population of the districts used in the paper, the figure also exhibits a increasing trend in the share of the population of the dropped castes, which might affect the results. In order to check if this might drive the result, I allocate the population of the dropped castes to the non agricultural castes, and re-run the regression described in Equation 1. Table 12 reports the results, which stay very close to the main results, hence showing that the attrition is not driving the evolution seen in the data.

[Table 9 about here.]

Table 2: Castes dropping choices.

Caste dropped	Quote	Source	Note
American			[Foreign nationality. 1891 population: 144.]
Armenian			[Foreign nationality. 1891 population: 69.]

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Caste dropped	Quote	Source	Note
Arya	“the term arya appears as a caste for the first time in this census”	Punjab 1911 Census report, p.445.	[1921 population: 51,532.]
Bangali	“really a geographical term”	Punjab 1891 Census report, p.291.	[1921 population: 1,323.]
Canadian			[Foreign nationality. 1891 population: 26.]
Chirimar	“...is a functional term”	Punjab 1911 Census report, p.452.	[1921 population: 809.]
Dabgar	“a functional term”	Punjab 1911 Census report, p.453.	[1921 population: 414.]
Darugar	“the name is obviously functional”	Punjab 1911 Census report, p.453.	[1921 population: 458.]
Eurasian			[Foreign nationality. 1891 population: 3,087.]
European			[Foreign nationality. 1891 population: 30,538.]
Goanese			[Geographical term. 1891 population: 72.]
Hijra	“Eunuchs”	Punjab 1891 Census report, p.302.	[1921 population: 150.]
Jain			[Religion. 1901 population: 2,442.]
Jew			[Religion. 1891 population: 32.]
Khalsa	“it has been returned for the first time as a caste”	Punjab 1911 Census report, p.462.	[1921 population: 9,648.]
Kharasia	“it is really a functional term”	Punjab 1911 Census report, p.463.	[1921 population: 127.]
Khushabi	“it is a geographical term”	Punjab 1911 Census report p.464	
Kunjra	“it is really a functional term”	Punjab 1911 Census report, p.464.	[1921 population: 4,872.]
Madras	“...the servants of Europeans from Madras”	Punjab 1891 Census report, p.309.	[1891 population: 68.]
Maniar	“... the term, which is a functional one...”	Punjab 1911 Census report, p.467.	[1921 population: 9,727.]
Miana	“they are now recognised as a separate caste”	Punjab 1911 Census report, p.469.	[1921 population: 2,831]

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Caste dropped	Quote	Source	Note
Mujawir	“it is a functional term”	Punjab 1911 Census re- port, p.469.	[1921 population: 5,267.]
Native Christian Parsi			[Religion. 1891 popula- tion: 19,176.] [Religion. 1891 popula- tion: 526.]
Patwa	“it is a functional term”	Punjab 1911 Census re- port, p.472.	[1891 population: 249.]
Pujari	“... it is a functional term...”	Punjab 1911 Census re- port, p.472.	[1921 population: 1,431]
Sangtrash	“it is a functional term”	Punjab 1911 Census re- port, p.474.	[1921 population: 28]
Swiss			[Foreign nationality. 1891 population: 22.]
Tajik			[Foreign nationality. 1921 population: 44.]
Tamboli	“tamboli is a fonctionnal term.”	Punjab 1911 Census re- port, p.476 .	[1921 population: 426.]
Thathiar	“is a fonctionnal term”	Punjab 1911 Census re- port, p.476.	[1901 population: 4,354.]
Turk			[Foreign nationality.1921 population: 560.]

## D List of Agricultural castes.

This list presented in Table 3 is taken from Lal (1937). The castes considered as agricultural in this paper are the ones that have been notified as agricultural before 1921.

Table 3: List of agricultural castes

District	Caste	Notification and date	District	Caste	Notification and date
Hissar	Ahir		Gujranwala	Arain	N°.32237, dated 21st December, 1921.
	Arain			Awan	N°.32237, dated 21st December, 1921.
	Bishnoi			Biloch	N°.32237, dated 21st December, 1921.
	Dogar			Dogar	N°.87, dated 25th May, 1908.
	Gujar			Gakhar	N°.32237, dated 21st December, 1921.
	Jat			Gujar	N°.32237, dated 21st December, 1921.
	Koreshi	N°.2401-R, dated 21st June, 1933		Jat	N°.32237, dated 21st December, 1921.
	Mali			Kamboh	N°.32237, dated 21st December, 1921.
	Moghal			Kharral	N°.32237, dated 21st December, 1921.
	Pathan			Koreshi	N°.109, dated 6th July, 1908.
	Rajput			Labana	N°.100, dated 30th March, 1906.
	Saiyad			Moghal	N°.32237, dated 21st December, 1921.
				Pathan	N°.32237, dated 21st December, 1921.
				Rajput	N°.32237, dated 21st December, 1921.
				Saiyad	N°.32237, dated 21st December, 1921.

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District	Caste	Notification and date	District	Caste	Notification and date
Rohtak	Ahir		Sheikhupura	Arain	
	Arain	N°. 54, dated 18th February, 1914.		Awan	
	Biloch			Biloch	
	Chauhan	N°. 54, dated 18th February, 1914.		Bodla	
	Gujar			Dogar	
	Jat			Gakhar	
	Koreshi	N°.2401-R, dated 21st June, 1933		Gujar	
	Mali			Jat	
	Moghal			Kamboh	N°.32238, dated 31st December, 1921.
	Pathan			Kharral	
	Rajput			Koreshi	
	Ror			Labana	
	Saini	N°. 54, dated 18th February, 1914.		Mahtam	
	Saiyad			Moghal	N°.441-183-17-2-2946, dated 7th March, 1923.
	Taga	N°. 54, dated 18th February, 1914.		Pathan	
				Rajput	
				Saiyad	
				Saini	

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District	Caste	Notification and date	District	Caste	Notification and date
Gurgaon	Ahir		Gujrat	Arain	
	Biloch			Awan	
	Gujar			Bahrupia	N°.12, dated 13th January, 1913.
	Jat			Biloch	
	Khazada			Gujar	
	Koreshi			Jat	
	Mali			Koreshi	
	Meo			Labana	N°.100, dated 30th March, 1906.
	Moghal			Maliar	N°.1076-R, dated 1st April, 1935.
	Pathan			Moghal	
	Rajput			Pathan	
	Saiyad			Rajput	
	Taga	N°.76, dated 4th April, 1910.		Saiyad	

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District	Caste	Notification and date	District	Caste	Notification and date
Karnal	Abbasi		Shahpur	Ahir	
	Ahir			Arain	
	Ansari			Awan	
	Arain			Biloch	
	Dogar			Gujar	
	Gadi			Jat	
	Gujar			Kamboh	
	Jat			Khkhar	
	Kamboh			Koreshi	
	Koreshi			Maliar	
	Mali			Moghal	
	Meo			Pathan	
	Moghal			Rajput,	N°.675-R, dated 29th
				excluding	February, 1936.
	Pathan			Bhatia	
	Rajput			Bhatia	
	Ror			Saiyad	
	Saini	N°.127, dated 20th May, 1909.			
	Saiyad				
	Taga				
	Usmani				

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District	Caste	Notification and date	District	Caste	Notification and date
Ambala	Abbasi	N°.223, dated 20th August, 1914.	Jhelum	Akra	
	Ahir			Awan	
	Ansari	N°.223, dated 20th August, 1914.		Bhatti	
	Arain			Biloch	
	Biloch			Chauhan	
	Gara			Chib	
	Gaur	N°. 3137-R, dated 18th September, 1934.		Gakhar	
	Brahman			Gujar	
	Gujar			Jalap	
	Jat			Janjua	
	Kamboh			Jat	
	Kanet	N°.60, dated 22nd April, 1908.		Jodh	
	Koreshi	N°.233, dated 20th August, 1914.		Kahut	
	Labana	N°.100, dated 30th March, 1906.		Kasar	
	Magh			Khandoya	
	Mali			Khokar	
	Moghal			Koreshi	
	Pathan			Lilla	
	Rajput			Mair and	
	Ror			Manhas	
	Saini			Maliar	
	Saiyad			Moghal and Kok	
	Taga			Panwar	
				Pathan	
				Phaphra	
				Rajput	
				Sial	
				Sohlan	
				Saiyad	

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District	Caste	Notification and date	District	Caste	Notification and date
Simla			Rawalpindi		
	Badi	N°.16177, dated 21st of June, 1919.		Awan	
	Bohara	N°.5077, dated 16th February, 1921.		Biloch	
	Brahman	N°.223, dated 20th August, 1914.		Danial	
	Christain	N°.223, dated 20th August, 1914.		Dhund	
	Kanet	N°.223, dated 20th August, 1914.		Gakhar	
	Koli	N°.223, dated 20th August, 1914.		Gujar	
	Kumhar	N°.223, dated 20th August, 1914.		Jat	
	Lohar	N°.223, dated 20th August, 1914.		Jodhra	
	Mochi	N°.223, dated 20th August, 1914.		Khethwal	
	All Pujaris indigneous to the Kotgarh ilaqa	N°.223, dated 20th August, 1914.		Khattar	
	Rajput	N°.223, dated 20th August, 1914.		Koreshi	
	Rohar	N°.223, dated 20th August, 1914.		Maliar	
	Sunar	N°.223, dated 20th August, 1914.		Moghal	
				Pathan	
				Rajput	
				Satti	
				Saiyad	

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District	Caste	Notification and date	District	Caste	Notification and date
Kangra	Arain	N° 8111, dated 24th March, 1919.	Attock	Awan	N° .36, dated 31st January, 1919.
	Bhatti	N° .54, dated 18th February, 1914 and N° 60, dated 22nd April, 1908.		Bati Sheikh	N° .176, dated 17th July, 1912.
	Chhang	N° 204, dated 20th July, 1914.		Bhatti	N° .36, dated 13th January, 1906.
	Dagi	N° 204, dated 20th July, 1914.		Biloch	
	Gadi	N° 204, dated 20th July, 1914.		Gakhar	
	Ghirath	N° 204, dated 20th July, 1914.		Gujar	
	Gujar	N° 204, dated 20th July, 1914.		Jat	
	Jat	N° 204, dated 20th July, 1914.		Janjua	
	Kanet	N° 204, dated 20th July, 1914.		Jodhra	
	Koli	N° 204, dated 20th July, 1914.		Jodhra	
	Rajput	N° 204, dated 20th July, 1914.		Kahut	
	Rathi	N° 204, dated 20th July, 1914.		Khattar	
	Saini	N° 204, dated 20th July, 1914.		Koreshi	
	Thakur	N° 204, dated 20th July, 1914.		Mair and Manhas Maliar Moghal Pathan Rajput Sadiqi Sheikh Saiyad	N° .176, dated 17th July, 1912. N° .36, dated 13th January, 1906.

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District	Caste	Notification and date	District	Caste	Notification and date
Hoshiarpur	Arain	N°.127, dated 27th May, 1909.	Mianwali	Ahir	
	Awan				
	Bhatti				
	Chhang				
	Dogar				
	Girath				
	Gujar				
	Jat				
	Kanet				
	Koreshi		N°.44, dated 4th March, 1911.		
	Labana		N°.100, dated 30th March, 1906.		
	Mahtam				
	Moghal				
	Pathan				
	Rajput				
	Saini				
	Saiyad	N°237, dated 26th August, 1914.			

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District	Caste	Notification and date	District	Caste	Notification and date
Jullundur	Arain		Montgomery	Arain	
	Awan			Awan	N°.781-R, dated 30th July, 1927.
	Dogar			Bhatti	
	Gujar			Biloch	
	Jat			Bodla	N°.107, dated 6th July, 1908.
	Kamboh			Dogar	N°.1684-R, dated 6th July, 1931
	Koreshi	N°.195, dated 30th July, 1912.		Jat	
	Labana	N°.100, dated 30th March, 1906.		Kamboh	
	Mahtam			Khagga	N°.107, dated 6th July, 1908.
	Pathan			Kharral	
	Rajput			Koreshi	N°.107, dated 6th July, 1908.
	Saini			Matham	
	Saiyad			Pathan	
				Rajput	
				Saiyad	

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District	Caste	Notification and date	District	Caste	Notification and date
Ludhiana			Lyallpur		
	Arain			Arain	N°.79, dated 12th April, 1907.
	Awan			Awan	N°.4643-R, dated 23rd August, 1929.
	Dogar			Bhatti	N°.79, dated 12th April, 1907.
	Gujar			Biloch	N°.79, dated 12th April, 1907.
	Jat			Ghakhar	N°.4643-R, dated 23rd August, 1929.
	Kamboh			Gujar	N°.79, dated 12th April, 1907.
	Koreshi	N°.2401-R, dated 21st June, 1933.		Jat	N°.79, dated 12th April, 1907.
	Labana	N°.100, dated 30th March, 1906.		Kamboh	N°.79, dated 12th April, 1907.
	Pathan			Khagga	N°.79, dated 12th April, 1907.
	Rajput			Kharral	N°.79, dated 12th April, 1907.
	Saini			Kokara	N°.79, dated 12th April, 1907.
	Saiyad			Koreshi	N°.79, dated 12th April, 1907.
				Moghul	N°.4643-R, dated 23rd August, 1929.
				Pathan	N°.79, dated 12th April, 1907.
				Rajput	N°.79, dated 12th April, 1907.
				Saini	N°.79, dated 12th April, 1907.
				Saiyad	N°.79, dated 12th April, 1907.

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District	Caste	Notification and date	District	Caste	Notification and date
Ferozepore	Arain		Jhang	Arain	N°.91, dated 8th June, 1908.
	Baloch	N°.361, dated 8th December, 1914.		Biloch	
	Bodla			Gujar	N°.2129-R, dated 20th May, 1933.
	Dogar			Jat	
	Gujar			Kokara	
	Kamboh			Koreshi	
	Koreshi	N°.2401-R, dated 21st June, 1933.		Nekokara	
	Labana	N°.100, dated 30th March, 1906.		Pathan	N°.4667-R, dated 26th August, 1929.
	Mahtam			Rajput	
	Moghal			Saiyad	
	Mussalman			Turk	N°. 194, dated 18th August, 1906.
	Jat				
	Other Jat				
	Pathan				
	Rajput				
	Saini				
	Saiyad	N°.168, dated 30th August, 1909.			

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District	Caste	Notification and date	District	Caste	Notification and date	
Lahore	Arain	N°.135, dated 18th August, 1908.	Multan	Ahir		
	Awan			Arain		
	Biloch	N°.85, dated 25th May, 1908.		Awan		
	Bodla			Biloch		
	Dogar			Gujar		
	Jat			Jat		
	Kamboh			Kamboh		
	Kharral			Kharral		
	Koreshi			Khokhar		
	Labana			Koreshi		
	Mahtam			Mahtam		
	Moghal			Moghal		
	Pathan			Od		
	Rajput			Pthan		
	Saiyad			Rajput		N°.948-R, dated 28th March, 1936.
				excluding Bhatia		
			Saini	N°.1694-R, dated 11th August, 1927		
			Saiyad			

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District	Caste	Notification and date	District	Caste	Notification and date
Amritsar	Arain		Muzaffargarh	Arain	N°.187, dated 22nd November, 1907.
	Awan	N°.93, dated 5th June, 1907.		Awan	N°.169, dated 6th June, 1914.
	Dogar			Biloch	
	Gujar			Jat	
	Jat			Koreshi	
	Kakkezai	N°. 2337-R, dated 24th August, 1935.		Pathan	
	Kamboh			Rajput	
	Koreshi	N°. 2401-R, dated 21st June, 1933.		Saiyad	
	Labana	N°.100, dated 30th March, 1906.			
	Moghal				
	Pathan				
	Rajput				
	Saiyad				
Gurdaspur	Arain		Dera Ghazi Khan	Arain	
	Chhang	N°.163, dated 26th August, 1909.		Biloch	
	Dogar			Jat	
	Gujar			Khetrans	
	Jat			Koreshi	
	Kakkezai	N°. 2337-R, dated 24th August, 1935.		Machhi	
	Kamboh	N°.164, dated 2nd March, 1914.		Moghal	
	Koreshi	N°. 2401-R, dated 21st June, 1933.		Mujawar	
	Labana	N°.100, dated 30th March, 1906.		Pathan	
	Moghal			Rajput	
	Pathan			Saiyad	
	Rajput				
	Saini				
Saiyad					

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District	Caste	Notification and date	District	Caste	Notification and date
Sialkot	Arain				
	Awan				
	Baghban				
	Dogar				
	Gakhar				
	Gujar				
	Jat				
	Kakkezai	N°. 2337-R, dated 24th August, 1935.			
	Kamboh				
	Koreshi	N°.787, dated 8th August, 1906.			
	Labana	N°.100, dated 30th March, 1906.			
	Moghal				
	Pathan				
	Rajput				
	Saini				
	Saiyad				

## E Religion robustness check

The Province of Punjab is composed of 3 religious groups: the Muslims, the Hindus and the Sikhs. As the Alienation of Land Act does not make a distinction between the religions, and because the institution of caste has largely been transposed in Indian Islam<sup>31</sup>. However, one might argue that caste barriers are weaker for Muslims, and that the evolution described here is driven by Muslim tribe or caste identity manipulation. First of all, it is to be noted that this point does not weaken the argument, as the Muslim tribes are endogamous. Second, as a robustness check, Table 13 presents the results of the main regression of this paper, but restricting the population to Hindus

<sup>31</sup>Jamous (1996) writes for example in the case of the Meo: “It is as if we had to show that the Meo were a Rajput caste and false Muslims, or, on the contrary, that they were Muslims and not a real caste. In fact, the Meo case is not so simple: they are both a Rajput caste and a Muslim community.” It can also be found in Kaul (1912) that “...not only have caste prejudices survived among the converts from Hinduism to Islam, but that the immigrant tribes of Muhammadans have also come under the influence of the institution. [...] All Muhammadan tribes are, as a rule, endogamous, although the restriction regarding marriage is not so rigid [...]”

and Sikhs<sup>32</sup>. It can be seen that the coefficient on post1901\*agricultural is very similar to the one found using the whole population presented in Table 6. It is thus not the Muslim population who is driving the results.

[Table 10 about here.]

## F Ten years periods regressions

An alternative specification would consist in considering ten year growth rates instead of twenty years growth rate, thus having twice two time periods before and after 1901. This increases the number of observations, and allows to merge castes according to their agricultural caste status for an additional robustness check that it is not extreme growth rates of small castes that are driving the results. It can be seen that the results are not affected by this alternative method, even if the point estimate lose of significance when aggregating castes, due to the drastic decrease the number of observations.

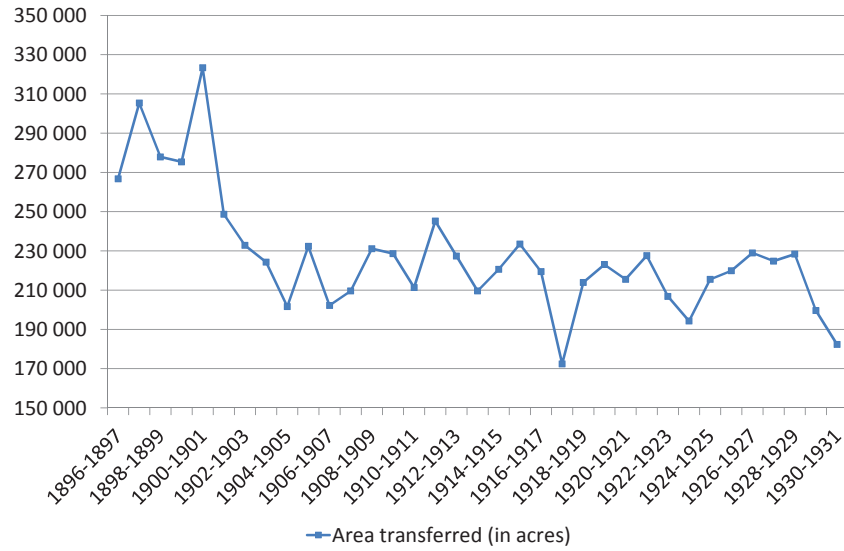
[Table 11 about here.]

[Table 12 about here.]

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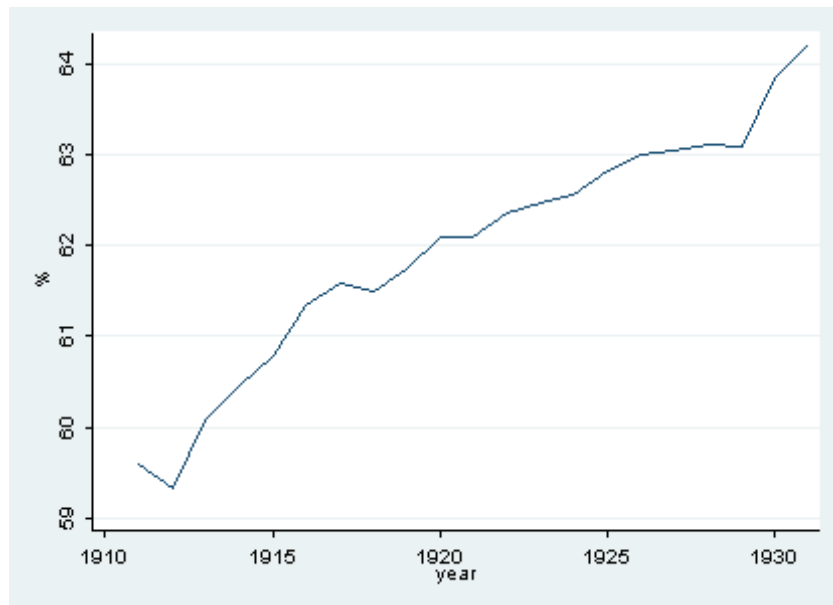
<sup>32</sup>The Hindus and Sikhs had to be merged together, due to a change in the way the Sikhs were recorded in 1911 “...the arbitrary restriction of the term ‘Sikh’ to Keshdaris [...] which had been adopted at the Census of 1901 was removed on this occasion...” (Kaul, 1912), leading to an increase of the Sikh population of 468,251 (out of a total population of 2,883,729 in 1911).

Figure 1: Evolution of sales of land. Province of Punjab, 1896-1932.



Source: Reports on the Land Administration of the Punjab, 1932.

Figure 2: Evolution of share of land owned by agricultural castes. Province of Punjab, 1911-1931.



Source: Reports on the Land Administration of the Punjab, 1911-1931.

Figure 3: Canal colonies' districts.

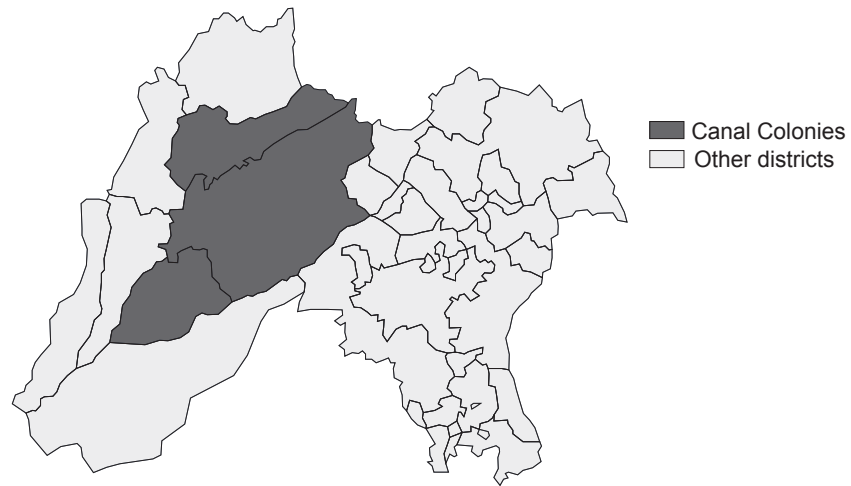
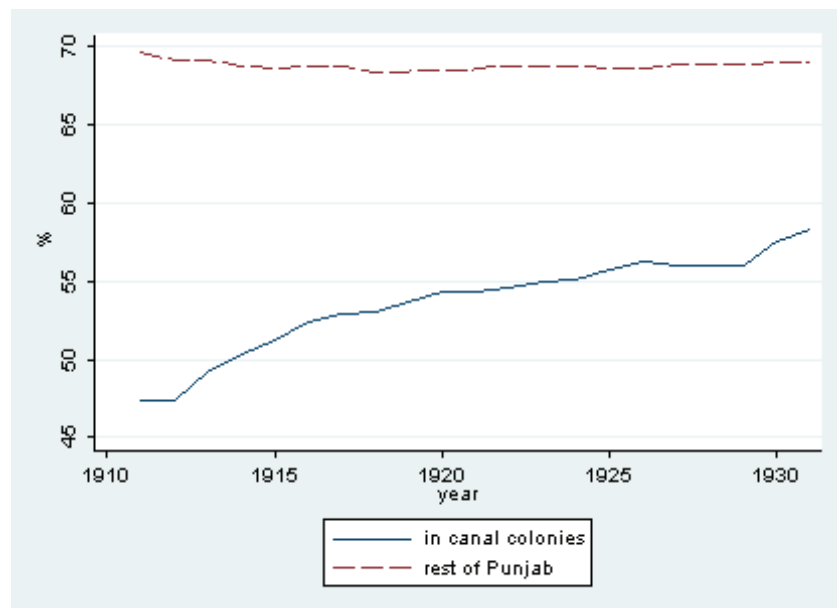


Figure 4: Evolution of agricultural castes' land ownership, by Canal colony status.



Source: Reports on the Land Revenue Administration of Punjab, 1911-1931

Figure 5: British Punjab : dropped and merged districts

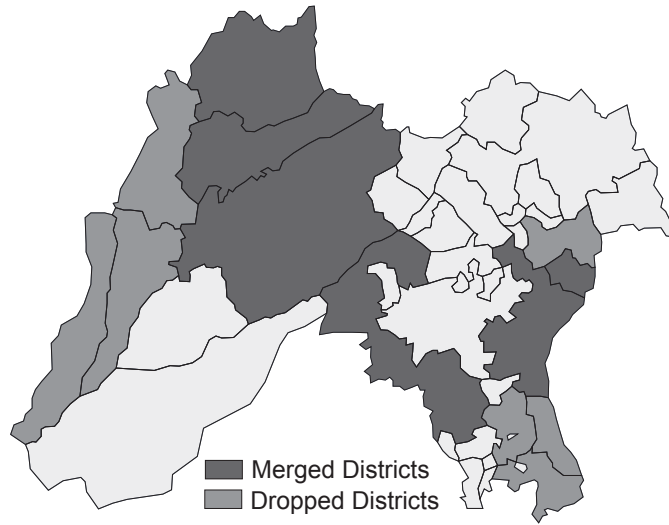
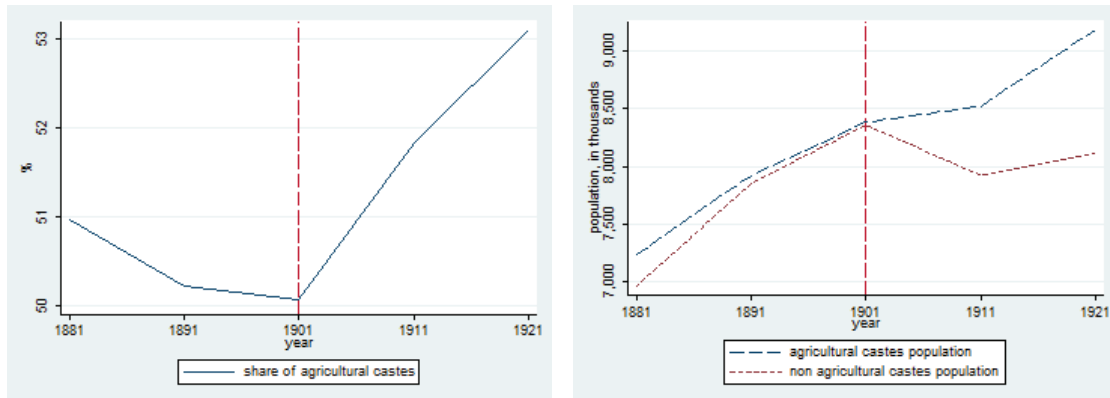


Figure 6: British Punjab: Princely States and British Districts





Figure 7: Evolution of the populations of agricultural versus non agricultural tribes in British districts of Punjab, 1881-1921.



Source: Reports on the Census of Punjab, 1881 to 1921.

Figure 8: Evolution of the growth rates of non agricultural castes and agricultural castes. 1881-1921

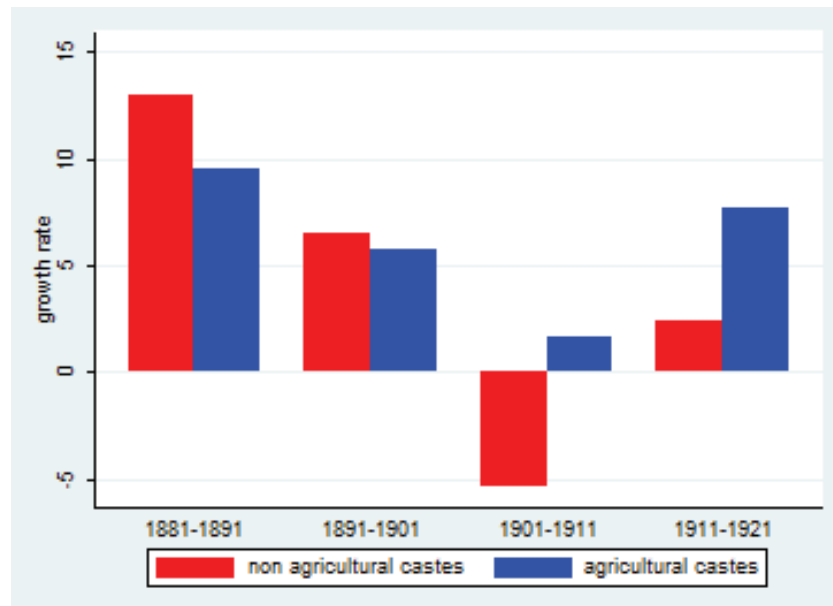


Figure 9: Main Demographic Shocks affecting the Punjab

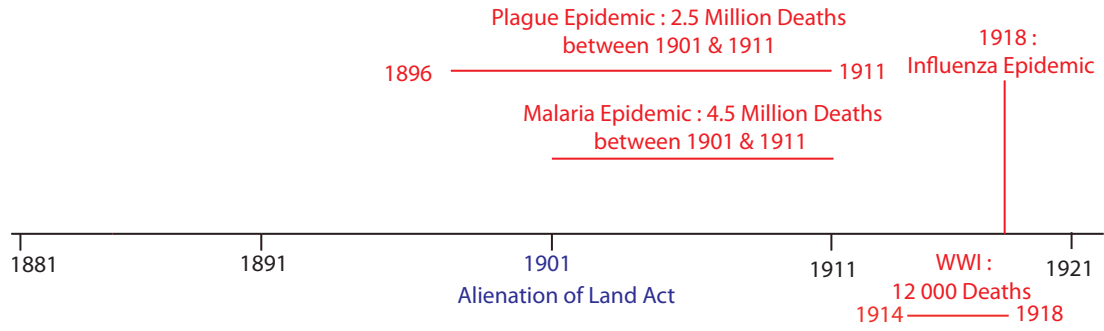
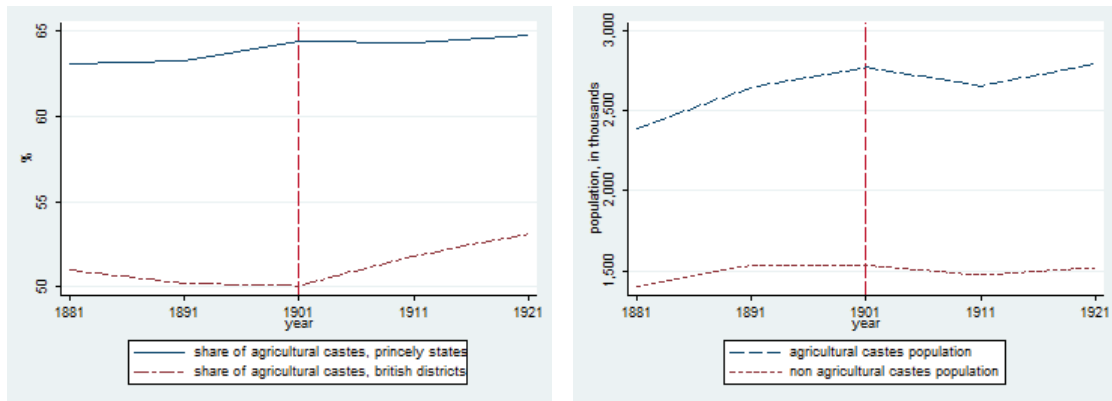


Figure 10: Evolution of the populations of agricultural versus non agricultural tribes in the Princely States of Punjab. 1881-1921.



Source: Reports on the Census of Punjab, 1881 to 1921.

Figure 11: Placebo tests regressions.

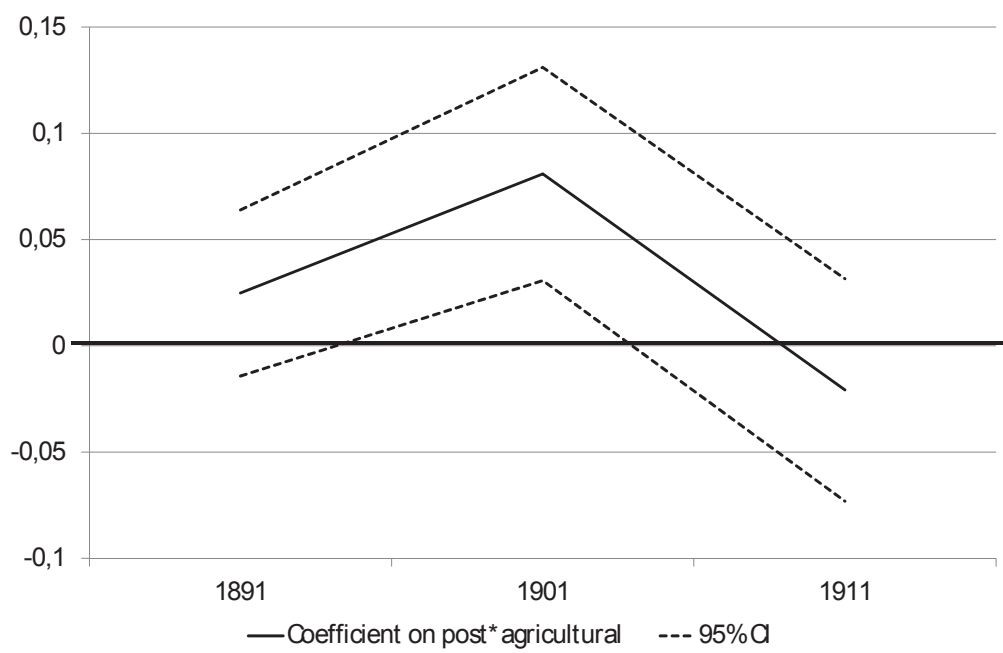
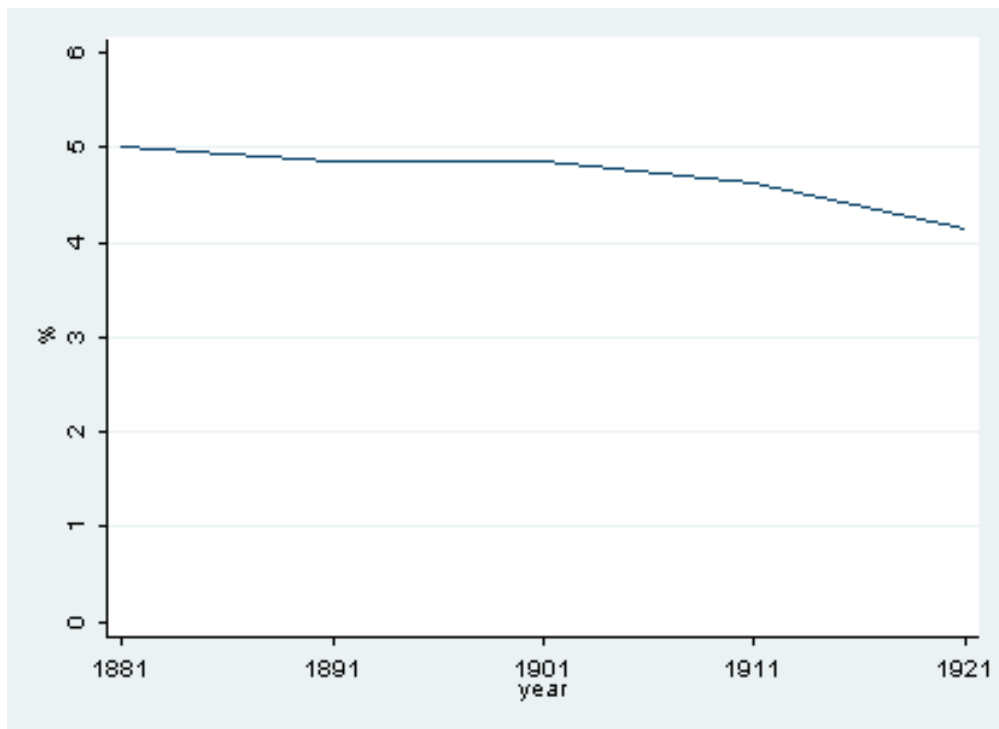
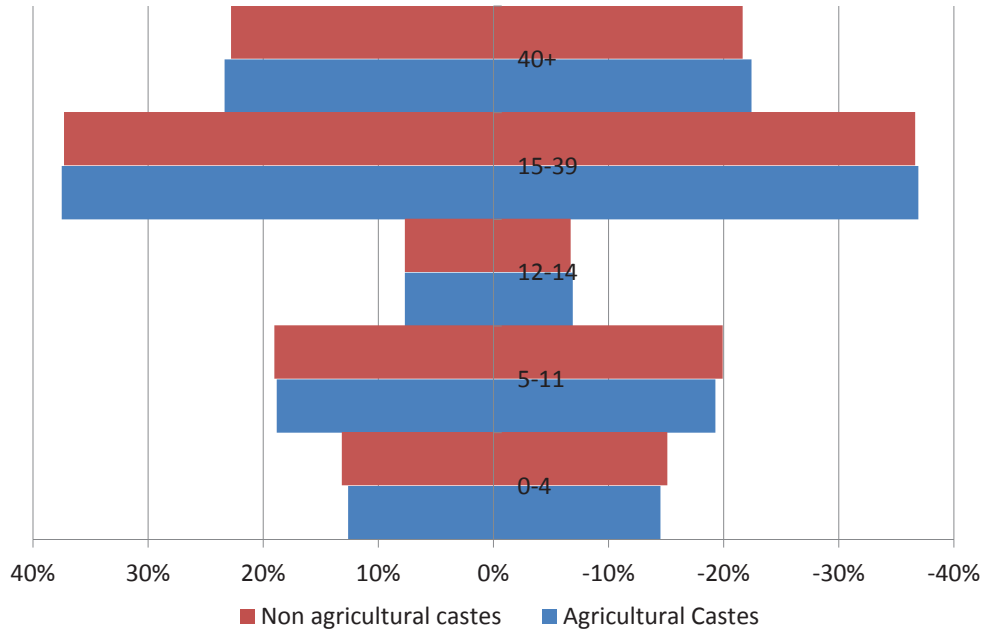


Figure 12: Evolution of the share of persons born outside a British District of Punjab in the British Districts of Punjab. 1881-1921.



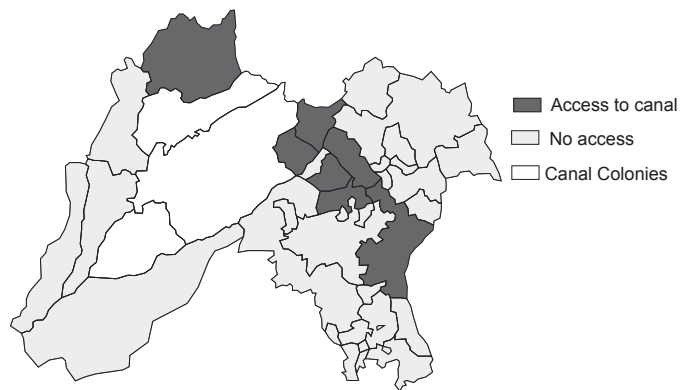
*Source:* Reports on the Census of Punjab, 1881 to 1921.

Figure 13: Age pyramid by agricultural status, 1911.



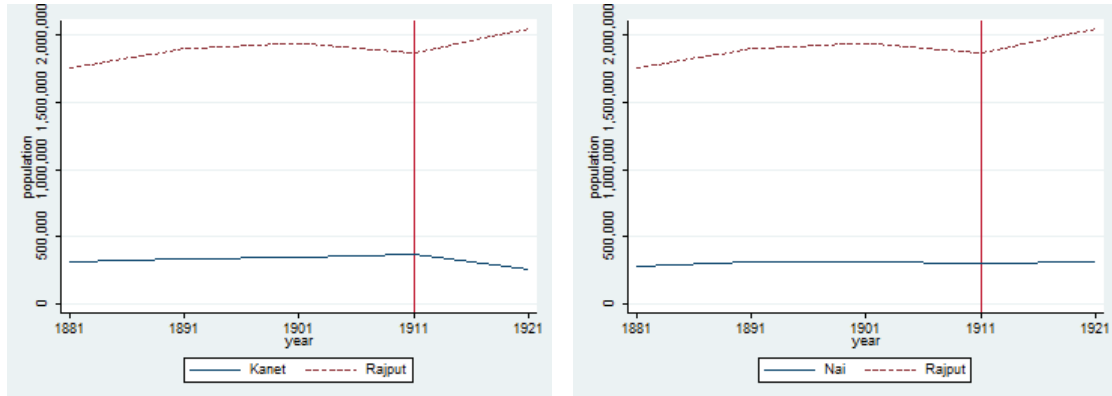
Source: Report on the Census of Punjab, 1911.

Figure 14: Districts whose population is eligible to land in the Canal colonies.



Source: Ali (1988)

Figure 15: Evolution of the populations of Rajput, Nai and Kanet, 1881-1921.



Source: Reports on the Census of Punjab, 1881 to 1921.

Figure 16: Share of non dropped castes in the total population.

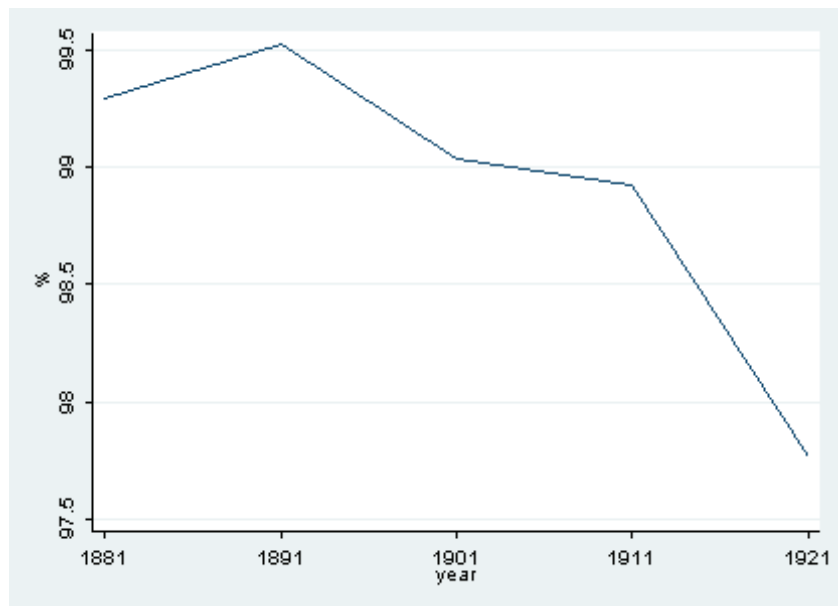


Table 4: Descriptive Statistics: districts and states of Punjab, 1901.

	British Districts	Princely States
Mean Population (std error)	1,408,241 (1,081,661)	207,298 (357,096)
Mean Population/km2 (std error)	291 (175)	194 (127)
Mean Urban Population (std error)	10.8% (0.05)	9.9%(0.08)
Number of Districts/States	12	21

*Source:* Report on the Census of Punjab, 1901. The figures refer to the districts made comparable over time.

Table 5: Descriptive Statistics: population of castes by agricultural status, 1901.

	Agricultural Castes	Non agricultural castes
population (std deviation)	506,789 (930,499)	86,496 (200,510)
N	26	91

*Source:* Report on the Census of Punjab, 1901.

Table 6: Impact of the Alienation Act.

	Province level	District level	
	(1)	(2)	(3)
<b>post1901*agricultural</b>	<b>0.160***</b> (0.0374)	<b>0.158***</b> (0.0363)	<b>0.150***</b> (0.0344)
post1901	-0.218*** (0.0273)	-0.232*** (0.0278)	
agricultural	-0.0354 (0.0253)	-0.0348 (0.0217)	-0.0113 (0.0185)
District Dummies	NO	NO	YES
post*District Dummies	NO	NO	YES
Observations	210	1337	1337
Adjusted $R^2$	0.418	0.152	0.394

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 7: Controlling for diseases.

	Disease deaths on 1901 population		Disease deaths on 1921 population	
	(1)	(2)	(3)	(4)
	<b>post1901*agricultural</b>	<b>0.151***</b> (0.0364)	<b>0.150***</b> (0.0347)	<b>0.156***</b> (0.0350)
post1901*disease*agricultural	<b>0.00485</b> (0.0307)	<b>0.00548</b> (0.0234)	<b>0.00822</b> (0.0341)	<b>0.00745</b> (0.0285)
agricultural	-0.0319 (0.0209)	-0.00842 (0.0188)	-0.0388* (0.0230)	-0.0139 (0.0182)
disease*agricultural	-0.00337 (0.0215)	-0.0289*** (0.00981)	-0.0163 (0.0308)	-0.0457** (0.0179)
post1901	-0.226*** (0.0276)		-0.235*** (0.0276)	
disease	0.0176 (0.0131)		-0.0432*** (0.00936)	
post1901*disease	-0.0389 (0.0289)		-0.0586* (0.0296)	
District Dummies	NO	YES	NO	YES
post*District Dummies	NO	YES	NO	YES
Observations	1337	1337	1337	1337
Adjusted $R^2$	0.153	0.395	0.235	0.399

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



Table 8: British districts vs Princely States.

	Province level		District level	
	(1)	(2)	(2)	(3)
<b>post1901*british*agricultural</b>	<b>0.205***</b> (0.0662)	<b>0.255***</b> (0.0896)	<b>0.252***</b> (0.0922)	
<b>post1901*agricultural</b>	<b>-0.0449</b> (0.0416)	<b>-0.0967</b> (0.0661)	<b>-0.102</b> (0.0687)	
agricultural	0.0686*** (0.0248)	0.0852*** (0.0315)	0.0869*** (0.0327)	
british*agricultural	-0.104*** (0.0317)	-0.120*** (0.0384)	-0.0981** (0.0379)	
post1901	-0.0948** (0.0368)	-0.0484 (0.0624)		
british	0.107*** (0.0197)	0.122*** (0.0315)		
post1901*british	-0.123** (0.0512)	-0.183** (0.0797)		
District Dummies	NO		NO	YES
post1901*District Dummies	NO		NO	YES
Observations	365	2539	2539	
Adjusted $R^2$	0.369	0.129	0.317	

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 9: Migration robustness check.

	Province level		District level	
	(1)	(2)	(2)	(3)
<b>post1901*agricultural</b>	<b>0.0893**</b> (0.0374)	<b>0.0849**</b> (0.0364)	<b>0.0759**</b> (0.0343)	
post1901	-0.190*** (0.0273)	-0.203*** (0.0279)		
agricultural	-0.0354 (0.0253)	-0.0348 (0.0217)	-0.0113 (0.0185)	
District Dummies	NO	NO	YES	
post1901*District Dummies	NO	NO	YES	
Observations	210	1337	1337	
Adjusted $R^2$	0.378	0.135	0.381	

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 10: Heterogeneity of the effect: access to the canal colonies

	Access level	District level	
	(1)	(2)	
<b>post1901*agricultural</b>	<b>0.0776***</b> (0.0266)	<b>0.0744***</b> (0.0251)	<b>0.0583**</b> (0.0252)
<b>post1901*access*agricultural</b>	<b>0.0935**</b> (0.0357)	<b>0.0941***</b> (0.0339)	<b>0.107***</b> (0.0326)
agricultural	-0.0594*** (0.0183)	-0.0564*** (0.0193)	-0.0206 (0.0247)
access*agricultural	0.0291 (0.0220)	0.0252 (0.0190)	0.0108 (0.0382)
post1901	-0.138*** (0.0148)	-0.135*** (0.0137)	
access	-0.00828 (0.0142)	-0.0151 (0.0151)	
post1901*access	-0.0906*** (0.0310)	-0.110*** (0.0310)	
District Dummies	NO	NO	YES
post1901*District Dummies	NO	NO	YES
Observations	345	1337	1337
Adjusted $R^2$	0.396	0.158	0.398

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 11: Heterogeneity of the effect: 1901 share of agricultural castes.

	(1)	(2)
	<b>post1901*agricultural</b>	<b>0.143***</b> (0.0318)
<b>post1901*agricultural*sh_agr</b>	<b>-0.0646***</b> (0.0239)	<b>-0.0724***</b> (0.0248)
agricultural	-0.0122 (0.0150)	-0.0110 (0.0178)
sh_agr	-0.0743*** (0.00951)	-0.0260 (0.0193)
post1901	-0.217*** (0.0235)	
post1901*sh_agr	0.0728*** (0.0236)	
agricultural*sh_agr	0.00322 (0.0250)	0.00344 (0.0251)
District Dummies	NO	YES
post1901*District Dummies	NO	YES
Observations	1344	1344
Adjusted $R^2$	0.200	0.400

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 12: Controlling for attrition.

	State level	District level	
	(1)	(2)	(3)
<b>post1901*agricultural</b>	<b>0.124***</b> (0.0374)	<b>0.123***</b> (0.0364)	<b>0.118***</b> (0.0340)
post1901	-0.182*** (0.0273)	-0.197*** (0.0280)	-0.278*** (0.0346)
agricultural	-0.0371 (0.0253)	-0.0353 (0.0219)	-0.0116 (0.0184)
District Dummies	NO	NO	YES
post*District Dummies	NO	NO	YES
Observations	210	1337	1337
Adjusted $R^2$	0.330	0.113	0.377

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 13: Regression on Hindus and Sikhs only.

	State level	District level	
	(1)	(2)	(3)
<b>post1901*agricultural</b>	<b>0.180**</b> (0.0796)	<b>0.177**</b> (0.0687)	<b>0.158***</b> (0.0542)
post1901	-0.251*** (0.0747)	-0.259*** (0.0645)	-0.311*** (0.0539)
agricultural	-0.0932* (0.0472)	-0.0724* (0.0373)	-0.0340 (0.0252)
District Dummies	NO	NO	YES
post*District Dummies	NO	NO	YES
Observations	151	848	848
Adjusted $R^2$	0.331	0.122	0.321

Weighted OLS regressions of caste's growth rates in 1881-1901 and in 1901-1921. Standard errors clustered at the caste level in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 14: British districts: 10 years growth rates regressions.

	(1)	(2)	(3)	(4)	(5)
	Province Level	District Level		Castes aggregated	
<b>post1901*agricultural</b>	<b>0.0799***</b>	<b>0.0789***</b>	<b>0.0751***</b>	<b>0.0735*</b>	<b>0.0712**</b>
	(0.0186)	(0.0181)	(0.0171)	(0.0395)	(0.0314)
post1901	-0.109***	-0.116***	-0.150***	-0.111***	-0.148**
	(0.0136)	(0.0139)	(0.0172)	(0.0263)	(0.0647)
agricultural	-0.0177	-0.0174	-0.00564	-0.0190	-0.00753
	(0.0126)	(0.0108)	(0.00922)	(0.0276)	(0.0223)
District Dummies	NO	NO	YES	NO	YES
post1901*District Dummies	NO	NO	YES	NO	YES
Observations	429	2640	2640	96	96
Adjusted $R^2$	0.210	0.066	0.170	0.176	0.411

Weighted OLS regressions of caste's growth rates in 1881-1891, 1891-1901, 1901-1911 and in 1911-1921. Standard errors clustered at the caste level in parentheses, except for columns 4 and 5, in which the standard errors are robust. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 15: British districts and Princely states: 10 years growth rates regressions.

	(1)	(2)	(3)	(4)	(5)
	Province Level	District Level		Castes aggregated	
<b>post1901*british*agricultural</b>	<b>0.114**</b>	<b>0.127***</b>	<b>0.125***</b>	<b>0.104</b>	<b>0.106</b>
	(0.0338)	(0.0446)	(0.0457)	(0.0719)	(0.0740)
<b>post1901*agricultural</b>	<b>-0.0343</b>	<b>-0.0488</b>	<b>-0.0513</b>	<b>-0.0309</b>	<b>-0.0345</b>
	(0.0220)	(0.0328)	(0.0339)	(0.0603)	(0.0671)
agricultural	0.0265**	0.0434***	0.0440***	0.0310	0.0330
	(0.0133)	(0.0159)	(0.0164)	(0.0329)	(0.0388)
british*agricultural	-0.0472***	-0.0595***	-0.0486**	-0.0499	-0.0405
	(0.0171)	(0.0193)	(0.0190)	(0.0428)	(0.0447)
post1901	-0.0376*	-0.0233		-0.0399	
	(0.0197)	(0.0310)		(0.0476)	
british	0.0466***	0.0610***		0.0511	
	(0.0104)	(0.0158)		(0.0319)	
post1901*british	-0.0735***	-0.0915**		-0.0715	
	(0.0263)	(0.0397)		(0.0544)	
District Dummies	NO	NO	YES	NO	YES
post1901*District Dummies	NO	NO	YES	NO	YES
Observations	767	5725	5725	264	264
Adjusted $R^2$	0.018	0.051	0.131	0.160	0.315

Weighted OLS regressions of caste's growth rates in 1881-1891, 1891-1901, 1901-1911 and in 1911-1921. Standard errors clustered at the caste level in parentheses, except for columns 4 and 5, in which the standard errors are robust. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .