

Income Concentration in British India, 1885-1946*

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Abstract: *Little is known about the evolution of inequality in pre-industrial times in general and under colonial rule in particular. We use a novel income tax data set to present evidence on the evolution of income concentration in the last 60 years of British India. These data allow us to study both the yearly evolution of income concentration as well as its geographical repartition, a dimension that has been ignored in the top income literature. We uncover the following patterns: (1) the evolution of income concentration in British India was non linear, following a U shape, (2) this pattern of increasing income concentration during the 1920's and 1930's is specific to the Indian setting and may be linked to contemporaneous institutional changes, (3) most of the top income earners were Indians, and (4) the geographical location of top income earners changed over time with the province of Bombay gaining more and more in importance in the XXth century.*

JEL Classification: N35; O10; D31

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“[It is] no part of the functions of fiscal arrangements to equalize the conditions of men.”

James Wilson, First Finance Minister of British India, 1860¹

Introduction

Little is known about the evolution of inequality in pre-industrial times in general and under colonial rule in particular (Milanovic et al., 2011). However, the interaction between colonial policies and historical inequality is at the center of many standard economic analysis of the long term determinants of current economic development. On the one hand, indeed, inequality as determined by colonial institutions has attracted a wide attention as a determinant of economic growth in the long run (Acemoglu et al., 2001, 2002; Engerman and Sokoloff, 2002; Bertocchi and Canova, 2002; Angeles, 2007; Acemoglu and Robinson, 2012). But the historical data on which the evidence is based is very scant and researchers have been forced to make strong assumptions about the nature of those relationships. As the profession has evolved towards more demanding standards in terms of claims to identification and causality, empirical studies have tended to focus on the impact analysis of one specific historical accident, used as an instrument, on long term economic development (Nunn, 2008; Huillery, 2009; Iyer, 2010). With a few notable exceptions (Dell, 2010) this has led the trade off between identification of causal effects versus data-based analysis of the channels of transmission to become heavily biased towards identification. As a result, one could read this literature as suggesting that history is as simple as a line drawn between the period of the “natural experiment” and the year during which the “long term consequences” are measured. This tendency to “compress history” has been heavily criticized (Austin, 2008; Atkinson, 2014). On the other hand, the measurement of the evolution of income inequality during the process of

¹As quoted in Banerjee (1930).

development has also produced a large literature. Recent studies have constructed series of shares of national income accruing to upper income groups over the long run² for various countries (Atkinson and Piketty, eds, 2007, 2010)), which permitted an analysis of the evolution of income concentration year by year allowing for non linear changes. Such body of research permitted an analysis of the evolution of income concentration year by year, but mostly focused on developed countries. Recent evidence on former colonies have been collected, but their time horizon tends to be relatively short (Piketty and Qian, 2009; Atkinson, 2011a,b, 2015a,b,c,d). As a result, the analysis of the evolution of income concentration under colonial rule, at the center of many theories of the determinants of development, has been largely ignored.

A recent data collection effort of series of colonial period statistics allowed for a much more nuanced analysis of the impact of colonial policies, which have been shown to widely change over time (Cogneau et al., 2015; Cogneau and Moradi, 2015; Dupraz, 2015; Jedwab et al., Forthcoming). The Indian case is particularly telling in that respect. Indeed, its colonial rule lasted close to two hundred years and exhibited dramatic changes over time, from the private rule of the East India Company to direct rule of the British Crown, with partial enfranchisement of the Indian citizens in the last decades of British rule. How, then, to qualify the “long term” consequences of the British rule, when the forms of this rule was varying so much over the short run ? The evidence of the evolution of income inequality under British rule in India is heavily constrained by the data sources exploited so far³. The best series on income concentration in India over time was proposed by Banerjee and Piketty (2005) and Banerjee and Piketty

²“Long run” is a relative term, which in this context refers to the years since the last quarter of the XIXth century.

³Maddison (1971) provides a description of the social structure of India at the end of British rule based on miscellaneous budgetary and census material, and national income data. Milanovic et al. (2011) use social tables for Moghul India in 1750 and for British India in 1947. They estimate that the Gini coefficient lied between 38.5 and 48.9 in 1750 and between 48.2 and 49.7 in 1947. Roy (2007) uses Atkinson (1902) national income estimate for 1875 and the first compilation of the national accounts in 1948 to estimate that the Gini coefficient was 35 in 1875 and 30 in 1948.

(2010) but their data start only in 1922, and as a result, their analysis largely ignores the pre-independence evolution. We use novel Indian income tax data sources⁴ allowing us to go as far back as 1885, creating the longest series on income concentration of developing countries, and one of the longest in the world. This historical depth allows us to analyse the evolution of income concentration within the colonial period, at a time when the colonial institutions exhibits dramatic changes⁵ and shocks⁶ Another advantage of focusing on the Indian setting is that the structure of the data allows us to localize the top income earners across provinces. As a result, not only can we follow the evolution of income concentration across time, we can also follow the repartition of top income earners across space. To our knowledge, this is the first time that patterns of income concentration are given a geographical dimension in the top income concentration literature⁷.

Hence, our paper is, to our knowledge, the first to study the evolution of income concentration of a colony over a significant period of time (more than 60 years) and across space. This allows us to uncover the following: (1) the evolution of income concentration in British India was non linear, following a U shape during the colonial period⁸, the lowest point of which corresponds to the end of the first world war and the introduction of a very limited franchise; (2) British India exhibits a very specific increase of income concentration during the 1920's and 1930's which is present neither in other British colonies, nor in other commonwealth countries; (3) top income earners were Indias and (4) the geographical location of top income earners changed over time, with the province of Bombay gaining more and more in importance in the XX^{th} century,

⁴The data sources used in this paper, described in more details in Online Appendix 2 are yearly province level reports on income tax.

⁵In particular, the constitutional reforms of 1919 and 1935

⁶The two world wars.

⁷Foellmi and Martinez (2014) and Sommeiller and Price (2014) study income concentration at the subnational level. However, they look at income concentration within subnational units and do not study the repartition of top income earners across subnational units.

⁸And a W shape throughout the XX^{th} century

as well as Punjab gaining in importance after Delhi became the capital of the Raj.

The organisation of the paper is the following: Section 1 presents the data and the evolution of income concentration over the period, Section 2 puts that evolution into international perspective and Section 3 discuss the identity of top income earners. Finally, Section 4 present the patterns of geographical repartition of top income earners.

1 Top Income Shares and Composition in British India

1.1 Data Sources

The analysis of this paper relies on data coming from the digitization of a series of income tax reports unused until now. A detailed history of the income tax in India is presented in Online Appendix 1 while the actual data sources used is presented thoroughly in Online Appendix 2.

Introduced temporarily first in 1860 and reintroduced in 1886, both times due to the tight financial constraints faced by the Government of India, the income tax in British India was initially a schedular income tax, before becoming a modern income tax in 1922. We gathered all available provincial income tax reports from 1886 to 1922⁹, while Banerjee and Piketty (2005) graciously shared their scans of income tax reports from 1922 to 1947, which contain previously unused provincial decomposition. It is to be noted that the Indian Income Tax Acts were only applied to British India, that is, to the Provinces under direct British rule¹⁰. Figure 1 shows a map of the political borders of India in 1909. The yellow parts are the Princely States of India, under indirect rule, and as such, not subject to the income tax¹¹.

⁹The tax was assessed in year $t+1$ (financial year) for incomes accrued in year t (income year). This explains why our series start in 1885, as we always refer to income years.

¹⁰Around 80% of the total Indian population.

¹¹Note that up to 1935, Burma is considered as being part of India. We do not take that Province into account in our estimates.

[Figure 1 about here.]

The schedular income tax of 1886-1922 was by definition not levied on individuals total income but on different sources, or schedules of income: salary, annuity, pension or gratuity (schedule one); net profit made by a company (schedule two); interest on the securities of the government of India (schedule three) and other sources of income, i.e. income from commerce, trade, properties, learned professions, manufacture and construction (schedule four). The fact that the tax was levied on a schedular basis means that the resulting statistics can not be used, *stricto sensu* and without further assumptions, to produce estimates of the distribution of personal income. Indeed, the related UK schedular tax of the *XIXth* century intentionally prevented the calculation of a taxpayer total income: an individual could be assessed under all the schedules, and even several times in the same schedule (thus, counted multiple times).

In order to obtain the total income we apply the following assumptions. First, to obtain the number of income taxpayers we summed the number of taxpayers under schedule one and four by income brackets. Second, to obtain the amount of income tax we summed the amount of tax collected under schedule one and four by income range ¹². As a consequence, by assuming that no taxpayer is liable to both schedule one and four we are most likely underestimating the individuals' incomes. As long as this underestimation is constant over time, it will not affect our estimates of the trend. In addition, we can get a sense of the extent of this bias by comparing the difference in levels of income concentration before and after 1922, when the Indian income tax becomes a modern income tax applied to total income. As can be seen in Figure 2, we see no discontinuity at 1922, which points to negligible bias. This could imply that the

¹²We do not use the information on net profit made by a company (schedule two) as it only concerns firms. We do not include Interests on the securities of the government of India (schedule three) in our definition of total income since the *Annual Reports on the Administration of the Income Tax Act* and the *Triennial Reports on the Administration of the Income Tax Act* only report the total amount of tax collected but not the corresponding income bracket or the number of taxpayers. Throughout the period interests on the securities of the government of India represented on average 5 per cent of the total taxable income.

employment structure of the Indian society was simpler than its UK counterpart, where it was more likely for a taxpayer to have multiple jobs, as mentioned in [Stamp \(1916\)](#).

Finally, as pointed in [Simon \(1930\)](#)¹³, one specific feature of the Indian income tax is the exemption of agricultural incomes¹⁴. This is of course a concern given the importance of agriculture in colonial India. However, sources suggest that only a minority of top income earners were landowners in British India¹⁵. Indeed, according to [Maddison \(1971\)](#), big zamindars and jagirdars (i.e. Indian very large landowners) constituted around 0.3% of the population and obtained around 3% of national income in 1938. This implies that taking into account agricultural incomes could increase the share of the top 0.1% group from 8% (our results) to 11% at most in the very unlikely case of extreme inequality among large estates proprietors.

1.2 Trends in Top Income Shares

Figure 2 shows the evolution of the share of total income earned by the top 0.1% and 0.01% between 1885 and 1947 (our series) together with the 1922-1999 estimates of [Banerjee and Piketty \(2005\)](#)¹⁶ (see Online Appendix 4 for a detailed description of the method used to compute those estimates).

[Figure 2 about here.]

¹³“The most striking feature of the Indian income tax is the exemption granted to agricultural incomes in the Act of 1886.” [Simon \(1930\)](#), p.359 para. 408.

¹⁴[Pagar \(1920\)](#) reports that “an attempt was made to bring agricultural incomes [...] under the income tax [...] but [...] the representatives of the great landed estates in combination with the official sympathisers always carried the amendment and left the law where it was before. [...] The usual arguments against inclusion of agricultural incomes such as the violation of the permanent settlement and the discouragement of industrial enterprise among landlords were re-emphasized.”

¹⁵This is not to say that there were no very rich land owners, but that they might not be rich enough to be part of the top 0.1% income earners which are the focus of this study.

¹⁶Note that our estimates marginally differ from [Banerjee and Piketty \(2005\)](#) for two reasons: 1. they use all India income tax reports, which includes small Provinces for which we were not able to locate income tax reports (see Table 4 of Online Appendix 2 for the list of Provinces*Year included in our analysis); 2. their estimates of total income are at the all India level, while we scale them down to the directly ruled Provinces, since the income tax only applied to those territories.

The evolution of income distribution during the 1885-1947 period follows a U shape, particularly pronounced for the top 0.01%. Income concentration falls regularly from the beginning of the period to the very beginning of the 20's. It is around 1921 that the trend is reversed towards increasing income inequality. This is somehow surprising since this reversal of the trend comes only a few years after the introduction of progressivity in the income tax¹⁷. While the fall in income concentration can be linked to the episode of “de industrialization” in India¹⁸, this reversal was also contemporaneous with the first significant extension of the franchise in British India, which took place in 1919 and was applied for the first time at the elections of 1921. Since the electorate was extremely limited (around 3% of the total population after 1919 and around 10% after 1935), it might not be a surprise that the policies put in place would serve the interest of the rich. At the local level, for example, [Tinker \(1954\)](#) notes that “In view of the very low incidence of local taxation both in town and countryside it would have been desirable if taxes could have been increased, especially those direct taxes which bore upon the richer section of society. But the middle-class members of municipal and district boards were, in the main, quite unprepared to tax themselves more heavily”¹⁹. At the provincial level, [Simon \(1930\)](#) writes that “with the considerable widening of the franchise, agricultural interests have dominated the provincial legislatures”. Hence, on the political side, the interests of the top income earners were probably very much at the heart of the policy makers, and it is not clear that the introduction of the limited franchise led to more redistributive policies.

Looking at the broad evolution over the XX^{th} century, it is striking to see that the evolution of income concentration seems to have followed a W shape, with a first less

¹⁷See Online Appendix 1

¹⁸Many economic historians regard the period as an episode of “de-industrialisation” ([Bagchi, 1976](#); [Towmey, 1983](#); [Guha, 1989](#); [Harnetty, 1991](#)), even if some recent works has put the reality of “de-industrialisation” in perspective ([Ray, 2016](#))

¹⁹Note that local taxation was far from negligible: “Of the total revenue from all sources of taxation in India and Burma, local taxes amounted to 8 percent in 1884, 10.5 percent in 1894, 10.75 percent in 1904, 14 percent in 1914, 22.7 percent in 1924, and 25 percent in 1934”, ([Tinker, 1954](#))

pronounced U during the 1886-1947 period and a much steeper one after the Independence of the country, which mirrors the patterns observed in many other countries (see Section 2). As underlined by (Banerjee and Piketty, 2010), this decrease in income concentration after the Second World War is probably be to be linked with the very high progressivity of the income tax after Independence, when the franchise was extended to the entire population. As a result, the history of the evolution of income concentration in the colony that was India can not be resumed to a simple pattern of increasing or decreasing inequality, but to a complex evolution which followed the changes of the institutional structures and shocks on the economy.

2 British India's Income Concentration in International Perspective

The data of the World Wealth and Income Database (WID, Alvaredo et al. (2016)) allows us to put the Indian evolution into international perspective.

Figure 3 compares the evolution of the top 0.1% income share in India with the metropolis and two Commonwealth countries (Australia and Canada); the plot also displays the series for Japan and Norway²⁰. Figure 4 makes the comparison against a former British dominion, South Africa, and two former colonies, Zambia and Zimbabwe. Several facts are worth noting.

[Figure 3 about here.]

First, the two decades preceding WWI seem to point to decreasing concentration in India, but not in Japan; in this sense, the U shape evolution of shares during the British years is unique. Second, shares in India are below those in the UK until they converge by the beginning of the 1930²¹; in fact, the WWI and the crisis following the crash of

²⁰The other two countries in the WID with statistics starting in the last quarter of the *XIXth* century.

²¹There is of course always uncertainty about the level of shares for cross country comparison given the different treatment of income controls.

1929 affected negatively the UK top groups, while the roaring twenties were favorable for the India based elite. Surprisingly, the India elite also seems to have benefited of the crisis years of the 30's: other former British colonies did not exhibit such a pattern, and very few countries in the WID database exhibit such a pattern²²

Third, and for reasons which should still be fully explained, India's elite did not benefit from the commodity boom during and immediately after WWII, a pattern clearly noticeable in the cases of Australia, South Africa, Zambia and Zimbabwe. [Banerjee and Piketty \(2010\)](#) point to the very progressive character of the income tax to explain such evolution in the thirty years going from the independence to 1980; however it is unlikely that the tax alone could explain the absence of a noticeable effect of the increase in international trade prices. Fourth, there is much commonality in levels and trends among the four developing countries since 1950. Finally, the increase in concentration in the English speaking world described in [Atkinson \(2007\)](#) since the mid 1970's also applies to India ([Banerjee and Piketty, 2010](#)).

[Figure 4 about here.]

3 Were the top income earners non Indian ?

A striking feature of income concentration in former British colonies in Africa is that most of top income earners were non African ([Atkinson, 2014](#)). Is this also the case in British India ? While the income tax data does not allow for such a decomposition, we take advantage of a specific feature of the constitutional reforms put in place in India after 1919: limited franchise and separate electorate²³. As Europeans were given

²²Those countries are Argentina ([Alvaredo, 2010](#)) and Indonesia ([Leigh and van der Eng, 2010](#)), a caveat being that only few countries have income concentration data starting in the 20's or 30's, thus making difficult any claim to generalisation.

²³With the 1919 reforms, several "segments" of the Indian population were given separate electorate, that is constituencies in which only the members of a given community (Muslims, Sikhs etc...) could vote for a member of that same community. Note that separate electorates had been introduced at the end of the *XIXth* century at the local level, and in 1909 at the national level, but only the 1919 reforms granted a franchise large enough to be useful for our purpose.

separate electorates and that one criteria to be enfranchised was to pay the income tax, we can use the number of voters in European constituencies post 1919 as an upper bound of the number of European tax units paying the income tax²⁴. Using population data from the Census, we know that in 1921, roughly 1% of the tax units were non Indian. Theoretically then, the whole top 0.1% could be composed fully of non Indian. However, we know for a fact that a significant share of this population was not earning enough to enter the top 0.1% since a significant share of non Indian present in India were soldiers, and most soldier wages were not high enough to enter the top 0.1%(Atkinson, 1902). Moreover, we know that the total European and Anglo Indian electorate at the elections of 1921 was 14,405²⁵. That is, with a total of 217,000 tax payers in 1921, non Indian represent at most 7% of the total tax payers, and at most 0.0002% of the total tax units, far from being able to constitute a significant share of even the top 0.01%. As a consequence, as opposed to the other British colonies studied in Atkinson (2014), the tax payers in British India were Indian for the most part.

4 Repartition of Top Incomes Earners across Space

The literature on the impact of colonial policies in British India has put forward the large geographical (Banerjee and Iyer, 2005) and temporal (Iyer, 2010) variations in colonial policies. However, very little is known about the evolution of the concentration of top income earners across space in general, and in British India in particular. The data we use is structured at the Province level for the 1886-1946 period, which allows us to construct the Province level distribution of top income earners and its evolution over time²⁶. Among the top 0.1%, Bombay's share starts to increase around 1910, at the

²⁴Under the assumption that women did not vote, which was true for the most part.

²⁵Source: *Return Showing the Results of Elections in India (1921)*

²⁶As the Provinces of India have faced several merges and splits across time, we regroup the Provinces that have been split apart into stable geographical units. In particular, Bombay regroups Bombay and Sind, Punjab regroups Punjab, North West Frontier Province and Delhi, Bengal regroups Bengal, Assam, Eastern Bengal, Bihar and Orissa, while Central Provinces also include Berar from 1904 onwards when

expense of Bengal and the North West Province (later called United Provinces). The pattern starts earlier within the top 0.01% with the share of Bombay starting to increase at the turn of the century.

[Figure 5 about here.]

Exploring the evolution of the provincial distribution of shares within shares, we see in Figure 6 that as already hinted at in Figure 5, it is first among the extremely rich (the top 0.001%) that Bombay's share starts increasing during the first decade of the XX^{th} century, almost only at the expense of Bengal. After 1910, the share of Bombay among lower deciles also starts increasing, as the increase in the share of the province trickles down to the 0.005-0.001% in 1920, then to the 0.01-0.005% in 1930 and finally to the full top 0.1% in 1945.

[Figure 6 about here.]

However, this increase in the representation of a province among the top percentile might just reflect an increase of the province in British India's population, more than anything else. Figure 7 graphs the ratio of the share of the provinces in the top 0.1% on the share of the provinces in British India population. The over representation of Bombay is striking: it is the only province over represented in the top 0.1% during the whole period (with a ratio above 1). Moreover, the over representation of Bombay drastically increases at the turn of the century: from 200% over representation at the beginning of the period to 400% over representation at the end. [Bagchi \(1976\)](#) proposes an interpretation of this pattern: Bombay benefited from heavy expenditures on railways, large-scale irrigation works, the development of an Indian capitalist class and the boom in cotton demand.

Berar becomes part of British India.

A second evolution worth pointing out is the increase of Punjab from 1915 onwards at the expense of Bengal. While Bengal was marginally over represented in the top 0.1% until the first world war, and Punjab under represented, this pattern is changing from 1915 onwards. As the capital of British India was moved from Calcutta to Delhi after 1911, it is tempting to see in this evolution a consequence of the displacement of the bureaucracy from Bengal to Punjab.

[Figure 7 about here.]

5 Conclusion

The use of novel income-tax data allowed us to study in depth the evolution of income concentration in British India over a period of 60 years. This historical depth allowed us to assess the evolution of income concentration during a colonial period and be able to see that far from being stable, income concentration during the 1885-1946 period followed a U shape. The decreasing pattern in the first half of the period may be explained by the transformation of the economic structure of the country. The institutional changes of the second half of the period, which granted much more political influence to the very rich, were correlated with an increase in income concentration, an evolution rarely seen during the period. Indeed, as the world economy was hit by the Great Depression, this led to a compression of the income distribution in most countries, but British India faced the opposite pattern. Finally, the geographical location of top income earners changed importantly over time, with Bombay's over representation among the very rich dramatically increasing at the turn of the century, while Punjab's over representation started to increase at the expense of Bengal's with the installation of the capital in Delhi. Those later pattern again point to the influence of both economic and political changes as drivers of income concentration in a colony. Hence, this paper emphasizes that in

contrast with the view taken by the literature²⁷ on income inequality in colonies, income concentration in British India was far from being stable, and was changing under the influence of both economic and institutional changes. British India, like other colonies, can not be considered unambiguously as a country of “high” or “low” income concentration: not only was income concentration changing over time, but it was also changing over space.

²⁷Due to a lack of data for the most part.

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Figure 1: Political borders of colonial India, 1909

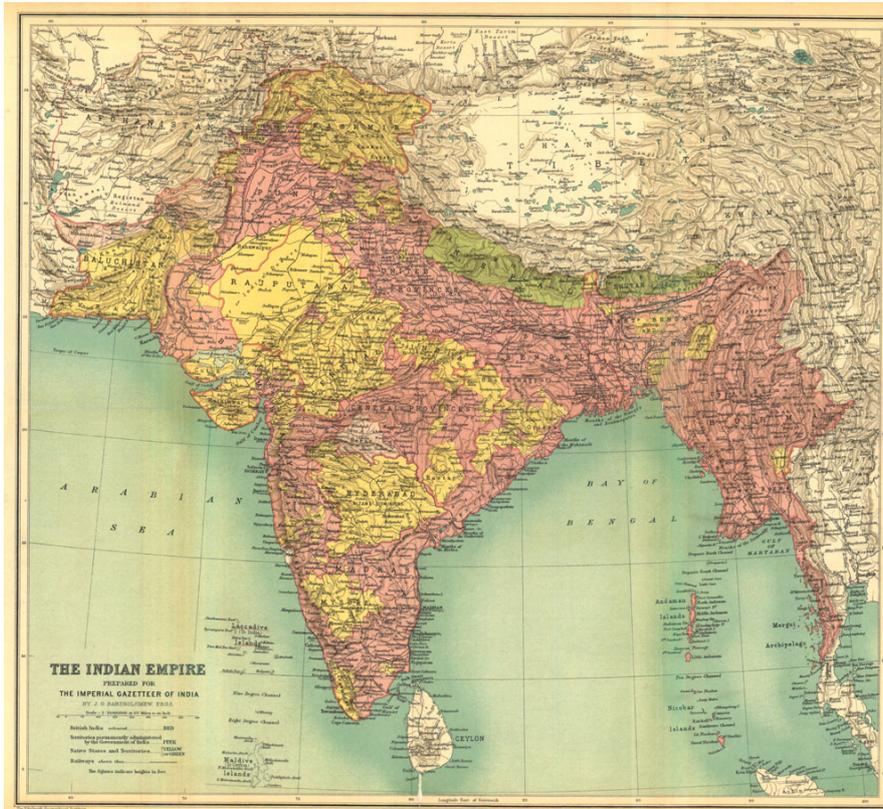


Figure 2: Top 0.1% and 0.01% income shares, 1885-1999.

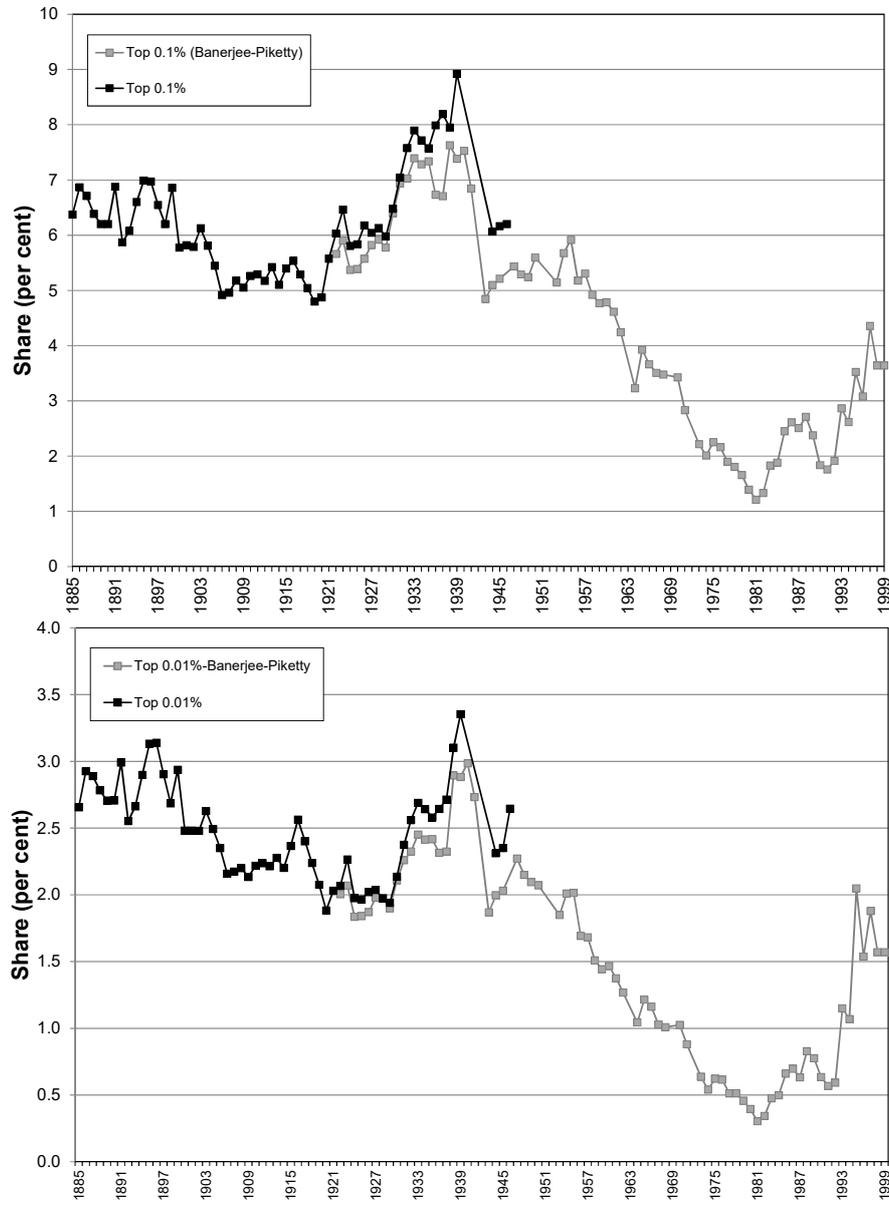


Figure 3: Top 0.1% income share in selected developed countries

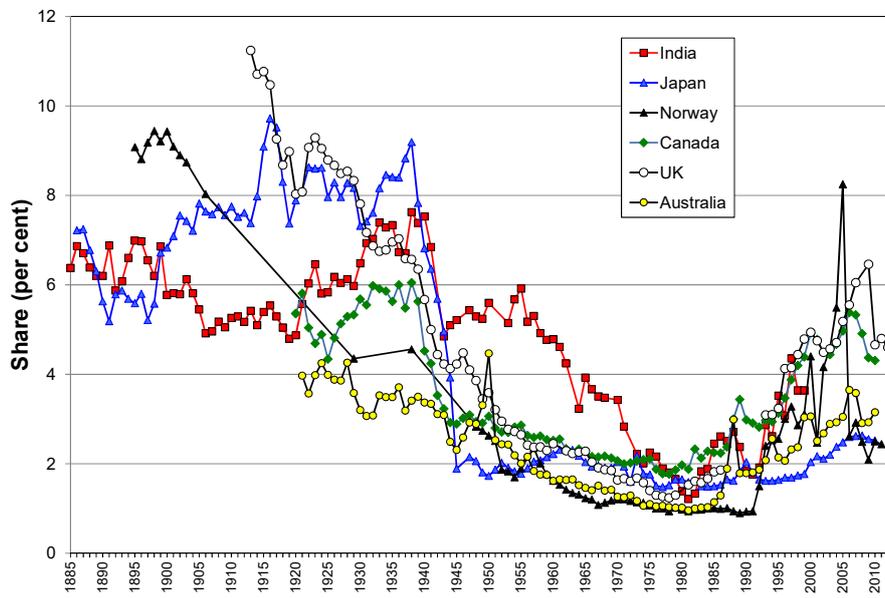


Figure 4: Top 0.1% income share in selected former British colonies

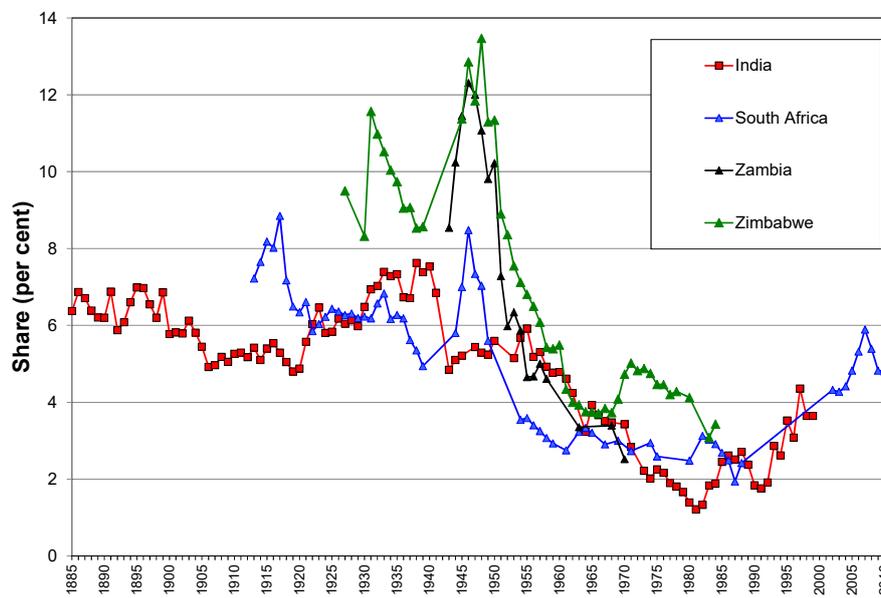


Figure 5: Geographical location of the top 0.1% and 0.01%, 1885-1946.

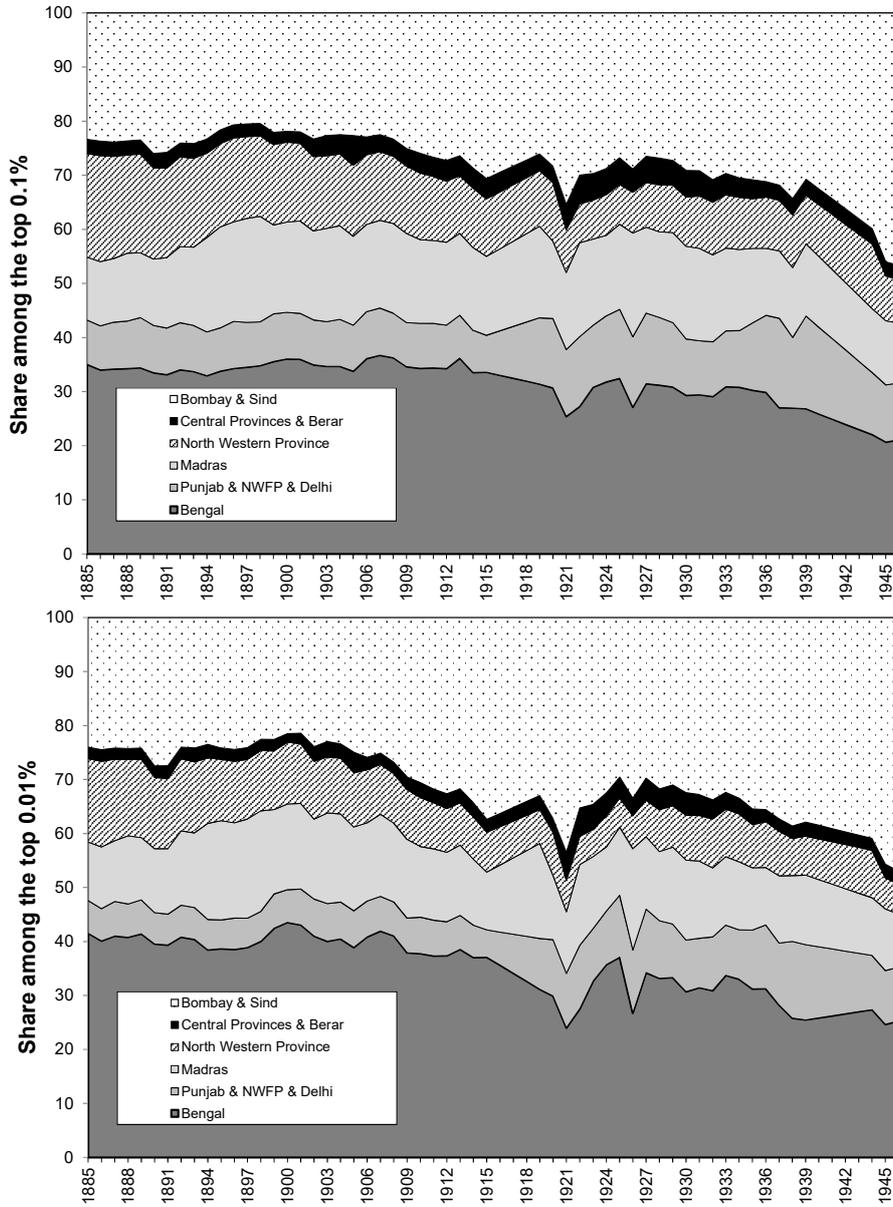


Figure 6: Evolution of provinces' shares within shares, 1885-1945.

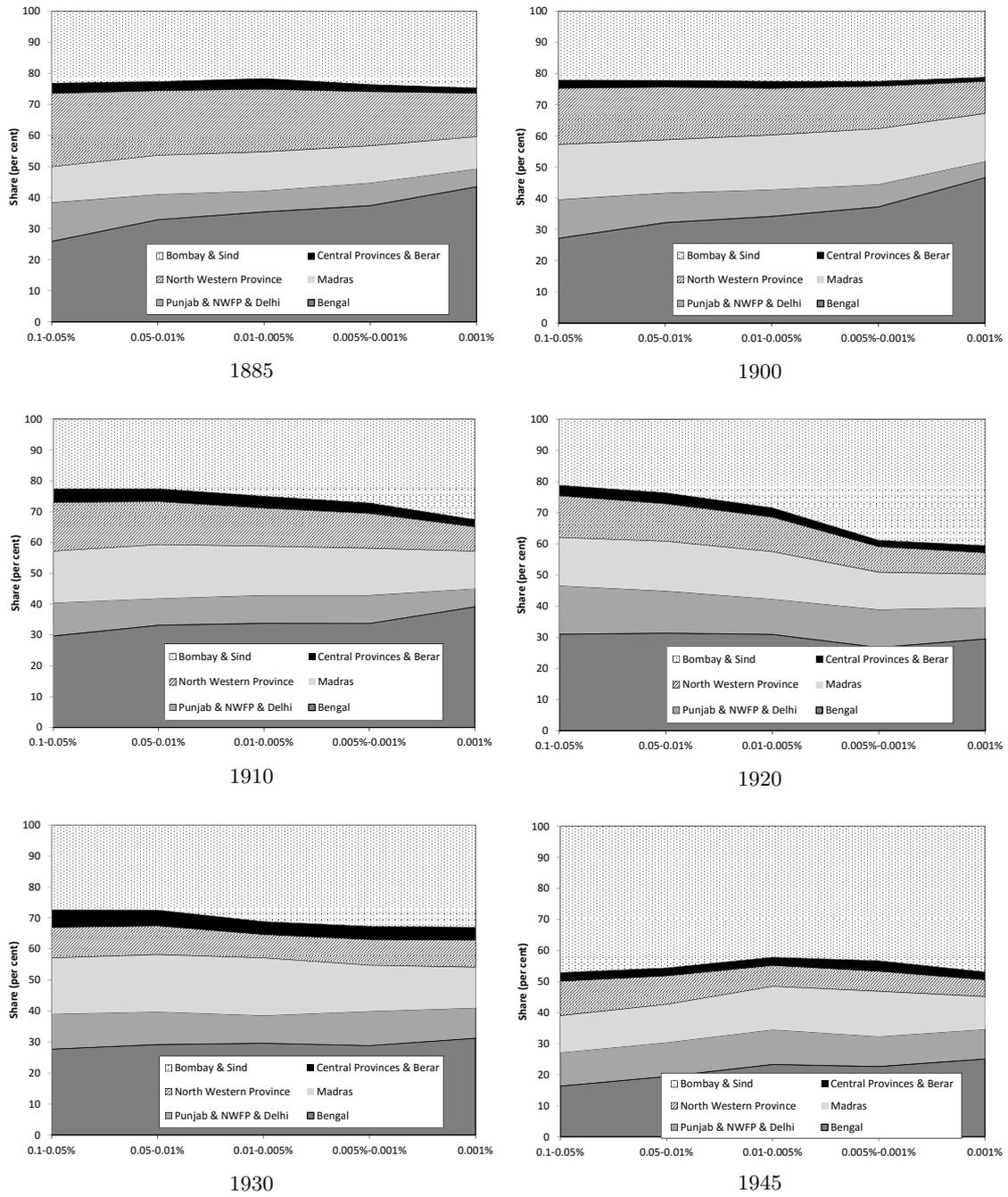


Figure 7: Evolution of the over representation of Provinces in the top 0.01%: the increasing importance of Bombay as an economic center and of Delhi as an administrative center

