Income concentration in British India, 1885-1946.

Online Appendix

Facundo Alvaredo [*], Augustin Bergeron [†] and Guilhem Cassan[‡]

1 The Income Tax in British India

This section draws extensively from Niyogi (1929), Pagar (1920) and Rao (1931).

1.1 The Indian Income Tax Act of 1860 and 1869

The Indian Income Tax Act of 1860 was enforced to meet the losses sustained by the government on account of the military mutiny of 1857. Income was divided into four schedules taxed separately: (1) Income from landed property; (2) Income from professions and trades; (3) Income from Securities; (4) Income from Salaries and pensions. Under each schedule the tax rate was 2% for incomes below Rs. 500 and 4 % for incomes above that amount. Were exempted: individuals with less than Rs. 200 a year income from all sources; officers and soldiers whose pay and allowances were less than Rs. 500; naval and marine officers; peasants or tenant farmers having less than Rs. 600 yearly as land revenue. Moreover, some belongings and estates were not included in the definition of taxable income: government properties; houses owned or rented for the purpose of habitation only; properties devoted to charitable and religious purposes; life insurance

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[*]Paris School of Economics and Oxford University
[†]Harvard University.
[‡]University of Namur.

premiums not exceeding one-sixth of the income.

Assessment was made by a local committee, the Panchayat in the rural district and by special commissioners and collectors in towns and cities. Understatement was high given the low minimum of Rs. 200 and the relatively high taxation rates of 2 and 4 % (compared for example with the flat rate of 0,83 % in Great Britain at the time).

The Indian Income Tax Act of 1860 expired in 1863 and was replaced by a License Tax. The government was forced by financial difficulties to reintroduce an income tax in 1869. Under the Indian Income Tax Act of 1869, salaries were taxed at 2 pies per rupees and individuals, divided into classes, paid fixed fees that went from Rs. 6 on an income of Rs. 500 up to Rs. 1,140 on an income of Rs. 1,10,000. The exemptions criterions and the assessment methods were the same as under the Indian Income Tax Act of 1860. The Indian Income Tax Act of 1869 expired in 1873. The government replaced it in 1878 by several license taxes to raise money for famine insurance in Bengal, North-Western Provinces and Oudh, Punjab, Central Provinces, Bombay and Madras.

1.2   The Indian Income Tax Act of 1886

In 1886 the government, forced once again by financial difficulties, reintroduced an income tax. Under the the Indian Income Tax Act of 1886, income was divided into four schedules taxed separately: (1) salaries, pensions or gratuities; (2) net profits of companies; (3) interests on the securities of the Government of India; (4) other sources of income. This last schedule included income from Hindu undivided families, income from learned professions, manufacturing, construction, manipulation, income from commerce and trade and income from property or other taxable estates. Were exempted: foreign consuls and consular employees; officers whose salary was less than Rs. 500; inhabitants of specific territories like the hill tribes regions; railway, shipping and indigo companies. Furthermore, some sources of income were not included in the definition of taxable income: agricultural incomes; properties devoted to charitable and religious purposes;

savings up to one sixth of total income; capital gains and casual profits.

Incomes under Schedule 1 and 3 were taxed at source while local registrars assessed incomes under Schedule 2 and 4. Incomes under Schedules 1 and 4 were taxed at the same rate. Because we use these tax rates to obtain the total income by income brackets we report them in Online Appendix Table 1a. The only two modifications were introduced in 1903 when the exempt minimum was raised to R. 1,000 and in 1916 with the establishment of more progressive tax rates. Incomes under Schedule 2, provided they were superior to Rs. 1,000 were taxable at 5 pies in the rupee. Incomes under Schedule 3 were charged a progressive fee: Rs. 10 for income between Rs. 500 and 750, Rs. 15 for income between Rs. 750 and 1,000, Rs. 20 for income between Rs. 1,000 and 1250, Rs. 28 for income between Rs. 1,250 and 1,500, Rs. 35 for income between Rs. 1,500 and 1,750 and Rs. 42 for income between Rs. 1,750 and 2,000.

1.3 The Indian Income Tax Act of 1918 and 1922

The main reforms to the Indian Income Tax Act of 1886 were due to the administrative and financial difficulties linked to the First World War and were implemented in 1918 and in 1922. Tax rates per bracket under these law are reported in Online Appendix Table 1b. The Indian Income Tax Act of 1918 repealed the Indian Income Tax Act of 1886 and introduced several important changes. First of all, it replaced the schedular income tax by a total income tax. Secondly, it disallowed some of the exemptions to the income tax such as military and political exemptions or the exemptions of railways, shipping and indigo companies. Finally, income tax filing was made compulsory. The novelty introduced by the Income Tax Act of 1922 relative to the Indian Income Tax Act of 1918 was to allow tax rates to be fixed by the annual Finance acts rather than being embodied in the text of the Income Tax Act. The Income Tax Act of 1922 remained in force until the year 1961. A separate agency was created, and between 1922 and 1931, the administration of the income tax was progressively transferred from the Revenue

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Department to full-time Income tax Officers[1]

2 Data Sources on Income Tax in British India

Available statistical information about the distribution of income or tax paid by brackets under the 1886, 1918 and 1922 Income Tax Act come from several sources. Under the Income Tax Act of 1886 and 1918, income tax tabulations were published annually by each province of British India in the *Annual Reports on the Administration of the Income-Tax Act* and The *Triennial Reports on the Administration of the Income-Tax Act*. Under the Income Tax Act of 1922 income tax tabulations were published yearly in the *All India Income-tax Returns*, which contained tabulations at the province level. The sources used in this study for the Income tax data are indicated in Online Appendix Table 2, while Online Appendix Table 3 shows the years and provinces of Colonial India covered by the Income tax reports indicated in Online Appendix Table 2.

3 Control Totals for Individuals and Income

When estimating top incomes share from tax records, a standard methodology has been established, combining tax data with external source for the reference population and total income (Atkinson and Piketty, eds, 2007, 2010).

The number of tax payers in the income tax statistics has to be related to the population of tax units as a whole. Under the 1886, 1918 and 1922 Income Tax Act the tax unit was the single adult individual or the married couple. We therefore define the

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[1]Source: Government of India (1925) p.2 and Government of India (1933) p.2 para.5.

number of tax units as the total population minus the number of persons aged under 15 minus the number of married women. It is computed for 1881, 1891, 1901, 1911, 1921, 1931, 1941 using the Reports on the Census of India, 1931 and 1941 and interpolated in between the census years. Online Appendix Table 4 reports the total population of colonial India, including both Princely States and British Provinces (column 1), the total population of the British Provinces of India (column 2), the total population of the areas covered by the income tax reports (column 3) and the corresponding number of tax units (column 4). It also reports the number of tax payers in the income tax statistics (column 5) and the number of tax payers in per cent of total tax units (column 6).

The income reported in the income tax statistics also has to be related to the total household income. We make use of the estimates of domestic product by Heston (1983) for the 1885-1900 period and of the estimates of national income by Sivasubramonian (2000) for the post-1900 years. Because we are interested in national income we used the year-over-year growth rate of Heston (1983) to extend Sivasubramonian (2000) backwards. Finally, household income is set to 70% of national income for the same reasons as in Banerjee and Piketty (2005, 2010)[2]. Online Appendix Table 4 reports the total nominal household income (column 7), the total real household income in base 1900 (column 8), the average real household income per tax unit (column 9), and the weighted index of all commodity prices, with base 100 in 1900 (column 10).

[Table 4 about here.]

4   Estimating Top Shares

As the income or earning brackets in the income tax reports do not generally coincide with the percentage groups of the population with which we are concerned (such as the

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[2]Household income is less than national income to the extent that income accrues to the government and there are undistributed company profits.

top 0.1 per cent, the top 0.05 per cent, etc.), it is necessary to interpolate to obtain the shares of total income. As the top tail of the earnings or income distribution is in general very well approximated by Pareto distributions, this study uses simple parametric interpolation methods to estimate the thresholds and average income levels for each fractile. This method follows the classic study by Kuznets (1953) and has been used in many of the top income studies presented in Atkinson and Piketty, eds (2007, 2010).

4.1 Key Properties of the Pareto Law

The general interpolation technique is based on the well known empirical regularity that the top tail of the income distribution is very closely approximated by a Pareto distribution. A pareto distribution has a cumulative distribution function of the form

$$F(y) = 1 - (\tfrac{k}{y})^a, \, k > 0, \, a > 1$$

where k and a are constants, and a is the Pareto parameter of the distribution. The corresponding density function is given by

$$f(y) = \tfrac{ak^a}{y^{1+a}}$$

Such a distribution has the key property that the ratio of average income $y^*(y)$ of individuals with income above a given threshold y is always exactly proportional to y :

$$y^*(y) = (\textstyle\int_{z>y} zf(z)dz)/(\int_{z>y} f(z)dz) = (\int_{z>y} dz/z^a)/(\int_{z>y} dz/z^{1+a}) = a/(a-1)y$$

i.e. the ratio $y^*(y)/y$ does not depend on the income threshold y :

$$y^*(y)/y = a/(a-1).$$

The inverted Pareto coefficient $a/(a-1)$ is related to the shape of the income distribution. A higher inverted Pareto coefficient means a fatter upper tail of the distribution and thus a larger top income shares and higher inequality.

4.2   First Step of the Estimation

This step consists in estimating the income or earnings thresholds for each of the percentiles (top 0.1 per cent, top 0.05 per cent, etc.) that define the top earnings and income groups. For each percentile p, we first look for the bracket of income or earnings $[r, s]$ containing p. We then estimate the parameters (a, k) of the Pareto distribution by solving the system of two equations: $k = rp^{1/a}$ and $k = sq^{1/a}$ with p the fraction of tax returns above r and q the fraction of tax returns above s. Note that the Pareto parameters (a, k) may vary from bracket to bracket. Once we have estimated the density distribution on the interval $[r, s]$ it is straightforward to estimate the earnings or income threshold, y_p, corresponding to percentile p.

4.3   Second Step of the Estimation

This step consists in estimating the amount of income or earnings reported above the earnings or income threshold y_p. The amount reported between y_p and s (the upper bound of the published brackets $[r, s]$ containing y_p) is estimated using the estimated Pareto density with parameters (a, k). We then add to that amount the amounts in all the published brackets above s. Once the total amount of income or earnings above y_p is computed, we obtain directly the mean income or earnings above percentile p by dividing the amount by the number of individuals above percentile p. Finally, the share of income or earnings accruing to individuals above percentile p is obtained by dividing the total amount above y_p by the income or earnings denominator series. Average incomes and income shares for intermediate fractiles (top 0.1-0,05 per cent, top 0.05-0,01 per cent, etc.) are obtained by subtraction.

4.4   Adjustments to Raw Pareto Interpolations

Under the Indian Income Tax Act of 1886 income tax tabulations display for each income bracket and each income schedule the number of tax files as well as the amount of

tax collected. For each income bracket and income schedule we estimated the amount of income by means of the statutory tax scale and the taxable thresholds. We then computed total income by income bracket as the sum of salaries and other sources of income. Under the Indian Income Tax Act of 1918 and the Indian Income Tax Act of 1922 income tax tabulations display for each income bracket the number of tax files as well as the income and its source. We computed total income by income bracket as the sum of salaries and other sources of income. Online Appendix 1 reports the precise definition of salaries and other sources of income under the Indian Income Tax Act of 1886, 1918, 1922.

5 Inclusion of agricultural incomes

The exemption of agricultural income under the 1886, 1918 and 1922 Income Tax Act is a potential issue for the estimation of income concentration as it is likely to i) bias the level of income concentration downwards and ii) affect the evolution of income concentration. We consider three scenarios that allow us to bound the effect of including agricultural incomes on income concentration.

Scenario 1: Individuals receiving agricultural incomes do not have any other sources of income. Moreover, top agricultural income recipients earn an income below the income threshold corresponding to the top 0.1% income group. In that case, independently of the distribution of agricultural incomes (which can be more or less unequal than other sources of income), our top incomes estimates are not affected by the inclusion of agricultural income. This case is the most favorable to our estimation: the inclusion of agricultural income in the income tax tabulations does not affect our top income shares estimates.

Scenario 2: Individuals receiving agricultural incomes do not have any other sources of income. But, top agricultural income recipients earn an income above the income

threshold corresponding to the top 0.1% income group. Under the hypothesis that the distribution of agricultural income is the same as the distribution of other sources of income at the top, we can use the share of agricultural income in national income depicted in Figure 2b to estimate the effect of including agricultural income on top income shares. The share of agricultural income in national income was 63% in 1885, 60% in 1900 and 45% in 1946, etc. As a result, to account for agricultural income in 1885 we can add 63% more individuals earning 63% more income in each income bracket. We can proceed similarly but with different percentages for other years (60% in 1900, 45% in 1946, etc.). The effect on the top 0.1% income shares is shown in Online Appendix Figure 1. The gap with the original top 0.1% income shares is noticeable, but it decreases with time. Moreover, the evolution of income concentration is unaltered.

Scenario 3: Individuals in the income tax tabulations also receive incomes from agriculture. Under the hypothesis that the distribution of agricultural income is the same as the distribution of other sources of income at the top, we can again use the share of agricultural income in national income depicted in Figure 2b to estimate the effect of including agricultural income on top income shares. To account for agricultural income in 1885 we can add 63% more income in each income bracket. We can proceed similarly but with different percentages for other years (60% in 1900, 45% in 1946, etc.). The effect on the top 0.1% income shares is shown in Online Appendix Figure 1. Again, the gap with the original top 0.1% income shares is noticeable, but it goes down with time and the evolution of income concentration is unchanged.

[Figure 1 about here.]

6 International Comparisons

The data provided by the World Wealth and Income Database (WID, Alvaredo et al. (2016)) allows us to put our top income series for British India in international perspec-

tive[3].

Online Appendix Figure 2 compares the evolution of the top 0.1% income share in India with the metropolis (Atkinson, 2007) and Japan (Moriguchi and Saez, 2008). Top income shares in British India are below those in the United Kingdom until the beginning of the 1930s when the two series start converging. In fact, the World War I and the Great Depression corresponded to a period of decline in income concentration in the United Kingdom while during the same time period income concentration increased in British India for reasons discussed in Section 2. The comparison with Japan is also interesting because while both countries experienced similar levels of income concentration in the late XIXth century, the evolution of income concentration were opposite in the two countries during the first half of the XXth century[4].

[Figure 2 about here.]

Online Appendix Figure 3 compares our top income shares with estimates for South Africa (Alvaredo and Atkinson, 2010) and Zimbabwe (Atkinson, 2015), the two other British colonies for which income concentration data is available over the period. Both South Africa and Zimbabwe were characterized by a higher level of income concentration than British India. Moreover, the U-shaped evolution of income concentration between 1885 and 1946 seems to be specific to British India rather than common across British colonies.

[Figure 3 about here.]

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[3]The series are estimated using similar methodologies across countries. It is important to note that while the numerator differs across countries, especially as agricultural income was exempted from the income tax in British India but not in other countries, the denominator is comparable across countries.

[4]Japan, like India, was predominantly a rural society based on agriculture and handicraft industry in the late XIXth century. It began to modernize earlier, i.e. after the fiscal reform that resulted in the Matskukata deflation in 1881-1884 (Minami, 1994)

7 Provincial Income per Capita

In Section 4, we discuss several potential explanations for the evolution of the share of each province among the top income earners. One explanation is that one province's income per capita might have increased slower or faster than in other provinces. To our knowledge, the only existing estimates of income per capita, more precisely of GDP per capita, at the provincial level have been provided by Caruana-Galizia (2013) for the 1875 to 1911 period. Online Appendix Table 5 displays their data and shows that while Bombay had higher GDP per capita than most provinces it also experienced slower growth in GDP per capita than most provinces. In particular between 1901 and 1911, when the share of Bombay among the top income earners started increasing, Bombay's GDP per capita growth rate was below those of Punjab, Madras or the Central Provinces and equivalent to the growth rate in the United Provinces .

[Table 5 about here.]

8 Joint Stock Companies

There is, to our knowledge, little data available on firm ownership that can be related to the evolution of income concentration across time and space in British India. However, the statistical abstracts of British India do provide informations on Joint Stock Companies (JSC)[5] thus allowing us to study the evolution of firm ownership in specific industries. Since most of the industries with JSC[6] can not be easily located in one of

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[5]We gathered these data from the series of Statistical Abstract (His Majesty's Stationery Office (1905), His Majesty's Stationery Office (1915), His Majesty's Stationery Office (1922), His Majesty's Stationery Office (1929) (scanned and digitized by the Digital South Asia Library), His Majesty's Stationery Office (1929), His Majesty's Stationery Office (1939) and His Majesty's Stationery Office (1943) (scanned by the Digital Library of India and digitized by us)). Note that we miss the years 1928-29 to 1939-40, which are interpolated in our series, and years prior to 1895 (no tables on JSC were present in the statistical abstracts) and after 1940 (we did not have access to posterior statistical abstracts).

[6]The data presents the number and total paid up capital of JSC for the following sectors: Banking and Loan, Insurance, Navigation, Railways and Tramways, Other Trading Companies, Tea, Other Planting Companies, Coal Mining, Gold Mining, Other Mining and Quarrying Companies, Mining Companies,

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the provinces of British India, we focus on cotton and jute mills JSC, mainly located in Bombay and Bengal, respectively. Note that these two sectors alone account for more than 80% of the net value added for the eight major large scale industries studied in Sivasubramonian (2000).

Online Appendix Figure 4a shows that the number of cotton JSCs was much larger than the number of jute JSCs and that the number of cotton JSCs increased strongly around 1905 and again from the 1920s onwards. Online Appendix Figure 4b shows that the average capital of jute JSCs was higher than the average capital of cotton JSCs: 1.5 times higher in 1895 and 2.5 times higher from 1905 onwards. Finally, Online Appendix Figure 4c shows that while the ratio of the average capital to national income was increasing for jute JSCs and decreasing fro cotton JSCs until the 1920s, this pattern reversed in the post 1920s period.

This evolution can be put in perspective with the changes in the relative shares of Bombay and Bengal among the top 0.1%. As a matter of fact, the increase in the fraction of top income earners located in Bombay from 1905 onwards was contemporary to the increase in the number of cotton JSCs. Moreover, while cotton JSC were not necessarily huge in terms of capital, they were probably making increasing profits, a possibility corroborated by the increasing productivity of the sector detailed in Section 4. As a result, the increase in the number and the productivity of cotton JSCs might have contributed to the increase in the share of Bombay among the population of the top 0.1% income earners.

[Figure 4 about here.]

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Cotton Mills, Jute Mills, Mills for Wool, Silk, Hemp etc, Cotton and Jute Screws and Presses, Flour Mills, Land and Building, Sugar, and Other Companies. Note that the category "Cotton and Jute Screws and Presses" lumped together jute and cotton. As a consequence, we focus only on cotton and jute mills when discussing the relative evolution of JSCs in cotton and jute.

References

Alvaredo, Facundo and Anthony Atkinson, "Colonial Rule, Apartheid and Natural Resources: Top Incomes in South Africa 1903-2007," *CEPR Discussion Paper 8155*, 2010.

_ , _ , **Piketty Thomas, Emmanuel Saez, and Gabriel Zucman**, "WID- The World Wealth and Income Database," http://www.wid.world/ 2016.

Atkinson, Anthony, "The Distribution of Top Incomes in the United Kingdom, 1908-2000," in Anthony Atkinson and Thomas Piketty, eds., *Top Incomes over the Twentieth Century. A Contrast Between Continental European and English-Speaking Countries*, Oxford University Press, 2007.

_ , "Top Incomes in Central Africa: Historical Evidence.," *The World Wealth and Income Database WID WP 5/2015*, 2015.

_ **and Thomas Piketty, eds**, *Top Incomes over the Twentieth Century. A Contrast Between Continental European and English-Speaking Countries*, Oxford University Press, 2007.

_ **and** _ **, eds**, *Top Incomes: A Global Perspective*, Oxford University Press, 2010.

Banerjee, Abhijit and Thomas Piketty, "Top Indian Incomes 1922-2000," *World Bank Economic Review*, 2005, *19* (1).

_ **and** _ , "Top Indian Incomes 1922-2000," in Anthony Atkinson and Thomas Piketty, eds., *Top Incomes: A Global Perspective*, Oxford University Press, 2010.

Caruana-Galizia, Paul, "Indian Regional Income Inequality: Estimates of Provincial GDP, 1875-1911," *Economic History of Developing Regions*, 2013, *28* (1), 1–27.

Government of India, *All India Income-tax Report and Returns for the year 1923-24* 1925.

_ , *All India Income-tax Report and Returns for the year 1931-32* 1933.

Heston, A., "National Income," in Dharma Kumar and Mehgnad Desai, eds., *The Cambridge Economic History of India*, Vol. 2, Cambridge University Press, 1983, pp. 376–462.

His Majesty's Stationery Office, *Statistical Abstract relating to British India. From 1894-95 to 1903-04.* number 39 1905.

_ , *Statistical Abstract relating to British India. From 1903-04 to 1912-13.* number 48 1915.

_ , *Statistical Abstract relating to British India. From 1910-11 to 1919-20.* number 55 1922.

_ , *Statistical Abstract relating to British India. From 1917-18 to 1926-27.* number 61 1929.

_ , *Statistical Abstract relating to British India. From 1927-28 to 1936-37.* number 70 1939.

_ , *Statistical Abstract for British India with statistics, where available, relating to certain Indian States. From 1930-31 to 1939-40.* number 72 1943.

Kuznets, Simon, *Shares of Upper Income Grousp in Income and Savings*, National Bureau of Economic Research, 1953.

Minami, R., *The Economic Development of Japan*, New York: St. Martin's Press, 1994.

Moriguchi, Chiaki and Emmanuel Saez, "The Evolution of Income Concentration in Japan, 1886-2005: Evidence from Income Tax Statistics," *Review of Economics and Statistics*, 2008, *90* (4), 713–734.

Niyogi, J. P., *The Evolution of the Indian Income Tax*, London P.S. King & son, ltd, Westminster, 1929.

Pagar, S. M., *The Indian Income Tax its History, Theory and Practice*, Lakshmi Vilas P. Press Co., 1920.

Rao, V.K.R.V., *Taxation of Income in India*, C. N. Vakil, Longmans, green and co.ltd. London, New York and Toronto., 1931.

Sivasubramonian, S., *The National Income of India in the Twentieth Century*, Oxford University Press, 2000.

Figure 1: Top 0.1% income shares, 1885-1999: inclusion of agricultural income
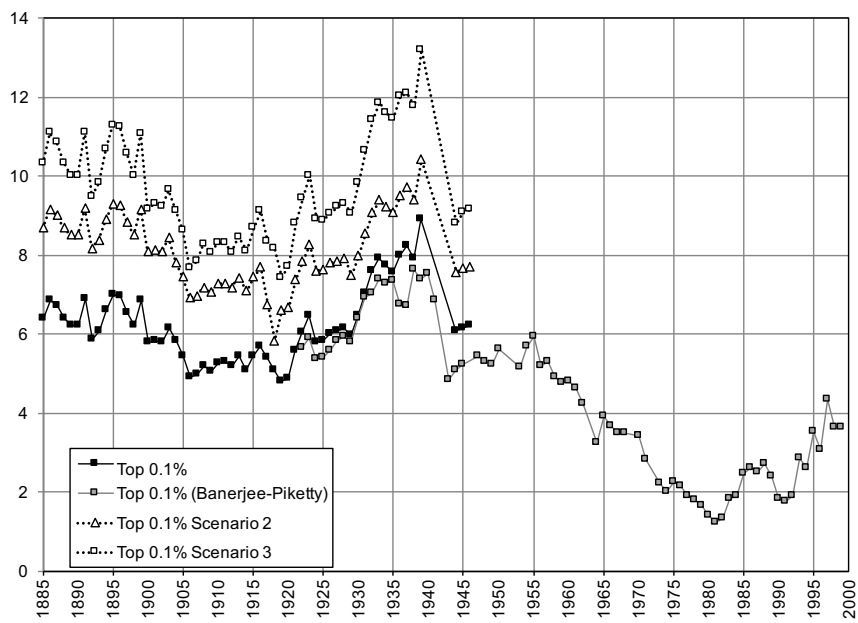
Sources: Authors' calculations (1885-1946) and Banerjee and Piketty (2010) (1922-1999).

Figure 2: Top 0.1% income share in India, UK and Japan
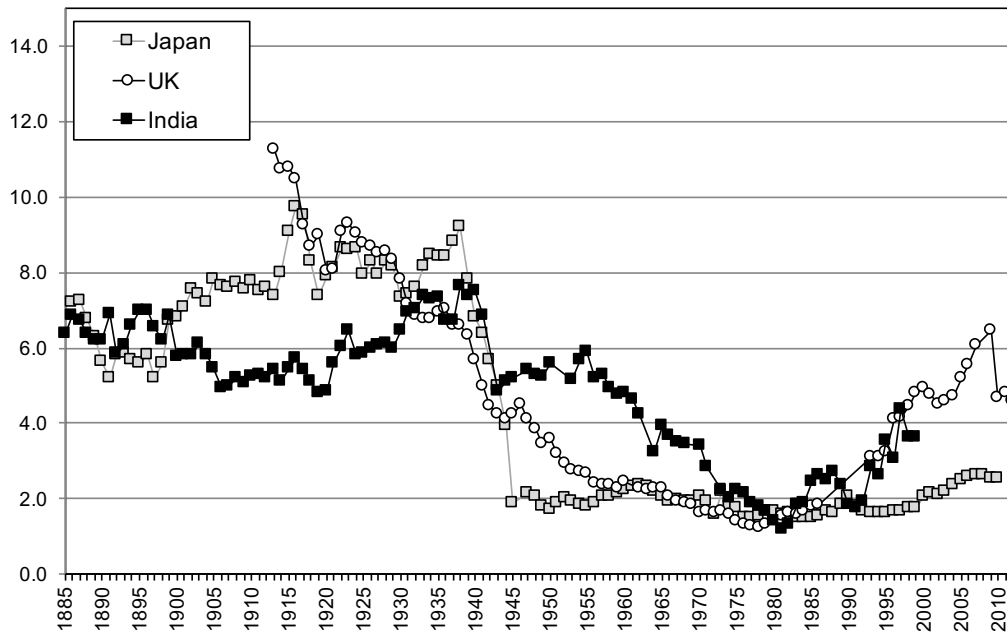
Source: Authors' calculations and World Wealth and Income Database (WID, Alvaredo et al. (2016)).

Figure 3: Top 0.1% income share in former British colonies: India, South Africa and Zimbabwe
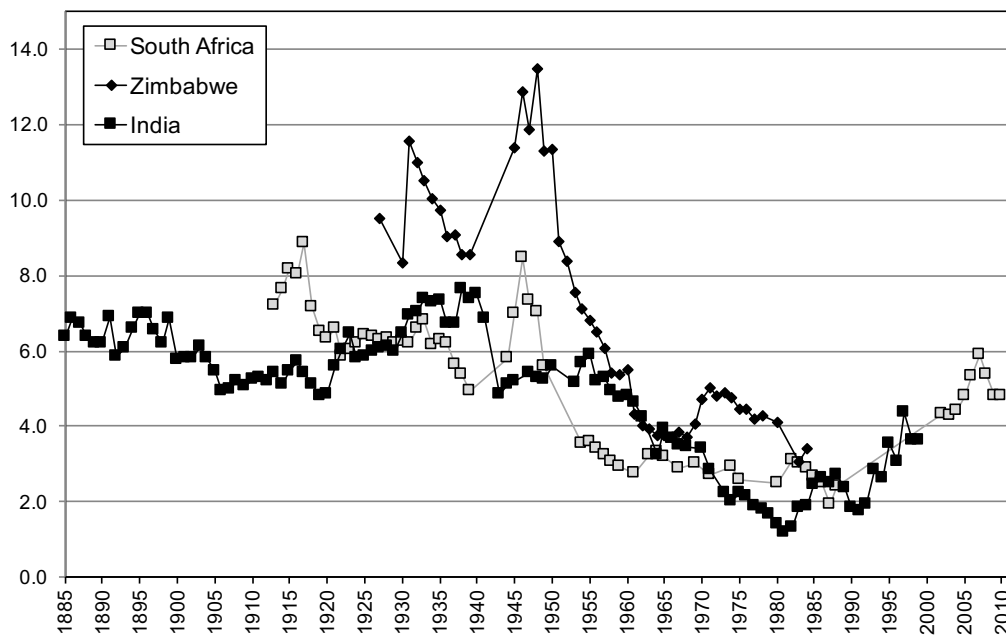
Source: Authors' calculations and World Wealth and Income Database (WID, Alvaredo et al. (2016)).

Figure 4: Evolution of Joint Stock Companies: Cotton and Jute Mills, 1895-1940
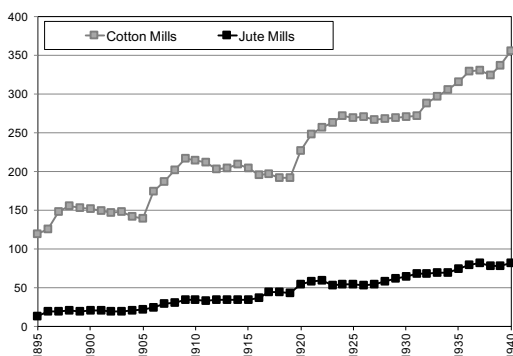
(a) Number of Joint Stock Companies.
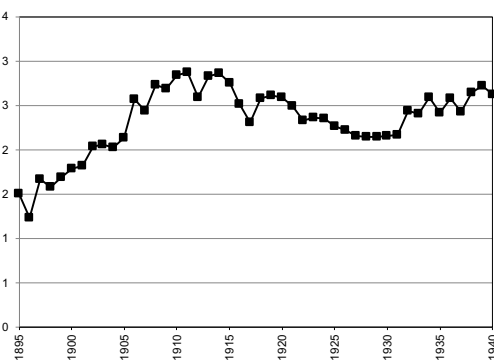
(b) Ratio of average capital in jute versus cotton mills.
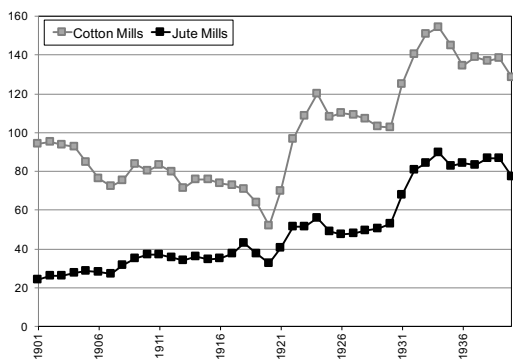
(c) Share of total paid up capital over national income in per 10,000

Sources: His Majesty's Stationery Office (1905), His Majesty's Stationery Office (1915), His Majesty's Stationery Office (1922), His Majesty's Stationery Office (1929), His Majesty's Stationery Office (1939), His Majesty's Stationery Office (1943) and Sivasubramonian (2000), authors' calculations.

Table 1: Tax Scales under the Income Tax Act, 1886, 1918 and 1922.

Taxable Income (Rs.)	Tax Rates under Schedule 1 and 4					
	1886-1903		1903-1916		1916-1918	
	pies in the Rs.	%	pies in the Rs.	%	pies in the Rs.	%
500-1,000	4	2.08%	Not taxed		Not taxed	
1,000-2,000	4	2.08%	4	2.08%	4	2.08%
2,000-5,000	5	2.60%	5	2.60%	5	2.60%
5,000-10,000	5	2.60%	5	2.60%	6	3.13%
10,000-25,000	5	2.60%	5	2.60%	9	4.69%
25,000 and over	5	2.60%	5	2.60%	12	6.25%

(a) Tax Scales Under schedule 1 and 4 of the Income Tax Act, 1886.

Taxable Income (Rs.)	1919-1920		1921-1922		1922-1923	
	pies in the Rs.	%	pies in the Rs.	%	pies in the Rs.	%
2,000-5,000	5	2.60%	5	2.60%	5	2.60%
5,000-10,000	6	3.13%	6	3.13%	6	3.13%
10,000-20,000	9	4.69%	9	4.69%	9	4.69%
20,000-25,000	9	4.69%	12	6.25%	12	6.25%
25,000-30,000	12	6.25%	12	6.25%	12	6.25%
30,000-40,000	12	6.25%	14	7.29%	15	7.81%
40,000 and over	12	6.25%	16	8.33%	18	9.38%

(b) Tax Scales Under the Income Tax Act, 1918,1922.

Source:Niyogi (1929)

Table 2: Data sources on individual income.

Year	Source Used	Table
1886-1887	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1887-1888	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1888-1889	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1889-1890	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1890-1891	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1891-1892	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1892-1893	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1893-1894	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1894-1895	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1895-1896	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1896-1897	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1897-1898	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1898-1899	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1899-1900	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1900-1901	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1901-1902	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1902-1903	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1903-1904	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1904-1905	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1905-1906	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1906-1907	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1907-1908	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1908-1909	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1909-1910	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1910-1911	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1911-1912	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1912-1913	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1913-1914	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1914-1915	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1915-1916	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1916-1917	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1917-1918	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°III
1918-1919	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°II
1919-1920	Annual Report on the Working of the Income- Tax Act II of 1886 Triennial Report on the working of the Income-Tax Act II of 1886	Return n°I
1920-1921	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1921-1922	Annual Report on the Working of the Income- Tax Act II of 1886	Return n°III
1922-1923	All India Income-Tax Report and Returns	Return n°IV
1923-1924	All India Income-Tax Report and Returns	Return n°IV
1924-1925	All India Income-Tax Report and Returns	Return n°IV
1925-1926	All India Income-Tax Report and Returns	Return n°IV
1926-1927	All India Income-Tax Report and Returns	Return n°IV
1927-1928	All India Income-Tax Report and Returns	Return n°IV
1928-1929	All India Income-Tax Report and Returns	Return n°IV
1929-1930	All India Income-Tax Report and Returns	Return n°IV
1930-1931	All India Income-Tax Report and Returns	Return n°IV
1931-1932	All India Income-Tax Report and Returns	Return n°IV
1932-1933	All India Income-Tax Report and Returns	Return n°IV
1933-1934	All India Income-Tax Report and Returns	Return n°IV
1934-1935	All India Income-Tax Report and Returns	Return n°IV
1935-1936	All India Income-Tax Report and Returns	Return n°IV
1936-1937	All India Income-Tax Report and Returns	Return n°IV
1937-1938	All India Income-Tax Report and Returns	Return n°IV
1938-1939	All India Income-Tax Report and Returns	Return n°IV
1939-1940	All India Income-Tax Report and Returns	Return n°IV
1940-1941	All India Income-Tax Report and Returns	Statement n°5
1941-1942	All India Income-Tax Report and Returns	Statement n°5
1942-1943	All India Income-Tax Report and Returns	Statement n°5
1944-1945	All India Income-Tax Report and Returns	Statement n°5
1945-1946	All India Income-Tax Report and Returns	Statement n°5
1946-1947	All India Income-Tax Report and Returns	Statement n°5
1947-1948	All India Income-Tax Report and Returns	Statement n°5
1948-1949	All India Income-Tax Report and Returns	Statement n°5
1949-1950	All India Income-Tax Report and Returns	Statement n°5

Table 3: Available data by Province and by year.

Year	Assam	Eastern Bengal and Assam	Punjab	Punjab & North-West Frontier	North-West Frontier	Madras	Delhi	Lower Provinces/ Bengal	Bihar and Orissa	Bihar	Orissa	Bombay	Sind	Central Provinces	Berar	North Western Province and Oudh/United Provinces
1886-1887	x		x					x				x				
1887-1888	x		x					x				x				x
1888-1889	x		x			x		x				x				x
1889-1890	x		x			x		x				x				x
1890-1891	x		x			x		x				x				x
1891-1892	x		x			x		x				x		x		x
1892-1893	x		x			x		x				x	x			x
1893-1894	x		x	In Punjab		x		x				x		x		x
1894-1895	x	Province not yet created	x			x		x						x	Not a British Province	x
1895-1896	x		x			x		x				x		x		x
1896-1897	x		x			x		x				x		x		x
1897-1898	x		x			x		x	See Lower Provinces/ Bengal			x		x		x
1898-1899	x		x			x	In Punjab	x						x		x
1899-1900	x		x			x		x				x		x		x
1900-1901	x		x			x		x				x		x		
1901-1902	x		x		x	x		x				x		x		x
1902-1903	x		x	Punjab and NWFP separated	x	x		x				x		x		x
1903-1904	x		x		x	x		x				x		x		x
1904-1905	x		x		x	x		x				x		x	x	x
1905-1906		x	x		x	x		x				x		x	x	x
1906-1907	In Eastern Bengal and Assam	x	x		x	x		x				x		x	x	
1907-1908		x	x		x	x		x				x		x	x	x
1908-1909		x	x		x	x		x		See Lower Provinces /Bengal/ Bihar and Orissa	See Lower Provinces/ Bengal/Bihar and Orissa	x		x	x	x
1909-1910		x	x		x	x		x				x		x		x
1910-1911		x	x		x	x		x				x		x		x
1911-1912	x		x		x	x		x	x			x	Included in Bombay	x	x	x
1912-1913	x		x		x	x		x	x			x		x	x	x
1913-1914	x		x		x	x		x	x			x		x	x	x
1914-1915	x		x		x	x		x	x			x		x	x	x
1915-1916	x		x			x		x	x			x		x	x	x
1916-1917	x		x			x		x	x			x		x	x	x
1917-1918	x		x			x		x	x			x		x	x	x
1918-1919	x		x			x		x	x			x		x	x	x
1919-1920	x		x			x		x	x			x		x	x	x
1920-1921	x		x			x		x				x		x		x
1921-1922	x		x					x	x			x		x	x	x
1922-1923	x			x		x		x	x			x		x	x	x
1923-1924	x	See Lower Provinces/ Bengal/ Assam/ Bihar and Orissa	x		x	x	x	x	x			x		x	x	x
1924-1925	x		x		x	x	x	x	x			x		x		x
1925-1926	x				x	x	x	x	x			x		x		x
1926-1927	x		x		x	x	x	x	x			x		x		x
1927-1928	x		x		x	x	x	x	x			x		x		x
1928-1929	x				x	x	x	x	x			x		x		x
1929-1930	x		x		x	x	x	x	x			x		x		x
1930-1931	x		x		x	x	x	x	x			x		x		
1931-1932			x		x	x	x	x	x					x		x
1932-1933	x		x		x	x	x		x			x		x		x
1933-1934	x		x		x	x	x	x	x			x		x		x
1934-1935	x		x		x	x	x	x	x			x		x		x
1935-1936			x	Separate reports for Punjab and NWFP	x	x	x	x	x			x		x	Included in Central Provinces	x
1936-1937	x		x		x	x	x	x	Bihar and Orissa reported separately	x	x			x		x
1937-1938	x		x		x	x	x	x		x	x	x	x	x		
1938-1939	x		x		x	x	x	x		x	x	x		x		x
1939-1940	x		x		x	x	x	x		x	x	x	x	x		x
1940-1941	x		x		x	x	x	x				x	x	x		x
1941-1942			x			x	x				x		x			
1942-1943	x															
1943-1944																
1944-1945	x		x				x						x	x		
1945-1946	x		x		x	x	x	x		x	x	x	x	x		x
1946-1947	x		x		x	x	x	x		x	x	x	x	x		x
1947-1948	x		x			x	x			x	x	x		x		
1948-1949	x		x			x	x				x					
1949-1950	x					x										

Note: The following provinces have not been used, due to lack of data: Adaman and Nicobar, Ajmer-Merwara, Baluchistan, Burma and Coorg. In 1901, those provinces accounted for less than 5% of the total population of British India..

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Table 4: Reference totals for population, income, earnings and inflation .

Years	Total Population of colonial India (excl. Burma)	Total Population of British India (excl. Burma)	Total Population of the Covered Provinces	Number of Tax Units	Number of Assessees	Assessees / Tax Units	Total Household Income	Total Household Income	Average Household Income per Tax Unit	CPI
							million current Rs.	millions 1900 Rs.	1900 Rs.	base 1900
	'000s	'000s	'000s	'000s	'000s	%				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1885	261,774	216,428	198,376	80,667	339	0.42	4,521	6,067	75	75
1886	264,717	218,715	200,169	81,396	342	0.42	4,258	5,900	72	72
1887	267,673	221,050	201,980	82,133	345	0.42	4,472	6,196	75	72
1888	270,641	223,434	203,810	82,877	356	0.43	4,859	6,281	76	77
1889	273,618	225,872	205,659	83,629	360	0.43	5,038	6,139	73	82
1890	276,602	228,365	207,527	84,388	371	0.44	5,298	6,455	76	82
1891	279,593	230,917	209,415	85,156	383	0.45	4,885	5,851	69	83
1892	280,049	231,752	210,127	85,446	393	0.46	5,853	6,331	74	92
1893	280,500	232,602	210,846	85,738	403	0.47	5,828	6,502	76	90
1894	280,945	233,468	211,572	86,033	413	0.48	5,615	6,614	77	85
1895	281,384	234,349	212,304	86,331	414	0.48	5,395	6,462	75	83
1896	281,816	235,246	213,042	86,631	407	0.47	5,459	5,997	69	91
1897	282,241	236,159	213,787	86,934	417	0.48	7,642	7,106	82	108
1898	282,660	237,088	214,539	87,240	427	0.49	6,225	7,134	82	87
1899	283,071	238,034	215,297	87,548	420	0.48	5,596	6,591	75	85
1900	283,475	239,006	216,062	87,859	431	0.49	6,836	6,836	78	100
1901	283,870	240,360	216,834	88,173	441	0.50	6,854	7,158	81	96
1902	285,735	241,955	218,091	88,684	186	0.21	7,103	7,722	87	92
1903	287,610	243,580	219,371	89,205	196	0.22	6,875	8,009	90	86
1904	289,498	247,327	222,770	90,587	199	0.22	7,453	8,449	93	88
1905	291,397	248,762	223,852	91,027	209	0.23	8,453	8,828	97	96
1906	293,308	250,214	224,944	91,471	201	0.22	9,360	8,338	91	112
1907	295,230	251,681	226,046	91,919	202	0.22	9,450	7,950	86	119
1908	297,165	253,164	227,160	92,372	212	0.23	9,034	7,510	81	120
1909	299,112	254,664	228,284	92,829	223	0.24	9,583	8,910	96	108
1910	301,070	256,181	229,419	93,291	233	0.25	9,600	9,046	97	106
1911	303,041	257,714	230,565	93,757	244	0.26	10,050	8,952	95	112
1912	303,312	258,002	230,749	93,831	253	0.27	10,830	9,003	96	120
1913	303,583	258,294	230,936	93,907	272	0.29	10,920	8,802	94	124
1914	303,853	258,590	231,126	93,985	273	0.29	11,754	9,195	98	128
1915	304,123	258,889	231,319	94,063	301	0.32	11,809	8,235	88	143
1916	304,392	259,193	231,514	94,143	301	0.32	12,347	7,543	80	164
1917	304,661	259,500	231,713	94,223	188	0.20	12,834	6,923	73	185
1918	304,929	259,811	231,914	94,305	104	0.11	14,961	6,649	71	225
1919	305,197	260,126	232,119	94,388	179	0.19	19,088	7,621	81	250
1920	305,464	260,446	232,327	94,473	170	0.18	17,729	6,871	73	258
1921	305,730	260,769	232,537	94,558	217	0.23	18,432	8,057	85	229
1922	308,829	263,276	234,743	95,456	220	0.23	17,657	7,848	82	225
1923	311,959	265,809	236,972	96,362	212	0.22	16,479	7,497	78	220
1924	315,121	268,368	239,224	97,278	224	0.23	18,467	8,348	86	221
1925	318,315	270,954	241,499	98,203	216	0.22	18,257	8,980	91	203
1926	321,542	273,566	243,796	99,137	228	0.23	18,137	9,589	97	189
1927	324,801	276,205	246,118	100,081	220	0.22	17,912	9,470	95	189
1928	328,093	278,871	248,463	101,034	232	0.23	17,880	9,645	95	185
1929	331,418	281,564	250,832	101,998	214	0.21	17,340	9,623	94	180
1930	334,777	284,285	253,225	102,971	268	0.26	13,745	9,280	90	148
1931	338,171	287,035	255,643	103,954	405	0.39	12,064	9,837	95	123
1932	356,297	275,711	258,854	105,260	474	0.45	11,153	9,573	91	117
1933	359,790	279,104	262,113	106,585	480	0.45	10,630	9,549	90	111
1934	363,318	282,546	265,421	107,930	496	0.46	11,219	9,869	91	114
1935	366,880	286,039	268,778	109,295	230	0.21	11,198	9,611	88	117
1936	370,477	289,584	272,185	110,681	232	0.21	11,823	10,148	92	117
1937	374,109	293,180	275,644	112,087	213	0.19	12,028	9,205	82	131
1938	377,777	296,830	279,154	113,515	159	0.14	12,114	9,993	88	121
1939	381,481	300,534	282,717	114,964	322	0.28	13,684	9,901	86	138
1940	385,221	304,292	286,334	116,434			14,948	9,751	84	153
1941	388,998	308,107	290,005	117,927			18,224	10,732	91	170
1942	392,812	311,978	293,732	119,443			26,193	12,649	106	207
1943	396,663	315,906	297,515	120,981			36,694	12,922	107	284
1944	400,552	319,894	301,356	122,543	417	0.34	36,731	11,763	96	312
1945	404,479	323,941	305,255	124,128	434	0.35	36,432	11,493	93	317
1946	408,445	328,048	309,213	125,738	402	0.32	36,089	10,409	83	347
1947	412,449	332,217	313,232	127,372			39,558	10,353	81	382
1948	416,493	336,449	317,312	129,031			41,064	8,706	67	472

Source: Reports on the Census of India, 1931 and 1941, income tax reports, Heston (1983), Sivasubramonian (2000) and authors' calculation.

Table 5: GDP per capita in British India Provinces, 1881-1911.

	1881	1891	1901	1911
Bengal and States	195	185	190	158
Bombay and States	263	272	278	310
Central Provinces and States	195	188	203	257
Madras and States	143	156	172	195
Punjab and States	180	187	221	276
United Provinces of Agra and Oudh and States	146	163	151	169

(a) Provincial Real GDP per capita, 1948 rupees.

	1881-1891	1891-1901	1901-1911
Bengal and States	-5%	3%	-17%
Bombay and States	3%	2%	12%
Central Provinces and States	-4%	8%	27%
Madras and States	9%	10%	13%
Punjab and States	4%	18%	25%
United Provinces of Agra and Oudh and States	12%	-7%	12%

(b) Provincial Real GDP per capita growth rate, percentages.

Sources: Caruana-Galizia (2013) and authors' calculations.