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World Inequality Lab

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Abstract: In this article we assess income inequality across French and British colonial empires between 1920 and 1960. For the first time, income tax tabulations are exploited to assess the case studies of French Algeria, Tunisia, Cameroon, and Vietnam, which we compare to British colonies and dominions. As measured by top income shares, inequality was high in colonies. It fell after WWII, but stabilized at much higher levels than in mainland France or the United Kingdom in the 1950s. European settlers or expatriates comprised the bulk of top income earners, and only a minority of autochthons could compete in terms of income, particularly in Africa. Top income shares were no higher in settlement colonies, not only because those territories were wealthier but also because the average European settler was less rich than the average European expatriate. Inequality between Europeans in colonies was similar to (or even below) that of the metropoles. In settlement colonies, the post-WWII fall in income inequality can be explained by a fall in inequality between Europeans, mirroring that of the metropoles, and does not imply that the European/autochthon income gap was reduced.

JEL Codes: O15, O53, O55, N3, N35, N37
Keywords: Inequality; Top incomes; Colonialism; Africa; Asia

1. Introduction

Almost by definition, colonial societies entailed huge inequalities in political power and agency, as well as in social and economic opportunities, if only along the racial divide between European and autochthonous populations. The day-to-day experience of colonized peoples is well known; from very early on, the various forms of domination and discrimination were exposed through militant pamphlets, analytical essays, and sociological works.[1,2] In contrast, the within-group inequalities of both the colonizers and the colonized have received little attention. On European settlers or expatriates, recent historical works have described opportunities offered by the colonial context (Lambert 2009; Chambru & Viallet-Thévenin 2019; Michel 2019). However, success stories are only part of the picture, and not all Europeans managed to find their way into the elite. Regarding autochthons, while some chiefs, landlords, religious leaders or scholars opposed colonial domination and were wiped out, others entered into various forms of collaboration with colonial authorities and were able to reap political and economic benefits. Furthermore –and despite colonial discrimination-, commerce, urbanization, and education opened new channels for accumulation and upward mobility, and also produced some of the soon-to-be leaders of the independence era (Chater 1993; Sraieb 1993; Brocheux & Hémery 1994; Pervillé 1997; Bezançon 2002; 2002).[3] Colonial societies also included autochthonous or immigrant minorities, such as Jews in North Africa, Levantines in West Africa, Indians in East Africa, or Chinese in Indochina, who played an important role in trade, and who were able to occupy intermediate positions within the income and wealth distributions. In any case, the current picture of colonial inequality is incomplete.

As far as the quantitative evidence is concerned, little is known about income and wealth concentration in colonial societies, especially from a comparative standpoint, and particularly for Africa. How great was economic inequality in the colonies of the 20th century, and how did it compare to other historical cases? Could autochthonous elites compete with the richest Europeans in terms of economic affluence, and how high was inequality among the colonized, including non-European minorities? Was inequality higher where Europeans were many? Were the European enclaves homogeneous or not? How did the richest Europeans in the colonies compare with the richest in the mainland? As inequality fell in Europe following World War II, and colonialism became increasingly scrutinized for the treatment of its subjects, did inequality also decrease in the colonies, and why? This paper contributes to answering these questions by studying the concentration of income in four French colonies across Africa and Asia, and comparing them to those of the British Empire. Knowing more about colonial inequality is essential to better understanding the political economy of colonialism itself. It is also important for understanding the socioeconomic structures that the newly independent nations inherited with the end of the colonial rule, hence the political economy of the postcolonial era. In terms of inequality, colonial legacies varied depending on whether settlers left (Algeria) or stayed (South Africa). Furthermore, the ideological pathways chosen by newly independent nations ranged

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[1] Among the earliest works in the French colonial context, Nguyen Ai Quoc (1925) belongs to the first category, Franz Fanon (1952) and Albert Memmi (1957) to the second, and Georges Balandier (1955) and Pierre Bourdieu (1958) to the third.

[2] The fate of mixed-race individuals also well demonstrates the difficulty of bridging the divide between colonizer and colonized (White 1999; Saada 2012).

[3] Here again, the cited references are restricted to French colonies.

from Marxism-Leninism (North Vietnam, and later the whole of Vietnam), to 'planned' or 'community' liberalism (doctrines of the two successive presidents of independent Cameroon), to variations of socialism (Algeria, Tunisia, India) that were later either abandoned or amended. Despite their diversity, what these doctrines had in common was an objective to reduce inequality by breaking with colonial structures.

Until recently, studies on colonial inequality have focused on the distribution of the populations across social classes, each of which is associated with an estimate of average income; today, this construct is known as a "social table". In a seminal work on French North Africa, Samir Amin estimates the average income of Muslims and non-Muslims in agricultural and non-agricultural occupations in 1955, at the end of the colonial period (1970, pp. 60-89).[4] Bigsten (1986) disaggregates national income in Kenya from 1914-1976 into 13 occupational groups; having estimated income inequality within each group for a given date, he assumes the within components to be time-invariant and produces a time series for the Gini coefficient of income inequality. He finds that the Gini coefficient increases sharply between 1914 and 1950, from 0.50 to 0.70, following the urban-rural income gap, and then fluctuates between 0.60 and 0.70 in the 1950s and 1960s. Bolt and Hillbom (2016) use the same method to study income inequality in Botswana from 1921 to 1974; they find a regular increase in the income Gini from the mid-1930s to the mid-1970s, followed by stagnation at a very high level. Aboagye and Bolt (2018) construct social tables for Ghana between 1891 and 1960, and also find an increase in the Gini coefficient between 1930 and 1960. In contrast, Alfani and Tadei (2017) look at Cote d'Ivoire and Senegal, two French colonies in West Africa, and find a significant decrease in the Gini and Theil coefficients between 1939 and 1954, which they link to the reduction of inequality between Europeans and autochthons. Milanovic, Lindert, and Williamson (2011) use social tables to estimate Gini coefficients for 28 pre-industrial societies, including New Spain (1790) and precolonial (1750) and colonial (1947) India.[5] Milanovic (2018) adds 13 social tables to this database, including one from Sarah Merette (2013a, b) on colonial Southern (Cochinchina) and Northern (Tonkin) Vietnam in 1929. The social table approach entails a number of limitations. First, the method is mostly based on labor earnings linked to occupations, and often ignores (or fails to capture) other relevant sources of income (rents, profits).[6] Second, inequality within occupational groups can be severe, and can change across time. Third, the contents of each occupation may vary across space and time.

Fiscal sources allow for a more direct approach that can complement social tables and address some of the drawbacks of missing survey data. After World War I, Britain and France gradually introduced progressive personal income taxes in their colonial empires, shortly after the enactment of these taxes in the metropolis.[7] In recent work, Atkinson (2014, 2015a, b, c)

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[4] See Appendix Table C1. Ageron (2005) discusses Amin's figures for Algeria, and points to large uncertainties.

[5] On the basis of these estimates, Williamson (2010, 2015) contradicts Engerman and Sokoloff (2000), arguing that inequality in Spanish and Portuguese America was moderate and that it rather rose long after independence, following the first wave of globalization in the late 19th century.

[6] Frankema (2010) analyzes the colonial origins of land inequality in Malaysia, Sierra Leone and Zambia.

[7] Even if this work is related to the latest developments in the study of top incomes (Atkinson and Piketty, 2007, 2010; Alvaredo et al., 2013), it is worth recalling that this area of literature has long been concerned with the colonial territories: Frankel and Herzfeld (1943) published estimates of the European income distribution in South Africa based on the income tax returns by making use of control totals from the population census and from the national

exploited income tax data for former British territories in Central, West and East Africa. Here, we use income tax distributional tables published in French statistical abstracts to estimate and analyze the shares accruing to top income groups across four French colonial territories, Algeria, Tunisia, Vietnam, and Cameroon, between 1920 and 1960. We then compare the data to British colonies and former dominions in Africa and Asia (Atkinson 2014, 2015a, b, c; Alvaredo and Atkinson 2010; Alvaredo, Bergeron and Cassan 2017, Banerjee and Piketty, 2010), as well as with France or the United Kingdom (Atkinson 2005, 2007b; Piketty 2001, 2007). No data source is perfect, and this approach is not exempt from shortcomings. We discuss, in particular, a number of methodological limitations: sensitivity to population and income aggregates, coverage and enforcement of the income tax, and definitions of income.

Figures 1 and 2 provide a preview of the main results. Unsurprisingly, we find that top income inequality in the French and British empires of the 20th century was high. Although it fell significantly after World War II, as it did in mainland France or United-Kingdom, it stabilized in the 1950s at higher levels than in the metropoles. Although non-Europeans were sometimes present at the top of the income distribution, this was rarely the case in Africa. In Tunisia, non-Europeans, including the Jewish minority, could represent up to 20% of top income earners; in South Vietnam, non-Europeans, including the Chinese minority, could reach up to 30 to 40% of the top income group. European settlers or expatriates always made up the majority of top income recipients, to a greater extent in Africa. Despite being wealthier, the top income shares of settlement colonies were no higher than in colonies where the number of European expatriates was far smaller. This was because in non-settlement colonies the top rich expatriates were more exclusive or received higher bonuses than settlers did. Inequality between Europeans must have been close to, or even lower than, inequality in the mainland of origin. We show that in the settlement colonies of South Africa, Algeria, or Zimbabwe, the post-war fall in colonial inequality can be explained by the fall of inequality between Europeans alone, which mirrored that of mainland Europe, and cannot be taken to imply that the income gap between Europeans and autochthons decreased.

The remainder of this paper is organized as follows. Section 2 provides a brief historical background for the four French colonies, along with a description of the various forms of income taxes that were implemented after WWI. Section 3 presents the income distribution data and estimation methodology. Section 4 describes our estimates of the population of tax units and of the total (fiscal) reference income. Section 5 presents the results, with details on wealthy autochthons, European settlers and expatriates, and an analysis of the evolution of inequality before and after World War II. Section 6 concludes.

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accounts; their use of external information to complement income tax data pre-dates Kuznets' study of upper income groups in the US by ten years (1953).

Figure 1. Top 1% income share in the French and British colonial empires, 1920-1960
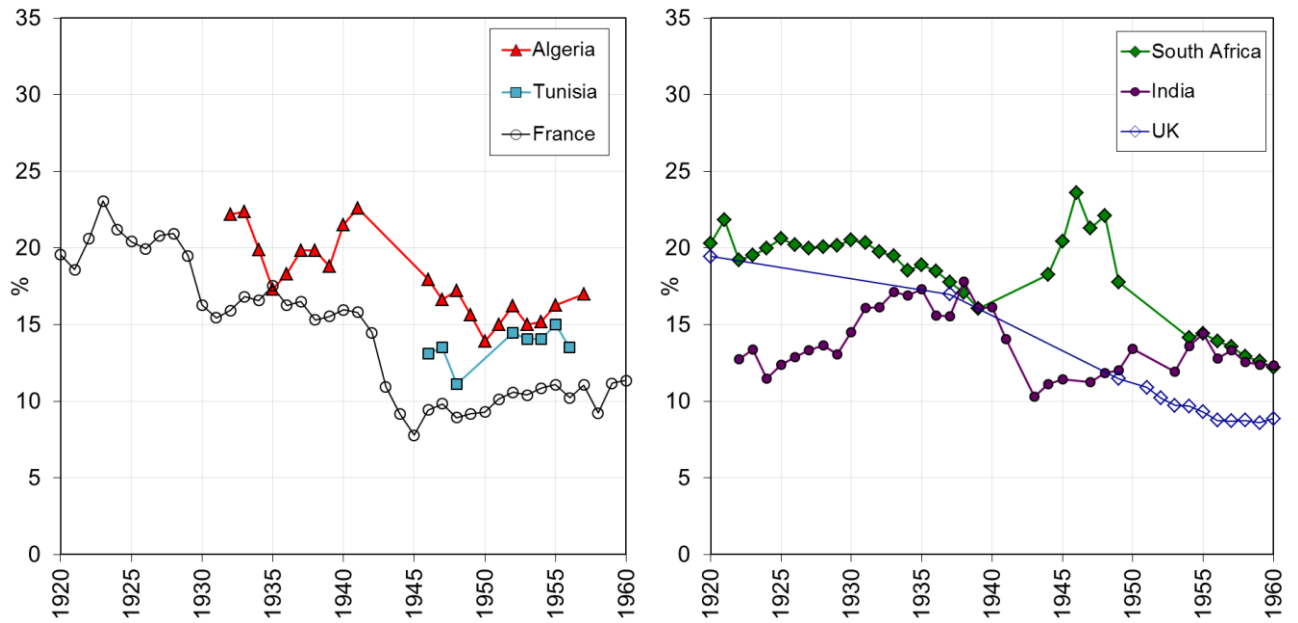
Sources: Table 2A (Algeria), Table 2B (Tunisia), Table 2D (Indochina), Piketty, 2001, 2007 (France), Atkinson, 2005, 2007a (UK), Alvaredo and Atkinson, 2010 (South Africa), Banerjee and Piketty, 2010 and Alvaredo, Bergeron and Cassan, 2017 (India).

Figure 2. Top 0.1% income share in the French and British colonial empires, 1920-1960
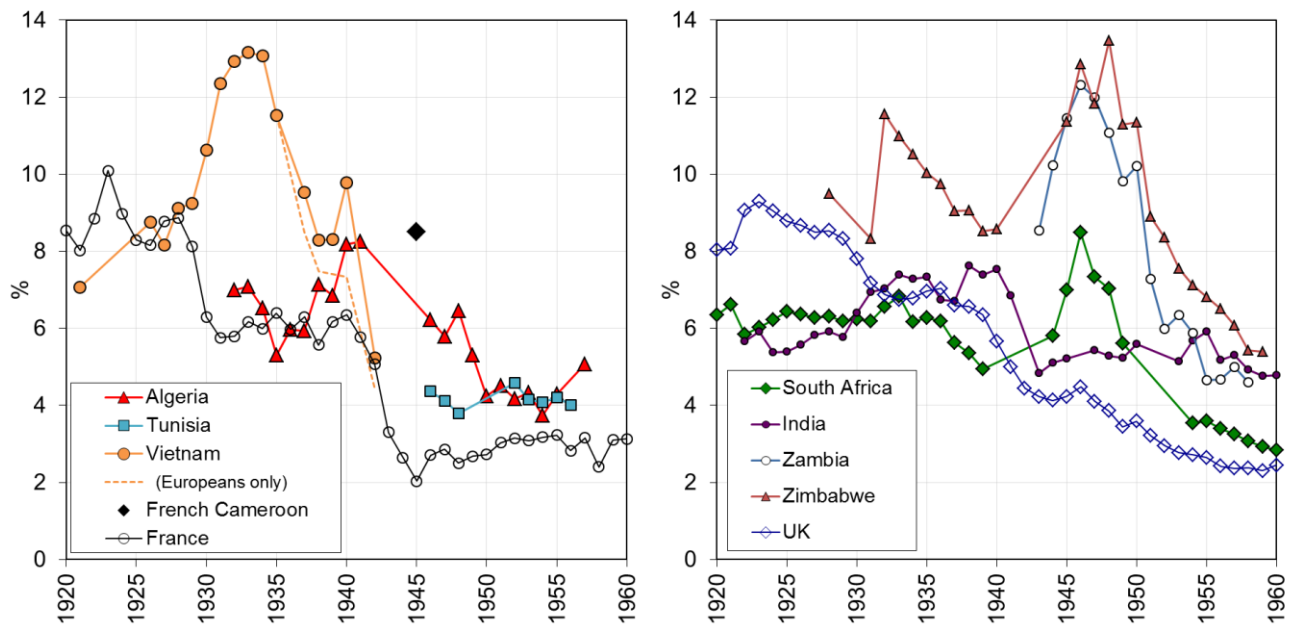
Sources: Table 2A (Algeria), Table 2B (Tunisia), Table 2C (French Cameroon), Table 2D (Vietnam), Piketty 2001, 2007 (France), Atkinson 2005, 2007a (UK), Alvaredo and Atkinson 2010 (South Africa), Banerjee and Piketty, 2010 and Alvaredo, Bergeron and Cassan 2017 (India), Atkinson 2015b, (Zambia and Zimbabwe).

2. Historical background and chronology of tax reforms

Algeria. Before the French invasion of 1830, Algeria was part of the Ottoman Empire. It was officially annexed by France in 1848 and divided into three *départements*, although conquest wars would continue for the next four decades, the last major insurrection being that of the *Kabylie* province in 1871. French and other European populations (Spanish, Italian) more than doubled between 1871 and 1914. The Jews of Algeria were granted French citizenship in 1871. With the advent of the Third Republic, settlers' opposition to the military administration gained momentum, and by 1900 they obtained some autonomy in government. In 1932, where our income tax data series on Algeria begins, non-Muslims accounted for 13.5% of the population (14.4% of tax units, given the differences in age, structure, and household composition between Europeans and Muslims).[8] After the mid-1930s, the share of non-Muslims began to slowly decrease until it reached 10% in 1961. After the end of the independence war, in 1962, almost all French *pied-noirs* (settlers) and Jews left Algeria. Settlers made up the majority of the urban population, and in agriculture they produced wine and grew wheat and barley, oranges, lemons, and olives. Oil and gas production only became significant at the very end of the colonial period. After WWI, tax obligations made no distinction between French or European citizens and from Algerian "Muslims" as colonial subjects. The *impôt complémentaire sur le revenu* was set as early as in 1920, soon after the introduction of the income tax in mainland France in 1914. It came on top of other schedular taxes on salaries, profits, and rental income. The income tax also came to replace the old *impôts arabes* (Arab taxes) that had survived from the Ottoman period and were abandoned in 1919.[9] Published income tax tables make no distinction between Muslim and non-Muslim taxpayers.[10] Available distributional data cover the years from 1932 to 1957 (1942-1945 are missing).[11]

Tunisia. France conquered Tunisia (also formerly part of the Ottoman Empire) in 1881. It remained a protectorate, under the official rule of the *bey* of Tunis, even if the actual power was exerted by the *résident général de France* and the French administration. French and Italian immigrants trickled in until WWI, by which point Europeans made up 7% of the population. Most of them gradually left the country in the decade that followed independence in 1956. In 1947, when our income tax data begins, Europeans represented 7.3% of population, of which 61% were French and 34% Italian (8.8% of tax units).[12] By 1956, the year of the country's independence, this share had decreased to 6.7%. In contrast with Algeria, Jews were not granted French citizenship and were counted as "Tunisians" in official statistics; they represented 1.5% of the population in 1955, hence 18% of "non-Muslims." The Jewish population left Tunisia after independence, half of them to Israel, and the other half to France. As in Algeria, settlers produced wine and grew wheat, oranges, lemons, and olives in the outskirts of the cities. The personal income tax, called the *contribution personnelle d'État*, was established in 1928. It began as a very simple tax with five income ranges (a lump-sum corresponding to each range) on the

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[8] See Appendix Table B1.A, column (9).

[9] The *achour* and the *hokkor* (only in Constantine area) were taxes on agricultural land, the *zekkat* was a tax on cattle, the *lezma* only prevailed in Kabylie and was a head tax with three distinct rates according to estimated wealth.

[10] Until 1938, the income tax was only levied in Northern Algeria, where more than 90% of the population lived.

[11] Dates correspond to the year when incomes were earned, given that the income tax was levied the year after.

[12] See Appendix Table B1.B, column (8).

resident population. Subsequently, it was transformed into a progressive income tax in 1937 with increasingly refined schedules as time went on. The tabulations from the income tax span from 1946 to 1956 (1949-1951 are missing), and provide a breakdown of European and Tunisian income recipients.

French Cameroon. French Cameroon resulted from the partition of the German colony of Kamerun between the British and the French at the end of WWI. In 1920, about three quarters of the territory was placed under French rule as part of a mandate from the League of Nations. The remainder from the border of present-day Nigeria was placed under British rule. By 1946, the French population was still very small, and did not count more than 4,000 people -a little over 0.1% of the total. Independence came in 1960. French colonists established plantations for palm oil, bananas, and groundnuts. Coffee, cocoa, and rubber only arrived in the late 1950s, and oil production at the end of the 1970s. The *impôt global sur le revenu* was introduced in French Cameroon in 1937 and applied to all residents. For eligible taxpayers with incomes above the given threshold, it replaced the head tax. There were two versions of the tax, one for Europeans and the other for Africans.[13] The European income tax was truly progressive, while the African version was a lump-sum tax whose amount depended on income. In 1945, the same system still applied: Europeans were subject to the *impôt général sur le revenu,* while relatively rich Africans had the *impôt personnel nominatif par tranche de revenu.* The *Annuaire Statistique du Cameroun 1938-1945* provides two separate income tabulations for Africans and Europeans for incomes accrued in 1945. This is the only year for which we have been able to locate income distribution statistics.

Indochina / Vietnam. French Indochina was composed of five territories that were gradually conquered by France between 1858 and 1899. Cochinchina (Southern Vietnam, capital city Saigon) was the first, in 1862, and was directly ruled as a colony. The other four, Annam (Central Vietnam, capital city Hue), Tonkin (North Vietnam, capital city Hanoi), Cambodia (capital city Phnom Penh), and Laos (capital city Vientiane), were officially registered as protectorates, although Tonkin was eventually managed as a colony. The *gouvernement général* of Indochina was established in 1897, putting the five territories under a federal administration. Europeans living across these territories were mostly French (constituting 95% of the total European population) and counted some 20,000 people in 1920, and a little less than 50,000 at the beginning of the 1940s. In 1920, half of this total resided in Cochinchina, which rose to two-thirds by 1948. Most of the remainder were based in Tonkin, and never represented more than 0.25% of the population. Chinese people constituted a larger minority, counting around 300,000 people in 1920 and over 600,000 in 1948 (over 2% of the population). After a short-lived invasion by the Japanese at the end of WWII, the French lost ground and were unable to regain control over the North. In 1947, partial autonomy was granted to Vietnam, Cambodia, and Laos, with Vietnam still divided into three regions (South, Central, and North). The war for Indochina ended with the French defeat of Dien-Bien-Phu in 1954. The French had invested in rice production and exports, rubber, tea and coffee plantations, and exploited coal and tin mineral resources. The *taxe personnelle sur les européens et assimilés* was enforced in 1920 in all of Indochina and applied only to

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[13] According to public finance accounts (Cogneau, Dupraz & Mesplé-Somps 2018), the income tax was introduced in 1934 in French Central Africa (*Afrique Equatoriale Française*) and French Western Africa (*Afrique Occidentale Française*), apart from Côte d'Ivoire, where it was installed in 1937, Togo in 1943, and Madagascar in 1946. Unfortunately, we have not been able to find any statistics for these colonies.

Europeans, Westerners, and the Japanese. It was a lump-sum which increased over twelve ranges of income. The implicit rates were very low. The tax was later replaced by the *impôt général sur le revenu*, which applied to all households whose income lay above a relatively high threshold. The latter was first implemented in Cochinchina and Cambodia in 1937. It then reached Laos and Annam in 1938, and finally Tonkin in 1940; however, in these three territories only Europeans, Chinese and other Asians were liable, while Indochinese households were exempt. In Cochinchina and Tonkin, tabulations from statistical annals distinguish Europeans, Chinese, Asian foreigners, and Indochinese (the latter only in Cochinchina).[14] As we lack estimates for Cambodia and Laos' domestic income, we focus on Vietnam (i.e. the reunion of Cochinchina, Annam and Tonkin), and only report estimates for the two other colonies in the Appendix.

British colonies and dominions. Our main focus is not the colonial history, economic structure, or the income taxation features of the colonies, territories, and dominions of the British Empire included in our comparison; rather, we borrow results from a number of authors. In alphabetical order we consider: Ghana (former Gold Coast), India (British India then independent India without Pakistan), Kenya, Malawi (former Nyasaland), Nigeria, South Africa, Tanganyika (mainland part of Tanzania, merged with Zanzibar island in 1964), Uganda, Zambia (former Northern Rhodesia) and Zimbabwe (former Southern Rhodesia). The interested reader is referred to the papers of Atkinson on the British colonies in Africa (Atkinson 2014, 2015a, b, c), to Alvaredo and Atkinson (2010) on South Africa, and to Banerjee and Piketty (2010) and Alvaredo, Bergeron and Cassan (2017) on India. Each had its particular political arrangements, and not all remained strict colonies for the duration of the period under analysis. The Union of South Africa was a British dominion formed in 1910, and was made up of the former colonies of the Cape of Good Hope, Natal, Orange River Colony (or Free State) and Transvaal, and was transformed into a republic in 1961, before eventually leaving the Commonwealth; as is well known, the rule of the white minority only ended in 1994. India became independent in 1947. Following Ghana in 1957, all other British colonies gained their independence after 1960. Southern Rhodesia declared unilateral independence from Britain in order to preserve the white minority rule, which only came to an end with the creation of Zimbabwe in 1980. For our purposes, it is enough to say a final word on European settlement patterns. White settlers represented around 20% of the population of South Africa from the beginning of the 20th century until 1960, after which their population share decreased. Zambia and Zimbabwe, at the time respectively Northern and Southern Rhodesia, were settlement colonies like South Africa, although to a lesser extent, as Europeans never constituted more than 4% of the total population in the former, and never more than 7.5% in the latter; these fractions increased significantly in the 1950s. Kenya was another intermediate case, with the population of white settlers at around 0.6% in 1948. In other African colonies, Europeans did not make up more than 0.15% of the populations, like in Cameroon (but also Vietnam). In Eastern Africa, a significant Indian minority could also be found (such as in Kenya, Uganda, and Tanganyika). In all African colonies, except for South Africa and Southern Rhodesia, the majority of white settlers left the country after independence; many white Zimbabweans also left after the end of the white rule in 1980. Last, in India, Europeans represented an even smaller proportion of the population, less than 0.05%.

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[14] See the top panel of Appendix A1.E for population coverage. Again, dates correspond to the year when incomes were earned; the true date of implementation is the year after.

3. Income tax data and estimation methods

The data used here do not come in the form of individual tax records, which no longer exist for the period studied; rather, we make use of readily published tabulations. The information necessary for the estimation of top income shares is the distribution of taxpayers assessed by ranges of income and, ideally the amount of income in each range (present in many, but not all cases). The tabulations categorize taxpayers by income ranges $[\tilde{y}_k; \tilde{y}_{k+1}[$; for each income range they report the number of taxpayers N_k and the total income before tax Y_k, as exemplified in Table 1.

Table 1. The typical income tax tabulation

Income brackets	Total number of taxpayers	Total income declared
Between $\tilde{y}_0$ and $\tilde{y}_1$	N_0	Y_0
…	…	…
Between $\tilde{y}_k$ and $\tilde{y}_{k+1}$	N_k	Y_k
…	…	…
Above $\tilde{y}_K$	N_K	Y_K

With the total number of potential tax units, N (assuming everyone was required to file for the income tax, i.e. including those who lay below the minimum income tax threshold), we can calculate the cumulated population share lying above the lower bound of each income bracket: $P_k = \sum_{j \geq k} N_j / N$, for tax payers whose pre-tax income lies above $\tilde{y}_k$. In addition, if we know the (before tax) total household income, Y, we are also able to estimate the income share earned by people lying above $\tilde{y}_k$: $S_k = \sum_{j \geq k} Y_j / Y$. Pareto interpolation techniques allow us to estimate S_q, the income share earned by the q richest percent, for any q lying below P_0.[15] In this paper, we apply the mean-split histogram method (Atkinson, 2005, 2007b). When the coverage of the income tax is low, we can only estimate the shares of the very rich groups (the top 1% or the top 0.1%).

For some years, income tax tabulations only report the number of taxpayers and not their total declared income: Algeria 1932-1941 and 1946, Tunisia 1956, and for Vietnamese colonies following the introduction of the income tax.[16] We impute total declared income to each bracket.[17] The simplest solution can be applied to cases where the income records are available for the previous or next year with the same income brackets; we then import the average income from the year with no missing income totals: Algeria 1946, using 1947; Tunisia 1956, using 1955; and Tonkin 1921, using 1922. A second and relatively easy case is that of Vietnam, where we still have access to the total amount of taxable income of liable taxpayers. Under the general income tax, the total amount of incomes sitting above the liability threshold $\tilde{y}_1$ (=3600 piasters) is

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[15] Readers interested in the details of the estimation methods are referred to Atkinson (2007b), Cowell (2011), and Blanchet, Fournier, and Piketty (2017).
[16] See bottom panel of Appendix Table A1.E.
[17] See Appendix A1.F.

reported.[18] This is good because liable taxpayers make up just over 0.1% of fiscal units, so that the estimate of the 0.1% income share is anchored on this known amount and does not depend much on our imputations (although lower top percentile shares do). For each bracket, we write: $Y_k = N_k[\tilde{y}_k + \alpha(\tilde{y}_{k+1} - \tilde{y}_k)]$ for k=0, …, K, while setting $\tilde{y}_0 = 0$ and $\tilde{y}_{K+1} = 2\tilde{y}_K$.[19] The parameter α is then calibrated to fit the reported total amount. In Algeria 1932-1941, where the total of taxable incomes is not even available, we assume that the mean income exceeds the lower bound of the bracket by 30% of the bracket range, and by 30% of $\tilde{y}_K$ in the last bracket.[20]

In the early years of Vietnamese colonies, before the introduction of the general income tax, incomes declared in the last bracket are obviously capped; indeed, as the tax is a lump-sum tax based on the brackets, it is not necessary to know the exact figure of incomes above the last threshold, as they are in any case subject to the maximum lump-sum tax. We use the ratio $(1 + \alpha)$ to $\tilde{y}_K$ for 1937 and 1938. This is innocuous for the estimate of the 0.1% income share (but not for the 0.01%), as taxpayers in the last bracket never represent more than 0.006% of fiscal units.

Once all imputations are implemented separately, we aggregate the income tabulations of the three Vietnamese colonies into one, and estimate the top shares for Vietnam as a whole (1921 to 1942). In Appendix Figure D2 we also provide separate figures for Cochinchina, Annam, and Tonkin, while data for Cochinchina (South-Vietnam) extends beyond World War II, until 1949.

In Algeria, until 1945, lump-sum deductions for family charges applied, and reported income was net of these deductions. Before 1937, only the number of children under 18 years old mattered. Starting in 1938, deduction schedules changed somewhat: married couples benefited from an initial deduction even in the absence of children, and the total deduction was modulated according to the level of declared income. These deductions mechanically generate an underestimation of the top income shares. As household composition is most likely correlated with income, it is very difficult to implement a refined correction. We can still compute a coarse estimate for the resulting underestimation. We used population census data for Algeria in 1948 to estimate the distribution of family types (married couples or single parents according to the number of children). Two separate distributions were produced for non-Muslims and Muslims. We then calculated the average deduction that would have applied to each year, assuming that the household composition of taxpayers was the same as in a population composed of 90% of the average non-Muslim household and 10% of the average Muslim household (while ignoring the decrease in deductions with declared income, which is conservative).[21] Under these assumptions,

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[18] In all years, the total number of registered European tax units is also reported, even below the liability threshold; this is why the first income bracket $[0; \tilde{y}_1[$ is not empty. In 1940, the reported taxable income total includes the income of these non-liable Europeans. See Appendix A1.F.

[19] The latter $\tilde{y}_{K+1} = 2\tilde{y}_K$ is arbitrary, yet it results in rather plausible estimates of α, which make the average income in the last unbounded income bracket exceed $\tilde{y}_K$ by 23 to 72%, depending on the colony and the year considered.

[20] The latter assumption is innocuous for the estimates of the 1% or 0.1% income shares, as the last open bracket never represents more than 0.004% of tax units, and always less than 0.002% after 1934.

[21] This 90/10 weighing rule is motivated by the case of Tunisia where the breakdown of taxpayers by citizenship is reported. In Tunisia after WWII, around 20% of liable taxpayers are not Europeans, yet some of them are Jews. This is why we consider that only 10% of taxpayers were Muslim before WWII. Given the differences in household structure and the deductions schedule, assuming 0% or 20% of Muslims makes very little change.

the top 1% income share could be underestimated by 2.5 to 3.5 percentage points in the years 1932 to 1941. This would shift Algeria in the 1930s to above South Africa (Figure 1), and the fall of the top income share after WWII would look even sharper. Given that deductions are lump-sum amounts, their impact on the 0.1% top income share is negligible (one tenth of the calculated impact on the 1% share in percentage points).

To summarize, we believe that the impact of taxable income imputations, corrections for capped incomes, and deductions for family charges should be limited, both for the top 1% and top 0.1% income shares estimates on the total population. They could have more impact on the estimates of the within-group distributions (Europeans and non-Europeans); this source of uncertainty will be given due consideration in the analytical section.

4. Total population and income

In order to arrive at meaningful inequality estimates, the distribution of taxpayers by income ranges have to be combined with totals for the number of households *N,* and for household income *Y*. The income tax data can only be interpreted in the light of such external information. The assembly of this information for much of the first half of the twentieth century in the colonial territories requires a considerable investment, and further elements of uncertainty. As also stressed in Alvaredo and Atkinson (2010), an understanding of these processes is necessary to appreciate the limitations of the estimates, but may also provide confidence in their use. The next two sub-sections explain our estimates for the population total, as well as for total household income.

4.1 Population of tax units

In the four French colonies being studied, the income tax was originally levied on the tax unit, as in most countries, treating single adults and married couples as units. This is still the case in France today (and in the UK until 1989). Our income shares are consequently defined with respect to the population of tax units. In principle, the derivation of these numbers involves the following steps: (1) estimate of total population, (2) exclusion of those aged under 15, to arrive at the number of adults, and (3) subtraction of the number of married women to arrive at a total for tax units. The selection of the age of 15 is arbitrary but does not seem unreasonable, and follows common practice within the literature.

In this paper, due to the limitations of the available statistics, we will simply calculate the number of tax units as 60% of the population aged 15 and over. This method was chosen according to the data that was available, but also for the purpose of comparing our results with those of Atkinson (2014; 2015a, b, c), who made the same choice when analyzing British colonies. In the case of Algeria, and for Europeans in Indochina, we can confirm that this option is consistent with a more refined analysis of demographic structures, as we detail below.[22]

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[22] The series of the control totals for population and income are given in Appendix Table B1.A (Algeria), Table B1.B (Tunisia), Table B1.C (Cameroon), and Table B1.D (Indochina). Sources for demographic estimates are in Appendix A2.

Algeria. The total numbers of "Muslims" and "non-Muslims" are drawn from population censuses of 1931, 1936, 1948, and 1954 (*Annuaire Statistique de l'Algérie,* 1955). A population estimate for 1960 is taken from the United Nations Demographic Yearbook for 1966. The number of non-Muslims is drawn from the *Annuaire Statistique de la France* for 1962. These figures were double-checked with demographic studies from CICRED (1974a), and from Fargues (1986). Starting with 1931, demographers deem population censuses reliable enough. Age pyramids are available for the population censuses of 1936, 1948 and 1954. We use them to estimate the total population aged 15 and over, separately for Muslims and non-Muslims. We assume that the 1936 age structure applies to 1931, and that the 1954 age structure applies to 1960. Between census years, population figures are interpolated with constant annual growth rates.

Using the 1948 population census, we first estimate the number of tax units for 1948 as the sum of married men aged 15 and over, widowed and divorced men and women aged 15-69, single men and women aged 30-69, 80% of single men and women aged 25-29, 50% of single men and women aged 20-24, 20% of single men and women aged 15-19, and 50% of single men and women over 70.[23] For Europeans, the figure obtained represents 58% of the adult population, close to the 60% figure used by Atkinson (2014; 2015a, b, c). For Muslims, it reaches 54%. For the sake of simplicity and comparison with existing estimates for the British Empire, we still take 60% of the population aged over 15 as the number of tax units, as mentioned above.

Tunisia. The total numbers of Europeans and Tunisians (including Jews) are drawn from population census of 1946 and 1956, corrected by CICRED (1974b). To obtain the number of people aged 15 and over, we use the age pyramids also found in the censuses. We then apply the same ratio as in Algeria (60%) to arrive at the number of tax units in the European and Tunisian populations, respectively.

French Cameroon. For the population of Cameroon in 1945, we take the estimate from Frankema and Jerven (2014), as colonial enumerations severely underestimate the total population, and are inconsistent with post-independence census figures. To calculate the population of the French region, we apply a ratio of 85% to account for the fact that the Southern part of British Cameroon merged with French Cameroon to form present-day Cameroon. The enumeration for 1945, as reported in the *Annuaire Statistique du Cameroun 1938-1945* (vol. 1), points to a proportion of 65% of people aged 15 and over. As this kind of enumerations tend to leave out a significant portion of children, the share is likely to be overstated. In 1948 Algeria, this share represents 57% for Muslims. We prefer to apply Algeria's proportion for the population aged 15 and over, and then take 60% of those over 15 as our total population of tax units.

Indochina / Vietnam. Both the total population and the population of over 15-year-olds in each of the five colonies of Indochina are from Banens (2000). We again take 60% of the 15 and over population as an estimate of the total number of tax units. The population of Europeans is available for the years 1921, 1929, 1931, 1936, 1937 (all of which were specific censuses specific for Europeans), 1947, and 1948. We are also able to estimate the number of European soldiers,

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[23] The shares for single individuals according to age are chosen rather arbitrarily.

who always made up at least 20% of the European population, although from 1947 this rose to at least 50%. The majority of the members of the armed forces were exempt from income taxes. Once again, taking 60% of the number of Europeans aged 15 and over is therefore well suited to estimating the total number of Europeans in civilian employment, for both 1929 and 1937.

Figure 3. Income taxpayers as a percentage of total tax units, 1920-1960
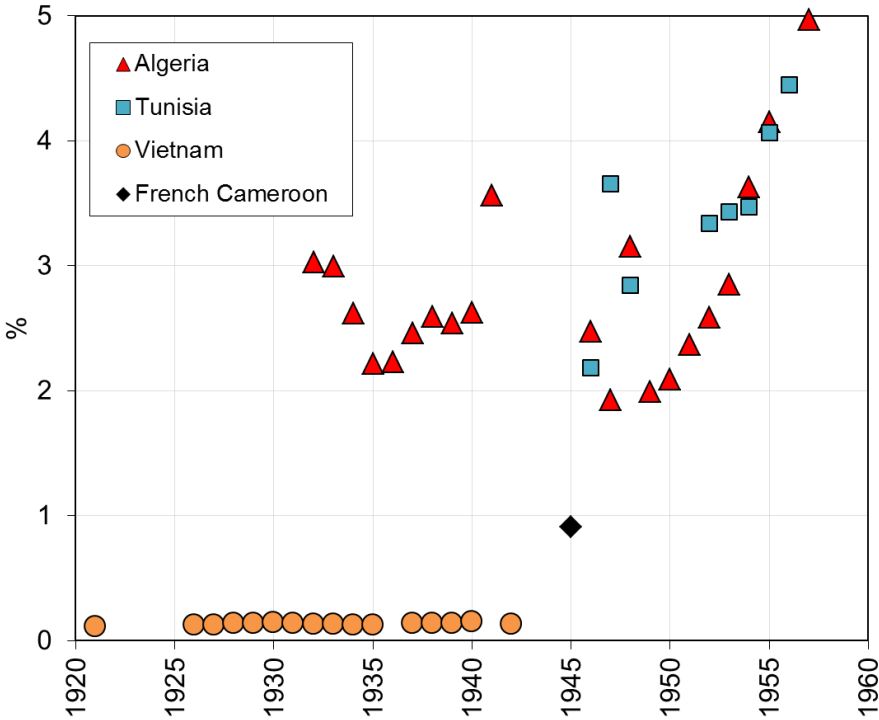
Sources: Appendix Tables B1.A-B1.D, and Appendix A2.

Figure 3 displays the number of income tax payers covered by the published statistics as a proportion of the number of total tax units, whose estimation we have just described. While in Algeria and Tunisia income taxpayers represented over 2% of tax units, in Cameroon they made up only 0.9%, and in Vietnam just slightly more than 0.1%. These figures fix bounds to the top income groups that we are able to study in each colony (P_0, as defined above). In North Africa, they point to quite significant variations in coverage. In Algeria, the share of taxpayers varies between 1.9 (for 1947) and 5% (for 1957), and in Tunisia ranges from 2.2% in 1946 to 4.4% in 1956. These variations are mainly due to inflation and delayed adjustments of liability thresholds; the period of 1937-1949 is indeed characterized by high inflation, particularly between the years 1946 and 1949.[24] In Tunisia, during 1955 and 1956, the notable increase in coverage stems from the inclusion of more non-European taxpayers following independence in 1956 (given the one year delay, data for 1956 correspond to the income tax collected in 1957).

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[24] See Appendix Table B1.A column (15) and Appendix Table B1.B column (18).

4.2. Total income

The tax records only cover a fraction of income, so we need to estimate control totals for aggregate income. As Atkinson points out "If the population totals pose problems, then control totals for household income take us into still more treacherous territory" (2014, p. 11). The difficulties in calculating national income in Africa are widely recognized, and there is much criticism of contemporary macro-economic statistics. Nonetheless, there is a long history of research on national accounts in Africa, specific to each of the countries that form the basis of our series. For the most part, we import the GDP and price data constructed by Cogneau, Dupraz and Mesplé-Somps (2018); the sources and methods for which are briefly described below.[25]

Algeria. Official national accounts are available from 1950. We extrapolate GDP backwards from 1950 to 1932, using Samir Amin's estimate of the growth rate of real GDP between 1930 and 1955 (1970, p.54).[26] To obtain GDP in current francs, for years 1938 to 1957, we use the consumer price index of Algiers, and for years 1932 to 1938 we use the France price index from Villa (1994).[27] We must then go from GDP to household (fiscal) income. In 1950s France, the gross primary income of households was around 85% of GDP, and household income was around 60% of gross primary income, due to important conceptual differences between the definition of income by national accounts and by the fiscal administration, in particular for non-salaried occupations (Piketty 2018, Appendix G). In Algeria, households' gross primary income also lies between 80 and 87% of GDP in 1950-1957, with a mean of 83% which matches the level at 1950, the base year for our backward projection.[28] To calculate total household income we then apply a ratio of 0.83×0.60=0.50 to GDP.

Tunisia. Estimates of GDP in constant francs are available for the years 1950 to 1961, as reported in Amin (1966), Zarka (1964) and the *Annuaire Statistique de la Tunisie* (1955, 1959, 1960, and 1961-62). We grant our preference to Amin's (1966) figures for 1953 (p. 297), 1955 (p. 101), and 1957 (p. 297). For 1953, Amin's GDP is consistent with the *Annuaire* (1955), but 15% lower than Zarka's. Amin's figure for 1955 is 5% higher than Zarka's, which means that 1953-1955 is a period of high growth (6.8% per year) according to the former, while GDP decreases according to the latter. Given the large public investments financed by loans at the end of the colonial period (Saul, 2016), Amin's figures seem more likely. For 1957, the three estimates are very close; GDP falls down in the immediately following independence, and positive growth only resumes after 1958. We translate these estimates into current francs using the consumer price index of Tunis for the years 1938 to 1962. To obtain household income, we take 50% of GDP, as we did for Algeria.

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[25] More details are provided in the data appendixes of this paper. Original sources are detailed in Appendix A3.

[26] Between 1930 and 1950, Cogneau, Dupraz, and Mesplé-Somps (2018) also make use of exports and imports data to estimate year-to-year GDP variation, see their data appendix.

[27] Between 1938 and 1957, the Pearson coefficient of correlation between the two indexes is 0.99.

[28] After 1954, large inflows of military soldiers, who are treated as residents in national accounts, tend to distort the representativeness of national income figures. The 1950s are also specific in that remittances (not included in GDP but included in household income) from Algerian migrants in France were already quite significant. For these reasons, taking 1950 as the base year is safer than taking an average of the 1950s.

French Cameroon. The GDP of the French part of Cameroon was estimated for the years 1947 and 1953 by the French administration in charge of the overseas territories. From 1947 back to 1945, we use Cogneau, Dupraz and Mesplé-Somps' (2018) extrapolation, based on trade data. We translate the constant franc estimate to current prices using the consumer price index for Brazzaville (the capital city of French Congo, the nearest place where price data were collected between 1938 and 1951). We take 50% of GDP to obtain household income.

Indochina / Vietnam. GDP estimates at current prices for the three parts of Vietnam between 1920 and 1952 are from Jean-Pascal Bassino (2000), who generously shared his estimates with us.[29] Using these estimates, we apply the ratio of 50% to obtain household income. Unfortunately, no GDP estimates were available for Cambodia and Laos. Even so, we still tentatively computed top income shares for these two colonies, by assuming that Cambodia and Laos had the same GDP per capita as Annam (Appendix Figure D6).

Figure 4. Estimates of GDP per capita in Algeria, Tunisia, French Cameroon and Indochina, 1920-1960
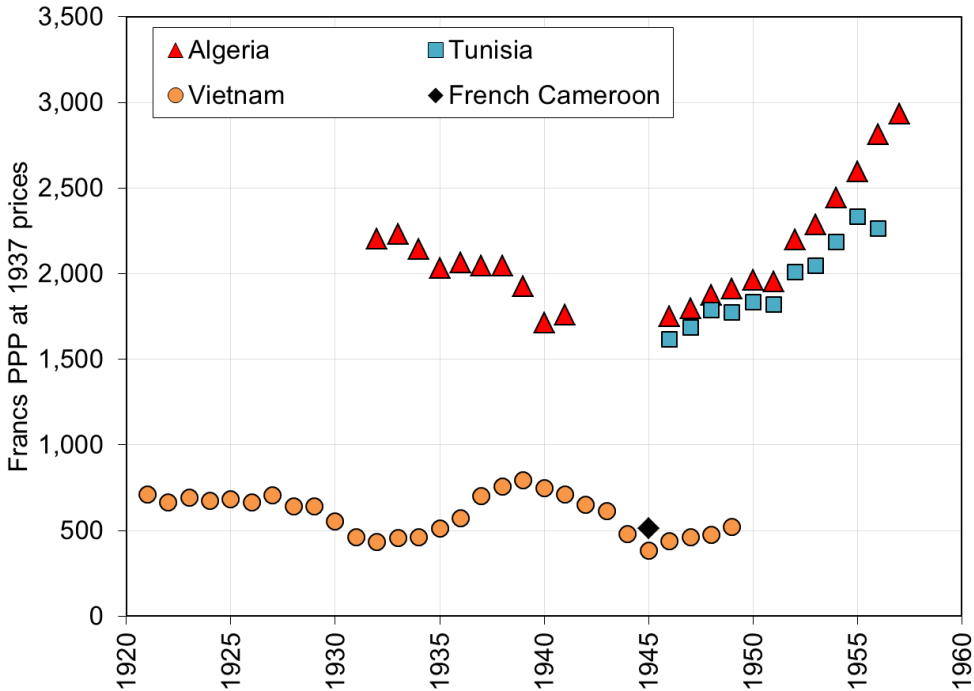
Sources: see text and Appendix A3.

Notes: The purchasing power parity conversion factor has been constructed using a basket of goods for years 1936-38. Compared to the reference country Algeria, prices are found to be lower by 5% in Tunisia, 20% in Cameroon, and 60% in Vietnam. See Cogneau, Dupraz and Mesplé-Somps (2018) (data appendix).

Figure 4 displays the time profile of the real GDP per capita between 1920 and 1960, for the years when tax data are available. A number of comments are in order. In the first half of the 20th century, average incomes in Algeria and Tunisia are considerably higher than in the rest of the empire. In particular, Cameroon and Indochina were four to five times poorer than Algeria in terms of PPP.

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[29] We use the Saigon consumer price index of 1920-1940 for Southern Vietnam (Cochinchina) and Central Vietnam (Annam), and the Hanoi consumer price index for Northern Vietnam (Tonkin).

In Algeria, GDP per capita decreased by 20% between 1930 and 1950, corresponding to the Great Depression and World War II. Very high growth rates were achieved in the 1950s, despite the independence war which began in 1954. This can be attributed to the significant infrastructural investments financed by the metropolis, as well as to growth recovery in France which encouraged Algerian exports. In Tunisia, growth was also quite high between 1946 and independence in 1956. In Cameroon, GDP per capita showed no signs of change until 1946, when large public investments financed by grants began, so that the only point we observe is before this growth spell. In Indochina, GDP per capita stagnated in the 1920s; subsequently, the Great Depression resulted in a collapse of the international prices of rice and rubber, causing a deep deflationary crisis in the first half of the 1930s. Growth resumed in the second half, but GDP collapsed again during WWII.

Figure 5 displays the ratios between the average incomes of the empire and mainland France. Before WWII, the metropole was three times richer than Algeria, and over ten times richer than Indochina (note that here, in contrast to Figure 4, the series are not adjusted for differences in price levels). After WWII, France experienced very high growth rates, increasing the gap with Algeria and Tunisia, which, despite their own growth processes, ended up four to five times poorer than France by the mid-1950s.

Figure 5. Average income in Algeria, Tunisia, French Cameroon and Indochina: ratio to average income in France, 1920-1960
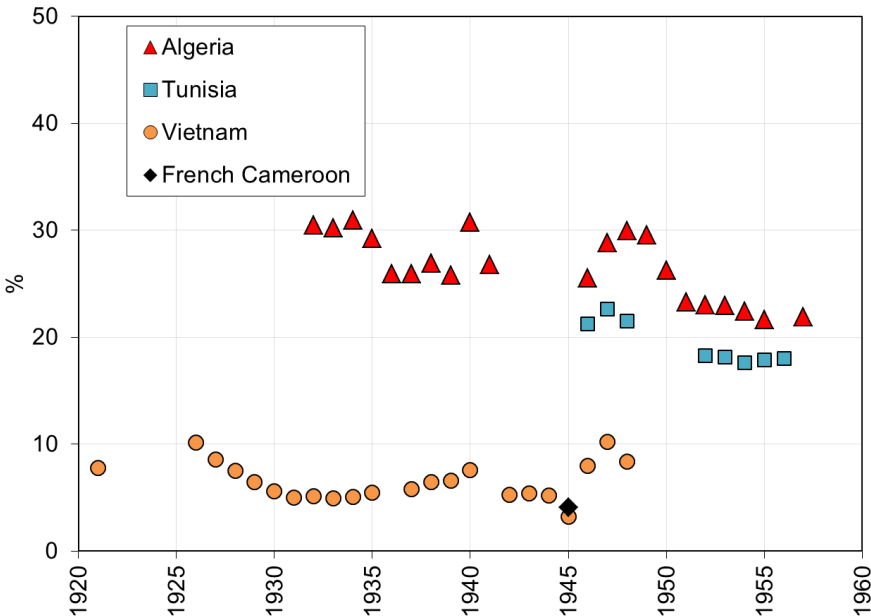
Sources: Tables B1.A-B1.D and WID.world.
Note: In 1945, the estimated income per tax unit in Cameroon is around 5% that of mainland France.

5. Income concentration in the French and British colonial empires

5.1. The income shares of the top 1% and 0.1% groups across time

Table 2 presents our estimates of top income shares for Algeria (Table 2A), Tunisia (Table 2B), French Cameroon (Table 2C), and Vietnam (Table 2D). Figure 1 shows the income share of the top 1% in Algeria and Tunisia, compared to France, and in South Africa and India compared to the United Kingdom, between 1920 and 1960. In Algeria, this share starts from a very high 22% in 1932, then drops steadily throughout the 1930s, and drops further during WWII, like in France. It stabilizes at around 15% in the 1950s. Measured between 1946 and 1956, the figures for Tunisia are slightly lower but close, at around 14%.

The inequality levels in Algeria in the early 1930s appear to be among the highest recorded in WID.world.[30] Even if the available data do not allow for a precise estimate, this suggests a top 10% income share of at least 60%, if not higher.[31] As in many other countries, the Second World War resulted in a sharp and definitive fall of top shares. French North Africa overwhelmingly depended on the mainland economy for its exports, and the fall of France resulted in a deep recession. The arrival of Allied forces in 1943 and ensuing warfare in Tunisia further deepened the disruption of trade, and most likely accelerated capital losses.[32] In contrast, South Africa suffered less of an impact, and benefitted from the price boom of mineral exports, gold in particular, in the late 1940s. Inequality peaked; however, in the 1950s top shares finally fell far below pre-war levels (Alvaredo and Atkinson 2010). In the late 1950s, the levels of income concentration in Algeria, Tunisia, and India were greater than apartheid South Africa.

The set of top 0.1% shares depicted in Figure 2 includes figures for Vietnam between 1920 and 1942, for French Cameroon in 1945, and for Zambia and Zimbabwe on the side of British colonies.[33] In the 1920s, the top 0.1% share for Vietnam is estimated to be around 8%, a level that sits in the same range as France, the UK, or Zimbabwe. As Europeans in Vietnam make up around 0.1% of tax units, this share reflects the average income of Europeans compared to autochthons, at least until 1937, when rich autochthons became liable to the income tax. After this date, the dotted line in Figure 2 shows the top 0.1% share when only Europeans are considered; the difference remains minimal until 1940, when many more wealthy non-Europeans came to be counted. Europeans seem to have been relatively well protected from the deflation and economic collapse of the first half of the 1930s, so that their share in total income actually jumps upward to 12% before falling back to pre-crisis levels at the end of the decade. This increase in top shares is observed across all parts of Vietnam (see Figure 6 and Appendix Figure D2). This is striking, as historical accounts of the period describe the bankruptcies of several French firms in Indochina (Brocheux and Hémery 2001; Brocheux 2009). While income tax

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[30] See also the discussion in section 3 about tax deductions for family charges in Algeria, whose reintegration would put Algeria significantly above South Africa in the 1930s.
[31] In 1932 France, the top 10% share is 2.9 times the top 1% share. Cogneau, Dupraz and Mesplé-Somps (2018, Appendix I) estimate the total income share of Europeans at 64% in 1925.
[32] In 1943, exports from the two colonies went down to less than 10% of their value in 1942. Cogneau, Dupraz and Mesplé-Somps (2018) estimate that GDP per capita decreased by around 20% between 1938 and 1945, both in Algeria and Tunisia. The estimate for France is a 25% decrease.
[33] Top 0.01% shares are shown in Appendix Figure D1.

tabulations indeed show a decrease in the average income of European taxpayers, in nominal terms and even in real terms (despite deflation), this decrease is much less pronounced than the fall of GDP in Bassino's (2000) estimates. Poor Vietnamese rice producers may have suffered even more than European businesses from the collapse in rice prices and exports. The same explanation could hold for India where the top 0.1% share also increased significantly during the first half of the 1930s, although to a lesser extent.

Figure 6. Top 0.1% income share in Cochinchina and Tonkin, 1920 to 1949
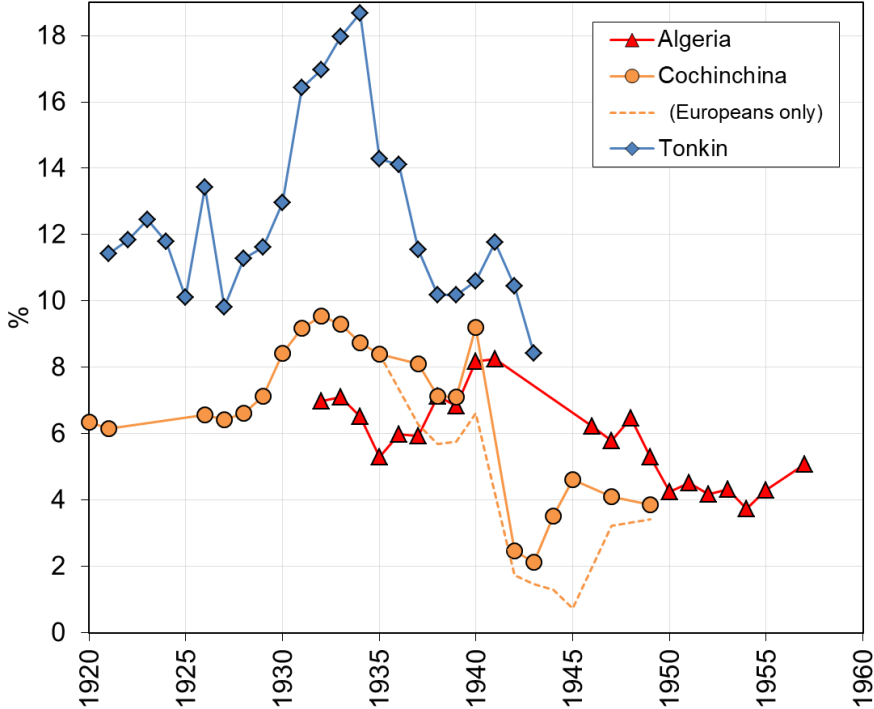
Sources: Table 2A (Algeria) and authors' calculations (Cochinchina and Tonkin).
Notes: Due to the small number of taxpayers, the 0.1% income share cannot be computed for Annam (Center Vietnam).

Data for Cochinchina (South-Vietnam) allow us to extend the top 0.1% estimation to 1949 (Figure 6). In 1921, the top 0.1% share for this single colony is below that of the whole Vietnam (i.e. 6% against 8%), and is much lower than that of the poorer Tonkin (around 12%), which it remains so throughout the 1920s and 1930s.[34] The share in Cochinchina then abruptly falls from around 8% in 1937-1940 to 2.1% in 1943, and stabilizes at around 4% between 1944 and 1949. The beginning of a drop is also observed for Tonkin in 1943. After 1943, the economy of Cochinchina collapsed. In March 1945, the Japanese army took hold of Saigon, and the Vietminh rebel forces entered into action; famine and epidemics spread, Europeans fled. Between 1939 and

[34] These results are at odds with the low Gini coefficients from Milanovic (2018, p. 1033) where Cochinchina (36.8) appears more unequal than Tonkin (25.6) in 1929. The social tables and Gini coefficients are supposed to come from Merette (2013a), yet in her paper the Gini coefficients are higher and closer (39.0 and 38.6 respectively), even if they are just a little bit higher than the Gini coefficient of 35.6 for Vietnam in 2008 cited by Merette (2013a), after a few decades of socialism. Both authors provide little clue as to their calculations. Besides, in Milanovic (2018) Cochinchina's GDP per capita is just 40% higher than in Tonkin, whereas in our data, Cochinchina is almost three times above, like in Merette (2013a, b), who also used Bassino's (2000) estimates.

1945, the number of European taxpayers in Cochinchina fell by 30%, and not many came back; in 1949, they still counted for 28% less than the 1939 numbers. But the income of those who remained also fell. Cogneau, Dupraz and Mesplé-Somps (2018, Appendix II) show that the average real wage of European civil servants fell by 60% between 1925 and 1945, due to inflation; those civil servants represented more than one third of employed Europeans, even excluding army men. In colonial India, the top 0.1% share also fell during WWII, although much less so, from 7.5% in 1940 to less than 5% in 1945, in particular because India was less impacted by warfare; like in Vietnam, the share never went back to pre-war levels, neither before independence in 1947 nor even after. In contrast, and much like in South Africa, the top shares peaked in the late 1940s in Zambia and Zimbabwe, due to the mining boom; it is only in the 1950s that they converged to the levels reached by the other colonies, and finally broke with the high pre-war levels.

To summarize, colonies displayed higher levels of income concentration than the mainland. During the Great Depression, and in contrast to France or the United Kingdom, top income shares did not fall (Algeria, South Africa), and in some cases they even increased (Vietnam, India, Zimbabwe). After World War II, and once the impact of the boom in mineral prices had faded away in British Austral Africa, inequality stabilized to levels much lower than before, although still significantly higher than in the metropoles.

Figure 7. Top 0.1% income share in French and British colonies and dominions 1945-1960
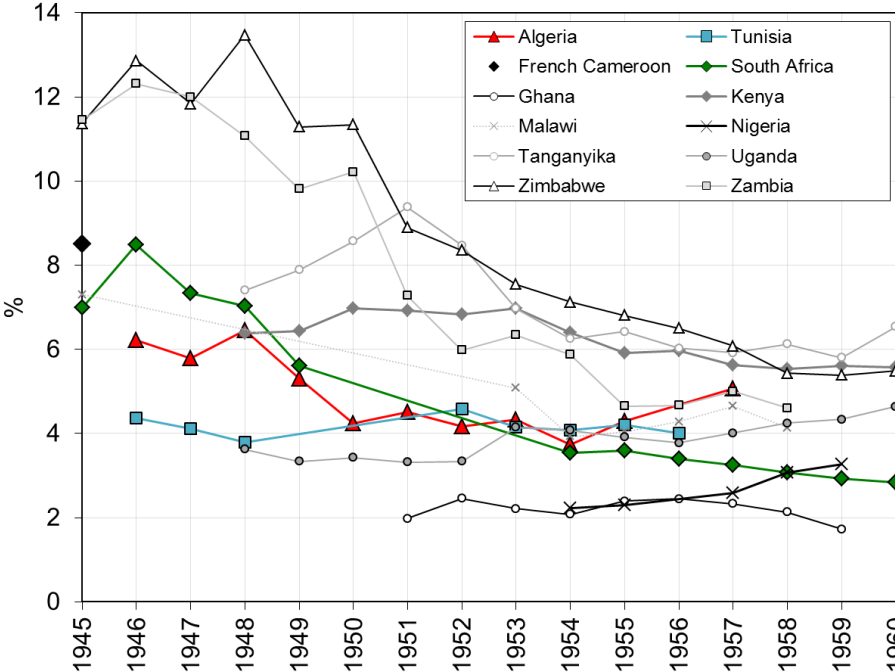
Sources: Table 2A (Algeria), Table 2B (Tunisia), Table 2C (French Cameroon), Table 2D (Indochina), Alvaredo and Atkinson, 2010 (South Africa), Atkinson 2014, 2015a, b, c (Ghana, Malawi, Tanganyika, Zimbabwe, Kenya, Nigeria, Uganda, Zambia).

While inequality was higher in colonies, this does not mean that top-income earners were as rich as their mainland counterparts (i.e. in the same overall top quantile). The two North African

colonies were four to five times poorer than France in the 1950s (Figure 5), yet their top 1% shares were "only" 50% higher, meaning that the average income of top 1% earners in the colonies was 30 to 50% that of the top 1% in the metropole. In other words, by 1955 the average income of the top 1% rather corresponded to the average income of the top 10% in France. In both 1921 and 1932 in Vietnam, the top 0.1% earned on average the mean income of the top 4% or 5% in France. The same was true of Cameroon in 1945. The South African elite were more affluent. In the 1950s, the average income in South Africa was half that of the UK at market exchange rates, and the mean income the top 1% earners in South Africa was 75% of the mean income of the British top 1%.

The comparison of top 0.1% shares (Figure 2) would also suggest that inequality was not systematically different in settlement colonies like Algeria or South Africa compared to colonies where the Europeans only represented a very small minority, like Vietnam, or India. In the second half of the 1930s, the top 0.1% share is between 7 and 8% in these four colonies. In the late 1950s, it lies between 4 and 5%. Figure 7 displays the top 0.1% shares for another set of British African colonies between 1945 and 1960. Once again, in the late 1950s, the highest top shares (above 5%) are those of Kenya, Tanganyika and Zimbabwe, while the lowest shares (below 4%) are those of Ghana, Nigeria and South Africa. It is hard to discern any patterns linked to the presence of Europeans.

To shed more light on the comparison of top-income earners, both between colonies and the metropoles and within colonies, we must dig further into the composition of these groups in terms of citizenship and ethnicity.

Let us more formally portray how Europeans and autochthons enter the colonies' income distribution. The top p% share reads

$$S_p = p.\frac{\bar{y}_p}{\bar{y}} \tag{1}$$

Where $\bar{y}_p$ and $\bar{y}$ reflect, respectively, the average incomes of the top p% richest and the colony average income. The average income $\bar{y}$ combines the average income of Europeans ($\bar{y}^e$) and of autochthons ($\bar{y}^a$)

$$\bar{y} = \varepsilon\bar{y}^e + (1-\varepsilon)\bar{y}^a = [\varepsilon + (1-\varepsilon)/\delta]\bar{y}^e \tag{2}$$

where ε is the share of Europeans in the total population of tax units, and δ is the Europeans to autochthons average income ratio, which our data cannot not capture because it focuses on top income earners. Likewise, the average income $\bar{y}_p$ combines the average income of Europeans and of autochthons

$$\bar{y}_p = \varepsilon_p\bar{y}_p^e + (1-\varepsilon_p)\bar{y}_p^a = [\varepsilon_p + (1-\varepsilon_p)/\delta_p]\bar{y}_p^e \tag{3}$$

where ε_p is the share of Europeans in the top p%. If p is small, we can expect δ_p to be close to 1, as rich autochthons and Europeans gathered at the top of the income distribution should not differ too much in terms of average income. By knowing the ethnic composition of the top p%, i.e. of ε_p, we can find out to which top q% among Europeans it corresponds to

$$q = p.\varepsilon_p/\varepsilon \tag{4}$$

Among Europeans, the top share of the $q\%$ richest then reads

$$S_q^e = q.\frac{\overline{y}_q^{ee}}{\overline{y}^e} = q.\frac{\overline{y}_p^e}{\overline{y}^e} \tag{5}$$

Where $\overline{y}_q^{ee}$ is the average income of the top $q\%$ Europeans among Europeans, equal to $\overline{y}_p^e$ by definition. S_q^e can only be known when we have separate income tax tabulations for Europeans, and when we can make a safe calculation of the average income of Europeans, like in Cameroon and Vietnam (see next section).

Combining all terms yields

$$S_p = \frac{\varepsilon}{\varepsilon_p}\frac{\varepsilon_p + \left(1 - \varepsilon_p\right)/\delta_p}{\varepsilon + (1 - \varepsilon)/\delta}.S_q^e \tag{6}$$

The top $p\%$ share is the product of S_q^e, which measures inequality among Europeans in the colony, and of a first term that combines the between-group inequality (δ), and the inequality among non-Europeans. When $\varepsilon_p = 1$ the European and autochthon distributions do not overlap at the top, either because autochthons are not liable (their incomes are not reported, as in Vietnam before 1937), or else because the richest autochthons are too poor to enter the top $p\%$ (as in Cameroon or South Africa as we will see).

The next sub-section looks for autochthons at the top of the colonial income distributions. Sub-section 5.3 then analyzes the inequality among Europeans, within colonies, and between the colonies and the metropoles.

Table 2A. Algeria. Shares of income of top groups 1932-1957

per cent

	Among total (adult) population				
	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%
1932	22.2	15.4	7.0	4.9	1.8
1933	22.4	15.4	7.1	4.5	1.7
1934	19.9	14.6	6.5	4.4	1.6
1935	17.3	12.4	5.3	3.6	1.3
1936	18.3	13.3	6.0	4.1	1.6
1937	19.8	14.1	5.9	4.0	1.5
1938	19.8	14.7	7.1	4.9	1.6
1939	18.8	14.0	6.8	4.7	1.6
1940	21.5	16.4	8.2	5.5	1.7
1941	22.6	17.0	8.3	5.5	1.7
1942					
1943					
1944					
1945					
1946	17.9	13.1	6.2	4.6	2.2
1947	16.6	12.1	5.8	4.2	2.1
1948	17.2	12.8	6.5	4.9	3.3
1949	15.7	11.1	5.3	3.9	2.1
1950	13.9	10.3	4.2	2.9	1.3
1951	15.0	10.8	4.5	3.1	1.1
1952	16.2	10.8	4.2	2.8	1.1
1953	15.0	10.9	4.3	2.9	1.1
1954	15.2	9.9	3.7	2.7	1.2
1955	16.3	10.7	4.3	3.3	1.3
1956					
1957	17.0	11.7	5.1	3.7	2.1

Table 2B. Tunisia. Shares of income of top groups 1946-1956

per cent

	Among total (adult) population					Among Europeans							Among Tunisians-non Europeans				
	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%	Top 1%	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%
1946	13.1	9.5	4.4	3.1	1.3	31.3	22.8	10.2	7.2	3.0	1.9	0.7			2.8	2.1	1.0
1947	13.5	9.4	4.1	2.9	1.3	31.9	22.0	9.2	6.3	2.6	1.7	0.8		6.0	3.1	2.3	1.2
1948	11.1	8.0	3.8	2.7	1.2	26.9	19.3	9.0	6.6	2.9	2.2	1.5		4.4	2.2	1.6	0.8
1949																	
1950																	
1951																	
1952	14.5	10.4	4.6	3.2	1.3	34.6	24.8	11.0	7.7	3.1	2.1	1.3		5.6	2.6	1.8	0.8
1953	14.1	10.0	4.1	2.8	1.1	32.9	23.4	9.8	6.6	2.5	1.7	0.9		6.0	2.7	1.8	0.7
1954	14.1	9.9	4.1	2.7	1.0	33.0	23.2	9.6	6.5	2.5	1.6	0.9		5.7	2.6	1.8	0.6
1955	15.0	10.4	4.2	2.8	1.1	34.5	23.9	9.6	6.4	2.5	1.7	1.0	9.0	6.5	3.0	2.0	0.8
1956	13.5	9.6	4.0	2.7	1.0	30.9	22.1	9.2	6.2	2.4	1.6	0.9	8.1	5.9	2.7	1.8	0.7

Table 2C. Cameroon. Shares of income of top groups 1945

per cent

	Among total (adult) population					Among Europeans			
	Top 0.5%	Top 0.1%	Top 0.05%	Top 0.01%		Top 50%	Top 25%	Top 10%	Top 5%	Top 1%
1945	11.1	8.5	5.9	2.2		79.8	53.6	30.9	20.2	7.1

Table 2D. Vietnam. Shares of income of top groups 1921-1942

	Among total (adult) population			Among Europeans					
	Top 0.1%	Top 0.05%	Top 0.01%	Top 75%	Top 50%	Top 25%	Top 10%	Top 5%	Top 1%
1921	7.1	4.8	1.4	89.5	72.8	48.4	28.3	19.4	8.0
1922									
1923									
1924									
1925									
1926	8.8	6.2	2.5	89.5	73.2	49.3	29.0	20.0	8.5
1927	8.2	5.8	2.3	89.5	73.4	49.5	29.2	19.9	9.0
1928	9.1	6.3	2.5	89.7	72.7	48.6	28.6	19.5	8.7
1929	9.2	6.3	2.4	89.7	73.0	48.2	27.7	18.8	8.3
1930	10.6	7.3	2.7	89.9	73.5	48.4	27.1	17.8	7.7
1931	12.3	8.5	3.1	90.6	73.8	48.4	27.0	17.7	7.3
1932	12.9	8.9	3.3	90.4	73.6	48.3	27.0	17.7	5.7
1933	13.2	9.2	3.4	90.5	73.9	48.8	27.5	18.3	7.7
1934	13.1	9.1	3.4	90.1	73.3	48.2	27.1	18.0	7.4
1935	11.5	8.1	2.9	89.6	73.5	48.3	26.9	17.6	6.9
1936									
1937	9.5	7.1	2.9		79.6	56.0	32.6	22.1	8.8
1938	8.3	6.2	2.6		79.9	57.5	34.7	23.5	10.1
1939	8.3	6.2	2.7		80.0	58.4	36.1	24.6	11.6
1940	9.8	7.8	3.5		90.8	69.0	44.5	31.7	12.4
1941									
1942	5.2	4.4	2.0		89.6	68.3	42.2	29.0	11.4

5.2 Were there non-Europeans among the rich?

One unsurprising characteristic of the concentration of income in territories under colonial rule is that most members of the top groups were Europeans. In Kenya and Tanganyika in 1949, Atkinson (2014) shows that Europeans made up 73 and 74% of taxpayers, respectively. The remaining fraction was not necessarily composed of Africans, for these colonies also had significant Asian, and in particular Indian, minorities. The relatively large size of the Indian community also explains why Europeans only made up 50% of taxpayers in Uganda in 1949. In Ghana, in 1951, and Nigeria in 1957, the shares of Europeans reached 70 and 79%, respectively, while the shares of Africans were 18% and 14%, the rest being from India or the Middle East (Atkinson 2015a). Furthermore, the proportion of Europeans in the upper range of the income distribution (ε_p in the notations introduced above) is often likely to surpass the fraction of Europeans in the taxpaying population as a whole. Alvaredo and Atkinson (2010) show that in South Africa in the late 1950s, when the breakdown of taxpayers by race becomes available, the

fraction of non-whites is less than 2%, whether in the top 1% or the top 5% group. In contrast, in British India, top income earners were most likely to be Indian: Alvaredo, Bergeron and Cassan (2017) argue that, even if income tax data do not provide information on nationality or origin, the demographic weight of the European population was small enough to conclude that they could not possibly have represented more than 40% of the top 0.1% group in 1921.

What about the French colonies? Here we can provide some insight for the cases of Tunisia, Cameroon, and Vietnam. The income tax in Algeria applied to all residents, but the breakdown according to ethnic origin is not available in the statistics. On average, Europeans in Tunisia usually made up over three quarters of taxpayers between 1946 and 1955.[35] The fraction of Tunisian taxpayers went up from 20% in 1946 to 26% in 1955. At the turn of independence in 1956, it increased considerably, reaching 38%, because some Europeans had left: the number of European taxpayers fell by 23% compared to 1955, and those who remained were renamed "Foreigners" in the statistics. Over the same period, the number of Tunisian taxpayers did not increase, but rather dropped by 9%. As shown in Figure 8, Tunisians earned between 14 and 27% of the top 0.1% group in each year (18% in 1956), the proportion being similar for the top 1%.[36] This suggests that, despite similar levels of inequality, the racial divide in the income dimension may have not been as acute in colonial Tunisia as it was in apartheid South Africa. However, a qualification is in order: Jews constituted a significant minority in Tunisia; they were concentrated in cities, were on average richer than Muslim Tunisians, and were not counted as Europeans in the statistics. In 1956, Tunisian Jews represented 18% of non-Muslims, so it would be demographically possible that they made up the majority of non-European top-income earners. Most of them also left the colony after independence, to France or to Israel. The income tax tabulation for 1956 adds the occupational distribution of taxpayers in each income bracket, separately for both Tunisians and Europeans (labeled as "Foreigners"). 61% of Tunisians belonging to the top 1% were salaried, 7% were self-employed professionals, 18% traders, and 8% farmers. Europeans were even more likely to be wage earners, 70% were salaried and 7% were retired, only counted for 4% were professionals, 8% traders, and 7% farmers.[37] In the top 0.1% the occupational distribution changes dramatically, as fewer wage earners are found. Among Tunisians, the majority is made up of big traders (46%) and farmers (8%), 12% are self-employed professionals, while only 23% are salaried. Among Europeans, salaried and retired individuals still make up 49% of the total, professionals 13%, traders 15% and farmers 16%.

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[35] See Appendix Table B1.B.

[36] To calculate the income share of each group, we look at the two income brackets that surround the top 0.1% or top 1% population share, compute the share of cumulated income earned by Europeans above each threshold, and linearly interpolate the share for the 0.1% or the 1%. See Appendix Figure D3 for the composition of the top 1% compared to South Africa. Within the top 0.1% or the top 1%, the average income gap between Europeans and non-Europeans, i.e. $\delta_{0.1}$ or $\delta_{0.1}$ in the notations introduced above, is not far from 1: in 1946 $\delta_{0.1}=0.86$ and $\delta_1=0.90$, and in 1955 $\delta_{0.1}=1.03$ and $\delta_1=0.98$.

[37] This is the occupational distribution after independence, when some Europeans had already left. The tabulation for 1955 also provides the occupational distribution of taxpayers, although not broken down by income level. It seems that it is mostly wage-earners who left first, for instance civil servants sent back to the metropole, but also a few professionals, like physicians or lawyers. In North Africa, only a small minority (less than 15%) of French salaried workers were in the public sector, even if the French made up around 60% of all civil servants (Cogneau, Dupraz and Mesplé-Somps 2018, Appendix I). Yet it could be that the share of civil servants was higher in the top percentiles of income.

In 1945 in Cameroon, due to the existence of a means-tested lump-sum tax targeting rich autochthons, Africans made up 89% of registered taxpayers. However, their income distribution overlaps very little with that of Europeans. Out of 9,967 African taxpayers, only 22 had incomes above the minimum threshold for Europeans (60,000 francs). This means that Africans represented a negligible share of the top 0.1%, like in South Africa, even if they made up the great majority of the top 0.5% or 1%.

Figure 8. The ethnic composition of the top 0.1% income share in Tunisia and Cochinchina

| Tunisia | Cochinchina |
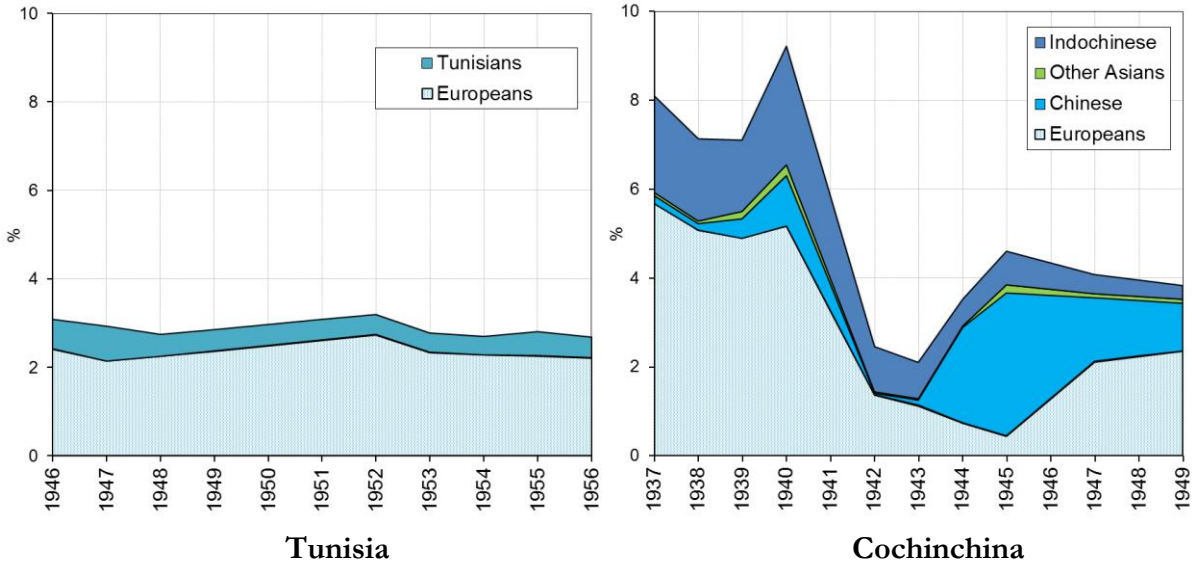
Sources: Table 2B and author's calculations.

Following 1937, the gradual introduction of the progressive income tax in Indochina meant that certain non-Europeans became liable. In 1938 in Annam, this extension of liability was restricted to Asian minorities (Chinese and others); published statistics do not include a breakdown by ethnicity; however the total number of taxpayers increases by 65% between 1937 and 1942. In 1940 in Tonkin, a few Chinese and other Asians appear separately in the income tax tabulations, and their number increases in the top 0.1%, from 5% of tax units in 1940 to 13% in 1943. As they were relatively rich (i.e. $\delta_{0.1}$ is below 1, in the notations introduced above), they received an even larger share of the income pie of the top 0.1%, growing from 9% in 1940 to 22% in 1943. In Cochinchina after 1937, Indochinese also became liable. While Cochinchina counted only for one fifth of Vietnam in terms of population, it was by far the richest region, with twice the average income of Vietnam (Bassino 2000, Merette 2013a). It was home to over 40% of the Europeans in Indochina before WWII, and over 70% after the war. It also attracted many Chinese immigrants, whose number more than tripled between 1937 and 1949 (Amer 2010). As visible in the right-hand panel of Figure 8, the fraction of Europeans within the top 0.1% decreased from 70% in 1937 to 56% in 1940, with the gradual inclusion of more Indochinese, Chinese, and other Asian taxpayers. During WWII, even if the number of non-European taxpayers stopped growing, the share of European taxpayers continued to fall because their number decreased, and a greater proportion of those who remained declared incomes below the liability threshold. After 1944, the number of Chinese taxpayers boomed, yet the share of

Europeans in the top 0.1% recovered, from 52% in 1947 to 61% in 1949.[38] Whereas rich Indochinese made up over 90% of non-Europeans at the beginning, it is the inflow of Chinese taxpayers from 1939 that drove up the non-Europeans' share, given the impoverishment of the Vietnamese elite during the war. In 1940, the non-European taxpayers in the top 0.1% were composed of 63% of Indochinese and 37% of Chinese and other Asians. In 1949, the ordering of shares was reverted, as they were respectively 21% and 79%. There were more non-Europeans at the top in Vietnam than in Tunisia or Cameroon, though never as many as in British India, where they were a majority. Furthermore, as was potentially the case with Jews in Tunisia, after WWII it was mainly the prosperous Chinese diaspora that would have been able to compete with Europeans. In contrast with Jews, however, not all Chinese taxpayers were, strictly speaking, autochthons, as some of them were new migrants. But unlike Jews, they did not leave after independence.

Can we calculate inequality among non-Europeans? We would need information of their income total, or equivalently, of the income of Europeans. For Tunisia, Amin (1966, 1970) provides an estimate of the income share of Muslims in the 1950s. By that time, according to Amin, the average European (mainly French and Italian) earned about eight times the average income of Tunisian Muslims. If we additionally assume that Jews had the same average income as Europeans, we can compute the income total for the population of Tunisian autochthons (Muslims and Jews together). Under these two assumptions, Table 2B suggests that inequality among Tunisians was not very high, with the top 1% reaching 8-9% in 1955-56, and the top 0.1% sitting somewhere between 2% and 3% (see the left-hand panel of Appendix Figure D5). These figures are close to the ones obtained for the income distribution of Europeans (also shown in Table 2B), and are also close to the income distribution of mainland France. The higher level of overall inequality in Tunisia is then essentially due to the gap in average income between Europeans and non-Europeans.

In Cameroon in 1945, the 1,203 European taxpayers represent 70% of our estimated population control total.[39] The remaining 30% must earn incomes below the liability threshold, hence representing the poorest 30%. If we assume that the income ratio between these two groups is the same as mainland France in 1945, we get an estimate of the total income of Europeans. We obtain moderate inequality figures among Europeans, and even lower among autochthons. The concentration figures among Europeans is very similar to that of France, the share of the top 1% richest being 7.1% versus 7.5% in the metropole. As for autochthons, registered taxpayers make up 0.8% of the total of tax units getting 4.9% of the estimated non-European income. In any case, this would put the extrapolated top 1% far below 6%. We also get a 1.2% share for the top 0.1%, again much lower than the share for France (2%).

In Vietnam, all European tax units are in principle recorded, as well as their taxable income. We thus just use the reported figures alone to individually calculate the top shares for Europeans and for non-Europeans. For the latter, this is only possible when they are supposed to be taxed, i.e.

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[38] Data for Europeans in 1948 is incomplete and cannot be used.
[39] Obtained again as 60% of the 15+ population, assuming a 75% share for this age group, applied to the figure of 3,600 Europeans reported in the Statistical Abstract for 1936-1945.

only for Cochinchina after 1937.[40] Before WWII, we find rather high top shares, especially in 1940 when the number of non-European taxpayers reached a local maximum (before an additional inflow of Chinese migrants during the 1940s, see above). The top 0.01% share is then as high as 2%, compared to 1.7% in France during the same year, and 1.7% as well in Algeria wherea Europeans and non-Europeans are taken together (see right-hand panel of Appendix Figure D4, and compare with Appendix Figure D1). This number is, however, lower than the estimates for India by Alvaredo, Bergeron and Cassan (2017) which lie above 2.5% across most of the 1930s and above 3% in 1940; although these estimates include a minority of rich Europeans. After WWII, in the years 1947 and 1949, the non-European income distribution in Cochinchina becomes much more equal, even more so than among Tunisians in Tunisia.

Caution around estimates of top shares among non-Europeans is certainly warranted, given the assumptions involved in estimating the income total. There may also be concerns around the enforcement of the tax.[41] In the case of Cochinchina, another layer of uncertainty stems from the additional assumptions needed to estimate the missing totals for the taxable income of both Europeans and non-Europeans, as only the sum of the two is available (see section 3 and Appendix A1.F). It seems safe, however, to conclude that inequality among autochthons was not very high during the post-WWII period, and was probably higher in the 1930s. Given the under-representation of autochthons in the top percentiles, even a significant fall in autochtons' within-group inequality would only have played a minor role in the post-war reduction in overall inequality.

5.3 European expatriates and settlers

If a few autochthons or non-Europeans could compete with European expatriates or settlers in terms of income, it remains that the latter represented the majority of top-income earners. Better understanding how European top incomes were formed is therefore important to analyzing cross-country differences in top shares, as well as their evolution over time. As already underlined, the number of Europeans varied greatly across colonies.

In the colonies where there were fewer European expatriates, such as Cameroon or Vietnam, the majority formed part of the top 0.1%, whereas in the colonies where settlers resided in greater numbers, like in Algeria, Tunisia, or South Africa, those found in the top 1% or top 0.1% were much more exclusive than the wider European population. For this reason, we would expect the top shares to be higher in settlement colonies. As already mentioned, this is not what we found. Two factors counterbalance this selection effect. First, settlement colonies are richer. Even before colonization, North Africa was already wealthier and more urbanized due to its secular inclusion in the Mediterranean economy. Settlement regions, from North Africa to the Cape

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[40] We discuss the income distribution among Europeans, for the whole Vietnam, in the next section.
[41] This said, tax compliance under colonial rule might be better than most would expect. This has been shown in Cogneau, Dupraz and Mesplé-Somps (2018) in the case of the capitation tax in French West Africa. The fact that the massive inflow of Chinese migrants in the 1940s is reflected in the tabulations is another testimony of the fact that the colonial administration was able to identify liable taxpayers, even when recently arrived in the territory.

Colony, through the Kenyan highlands, offered favorable health conditions and opportunities to develop European-like agriculture.

Figure 9. The top 0.1% income share and settlement patterns
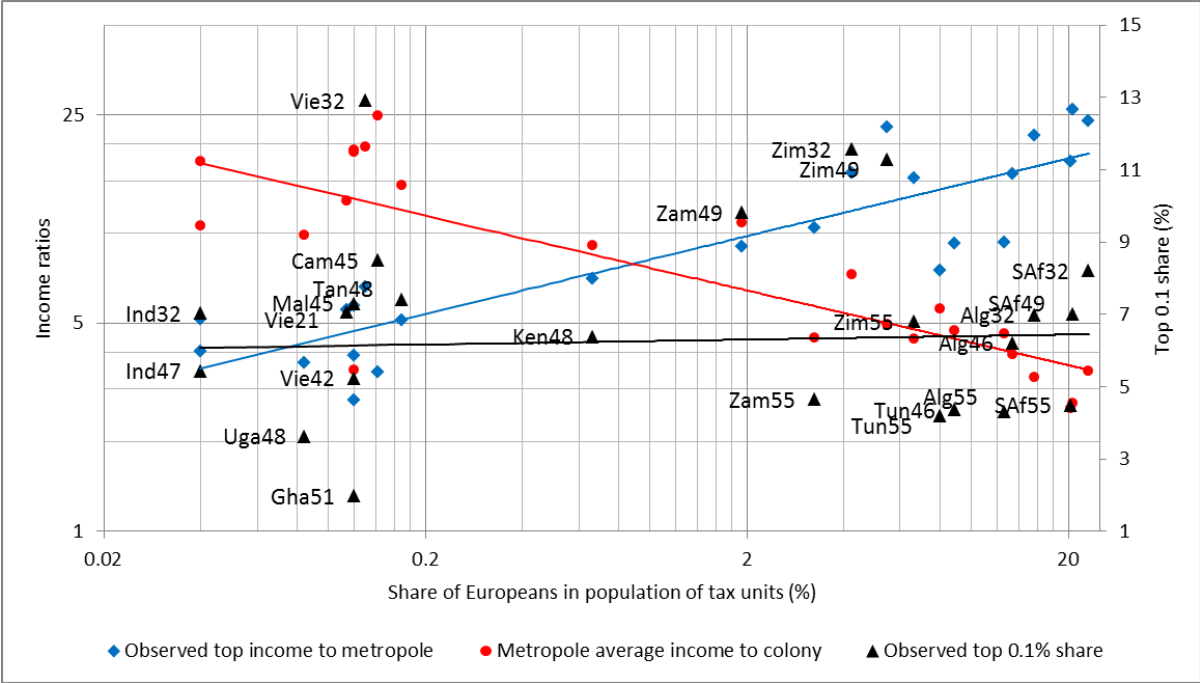
Source: Authors' data; Alvaredo and Atkinson (2010) and Atkinson (2014) for British colonies.

Notes: Both the availability of the top 0.1% share and of an estimate of the European population commanded the selection of the analysis sample. It is composed of colonies observed in 1921 (Vietnam), 1932 (Algeria, Tunisia, Vietnam, South Africa and Zimbabwe), between 1945 and 1951 (Algeria, Tunisia, Cameroon, Vietnam, South Africa, Zimbabwe, Zambia, Kenya, Ghana, Malawi, Tanganyika, Uganda and India), and in 1955 (Algeria, Tunisia, South Africa, Zimbabwe and Zambia). The number of British tax units in India is not precisely known, so we took the upper bound of 0.04% mentioned by Alvaredo, Bergeron and Cassan (2017). Black dots represent the top 0.1% share, while the black line is the slope of a simple linear regression of the logarithm of the top 0.1% share on the logarithm of the share of Europeans. Blue dots and red dots indicate, respectively, the ratio of the top 0.1% average income to the average income of the metropole, and the ratio of the average income of the metropole to the average income of the colony. Blue and red lines represent the slope of a log-log regression on the share of Europeans; the slope of the black line is the sum of the two slopes of opposite sign.

Figure 9 uses a subsample of country-years to look at the relationship between inequality levels and settlement patterns. The top 0.1% share can be decomposed as the product of two elements: the ratio of the top 0.1% average income to the mainland average income, and the ratio of the mainland average income to the average income of the colony. As shown in the logarithmic scales that transform this product into a sum, the two elements co-vary with the share of Europeans in the population, with slopes of equal magnitude and opposite signs. It is indeed the case that the top 0.1% is richer in settlement colonies, yet the bigger wealth of these colonies compensates for this advantage, so that in the end the relationship between the top share and the weight of Europeans is flat.

A second factor contributes to the flattening of this relationship. Compared to the metropole, expatriates also formed a more select group than settlers. European incomes were not randomly drawn from the overall income distribution of the metropole; in particular the incomes of expatriates in non-settler colonies were more often drawn from the upper parts of this distribution. The average European settler was closer to the average French in France or the average British in the UK, whereas expatriates in non-settler colonies were more likely to be high-rank civil servants or adventurous businessmen. Occupation-wise, the North African settler population indeed resembled like a "small France". According to the 1948 population census in Algeria, among the 331,595 non-Muslims who were economically active, two thirds (219,714) were classified as blue collars or low-ranking white collar workers (*ouvriers, employés, cadres inférieurs*). In the social table established by Samir Amin (1966, 1970) for Algeria and Tunisia in 1955, blue collars and low-ranking white collars workers accounted for 50% of the workforce in Algeria, and 46% in Tunisia, while small business managers and middle-rank white collars represented 33 and 38% respectively.[42] The 1937 census of Europeans in Indochina unfortunately does not provide much detail on occupational ranks and skills, although it is obvious that low rank occupations were largely missing. Civil servants made 40% of the 9,730 employed civilians, 12% were professionals (*profession libérale*) and 15% were in trade (*commerce*). In Cameroon in 1938, one third of the 1,944 male Europeans were civil servants, another third were traders (*commerçants*), 10% ran plantations (*planteurs*), and another 10% were missionaries.

More formally, getting back to the notations introduced in sub-section 5.1, we write the average income ($\bar{y}_q^{ee}$) of the top q% Europeans as a factor θ_q of the average income ($\bar{y}_q^m$) of the top q% in the metropole:

$$\bar{y}_q^{ee} = \theta_q \cdot \bar{y}_q^m \tag{7}$$

We are interested in computing θ_q, with for instance $q = 5$%. In the cases of Tunisia, Cameroon and Vietnam, separate tabulations for Europeans allow us to directly compute $\bar{y}_q^{ee}$.

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[42] See Appendix Table C1.

Table 3. Top 5% Europeans

Country	Year	Europeans in tax units	Assumption: Europeans at the top	Top p% of population	Average income to metropole top 5%
		ε	ε_p	$=5.\varepsilon/\varepsilon_p$	θ_5
		(%)	(%)	(%)	(ratio)
		I	II	III	IV
1932					
South Africa	1932	23.2	*98.0*	1.182	1.12
Algeria (North)	1932	15.7	*90.0*	0.873	1.13
Vietnam	1932	0.13	*not needed*	0.0065	3.05
1940s					
South Africa	1949	20.6	*98.0*	1.051	1.74
Algeria	1946	13.5	*90.0*	0.748	1.19
Tunisia	1946	8.9	*not needed*	0.443	0.85
Zimbabwe	1949	5.5	*98.0*	0.280	2.89
Zambia	1949	1.9	*98.0*	0.099	1.94
Kenya	1948	0.66	*73.2*	0.045	2.15
French Cameroon	1945	0.14	*not needed*	0.0071	2.57
Vietnam	1942	0.12	*not needed*	0.0060	2.02
Ghana	1951	0.12	*70.3*	0.0086	3.70
Uganda	1948	0.08	*49.6*	0.0085	2.52
1955					
South Africa	1955	20.3	*98.0*	1.036	1.64
Algeria	1955	12.7	*90.0*	0.703	0.80
Tunisia	1955	8.0	*100.0*	0.399	0.74
Zimbabwe	1955	6.6	*98.0*	0.338	2.14
Zambia	1955	3.3	*98.0*	0.166	2.08

Source: Authors' data; Alvaredo and Atkinson (2010) and Atkinson (2014) for British colonies.

Notes: Within each decade, countries are ordered according to the share (ε) of European tax units in the population, reported in column I. We estimated the average income of the top 5% richest Europeans. In the cases of Tunisia, Cameroon and Vietnam, we used the separate tabulations of Europeans. In the cases of Algeria and of British colonies, tabulations do not break down taxpayers by citizenship or ethnicity; for them, we make an assumption on the proportion of Europeans at the top of the income distribution (ε_p), reported in column II. The top 5% Europeans is then matched with the top percentile p ($= 5.\varepsilon/\varepsilon_p$) of total population, reported in column III. For Algeria, we assumed that the top of the income distribution was composed of (ε_p=) 90% of Europeans. For South Africa, Zambia and Zimbabwe, we assumed that Europeans made 98% of top taxpayers, like in 1956 in South Africa. For other British colonies, we used the share of Europeans in taxpayers given in Atkinson (2014, 2015a) for the years around to 1948. We additionally assumed that there was no difference in average income between Europeans and non-Europeans within the top p, i.e. $\delta_p = 1$, or $\overline{y}_p^e = \overline{y}_p^a$; given that ε_p is large this assumption is innocuous (estimates of $\delta_{0.1}$ for Tunisia are 0.86 in 1946 and 1.03 in 1955). Then we estimate the average income $\overline{y}_p$ using Pareto interpolations. Column IV reports the ratio of the average income of the top 5% Europeans to the e average income of the top 5% income-earners in the metropole. The top 5% income shares for France and United-Kingdom are from WID.world. For the United Kingdom, the top 5% share in 1932 is interpolated at 30.2% using figures for 1919 and 1937, and the top 5% share in 1955 is extrapolated at 21.0% using figures for 1954 and 1959.

In the other cases, we make assumptions about ε_p for sufficiently low top p percentiles (above 1.5%), and, for a given q, compute $\bar{y}_p$ at $p = q.\varepsilon/\varepsilon_p$, by inverting equation (5) above. We also assume $\delta_p = 1$, i.e. that at the top of the income distribution the income gap between Europeans and autochthons is negligible (see also Table 3 footnote). Inverting equation (3) gets us from $\bar{y}_p$ to $\bar{y}_p^e$, which is by definition equal to $\bar{y}_q^{ee}$.

Table 3 column IV shows the estimates of the average income of the top 5% Europeans ($\bar{y}_5^{ee}$), expressed as a factor θ_5 of the average income of the corresponding top 5% ($\bar{y}_5^m$) in the metropole. Among the French colonies, European top income earners systematically earn less in settlement colonies. In 1932, the top 5% of Europeans in Vietnam earn three times the average income of the top 5% in France, while the top 5% in Algeria only earn 13% more. In 1945-46, the top 5% of Europeans in Cameroon earn 2.5 times the metropole's top 5% average income, while the top 5% in Algeria earn only 19% more and in Tunisia 15% less. After WWII, the rich settlers in North Africa lost some ground compared to the metropole. In 1955, those in Algeria and Tunisia earned 20% and 26% less than the top 5% in France, respectively. In contrast, the top rich settlers in South Africa increased their advantage as in 1955 they were earning 64% more than the top 5% average income in the UK, compared to only 12% in 1932. According to Maddison's (2003) estimates of GDP per capita, the average income in the UK was always higher than in France by 30% in 1932, 50% in 1948 and 27% in 1955, and top shares were close, so that the top rich settlers in South Africa were always richer than the top rich settlers in Algeria, even as early as in 1932. Yet, among British colonies, the top rich Europeans are also better off the lower their weight in the colony's population. The richest white South Africans earned less than their counterparts in Zambia or Zimbabwe, and also in Kenya, Ghana or Uganda.[43]

As argued above, the main reason for this regularity is the selection of skills and occupations. Another factor was the wage premium paid to attract European expatriates in less enjoyable or more remote non-settler colonies. In French colonies, civil servants received higher wage bonuses in Cameroon and Vietnam than in Algeria and Tunisia (Cogneau, Dupraz and Mesplé-Somps, 2018).

Within each colony, inequality among settlers or expatriates was similar to the inequality observed in the metropoles. We already mentioned that this was the case for Tunisia 1946 to 1956 (Table 2B and Figure 10 below). In Cameroon in 1945, inequality among Europeans was lower than in mainland France (Table 2C). In Vietnam we also found that until 1937 the richest 10% Europeans earned 27-29% of the European income, i.e. a much lower share than in France at the time, and closer to the share that prevailed in post-WWII France or Tunisia. As soon as the general income tax starts was introduced in 1937 (see section 2), income concentration among Europeans seems to have caught up with the levels in mainland France levels (Figure 10). Yet the total amount of declared taxable income sees little change, and no discontinuity is observed in the top shares for the total population. As the general income tax introduced a liability threshold, a bit of income bunching can be observed below the threshold. However, correcting for this

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[43] Even in India in 1932, the top 0.01% of the total population, which potentially included the top 25% of Europeans, earned 13 times more than the UK average income, i.e. they earned twice as much as our estimate for the top 5% in the metropole, and in 1947 this grew to 25.5 times more, which was more than twice the average income of the top 1%.

behavioral response only explains a small part of the difference. It seems that under the new tax, some taxpayers declare less in the middle of the distribution while others declare more at the top. As the general income tax is closer to the one that was implemented in the metropole, we conclude that inequality among Europeans was close to that of the mainland, as in Tunisia.

Figure 10. Inequality among Europeans in Tunisia and Vietnam, and comparison with France

Tunisia   **Vietnam**
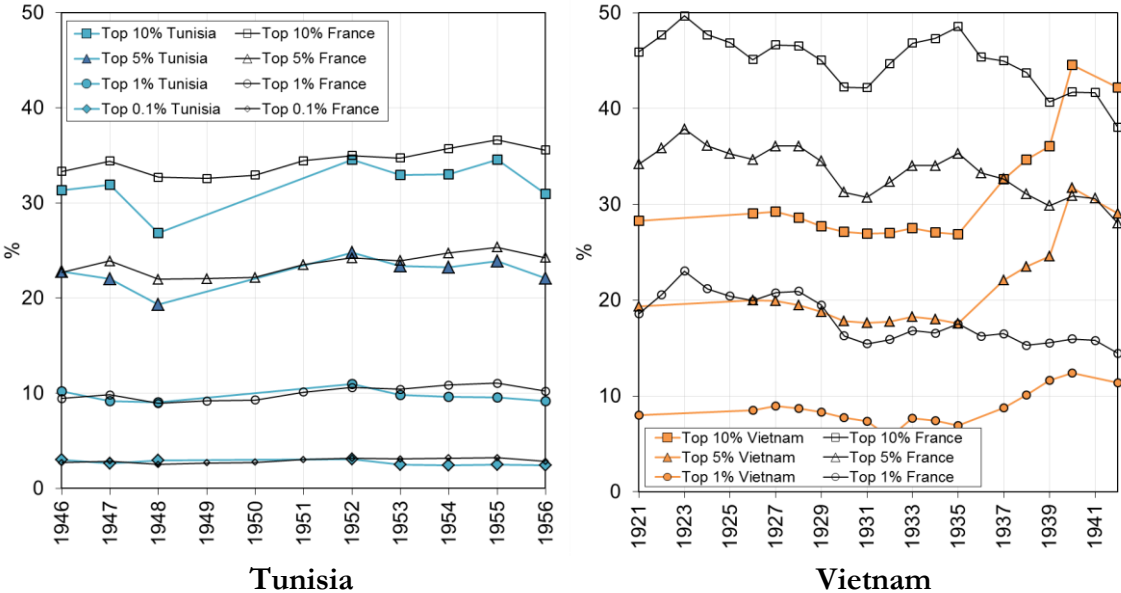
Sources: Table 2B (Tunisia), Table 2D (Indochina), and Piketty (2001, 2007) (France).

Another way to capture the inequality and its impact among Europeans is to run the same computations as in Table 3 for even richer expatriates or settlers belonging to the top 0.5% rather than the top 5%. When referring to the standardized income ratio, i.e. the average income of the top 0.5% of Europeans to the average income of the top 0.5% in the metropole, the figures are quite close to those seen in Table 3. This reflects the similarity between the income distributions among Europeans in the colonies and the metropoles. In most cases, in comparison to Table 3, the "colonial advantage" is slightly attenuated at this level, meaning that the colonial income distribution is more equal at the very top than in the mainland. This can also be seen in the cases of Tunisia and Vietnam in Figure 10.

5.4 Analyzing the fall in inequality before and after WWII

The similarity between top income shares Europeans in the colonies and the mainland suggests that inequality in the colonies and in the metropoles co-moved, due of the integration of the labor and capital markets.[44] In particular, the large reduction in inequality observed in France and the UK after WWII could account for the reduction observed also in the colonies between the 1930s and the 1950s.

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[44] Allen, Murphy and Schneider (2014) make a similar argument on the integration of the labor markets of European powers and their American colonies.

Let us write the average income of Europeans as a factor θ of the average income in the metropole

$$\bar{y}^e = \theta . \bar{y}^m \qquad (8)$$

Then, with the notations introduced before, the top $q\%$ share among Europeans reads

$$S_q^e = q . \frac{\bar{y}_q^{ee}}{\bar{y}^e} = q . \frac{\theta_q}{\theta} \frac{\bar{y}_q^m}{\bar{y}^m} = \frac{\theta_q}{\theta} S_q^m \qquad (9)$$

Where S_q^m is mainland's top $q\%$ income share. The ratio θ_q/θ captures the differences between the two European income distributions, the first in the colony, the second in the mainland. Finally, getting back to the decomposition introduced in section 5.1, equation (6) becomes:

$$S_p = \frac{\varepsilon}{\varepsilon_p} \frac{\varepsilon_p + (1 - \varepsilon_p)/\delta_p}{\varepsilon + (1 - \varepsilon)/\delta} . \frac{\theta_q}{\theta} S_q^m \qquad (10)$$

This expression directly relates the top share S_p in the colony to that in the metropole (S_q^m). The two main unknowns in this equation are δ and θ, as in all cases except Vietnam and Cameroon, we do not observe the average income of Europeans.

We make use of equation (10) to analyze the evolution of top income shares before and after WWII across the five colonies where this evolution is observed. At the top end of Table 4, we begin with Cochinchina between 1932 and 1949, because, as all European taxpayers are recorded, we can estimate every parameter and reach an exact decomposition. Between the two dates, the top 0.1% income share fell from 9.5 to 3.9 (column II and Figure 6). However, the fall of inequality in mainland France should not have played a role in this. Simultaneously, the share of Europeans in the population was more than halved, from 0.31 to 0.13%, as many of them left during WWII and the independence war that followed. Even though non-Europeans entered the top 0.1% after the introduction of the general income tax in 1937, this large outmigration ensured that Europeans in the top 0.1% became a less selective sample. They represented 46% of all expatriates versus 33% in 1932 (col. V), and the corresponding income shares in the mainland (S_q^m) went from 73 to 79% (col. VI). Simulations (not shown) indicate that, combined, these changes would have led to a decrease in the top income share from 9.5 to 7.6, i.e. by only 20% of the initial level. The European income distribution also became somewhat more equal compared to mainland France, as the ratio θ_q/θ went from 0.85 (=4.68/5.49) to 0.76 (=3.14/4.11), however this change can only explain a further 11% reduction in the top 0.1% income share, from 7.6 to 6.8 (col. XI). The bulk of the fall in inequality is thus explained by the reduction in the income gap between Europeans and autochthons, i.e. the fall of δ from 59.1 to 32.7 (col. X). The "between-groups" dimension dominates. However, as mentioned earlier, this reduction in the racial divide took place in a context of economic collapse, whereby Europeans' incomes fell more than autochthons' ones.

The lower part of Table 4 considers the cases of the four other colonies: South Africa, Algeria, and Zimbabwe between 1932 and 1955, and Zambia between 1943 and 1955. In contrast to Cochinchina, the parameters ε_p, δ_p, and, most importantly, θ and δ, cannot be estimated from the income tabulation data directly. The first two parameters can be quite confidently set at values close to 100% or 1. As with the estimations conducted for Table 3, we assume that Europeans made up 90% of top taxpayers in Algeria, and 98% in the three other British colonies;

and we set $\delta_1 = \delta_{0.1} = 1$. As can be seen in Table 4 col. VIII, the estimates of θ_q (for q ranging between 1.48 and 7.58%, col. V) closely match the estimates of θ_5 reported in Table 3 (for the top 5%). If we assume that the income distribution among Europeans is close enough to that of the metropole, we can set $\theta = \theta_q$, as is done in column IX. The data then allow us to estimate plausible values for δ, in column X. In both South Africa and Algeria in 1932, the average European is found to earn seven times the average income of autochthons. In the two other British colonies of Sub-Saharan Africa, this income gap is much greater: 21 in Zimbabwe, and 28 in Zambia, firstly because these two colonies are poorer, and secondly because the average European is more selected. Of course, these estimates of δ are strongly sensitive to the calibration of θ. Depending on whether the European income distribution was either more (respectively, less) equal in the colonies than in the metropole, the average European would, respectively, be either richer or poorer, and, conversely, the income gap δ would be either larger or smaller. Column XI reports the prediction of the top income shares for the year 1955 under the two following assumptions: (i) the income gap δ between Europeans and autochthons remained the same as before WWII; (ii) inequality among Europeans shifted alongside like inequality in the metropole.

The last column (XII) of the Table suggests that this prediction fits well with the figures observed in the cases of South Africa, Algeria, and Zimbabwe. The proportional difference between what is observed and predicted never exceeds 7% (South Africa); this small difference can be explained by a small discrepancy between inequality among Europeans and mainland inequality. Although a good fit is not evidence of causation, it nonetheless suggests that the fall of inequality in the colonies might have been driven by the same factors as the fall of inequality in France (Algeria) or in the United-Kingdom (South Africa and Zimbabwe), and more generally in Europe.

The last case of Zambia 1943-1955 does not quite fit with the rest of the model, like Cochinchina. The income gap δ between Europeans and autochthons must have sharply fallen during this period (possibly from 27.6 to 11.6, see col. X) and/or the inequality among European settlers must have been more heavily reduced than in the UK (i.e. θ_q/θ possibly from 1 to 0.58, col. XI). It is likely that an intermediate combination of the two took place, although it is impossible to identify their respective weight. The expansion of copper mining from the 1930s, might well have paved the way to some income convergence between Europeans and autochthons. The famous copper strike of 1935, African labor unionization in 1949, and another successful copper strike in 1952, forced mining companies and colonial authorities to concede higher wages and benefits to African workers (Butler 2007). The copper price boom of 1953 (Korea War) should also have facilitated convergence. In the meantime, the population of European settlers also boomed, and the share of European tax units almost tripled, from 1.3% in 1943 to 3.3% in 1955. This large inflow of new settlers could have resulted in a strong reduction in inequality among Europeans, even stronger than in the metropole. This demographic shock ensured that Europeans in the top 0.1% were the richest 3% in 1955, versus 8% in 1932 (column V); at both points, these top rich settlers earned 1.7 to 1.9 the income of their mainland counterparts (column VIII). Perhaps the remaining 92% were less advantaged or less exclusive in 1932 (the income gap δ would then have been lower than the estimate in column X) while the

newcomers of 1955 fared better, being attracted by the new profit opportunities opened by the copper economy.

Given the over-representation of Europeans in the top percentiles, the fall in within-group inequality, mirroring the inequality reduction in Europe, should have played a very important role in the fall of the colonial top income shares after WWII. In the settlement colonies of South Africa, Algeria, and Zimbabwe, the decline in top income shares had little to do with a reduction in the between-groups inequality, i.e. of the gap in average incomes between Europeans and autochthons. Although this cannot be tested, it is plausible that Tunisia followed the same model. However, in other cases such as Vietnam or Zambia, idiosyncratic shocks like the independence war or the copper boom impacted the between-group component, while the population of Europeans also changed in size, composition, and income distribution.

6. Conclusion

Using income tax tabulations from French administrative archives, we produce estimates of income concentration for four French colonies between 1920 and 1957. Drawing from previous work, we were able to compare these French colonies with the British Empire in Africa, and Asia, but also the two metropoles, France and the United Kingdom. Perhaps unsurprisingly, income inequality in the French and British empires of the 20th century was very high, even above that of mainland France or United Kingdom. In the mid-1930s, the share of the top 1% was around 20% in Algeria and 15% in France. In the aftermath of World War II, both the metropoles and colonies experienced a significant drop in concentration; yet in the 1950s, the top shares stabilized at a higher level than the metropoles, ranging from 13 to 15% for the top 1%, and from 3 to 6% for the top 0.1%.

European expatriates and settlers comprised an overwhelming majority of top income recipients in the French Empire and in the British colonies of Africa; this differs from the case of India, where British and Indians cohabited at the top 0.1%. Prosperous Tunisians made up one fifth of the top-rich in the 1950s. In terms of non-Europeans, Tunisian Jews represented another significant minority, so that the divide between non-Muslims and Muslims may well have been no less salient than the divide between Whites and Blacks in South Africa or in Cameroon. In Southern Vietnam (Cochinchina) in the late 1930s and 1940s, locals constituted a greater proportion of the top than in Tunisia, although not as great as as in British India; another minority, the Chinese, was also well represented among the richest. The available data provide limited insights into the income concentration between the non-Europeans, though it suggests it was lower in Tunisia or Cameroon than in Vietnam.

The top shares in settlement colonies do not look higher than in colonies where Europeans were a smaller minority. On the one hand, where Europeans populations were higher, top income settlers represented a smaller and relatively richer, fraction of all Europeans. On the other hand, settlement colonies were wealthier. Furthermore, the population of European settlers was much closer to the mainland averages in terms of occupation or skill, whereas European expatriates in non-settler colonies were more exclusive and received higher wage bonuses or risk premiums. The richest Europeans were better off outside settlement colonies; this is true of both French

and British territories, even if the rich white South Africans always fared better than the rich French settlers in Algeria or Tunisia. In the cases we were able to analyze, inequality among Europeans in the colonial territories was close to, or sometimes even lower than, that of the corresponding mainland. For Europeans, the integration of labor and capital markets between the mainland and its colonies meant that incomes were partly determined in France or in the UK. Leaving aside idiosyncratic shocks such as independence wars or mining booms, a significant part of the decrease in the top shares following World War II can thus be linked to the decrease in inequality in Europe, that is, to global forces, rather than to a reduction of the income gap between the Europeans and the colonized.

Table 4. Decomposition of the fall in inequality after World War II

Colony	Year	Top percentile (%) p	Observed income share (%) S_p	Share of Europeans (%) ε	Share of Europeans at top (%) ε_p	Metropole quantile (%) $q = p.\varepsilon_p/\varepsilon$	Income gap at top (ratio) δ_p	Top share metropole (%) S_q^m	European income ratio at top θ_q	European income ratio θ	Income gap (ratio) δ	Predicted top share (%)	Fit = Observed / Predicted
		I	II	III	IV	V	VII	VI	VIII	IX	X	XI	=II/XI
Cochinchina	1932	0.1	9.5	0.31	100.0	32.8		73.0	4.7	5.5	59.1	9.5	1.00
Cochinchina	1949	0.1	3.9	0.13	57.5	45.7	1.18	78.6	3.1	4.1	32.7	6.8	0.57
South Africa	1932	1.0	19.8	23.2	*98.0*	4.23	*1.00*	30.2	1.1	*1.1*	7.0	19.8	1.00
South Africa	1955	1.0	14.4	20.3	*98.0*	4.83	*1.00*	21.0	1.6	*1.6*	8.5	13.5	*1.07*
Algeria	1932	1.0	22.2	15.7	*90.0*	5.73	*1.00*	35.6	1.1	*1.1*	7.2	22.2	1.00
Algeria	1955	1.0	16.3	12.7	*90.0*	7.11	*1.00*	30.3	0.8	*0.8*	8.9	17.4	*0.94*
Zimbabwe	1932	0.1	11.6	4.2	*98.0*	2.31	*1.00*	17.7	1.6	*1.6*	21.2	11.6	1.00
Zimbabwe	1955	0.1	6.8	6.6	*98.0*	1.48	*1.00*	9.3	2.0	*2.0*	20.2	7.0	*0.98*
Zambia	1943	0.1	8.5	1.3	*98.0*	7.58	*1.00*	35.3	1.7	*1.7*	27.6	8.5	1.00
Zambia	1955	0.1	4.7	3.3	*98.0*	3.01	*1.00*	21.0	1.9	*1.9*	11.6	8.0	0.58

Source: Authors' data for French colonies; Alvaredo and Atkinson (2010) and Atkinson (2014) for British colonies.

Notes: We decompose the evolution of the top 1 or 0.1% income share, before and after WWII, using equation (10). In Cochinchina, we can estimate all the parameters (top panel). In the four other cases, we first make the same assumptions as in Table 3 about the share of Europeans at the top: $\varepsilon_1 = 90\%$ in Algeria, $\varepsilon_1 = \varepsilon_{0.1} = 98\%$ in the three others (col. IV), and about the income gap between Europeans and non-Europeans at the top ($\delta_1 = \delta_{0.1} = 1$, col. VII). We are left with two main unknowns: the income ratio of European settlers to mainland (θ), and to non-Europeans (δ). Under the assumption that the European income distribution was the same as in the mainland, we set θ at the same level as θ_q. This allows us to reach an estimate for δ in each year (col. X). In column XI, we predict income shares in 1955 by fixing δ at its 1932 (1943 for Zambia) value. This way, the predicted evolution of the colonial top income shares only depends on income inequality in the mainland.

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Income Inequality under Colonial Rule

Evidence from French Algeria, Cameroon, Tunisia and Vietnam and comparison with British colonies 1920-1960

Facundo Alvaredo, Denis Cogneau, Thomas Piketty

Supplementary Materials to be published on line

Appendix A. Sources of data

A1. Tax-based income distribution information

Table A1.A. Algeria. Data sources of the distribution of income from the income tax

1932	République Française. Gouvernement Général de l'Algérie. Direction des Services Économiques. Service Central de Statistique. Annuaire Statistique de l'Algérie année 1933
1933	République Française. Gouvernement Général de l'Algérie. Direction des Services Économiques. Service Central de Statistique. Annuaire Statistique de l'Algérie année 1934
1934	République Française. Gouvernement Général de l'Algérie. Direction des Services Économiques. Service Central de Statistique. Annuaire Statistique de l'Algérie année 1935
1935	République Française. Gouvernement Général de l'Algérie. Direction des Services Économiques. Service Central de Statistique. Annuaire Statistique de l'Algérie année 1936
1936	République Française. Gouvernement Général de l'Algérie. Direction des Services Économiques. Service Central de Statistique. Annuaire Statistique de l'Algérie année 1937
1937	République Française. Gouvernement Général de l'Algérie. Direction des Services Économiques. Service Central de Statistique. Annuaire Statistique de l'Algérie année 1938
1938	Gouvernement Général de l'Algérie. Direction Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. 1939-1947. Nouvelle Série. Premier Volume. Années 1939-1947.
1939	Gouvernement Général de l'Algérie. Direction Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Années 1939-1947. Nouvelle Série. Premier Volume. Années 1939-1947.
1940	Gouvernement Général de l'Algérie. Direction Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Années 1939-1947. Nouvelle Série. Premier Volume. Années 1939-1947.
1941	Gouvernement Général de l'Algérie. Direction Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Années 1939-1947. Nouvelle Série. Premier Volume. Années 1939-1947.
1942	
1943	
1944	
1945	
1946	Gouvernement Général de l'Algérie. Direction Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Premier Volume. Années 1939-1947.
1947	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Deuxième Volume. 1948-1949.
1948	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Deuxième Volume. 1948-1949. P. 271. Tableau XXVI
1949	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Troisième Volume. 1950.
1950	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Quatrième Volume. 1951.
1951	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Cinquième Volume. 1952.
1952	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Sixième Volume. 1953.
1953	Gouvernement Général de l'Algérie. Direction Générale des Finances. Service de Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Septième Volume. 1954.
1954	Ministère de l'Algérie. Direction Générale des Affaires Économiques et de l'Industrialisation. Service de la Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Neuvième Volume. 1956-1957.
1955	Délégation Générale du Gouvernement de l'Algérie. Secrétariat Général Adjoint pour les Affaires Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Dixième Volume. 1958.
1956	
1957	Délégation Générale du Gouvernement de l'Algérie. Secrétariat Général Adjoint pour les Affaires Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Algérie. Nouvelle Série. Onzième Volume. 1959.

Table A1.B. Tunisia. Data sources of the distribution of income from the income tax

1946	Régence de Tunis. Protectorat Français. Secrétariat Général du Gouvernement Tunisien. Service Tunisien des Statistiques. Annuaire Statistique de la Tunisie. Année 1948. p. 134.
1947	Régence de Tunis. Protectorat Français. Secrétariat Général du Gouvernement Tunisien. Service Tunisien des Statistiques. Annuaire Statistique de la Tunisie. Année 1948. p. 134.
1948	Régence de Tunis. Protectorat Français. Secrétariat Général du Gouvernement Tunisien. Service Tunisien des Statistiques. Annuaire Statistique de la Tunisie. Année 1949/50. p. 128.
1949	
1950	
1951	
1952	Royaume de Tunis. Protectorat Français. Présidence du Conseil. Service Tunisien des Statistiques. Annuaire Statistique de la Tunisie 1953. Nouvelle série. Sixième volume. p. 129.
1953	Royaume de Tunis. Protectorat Français. Présidence du Conseil. Service Tunisien des Statistiques. Annuaire Statistique de la Tunisie 1954. Édition 1955. p. 121.
1954	Royaume de Tunisie. Présidence du Conseil. Service Tunisien des Statistiques. Annuaire Statistique de la Tunisie 1955. Édition 1956. p. 130.
1955	République Tunisienne. Secrétariat d'État à la Présidence. Sous-Secrétariat d'État au Plan. Service des Statistiques. Annuaire Statistique de la Tunisie 1956. Édition 1957. p. 146.
1956	République Tunisienne. Secrétariat d'État à la Présidence. Sous-Secrétariat d'État au Plan. Service des Statistiques. Annuaire Statistique de la Tunisie 1957-1958. p. 159.

Table A1.C. Cameroon. Data sources of the distribution of income from the income tax

1945	Ministère de la France d'Outre Mer. Service Colonial des Statistiques. Annuaire Statistique du Cameroun. Volume I. 1936-1945.

Table A1.D. Indochina. Data sources of the distribution of income from the income tax

Year	Source
1920	Gouvernement Général de l'Indochine. Direction des Affaires Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Premier Volume. Recueil de Statistiques relatives aux années 1913 à 1922. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1927.
1921	Gouvernement Général de l'Indochine. Direction des Affaires Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Premier Volume. Recueil de Statistiques relatives aux années 1913 à 1922. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1927.
1922	Gouvernement Général de l'Indochine. Direction des Affaires Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Premier Volume. Recueil de Statistiques relatives aux années 1913 à 1922. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1927.
1923	
1924	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale de l'Indochine. Annuaire Statistique de l'Indochine. Deuxième Volume. 1923 à 1929. Imprimerie d'Exrême-Orient. Hanoi 1931.
1925	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale de l'Indochine. Annuaire Statistique de l'Indochine. Deuxième Volume. 1923 à 1929. Imprimerie d'Exrême-Orient. Hanoi 1931.
1926	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale de l'Indochine. Annuaire Statistique de l'Indochine. Deuxième Volume. 1923 à 1929. Imprimerie d'Exrême-Orient. Hanoi 1931.
1927	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale de l'Indochine. Annuaire Statistique de l'Indochine. Deuxième Volume. 1923 à 1929. Imprimerie d'Exrême-Orient. Hanoi 1931.
1928	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale de l'Indochine. Annuaire Statistique de l'Indochine. Deuxième Volume. 1923 à 1929. Imprimerie d'Exrême-Orient. Hanoi 1931.
1929	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale de l'Indochine. Annuaire Statistique de l'Indochine. Deuxième Volume. 1923 à 1929. Imprimerie d'Exrême-Orient. Hanoi 1931.
1930	Gouvernement Général de l'Indochine. Inspection Générale des Mines et de l'Industrie. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Troisième Volume. Recueil de Statistiques. 1930-1931. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1932.
1931	Gouvernement Général de l'Indochine. Direction des Affaires Économiques et Administratives. Bureau de la Statistique Générale. Annuaire Statistique de l'Indochine. Quatrième Volume 1931-1932. Imprimerie d'Exrême-Orient. Hanoi 1933.
1932	Gouvernement Général de l'Indochine. Direction des Affaires Économiques et Administratives. Bureau de la Statistique Générale. Annuaire Statistique de l'Indochine. Quatrième Volume 1931-1932. Imprimerie d'Exrême-Orient. Hanoi 1933.
1933	Gouvernement Général de l'Indochine. Direction des Affaires Économiques et Administratives. Bureau de la Statistique Générale. Annuaire Statistique de l'Indochine. Quatrième Volume 1931-1932. Imprimerie d'Exrême-Orient. Hanoi 1933.
1934	Gouvernement Général de l'Indochine. Direction des Affaires Économiques et Administratives. Bureau de la Statistique Générale. Annuaire Statistique de l'Indochine. Sixième Volume. 1934-1935-1936. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1937.
1935	Gouvernement Général de l'Indochine. Direction des Affaires Économiques et Administratives. Bureau de la Statistique Générale. Annuaire Statistique de l'Indochine. Sixième Volume. 1934-1935-1936. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1937.
1936	Gouvernement Général de l'Indochine. Direction des Affaires Économiques et Administratives. Bureau de la Statistique Générale. Annuaire Statistique de l'Indochine. Sixième Volume. 1934-1935-1936. Imprimerie d'Exrême-Orient-Éditeur. Hanoi 1937.
1937	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Huitième Volume 1937-1938. Imprimerie d'Exrême-Orient. Hanoi.
1938	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Huitième Volume 1937-1938. Imprimerie d'Exrême-Orient. Hanoi.
1939	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Neuvième Volume 1939-1940. Imprimerie d'Exrême-Orient. Hanoi.
1940	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Neuvième Volume 1939-1940. Imprimerie d'Exrême-Orient. Hanoi.
1941	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Dixième Volume 1941-1942. Imprimerie d'Exrême-Orient. Hanoi.
1942	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine. Dixième Volume 1941-1942. Imprimerie d'Exrême-Orient. Hanoi.
1943	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine.Onzième Volume 1943-1946. Imprimerie d'Exrême-Orient. Hanoi.
1944	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine.Onzième Volume 1943-1946. Imprimerie d'Exrême-Orient. Hanoi.
1945	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine.Onzième Volume 1943-1946. Imprimerie d'Exrême-Orient. Hanoi.
1946	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine.Douzième Volume 1947-1948. Imprimerie d'Exrême-Orient. Hanoi.
1947	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine.Douzième Volume 1947-1948. Imprimerie d'Exrême-Orient. Hanoi.
1948	Gouvernement Général de l'Indochine. Direction des Services Économiques. Service de la Statistique Générale. Annuaire Statistique de l'Indochine.Douzième Volume 1947-1948. Imprimerie d'Exrême-Orient. Hanoi.
1949	Vietnam Institut de la Statistique et des Études Économiques du Viêtnam. État du Viêtnam. Ministère de l'Économie Nationale. Annuaire Statistique du Viêtnam. Premier volume. 1949-1950. pp.274-275.
1950	Institut de la Statistique et des Études Économiques du Viêtnam. État du Viêtnam. Ministère de l'Économie Nationale. Annuaire Statistique du Viêtnam. Premier volume. 1949-1950. pp.274-275.

Table A1.E. Availability of tax tabulations, coverage, and reporting of taxable income

Year 19..   19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57
Algeria
Tunisia
Cameroon
Cochinchina   Saigon only
Annam
Tonkin
Cambodia
Laos

Black : All taxpayers; dark grey: Only Europeans and Chinese; light grey : Only Europeans; blank : no data

Year 19..   19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57
Algeria
Tunisia
Cameroon
Cochinchina
Annam
Tonkin
Cambodia
Laos

Black : Income totals for each income bracket; dark grey: Total amount of declared income is known; light grey : No income totals; blank : no data

A1.F. Imputation of missing taxable income

Algeria
1932-41: We estimate $Y_k = N_k[\tilde{y}_k + 0.3(\tilde{y}_{k+1} - \tilde{y}_k)]$, for k=0,…, K, while setting $\tilde{y}_0 = 0$ and $\tilde{y}_{K+1} = 2\tilde{y}_K$. 1946: We use mean incomes of 1947 (same brackets).

Tunisia
1956: Brackets are the same as in 1955 except the two last ones, until then we use mean incomes of 1955. For the last but one we estimate $Y_{K-1} = N_{K-1}[\tilde{y}_k + 0.3(\tilde{y}_K - \tilde{y}_{K-1})]$, and calibrate the last one so that the two merged display the same mean income as in 1955.

Indochina
Cochinchina
1920-21 & 1926-35: Income is capped in the last bracket; we use instead 1937 ratio to $\tilde{y}_K$. 1937-39 & 1944-45: Total income above $\tilde{y}_1(=3,600)$ is known. We write $Y_k = N_k[\tilde{y}_k + \alpha(\tilde{y}_{k+1} - \tilde{y}_k)]$ for k=0, …, K, while setting $\tilde{y}_0 = 0$ and $\tilde{y}_{K+1} = 2\tilde{y}_K$. α is then calibrated to fit total income above $\tilde{y}_1$. 1940 & 1947: Total income is known (excepting non-Europeans below $\tilde{y}_1$); in 1947, as it seems that the general lump-sum rebate (12,000 piasters) was discounted from the total, we make a correction and also adjust income brackets. Idem 1937-39. 1942-43: We import α from 1940 and apply $Y_k = N_k[\tilde{y}_k + \alpha(\tilde{y}_{k+1} - \tilde{y}_k)]$. 1949: We import α from 1947 and apply $Y_k = N_k[\tilde{y}_k + \alpha(\tilde{y}_{k+1} - \tilde{y}_k)]$, while also adjusting income brackets with the lump-sum rebate of 12,000 piasters.

Tonkin
1921: We use mean incomes of 1922 (same brackets). 1921-37: Income is capped in the last bracket, but not in 1938-39. We use instead 1938 ratio to $\tilde{y}_K$. 1940-41: Total income is known (excepting non-Europeans below $\tilde{y}_1$). Idem Cochinchina 1940. 1942-43: For each bracket, we use 1941 (same brackets) mean income.

Annam
1922-37: Income is capped in the last bracket. We use instead 1938 ratio to $\tilde{y}_K$. 1938-39: Idem Cochinchina 1937-39. 1940-41: Idem Cochinchina & Tonkin. 1942: Idem Tonkin.

Cambodia
1920-21: As brackets are the same as in 1923, we use 1923 mean incomes. 1923-36: Income is capped in the last bracket. We use instead (estimated) 1938 ratio to $\tilde{y}_K$. 1936: We use mean incomes of 1935 (same brackets). 1937-39: Idem Cochinchina. 1940-41: Idem Cochinchina & Tonkin. 1942-45: We import α from 1941 and apply $Y_k = N_k[\tilde{y}_k + \alpha(\tilde{y}_{k+1} - \tilde{y}_k)]$.

Laos
1938-39: Idem Cochinchina. 1940-42: We use mean incomes of 1939 (same brackets).

A2. Population of French colonies

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Ministère de la France d'Outre-Mer, 1947. *Annuaire Statistique du Cameroun 1938-1945,volume I*. Paris : Imprimerie Nationale.

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Frankema, Ewout and Morten Jerven. 2014. Writing History Backwards and Sideways: Towards a Consensus on African Population, 1850-present. *Economic History Review*. 67(4): 907-931.

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CICRED, 1974b. *La population de la Tunisie*.

A3. National income of French colonies

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Direction des Affaires économiques et du Plan du ministère de la France d'outre-mer, 1955. "Essai de détermination du revenu national des principaux territoires d'outre-mer en 1947 et en 1953", Paris.

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A4. Legal sources about the income taxes in French colonies

Algeria

République française, Gouvernement général de l'Algérie, 1928. « Circulaire relative à l'établissement des impôts sur les revenus (Circulaire n°102 du 30 avril 1928) ». Direction des services financiers, Service des contributions directes. Alger : Ancienne Maison Bastide-Jourdan et Jules Carbonel.

République française, Gouvernement général de l'Algérie, 1935. « Recueil des textes réglementaires concernant l'assiette de l'impôt sur le revenu, en Algérie – Année 1935. » Alger : Imprimeries « La Typo-Litho » et Jules Carbonel réunies.

République française, Gouvernement général de l'Algérie, 1938. « Recueil des textes réglementaires concernant l'assiette de l'impôt sur le revenu, en Algérie – Année 1938. » Alger : Imprimerie Imbert.

Gouvernement général de l'Algérie, 1947 and 1955. *Code algérien des impôts directs et taxes assimilées*. Imprimerie officielle du gouvernement général de l'Algérie.

Délégation générale du gouvernement en Algérie, 1959. *Code algérien des impôts directs et taxes assimilées*, Imprimerie officielle.

Tunisia

Louët, Th., 1927. *Les impôts directs en Tunisie*, Thèse pour le doctorat en droit de l'Université de Lyon, Tunis : Société Anonyme de l'Imprimerie Rapide.

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Journal Officiel du Cameroun, various dates, 1937-1941.

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To-Van Qua, Secrétaire du gouvernement de la Cochinchina, 1930. « Répertoire des textes réglementant les divers impôts directs et taxes assimilées perçus en Cochinchina », Saigon : Imprimerie de l'Union Nguyen Van-Cua.

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Journal Officiel de l'Indochine, various dates, 1930-1957.

Appendix B. Control totals for population and income

Table B1.A. Algeria. Income control, population control and price index 1932-1957

	#Taxpayers in statistics	Tax units (control population)								Taxpayers /Tax units	Total income		Average income per tax unit		Price index
		North Algeria				All Algeria (including South territories)					North Algeria	All Algeria	North Algeria	All Algeria	
		Europeans	Muslims	Total	Europeans in Total	Europeans	Muslims	Total	Europeans in Total						
		(000)	(000)	(000)	(%)	(000)	(000)	(000)	(%)	(%)	million current francs	million current francs	1937 francs	1937 francs	1937=100
		Estimated as 60% of population aged 15+ to reflect the population of married couples and single adults													
	(1)	(2)	(3)	(4)	(5)=(2)/(4)	(6)	(7)	(8)	(9)=(6)/(8)	(10)=(1)/(4)	(11)	(12)	(13)	(14)	(15)
1932	70 448	366	1 962	2 328	15,7	368	2 187	2 556	14,4	3,03	6 316	6 615	2 979	2 842	91,06
1933	71 069	371	2 004	2 374	15,6	374	2 233	2 607	14,3	2,99	6 268	6 568	3 020	2 882	87,40
1934	63 366	376	2 046	2 421	15,5	379	2 280	2 659	14,2	2,62	6 038	6 330	2 900	2 768	85,99
1935	54 784	381	2 089	2 470	15,4	384	2 328	2 713	14,2	2,22	5 636	5 911	2 746	2 622	83,12
1936	56 120	386	2 132	2 519	15,3	390	2 377	2 767	14,1	2,23	5 793	6 079	2 792	2 666	82,39
1937	62 273	387	2 146	2 534	15,3	391	2 397	2 788	14,0	2,46	7 095	7 452	2 800	2 673	100,00
1938	72 854	389	2 160	2 549	15,2	392	2 417	2 809	14,0	2,86	8 409	8 839	2 840	2 708	116,18
1939	71 840	390	2 175	2 564	15,2	393	2 437	2 831	13,9	2,80	8 966	9 432	2 709	2 581	129,09
1940	74 856	391	2 189	2 580	15,2	395	2 458	2 852	13,8	2,90	9 760	10 276	2 422	2 306	156,20
1941	102 428	392	2 203	2 595	15,1	396	2 478	2 874	13,8	3,95	11 004	11 596	2 507	2 386	169,11
1942		393	2 218	2 611	15,1	397	2 499	2 896	13,7		14 319	15 101	2 347	2 232	233,65
1943		394	2 232	2 627	15,0	398	2 520	2 918	13,6		19 375	20 452	2 164	2 056	340,80
1944		396	2 247	2 643	15,0	399	2 541	2 940	13,6		28 903	30 534	2 265	2 151	482,79
1945		397	2 262	2 659	14,9	401	2 562	2 963	13,5		38 327	40 526	2 302	2 185	626,08
1946	73 895	398	2 277	2 675	14,9	402	2 584	2 986	13,5	2,48	59 468	62 934	2 578	2 444	862,32
1947	57 944	399	2 292	2 691	14,8	403	2 605	3 008	13,4	1,93	89 333	94 622	2 670	2 530	1243,13
1948	95 690	400	2 307	2 707	14,8	404	2 627	3 031	13,3	3,16	156 034	165 416	2 812	2 662	2049,94
1949	95 638	404	2 357	2 761	14,6	409	2 672	3 080	13,3	3,10	198 074	209 722	2 858	2 713	2509,50
1950	85 168	408	2 408	2 817	14,5	413	2 718	3 130	13,2	2,72	208 234	220 200	2 922	2 780	2530,16
1951	85 274	412	2 461	2 873	14,4	417	2 764	3 181	13,1	2,68	237 668	251 000	2 901	2 767	2851,42
1952	112 608	416	2 514	2 931	14,2	421	2 811	3 232	13,0	3,48	281 358	296 750	3 252	3 110	2952,13
1953	106 619	420	2 569	2 989	14,1	426	2 859	3 285	13,0	3,25	290 185	305 650	3 369	3 230	2881,04
1954	123 165	424	2 625	3 049	13,9	430	2 908	3 338	12,9	3,69	308 263	324 250	3 590	3 449	2816,12
1955	144 932	428	2 701	3 129	13,7	434	2 992	3 426	12,7	4,23	328 221	345 400	3 816	3 667	2749,02
1956		431	2 780	3 211	13,4	437	3 079	3 516	12,4		364 070	383 300	4 140	3 980	2738,75
1957	179 003	434	2 842	3 276	13,3	440	3 148	3 589	12,3	4,99	423 255	445 750	4 317	4 151	2992,48

Table B.1B. Tunisia. Income control, population control and price index 1937-1956

	# Taxpayers in statistics				Tax Units (control population)				Taxpayers/Tax units			Total income			Average income			Price index
	Tunisians-non Europeans	Europeans	Total	Europeans in Total	Tunisians-non Europeans	Europeans	Total	Europeans in Total	Tunisians-non Europeans	Europeans	Total	Tunisians-non Europeans million current francs	Europeans million current francs	Total million current francs	Tunisians-non Europeans 1937 francs	Europeans 1937 francs	Total 1937 francs	1937=100
				%	(000)	(000)	(000)	%	%	%	%							
					Estimated as 60% of population aged 15+ to reflect the population of married couples and single adults													
	(1)	(2)	(3)	(4)=(2)/(3)	(5)	(6)	(7)	(8)=(6)/(7)	(9)=(1)/(5)	(10)=(2)/(6)	(11)=(3)/(7)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1937					893,1	91,6	984,7	9,3						2 150			2 183	100,00
1938					909,0	92,8	1 001,8	9,3						2 651			2 278	116,18
1939					925,2	94,1	1 019,3	9,2						2 654			2 135	121,99
1940					941,7	95,1	1 036,7	9,2						2 966			2 018	141,74
1941					958,4	96,1	1 054,6	9,1						3 606			1 774	192,77
1942					975,5	97,2	1 072,7	9,1						5 108			1 768	269,31
1943					992,9	98,3	1 091,2	9,0						5 009			1 280	358,60
1944					1 010,6	99,5	1 110,1	9,0						7 975			1 614	445,06
1945					1 028,6	100,7	1 129,3	8,9						10 859			1 859	517,35
1946	5 010	20 082	25 092	80,0	1 046,9	101,7	1 148,6	8,9	0,5	19,7	2,2	13 056	7 075	20 131	1 533	8 551	2 154	813,59
1947	8 402	34 265	42 667	80,3	1 064,9	102,1	1 167,1	8,8	0,8	33,5	3,7	18 656	10 109	28 765	1 599	9 033	2 250	1 095,65
1948	6 194	27 544	33 738	81,6	1 083,3	102,6	1 185,8	8,7	0,6	26,8	2,8	30 169	16 347	46 516	1 700	9 725	2 394	1 638,52
1949					1 101,9	103,0	1 204,9	8,6				39 603	21 459	61 062	1 688	9 783	2 380	2 128,94
1950					1 120,8	103,5	1 224,3	8,5				42 580	23 072	65 652	1 746	10 247	2 465	2 175,71
1951					1 140,1	103,9	1 244,1	8,4				50 136	27 166	77 302	1 734	10 307	2 450	2 535,73
1952	9 123	33 053	42 176	78,4	1 159,7	104,4	1 264,1	8,3	0,8	31,7	3,3	59 671	32 333	92 004	1 916	11 530	2 710	2 685,98
1953	9 936	34 156	44 092	77,5	1 179,7	104,9	1 284,5	8,2	0,8	32,6	3,4	61 290	33 210	94 500	1 954	11 911	2 767	2 659,05
1954	10 020	35 242	45 262	77,9	1 200,0	105,3	1 305,3	8,1	0,8	33,5	3,5	64 479	34 938	99 417	2 090	12 902	2 962	2 571,17
1955	14 239	39 702	53 941	73,6	1 220,6	105,8	1 326,4	8,0	1,2	37,5	4,1	71 626	38 810	110 436	2 235	13 977	3 172	2 625,03
1956	22 719	37 235	59 954	62,1	1 241,6	106,2	1 347,8	7,9	1,8	35,0	4,4	78 825	42 711	121 536	2 174	13 768	3 088	2 919,85

Table B.1C. Cameroon. Income control and population control 1945

	# Taxpayers in statistics				Tax units (control population)				Taxpayers/Tax units			Total income			Average income per tax unit			Price index
	Non-Europeans	Europeans	Total	Europeans in Total	Non-Europeans	Europeans	Total	Europeans in Total	Non-Europeans among Non-Europeans	Europeans among Europeans	Total	Non-Europeans	Europeans	Total	Non-Europeans	Europeans	Total	
				(%)	(000)	(000)	(000)	(%)	(%)	(%)	(%)	million current francs	million current francs	million current francs	1937 francs	1937 francs	1937 francs	1937=100
					Estimated as 60% of population aged 15+ to reflect the population of married couples and single adults													
	(1)	(2)	(3)	(4)=(2)/(3)	(5)	(6)	(7)	(8)=(6)/(7)	(9)=(1)/(5)	(10)=(2)/(6)	(11)=(3)/(7)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1945	9 697	1 203	10 900	11,0	1 194	1,71	1 196	0,14	0,81	70,5	0,91	2 270	281	2 551	547	47 302	615	347,6

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Table B.1D. Vietnam. Income control, population control and price index 1920-1948

	# Taxpayers in statistics		Tax Units (control population)				Taxpayers/Tax units		Total income		Average income			Price index
	Europeans	Total	Non Europeans	Europeans	Total	Europeans/Total	Europeans among Europeans	Total	Total	Europeans	Total	Europeans	Non Europeans	
			(000)	(000)	(000) Estimated as 60% of population aged 15+ to reflect the population of married couples and single adults	%	%	%	million current piasters	million current piasters	1937 francs	1937 francs	1937 francs	1937=100
	(1)	(2)	(3)	(4)	(5)	(6)=(4)/(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(18)
1920			8 741	7,79	8 749	0,09			497		652			87,07
1921	7 815	7 815	8 823	8,41	8 831	0,10	100	0,10	522	40	621	50 270	573	95,24
1922			8 913	8,96	8 922	0,10			509		604			94,56
1923			9 009	9,52	9 019	0,11			529		634			92,52
1924			9 112	10,10	9 122	0,11			523		610			93,88
1925			9 224	10,70	9 235	0,12			530		602			95,24
1926	9 195	9 195	9 341	11,32	9 352	0,12	100	0,11	542	47	583	41 786	533	99,32
1927	9 517	9 517	9 461	11,96	9 473	0,13	100	0,11	596	50	586	38 953	537	107,48
1928	10 670	10 670	9 584	12,61	9 597	0,13	100	0,12	580	57	549	41 029	495	110,20
1929	10 902	10 902	9 710	13,28	9 723	0,14	100	0,12	617	61	539	39 242	486	117,69
1930	11 272	11 272	9 771	13,24	9 784	0,14	100	0,13	583	67	476	40 676	422	125,17
1931	11 132	11 132	9 842	13,03	9 855	0,13	100	0,13	479	64	402	40 462	349	121,09
1932	10 469	10 469	9 925	12,94	9 938	0,13	100	0,12	429	58	385	39 611	333	112,24
1933	10 634	10 634	10 010	12,85	10 022	0,13	100	0,12	405	55	398	42 240	345	101,36
1934	10 005	10 005	10 085	12,75	10 098	0,13	100	0,11	385	51	403	42 300	350	94,56
1935	10 185	10 185	10 219	12,64	10 232	0,12	100	0,11	406	48	452	43 723	399	87,76
1936			10 337	12,52	10 349	0,12			443		495			86,39
1937	11 015	11 551	10 451	11,99	10 463	0,11	100	0,12	611	55	584	45 639	533	100,00
1938	11 152	11 744	10 560	12,13	10 572	0,11	100	0,12	745	56	628	41 454	581	112,24
1939	11 272	12 039	10 669	12,26	10 681	0,11	100	0,12	846	64	616	40 292	570	128,57
1940	11 901	13 461	10 865	12,38	10 878	0,11	100	0,13	903	78	567	43 324	519	146,26
1941			11 061	12,49	11 073	0,11			947		534			160,01
1942	10 978	11 740	11 254	12,57	11 266	0,11	100	0,12	1 120	67	485	25 922	456	205,01
1943			11 445	12,60	11 458	0,11			1 409		457			268,77
1944			11 636	12,57	11 649	0,11			1 708		355			412,52
1945			11 495	12,46	11 507	0,11			1 830		275			577,53
1946			11 648	11,78	11 660	0,10			7 427		327			1 950,11
1947			11 730	10,89	11 741	0,09			12 685		344			3 137,68
1948			11 845	9,74	11 854	0,08			17 492		349			4 225,25

Appendix C. Additional tables

Table C1. Samir Amin's social table for Algeria and Tunisia for 1955

	Algeria		Tunisia	
	Number (000)	Income per head (000 francs)	Number (000)	Income per head (000 francs)
Muslims				
Farmers				
Small	210	60	80	90
Medium	210	200	105	150
Large	50	560	45	450
Agricultural workers				
Permanent	100	100	25	120
Non-permanent	500	40-60	110	60-70
Blue-collar workers	225	150	118	160
White-collar workers	90	270	35	300
Heads of small businesses & junior executives	135	270	53	300
Senior executives & managers	7-8	1000-1500	2-3	1000-1500
Non-muslims				
Farmers	33	2800	6	2800
Blue-collar workers	88	400	16	400
White-collar workers	80	530	21	530
Heads of small businesses and junior executives	110	1150	31	1150
Senior executives & managers	27	3000	8	3000

Source: Samir Amin, 1970. Pages 62 & 65 for rural households, pages 70-71 & 73-74 for urban.

Table C2. Distribution of income among Tunisian Muslims according to household survey 1957

Income brackets (francs)	Rural				Urban				Total			
	N (000)		Income (billions)		N (000)		Income (billions)		N (000)		Income (billions)	
0 to 20000	1666	54%	21	26%	348	23%	6,3	7%	2014	43%	27,3	15%
20000 to 30000	605	73%	15	44%	222	37%	5,6	13%	827	61%	20,6	27%
30000 to 40000	305	83%	11	57%	93	43%	3,3	16%	398	70%	14,3	35%
40000 to 50000	177	89%	8	67%	117	51%	5,3	22%	294	76%	13,3	43%
50000 to 60000	101	92%	6	74%	118	59%	6,5	28%	219	81%	12,5	50%
60000 to 70000	69	94%	4	79%	55	62%	3,6	32%	124	84%	7,6	54%
70000 to 80000	41	96%	2	82%	73	67%	5,5	38%	114	86%	7,5	58%
80000 to 90000	27	96%	2	84%	46	70%	3,9	42%	73	88%	5,9	62%
above 90000	110	100%	13	100%	457	100%	55	100%	567	100%	68	100%
Total	3101		82		1529		95		4630		177	

Source: Samir Amin, 1966. Page 122 for rural households, page 159 for urban households.
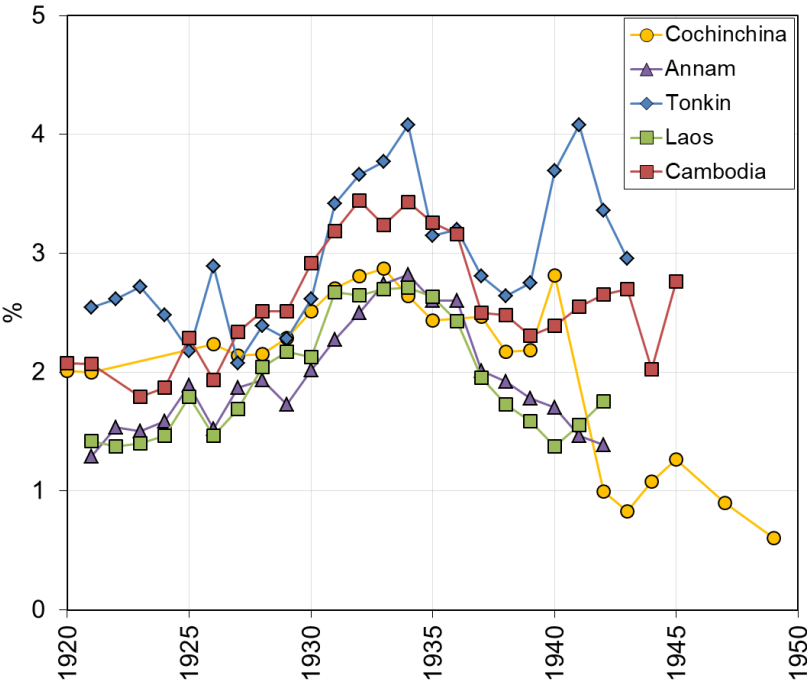
Appendix D. Additional figures

Figure D1. Top income 0.01% shares
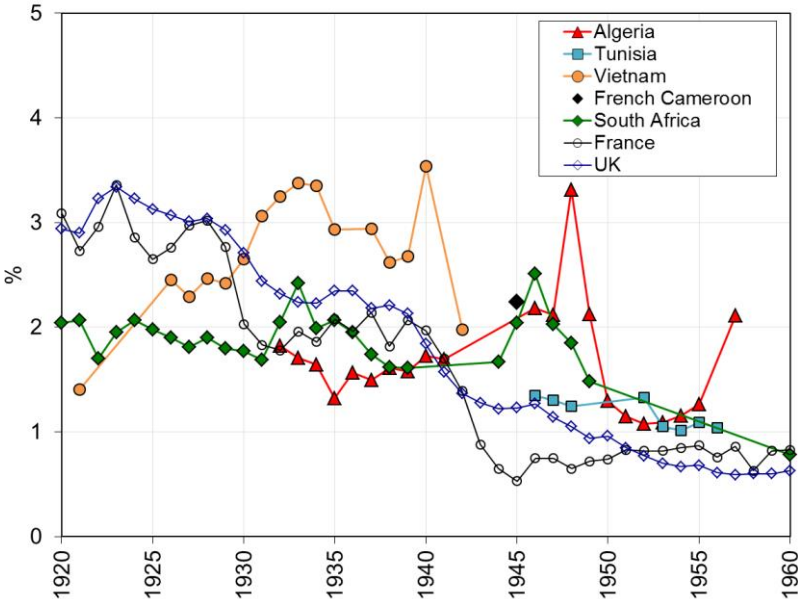
Sources: Table 2A (Algeria), Table 2B (Tunisia), Table 2C (French Cameroon), Table 2D (Indochina), and WID.world (France (Piketty, 2001, 2007), UK (Atkinson, 2005, 2007a), South Africa (Alvaredo and Atkinson, 2010).

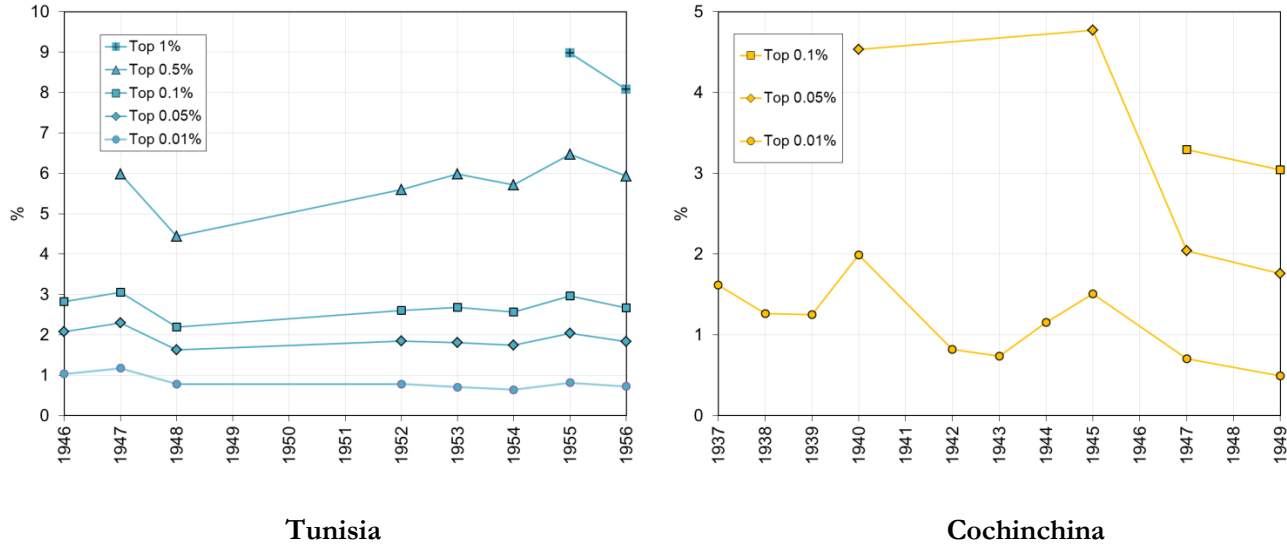### Figure D2. Top 0.01% shares in the five colonies of French Indochina

Sources: Authors' calculations.

Figure D3. Ethnic composition of the top 1% shares in Tunisia and South Africa

Tunisia

South Africa
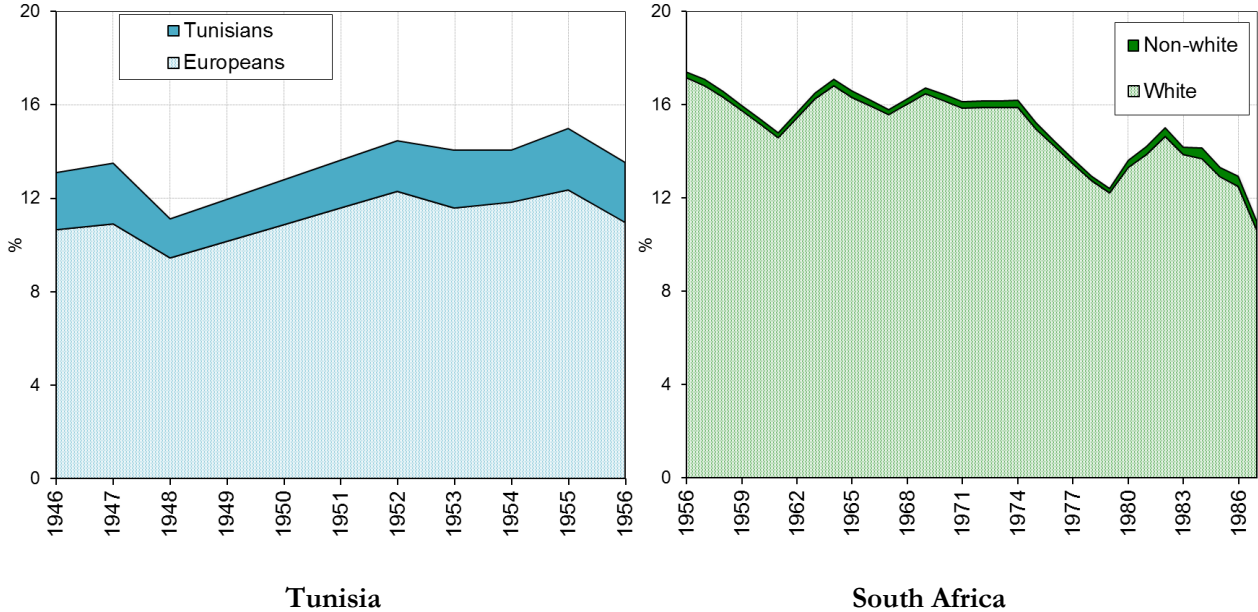
Sources: Table 2B (Tunisia) and Alvaredo and Atkinson (2010).

Figure D4. Top shares among autochthons in Tunisia and Cochinchina

Tunisia

Cochinchina

Sources: Table 2B (Tunisia) and Authors' computations.