Endogenous Colonial Institutions
Lessons from fiscal capacity building in British and French Africa, 1880-1940[*]

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Abstract

The economic and historical literature is divided about the role of metropolitan identity for the design of colonial institutions. We explore the importance of exogenously imposed metropolitan policies and endogenous economic and geographic conditions on the comparative development of colonial tax systems in British and French Africa. Fiscal capacity building constituted the financial backbone of the colonial state formation process. Using colonial government budget accounts we construct PPP-adjusted comparisons of per capita government revenue, and we analyze the source composition of taxes. We find that local geographies and indigenous responses to commercial opportunities were key determinants for the design of local colonial tax systems and that typically 'British' or 'French' tax policy blueprints are hard to decipher.

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JEL Codes: E62, H11, H20, N25, N27, O10

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1. Introduction

The economic and historical literature is divided about the extent to which metropolitan identity mattered for long-term institutional development in former European colonies. Some scholars emphasize metropolitan identity as a key determinant of the nature of colonial institutions, often regarding British rule as having been more 'benign' because of its emphasis on liberal trade policies, secure property rights institutions and solid rule of law, better fostering welfare development in the former British colonies than elsewhere. Others have subordinated the impact of metropolitan identity to that of endogenous factors, arguing that the nature of colonial institutions was primarily shaped by local economic and geographic conditions.

This paper assesses the relative importance of exogenous and endogenous forces for colonial institutional design by exploring the comparative development of colonial tax systems in British and French Africa. As fiscal capacity constituted the financial backbone of the colonial state, it offers an excellent lens to study comparative processes of colonial state formation. In recent years, economists and economic historians have increasingly come to explore the relationship between fiscal capacity building, state formation and long-term institutional and economic development (Frankema 2010, 2011; Booth 2007; Besley and Persson 2009, 2010; Grafe and Irigoin 2012). This study contributes to this literature, being the first to exploit historical records of colonial state finances for *a systematic comparison* of tax systems between British and French Africa.[1]

Our comparative analysis focuses on two dimensions of taxation: 1) the absolute per capita levels of government revenue, and 2) the source composition of government revenue, including non-tax revenues such as railway and government monopoly receipts. We explore these dimensions in a dynamic framework, using state budget data from the early stages of African colonial states onwards up to 1940.[2] We take 1940 as the end point to exclude the grave impact of the Second World War and its aftermath (decolonization) on the design of colonial fiscal systems. We solve the currency conversion problem – a major obstacle to this type of comparative analysis – by

[1] Although Mkandawire (2010) insightfully compares the different post-colonial African tax systems from a 'colonial legacies' lens (identifying different kinds of colonial economies as the root cause) the study does not provide new empirical material for the colonial period, nor does it contrast colonial identities.
[2] We take 1940 as the end point of our analysis to avoid a discussion about the grave impact of the Second World War and its aftermath (decolonization) on the design of colonial fiscal systems.

constructing government purchasing power parity (PPP) benchmarks based on the comparative unit costs of hiring different types of (government) personnel, thus avoiding the use of volatile pound-franc exchange rates in the interwar era, which, as we will show, would bias the comparison. We exploit the collected wage and salary data to convert nominal series of government revenue into real terms.

Our main findings are that local geographies and indigenous responses to commercial opportunities were key determinants of colonial tax system design and that typically 'British' or 'French' policy blueprints are hard to decipher. All African colonial governments preferred to tax international trade and resorted to direct taxes when the potential of trade taxes was constrained. We also find a positive correlation between the length of colonial rule and per capita revenue levels. If there is anything that set the French approach apart from the British it was the former's strategy to make state formation possible in the vast African hinterlands by creating federations, in which fiscal resources could be redistributed from the coastal centers towards the landlocked peripheries. The French implemented tax systems in territories that were economically less viable than the 'plums' that the British had managed to 'harvest' during the scramble for Africa, and compensated this by raising tax pressures. The French imposed labor corvée programs on a wider scale than the British and maintained these for a longer period of time, not because of a difference in policy principles, but as a specific response to different fiscal opportunities.

The paper proceeds as follows. Section 2 discusses the different views in the literature on the role of metropolitan identities in colonial institutional design. Section 3 outlines the main differences and similarities between British and French colonial rule in Africa. Section 4 explores if, and how, these differences are reflected in British and French African colonial revenue levels during the 1880-1940 era. Section 5 explores the source composition of colonial government budgets. Section 6 offers a brief discussion of forced labor. Section 7 concludes.

2. Colonial policy objectives and institutional design

The idea that the British bequeathed the world with a more favorable colonial legacy than any of the continental European powers has received widespread support. Some scholars have argued that income differences between North and South America should be attributed to British liberal trade policies and solid property rights institutions as opposed to Spanish protectionism and native labor exploitation (Landes 1998; North, Summerhill, and Weingast 2000). Others, in turn, have interpreted current inter-African income differentials as an long-term outcome of the more favorable legal and political institutions that were implemented in British Africa (Bertocchi and Canova 2002; La Porta et al. 1999). Another group of scholars has connected the higher literacy and school enrolment rates that were achieved in British Africa, to higher governance quality, higher rates of growth and higher welfare standards in former British African areas today (Brown 2000; Bolt and Bezemer 2009; Cogneau 2003).[3] From a slightly different angle, the influence of Protestantism – dominant in British ruled areas – has been linked to a more productive 'Weberian' work ethic and the rise of liberal democracy (Landes 1998; Woodberry 2012). In his appraisal of British imperialism, Niall Fergusson (2002) points to the British devotion to abolish the slave trade and lauds the role of British sports in the creation of 'the modern world.'

Many of these arguments fit seamlessly into a longstanding tradition of Victorian scholarship that has internalized Britain's self-perceived role as caretaker of the 'uncivilized' world. Another way of looking at this is that the British, being the worlds' supreme naval power in the long nineteenth century simply managed to conquer those areas of the globe that were more promising in terms of commercial development and cultural assimilation at the outset. Proponents of the view that colonial institutions were essentially a product of local conditions have thus downplayed the role of metropolitan identity. Stanley Engerman and Kenneth Sokoloff (1997; 2000; 2005), for example, have stressed the role of geography (soil, location, climate and mineral deposits) and native population densities to explain variations in economic and political development across the Americas. Ewout Frankema (2012) has argued that the spread of missionary schooling in Africa was primarily determined by the indigenous reception of Christianity and the ensuing 'Africanization' of the mission, but that this does not necessarily mean that the British adopted more beneficial education policies. Elliott Green has argued in a

[3] The British African education advantage has been attributed to liberal British policies regarding the development of Christian missionary activities, which stimulated denominational competition for the establishment of mission schools (Callego and Woodberry 2010; Cogneau and Moradi 2011).

similar vein that the size and shape of African states was the outcome of endogenous forces, as both the size as well as arbitrarily drawn territorial borders are negatively related to the magnitude of pre-colonial trade and comparative population densities (Green 2012).

The diverging views on the importance of metropolitan policy principles are closely intertwined with another academic debate that highlights different views on the *comparative agency* of colonial administrations. In fiscal matters this concerns both the setting of tax *rates* as well as the selection of revenue *sources*. In particular the imposition of 'flat' native hut, head, and poll taxes have been understood as central tools for a broad range of policy objectives. Crawford Young, for example, considers the head tax as "leading the way" in achieving the "requirements of revenue and hegemony" (Young 1994). Richard Reid, attributes the creation of a head tax system to similar objectives, maintaining that the imposition of a capitation tax, "the most visible, and the most dreaded manifestation of conquest," was not just "absolutely fundamental to the functioning of the colonial state," but in many ways even its "key purpose" (Reid 2009). Mahmood Mamdani has interpreted the British African fiscal system as a central touchstone in the state's hegemony imperative – that is, its cultural hegemony imperative. Mamdani sees the tax collection structure as an integral part of the colonial state's 'decentralized despotism' with built-in incentives for corruption and abuse. As such, the fiscal system became one of "pervasive revenue hunger all along the chain of command," with widespread efforts "to tax or impose fees on anything that moved" (Mamdani 1996).

Other scholars have emphasized how direct taxes were intended to fulfill the objectives of integrating Africans into the money economy (Wrigley 1992; Munro 1984; Berg 1977; Freund 1984; Davis and Huttenback 1988), to push them onto the labor market (Young 1994), and to 'civilize' the colonized subject (Conklin 1997), such as instilling them with Victorian bourgeois values as to create a 'governable person' (Bush and Maltby 2004). The implicit assumption of such interpretations is that colonial states possessed the agency to create fiscal regimes to their liking.

Not all historians of Africa though have maintained a similar understanding of the colonial state as a powerful 'crusher of rocks'.[4] Jeffrey Herbst, for example, has pointed out that interpretations of the colonial state as an absolutist apparatus strongly overestimate actual European power and the scope of their hegemonic project. The colonizers, "whatever their formal theory of rule," he argues, were "generally unsuccessful in changing cost structures to allow for a systematic expansion of authority into the rural areas" (Herbst 2000). According to Herbst low population densities made the borders of pre-colonial African states fluid because the marginal costs of collecting taxes (coercion, monitoring, logistics) exceeded the potential revenues. Europeans may have fixated African borders on maps, but they didn't 'control' the hinterland areas. Leigh Gardner maintains that the structure of African colonial administrations remained a "skeleton" and observes that the description of British rule as a "gimcrack effort by two man and a dog" may not have been too far from reality (Gardner 2010b). Finally, several scholars have asserted that the assumption of colonial governments bearing near-absolute power entails a Eurocentric perception of colonial history, denying the critical importance of African agency (Austin 2007; Frankema 2012).

So the relevant question for this study is not whether the British and French employed their own 'style' of colonization or not: they of course did so. The key question is to which extent their different policy approaches were *decisive* for the design and development of colonial tax systems and the answer to this question will depend, amongst others, on the degrees of freedom the French and British colonial governments enjoyed to fulfill their fiscal policy objectives.

3. British and French 'indirect rule' in Africa

British-French differences in governance structures in Africa evolved in the context of different global imperial aspirations. For France, the incorporation of West Africa meant a logical southward extension of their colonial backyard in Algeria. They set out to conquer a vast unified territory which was envisioned as part of a great French African empire (Wesseling 2003). The British geographic orientation was not primarily directed

[4] The metaphor Young uses to describe the African colonial state is 'Bula Matari,' which means 'he who crushes rocks.' (1994: 1).

towards Africa. South Africa and Egypt were strategically too important to leave to the French or the Germans, but in the bigger British scheme of global politics, the remainder of the continent was a marginal area that was neither needed to sustain British industrial power, nor vital to British commercial interests. For the British, India and the New World dominions were the focal point of foreign policy efforts (Davis and Huttenback 1988; Pakenham 1992). These different perspectives underpinned different styles of 'indirect rule' in colonial Africa.

The French colonial bureaucracy was more deeply involved in colonial affairs in at least two ways. First, they aspired to exert control through a more fine-grained administrative structure than the British, putting in place a top-down structure of governance layers reaching out to the community level, with a larger number of administrative (not necessarily French!) government officials. Second, the colonial state engaged more intensively in the training of an African elite bureaucracy to strengthen local administrations and develop an, albeit very minimal, structure of local representation at the central government level. The British 'arm's length style' of indirect rule, granted greater degrees of freedom to local chiefs, with fewer layers of official bureaucracy, and a more cost-efficient organization of the colonial state. The British approach required an avoidance of intervention in local affairs that were not essential to sustain their 'gate-keeping state' (Cooper 2002). According to Crowder (1970, 212-4) this constituted a difference in kind rather than degree. While in the British system the relationship between political officers and native authorities was advisory, in the French system chiefs were subordinates.

The French ideals of *assimilation* and *association* reflected the ambition to instill French political and cultural values, customs and administrative institutions in the subjected peoples of the overseas territories (*Les Outre-Mer*) with the ultimate objective of their full integration into French society (Manning 1988; Conklin 1997). The British had a less sharply delineated idea of the nature and aims of their presence in Africa. The distinction between dominions – containing substantial proportions of white settlers –, directly ruled colonies, indirectly ruled colonies and so-called protectorates reveals a more tailored approach towards empire building. Dominions enjoyed rights of selfgovernance that colonies not had, while protectorates received military protection from the British but were no formal part of the British Commonwealth.

Both the French and the British strove to make their colonies fiscally independent as quickly as possible, although they did not always accomplish that. One way to enhance fiscal autonomy was to integrate African territories into encompassing administrative units, be it in the form of a custom union, a federation or a unified state. The model used in French West Africa (*l'Afrique Occidentale Française,* hereafter: AOF) in 1904 was copied in the formation of French Equatorial Africa (*l'Afrique Équatoriale Française*, hereafter: AEF) in 1910, and both were derived, in turn, from the experience in French Indochina (Conklin 1997). The AOF and AEF were made up of respectively eight and four colonies which themselves were subdivided into districts (*cercles*). On average there were around 15 districts in each colony, of which the larger ones were subdivided into smaller sub-districts, constituting a fourth administrative layer. The government officials were, amongst others, responsible for the population count, the provision of local maps and the supervision of infrastructural construction. At the bottom of this hierarchy were the African chiefs who were responsible for collecting taxes and recruiting labor (Coquery-Vidrovitch, 1969; Huillery, 2009).

In British Africa, the Union of South Africa, formed in 1910, set the example, but its function as a role model was more limited, because the federation came into being quite late and because of the unusual dominance of the white settler community, which had been present from the seventeenth century onwards. The Central African Federation, consisting of self-governing dominion Southern-Rhodesia and the British protectorates Northern Rhodesia and Nyasaland was only established in 1953. The fiscal integration of Uganda and Kenya never went further than a customs union that was established in 1917, and which was joined by Tanganyika in 1927. The attempt to force these three countries into an actual federal structure was only made upon independence and was short-lived.

These British-French distinctions give rise to two hypotheses.

1) Given the French ambitions for centralized and uniform administrative structures and the more pragmatic approach of the British, we expect to find more uniformity in the tax systems in French Africa than in British Africa.

2) To finance the desired degree of state *dirigisme* the French were more inclined to maximize tax revenue than the British. The French needed the tax revenues to finance their more extensive state apparatus, while revenue maximization was at odds with British principles of indirect rule.

What could go against these hypotheses, however, is that the local opportunities and constraints to taxation in the British and French areas differed so substantially that they subjected policy ambitions to local conditions. After all, the partition of Africa was a rather unequal political and military process, as the British were at the height of their imperial power in the closing decades of the 19th century and, more than any other nation in the world, had the military and diplomatic means to pre-select. Jane Burbank and Frederick Cooper state that the British "ended up with the plums", while France "got what it could – much of it arid lands on the edge of the Sahara plus choicer morsels along the coast" (2010, p. 315).[5] The British had good reasons to be choosier than other European powers, reluctant as they were to overstretch their military capacities by spreading military resources too thin. Obviously, the more densely populated areas with a revealed propensity to engage in commercial relationships and less organized resistance against colonial encroachment were favored most. In these areas taxation was easier to organize than elsewhere via custom duties, sparing the costs of more fine-grained structures of direct tax collection in distant hinterlands. Moreover, trade taxes were less regressive because the burden mainly fell on consumers of import (luxury) commodities. This raises an additional hypothesis:

3) The British held a larger proportion of commercially viable areas in Africa, where they could tax trade to finance the colonial state formation process, and the head start they enjoyed in several parts of West Africa allowed them to develop their fiscal and administrative capacities more easily.

[5] The geographical demarcations of the Gambia and Senegal are illustrative: the British ensured the best part of the region around the Gambia River, while the French obtained the much larger portion around it.

4. Comparing per capita revenue levels

We conducted our empirical investigation in four steps. First, we collected archival data on colonial budget accounts for the years 1911, 1920, 1925, 1929, 1934 and 1937. The year 1911 captures the early stages of the French West and East African federations, which were established in 1904 and 1910 respectively.[6] The year 1937 is the latest benchmark before the outbreak of the Second World War. The years 1925, 1929 and 1934 offer the possibility to study the effects of the Great Depression on tax revenues and 1920 serves as an early post-WWI benchmark.

Second, we circumvented the potentially distorting effect of exchange rate volatility by constructing colonial government PPPs based on four different categories of personnel expenditure in British West Africa and French West Africa: 1) lower-ranked clerk salaries; 2) African public school teacher salaries; 3) urban unskilled worker day wages, and; 4) skilled construction worker day wages (carpenters). The first two categories are to reflect the relative costs of hiring government staff, especially in the lower ranks of civil service where most of the personnel expenses were made. The latter two categories are to reflect the relative costs of government investments in public works, which took another big portion of colonial state expenditure.

Table 1 compares the PPP estimates with the actual exchange rate. The table shows that a PPP-adjusted comparison of per capita government revenue will yield significantly different results from an exchange rate-based comparison, particularly for the interwar era when the British and French went on and off gold at different times. We thus adopt the PPPs for conversion purposes. For details on sources, data and calculation procedure we refer to Appendix 1.

[6] Although the French West African federation was formally created in 1895, its existence did not become an effective reality until 1904. Whereas the diplomatic struggle about the continent's partition had already been concluded in the course of the 1880s and 1890s, the actual conquest of the African territories was still to be completed at the turn of the century. Manning distinguishes these stages as "diplomatic partition" and "actual conquest." (Manning 1988) 18. Huillery (2009: 180) states that "we can consider that an administrative occupation has been in effect in the major part of the territory from approximately 1910–1960".

Table 1: French-British exchange rates, colonial government PPPs and related price index of public and private sector labor, 1911-1937

	1911	**1920**	**1925**	**1929**	**1934**	**1937**
Government PPP (FA/BA)	31.3	27.6	48.7	94.2	82.3	76.6
Exchange rate Ffr/£	25.1	52.0	101.3	124.0	76.7	122.2
Labour price index FA (1911 = 100)	100.0	99.5	284.8	379.3	363.2	472.8
Labour price index BA (1911 = 100)	100.0	115.9	199.5	128.5	139.2	206.4

Sources: see Appendix 1.

Third, we singled out the individual colony shares in the collective revenues of the federal states (AOF and AEF, Kenya-Uganda customs union) to make revenue levels comparable at the colony level. The French colonies were organized along a layer of three to four budgets, depending on whether or not the colony was part of a federation. The French *Ministry of the Colonies budget* (*Ministère des Colonies*) relied on metropolitan taxes and its funds were used for military expenses only. This was not very different from the British system, where metropolitan tax-payers supported the expensive British navy, while African colonies co-financed standing armies in the region.[7] The *federal budget* was primarily composed of trade taxes (customs duties) and consumption taxes, which were destined for: (1) the administrative costs at the federal level, (2) the larger public works projects (mainly railroads), and (3) the allocation of subsidies colonies. The *local budgets* of the individual colonies were mainly based on direct taxes, such as head taxes, property taxes, or other local trading taxes. Finally, there were *annexed budgets* to either the federal or local budgets in which the revenue and expenditures from the railways and major ports were documented.

In order to compare gross per capita public revenue levels on a cross-colony basis we re-allocated the shares of the federal and annexed budget towards the areas of origin (the colonies), thus filtering out the federal effect and creating 'adjusted' budgets for the French federal colonies that include the same components as the British colonial revenue budgets. The magnitude of these transfers were quite substantial. In 1925 about 40% of the Senegalese adjusted budget had originally been transferred to the AOF. For Mauritania, the picture is very different. It received 2,575,000 francs in AOF subsidies,

[7] Similar to British Africa, metropolitan contributions to the French colonial budgets, other than general defense expenses, were negligible before 1940 with the exception of the initial years of colonial occupation.

but it did not transfer any customs duties (as there were none), nor did it have income from railways. The non-adjusted budget of Mauritania consisted for 36% of federal subsidies. This exercise clearly shows that the French African federations were redistributive (from rich to poor), although we need to keep in mind that the net-contributors also received a large share of the federal expenditures and will have economically benefitted from, for instance, infrastructural investments in the hinterland enhancing trade and labour mobility.

And finally, we computed *per capita* estimates of government revenue. There are strong indications that early French African population censuses grossly exaggerated the number of people in the AOF and AEF, whereas the early British colonial censuses had a tendency to underestimate populations (Kuczynski 1948, 1949). To avoid the potential bias of the per capita comparison we assumed a common fixed rate of population growth to inform backward projections of population from a 1950 benchmark as suggested by Manning (2010).[8]

Table 2 shows total Gross Public Revenue (GPR hereafter) per head of the population for the British and French African colonies for all benchmark years in pound sterling (£).[9] Figure 1 groups these GPR per capita estimates into four categories, distinguishing colonial power (British-French) and geographical location (coastal-landlocked). We highlight three findings.

First, the cross-colony variation in per capita government revenue levels in French Africa is larger than in British Africa. Of course, in both empires one can find 'richer' and 'poorer' colonial administrations, but the revenue gap between Senegal and Niger, both part of the AOF, or Gabon and Tchad (both part of the AEF), is about a factor five larger in 1925 than the gap between Kenya and Nyasaland that constitute the 'richest' and 'poorest' states in British East Africa. The coefficients of variation for the four regions are: 1.05 (AOF). 0.76 (AEF), 0.48 (BWA) and 0.54 (BEA).

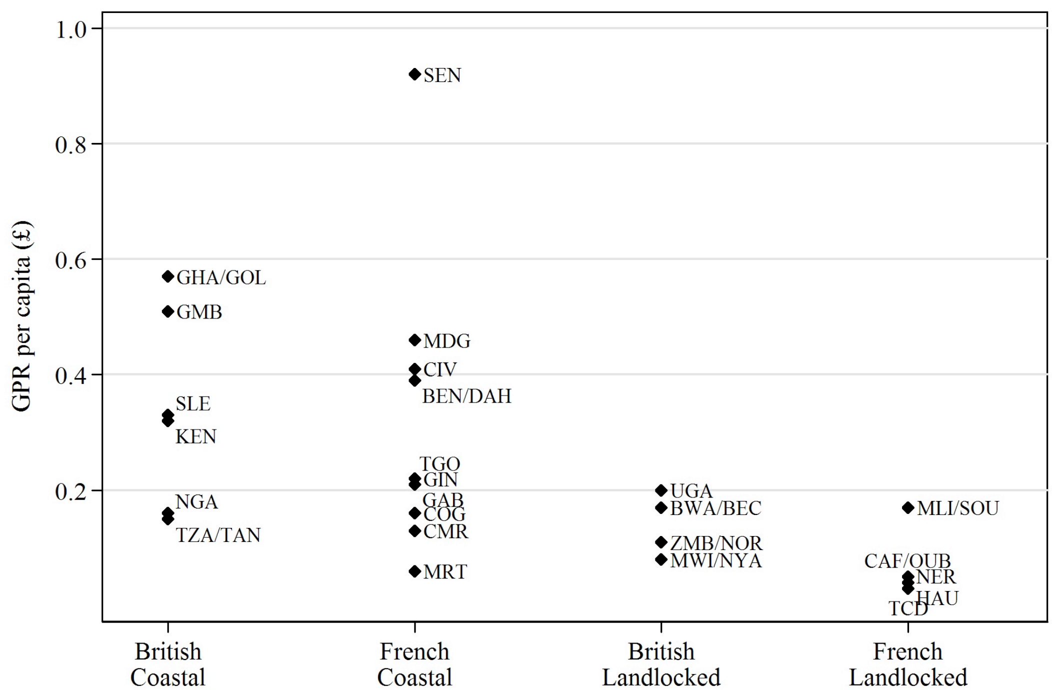
Second, location matters. Figure 2 shows the 1925 GPR per capita levels in real 1911 pound sterling (£) comparing four categorical groups: British coastal colonies, French coastal colonies, British landlocked colonies and French landlocked colonies.

[8] We adjusted the population figures for Togo and Cameroon to account for their post-WWI split up.

[9] Note that GPR solely consists of 'ordinary' revenue (in other words, regular posts of income) and that extraordinary revenue elements have been excluded.

Figure 1 illustrates that, although the British generated more government revenue on average in both coastal and landlocked countries, the primary distinction in terms of revenue generating capacity is the coastal-landlocked distinction, rather than a British-French distinction. In 1925, no single landlocked colonial state was capable of raising revenue beyond £0.40, whereas the majority of coastal colonies had revenue levels (far) exceeding £0.50. This picture of colonies with better access to long-distance trade, having higher per capita state revenue levels, becomes even more pronounced if we would include the data for outliers such as French Somaliland (Djibouti, an African city-state), Réunion and Mauritius (two sugar islands) with GPR per capita levels of respectively £0.95, £1.45 and £2.26.

Figure 1: GPR per capita in BA and FA landlocked and coastal colonies, 1925



<u>Notes</u>
The label of the observations is their current three-digit country code. In cases where the colonial name differed from the current name, both have been used. For convenience sake, the codes are: BEN/DAH = Benin/Dahomey; BWA/BEC = Botswana/Bechuanaland; CAF/OUB = Central African Republic/Oubangui-Chari; CMR = Fr. Cameroun; CIV = Côte d'Ivoire; COG = Fr. Congo; DJI/SOM = Djibouti/Fr. Somaliland; GAB = Gabon; GHA/GOL = Ghana/Gold Coast; GIN = Guinée; GMB = Gambia; BFA/HAU = Burkina Faso/Haute Volta; KEN = Kenya; MDG = Madagascar; MLI/SOU = Mali/French Soudan; MRT = Mauritanie; MUS = Mauritius; MWI/NYA = Malawi/Nyasaland; NER = Niger; NGA = Nigeria; REU = Réunion; SEN = Sénégal; SLE = Sierra Leone; SOM = Br. Somaliland; TCD = Tchad; TGO = Togoland; TZA/TAN = Tanzania/Tanganyika; UGA = Uganda; and ZMB/NOR = Zambia/Northern Rhodesia.

Table 2: Gross Public Revenue per capita in BA and FA Africa for six benchmarks years (in 1911 £)

French Africa	1911	1920	1925	1929	1934	1937
AOF						
Côte d'Ivoire	0.08	0.26	0.28	0.41	0.18	0.25
Dahomey	0.26	0.41	0.39	0.41	0.31	0.38
Guinée	0.25	0.36	0.22	0.23	0.23	0.27
Haute Volta	n.a.	0.05	0.04	0.06	n.a.	n.a.
Mauritanie	0.04	0.11	0.06	0.08	0.10	0.04
Niger	0.02	0.05	0.03	0.05	0.05	0.05
Sénégal	0.25	0.68	0.92	0.83	0.56	0.97
Soudan	0.09	0.24	0.17	0.20	0.15	0.19
non-weighted av.	*0.14*	*0.27*	*0.26*	*0.28*	*0.23*	*0.31*
pop. weighted av.	*0.12*	*0.25*	*0.25*	*0.27*	*0.21*	*0.29*
Co. variation	*0.57*	*0.79*	*1.05*	*1.43*	*0.78*	*0.82*
AEF						
Moyen-Congo	0.22	0.27	0.16	0.26	0.40	n.a.
Gabon	0.24	0.23	0.21	0.54	0.65	n.a.
Oubangui-Chari	0.04	0.07	0.05	0.11	0.12	n.a.
Tchad	0.02	0.06	0.03	0.04	0.05	n.a.
non-weighted av.	*0.13*	*0.16*	*0.11*	*0.24*	*0.30*	*n.a.*
pop. weighted av.	*0.07*	*0.11*	*0.07*	*0.13*	*0.17*	*n.a.*
Co. variation	*0.89*	*0.71*	*0.76*	*0.93*	*0.90*	*n.a.*
FA other:						
Cameroun	n.a.	0.16	0.13	0.13	0.12	0.12
Madagascar	0.24	0.52	0.46	0.49	0.49	0.47
Somaliland	0.61	1.54	0.53	1.45	1.28	1.64
Togo	n.a.	n.a.	0.22	0.31	0.28	0.24
Réunion	0.35	1.73	1.31	1.38	1.52	1.72

British Africa	1911	1920	1925	1929	1934	1937
BWA:						
Gambia	0.44	0.79	0.51	0.66	0.52	0.58
Gold Coast	0.29	0.58	0.57	0.49	0.33	0.51
Nigeria	0.15	0.18	0.16	0.14	0.10	0.15
Sierra Leone	0.31	0.42	0.33	0.27	0.19	0.27
non-weighted av.	*0.30*	*0.49*	*0.39*	*0.39*	*0.29*	*0.38*
pop. weighted av.	*0.18*	*0.35*	*0.22*	*0.20*	*0.14*	*0.21*
Co. variation	*0.40*	*0.52*	*0.48*	*0.59*	*0.65*	*0.53*
BEA:						
Bechuanaland	0.17	0.22	0.17	0.26	0.17	0.23
Kenya	0.17	0.50	0.32	0.30	0.23	0.32
N. Rhodesia	0.06	0.08	0.11	0.20	0.21	0.21
Nyasaland	0.05	0.11	0.08	0.10	0.09	0.11
Uganda	0.05	0.10	0.20	0.23	0.19	0.14
Tanganyika	n.a.	n.a.	0.15	0.20	0.14	0.20
non-weighted av.	*0.10*	*0.20*	*0.17*	*0.22*	*0.17*	*0.20*
pop. weighted av.	*0.10*	*0.28*	*0.19*	*0.23*	*0.18*	*0.20*
Co. variation	*0.64*	*0.86*	*0.54*	*0.35*	*0.32*	*0.41*
BA other:						
Mauritius	2.15	3.38	2.26	1.60	1.71	1.36

Sources: see appendix.

Table 3: Relationship between metropolitan identity and GPR per capita (1925)

Dependent variable	Gross Public Revenue per capita (log)				
	1925				Pooled regressions
	(1)	(2)	(3)	(4)	(5)
British indicator	0.412	0.429	0.249	0.246	0.121
	(0.409)	(0.286)	(0.219)	(0.214)	(0.202)
Coastal indicator		1.552***	1.189***	1.189***	1.212***
		(0.292)	(0.200)	(0.223)	(0.171)
Years pacified			0.031***	0.028*	0.030**
			(0.005)	(0.009)	(0.011)
Lowest monthly rainfall				0.002	-0.009
				(0.008)	(0.008)
Average max humidity				-0.002	-0.005
				(0.019)	(0.017)
Island indicator				0.330	0.008
				(0.597)	(0.623)
Number obs.	28	28	28	28	156
R^2	0.04	0.55	0.82	0.82	0.78

Notes: The geographical variables are taken from Nunn 2008. Lowest monthly rainfall is the average millimeters of rain fallen in the driest month of the year. The average humidity is in percentage and refers to afternoon humidity in the hottest month of the year. The specification of column 5 is a pooled regression over all available observations from the years 1911, 1920, 1925, 1929, 1934, and 1937. It includes year-fixed effects, and the standard errors are clustered by colony. As a robustness check, we used different sets of geographical variables, which does not lead to any substantial change in the coefficients on the British and coastal dummies, or the years pacified variable

A simple OLS and pooled OLS regression (table 3) reveals that those differences are statistically significant while controlling for other geographical variables. Column 1 compares the British with the non-British colonies, showing that there is a difference (the coefficient indicates an effect of 0.41 log points), but that this difference is not statistically significant. In column 2 a dummy for the coastal colonies is added which is both economically and statistically significant: a coastal colony is associated with a 4.7 times (1.55 log points) greater level of per capita revenue. In column 3 we extend the specification with a variable that captures the length of the period of pacified rule, that is the number of years up to 1940 without major revolts.[10] This variable too is statistically significant and the coefficient suggests a meaningful economic effect: each 10 years of pacification are associated with 31% (0.031 log points per year) increase in revenue. The specification shown in column 4 indicates that the results are not sensitive to the inclusion of geographical control variables. In the pooled regression, which is shown in column 5, we use all of the years available, and obtain the same results.

We can conclude from this exercise that being a coastal colony suggests an at least 3.3 times (1.21 log points) greater revenue level, whereas the coefficients of being a British colony imply increased state revenue by no more than 54% (0.41 log points). In other words, regardless of statistical significance, a comparison of the magnitudes of the coefficients on the British and coastal indicators highlights that the *first order difference* is between coastal or landlocked colonies.

Third, when adopting a dynamic perspective we observe that part of the initial variation between the British and French African regions fades away over time as GPR per capita levels converge. This is not so surprising if one considers that the pre-WWI differences in colonial state formation had been vast, not only between but also within both empires. Although the partition of Africa occurred in a relatively confined period of time, the actual pace and mode with which these territories were integrated into the British and French African empires differed greatly, and thus also produced large initial differences in the development of fiscal systems. Around 1900 BWA trade with Europe was, in per capita terms, more than ten times as large as BEA trade. Similarly, parts of the AOF and especially Senegal, where colonial ties originated from the 1850s onwards, were much better integrated in the Atlantic economy than the AEF.

The relatively low yields of the French hinterland areas such as Niger, Chad, the French Soudan and Haute Volta, were compensated by higher revenues in the richer coastal areas such as Senegal, Côte d'Ivoire and Gabon, to such levels that in the 1930s French revenue levels were (in constant £1911) comparable with those in British Africa as a whole. Part of this catching up effort, however, was due to a considerable drop in GPR in British Africa, where the depression of the early 1930s eroded the customs

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[10] The term 'pacified' was used by colonial administrations at the time, and is therefore of course not a neutral one.

revenues that had been so profitable in the 1920s. The colonial government of the AEF, which was very weakly integrated in the imperial economy until the completion of the Congo-Ocean railway in 1934, was the only administration that managed to raise GPR per capita during the 1930s.

5. Direct and indirect taxes

When probing into the source composition of African colonial taxes we can add two more findings. First, the sources of taxation *within* imperial territories varied much more than one would expect from a 'uniform' imperial administration. Table 4 presents the main sources of taxation, grouping countries together with comparable source compositions. It shows that the budgets of countries with large per capita export revenues, consisted of a relatively large percentage share of trade taxes and a much smaller contribution from direct taxation. Second, and building on this pattern, there was a strong negative correlation between per capita GPR and the proportion of direct taxes, *independent of metropolitan identity*. Figure 3 presents this relationship for the 1925 benchmark year and the appendix figures 1a-f show that it holds for all benchmark years.

Direct taxes in Africa consisted of taxes directly levied on persons, households, huts, cattle or land, although the latter were rare. Apart from being a potential source of resistance, direct taxes were also relatively inefficient. The French and the British African authorities had to rely upon native chiefs for the collection of direct taxes. In the early colonial years, the commission rate was up to 20% in the French African colonies.[11] According to Sara Berry, this strategy of outsourcing tax collection to native chiefs served a dual purpose. Not only was it a means to cut costs, it was also an effective way to integrate existing local power structures into the administrative framework of the new state. As such, she argues, nearly all of the colonial administrations at least practiced some form of indirect rule, regardless whether they had "articulated it as their philosophy or imperial governance." (Berry 1993, 25).

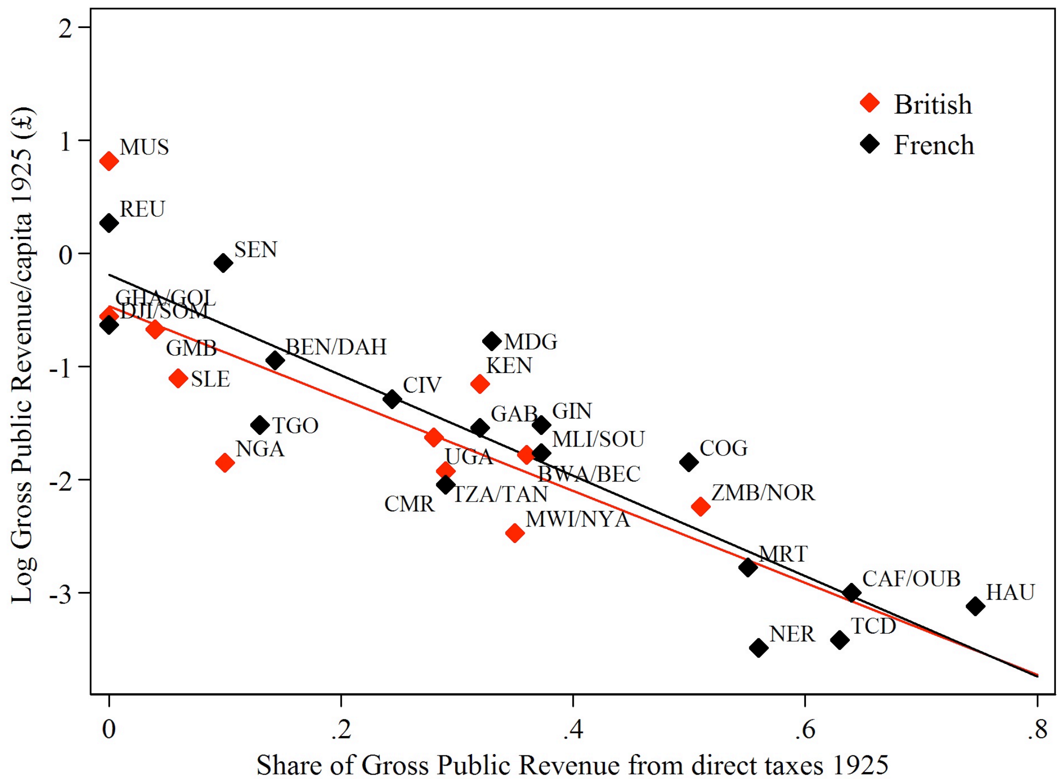
[11] Evidently, this number, which has bee derived from the colonial statistical yearbooks, is only a lower bound estimate of how much chiefs could possibly earn through their position. It is well known that the system was highly conducive to corruption, even more so in places where established, but resistant chiefs had been replaced by ones more supportive of the colonial state (Gardner 2010a; Van Zwanenberg and King 1975). Manning's (1998, 84) observation that "many of them built significant fortunes," is thus not surprising

Table 4: Per capita export values (£) and percentage share of tax source in GPR in three different groups of African colonies, for 1911 and 1925

	1911					1925				
	export/ capita (£)	trade taxes	direct taxes	railways revenues	other	export/ capita (£)	trade taxes	direct taxes	railway revenues	other
coastal colonies, per capita exports > £ xx										
Senegal		0.29	0.53	0.18	0.00		0.42	0.10	0.15	0.33
The Gambia		0.79	0.05	0	0.16		0.63	0.04	0	0.33
Gold Coast		0.60	0	0.22	0.18		0.59	0	0.27	0.14
Fr. Somaliland		0.90	0	0	0.10		0.94	0	0	0.06
Mauritius		0.34	0	0	0.66		0.48	0	0	0.52
Reunion		0.65	0.06	0	0.29		0.83	0	0	0.17
coastal colonies, per capita exports < £ xx										
Nigeria		0.51	0.16	0	0.33		0.42	0.10	0.34	0.14
Madagascar		0.18	0.50	0	0.32		0.27	0.33	0	0.40
Tanganyika	n.a	n.a	n.a	n.a	n.a		0.27	0.29	0	0.44
Mauritania		0	0.64	0	0.36		0	0.55	0	0.45
Cameroun	n.a	n.a	n.a	n.a	n.a		0.25	0.29	0.34	0.12
French Congo		0.59	0.36	0	0.05		0.33	0.50	0	0.17
Guinee		0.37	0.25	0.31	0.07		0.27	0.38	0.22	0.13
Gabon		0.54	0.25	0	0.21		0.40	0.32	0	0.28
Dahomey		0.78	0.14	0	0.08		0.61	0.14	0	0.25
Cote d'Ivoire		0.42	0.28	0.11	0.19		0.36	0.24	0.12	0.28
Togo	n.a	n.a	n.a	n.a	n.a		0.58	0.13	0.14	0.15
Sierra Leone		0.53	0.12	0	0.35		0.57	0.06	0.25	0.12
Kenya		0.14	0.24	0.47	0.15		0.28	0.32	0	0.40
Landlocked colonies										
Niger		0	0.75	0	0.25		0	0.56	0	0.44
Chad		0.00	0.83	0.00	0.17		0.06	0.63	0	0.31
Haute Volta	n.a	n.a	n.a	n.a	n.a		0.05	0.75	0	0.20
French Soudan		0.07	0.61	0.12	0.20		0.37	0.14	0.24	0.25
Uganda		0.06	0.61	0	0.33		0.35	0.28	0	0.37
Nyasaland		0.22	0.52	0	0.26		0.26	0.35	0	0.39
Oubangui-Chari		0	0.87	0	0.13		0.11	0.64	0	0.25
Bechuanaland		0.23	0.58	0	0.19		0.25	0.36	0	0.39
N. Rhodesia		0.18	0.69	0	0.13		0.22	0.51	0	0.27

Sources: see appendix.

Figure 3: Gross Public Revenue (GPR)/capita (log) vs. share GPR from direct taxation in 1925



Notes

The label of the observations is their current three-digit country code. In cases where the colonial name differed from the current name, both have been used. For convenience sake, the codes are: BEN/DAH = Benin/Dahomey; BWA/BEC = Botswana/Bechuanaland; CAF/OUB = Central African Republic/Oubangui-Chari; CMR = Fr. Cameroun; CIV = Côte d'Ivoire; COG = Fr. Congo; DJI/SOM = Djibouti/Fr. Somaliland; GAB = Gabon; GHA/GOL = Ghana/Gold Coast; GIN = Guinée; GMB = Gambia; BFA/HAU = Burkina Faso/Haute Volta; KEN = Kenya; MDG = Madagascar; MLI/SOU = Mali/French Soudan; MRT = Mauritanie; MUS = Mauritius; MWI/NYA = Malawi/Nyasaland; NER = Niger; NGA = Nigeria; REU = Réunion; SEN = Sénégal; SLE = Sierra Leone; SOM = Br. Somaliland; TCD = Tchad; TGO = Togoland; TZA/TAN = Tanzania/Tanganyika; UGA = Uganda; and ZMB/NOR = Zambia/Northern Rhodesia.

Figure 3 indicates, however, that in places where the state was able to raise sufficient revenue from trade taxation, governments were happy to drop the purpose of integrating local power structures via fiscal policies. The resembling slopes of the fitted lines, underline that both metropolitan powers preferred to tax trade. No direct native taxes were implemented in the Gold Coast, British and French Somaliland, Reunion, and

Mauritius.[12] Southern Nigeria did not have a direct capitation levy until the early 1930s.[13] Although Sierra Leone and the Gambia, both colonies where the government could count on significant trade revenues, did have a flat native tax, the rates of these – unlike the ones in French West Africa - did not change over time.

Custom duties were collected at a central point of entry or exit, and were fairly easy to monitor and enforce. Smuggling and other forms of tax evasion were problematic, but the overall administrative burden was much lower, especially in times and places lacking physical infrastructures and tiny bureaucracies. In general, imports were more heavily taxed than exports, so that the burden of taxation fell partly on European manufacturers exporting to Africa and partly on that particular class of Africans that possessed sufficient cash to consume imported European commodities. These were usually not the poorest strata of society and certainly not the subsistence farmers in the hinterlands who produced, bartered and consumed largely outside the commercial colonial economy. Part of the resistance against trade taxes was thus voiced by metropolitan businesses and trade companies, rather than by African taxpayers. Export taxes did of course meet with resistance from local farmers or European firms in control of mineral deposits or tropical cash crop plantations.

Those colonies that did implement direct taxes did so, at least partly, out of pure necessity, as trade taxes simply did not generate enough revenue. When direct taxes were still insufficient to make ends meet, the metropole would step in as a last resort, and this is a pattern we observe both in British and French Africa, albeit to differing degrees. Whereas the British did this occasionally in the early years of colonial state formation, and especially in East Africa (Gardner 2010b), the French had to do this repeatedly to accommodate structural deficits. For example, Paris transferred metropolitan grants to the

[12] In 1851 a hut tax had been imposed in the Gold Coast. However, this one was abandoned in less than a decade (1861), because it was highly unsuccessful in terms of the revenue it yielded. Hence, the experiment had already been long abandoned before the partition of Africa (and the period of effective colonial rule this study is concerned with).

[13] There was a difference between the fiscal strategies in Northern and Southern Nigeria. As pointed out by Bush and Maltby (2004), the Southern part, which was "far more prosperous and economically active," had no direct taxes until after WWI. Even when an income tax was imposed in the 1920s, incomes under £30 per year were exempted from this tax. Taking contemporary wage rates into account, which fluctuated between 12 and 17 pence per day in the 1920s, the annual income of an unskilled urban labourer would exceed £22 per year, assuming a 6-day workweek. It was not until 1937 that the lower income exception was abolished, and that the native income tax thus became applicable to all inhabitants of Southern Nigeria.

AEF annually until the 1930s, grants which often were up to 25-30% of the revenue raised locally.[14] The AOF, in contrast, received nothing. Catherine Coquery-Vidrovitch (1977: 190) points out that with a total trade value of 146 million francs for the AEF in 1920, vis-à-vis 1.2 billion francs for the AOF, the equatorial federation indeed was "the poor relation among the French colonies."

Figure 3 thus supports the hypothesis that there was little systematic difference between the way the British and the French designed their fiscal systems. Where the colonial state had the opportunity to refrain from imposing a head tax they appear to have spared the effort. The scatter plots in the appendix, that complement figure 3, underline this point from a temporal perspective as well: after 1911 the share of direct taxes declined in virtually all colonies, but they did so in a movement along, rather than away from, the fitted line. This is not to say that additional policy objectives – such as the desire to create 'governable subjects', to commodify indigenous labor or to establish political hegemony – did not matter at all for the design of fiscal strategies (Young, 1994; Conklin, 1997; Bush and Maltby 2004). But a comparative macro-perspective does suggest that these policy objectives first and foremost need to be understood *in the context of endogenous African economic and geographical conditions determining the constraints and opportunities to fiscal capacity building.* This also implies that we should be careful not to overemphasize the agency of European colonial governments in Africa.

That colonial fiscal policies were responsive to endogenous conditions is also reflected *within* colonies. Table 5 shows the official minimum and maximum tax rates for each colony, and the total number of different tax rates that were applied there. All of the maximum rates apply to the main cities, whereas the lower rates were set for the poorest rural hinterlands. Two British-French differences stand out. First, the gaps between minimum and maximum rates were considerably larger in French than in British Africa. In Togo, for example, the minimum-maximum tax rate ratio was around 1:11 in 1925, and in Dahomey we even observe a ratio of 1:20. In British Africa, in contrast, the largest gap that can be observed is 1:4 in Tanganyika in 1937.

[14] For example, in 1925, the total budget of the AEF was 21,225,845 francs. Of this amount 7,705,845 francs came from a metropolitan grant-in aid.

Table 5: Official minimum and maximum native tax rates in 1911, 1925 and 1937

	1911			1925			1937		
	min (fr.)	max (fr.)	# tax rates	min (fr.)	max (fr.)	# tax rates	min (fr.)	max (fr.)	# tax rates
French Africa:									
Côte d'Ivoire	0.50	4.50	n.a.	5.00	22.00	n.a.	8.00	50.00	26
Dahomey	0.25	2.25	n.a.	0.75	15.00	9	5.00	23.00	8
Guinée	3.00	3.00	1	5.00	12.00	7	12.00	21.00	12
Haute Volta	n.a.	n.a.	n.a.	2.00	5.00	7	n.a.	n.a.	n.a.
Mauritanie	n.a.	n.a.	n.a.	11.00	11.00	1	20.00	20.00	1
Niger	0.25	4.50	n.a.	1.00	6.00	n.a.	1.00	10.50	15
Sénégal	3.00	4.00	4	5.00	15.00	7	10.00	25.00	9
Soudan	0.25	4.50	n.a.	3.00	12.00	15	9.00	30.00	30
Congo	*	*	*	*	*	*	*	*	*
Gabon	*	*	*	2.00	20.00	n.a.	*	*	*
Oubangui-Chari	*	*	*	*	*	*	*	*	*
Tchad	*	*	*	*	*	*	*	*	*
Cameroun	n.a.	n.a.	n.a.	1.00	15.00	8	2.00	30.00	24
Togo	n.a.	n.a.	n.a.	5.00	55.00	11	14.00	175.00	11
Madagascar	10.00	30.00	4	15.00	35.00	3	n.a.	n.a.	n.a.
Fr. Somaliland	X	X	X	X	X	X	X	X	X
Réunion	X	X	X	X	X	X	X	X	X
British Africa:	min (£)	max (£)	# tax rates	min (£)	max (£)	# tax rates	min (£)	max (£)	# tax rates
Gambia	0.20	0.20		0.20	0.20		0.25	0.25	
Gold Coast	X	X	X	X	X	X	X	X	X
(S.) Nigeria	X	X	X	X	X	X	0.25	0.25	1
Sierra Leone	0.25	0.25	1	0.25	0.25	1	0.25	0.25	1
Bechuanaland	1.00	1.00	1	1.00	1.00	1	1.00	1.00	1
Kenya	0.20	0.20	1	0.30	1.00	7	0.60	0.60	1
N.Rhodesia	n.a.	n.a.	n.a.	0.38	0.50	2	0.30	0.50	4
Nyasaland	0.15	0.30	n.a.	0.30	0.30	1	0.30	0.30	1
Tanganyika	n.a.	n.a.	n.a.	0.10	0.60	5	0.15	0.60	9
Uganda	0.25	0.75	n.a.	0.25	0.75	4	0.35	1.05	8
Mauritius	X	X	X	X	X	X	X	X	X

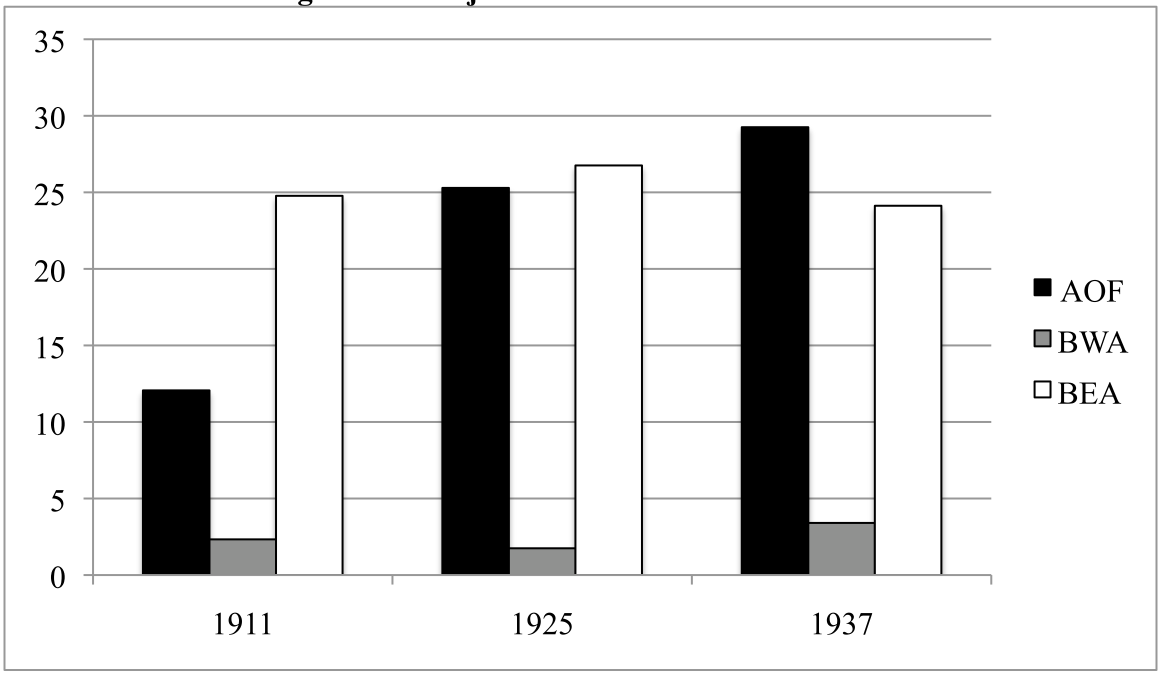
Notes: * indicates we need an additional archive visit to find the tax rate, as they were not available in the annual statistical yearbooks; X indicates that there was no native hut, head of poll tax levied. We should not directly compare these rates, because children and women were paying taxes as well in most French African areas, whereas they were not in British African areas.
Sources: Budgets Locales, Colonial Blue Books

Second, the French adjusted their tax rates more frequently than the British. In part, this was caused by higher inflation rates in French Africa (see table 1). But it also reflects a higher degree of precision in French fiscal administration. The British tended to levy head taxes or poll taxes on each adult male, or each hut, house or yard. In some cases, these were complemented by a 'multiple wives tax' to make taxes somewhat more progressive. The French on the other hand, introduced separate tax rates for men, women and children above a certain age. The French also levied alternative forms of taxation in large parts of Mauritania, Niger and French Soudan, such as the *zekkat*, which was a percentage levy on the value of cattle. Differentiation of tax rates was the rule everywhere, but the range of rates and tax instruments seems to have been wider in French Africa. A closer look at the 'micro-level' aspects of fiscal capacity building, such as varying district level tax rates and household differentiation, underlines the idea that local conditions shaped colonial tax systems: neither the British nor the French randomly assigned tax rates, their choices were largely guided by African constraints, rather than European policy preferences.

The high variation in dependence on direct taxes translated into varying tax burdens as well. We can provide some rough estimations of direct tax pressure, by transforming the nominal tax rates into number of working days required to meet the average rate of taxation, using urban unskilled wage rates. We focus exclusively on the urban areas, as we lack differentiated information on countryside wage rates.[15] Figure 4, depicting a regional average for the AOF, BWA and BEA, shows that tax pressure for urban unskilled labor in the British areas remained fairly stable over time, but that the levels were much higher in BEA than in BWA, testifying to a very different approach of British colonial governments in the East and the West. Tax pressure in the AOF increased substantially in the course of the colonial period, which allowed the French West African colonial states to catch up, at least partly, in terms of GPR per capita. But above all figure 4 shows that, despite the higher supposed levels of coercion in French colonies, it took the AOF at least 15 years longer to reach the average rates of direct tax pressure recorded in BEA in 1911.

[15] To transform the French tax rates from an individual to a household base, we have made the assumption that an average household existed of a father, a mother, and 3-4 children – of which one would have been older than 10 years and not yet started a family of his or her own. Although there was obviously greater variation in terms of family composition, these assumptions correspond well with demographic survey reports and should thus, on an aggregate level, be a fairly good approximation. Considering tax rate were slightly lower for women and children in the French African colonies, we multiply or divide not by a factor 4 (a father, mother and two children), but by 3.

Figure 4: Amount of working days for urban unskilled labor required to meet the annual direct tax obligation in major cities



Sources: see appendix

6. Forced labor programs

One important aspect of the colonial fiscal state that we have glossed over so far, and which links up with a discussion about varying tax burdens, are the implicit taxes that were levied in the form of forced labor obligations. Forced labor schemes were pervasive in both French and British Africa, and were deeply rooted in pre-colonial forms of labor coercion such as slavery, labor pawning, debt bondage and communal labor services. They were imposed by both the colonial state and 'private agents' - chiefs, creditors - leading to a wide range of different practices regarding the type of work to be performed, the labor conditions, the number of days of work, and the compensation received in return, if any. It is worth wile to briefly explore the extent of cross-colonial uniformity and variety in the use and regulation of labor *corvée* services.

Although colonial states justified the implementation of forced labor services as being part of their 'civilizing mission' (Conklin 1997), the forced recruitment of native labor was key to solving the colonial 'revenue dilemma' in largely rural and non-monetized African economies (Young 1994). The development of infrastructural networks, as well as the expansion of mining and cash-crop enclaves, required vast numbers of African workers, which were in many places difficult, if not impossible, to recruit via free labor markets.

Regarding the use of labor services *by the state* it seems safe to say that the French organized this practice in a more systematic manner than the British did and, in terms of implicit additional tax income, probably also relied on it to a larger degree. This would explain why the French withstood the growing criticism by international anti-slavery and pro-labor organizations, by refusing to sign ILO treaties aimed at curtailing this practice in the 1930s, treaties that the British did sign (Fall, 1993, 2002; Cooper, 1996; Ash, 2006).[16] The *prestations* in French Africa, which became officially regulated in 1912, applied to every African over the age of 15 for a maximum of 12 working days against a fixed daily ration, to be carried out on projects within 5 kilometers of the workers' residence - railway construction, road clearing, road maintenance, school building, porterage, cultivation of cash-crops etc. – Europeans and so-called *évolués* were generally officially exempted from this labor tax, or they, and some of the richer African families, enjoyed the privilege of being able to 'buy-out' their labor obligations.[17] These services were coordinated by district administration (*cercles*), local chiefs and village heads, and were often poorly supervised.

The British did not introduce an equivalent uniform legal framework for forced labor practices, and took a more pragmatic approach. In the more commercialized areas with well-functioning labor markets, such as in the rapidly expanding cocoa sector in the Gold Coast, forced labor practices were implemented (or maintained) in order to preserve part of the scarce labor supply for public works, especially local infrastructure projects. Workers were recruited by local chiefs and were usually paid for their services in cash or kind. In Uganda, the British adopted the indigenous practice of *kasanvu* (labor tribute)

[16] Note that there were other forms of labor coercion outside the *prestations* as well, such forcing the native population to grow certain crops, requirements to be employed in wage labor, forced labor migration and other paid labor services, but that we focus here on the most prevalent and systematic one: that of (unpaid) labor taxes owed to the colonial state.
[17] The option to buy-out one's labor obligations was expanded to larger groups in the course of the colonial period (especially in the course of the 1920s). Yet, the additional state income generated from these 'buy-outs' (*rachat des prestations*), which can be found in the annual yearbooks, suggests that the number of people doing so was negligible. The buy-out rate was in most places roughly the equivalent of the going unskilled native wage rate.

and allowed people to choose: either conduct public work for a fixed amount of days, or avoid the tax by cultivating cotton, which allowed the colonial state to capture rents from trade taxes. So both through the threat of forced labor and the actual practice of it, the British tried to enhance state revenue (Nayenga 1981). Finally, in British East Africa, it was migrant labor from India that relieved some of the labor demand for the large-scale infrastructural projects.

Overall, British forced labor schemes were probably to a higher degree based on 'positive' incentives. Both the British and the French relied upon the cooperation of native chiefs to recruit the demanded labor, but payments for this service seem to have been more common in British African colonies. The harshest forms of forced labor were usually adopted in the fiscally least developed areas, where the colonial government's desperate scramble for revenue made it resort to outright repression. Although we lack reliable quantitative evidence for the AEF, the most severe excesses of forced labor regimes seem to have occurred there. The AEF's late, but rapid catch-up (as can be seen in table 2) owes much to the construction of the Congo-Océan railway between 1921 and 1934; a project that could only be funded by extensive and repeated subsidies from Paris and by coercing more than 127,000 African men to work on its construction without pay other than food rations, killing at least 20,000 man through poor labor and health conditions (Sautter 1967).

Hence, an analysis of comparative tax burdens, whether through direct taxes or labor taxes, suggests that the British were, on the whole, less coercive than the French. Was this a reflection of the different and more ambitious style of French imperial governance, in which they put more pressure on the local population to finance the larger envisioned colonial state apparatus, or was it instead the result of 'pure necessity' (which of course does not morally justifying these practices)? We don't have sufficient space to explore this question in detail here, but reasoning by analogy from our analysis of direct taxes, we are inclined to emphasize the latter view. The challenge of *mise en valeur* was greater in French Africa, and higher degrees of labor coercion would, at least to some extent, redress the grave fiscal imbalances in the colonial federations. Hence, in the 1920s the *prestations* were lowered in Senegal from 10 days of labor service to 4, whereas in the AEF they were maintained at a 10 days minimum.

7. Conclusion

Reading the colonial accounts against the grain we conclude that despite the different objectives and structures of French and British colonial governance in Africa, the formation of the fiscal state was primarily determined by the opportunities and constraints set by local commercial and environmental conditions, as well as the social-political response to foreign rule. French and British colonial authorities responded to these endogenous factors in largely similar ways. The comparative analysis has forged two kinds of evidence for this claim.

First, the two most important determinants of per capita public revenue levels are the location of the colony (coastal-landlocked) and the length of colonial rule in 'pacified' territories. The identity of the metropolitan power did not appear statistically significant. Especially in West Africa the British and the French competed for the more prosperous and/or commercially most promising areas. The peripheral areas that were subdued later, such as British East Africa and French Equatorial Africa made do with a larger share of direct taxes and smaller budgets. The negative correlation between budget size and direct tax shares is both remarkably strong and remarkably similar across British and French territories.

This leads us to the second piece of evidence, which concerns the temporal development of colonial fiscal systems: convergence. Infrastructural and agricultural investments that were meant to unlock the economic potential of African hinterland areas increased the potential of revenue collection over time. In the majority of cases the tax revenues increased (in nominal and real terms) by enlarging the share of indirect taxes and non-tax revenues (railway receipts mainly). Commercialization thus changed the composition of the fiscal system and it did so in both the British and French African peripheries.

The most important difference, namely the French preference for federal governance structures, can be regarded as an attempt to integrate peripheral areas into a fiscally viable state structure. Colonies such as Niger, Mauritania, Chad and Oubangui-Chari were thus supported by an overarching federal governance structure where part of the costs of state formation (defense, administration) were born collectively. The federations of the AOF and the AEF greatly facilitated the process of integrating hinterland areas into the Atlantic economy by the construction of roads and railways. The drawback was that economic gravity centers such as Senegal and Côte d'Ivoire and Gabon, had to give up part of their control over tax revenues - especially custom duties -. The British integrated neighbor territories in federations or custom unions as well, but in a more ad hoc fashion. However, within these overarching structures, local colonial administrations differentiated tax rates and labor corvée services in order to align their tax systems with local political and economic conditions. And whenever British or French administrations could finance the state without imposing direct taxes they chose to do so.

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Appendix

A1. Construction PPPs

The PPPs were calculated in three steps. First, we took the unweighted average unit wage or salary values of three countries in British Africa (BA: Gold Coast, Gambia and Sierra Leone) and French Africa (FA: Dahomey, Sénégal and Côte d'Ivoire) for which there are comparatively good records. The equation for French Africa is:

$$UV_{ij}^{FA} = \frac{\sum_{i=1}^{x=1-n} uv_{ij}^{x^{FA}}}{n}$$

Where x refers to each of the individual colonies, $n = 3$ and UV_{ij} refers to the unit values of the four government expenditure categories i, that is, an indigenous school teacher (low rank), an indigenous clerk (low rank), an unskilled worker in government service (construction worker, gardener, cleaner, messenger or any other comparable type of job with comparable annual earnings) and a skilled construction worker (carpenters as a rule), in each of the six benchmark years j. For British Africa we did the same.

Second, we matched the wage and salary UV's for each category i and each year j to obtain the French-British unit value ratios:

$$UVR_{ij}^{FABA} = \frac{UV_{ij}^{FA}}{UV_{ij}^{BA}}$$

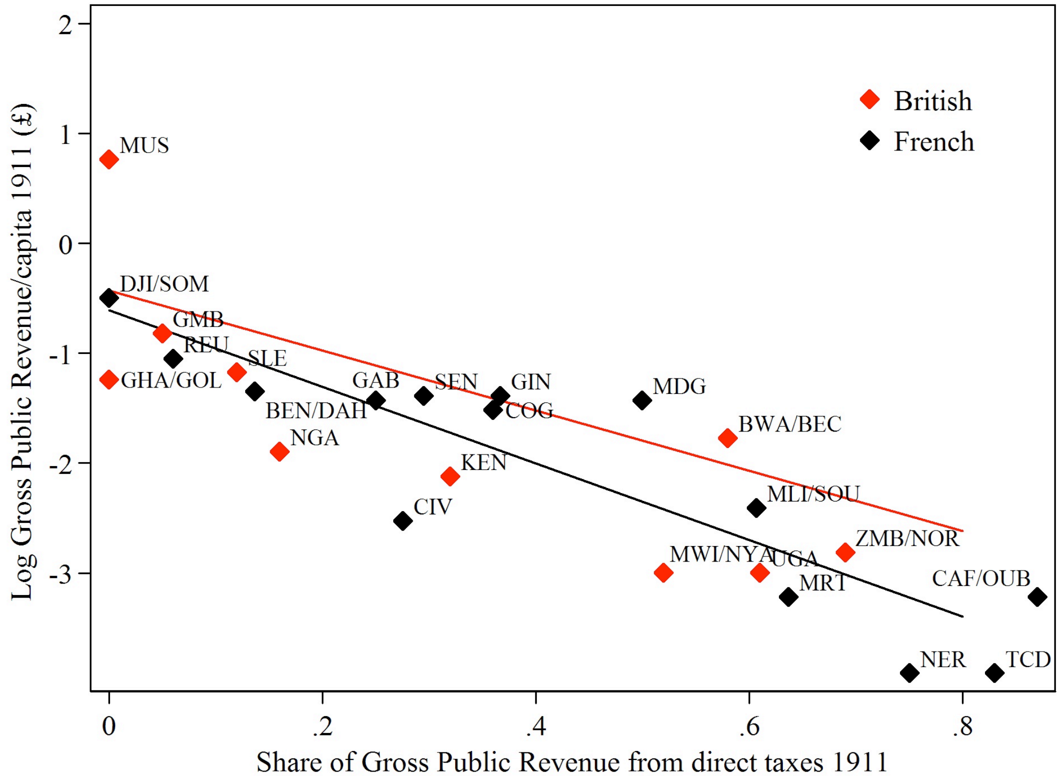
Third, we aggregated the UVR's up to a PPP_j for each year j applying equal weights (¼th) to the four expenditure categories i:

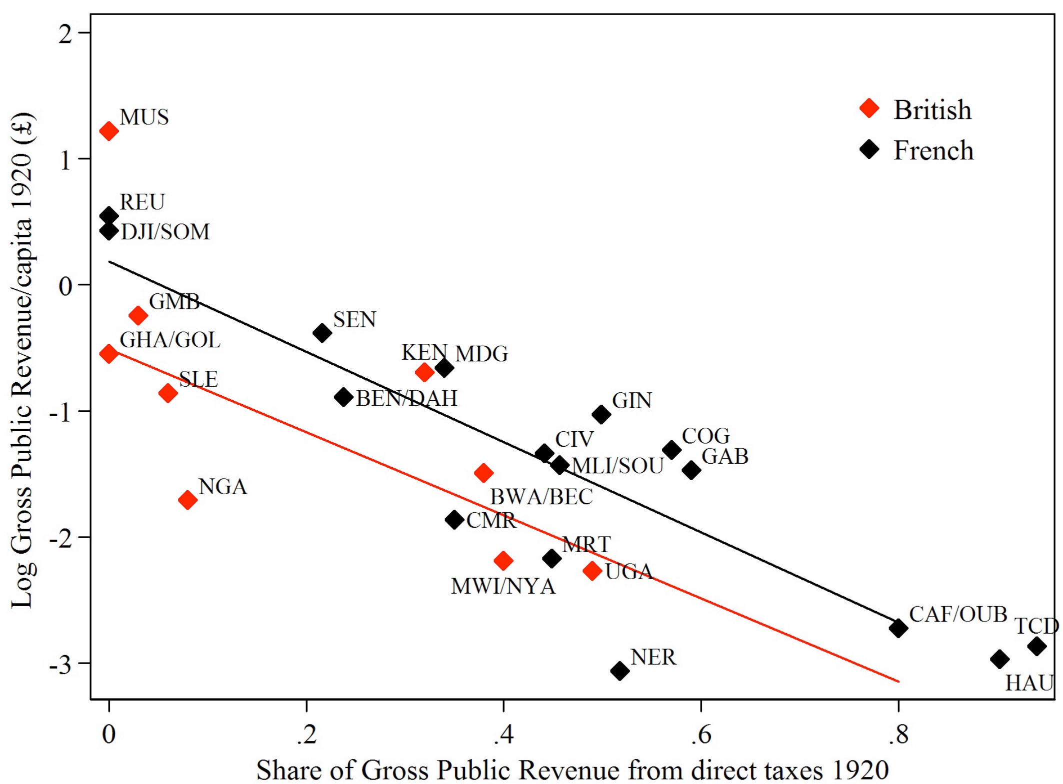
Appendix table 1: Unit Value Ratios and Purchasing Power Parities, 1911-1937

	British Africa (£)	French Africa (Ffr)	UVRs
1911			
Indigenous clerk/commis	50	1,500	30.0
Indigenous teacher/instructeur	50	1,800	36.0
Carpenter/charpentier	36	965	27.0
Unskilled worker/manouvrier	12	386	32.0
PPP (FWA/BWA)			**31.3**
Official Exchange Rate (Ffr/£)			25.1
1920			
Indigenous clerk/commis	55	1,500	27.3
Indigenous teacher/instructeur	56	1,950	34.8
Carpenter/charpentier	33	931	28.2
Unskilled worker/manouvrier	18	360	20.0
PPP (FWA/BWA)			**27.6**
Official Exchange Rate (Ffr/£)			52.0
1925			
Indigenous clerk/commis	67	3,500	52.2
Indigenous teacher/instructeur	60	3,500	58.3
Carpenter/charpentier	60	2,460	41.0
Unskilled worker/manouvrier	17	720	43.3
PPP (FWA/BWA)			**48.7**
Official Exchange Rate (Ffr/£)			101.3
1929			
Indigenous clerk/commis	56	6,150	109.8
Indigenous teacher/instructeur	60	7,400	123.3
Carpenter/charpentier	52	3,840	74.4
Unskilled worker/manouvrier	17	1,152	69.4
PPP (FWA/BWA)			**94.2**
Official Exchange Rate (Ffr/£)			124.0
1934			
Indigenous clerk/commis	81	6,030	74.4
Indigenous teacher/instructeur	91	7,725	84.9
Carpenter/charpentier	38	3,600	96.0
Unskilled worker/manouvrier	13	960	73.8
PPP (FWA/BWA)			**82.3**
Official Exchange Rate (Ffr/£)			76.7
1937			
Indigenous clerk/commis	128	6,100	47.7
Indigenous teacher/instructeur	100	14,000	140.0
Carpenter/charpentier	14	828	58.3
Unskilled worker/manouvrier	40	2,400	60.3
PPP (FWA/BWA)			**76.6**
Official Exchange Rate (Ffr/£)			122.2

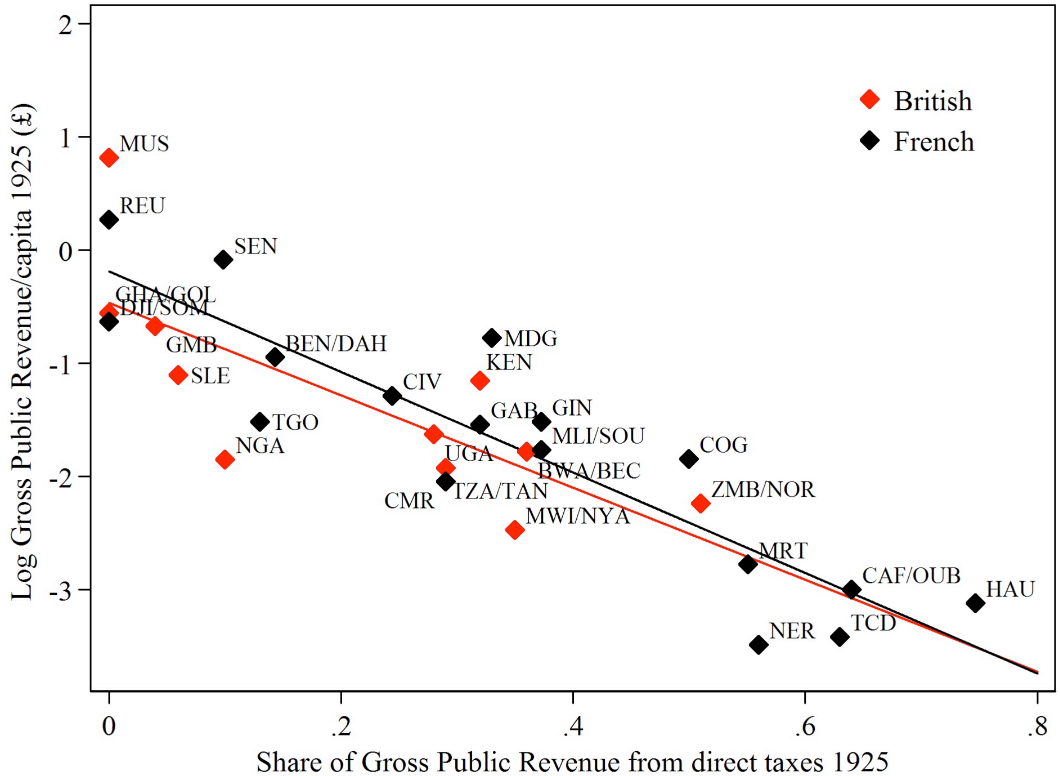
Notes: Starting salaries of indigenous clerks and teachers were derived from those with a rank just above a probationer/stagaire. The daily wages of unskilled workers and carpenters hired by the French African administrations were multiplied by the standard number of working days (240) reported in the colonial records. The sources are listed below.

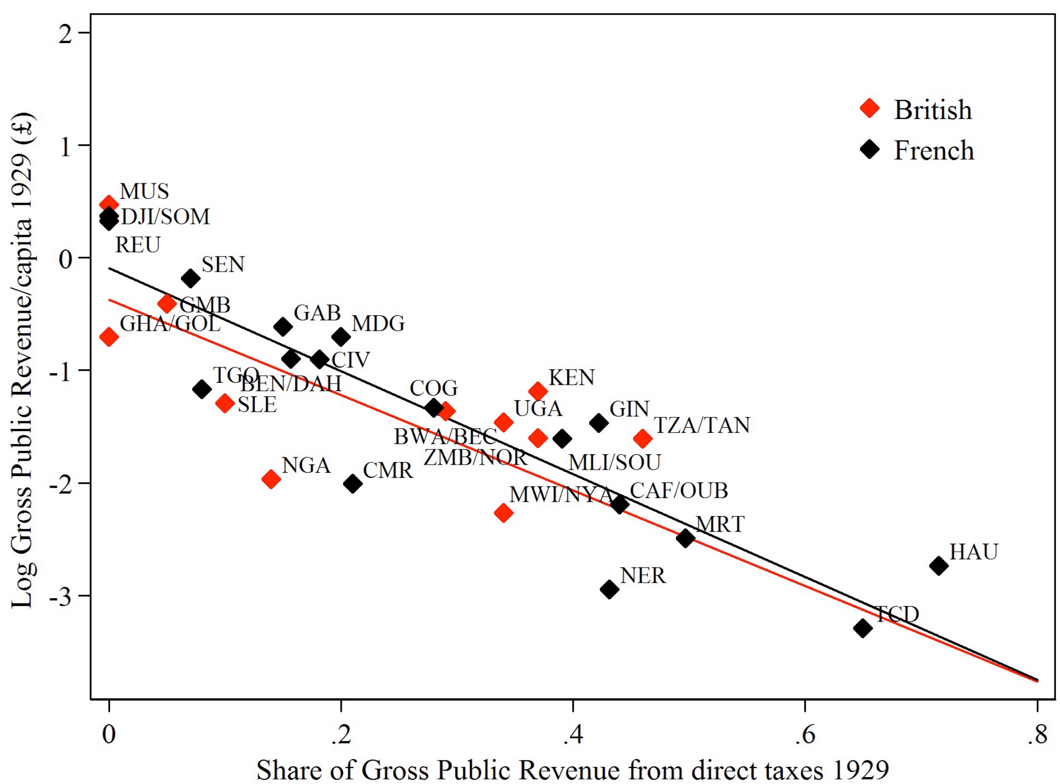
Figures A.1a-b: GPR/capita (log) vs. share GPR from direct taxation in 1911 & 1920



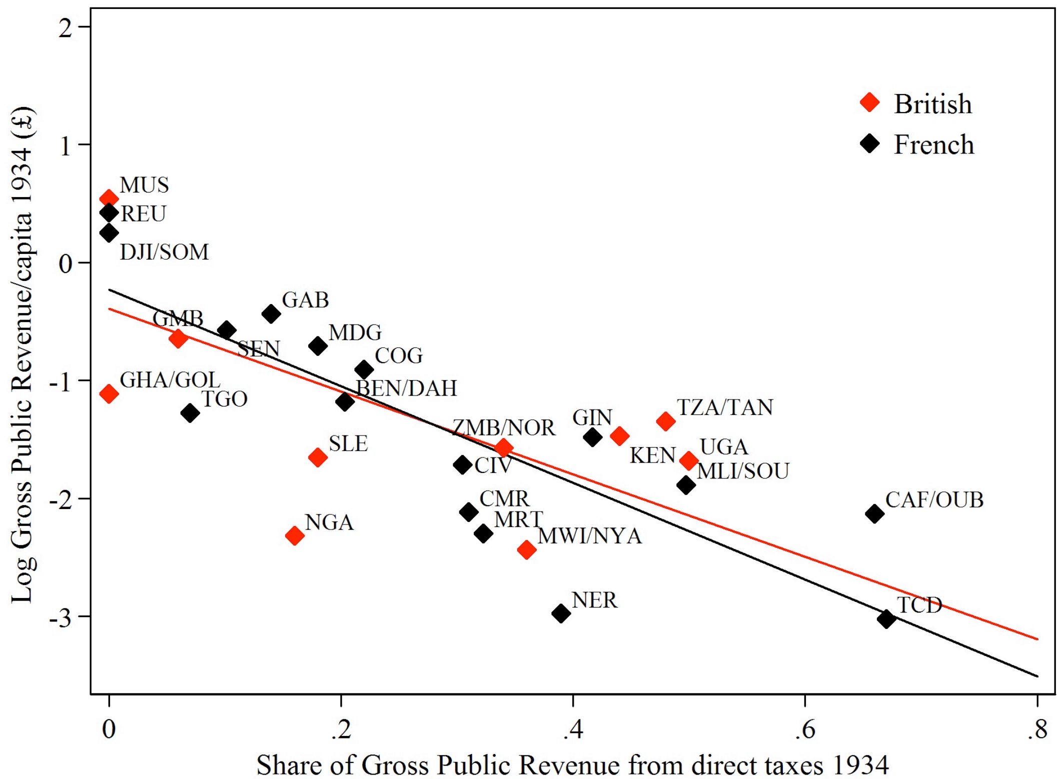


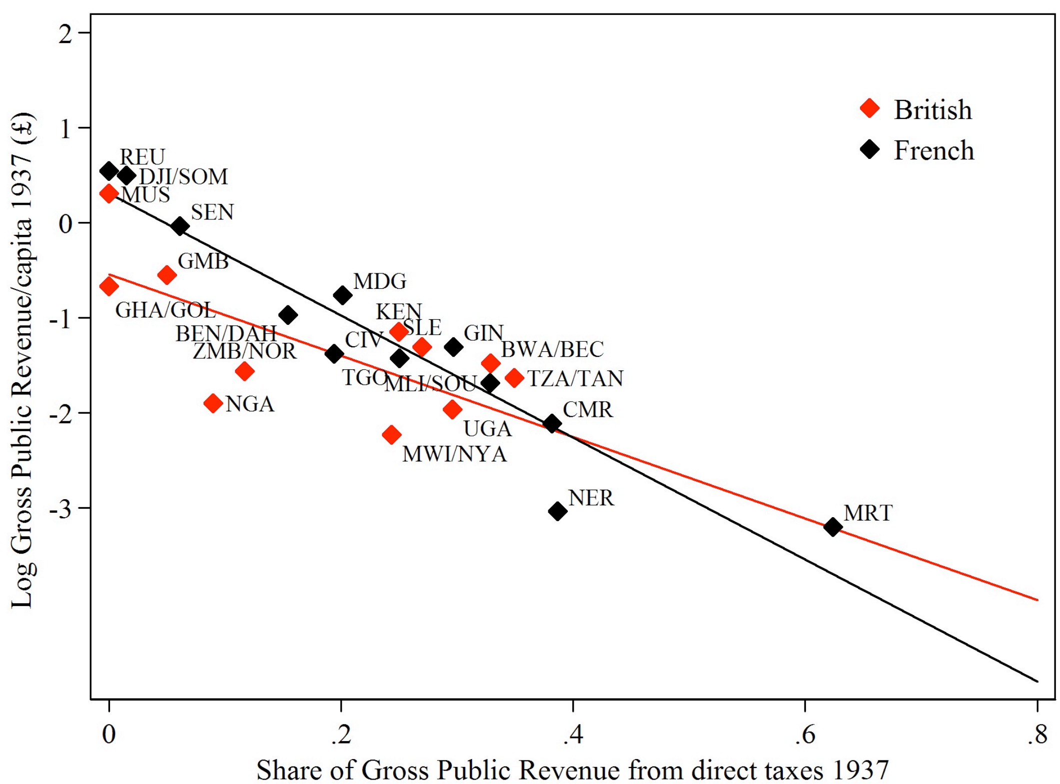
Figures A.1c-d: GPR/capita (log) vs. share GPR from direct taxation in 1925 & 192





Figures A.1e-f: GPR/capita (log) vs. share GPR from direct taxation in 1934 & 1937





A2. Sources PPPs and Government Revenues

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