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Colonial Taxation and Government Spending in British Africa, 1880-1940: Maximizing revenue or minimizing effort?

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Abstract
Colonial state institutions are widely cited as a root cause of sub-Saharan African underdevelopment, but the opinions differ on the channels of causation. Were African colonial states ruled by near absolutist governments who strived to maximize revenue extraction in order to strengthen their grip on native African societies? Or did European powers build 'states without substance', governed with minimal resources and effort, failing to invest in basic public goods? This paper develops an analytical framework for comparing colonial tax and spending patterns and applies it to eight British African colonies (1880-1940). We show that colonial fiscal systems did not adhere to a uniform logic, that minimalism prevailed in West Africa, extractive features were more pronounced in East Africa, and that Mauritius revealed characteristics of a developmental state already before 1940.

Keywords: sub-Saharan Africa, colonial history, public finance

JEL codes: N27, N37, N47

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1. Introduction

Modern economic growth in the West and, more recently, East Asia, has come hand in hand with the rise of the nation state as the supreme unit of political organisation. To reap the benefits of labour division and market integration these states secured a stable macro-economic environment, removed internal trade barriers and invested heavily in physical infrastructure. State intervention in schooling and health care have guaranteed higher rates of human capital accumulation than private markets normally provide (Lindert, 2004: p. 230). Indeed, rapid growth in countries like South Korea, Singapore and China was not due to democratic institutions, but effective fiscal institutions and a capable state administration were a *sine qua non* (Glaeser et al., 2004).

Among the numerous explanations for the lack of catch-up growth in sub-Saharan Africa, the failure of states to provide citizens with a minimum level of economic security and public goods has received ample attention (Manning, 1998; van de Walle, 2001; Meredith, 2005). Many African states were ruled by predatory regimes during the post-independence era. Instead of supporting the accumulation of human and physical capital, rent-seeking politicians often redistributed resources from the rural poor to urban elites (Lipton, 1977; Bates, 1981). The record of state failure in the late twentieth century is so impressive that it is hard to escape the idea that there is something specifically 'African' in the nature and history of African state formation. Scholars widely agree that the process of *colonial state formation* in Africa embodied some typical features, if only because African state boundaries were drawn on the European drawing table in almost complete neglect of the prevailing social, political, economic and cultural dividing lines (Ayittey, 2005). But the question how colonial state institutions impacted on long run African state development remains contested.

Acemoglu et al. (2001) have argued that without significant European settlement, colonial governments were not committed to the development of growth-promoting institutions. Instead, 'near absolutist' governments imposed 'extractive institutions' to facilitate the exploitation of indigenous labour and natural resources through trade, land appropriation, excessive taxation or outright plunder. Much of their story about extractive institutions is based on the African experience. Fiscal policy fulfils an important role in their argument as one of the main channels of revenue extraction.[1] According to Crawford Young (1994) the 'revenue imperative' of African colonial governments was a precondition for establishing European hegemony as it not only provided the necessary resources, but also symbolized the authority and legitimacy of the colonial state. Bush and Maltby (2004) have also stressed that colonial fiscal systems were functional in turning Africans into 'governable people'.

But the portrayal of colonial governments as 'near absolutist' overlooks much of the practical limitations to their political, economic and military power. Many studies pointed out how African economic and political agency constrained European hegemony (Bayart, 2000; Austin, 2008). Harsh environmental and geographical conditions not only made the colonial conquest itself more problematic than in other parts of the world, but also complicated the administration of large territories with little manpower. According to Cooper (2002) the post-colonial 'gatekeeper state' in Africa evolved due to such practical constraints. But the comparative power and capacity of the African colonial state power was, at least to some extent, also a matter of deliberate political choice.

Jeffrey Herbst (2000, p. 73) describes the African colonial state as a form of 'administration on the cheap'. Rather than facilitating extraction, Herbst argues, the colonial state in Africa was a prototype Night watchman state, performing a minimum set of tasks at minimum costs. Low population densities raised the marginal costs of controlling large territories above the marginal revenues of trade and taxation. Hence, African states developed soft boundaries which, contrary to European nation states, focused on the control of people rather than land (Tilly, 1990). Imposing their own views of state organisation, Europeans created hard territorial boundaries in Africa, but with little means (financial, military, logistic) to control them. Borders were protected by treaties designed in Europe (e.g. the Berlin conference), rather than by military and economic investments in the frontier areas.

Bayart (2009) introduces the concept of 'extraversion' to explain how African elites (ab)used the information asymmetry between themselves and the colonial rulers to mobilize resources. Minimalist rule resulted in increasing political competition for resources, aggravating corruption and

[1] Acemoglu et al. illustrate this with references to excessive taxation in Tunisia, Northern Rhodesia and Belgian Congo, which they implicitly hold to be representative for colonial Africa as a whole (2001, p. 1375).

social-ethnic cleavages (Berry, 1993; Reno, 1995). For Mamdani (1996) the British invention of indirect rule was basically a system of 'decentralised despotism'. It corrupted local authorities because it left native chiefs with almost unchecked powers of revenue collection. Lange (2009) lends support to this view, showing that the indirect ruled British colonies have performed significantly worse than the direct ruled. Inspired by Kirk-Greene's (1980) study of 'the thin white line', Richens (2009) finds that the number of European state administrators predicts post-colonial economic performance.

But what matters here is that the different interpretations of the nature of the African colonial state have produced contrasting views on the effectiveness of colonial fiscal systems. Mamadani argues that "*District level autonomy at times reached the level of a fetish […] The result was a pervasive revenue hunger all along the chain of command, from the central to the local state, leading to efforts to tax or impose fees on anything that moved."* (1996, p. 56). But Herbst observes that "*Not surprisingly, the colonial governments were unable to solve the revenue problem […] Reflecting their modest motivations for ruling in Africa, the states the Europeans created did not develop impressive institutions for collecting revenue.*" (2000, p. 116).

The interpretation of colonial spending patterns also part of this discussion. Proponents of both, the 'minimalist' and 'extractive' perspective, agree that colonial public expenses were geared towards securing colonial order, but for different reasons: the allocation of public resources could either be the result of underdeveloped fiscal systems leaving little resources for social spending, but it could also be that alternative spending options were deliberately neglected. Besides, a more benign view of colonial government spending is called for by authors who take the rapid reduction of child mortality rates and unprecedented gains in life-expectancy into account (Warren, 1980; Sender and Smith, 1986, pp. 61-6). Moradi (2009) and Austin et al. (2009) have shown considerable increases in stature of Kenyan and Ghanaian army recruits. Frankema (2010) shows that educational enrolment rates were impressive in many African colonies, and especially British African colonies, although these are not correlated with colonial government expenses.

In view of this discussion we explore three interrelated questions for the case of British Africa. First, to what extent did colonial governments strive for fiscal revenue maximisation: were colonial tax levels comparatively high or low? Second, how much of public revenue was spent on securing colonial order, and how much invested in human resources? Did this change much over time? And third, did colonial tax and spending patterns adhere to a similar logic throughout British Africa, or did varying local conditions lead to major differences?

In section 2 we introduce an analytical framework that can be used to systematically compare tax and spending patterns. In section 3 and 4 we apply this framework to British Africa in the period 1880-1940. This period covers most of the colonial era, but stops at a crucial turning point in colonial state finances during and after the Second World War. In the 1940s and 1950s colonial states start to receive significant subsidies (grants-in –aid) to carry out colonial development and welfare programs. Although the period up to formal independence was brief, we believe it warrants a separate study. The colonies include Gambia, Sierra Leone, Gold Coast (Ghana) and Nigeria in West Africa; Uganda, Kenya, Nyasaland (Malawi) in East Africa and the sugar-island colony of Mauritius.[2] These colonies differ in geographical and economical characteristics, but share their identity as British ruled territories. In section 5 we discuss the main results. Section 6 concludes.

2. The analytical framework

For a systematic temporal and spatial comparative analysis of African colonial state finance we need a framework in which tax levels are linked to spending patterns. Figure 1 shows a two-dimensional matrix with four quadrants. The matrix relates comparative tax levels on the horizontal axis to the ratio of expenses on 'human resources' versus 'colonial order' on the vertical axis. Tax levels are defined here as the share of an individual's income equalling average per capita tax revenue. Human resource expenditure refers to public investments in education and health care and colonial order expenditure refers to the costs of administration, police, prisons and the military. Each quadrant represents a

[2] The names refer to colonies and protectorates. We will use the encompassing term 'colony' henceforth. For simplicity, Uganda, Nyasaland and Kenya are all categorized as 'East African'. Kenya was named the East Africa Protectorate until 1920 and Nyasaland was called the British Central Africa Protectorate until 1907. Nyasaland became Malawi and the Gold Coast became Ghana after independence. These territories were administered by civil authorities and not by private companies such as the British South Africa Company in Southern and Northern Rhodesia. The Union of South Africa has been excluded because it became a self-governing dominion before WWI.

particular colonial state type. Anne Booth (2007) has recently analysed these state types for East and South East Asian colonies in the modern era.

[Figure 1]

1) In the *developmental state* comparatively high tax levels are used to finance public goods that support the accumulation of physical and human capital and enhance economic development. The state is able to legitimise and organise the fiscal system in such a way that the majority of the population complies. There is a basic level of trust among the native tax payers that their money is used for the common good.

2) In the *benevolent state* low taxes are combined with high levels of human capital investment. Such a scenario is only possible if there is an external source of revenue that relieves the native tax payer. This is conceivable when the colonial metropolis structurally subsidises the state budget in order to develop its colony, for instance by grants-in-aid or by a costless provision of international security.[3]

3) In the *Night watchmen (or minimalist) state* the colonial government primarily serves the political and military strategic concerns of the metropolis. Securing order is the ultimate objective and there is no ambition to expand state authority beyond the main administrative and commercial centres. Minimizing tax efforts is a means to prevent opposition and costly interventions by the army. Human resource investments have no priority because budget constraints are too tight.

4) In the *extractive state* the principle objective is to maximise government revenue. Fiscal revenues are used to expand territorial control and authority and further improve fiscal effectiveness. Revenues can also be used to enrich the colonial elite and/or attract European settlers. Self-enrichment can be achieved by paying extraordinary salaries to European government officials, by granting tax exemptions to European enterprises or by direct transfers of tax money to public goods and services that are only available to Europeans and/or the native elite.

[3] Davis and Huttenback (1988) have argued for instance that low taxes in British settler colonies such as New Zealand, Australia and Canada were enabled by a net subsidy from Britain for imperial defence expenses.

3. Colonial taxation in British Africa, 1870-1940

A first impression of the varying paths of fiscal development in British Africa is offered by a comparison of per capita public revenue series. To obtain these series two problems have to be solved. First, expressing colonial government revenue in per capita levels requires population estimates, but the unreliability of colonial African population figures is notorious (Kuczynski, 1948; 1949). Official British census figures are generally regarded as underestimates, but we lack adequate information to make upward adjustments. Hence, by using the actual census estimates we will overestimate per capita revenue. For our purpose the use of actual census estimates may be justified because the these figures are likely to offer an approximation of the number of people subjected to direct income taxes. Tax rolls were often used to control census estimates as well as make some projections for areas that could not be covered by the census taking committee. Hence, the per capita revenue estimates presented below must be regarded as a measure of revenue accumulated by the tax-paying population, rather than the total population.[4]

The second problem concerns the transformation of nominal into real revenue figures. The purchasing power of a colonial state budget depended not only on the domestic prices of labour, land and raw materials, but also on the prices of imported capital goods and the salaries paid to civil employees. These salaries were the single biggest component of government expenses and largely followed ‘British’ standards of remuneration, which were not necessarily in line with local wage or price movements. For this reason we adopted the price index of British public goods and services from Feinstein (1972, T132) to deflate the annual budget of colony *x* in year *t*. Hence, we measure the purchasing power of colonial budgets in terms of the number of civil employees that can be appointed.

Figure 2 shows the per capita public revenue series for between 1870 and 1940 in constant British Pounds of 1913. The differences in revenue levels were considerable. The colonial

[4] This does not rule out possible biases as we expect the census estimates for Mauritius to be closer to the actual population than for Nyasaland for instance. It should be noted, however, that bigger underestimates of the least-developed colonies would only strengthen our main conclusion about the differences in revenue raising capacity. When census data were not available at all we had to resort to official ‘guesstimates’ of the colonial administration as published in the blue books.

governments of Nigeria, Nyasaland, Uganda never managed to generate more than £0.3 (in 1913 prices) per head, whereas in Kenya, Gambia and the Gold Coast revenues were roughly two to three times as high towards the late 1930s. In Mauritius the state budget fluctuated between £1.5 and £2.5, which was three to ten times as large as elsewhere. The purchasing power of British African states varied, but it remained rather low compared to British settler colonies. In New Zealand, for instance, the per capita budget ranged between £10 and £14 during the years 1913-1939, which was a factor 20 to 60 higher than in British Africa.

[Figure 2]

Nearly all colonies witnessed a rise of per capita revenue between the final quarter of the 19th century and the eve of WWII. Major declines occurred during the last years of WWI and the early 1930s. But colony trends also differed: in Nigeria, Nyasaland and Uganda state budgets expanded much less dramatically than in Kenya or the Gold Coast. In Gambia, Sierra Leone and Mauritius, which had been (partly) incorporated in the British Empire in the first half of the 19th century already, the ceiling had been reached before 1914.

Birnberg and Resnick (1975) have argued that the waves of revenue expansion and contraction of European colonies were closely related to international trade development. Only if colonial governments were capable of promoting export development they created conditions for colonial state expansion. Increasing colonial trade raised government budgets both directly, via increasing custom duties, and indirectly, via the extraction of growing domestic economic surpluses. The Gold Coast economy offers a good example of such a virtuous cycle between export expansion and government revenue, as a result of the booming cocoa sector in the first three decades of the twentieth century (Austin, 2005). The per capita value of international trade in the Gold Coast reached a peak of £4,61 in 1927, which was four times as large as in Sierra Leone, where the virtuous cycle of exports and public revenue came to a halt around WWI.

Kenya’s rapid increase of the government budget was in part caused by the influx of British and Indian settlers responding to agricultural and commercial business opportunities. Kenya’s state budget drew almost half of total revenue from non-fiscal sources, with a large share from railway revenues. The greater extent of economic dynamics as a result of foreign investments did not imply a lower tax burden for the indigenous population, however, as direct taxes for foreign residents were kept to a minimum to encourage European settlement (Bowden and Mosley, 2009).

The trends in per capita revenue did not automatically correspond with trends in per capita tax levels as the shares of fiscal and non-fiscal revenue changed over time. Unfortunately, we do not dispose of GDP estimates to trace the development of the tax base, but we do have time-series of urban unskilled wages as a second-best alternative for assessing long term trends in the tax levels.[5] We compute tax levels by separating gross public revenue (GPR) into fiscal revenue (FR) and non-fiscal revenue (NFR) and divide these by population (POP) and the daily wage of an adult male urban labourer (UW):

$$FRpc_{xt} = (GPR_{xt} - NFR_{xt}) / POP_{xt} \qquad [1]$$

$$T_{xt} = FRpc_{xt} / UW_{xt} \qquad [2]$$

This gives the number of working days *T* in colony *x* and year *t* needed to match the average per capita tax revenue. The results are shown in table 1 for five benchmark years between 1910 and 1938.

[Table 1]

Table 1 shows that the average number of working days required in British Africa doubled, from 7,1 in 1910 to 14,6 in 1938. In West Africa the rise was modest compared to East Africa and Mauritius. The cross-colony rates of per capita taxation also diverged: in 1910 the tax rates varied from 3 working days in Uganda to 12 in Mauritius with a coefficient of variation of 0,44. In 1938 the gap had

[5] Using urban wages is inconvenient because the majority of the labour force worked in the rural sector in all these colonies. However, as rural wages are in the rule complemented with payments in kind, they are less easy to compare over time and across countries. Note that in reality a higher part of the nominal wage would have been commanded because adult male wage earners would also have to pay the contribution of non-income earning family members. We did not adjust for this because we have no information on household size or dependency ratios.

increased from 5 in Nigeria to 28 in Mauritius, with a coefficient of variation of 0,52. With the exception of Mauritius and Kenya, tax levels in British Africa were markedly lower than in the average non-African British colony. Frankema (2010, p. 460) shows that average required working days in the British Empire in a sample of 34 colonies was 14,1 in 1911, 19,1 in 1925 and 21,3 in 1937. But before concluding that the incidence of taxation on native Africans was comparatively moderate prior to 1940, we should examine the source composition of taxes in some more detail.

There are various reasons to separate domestic taxes from custom duties. Collecting custom duties was not only relatively easy and cheap, the political risks involved were also likely to be smaller. Tax revolts in colonial Africa were almost always provoked by taxes that were levied directly on people's income or assets; these were the most 'visible' taxes. Import duties, which constituted the bulk of custom revenues before 1940, were mainly levied on luxury items such as spirits, beer, wine, tobacco, fire-arms, gunpowder and manufactured cloth. Part of the burden of import duties were thus born by foreign producers and European and African elite consumers. Import tariffs also offered some protection to local producers.

While import taxes may actually have had a net progressive impact on the income distribution a flat rate poll tax burdened the native poor disproportionally and was essentially a discriminatory tax. Levying a poll tax or a land tax also required considerable administrative capacity in assessment and collection. For these reasons colonial governments had a natural inclination to found state finances on custom revenue as much as possible. But this option was limited to varying degrees. British manufacturers and merchants trading within the Empire pursued a powerful free-trade lobby (Davis and Huttenback, 1988, pp. 224-5). They resented the practice of import and export tariffs, especially in those colonies where they did not have to fear from 'unfair' competition. More important even, many African colonies were simply not trading enough to meet the financial demands of the colonial government.

Subtracting custom revenue (CR) from total fiscal revenue (FR),

$$T^{i}_{xt} = ((FR_{xt} - CR_{xt}) / POP_{xt}) / UW_{xt} \qquad [3]$$

implies that T^i is the number of working days required to equal internal tax revenue. Table 2 presents the results and indicates that internal tax revenues were much lower in West Africa than elsewhere. Although West African colonies reduced their dependence on trade taxes over time, they still constituted at least half of total revenue in the 1930s. Direct native taxes in West Africa were rather ineffective or introduced rather late and their introduction in Sierra Leone and Nigeria provoked serious violent protests (Kilson, 1966; Martin, 1988). In The Gold Coast native direct taxes were not introduced at all.

[Table 2]

East African governments, on the contrary, relied primarily on native direct taxes. One of the reasons is that East Africa did not have the revenue potential as generated by the cash crop revolution in West Africa (Hopkins, 1973; Austin, 1995). A related reason is that trade tariffs were considerably lower in East Africa: between 1896 and 1937 average custom duties constituted 6,6% of the total value of trade, against 11,2% in West Africa.[6] Especially in the formative stages of the colonial state before 1914, native direct taxes constituted the ultimate source of colonial state revenue. As head and poll taxes were occasionally adjusted to inflation, real revenues were kept relatively stable over time. After WWI the share of custom duties tended to increase, but it never surpassed 35% of total receipts.

In Mauritius tax revenues came primarily from excises on consumer goods such as salt, sugar, rum and tobacco. The contribution of commercial fees and business licenses from the thriving sugar planter's and merchant communities were also substantial. More important, Mauritius was the only colony that managed to reform and diversify its tax system by introducing direct taxes on businesses, income and property (Bräutigam, 2008). In 1938 these direct taxes constituted ca. 7% of total revenue. The steep rise of the tax burden in Mauritius during the 1930s (see table 1 and 2) reflects the broadening of the tax base, but was also due to a sharp decline in nominal wage rates (Frankema and van Waijenburg, 2010).

[6] The trade data were taken from the Board of Trade, *Statistical Abstract for the several Colonies and other Possessions of the United Kingdom* (London), various issues 1880-1937.

In sum, the cross-colony differences in the fiscal regimes of British African states seem to have outweighed their similarities. Real per capita budgets varied largely, as did the dependence on international trade taxation. Contrary to Mauritius, West African governments did little to reduce this dependence. When we leave custom duties out of the equation, it becomes clear that the unexploited tax potential in West Africa was much larger than in East Africa.

4. Securing colonial order or investing in human resources?

How did the differences in colonial fiscal systems and revenue raising capacities affect spending on public goods such as education and health care? To examine the expenditure side of British African public finances we constructed a dataset of seven major spending categories: 1) administration, 2) public debt, 3) the military, 4) domestic security, 5) health care, 6) education, and 7) public works. These categories normally constituted over 90% of total expenditures in the period under study. Appendix table 1 presents the data for each colony in the benchmark years 1911, 1925 and 1938. Details can be found in the notes below the table.

The percentage shares of the expenditure categories for the year 1925 are presented in table 3. The table compares the unweighted averages of the British African mainland, with Mauritius and New Zealand. The self-governing dominion of New Zealand offers a nice ‘welfare state benchmark’ within the confines of the British Empire, because of its advanced social spending program (Lindert, 2004, pp. 90-94).

[Table 3]

Table 3 shows remarkable differences in human resource expenditures between Mauritius and the African mainland. In terms of health care as well as education the expenditure shares were more than twice as high in Mauritius. Compared to New Zealand health care expenditures in mainland Africa were certainly not negligible, however. Many scholars have argued that the improvement in public health and longevity and the reduction of fatal tropical diseases was the most tangible and undisputed positive contribution of colonial rule to African development. According to Warren the supply of tropical medicine and medical facilities was "*the most dramatic, significant and conclusive proof of the advantages of Western colonization*" (1980, p. 131). Large parts of the population were potentially benefitting from the control of tropical disease epidemics and recurrent famines (Fieldhouse, 1999, p. 170; Illife, 2007, p. 215-8; Reid, 2009, pp. 210-6). Recent research also emphasizes the gains in living standards due to increasing health inputs, improved nutrition standards and increasing real wages (Austin, Baten and Moradi, 2009; Moradi, 2009; Frankema and van Waijenburg, 2010).

Compared to health care spending, education was granted less attention: its budget share increased before 1940, but never reached impressive amounts. Mauritius was an outlier. Although the absolute per capita educational expenses in Mauritius in 1925 (£0,15) were low compared to New Zealand (£2,03), they were a factor three to ten higher than in the rest of British Africa. In terms of the relative share of educational spending, which was around 10%, Mauritius even belonged to the select group of industrialized countries that were moving towards the creation of extensive welfare systems.

Contrary to the African mainland the Mauritian government did not heavily rely on the supply of primary schooling by Christian missionary societies. The Mauritian state had the capacity to supply primary education to broad layers of the population. About half of its primary schools were public schools, whereas on the mainland about 95% of all primary enrolled students went to mission schools. Enrolment rates were significantly higher in Mauritius: in 1938 the estimated gross enrolment rate of the age-group 5-14 was 38%, against an unweighted average of 14% in the other seven mainland colonies (Frankema, 2010). Kenya differed from the other colonies because nearly 40% of the total education budget went to a handful of European children, representing only 1 to 2% of the total school-age population. Such inequalities in public resource allocation could only be found in other British African settler societies like Rhodesia and South Africa (Frankema, 2010).

Table 3 suggests that the costs of defense and domestic security were comparatively high in British Africa, comprising about 14% of the total budget against 5% in New Zealand, but this is a bit misleading as part of New Zealand's military expenses were shrouded in its high levels of public debt. The involvement of the British self-governing dominions in WWI had inflated New Zealand's debt charges from 27% in 1911 to 41% in 1925. Although the African armies like the Royal West African Frontier Force and the King's African Rifles also participated in WWI (Reid, 2009, pp. 186-188), infrastructural investments were responsible for the lion's share of public debt creation, not military investments. When we take debt formation into account, African military expenses were probably lower (in proportion to the budget) than New Zealand's. Expenses on domestic security, i.e. police forces and prisons, were much higher in British Africa. Securing colonial order had, after all, the highest priority.

Davis and Huttenback have argued that "*Of all the subsidies enjoyed by the colonies, and by the British investors in those colonies, none was more lucrative than the subsidy for defense*" (1988, p. 112). They estimated that the average contribution to imperial defense of British taxpayers during the period 1860-1913 was £1,14 per capita and that military expenses comprised about 37% of the government budget and circa 4% of British national income. Davis and Huttenback have been criticised, however, for neglecting the financial contributions and human sacrifices of the overseas territories during WWI and WWII (O'Brien, 1988; Porter, 1988; Offer, 1993). It is therefore worth asking whether WWI changed the imperial distribution of military expenses.

In 1925 the UK defense expenses were £114.7 million (excluding war debt charges), which constituted ca. 15% of the central government budget and £2,55 per head of the population. In New Zealand the per capita expenses of £0,49 were considerably lower. But in British Africa the share of military expenditures declined from 14 to 6% of the total budget. So the imperial 'imbalance' in defense contribution did not really disappear. In 1937-38 the share of military expenditure in British Africa had further declined to around 5%, in New Zealand it had doubled to 6%, but in the UK it had risen again to 21,5% in the wake of intra-European tensions.

The extractive features of African colonial state finance were therefore not so much related to military expenses, but rather to the great financial burden of the state administration itself. Administrative expenditures absorbed more than one-fifth of the total budget in British Africa.[7] By contrast, New Zealand's administration appeared a mere bargain, consuming just 5% of the state budget. There are two explanations for this gap. First, given the low budgets and limited opportunities

[7] Elise Huillery has recently calculated a similar percentage share for French West Africa (2010, p. 1).

of debt creation, priority had to be given to the establishment of the colonial administration. Second, the standard salaries of British colonial government employees were a multitude of the incomes earned by native wage workers or subsistence farmers, who were paying most of the taxes.

A simple example reveals the regressive nature of this system. The 1937 colonial blue book of Nyasaland (L9, p. 42) reports the annual salaries of British government officials such as Uriah Joseph Chamberlain and Geoffrey Thomson Stafford, two senior clerks in the public works department in service since the early 1920s. Their annual salary of £480 was roughly three times the annual wage of a bricklayer in Manchester or Liverpool, but a staggering 90 times as much as the estimated annual income of a native wage worker (assuming 312 working days).[8] With a daily wage of 4 pence a labourer in Zomba would have to work 18 days to pay a 6 shilling head tax in the 1920s, which is ca. 6% of annual income. Stafford and Chamberlain were liable to the non-native poll tax of 40 shillings (£2) a year and an additional income tax of 3 pence per pound for the first one hundred pounds, and an additional 3 pence for each consecutive tranche of hundred pounds. This sums up to £18,5, which gives a tax rate of 3,8%.

Hence, British civil servants in Nyasaland contributed a lower share of their annual income than a native urban wage worker.[9] In fact, the colonial government needed 1600 natives paying a head tax of 6 shillings to be able to appoint just one senior clerk. Unsurprisingly, personal emoluments absorbed almost 60% of the total budget. Not only the salaries of British civil employees were expensive, also the pensions they received upon retirement (or their family in case of decease) constituted a growing drain on the colonial budget. State pensions for civil employees were paid from the regular budget.

Table 4 expresses the costs of this pension system as a percentage share of total government expenditure, demonstrating a much faster increase than the colonial state budget itself. At the eve of WWI pensions already consumed twice as much as in New Zealand, by 1925 the share had risen to ca. 4% and in 1938 it was nearly 7%. In the meantime, government pensions in New Zealand were

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[8] Bricklayers wages taken from *British Labour Statistics. Historical Abstract 1886-1968* (1971).
[9] A similar but more extensively elaborated argument has been made for the case of Uganda (Jamal, 1978).

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integrated in a general scheme for old-age pensions, so that the benefits were evenly distributed among New Zealand's retired workforce and the costs were not burdening the central state budget any longer.

[Table 4]

The consequences of these high administration costs become clear when we count the numbers of civil servants that were employed in British African colonies. Table 5 expresses the number of persons working in various government departments and the total number of civil servants per 10,000 inhabitants around the year 1929.

[Table 5]

The differences are large and there is a strong correlation (R^2 = 0,93) between per capita revenues (figure 1) and administrative manpower. In fact, the differences in manpower are so large that it does not require much imagination to see that the capacity to develop and solidify colonial state institutions in Mauritius or Ghana was much larger than in Nyasaland or Uganda, a point that has recently been elaborated by Peter Richens (2009) in much more detail. A recent study of colonial tax institutions in Nigeria by Daniel Berger (2009) also underlines this relationship. He shows that places where colonial tax collection required larger bureaucratic capacity are still characterised by higher governance quality at present.

5. Maximizing revenue or minimizing effort?

We now dispose of all the building blocks needed to connect colonial tax and spending patterns. The decomposition of government expenditure in the previous section enables us to compute a 'resources-order ratio': the ratio of investments in 'human resources', i.e. education and health care, versus the costs of establishing and maintaining ‘colonial order’ represented by the expenses on administration, domestic security and the military. This can formally be written as,

$$\sum\nolimits_{x}^{t} \textit{(Health care, Education)} \,/\, \sum\nolimits_{x}^{t} \textit{(Administration, Domestic security, Military)} \qquad [4]$$

Table 6 presents the resources-order ratio in British Africa for the six benchmark years between 1910 and 1938. Before 1914 the West African colonies and Mauritius, all of which had been under colonial rule for a longer period than the East African colonies, spent a larger share of their budget on human resources. In East Africa the establishment of rule and order had top priority and figure 1 has shown that their revenue budgets were considerably lower. Mauritius, which had been under British rule since the early 19th century already, spent much more on education and health care than any of the mainland colonies. A considerable part of its public revenues were thus invested in human capital.

But there were also some general patterns. The increase in human resource spending during the 1920s occurred throughout British Africa (Reid, 2009, pp. 205-216). It reflected the change in emphasis of colonial policies after WWI, which was formalized by the adoption of the Colonial Development Act in 1929. The idea of broader state responsibilities with regard to colonial social and economic development had already been around since the Colonial Loan Act of 1899 (Abbott, 1971; Gardner, 2010). Contrary to the literature, however, table 6 shows that the rising trend of social spending was not reversed in all colonies during the 1930s (Fieldhouse, 1999, p. 230). In the Gold Coast and Mauritius the budgets for education and health care clearly contracted, as they were comparatively hard hit by the global economic depression. But in Nyasaland and Uganda the budgets for human resources kept expanding and in Kenya and Nigeria the total budgets (in constant pounds) remained more or less at par with pre-1930 levels. Consequently, resources-order ratios converged, which is demonstrated by a rapidly declining coefficient of variation in table 6. In 1938 most of the British African colonies had a resources-order ratio around 0.40.

Figure 3 plots the resources-order ratio to the total per capita expenditure budgets between 1911 and 1938. It shows a positive relationship between colonial state’s financial capacity and human resource investments, which held across colonies as well as within colonies over time. A linear regression of all 47 observations yields an equation of y = 0.29x + 0.25 (the bold line) with an R-squared of 0.62. Hence, one additional pound per capita raises human resource expenses with a factor 1.29. Yet, figure 3 also shows that the ‘poorer’ administrations in East Africa tended to upscale their budgets for health care and education relatively fast and, partly, irrespective of their smaller budget sizes. They were catching-up with the ‘richer’ states, so to speak, which is illustrated by the trend lines for Uganda (the steepest) and Gambia.

[Figure 3]

That some colonies managed to expand social spending during the 1930s is important because it places the contraction of human resource budgets in West Africa in a particular perspective: these richer colonies had never fully exploited their internal tax potential (as argued in section 3) and this is why they were unable to upkeep investments in education and health care in a period of dwindling custom revenues. Social spending contracted *despite* an increasing emphasis of British policy makers on colonial economic and social development. Even the Mauritian government, which had taken steps to diversify its revenue base during the interwar period, could not prevent a decline of the budget for education and health care.

In figure 4 we place the colonial tax levels and resources-order ratios in the state typology matrix (shown in figure 1). For graphical clarity we show the West African colonies in the first matrix and East Africa and Mauritius in the second. The chronological line graphs trace the development of public finances between our six benchmark years from 1910 to 1938. The British colonies Ceylon, Jamaica and New Zealand have been added with a benchmark observation for 1938 to broaden the comparative perspective.

[Figure 4]

The matrices suggest that benign states did not exist in the British Africa, at least up to 1940. As we would expect from a ‘developmental state’, New Zealand is located in the north-eastern quadrant, combining a high tax level with a high resources-order ratio. For West Africa the Night watchman state seems to offer the best typology of the colonial state prior to WWII. The overall tax levels and the resource-order ratios were moderate and did not alter much during the interwar era. In British Asian colonies, such as Ceylon, rates of taxation were considerably higher, irrespective of the inclusion or exclusion of custom duties. In Jamaica tax levels were comparable, but the resources-order ratio increased faster over time, being notably higher in 1938 than in British West Africa.

In the East African colonies the extractive features of the fiscal system were more profound. Although the levels of taxation in Uganda and Nyasaland were comparable to the Gold Coast, most of the revenue was drawn from internal sources. The comparatively high native incidence of taxation did not translate into more favourable spending patterns. On the contrary, human resource spending in Nyasaland was minimal (because budgets were very low) and in Kenya the minority of European settlers consumed a disproportionally large amount of the public resources. Yet, even in Kenya tax levels in the 1930s were not exceeding the imperial average and remained lower than in Mauritius, Ceylon or New Zealand.

Mauritius is the only British African colony that tended towards the ‘developmental state’ type. The Mauritian government used its higher rates of fiscal revenue to invest in health care and education in proportions comparable to most Western countries in the 1920s. Matthew Lange has argued that one of the critical differences between the system of direct rule in Mauritius and indirect rule in the other British African colonies was the establishment of dense associational ties at the local level as early as the late nineteenth century (2003, pp. 417-8). These ties enabled a flow of resources and information which enhanced state-society relationships, something the tiny administrations in Nyasaland, Uganda or Sierra Leone were never capable of.

In line with Herbst we may note that Mauritius never had the ‘soft boundaries’ of the African mainland. The island is small and its borders are surveyable. The collection of taxes was therefore comparatively easy to arrange and colonial order could be secured at comparatively low costs. At the same time, government policies with respect to health care and education were directly visible to large parts of the population, which enhanced government accountability. The stellar growth performance of the island in the post-colonial era may therefore not have been so ‘miraculous’ after all (Meade, 1961; Subramanian and Roy, 2003).

6. Conclusion

This study has shown that colonial tax and spending patterns did not follow a similar logic throughout British Africa. They differed largely, especially between East and West Africa. Colonial state finances combined minimalist and extractive features, but to varying degrees. Up to 1940 the West African states may qualify best as classical Night watchman states. Custom duties were the key source of fiscal revenue. The collection of custom duties was relatively easy, cheap and likely to keep state-society conflicts limited. The extractive features were more pronounced in East Africa where the constraints to revenue collection were higher than in West Africa. In Nyasaland, Uganda and Kenya a large part of the administrative expenditures were financed by regressive direct taxes on the indigenous population. Kenya appeared as the most extractive colony in our study, because the small group of European settlers benefitted disproportionally from limited public resources.

In all British African colonies a steady rise in per capita revenues translated in higher budget shares reserved for health care and education. Total expenses on police, prisons and military forces remained more or less constant. Yet, although the colonial governments in West Africa did not face such tough budget constraints as in Nyasaland or Uganda, their resource-order ratio was not significantly higher. In the colonies where fiscal revenues were comparatively easy to obtain and expand, the colonial administration tended to behave in a minimalist fashion. Their continuous reliance on custom revenues went at the expense of revenue stability. In East Africa this strategy was impossible. Direct native taxes were indispensible for the financial development of the colonial state. The extremely low sums of per capita expenditure before 1914 were not so much the result of minimalist intentions, but rather of the great practical and economic constraints to revenue generation. After WWI the relative shares spent on human resources tended to catch-up with West Africa.

Public finances of Mauritius contrasted with the rest of British Africa in several aspects. Although Mauritius was evidently richer in terms of per capita income and government purchasing power, the colonial government of Mauritius strengthened its grip on colonial state finances by reducing commodity export dependence, expanding the state bureaucracy and maintaining high tax levels throughout the period under study. Whereas the Gold Coast government refused to impose direct taxes and kept relying on custom duties for 80% of gross public revenue, the Mauritian government diversified its tax base. But spending patterns were fundamentally different as well. None of the mainland colonies could match the system of public education that had been developed in Mauritius on the basis of tax money.

During and after the Second World War II things changed rapidly, however. School enrolment rates started to rise spectacularly across British Africa and, contrary to the pre-1940 era, colonial governments became the major driving force. Grants-in-aid from Britain financed a substantial part of this catch-up movement. With the benefit of hindsight we can conclude that the British attempt to restore or maintain the loyalty of its overseas subjects came too late to confine the call for independence. But grants-in-aid also reduced the incentives to reform colonial fiscal systems. In the long term this element of the colonial institutional heritage proved much more difficult to overcome than colonial rule itself.

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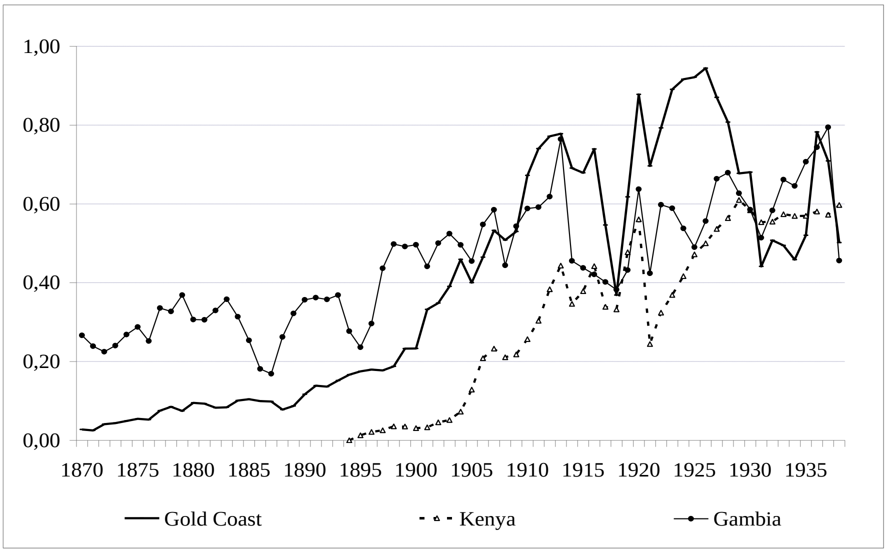
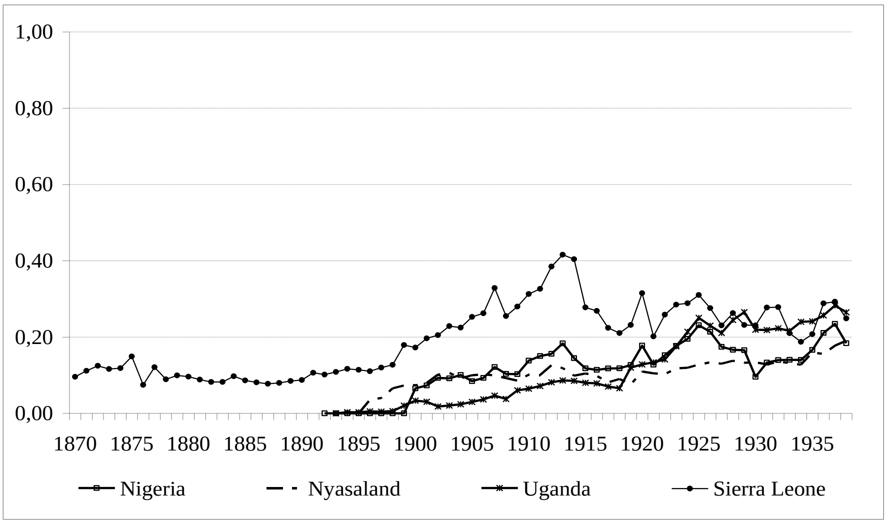
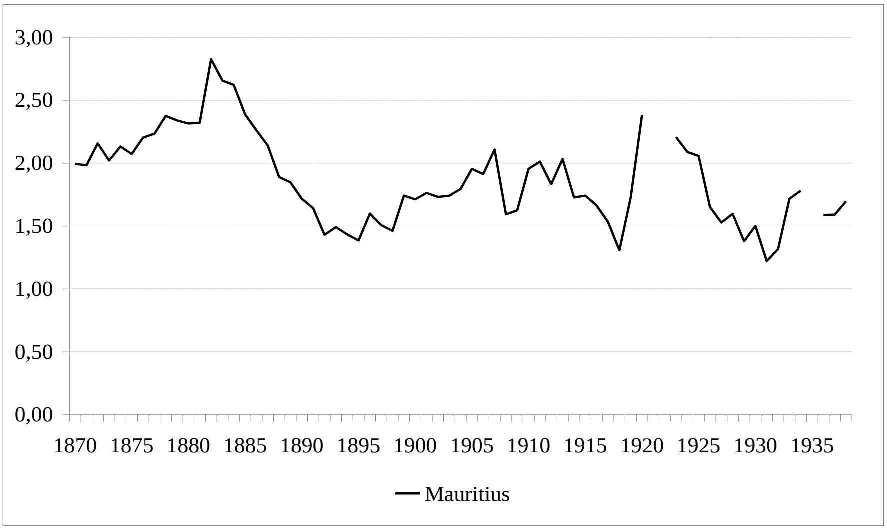
Figure 1: Colonial state typology based on public finance characteristics

	Low tax levels	*High tax levels*
Investing in human resources	**Benign state**	**Developmental state**
Spending on colonial rule & order	**Night watchman state**	**Extractive state**

Figure 2: Gross public revenue per capita in British Africa, 1870-1940 (constant 1913 £)

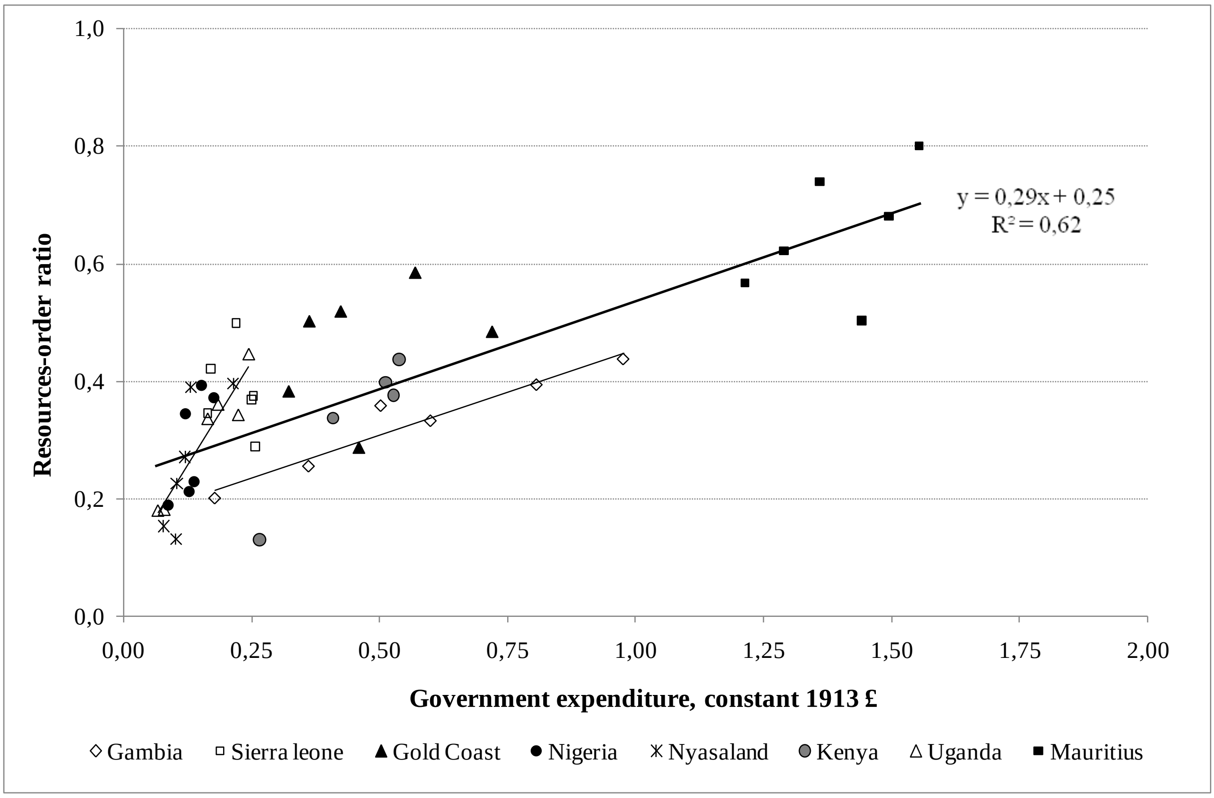






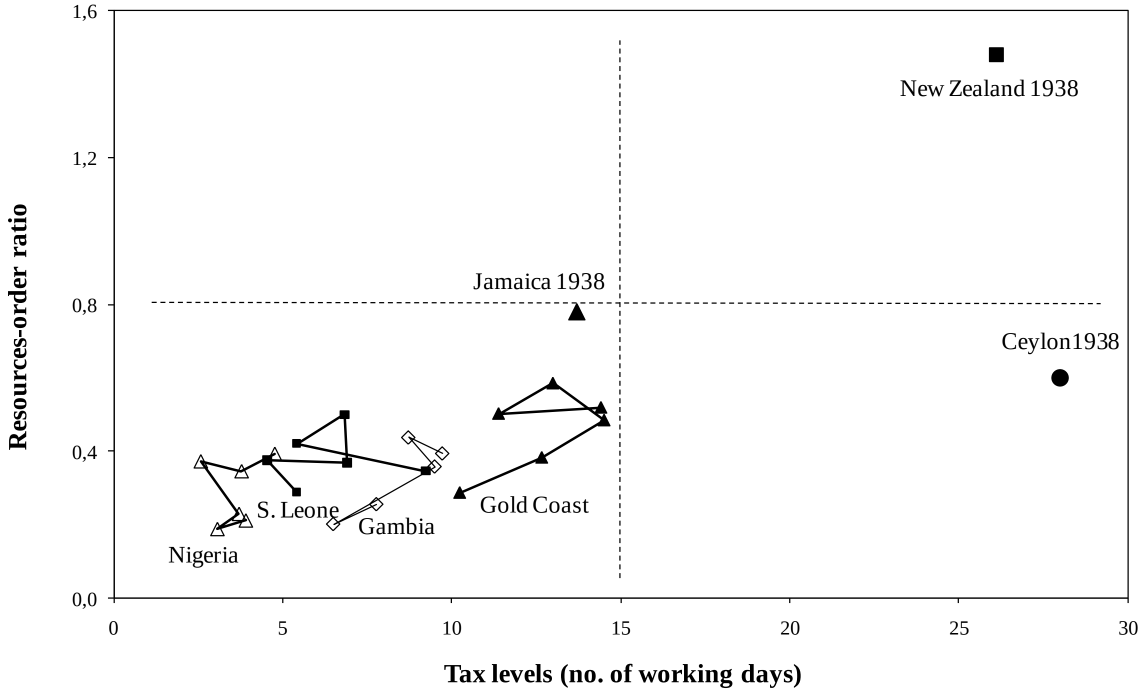
Sources: Revenue and population data from Board of Trade, *Statistical Abstract for the several Colonies and other Possessions of the United Kingdom*, London, various issues 1880-1937; 1938 revenue data directly taken from the colonial blue books (see appendix table 1). Price index series from Feinstein (1972, table 61, T132-133)
Notes: The territorial boundaries of 1913 were used for population figures.

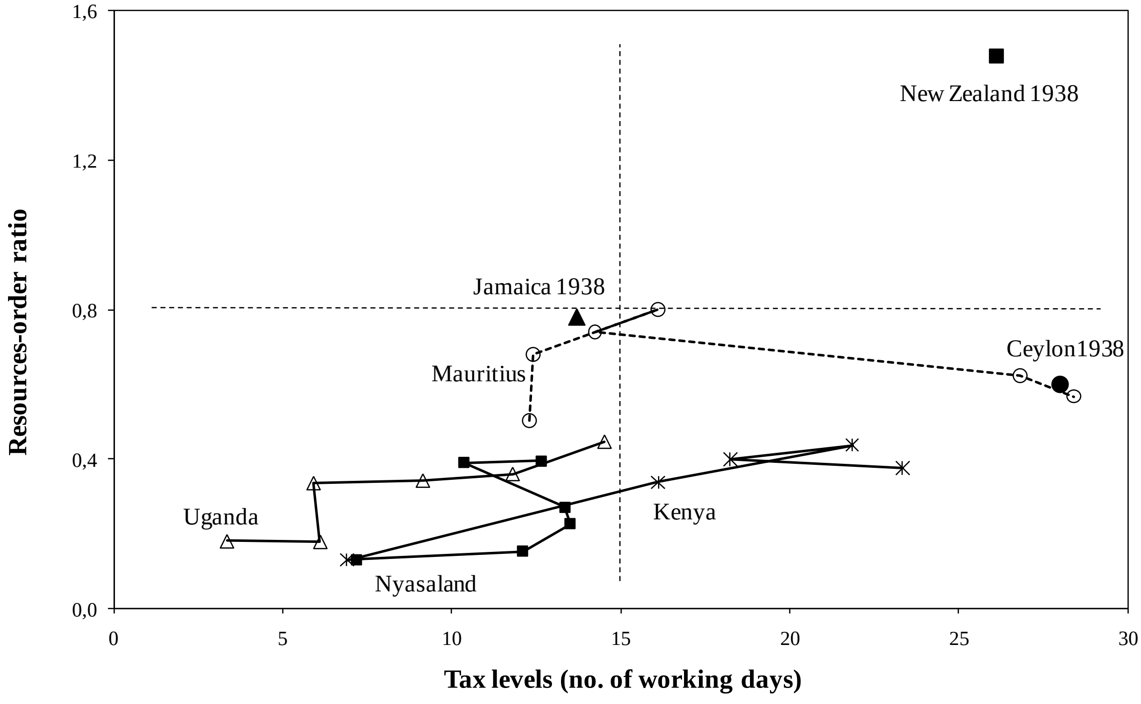
Figure 3: Total government expenditure on human resources and colonial order (x-axis) *versus* resources-order ratio (y-axis) in British Africa, ca. 1911, '20, '25, '29, '34 & '38.



Sources: See appendix table 1. Notes: Regression lines added for Uganda, Gambia and the total sample. No observation for Kenya 1919 and Gambia 1934.

Figure 4: Colonial tax levels versus the 'resource-order ratio' in British Africa, New Zealand, Jamaica and Ceylon, 1910-1938. Chronological line graphs connecting the years ca. 1911, '20, '25, '29, '34 & '38.





Sources: See table 1, table 6 and appendix table 1. For New Zealand see table 3. Tax and expenditure data for Ceylon and Jamaica are from respectively the *Blue Book of Ceylon,* 1938 (Colombo 1939) and the *Blue Book for the Island of Jamaica,* 1938 (Kingston 1939).
Note: Colony names are placed at the start of the chronological line graph, except Kenya.

Table 1: Number of working days required of a native urban unskilled worker to equal annual average per capita tax revenue, 1910-1938

	1910/13	1919/21	1925	1929	1934	1938
Gambia	7,8	6,5	9,5	8,7	na	9,7
Sierra Leone	5,4	4,5	6,9	6,8	5,4	9,2
Gold Coast	10,2	12,7	14,5	13,0	11,4	14,4
Nigeria	3,9	3,1	3,7	2,6	3,8	4,7
Nyasaland	7,2	12,1	13,5	13,3	10,4	12,6
Kenya	6,9	na	16,1	21,8	18,2	23,3
Uganda	3,3	6,1	5,9	9,1	11,8*	14,5
Mauritius	12,3	12,4	16,1	14,2	26,8	28,4
unweighted average	**7,1**	**8,2**	**10,8**	**11,2**	**13,2**	**14,6**

Sources: Population data from Board of Trade, *Statistical Abstract for the several Colonies and other Possessions of the United Kingdom* (London), various issues 1880-1937; Wage data and fiscal revenue figures from colonial blue books of the eight individual countries, various issues between 1880-1939. See appendix table 1 for details. Notes: *Uganda 1933.

Table 2: Number of working days required to equal annual average per capita tax revenue, excluding custom duties, 1910-1938

	1910/13	1919/21	1925	1929	1934	1938
Gambia	1	1	2	2	na	3
Sierra Leone	1	1	1	2	2	4
Gold Coast	1	1	1	2	2	3
Nigeria	1	1	1	1	1	1
Nyasaland	5	8	10	9	6	7
Kenya	5	na	9	11	11	13
Uganda	3	5	4	7	8	9
Mauritius	6	7	7	8	15	16

Sources: see table 1.

Table 3: Percentage shares of seven categories of government expenditure in British Africa (unweighted averages), Mauritius and New Zealand, ca. 1925

	British Africa	Mauritius	New Zealand
1. Administration	0,25	0,20	0,05
2. Public Debt	0,13	0,10	0,41
3. Military	0,06	0,08	0,03
4. Domestic security	0,07	0,08	0,02
5. Education	0,03	0,10	0,12
6. Health care	0,09	0,20	0,02
7. Public works	0,36	0,24	0,35
8. Total	1,00	**1,00**	**1,00**

Sources: Expenditure and revenue data obtained from various issues (1924-1926) of the colonial blue books, see appendix table 1 for details. For New Zealand we used *The New Zealand Official Yearbook 1925*, census and statistics department of the dominion of New Zealand (Wellington 1926).

Table 4: Pension allowances as a percentage share of total government expenditure in British Africa and New Zealand, ca. 1911, 1925 and 1938

	1910-12	1924-26	1937-38
Gambia	0,024	0,033	0,072
Sierra Leone	0,018	0,049	0,071
Gold Coast	0,016	0,024	0,078
Nigeria	0,010	0,037	0,072
Nyasaland	0,022	0,077	0,058
Kenya	0,003	0,036	0,060
Uganda	0,006	0,020	0,056
Mauritius	0,065	0,058	0,099
British Africa unweighted average	**0,021**	**0,042**	**0,071**
New Zealand	**0,005**	**0,004**	**0,000**

Sources: Expenditure data obtained from various issues (1910-1939) of the colonial blue books, see appendix table 1 for details. For New Zealand we used *The New Zealand Official Yearbook*, census and statistics department of the dominion of New Zealand, Wellington (various issues). Population figures are obtained from Board of Trade, *Statistical Abstract for the several Colonies and other Possessions of the United Kingdom* (London), various issues between 1910-1938.

Table 5: Number of civil employees per 10.000 inhabitants in a selection of government departments, ca. 1929

	Sierra Leone	Gold Coast	Southern Nigeria	Uganda	Kenya	Nyasaland	Mauritius
Agriculture & forestry	0,4	1,0	0,2	0,1	0,6	0,1	1,8
Medical & sanitation	0,8	2,7	0,3	0,3	1,3	0,2	7,2
Education	0,3	1,4	0,1	0,1	0,5	0,0	6,9
Audit, customs & treasury	0,9	1,4	0,1	0,1	0,2	0,2	5,6
Railways & public works	2,0	5,0	1,1	0,3	0,9	0,2	10,5
All departments	**6,8**	**19,2**	**3,0**	**1,4**	**7,8**	**1,4**	**47,1**

Sources: Data are obtained from the colonial blue books of 1928-1930, see for details appendix table 1.

Table 6: The 'resources-order ratio' in British Africa, 1910-1938: Colonial government spending on health care and education divided by spending on administration, domestic security and the military.

	1910/13	1919/21	1925	1929	1934	1938
Gambia	0,25	0,20	0,36	0,44	0,33	0,39
Sierra Leone	0,29	0,38	0,37	0,50	0,42	0,35
Gold Coast	0,29	0,38	0,48	0,59	0,50	0,52
Nigeria	0,21	0,19	0,23	0,37	0,35	0,39
Nyasaland	0,13	0,15	0,23	0,27	0,39	0,40
Kenya	0,13	na	0,34	0,44	0,40	0,38
Uganda	0,18	0,18	0,34	0,34	0,36	0,45
Mauritius	0,50	0,68	0,80	0,74	0,62	0,57
Unweighted average	**0,25**	**0,31**	**0,39**	**0,46**	**0,42**	**0,43**
Coefficient of variation	**0,49**	**0,61**	**0,47**	**0,32**	**0,23**	**0,18**

Sources: See appendix table 1.

Research Highlights

- Fiscal systems in British Africa differed because of varying local conditions.
- Tax levels in British Africa were comparatively low.
- Government spending patterns tended to converge over time (1880-1940).
- Colonial fiscal systems in East Africa were more ‘extractive’ than in West Africa.
- The Mauritian government spent significantly more on education and health care.

Appendix table A.1: Colonial government expenditures in British Africa decomposed into seven spending categories, ca 1911, 1925 and 1938

(per capita values in constant 1913 £ and percentage shares)

1910-12	Gambia 1911	Sierra Leone 1910	Gold Coast 1911	Nigeria 1913	Nyasaland 1911	Kenya 1912	Uganda 1911	Mauritius 1911
Per caput expenditure (£)								
1. Administration	0,14	0,06	0,09	0,02	0,05	0,06	0,02	0,29
2. Public Debt	0,00	0,05	0,06	0,02	0,00	0,00	0,00	0,24
3. Military	0,04	0,02	0,05	0,02	0,02	0,03	0,02	0,08
4. Domestic security	0,03	0,01	0,04	0,01	0,00	0,02	0,01	0,13
5. Education	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,11
6. Health care	0,04	0,02	0,04	0,01	0,01	0,01	0,01	0,14
7. Public works	0,10	0,10	0,18	0,05	0,02	0,15	0,02	0,46
8. Total	**0,36**	**0,26**	**0,46**	**0,13**	**0,10**	**0,27**	**0,08**	**1,44**
Percentage shares								
1. Administration	0,37	0,22	0,19	0,17	0,46	0,22	0,29	0,20
2. Public Debt	0,00	0,18	0,12	0,16	0,00	0,00	0,00	0,16
3. Military	0,11	0,06	0,10	0,12	0,24	0,10	0,22	0,06
4. Domestic security	0,09	0,05	0,08	0,06	0,01	0,08	0,08	0,09
5. Education	0,04	0,03	0,03	0,02	0,00	0,01	0,01	0,08
6. Health care	0,11	0,07	0,08	0,06	0,09	0,04	0,10	0,10
7. Public works	0,27	0,39	0,40	0,40	0,20	0,55	0,31	0,32
8. Total	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**

1924-26	Gambia 1925	Sierra Leone 1924	Gold Coast 1925	Nigeria 1925	Nyasaland 1925	Kenya 1926	Uganda 1925	Mauritius 1925
Per caput expenditure (£)								
1. Administration	0,23	0,10	0,20	0,05	0,07	0,18	0,09	0,31
2. Public Debt	0,00	0,05	0,17	0,05	0,02	0,17	0,03	0,15
3. Military	0,05	0,02	0,04	0,02	0,02	0,05	0,02	0,13
4. Domestic security	0,06	0,02	0,09	0,02	0,01	0,06	0,03	0,13
5. Education	0,01	0,02	0,05	0,01	0,00	0,04	0,01	0,15
6. Health care	0,11	0,04	0,11	0,01	0,02	0,06	0,04	0,30
7. Public works	0,44	0,19	0,64	0,09	0,04	0,18	0,08	0,38

8. Total	**0,91**	**0,45**	**1,30**	**0,25**	**0,19**	**0,74**	**0,29**	**1,55**
Percentage shares								
1. Administration	0,25	0,23	0,15	0,20	0,37	0,24	0,29	0,20
2. Public Debt	0,00	0,11	0,13	0,22	0,11	0,23	0,10	0,10
3. Military	0,05	0,05	0,03	0,07	0,10	0,06	0,08	0,08
4. Domestic security	0,07	0,05	0,07	0,07	0,07	0,09	0,09	0,08
5. Education	0,01	0,04	0,04	0,02	0,01	0,06	0,03	0,10
6. Health care	0,12	0,08	0,09	0,05	0,11	0,08	0,13	0,20
7. Public works	0,49	0,43	0,50	0,36	0,23	0,24	0,29	0,24
8. Total	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**

1937-38	**Gambia 1938**	**Sierra Leone 1937**	**Gold Coast 1938**	**Nigeria 1938**	**Nyasaland 1937**	**Kenya 1938**	**Uganda 1938**	**Mauritius 1938**
Per caput expenditure (£)								
1. Administration	0,28	0,06	0,11	0,03	0,05	0,12	0,07	0,31
2. Public Debt	0,01	0,01	0,02	0,05	0,09	0,17	0,02	0,24
3. Military	0,04	0,01	0,02	0,01	0,01	0,03	0,01	0,09
4. Domestic security	0,05	0,01	0,03	0,01	0,01	0,03	0,01	0,11
5. Education	0,02	0,01	0,03	0,01	0,01	0,03	0,02	0,15
6. Health care	0,12	0,02	0,06	0,01	0,02	0,04	0,03	0,14
7. Public works	0,28	0,04	0,16	0,03	0,03	0,10	0,08	0,19
8. Total	**0,81**	**0,16**	**0,42**	**0,15**	**0,21**	**0,53**	**0,24**	**1,21**
Percentage shares								
1. Administration	0,35	0,37	0,27	0,22	0,22	0,22	0,30	0,25
2. Public Debt	0,01	0,08	0,04	0,31	0,44	0,33	0,09	0,19
3. Military	0,05	0,06	0,05	0,05	0,03	0,07	0,04	0,07
4. Domestic security	0,06	0,05	0,08	0,06	0,05	0,06	0,05	0,09
5. Education	0,03	0,07	0,07	0,05	0,03	0,06	0,06	0,12
6. Health care	0,15	0,09	0,13	0,08	0,08	0,07	0,11	0,11
7. Public works	0,35	0,27	0,37	0,23	0,15	0,19	0,34	0,15
8. Total	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**	**1,00**

Sources: **Expenditure** data obtained from various issues between 1910 and 1939 of the *Blue Book of the British East Africa Protectorate*, Nairobi: changed into *Blue Book for the Colony and Protectorate of Kenya*, Nairobi; *Blue Book for the Colony of The Gambia*, Bathurst; *Blue Book for the Gold Coast Colony*, Accra; *Blue Book for the Colony of Mauritius*, Port Louis; *Blue Book for the Colony and Protectorate of Nigeria* (Lagos); *Blue Book of Nyasaland Protectorate*, Zomba; *Blue Book of Sierra Leone*, Freetown; *Blue Book of the Uganda Protectorate*, Kampala. For New Zealand we used *The New Zealand Official Yearbook*, census and statistics department of the dominion of New Zealand, Wellington, various issues 1910-1939; **Population** data obtained from various issues of *Statistical Abstract for the several Colonies and other Possessions of the United Kingdom.* **Price index** for British public goods and services from Feinstein (1972: table 61, T132-133).

Notes: **Administration** includes all expenditures on the governor's department, the legislature and judiciary, native affairs or provincial or district administration, the custom department, the excise department, the audit department, accounting and clerical services, the government printing office and all government pensions and gratuities. **Public Debt** includes all interest and amortisation payments on government loans. **Military** includes all expenses on the army, navy, volunteer or native auxiliary forces. **Domestic security** includes all expenses on police and prisons, occasionally including lunatic asylums as well. **Education** includes all expenses of the education department and direct contributions to primary and secondary schools, industrial schools and universities. **Health care** includes all expenses of the medical and sanitation departments and direct contributions to hospitals, medical research, sanitary and extraordinary expenses on famine relief or epidemics. **Public works** includes all expenses on physical infrastructure such as railways, roads, bridges, harbours, sewerage, water works, electricity, post and telegraph, plus all the recurrent and extraordinary expenses on public buildings, maintenance and the public works department.