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The Economic Legacies of the 'Thin White Line': Indirect Rule and the Comparative Development of Sub-Saharan Africa

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Abstract

Recent empirical studies claim to have identified roots of Africa's poverty in its colonial past, particularly in the 'extractive' or 'illegitimate' institutions that the colonial powers bequeathed. While taking a similar quantitative approach this paper accepts the view of many historians that colonial institutions were just as much African in origin as they were exogenously imposed. The number of colonial administrators relative to the African population – or the 'thin white line' – in 33 African colonies is examined. This varied considerably across the continent but is largely explicable by factors which appear to have had little direct effect on economic performance. There is found to be a strong and robust positive correlation between the closeness of administration during the colonial period and economic growth since independence, particularly where pre-colonial political systems were relatively decentralised. It is proposed that this correlation is the result of a causal relationship: where colonial powers were unable or unwilling to rule over their subjects directly they inadvertently increased competition between Africans over productive resources and political power. This has aggravated the insecurity of the poorest and least connected within African societies and rendered the pursuit of wealth contingent on active participation in political processes.

This paper investigates whether the experience of colonialism, and in particular indirect rule, has contributed to sub-Saharan Africa's (on average) poor economic performance since independence, and if so, through which causal mechanisms. Much of the existing empirical literature on colonial legacies overestimates the capacity of the colonial state and overlooks the most important means by which the "thin white line" maintained "hegemony on a shoestring":¹ collaboration with indigenous elites.²

¹ Phrases coined by Kirk-Greene and Berry respectively.

² An exception is Lange, 'British colonial legacies', but this study also has its limitation, to be discussed below.

In a hugely influential paper, Acemoglu, Johnson and Robinson (AJR) provided evidence that colonial experience did matter.³ They show that, across 64 former colonies (23 of them African), pre-quinine European settler mortality is correlated with the present-day risk of expropriation and therefore income. If settler mortality has not had a direct effect on income this relationship, they argue, must stem from the policies and associated institutions of colonisation, which depended on the number of European settlers. According to AJR most of Africa is characterised by high settler mortality, low levels of European settlement and “extractive” colonial institutions which have persisted to the present.

AJR’s story has limited explanatory power however, especially in the African context. Outside the ‘settler’ colonies, the European population was typically very small, yet economic performance within sub-Saharan Africa has been far from homogenous.⁴ It has even been suggested that the ‘peasant’ colonies – where European settlement was negligible (or forbidden) – have inherited institutions more favourable to the reduction of poverty.⁵ To classify African colonial states as purely ‘extractive’ is a gross simplification that obscures much variation over time and space, and the fact that it was “often in the interests of colonial rulers to facilitate African enterprise.”⁶ AJR overstate the ability of the European powers to impose their ‘chosen’ institutions at will, ignoring the “repeatedly demonstrated capacity [of Africans] to contribute crucially to shaping their own economic destinies.”⁷ If the colonial experience did

³ Acemoglu, Johnson and Robinson, ‘Colonial origins’.

⁴ For example, in the 1930s, neighbouring Bechuanaland and Northern Rhodesia (Botswana and Zambia) both had seven Europeans for every 1,000 Africans (Kuczynski, *Colonial Population*). From Independence to the 1990s Botswana’s annual per capita growth was in excess of 5%, while Zambia’s per capita income declined significantly (Englebert, *State Legitimacy*, p.3).

⁵ Bowden et al, ‘Measuring and Explaining Poverty’.

⁶ Moreover, this was more likely to be the case in the ‘peasant’ colonies, see Austin, ‘The reversal of fortune thesis’, pp.1007-1008, quote p.1020.

⁷ Ibid., pp.1019-1020. A similar argument is made by Bayly in the context of India, ‘Indigenous and Colonial Origins’.

have long-term economic legacies in Africa, it is clear that “the causal relationships involved are more differentiated than AJR’s formulations recognise.”⁸

Pierre Englebert argues that the key to explaining Africa’s post-colonial economic performance is the ‘legitimacy’ of states – whether or not they are “congruent with informal institutions and norms”.⁹ In a cross-country quantitative investigation, he constructs a dummy variable for ‘vertical legitimacy’, which supposedly captures “the embeddedness of the post-colonial state into pre-colonial relations of authority,”¹⁰ and an index of ‘horizontal legitimacy’ – the proportion of the population that belongs to an ethnic group that is split between two or more countries – which is intended to proxy “the extent to which there is agreement about what community the state rules over.”¹¹ Englebert finds these variables to be significant determinants of ‘good governance’ and therefore economic growth. Englebert sees the line of causality running from “incongruence between pre- and post-colonial institutions” to greater “relative payoffs to domestic elites of adopting neo-patrimonial polices over developmental ones.”¹² As others have put it, “having only limited legitimacy, governments were acutely exposed to pressures from their own narrow base of supporters”¹³ while “the mass of rural producers... lack[ed] political organisations with which to defend their interests.”¹⁴ Englebert claims that state illegitimacy accounts for Africa’s poor economic performance on average – in his model the Africa dummy is insignificant¹⁵ – and the heterogeneity of experiences within Africa; vertical legitimacy

⁸ Austin, ‘The reversal of fortune thesis’, p.996.

⁹ Englebert, ‘Pre-colonial institutions’, p. 11.

¹⁰ Ibid., p.16. The only mainland African states that Englebert judges to be legitimate in this sense are Botswana, Ethiopia, Lesotho, Swaziland, Rwanda and Burundi.

¹¹ Ibid.

¹² Englebert, ‘Pre-colonial institutions’, p.7.

¹³ Collier and Gunning, ‘Explaining’, p.68.

¹⁴ Bates, *Markets and States*, p.12.

¹⁵ Englebert, ‘AFRICA Dummy’.

accounts for half of the variation across the continent, and horizontal legitimacy 20 percent.¹⁶

While pointing to the arbitrariness of the boundaries drawn at the Berlin conference in creating low horizontal legitimacy, the main limitation of Englebert's argument is that it does not adequately explain the origins of vertical illegitimacy.¹⁷ While it is true that present-day African states (except Ethiopia) have not developed in a wholly 'natural' or 'endogenous' manner, it is wrong to claim, as Englebert does, that colonial regimes were able to 'import' political institutions of their choosing, and not rely on the legitimacy of pre-existing authorities.¹⁸ If colonialism did affect the development path of African institutions, it did so in a complex manner – reinterpreting, perhaps reinforcing and perhaps distorting; there was no clean break from the past.

The approach taken here emphasises the weakness of the colonial state and the central role of African agency. A key variable which affected the behaviour of both the 'lone-handed DC' (District Commissioner) and (perhaps more importantly) his potential African collaborators is the number of provincial administrators relative to the African population. This is estimated using the official staff lists and colonial population records. Regression analysis is used to examine the relationship between this variable and economic growth since independence. Of course, correlation does not necessarily imply causation; economic performance could be driven by underlying characteristics of African societies which also shaped the nature of colonialism. The factors that determined the thinness of the 'white line' are examined in an attempt to isolate any enduring legacies from its endogenous nature. A second identification

¹⁶ Englebert, *State legitimacy*, p. 9.

¹⁷ Of course, 'vertical legitimacy' is a concept that is almost impossible to quantify.

¹⁸ In an endnote, Englebert states (erroneously) that, "although colonialism used local systems to extend its rule, it did not base its rule upon them or their legitimacy", *State legitimacy*, ch. 5, note 5, p.118.

strategy exploits the central role of Africans in the making of their own history by examining how the 'legacy' of the white line varies with the nature of pre-existing institutions.¹⁹

Section I examines the nature of indirect colonial rule in Africa and the potential economic legacies that have been identified in the literature. Section II considers the closeness of administration, its appropriateness as a measure of indirect rule and the significance of any variation across colonial powers and time. Section III investigates the determinants of the white line, section IV its effects. Section V considers the significance and some implications of the results. Section VI concludes.

I

I.1 What was Indirect Rule?

One of the most striking characteristics of Europe's imperial adventure in Africa was the tiny amount of resources devoted to it; this was "colonialism-on-the-cheap".²⁰ Even by the 'high-noon of empire' – the late 1930s – there were barely 3,000 European administrators ruling over an African population approaching 90 million.²¹ This 'thin white line' was forced to rule indirectly through pre-existing institutions such as chieftainship and customary law and land tenure, a necessity that was always present whether or not the ideology of indirect rule was explicit. As Fields has put it, "for a state born illegitimate and forced to scrimp all its

¹⁹ In particular the degree of political centralisation. Since it is generally accepted that indirect rule was easier to implement in politically centralised societies, if the relationship between the closeness of colonial administration and subsequent economic performance is causal, it would be expected that it will be strongest in the instance of low political centralisation. In econometric terms, the interaction term between the white line and pre-colonial political centralisation will be negative.

²⁰ Kilson, *Political Change*, p.24.

²¹ This includes only British, French and Belgian colonies. See below for details and sources.

life, chiefs' legitimacy was the best available makeshift."²² Where there was no pre-existing chief, the colonial creations that filled the void had to "strike a resonant chord in the community" to be effective.²³ The following passage illustrates the pragmatic approach that colonial administrators were forced to take:

Before the re-organisation of a people is attempted, administrative officers are required to trace its history and the nature of its indigenous institutions; to consider what may remain of these institutions and how they can be built upon so that an executive authority and a judicial system may be set up which the people will accept and obey now. The administration proposed must be in accordance with the wishes of the people themselves and officers are advised that if a system desired by the people is sound it should not be rejected merely because it is not wholly in accordance with ancient institutions.²⁴

Under colonial rule customary institutions were therefore 'reinterpreted', through a process in which Africans were active participants.²⁵ Since the definition of 'traditional' was open to challenge, the "search for tradition" served as "a mechanism for generating factional struggle".²⁶ Moreover, "once colonial administrators acknowledged the sovereignty of traditional discourse, they too became subject to it."²⁷ In particular, attempts to introduce individual rights to buy and sell land were frustrated.²⁸ Indirect rule was thus a result of – and reinforced – the weakness of colonial regimes in Africa.

²² Fields, *Revival and Rebellion*, p.64.

²³ Harries, 'Imagery', p.107.

²⁴ Sierra Leone, *Report by J. S. Fenton on a visit to Nigeria*, 1935.

²⁵ See Spear, 'Neo-traditionalism'.

²⁶ Dunn and Robertson, *Dependence and Opportunity*, p.73. The 'search for tradition' is a phrase coined by Berry, see *No condition*, pp.22-42.

²⁷ Spear, 'Neo-Traditionalism', p.13. This is clearly illustrated by the cocoa hold-ups organised by Ghanaian chiefs in the 1930s, see Austin, 'Capitalists and chiefs'.

²⁸ See Phillips, *The enigma of colonialism*.

Broadly, the literature on indirect rule highlights two channels through which the system could have had long-term economic legacies. The first is by increasing 'fractionalisation', be it ethnic or otherwise. The second, associated particularly with the work of Sara Berry, stresses the effects indirect rule had on the access to resources, in particular reinforcing the competitive nature of property rights.

1.2 Fractionalisation

Bayart states that the present-day "precipitation of ethnic identities becomes incomprehensible if it is divorced from colonial rule."²⁹ Indirect rule certainly did make existing divisions less flexible. In most pre-colonial African societies, "status and wealth depended on accumulating dependents and followers",³⁰ outsiders who could increase the leader's prestige or the community's labour force were usually welcomed, and "communities were more often than not multiethnic."³¹ Under indirect rule "the African was containerized, not as a native, but as a tribesperson... [because] customary law was defined in the plural, as the law of the tribe, not in the singular, as a law for all natives."³² For example, in pre-colonial Kenya the division between the Kikuyu and Maasai was fluid: many Maasai left pastoralism "to take refuge with surrounding populations of cultivators and hunters."³³ But with the imposition of colonial rule, "imprecisely drawn boundaries hardened and became policed borders that divided rather than united communities on either side" and the "identities that had once been complementary now came to symbolise norms and values that could be perceived as being alien or opposed."³⁴

²⁹ Bayart, *The state in Africa*, p.51.

³⁰ Berry, *No Condition*, p.33.

³¹ Mamdani, *Citizen and Subject*, p.140.

³² Ibid., p. 22.

³³ Waller, 'Acceptees and Aliens', p.227.

³⁴ Ibid., pp.226-7.

Increasing the 'social distance' between individuals increases the transaction cost of any economic interaction. Leeson has argued that pre-colonial institutions – which overcame social distance and enabled trade to occur by screening outsiders for low discount rates – were disrupted by the 'noise' introduced by colonial rule.³⁵ Leeson focuses on stateless and quasi-stateless pre-colonial societies, where "agents adopted the customs and practices of the outsiders they wanted to trade with to signal their credibility"³⁶ and "commercial interaction was an important element creating homogeneity."³⁷ But when these societies came under indirect colonial rule individuals were often forced to follow the customs and practices which had been ascribed to their 'tribe', such signals were rendered meaningless and widespread trade and co-operation stifled.³⁸

The negative impact of 'fractionalisation' on economic policy and political stability is generally accepted, as fragmented societies "will be both prone to competitive rent-seeking by the different groups and have difficulty agreeing on public goods."³⁹ Mamdani has argued that because of the tribal nature of customary law, "revolt against indirect rule also took a tribal form", and that tribalism then "contaminated" post-colonial politics.⁴⁰

But just as ethnic diversity does not necessarily equate to fractionalisation, societies can be fragmented along non-ethnic lines. An advantage of indirect rule for the colonial power was that it served to 'internalise' opposition to the regime. As one official reported in Ghana in

³⁵ Leeson, 'Endogenizing fractionalization'.

³⁶ Ibid., p.82.

³⁷ Thornton, *Africa and Africans*, p.194.

³⁸ A weakness of this line of argument is that it probably overstates the inflexibility of indirect rule in practice. For example, the British often did not codify customary law with the explicit purpose of maintaining a degree of flexibility, Shadle, 'Changing traditions', while Berry has documented how the "structures and the boundaries of native administrations were periodically readjusted", with the result of "maintaining fluid, flexible social boundaries and structures of authority", *No Condition*, pp.35-7.

³⁹ Easterly and Levine, 'Africa's growth tragedy', p.1205.

⁴⁰ Mamdani, *Citizen and Subject*, p.183.

1930, “what disturbances occur are invariably in the nature of ‘faction fights’.”⁴¹ Political scientists have argued that indirect rule left post-colonial African states in a precarious position as the central administrations they inherited were weak relative to local level authorities, hence they chose to consolidate their power through state patronage and clientelism.⁴² Clapham has argued that in Sierra Leone paramount chiefdoms “came to form the local building blocks from which rival clientelist networks were constructed.”⁴³

Lange has attempted to test this hypothesis statistically. In a sample of 33 former British colonies with low levels of European settlement (14 of them in mainland Africa), he finds that his proxy for the extent of indirect rule (the percentage of court cases in 1955 that were conducted in colonially recognised customary courts) is strongly and negatively correlated with a number of indicators of political development, especially political stability and the rule of law.⁴⁴ The main limitation of the study is that it cannot be assumed that the correlation is the result of a causal relationship. The only controls Lange includes are the size of the European population, the population density at the beginning of the colonial period, ethnic diversity, as measured by Easterly and Levine, and dummies for Africa and plantation economies. If the extent of indirect rule is correlated with any other characteristic of the former colonies which could have also affected political development directly, the estimated effect of indirect rule will be biased. There is also reason to suppose that

⁴¹ Quoted in Dunn and Robertson, *Dependence and Opportunity*, p.87. Such struggles tended to be within, rather than between, chieftaincies.

⁴² For example, see Boone, ‘Sates and ruling classes’. Also note the similarities with Englebert’s argument, although he overlooks the significance of indirect rule.

⁴³ Clapham, ‘The politics of failure’, p.77.

⁴⁴ Lange, ‘British colonial legacies’.

indirect rule in Africa was in some ways unique, and has had a potentially more significant *economic* legacy.⁴⁵

1.3 Land Tenure

In the context of India, Banerjee and Iyer find that colonial land policies have had a persistent impact on economic performance. In particular, areas where the British collected land revenue through large landlords are now characterised by relatively low agricultural investment and productivity.⁴⁶ It is therefore reasonable to suppose that colonialism in Africa may have had an analogous economic legacy.

Perhaps the defining characteristic of land tenure in Africa today is its 'social embeddedness': its "entanglement" in "social, cultural, and political-economic matrices."⁴⁷ "The process of acquiring and defending rights in land is inherently a political process based on power relations among members of the social group.... A person's status ... can and often does determine his or her capacity to engage in tenure building."⁴⁸ As a result, most scholars would agree, "African systems of landholding are characterised by pervasive negotiability, ambiguity and indeterminacy",⁴⁹ and there is a "proliferation of debate, litigation and outright conflict over competing claims to land".⁵⁰ For example, in present-day Ghana "land ... is a focus of intense and unequal competition."⁵¹ Even in relatively sparsely populated Tanzania, "all social groups... participate in land negotiation processes, and their access to prosperity is determined by

⁴⁵ Lange's Africa dummy is consistently negative although not statistically significant. This could be due to Lange's focus on political rather than economic development, or simply the small sample size.

⁴⁶ The authors use an instrumental variable approach to rule out the endogeneity of historical institutions, Banerjee and Iyer, 'History'.

⁴⁷ Peters, 'The limits of negotiability', p.48.

⁴⁸ Basset and Crummey, *Land in African agrarian systems*, p.20.

⁴⁹ Peters, 'The limits of negotiability', p.46.

⁵⁰ Berry, 'Every-day politics', p.107.

⁵¹ Ibid., p.124.

active participation in these processes.”⁵² Since disputes over land often “turn on questions of historical precedent”,⁵³ Africa’s colonial past must have had an impact on this ongoing social process.

Berry argues that indirect rule reinforced the role of social networks and relationships in determining access to all resources, especially land.⁵⁴ The result, contrary to the aims of the colonising powers, was to weave instability – “in the form of changing relations of authority and conflicting interpretations of rules – into the fabric of colonial rule.”⁵⁵ Challenges to customary land tenure were common, resulting from both the indistinct and dynamic nature of African custom and from competition between Africans for control of productive resources and political power. One colonial official in Ghana lamented that “knowledge of ancient tradition is, in fact, small, but the manufacture of new ones has been raised ... to the status of a rural industry.”⁵⁶ The situation was therefore worse where ‘custom’ was difficult to define, as was the case in politically-fragmented societies, or where the value of land was increasing due to the ‘cash crop revolution’ which often accompanied colonial rule.⁵⁷ The immediate repercussion was that courts were turned into mere “arenas of struggle over control of land, revenue, jobs, and influence”.⁵⁸ This competition has remained – perhaps even increased – in the post-colonial period as “both the implementation and the effects of land-reform policies

⁵² Odgaard, ‘Scrambling for land’, p.71.

⁵³ Berry, ‘Every-day politics’, p.125.

⁵⁴ This argument is applied convincingly to three diverse regions (although all formerly British and with relatively high rainfall): the cocoa-based ‘peasant economies’ of southern Ghana and southwest Nigeria, the Kikuyu area of ‘settler’ Kenya and the ‘rural labour reserve’ of north-eastern Zambia. Berry, *No Condition*.

⁵⁵ *Ibid.*, p.32.

⁵⁶ Quoted in Sutton, ‘Law, chieftaincy and conflict’, pp.42-3.

⁵⁷ Cocoa, which spread over much of coastal West Africa from the 1890s, is the most extreme case.

⁵⁸ Berry, *No Condition*, pp.36-9.

[have borne] a striking resemblance to those of indirect rule.”⁵⁹ Indirect rule served to ‘institutionalise’ conflict over resources.

One colonial administrator dismissed land litigation as “a form of amusement which costs money.”⁶⁰ But property rights becoming subject to “perpetual contest” could be hugely significant in economic terms.⁶¹ Although most litigation was between chiefs, they were “bound by custom and public opinion to fight any land case to the limit of his stool’s credit”.⁶² The huge cost of litigation was thus ultimately borne by the farmers themselves. More generally, farmers had to “invest part of any available surplus in the means of contesting access to resources [ie. cultivating social status in order to challenge customary authority], leaving less for investing in directly productive capital.”⁶³ One important method of increasing social status and respect within the community (and therefore the ability to exercise claims to land) is by making contributions to (or at least attending) ceremonies such as marriages, funerals, naming ceremonies and initiation rites.⁶⁴ This sort of expenditure (and therefore foregone investment) was – and is – far from insignificant: a survey of 187 cocoa-farming families in Nigeria in 1951-2 found that on average four percent of income was devoted to social and ceremonial expenses.⁶⁵

Berry argues that the uncertainty inherent in this competitive method of accessing resources has encouraged farmers to diversify their

⁵⁹ Ibid., p.132.

⁶⁰ G.G. Shute, Chief Commissioner of Eastern Provinces, Nigeria. The comment was made as an explanation for the fall in litigation during the depression. *Annual report on the Southern Provinces of Nigeria*, 1938, p.5.

⁶¹ Berry, *No Condition*, p.40.

⁶² A DC in Ghana in 1940, quoted in Austin, ‘Capitalists and chiefs’, pp.87-8.

⁶³ Berry, *No Condition* p.42.

⁶⁴ Ibid., p.160.

⁶⁵ Galletti et al., *Nigerian cocoa farmers*. Cocoa prices were high at the time. This phenomenon could help account for the observed propensity of some of the world’s poorest households, including those in Africa, to spend a surprisingly large proportion of their income on festivals, see Banerjee and Duflo, ‘Economic Lives’. Time spent attending such ceremonies, which reduces possible labour inputs, should also be considered.

income streams, further inhibiting the development of commercial agriculture in post-colonial Africa.⁶⁶ Although more nuanced, this echoes arguments traditionally put forward by economists regarding tenure insecurity (and hence weak incentives for investment) resulting from poorly defined property rights.⁶⁷ Partly in recognition of Berry's work, economists are now beginning to pay attention to the social context of African systems of land tenure. In a microeconomic study of Akwapim, Ghana, Goldstein and Udry explicitly test Berry's hypothesis. They find that "individuals who are not central to the networks of social and political power that permeate these villages are much more likely to have their land expropriated while it is fallow."⁶⁸ Their fallow periods are therefore shorter than would be technically optimal, reducing the productivity of their land.⁶⁹

Although Berry is sceptical, others have argued that 'unequal competition' for land is leading to the concentration of land ownership and class formation. Peters argues that many areas have seen the "accumulation of land by a political and civil elite".⁷⁰ Significantly, "the accumulators are not 'kulaks'... but bureaucratic and professional 'big men'", who have "privileged access to information, credit, and administrative arenas".⁷¹ Land concentration gives rise to varied land-labour endowments and hence "an inefficient dispersion of marginal products unless offset by market mechanisms".⁷² The final channel through which competition over land could be harming aggregate economic performance is by undermining sale and rental markets in

⁶⁶ Berry, *No condition*, p.18.

⁶⁷ For example, see Feder and Noronha, 'Land rights systems'.

⁶⁸ Udry and Goldstein, 'The profits of power', p.25.

⁶⁹ This is particularly relevant given that, in the context of expensive fertiliser and relative abundance of land, leaving land fallow is the most efficient way to increase yields.

⁷⁰ Peters, 'Limits of negotiability', p.57.

⁷¹ Ibid.

⁷² Collier and Gunning, 'Explaining', p.80.

land.⁷³ Even where tenure is secure (as is often the case with tree crops), the basis of this security is usage; “most land in Africa is still not readily marketable”.⁷⁴

II

Given these potential casual mechanisms, the degree to which colonial administrations made use of – or attempted to ‘create’ – indigenous institutions could help explain the variation in economic performance across sub-Saharan Africa in the post-colonial period. But measuring the extent of indirect rule (and, still more, isolating any causal effect) is not a straightforward task.

Lange’s measure of legal penetration (for 14 former British colonies in mainland Africa) is intended to proxy the overall extent to which colonial rule relied upon traditional institutions. The degree to which this measure varies – from under 40 percent in Gambia and Zimbabwe to over 90 percent in Nigeria – suggests that different colonies did indeed rely on traditional institutions to different extents. But a drawback of this measure is that it makes no distinction between those court cases presided over by ‘legitimate’ chiefs and those headed by ‘creations’ of the colonial regime.⁷⁵ The extent of de facto indirect rule – and its effects – must have depended on the ‘suitability’ of pre-existing institutions.

“Officials ruled indirectly... whether or not the available institutions were

⁷³ Such competition, by inhibiting the use of land as collateral, could have also undermined credit markets.

⁷⁴ Collier and Gunning, ‘Explaining’, p.80. But it should be noted that land transactions are becoming more common. See André and Platteau, ‘Land relations’, for an example of widespread (and technically illegal) land sales, in Rwanda before the genocide. There is even evidence of some land sales (although conducted by chiefs on behalf of their subjects) in the early colonial period, see Hill, *Migrant cocoa-farmers*.

⁷⁵ The correlation between Lange’s measure of indirect rule and the extent of pre-colonial state development (as measure by Rainer and Gennaioli) is -0.40. Counter-intuitively suggesting that there was more collaboration where the available institutions were the least appropriate.

readily adaptable to this use”, but “indirect rule worked best in such tightly organized political systems” as in Northern Nigeria and Buganda.⁷⁶

It has been said that the power of the “thin white line” rested upon “coercion, collaborators, confidence, and competence.”⁷⁷ Kirk-Greene places the greatest emphasis on the last two, and even states that “the DC was the government and the government was the DC.”⁷⁸ But others (correctly) dismiss this notion; it was not the white administrator but “indigenous collaborators, [that] more than anything else, determined the organisation and character of colonial rule”.⁷⁹ Under indirect rule “the colonial state [was] a consumer of power generated within the customary order.”⁸⁰ As Cameron, Governor of Tanganyika, acknowledged, “the natives’ loyalties to their own institutions ... form one of the most valuable possessions which we have inherited ...[and] make for law and order in the land as nothing else can.”⁸¹

Traditionally some scholars have classified only British colonial rule as indirect, whereas the French and others were ‘assimilist’ or somehow ruled more directly. The explicit theory of indirect rule – as defined by Lugard, the first Governor of Northern Nigeria – was confined to British colonies. And almost all of the literature which deals explicitly with the legacies of indirect rule has focused on former British colonies.⁸²

But the “assorted *rois de la brousse* paid little heed to procedure and administered their areas of responsibility with a large degree of discretion”,⁸³ and the practical realities facing the British District Officer,

⁷⁶ Fields, *Revival and Rebellion*, p.33 and p.32.

⁷⁷ Kirk-Greene, ‘The thin white line’, p.38.

⁷⁸ Kirk-Greene, *Imperial administrators*, p.186.

⁷⁹ Robinson, ‘Non-European foundations’, p.139. According to Fields, an “occupational requirement” for a DC, more important than confidence or competence, was an “inattention to reality”, *Revival and Rebellion*, p.50

⁸⁰ Fields, *Revival and Rebellion*, p.31.

⁸¹ Comment made in 1937, quoted in Spear, ‘Neo-Traditionalism’, p.9.

⁸² For example, Lange’s sample consists only of former British colonies, while Berry’s case studies are Ghana, Nigeria, Kenya and Zambia.

⁸³ Chabal and Daloz, *Africa Works*, p.12.

the French *Commandant de Cercle* or the Belgian *Administrateur territoriaux* were – to a great extent – the same. The reason the French tolerated slavery, and even slave trading, following their conquest in West Africa was precisely that they depended on the acquiescence of African elites.⁸⁴ In 1902, Lyautey remarked that there was a need “so far as possible to keep intact the indigenous governmental machinery, institutions, serviceable customs, and traditional chiefs, leaving to them the direct exercise of police, administration, even justice and tax collection”.⁸⁵ Robert Delavignette acknowledged that in French West Africa “colonial institutions [were] determined by the evolution of the natives in a new African world, rather than by the theoretical conceptions of the home country.”⁸⁶ In other words, “officials ruled indirectly, whether or not they recognized the fact”.⁸⁷ Fields argues that the formal introduction of indirect rule in Zambia (in 1929) and Malawi (1933) did not affect the situation on the ground. In fact, the extent of collaboration was greater in the earlier period when white administrators were even fewer.⁸⁸

This illustrates the importance of the size of the ‘white line’: the number of European administrators relative to the African population – a variable that was far from constant across the continent. In the following analysis it will be assumed the lower this ratio the greater the extent of collaboration necessary. Figure 1 shows this assumption appears valid when considering Lange’s measure for the extent of indirect rule. Of course there are factors which could have affected the extent of

⁸⁴ Klein, *Slavery and colonial rule*.

⁸⁵ Quoted in Hailey, *African survey*, p.206, translated into English by Fields, *Revival and Rebellion*, p.62.

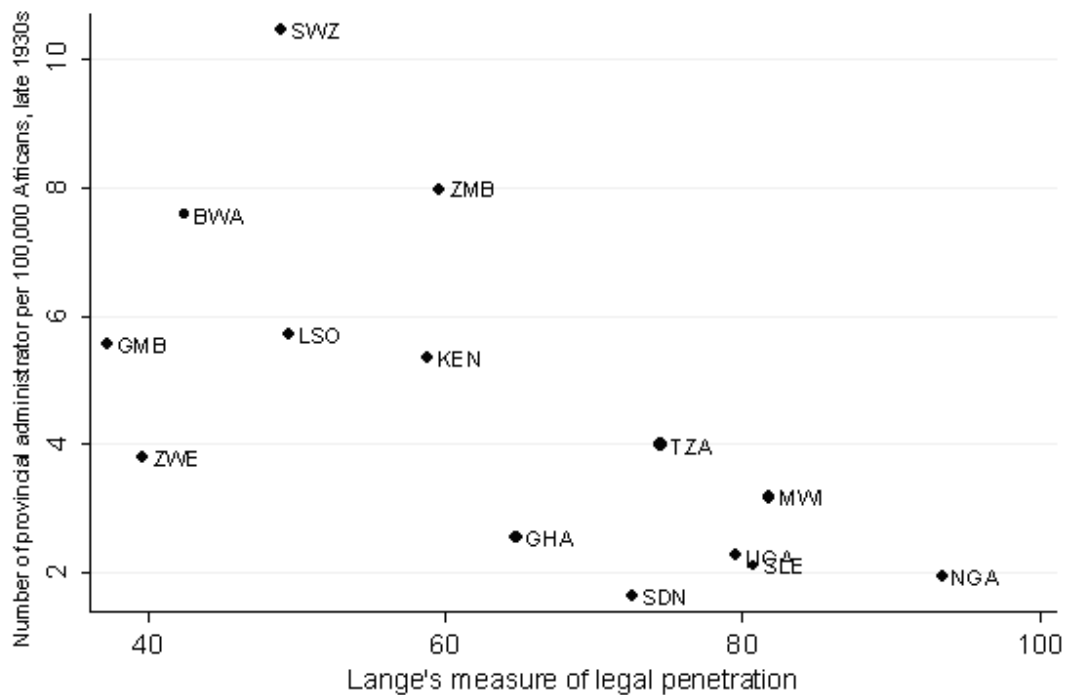
⁸⁶ Delavignette, *Freedom and authority*, p.51.

⁸⁷ Fields, *Revival and Rebellion*, p33. That said, it is possible that French administrators were more inclined to use coercion instead of collaboration, relative to their British counterparts. Cohen suggests that the upper-class background of the average DO made him more likely to accommodate indigenous elites relative to the French (most likely Republican) commandant, *Rulers of Empire*, pp.73-4.

⁸⁸ Fields, *Revival and Rebellion*, pp.32-6.

collaboration for any given number of administrators,⁸⁹ further consideration of such factors will be deferred until section V.

Figure 1. The 'White Line' Versus Lange's Extent of Indirect Rule



Source: Lange, 'British colonial legacies'. For the number of administrators see text (below) and app. II. For country codes see app. III.

II.1 The Thin White Line

Of most interest is the provincial and district administrations – the white line running through the African countryside – rather than the entire colonial service in each territory, which included the central administration and technical departments predominantly based in the new colonial

⁸⁹ These could include the identity of the coloniser, the extent of coercion, the population density, the number of Africans 'directly' employed, the number of European settlers and the overall 'strategy' of colonisation. These factors could help explain the outliers observed in fig. 1. For example, the presence of European settlers in Zimbabwe could have made indirect rule less politically desirable, while the small size of the Gambia could have made 'direct' rule more feasible.

towns.⁹⁰ Care must be taken when comparing across different colonial powers that the comparison is like-for-like. In the British colonies, residents (or provincial commissioners), district officers (or district commissioners), assistant district officers and cadets are considered. This translates fairly well for the French colonies into *administrateurs en chef*, *administrateurs* (divided into three classes), *administrateurs adjoints* (also three classes), and *élèves administrateurs*. The Belgian administrative system was slightly different. The *service territorial* consisted of both *fonctionnaires* (officials) and *agents*.⁹¹ In a 1970 article, Crowder, citing Malcolm Hailey, states that there were 316 administrators in the Belgian Congo in 1936.⁹² This figure, and the corresponding ratio of 35,000 Africans per administrator, has since been cited by many other scholars.⁹³ But this excludes 412 agents, all of whom were European, and many had a university degree.⁹⁴ Moreover, Hailey states that “so long as the Congo authorities can rely on this efficient and inexpensive European service there will be some hesitation in entrusting powers ... to the chiefs.”⁹⁵ For current purposes, it is therefore clear that the agents should be included. All colonial administrations employed Africans – usually as clerks, translators or messengers. But there are no instances, at least before the Second World War, of Africans being used in the administration proper.⁹⁶

⁹⁰ Fields, *Revival and Rebellion*, p.33. As well as the provincial and central administrations, Europeans were usually employed in departments for medicine, education, justice, printing, agriculture, forestry, mining, public works, railways, ports and postal services as well as the police and military.

⁹¹ The *fonctionnaires* consisted of provincial commissioners, district commissioners and administrators.

⁹² M. Crowder, ‘The white chiefs’, p.329.

⁹³ Notably Kirk-Greene, ‘The thin white line’, p.38.

⁹⁴ The agents were primarily responsible for censuses and various public works. Hailey, *African survey*, pp.242-4.

⁹⁵ *Ibid.*, p.244.

⁹⁶ Félix Éboué was a black governor of French Equatorial Africa during the Second World War, but was Guianese not African.

Portuguese (Mozambique, Angola and Guinea-Bissau), Spanish (Equatorial Guinea) and Italian (Eritrea) colonies are not considered. This is due to the different objectives of these colonial powers and the related differences in administrative structures.⁹⁷ Also excluded is Somalia, as different parts of the present-day country were colonised by Britain and Italy.⁹⁸ Djibouti is excluded due to its tiny size, as are all islands except Madagascar (Mauritius, the Seychelles, São Tomé and Príncipe, Cape Verde, Comoros and Réunion). Of course, countries not colonised (Ethiopia and Liberia) are not included, neither is South Africa (a self-governing dominion from 1910). Data was collected for Namibia but since the country was not independent from South Africa until 1990 many of the 'outcomes' and control variables are unavailable, it is therefore excluded from most regressions.

This still leaves a sample of 33 former colonies,⁹⁹ covering most of the land area of sub-Saharan Africa (see Map 1). In the 1930s these territories accounted for around 90 percent of the sub-Saharan African population which was under European control.¹⁰⁰ Table 1 and Map 1 present data on the ratio of European administrators (as defined above) to the native population in the late 1930s. Most of the data for British colonies are taken from Hailey's *An African survey*, published in 1938.¹⁰¹

⁹⁷ For a discussion of Portuguese objectives in Africa see Clarence-Smith, 'The myth of uneconomic imperialism'. The Portuguese often relied on *Mestiços* to administer their African possessions, and the "*chefe de posto*... was often charged with having gone native altogether", Chabal and Daloz, *Africa Works*, p.12.

⁹⁸ The same argument is not applied to Sudan – technically an Anglo-Egyptian condominium – as it was de facto a British colony. Different parts of present-day Cameroon were formerly under French and British mandates, although the majority of the country was under French rule.

⁹⁹ Including Namibia.

¹⁰⁰ Kuczyhski, *Colonial Population*.

¹⁰¹ Hailey, *African survey*, p.226. Hailey gives data for Nigeria (including British Cameroons), Ghana, Sierra Leone, Gambia, Kenya, Uganda, Tanganyika, Zanzibar, Northern Rhodesia, Basutoland, Swaziland, Nyasaland and Bechuanaland. No dates are given, although his figures appear consistent with the staff lists in the relevant blue books for 1937. Hailey's table is cited more or less completely in Kirk-Greene, 'The thin white line', tab. XIV, p.39.

Hailey also gives the number of administrators in the Belgian Congo and Ruanda-Urundi.¹⁰² The data for the remaining British colonies (Sudan, Zimbabwe and Namibia) was collected from the respective colonial government publications.¹⁰³ The French ministry of colonies annual for 1936 was used to obtain the number of administrators serving in French West Africa (FWA), French Equatorial Africa (FEA), Togo, French Cameroon and Madagascar. Publications of the governments of FWA and FEA were then used to estimate the distribution of administrators within these two federations, which are now 12 independent countries.¹⁰⁴

¹⁰² Hailey, *African survey*, p.242. This time Hailey does give a date: 1936.

¹⁰³ *Quarterly list of the Sudan government, Southern Rhodesia official year book and South West Africa, Estimates.*

¹⁰⁴ See app. II for details. Senegal, Benin, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger and Burkina Faso were formerly territories in FWA. FEA comprised what are now Gabon, Congo, Central African Republic and Chad.

Table 1. The White Line, circa 1937.

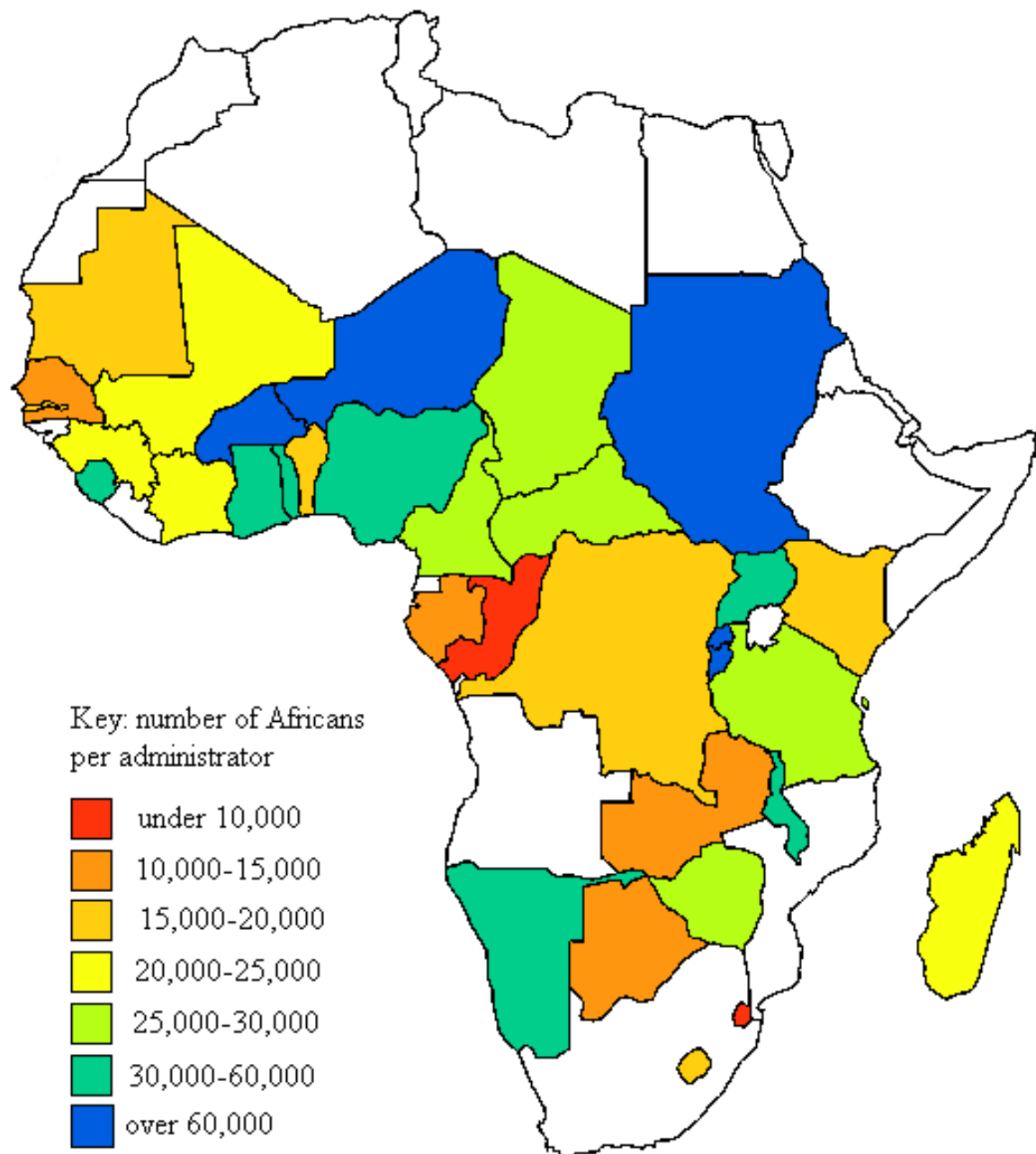
Colony	Number of Africans per administrator
French Congo	5,843
Swaziland	9,552
Gabon	10,646
Northern Rhodesia / Zambia	12,551
Botswana / Bechuanaland	13,193
Senegal	14,842
Dahomey / Benin	15,057
Belgian Congo / DRC	15,084
Basutoland / Lesotho	17,531
Gambia	17,963
Kenya	18,697
Mauritania	19,260
Côte d'Ivoire	22,089
Madagascar	23,451
Guinea	23,525
French Sudan / Mali	23,938
Tanzania ^a	25,062
Southern Rhodesia / Zimbabwe	26,246
Chad	26,584
Cameroon ^b	26,705
Oubangui-Chari / Central African Republic	28,413
Nyasaland / Malawi	31,401
Togo	36,333
Gold Coast / Ghana	39,219
South West Africa / Namibia	41,058
Uganda	44,086
Sierra Leone	47,232
Nigeria	56,428
Sudan	60,643
Burundi	65,713
Rwanda	67,108
Upper Volta / Burkina Faso	83,070
Niger	203,076
All British	37,374
All French	25,209
All Belgium	18,444
West Africa	38,257
East Africa	32,644
Equatorial Africa	16,252
Southern Africa	19,503
All	27,940

^a Includes Tanganyika and Zanzibar.

^b Includes French and British Cameroon.

Sources: See text. The data for French West Africa and French Equatorial Africa are estimates, see app. II for details. See app. III for actual number of administrators and population that these figures are based on, and the regional classification of each colony. All averages are weighted by population.

Map 1.



A potential problem with the data is the difference between the number of Europeans employed and the “effective strength of the administration on the ground.”¹⁰⁵ This could have varied across colonies as leave allowances and illness rates were not constant. In addition, “in

¹⁰⁵ Kirk-Greene, ‘The thin white line’, p.33.

some cases – but not all – administrative officers seconded to the Ministries were still carried on the strength of the provincial administration.”¹⁰⁶ There is also the concern – especially in large colonies such as Nigeria or the Belgian Congo – that the distribution of administrators was not even across different regions.¹⁰⁷ Another problem arises from any inaccuracies introduced by the researcher who is forced to count individual names on the staff lists one by one.¹⁰⁸

Population statistics were taken from Kuscynski, *Colonial population*, and FWA and FEA official publications.¹⁰⁹ It should be borne in mind that these statistics are far from perfect. Indeed, Frankel goes as far to say: “any calculations utilizing them must be regarded largely as informed guesses”.¹¹⁰

Despite these margins for error, it is clear that there was a huge variation in the closeness of administration across the continent. On average, there appears to be some evidence that British colonies were more ‘indirect’. But this obscures variation within the same colonial power, which was especially high within French colonies; the white line in Niger was over 30 times ‘thinner’ than in the French Congo. Belgium rule on average was the most ‘direct’. But the large disparity between the Congo and Ruanda-Urundi suggests that local conditions, rather than anything inherent to Belgian rule were responsible. Sudan – rather than those

¹⁰⁶ Ibid.

¹⁰⁷ In the Congo there was an official objective of one agent per 10,000 taxpayers, Hailey, *African survey*, p.244. It is not clear however whether reality reflected this policy, some areas (such as Katanga) may well have been more closely administered than others. The case of Nigeria will be considered below.

¹⁰⁸ For instance, Kirk-Greene (in ‘The thin white line’, Table VII, p.34) cites a figure of 331 administrators in Nigeria in 1920. This author’s count of the relevant list (in the 1920 Nigerian *Blue book*) came to 265. The latter figure seems more plausible given the corresponding figure was 239 in 1919 and 288 in 1921, *Blue book* for 1919, *Handbook* for 1921.

¹⁰⁹ See app. I for details.

¹¹⁰ Frankel, *Capital investment*, p.169. Even by the mid-1930s, no formal censuses had been conducted in the Belgian Congo, Ruanda-Urundi, Sudan or French Togoland, and those that had been conducted elsewhere varied considerably in quality, Kuczynski, *Colonial populations*, pp.i-xiv and p.5.

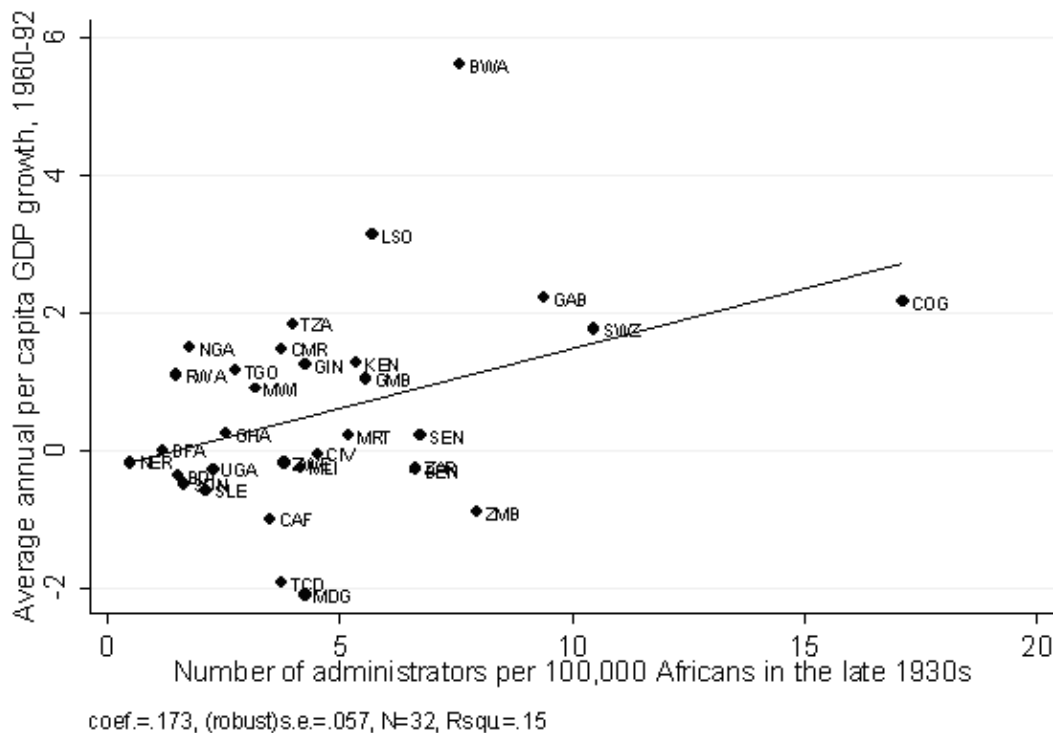
colonies most closely associated with indirect rule such as Nigeria or Uganda – is the British colony least closely administered. Table 1 suggests that the ‘type’ of colony could have affected the closeness of administration. In particular, ‘concession’ or ‘plantation’ colonies (predominantly in Equatorial Africa) and ‘settler’ or ‘labour-reserve’ colonies (Kenya and much of Southern Africa) appear to have been administered more closely than the ‘peasant’ colonies of West Africa. This is consistent with the view that a colonial policy which involved the expropriation of land or an objective to force Africans into the labour market (to work for European settlers or concession companies) placed a greater strain on indigenous society and therefore required more administrators.¹¹¹ However, the large variations within West Africa (Cf. Senegal, Dahomey and Gambia versus Niger, Upper Volta and Nigeria) suggest other factors were also at play.¹¹²

Figure 2 shows that there is a correlation between the closeness of colonial administration and economic performance since independence. This relationship cannot yet be viewed as causal but it is at least consistent with the argument that indirect colonial rule has had a long-term and negative economic legacy.

¹¹¹ For a discussion of this in the context of British West Africa, see Phillips, *The enigma of colonialism*.

¹¹² For example the size, revenue-generating capacity and political payoff to public investment could have been important.

Figure 2. Colonial Administration and Post-Colonial Economic Performance



Note: if independence came later than 1960, average growth is from the date of independence. Source: Englebert, 'Pre-colonial institutions'.

II.2 Change Over Time

Table 2 shows how the size of the administrative service in a selection of British colonies changed from 1920 to 1950. Figure 3 supplements this with more detailed information for Nigeria during the interwar period. The first observation is that there was a clear upward trend in the number of administrators, especially during the 1920s. In just five years from 1925 to 1930 the number of administrators in these eight colonies increased by 25 percent. This must have exceeded the population growth rate, as suggested by Figure 3.¹¹³ Taking the population statistics at face value, the number of Africans per administrator in Nigeria fell from 63,000 in

¹¹³ Although, given that statistics for the level of population are unreliable, the inferred growth rate is even more so.

1912 to 44,000 in 1929.¹¹⁴ This trend was reflected in French and Belgian colonies. From 1921 to 1936 the number of administrators in FWA increased from 386 to 483, while in FEA from 1913 to 1936 the size of the administration doubled from 107 to 213.¹¹⁵ From 1913 to 1936 the number of officials (excluding agents) in the Belgian Congo increased from 113 to 316.¹¹⁶ Over the following five years the total size of the Belgian administrative service (officials and agents in the Congo and Ruanda-Urundi) increased almost 20 percent from 777 to 921.¹¹⁷ Figure 3 shows that in Nigeria the upward trend in the number of administrators was mirrored by an opposite trend in the number of European military personnel, suggesting the shift from military to civilian rule was still an ongoing process.¹¹⁸

¹¹⁴ This growth is more dramatic given that it only began in the 1920s, after a decline in the number of administrators during the War. This suggests that the priorities of the colonial power also mattered.

¹¹⁵ See app. II for sources.

¹¹⁶ The figure for 1913 is taken from Gann and Duignan, *Belgian Africa*, tab. 18, p. 167. The figure for 1936 is from Hailey, *African survey*. Not too much should be read into this as the number of agents in 1913 is unclear – their numbers may have grown at a slower rate.

¹¹⁷ The 1941 figure is taken from the Belgian Ministère des colonies, *Annuaire*, and the 1936 figure is from Hailey, *African survey*, p.244.

¹¹⁸ Up until the 1920s there were more Europeans employed in the army than in the provincial administration. Many administrators were also ex-military.

Table 2.

	1920	1925		1930		1935		1940		1950	
	Number of administrators	Number of administrators	% of total	Number of administrators	% of total	Number of administrators	% of total	Number of administrators	% of total	Number of administrators	% of total
Nigeria	265 ^b	333	37.6	431	39.0	363	34.5	413	37.5	535	37.0
Gold Coast	-	79	8.9	80	7.2	77	7.3	90	8.2	155	10.7
Sierra Leone	23 ^c	29	3.3	32	2.9	33	3.1	37	3.4	58	4.0
Gambia	-	7	0.8	6	0.5	8	0.8	7	0.6	19	1.3
Kenya	139	104	11.8	136	12.3	115	10.9	112 ^d	10.2	149 ^e	10.3
Uganda	59	74	8.4	79	7.1	83	7.9	72	6.5	89	6.2
Tanzania ^a	130	135 ^e	15.3	200	18.1	193	18.4	218	19.8	221	15.3
Northern Rhodesia	-	81	9.2	94	8.5	134	12.7	106	9.6	142	9.8
Nyasaland	40	43	4.9	47	4.3	45	4.3	45	4.1	78	5.4
Total	-	885		1105		1051		1100		1446	

Sources: Kirk-Greene, 'The thin white line', Tables VII - IX, pp. 34-6, unless stated otherwise.

Notes: ^a Data for Tanganyika and Zanzibar summed together to correspond to modern-day Tanzania.

^b From Nigeria, *Blue book*, 1920. See note 108.

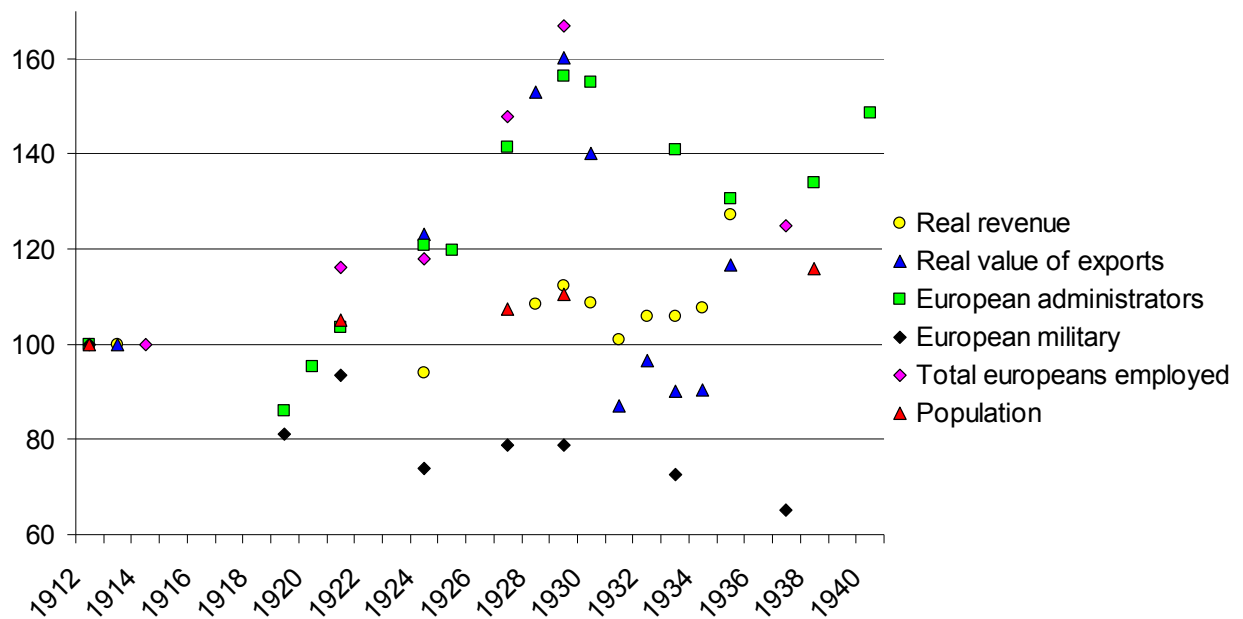
^c *Colonial Office List*, 1921.

^d Data for 1939.

^e Zanzibar data for 1926.

^f The number of administrators was later increased significantly following Mau Mau.

Figure 3. Exports, Revenue and the Size of the Colonial Service in Nigeria, 1912-40



For original data and sources see app. IV. Note that revenue and value of exports have been converted into 1913 pounds, and that all six series have been scaled so that their earliest values are equal to 100.

A second feature which is evident from both Table 2 and Figure 3 is that during the early 1930s there was a temporary break in this upward trend. From 1930 to 1935 the total number of administrators in the eight British colonies listed in Table 2 actually declined, by around five percent.¹¹⁹ The reason for this is obvious given that all colonies were expected to be self-financing. As one former administrator in Nigeria reflected, “revenue between the wars was never ample. In the worst years of the economic depression there was even the gruesome spectacle of the skeleton administration tightening its belt.”¹²⁰ Figure 3 shows that in the early 1930s the value of exports (the most important revenue source) fell below its pre-War level in real terms. And after

¹¹⁹ The fall was particularly great in Nigeria and Kenya, at around 15%. Northern Rhodesia is a notable exception, although a significant decline did occur in the following five year period.

¹²⁰ Nicolson, *The Administration of Nigeria*, p.217.

exports and revenue began to recover from the mid-30s, so too did the number of administrators.¹²¹

That the number of administrators in all the colonies followed a similar trend means that the distribution of administrators across colonies remained roughly constant over time (see Table 2), and that not too much will be lost by taking a comparison at just one point in time. The late 1930s – when the move to civilian rule was more or less complete – seems an appropriate point to take.¹²² The post-War period is not considered since the nature of colonialism had in many ways changed due to the international environment and pressures for more ‘developmental’ policies. As Table 2 shows, the number of administrators had increased dramatically by 1950. The first African administrators were also beginning to appear.¹²³ The data presented in Table 1 will therefore be used to construct a variable measuring the ‘thinness’ of the white line, and used in the following regression analysis.

III

III.1 Determinants of the White Line

As Table 1 demonstrates, the ratio of white administrators to the African population varied greatly across colonies. This variation was certainly not random.¹²⁴ This section identifies the principal factors which influenced the number of administrators in any given colony.

¹²¹ It is also worth noting that the trend in the number of administrators was mirrored by the trend in the size of the whole colonial service, suggesting that a DO was not viewed as more important or less dispensable than any other European employee.

¹²² Another advantage is that population statistics at this time, although by no means perfect, were at least more reliable than before. A concern however, is that the depression could have affected different colonies to varying extents.

¹²³ Kirk-Greene, ‘The thin white line’, p.33.

¹²⁴ In an OLS regression with economic growth since independence as the dependent variable, the estimated coefficient of the ‘white line’ will therefore not be a valid measure of its effect on growth. Economic growth in the post-colonial period could be

The previous section revealed some factors that could be important. Given that colonies were expected to be self-financing, one would expect greater revenue-generating capacity to be associated with closer administration. Figure 3 confirmed this to be the case across time in Nigeria. The level of exports could have been important as it was both a source of revenue and a variable that was easily observable by the colonial authorities. Table 1 also suggests that the identity of the coloniser or the ‘type’ of colonisation pursued could have affected the size of the white line. Another factor that could be important is the population density – in the context of poor transport and communication networks one would expect a relatively dense population to require a lower ratio of administrators to native population as ‘touring’ becomes easier. Authors – such as Kirk-Greene – who have stressed the supposed strength of the “steel frame” focus on the characteristics of the administrators themselves, in particular their “confidence and competence”. It is possible therefore that in some cases the ‘quality’ of administrators may have been a substitute for their quantity.

The nature of pre-colonial political institutions may also have been important. Although it is generally accepted that indirect rule was more difficult (and perhaps had worse consequences) in less hierarchical societies, it is not clear whether or not colonising powers deliberately administered decentralised societies more closely. The degree to which collaboration would be effective must have been largely unknown at the beginning of the colonial period. Given the constraints faced by the colonial powers, and the relative shortness of the colonial period, it should not necessarily be assumed that they were able to adjust their administrative strategies to match pre-existing institutions.

determined by underlying characteristics of each country which also affected the number of colonial administrators.

A comparison of north and south Nigeria is worthwhile. By far the most populous colony in Africa,¹²⁵ Nigeria exhibited a variety of pre-colonial political systems. Broadly speaking the Muslim emirates of the north had well-established bureaucratic, administrative and judicial institutions (this was the home of indirect rule, or at least its explicit ideology), while society in the south was more fragmentary and less politically centralised.¹²⁶

Table 3 compares how the colonial administration developed in north and south Nigeria, from their amalgamation into a single colony (in 1914) to independence. At the beginning of the period there were slightly more administrators in the north than the south. Both administrations grew, but from the mid-1920s until 1939 the north-south split was near 50-50. According to official population estimates however, population in the north was higher and growing faster.¹²⁷ Taking this into account, it appears the growth in the northern administration merely kept pace with population growth; the number of Africans per administrator remained roughly constant at just over 60,000. In the south, this figure started from a similar position but gradually declined – to around 45,000 by 1938. This could be evidence that the administration in the south was adjusting to its environment; that indirect rule proved difficult and the white line was strengthened as a result. Note also that the number of police was much

¹²⁵ According to Kucyinski, *Colonial population*, Nigeria accounted for over 20% of the entire population of my sample. Its population was significantly larger than the whole of FWA and almost twice as large as the Belgian Congo.

¹²⁶ South Nigeria could be divided up further into the southeast where “political evolution had not advanced beyond the clan and family stage, and the idea of chieftainship had made little headway” and the southwest where there were “more or less highly-organised communities”, *Annual report on the Southern provinces of Nigeria*, p.1. Unfortunately, data that distinguishes between administrators in the southwest and the southeast was not available.

¹²⁷ As usual these statistics should be treated with caution, but the higher rate of growth in the north is plausible given there was significant in-migration from Niger. See Baier, *An economic history of central Niger*, pp.114-5.

higher in the south than the north, suggesting greater use of coercion relative to collaboration.¹²⁸

Table 3. Administration of Nigeria, North vs. South

		1912	1920	1924	1933	1937	1938	1955	1960
Number of administrators	north	148	144	158	192	174	187	223	243
	south	130	121	159	200	179	185	308	324
Share of total	north	53.2%	54.3%	49.8%	49.0%	49.3%	50.3%	42.0%	42.9%
	south	46.8%	45.7%	50.2%	51.0%	50.7%	49.7%	58.0%	57.1%
Police	north	555	-	-	-	885	-	-	-
	south	942	-	-	-	1439	-	-	-
Population Estimate	north	9,611,941	-	10,321,324	-	-	11,940,307	-	-
	south	7,858,689	-	8,114,294	-	-	8,321,489	-	-
Africans per administrator	north	64,946	-	65,325	-	-	63,852	-	-
	south	60,451	-	51,033	-	-	44,981	-	-

Sources: Nigerian *Blue books*, *Annual Report on the Nigeria Police*, and, for 1955 and 1960, Kirk-Greene, 'The thin white line'.

Another explanation is that the revenue-generating capacity of southern Nigeria was greater than the landlocked north. Cocoa, which was grown in the southwest, was more lucrative and spread earlier than the north's main export crop: groundnuts. But the primary reason for amalgamation of the two territories was fiscal expediency; to merge a viable south with a near bankrupt north.¹²⁹ So the relative strength of the northern administration did not increase in spite of financial transfers from south to north, suggesting that the emirs were indeed able to supply more traditional authority to the British than the southern chiefs. It should be noted however that after 1945 the southern administration expanded much faster than its northern counterpart, this could suggest that the process of adapting to pre-existing institutions was still incomplete by the 'high-noon of empire'.

¹²⁸ The vast majority of these police were African.

¹²⁹ See Nicolson, *The administration of Nigeria*, p.181.

III.2 Cross-Country Regression Analysis

This section uses regression analysis to examine which of the factors identified above were the most important across all the colonies considered. Ordinary least squares (OLS) regressions are run with the number of European administrators per 100,000 Africans in the late 1930s as the dependent variable. On the right-hand side is the amount of revenue, and variables which could have affected the relative ease of maintaining 'hegemony on a shoestring'.

As discussed above, one would expect more administrators to be required where colonial policies placed a greater strain on indigenous society, in particular where a large proportion of land was expropriated or where there was an explicit aim to force Africans into the labour market – as in the settler and concession colonies. Three variables are used in an attempt to capture this: the size of the European population in the late 1930s, the number of wage earners in 1957, and the ratio of GDP to GNP in 1960.¹³⁰ This final variable – the so-called 'colonial drain' – was used by Canova and Bertocchi, who found it to be strongly and negatively associated with economic growth since independence.¹³¹ According to these authors, "the discrepancy between GNP and GDP reflects repatriated profits on foreign investment, royalties and direct exploitation activities, and therefore [its use] aims at measuring the degree of penetration that the metropolis exerted, roughly, at the end of the colonial period."¹³²

Other variables aim to measure conditions unique to each colony which could have affected the ability of any given number of administrators to rule effectively. Such factors could include the population density, the nature of pre-existing institutions and the 'quality'

¹³⁰ For further discussion and the source of each variable see app. I.

¹³¹ Bertocchi and Canova, 'Did Colonization matter?'

¹³² Ibid., p.1857.

of administrators. The degree of pre-colonial political centralisation is measured using an index constructed from anthropological data by Gennaioli and Rainer.¹³³ Each ethnic group is categorised as being either ‘centralised’ or ‘fragmented’. The value for each country is then the proportion of the country’s population that belonged (in 1960) to an ethnic-linguistic group adjudged to have been ‘centralised’ historically.¹³⁴ Gubernatorial salary is used as a proxy for the overall ‘quality’ of the colonial administration. Jones has argued that the governor’s salary was set in the 1880s according to the amount of revenue the colony generated, but that it was not adjusted as revenue changed.¹³⁵ It can therefore be treated as exogenous but was associated with the colony’s ‘prestige’ and thus the ‘quality’ of the officials that it attracted.¹³⁶ The results of key regressions are reported in Table 4.

¹³³ Gennaioli and Rainer, ‘Modern impact’.

¹³⁴ For further discussion of this variable see app. I.

¹³⁵ Jones, ‘History matters’. In the current sample there is in fact a weak *negative* correlation between the governor’s salary in 1913 and revenue/population in the 1930s. Jones’ data is not yet publically available, and so was collected independently following the same methodology. See app. I for further details and sources.

¹³⁶ The governor’s salary, rather than the salary of a provincial administrator, is used as while it is likely that they are correlated, the latter is more likely to reflect compensating factors. For example, higher pay for DCs could simply reflect a worse disease environment. Jones estimates wages equations to ensure that this is not the case for governors.

Table 4. Explaining the Variation in the White Line Across Colonies

Dependent variable is the white line – the number of administrators per 100,000 Africans in the late 1930s						
	(1)	(2)	(3)	(4)	(5)	(6)
Revenue (per capita, in the 1930s)	2.505* (1.419)	2.520* (1.431)	2.233 (1.333)	1.476 (1.159)	1.843 (1.347)	2.247** (0.912)
Wage earners		0.192** (0.080)	0.255*** (0.084)	0.265** (0.098)	0.222** (0.086)	0.213*** (0.071)
European population		0.592*** (0.204)	0.443* (0.234)	0.619*** (0.211)	0.417 (0.380)	0.304 (0.233)
‘Drain’		3.552 (4.741)	3.083 (4.816)	2.180 (5.182)	0.499 (5.587)	
Governor's salary			-3.814* (2.154)	-5.613* (3.028)	-5.142 (2.487)	-4.593** (1.707)
Population density (in the 1930s)			-0.207 (0.276)	-0.135 (0.292)	-0.193 (0.308)	
Political centralisation			-0.087 (1.051)	1.636 (2.116)	1.870 (1.797)	
London				2.490 (1.544)	1.816 (2.273)	
Brussels				0.622 (1.572)	1.090 (2.273)	
West				2.050** (0.871)	1.751 (1.086)	
South				-1.169 (1.691)	-0.782 (1.534)	
Equatorial				3.412** (1.305)	2.765* (1.461)	
Openness					0.028 (0.039)	0.034 (0.023)
N	32	30	30	30	29	29
R ²	0.20	0.71	0.79	0.84	0.85	0.80

Robust standard errors are in parentheses. Significance at the 10, 5 and 1% level denoted by *, ** and *** respectively. Constant terms were included but not reported. For data description and sources see text and app. I. The sample is not quite complete as the following data is missing: revenue for Madagascar, governor's salary for Zimbabwe, number of wage earners for Namibia, and value of trade for Sierra Leone. London and Brussels or dummy variables for colonisation by Britain and Belgium respectively (Paris is the omitted case). West, South and Equatorial are regional dummies (East is omitted). See app. III for regional classification of colonies.

Column 1 confirms the expected positive relationship between revenue-generating capacity and the closeness of administration. This factor accounts for around 20 percent of the variation in the white line.

The coefficient has a similar magnitude when additional regressors are included. The significance is not as high as one might expect however. This could be because almost half of the sample comprises former territories of FWA and FEA. These federations had aggregate fiscal systems and a high rotation of administrators among the separate colonies as a matter of policy.¹³⁷

Column 2 adds the three variables which are intended to capture the degree of conflict between colonial policy and indigenous interests. All three coefficients have the expected sign and their inclusion adds a great deal of explanatory power; the R^2 increases to over 0.7. While the coefficients on both the number of Europeans and the percentage of wage earners are individually significant, the so-called 'colonial drain' is not.

Column 3 includes three extra variables which could have affected the ability of the white line to rule effectively. The coefficient on the governor's salary is negative and significant at the 10 percent level. This suggests that quality of administrators could indeed have been a substitute for their quantity. Population density has the expected sign – negative – but is not statistically significant. That pre-colonial political centralisation does not seem to have any effect on the number of administrators is of particular interest. Indeed, in columns 4 and 5 the estimated coefficient is even positive. This supports Fields' view that "officials ruled indirectly... whether or not the available institutions were readily adaptable to this use."¹³⁸

Column 4 adds dummy variables for the region and identity of the coloniser. The coloniser fixed effects are insignificant suggesting that the

¹³⁷ Hailey, *African survey*, pp.236-8. The individual territories also had their own local budgets. For details of how colonial revenue was estimated for each colony see app. I.

¹³⁸ Fields, *Revival and Rebellion*, p.33. This suggests that the previously observed evolution of the southern Nigerian administration during the interwar period was not the general rule across the continent.

other variables adequately explain the variation in the white line across colonial powers.¹³⁹ Somewhat surprisingly, the dummies for location in west and equatorial Africa are both positive and significant.¹⁴⁰ The value of trade (at the end of the colonial period) is controlled for in column 5. Recall that this could be important as trade was closely associated with revenue and increasing exports was often the principal objective of colonial regimes.¹⁴¹ This variable – although not individually significant – causes the coefficients on both west and equatorial to reduce, although the equatorial dummy remains significant at the 10 percent level. This could be driven by exceptional circumstances in the Belgian Congo, perhaps resulting from international pressures to keep up appearances in the post-Leopold era.¹⁴² Another noteworthy effect of controlling for openness is that the coefficient on the size of the European population loses its significance – a result that remains in column 6 when previously insignificant variables are dropped. This casts doubt on the existence of a causal link between the number of European residents and the white line.

Although not reported in Table 4, other variables which could have affected post-colonial economic performance were also considered.¹⁴³ These include income in 1960, various measures of education in the 1950s, capital inflow (including for railways) during the colonial period, the extent of urbanisation in 1960, the number of Christians in 1960, ethnic

¹³⁹ The coefficient on London is actually positive, suggesting that the observed propensity for British colonies to be the least closely administered is entirely explicable. Higher governor's salary in British colonies and thus the 'quality' of administrators is particularly important here. This in part supports those – such as Kirk-Greene – who romanticise the qualities of the 'generic DO'.

¹⁴⁰ This is most surprising for 'peasant' west Africa, perhaps the region most closely associated with indirect rule.

¹⁴¹ It is possible that revenue in the late 1930s does not accurately reflect the long-term revenue generating capacity of each colony, and that openness to trade at the end of the colonial period is a better measure of this.

¹⁴² When the Belgian Congo is dropped the equatorial dummy loses its significance.

¹⁴³ If these factors are correlated with the white line then they could bias its estimated effect of subsequent economic performance.

diversity, and being landlocked.¹⁴⁴ None of these factors were found to be strongly correlated with the white line or add any explanatory power when included in column 6.¹⁴⁵

Over 80 percent of the variation in the white line can be accounted for by relatively few variables.¹⁴⁶ Moreover, the factors that have been identified as important are unlikely to have had a strong direct effect on economic performance in the period since independence.¹⁴⁷ This increases the likelihood that the relationship between the white line and growth (as seen in Figure 2) is causal.

IV

If indirect rule has had long-term and negative economic legacies, one would expect a positive relationship between the closeness of colonial administration and economic growth since independence. Recall also that indirect rule is thought to have been most effective where pre-colonial institutions were most state-like, so one would expect the relationship between the white line and growth to depend on the degree of pre-colonial state development. In particular, in stateless or fragmented societies the benefits of closer administration would be greater.

These general predictions are supported by Table 5, which constructs four groups based on the closeness of administration and the

¹⁴⁴ See app. I for a description and source of each variable. Education could be especially important: Grier, 'Colonial legacies', attributes most of the variation in the performance of former British and French colonies in west Africa to differences in their level of education at the end of the colonial period.

¹⁴⁵ See app. V for details.

¹⁴⁶ Although not reported in tab. 4, three variables alone – revenue, wage earners and governor's salary – account for three quarters of the variation.

¹⁴⁷ The size of the labour market might be an exception, although the correlation between growth since independence and the number of wage earners in 1957 is weak. There is no correlation between colonial revenue and growth since independence. See app. VI.

nature of pre-colonial institutions.¹⁴⁸ In general, countries with fewer administrators grew slower, but the number of administrators appears to matter much more where pre-existing political systems were fragmented.

Table 5. Pre-Colonial Institutions and the White Line: Difference in Differences

		Pre-colonial political system		
		Relatively centralised	Relatively fragmented	Difference in growth rate
The white line	Relatively Thick	Benin, Botswana, Mauritania, Lesotho, Senegal, Swaziland, Zambia Mean growth rate =1.39 (standard deviation =2.30)	Gabon, Gambia, Kenya Mean growth rate =1.50 (standard deviation =0.62)	-0.11
	Relatively thin	Burundi, Malawi, Rwanda Mean growth rate =0.54 (standard deviation =0.79)	Burkina Faso, CAR, Nigeria, Sierra Leone Mean growth rate =-0.02 (standard deviation =1.09)	0.56
	Difference in growth rate	0.85	1.52	-0.67

Regression analysis allows for a more sophisticated examination of the relationship between the white line and economic performance. OLS regressions are run with the average annual growth of per capita GDP from 1960 (or independence if earlier) to 1992 as the dependent variable. Table 6 reports the key results.

¹⁴⁸ The sample was ranked by both the closeness of administration and the share of the population belonging to a 'centralised' ethnic group (as defined by Gennaioli and Rainer, 'Modern impact'), in each case the middle quartile (eight observations) was then discarded. A country categorised as relatively 'fragmented' with a 'thin' white line therefore lies in the bottom 12 both in terms of the number of administrators and the extent of political centralisation.

Table 6. The Relationship Between the White Line and Post-Colonial Economic Growth

Dependent variable is the average per capita GDP growth from 1960 (or independence if earlier) to 1992						
	(1)	(2)	(3)	(4)	(5)	(6)
Initial income		-1.471** (0.635)	-1.326 (0.831)	-1.342 (0.850)	-1.514* (0.742)	-1.540* (0.772)
Low opportunities		-1.126** (0.410)	-1.419** (0.518)	-1.302** (0.469)	1.555*** (0.478)	1.502*** (0.508)
Ethnic diversity		0.028 (1.224)	-0.738 (1.181)	-0.809 (1.237)	0.095 (1.089)	-0.293 (1.305)
'Drain'		16.89*** (5.844)	16.59*** (5.180)	16.09*** (5.072)	20.20*** (5.620)	19.26*** (6.217)
Political centralisation		0.603 (0.921)	-0.318 (0.927)	-0.417 (0.992)	-0.180 (0.630)	-0.130 (0.703)
European population			0.211 (0.212)	0.231 (0.200)	0.206 (0.191)	0.170 (0.211)
Revenue			-0.826 (0.570)	-0.806 (0.653)	-0.781* (0.424)	-0.840 (0.534)
Wage earners			0.027 (0.016)	0.018 (0.044)	0.028* (0.015)	0.029 (0.017)
Governor's salary				0.578 (0.965)		
The white line	0.173*** (0.057)	0.204*** (0.056)	0.148*** (0.040)	0.169* (0.088)	0.134*** (0.036)	0.150*** (0.049)
The white line * political centralisation					-0.177** (0.066)	-0.191** (0.068)
Coloniser fixed effects	No	No	No	No	No	Yes
N	32	31	30	29	30	30
R ²	0.15	0.60	0.74	0.74	0.80	0.81

Robust standard errors are in parentheses. Significance at the 10, 5 and 1% level denoted by *, ** and *** respectively. Constant terms were included but not reported. See app. I for description and source of all variables. Coloniser fixed effects are dummy variables for colonisation by Britain and Belgian (France is the omitted case). When the white line and political centralisation are interacted, the white line is centred around zero and political centralisation is standardised to have mean zero and standard deviation one. This is to reduce co-linearity and ease interpretation. The sample is not quite complete as the following data is missing: growth for Namibia, ethnic diversity for Swaziland, revenue for Madagascar and governor's salary for Zimbabwe.

The white line is strongly and positively correlated with growth. Colonies that were relatively closely administered have tended to grow faster since they gained independence. The coefficient remains highly significant (and roughly unchanged in magnitude) when a variety of other factors are controlled for.

Note that coloniser fixed effects were not included in order to maintain more degrees of freedom. When the same regressions were run with these dummy variables included, they did not add extra explanatory power or affect the key results (see column 6).¹⁴⁹ That the coloniser dummies are insignificant is contrary to some previous studies.¹⁵⁰

Column 2 includes some country characteristics which could have affected growth: initial income, a dummy for 'low opportunities',¹⁵¹ ethnic diversity,¹⁵² GDP/GNP in 1960 (the so-called 'colonial drain') and the measure of pre-colonial political centralisation used previously. The results support the findings of Canova and Bertocchi (that more 'extractive' colonial regimes have had worse legacies), but not those of Easterly and Levine – there is no strong link between ethnic diversity and economic growth. There does seem to be some evidence of 'club convergence' within sub-Saharan Africa – initially richer countries have tended to grow slower.¹⁵³

Columns 3 and 4 control for factors which were shown above to be important determinants of the white line. Since these variables were so successful in explaining the variation in the white line, co-linearity is a

¹⁴⁹ The same can be said for the regional fixed effects.

¹⁵⁰ For example, Canova and Bertocchi, 'Did colonization matter?' and La Porta et al., 'Government'. Although Olsson, 'Institutional legacy', also found coloniser fixed effects to be insignificant.

¹⁵¹ This takes the value one when the country is landlocked *and* resource scarce, see app. I and III.

¹⁵² As defined by Easterly and Levine, 'Growth tragedy', see app. 1.

¹⁵³ The coefficient on initial income is only significant after this inclusion of the white line, convergence is therefore conditional on the number of administrators.

problem.¹⁵⁴ This makes it difficult to identify the individual effects of each variable.¹⁵⁵ It is therefore unsurprising that the white line is reduced in significance in column 4 (where all four determinant variables are included). That the coefficient on the white line remains roughly unchanged in magnitude suggests that the characteristics which determined the number of administrators have had little direct effect on growth, or have affected growth in counteracting directions.¹⁵⁶ Contrary to AJR's argument, the coefficient on the size of the European population, although positive, is never statistically significant – a result that is not simply driven by co-linearity.¹⁵⁷ Including the degree of openness at the end of the colonial period (not reported), did not affect the coefficient on the white line or add explanatory power.

Column 5 presents perhaps the strongest evidence that the relationship between the white line and growth is indeed casual. An interaction term between the white line and pre-colonial political centralisation is included – this allows the estimated relationship between the white line and growth to depend on the nature of pre-colonial institutions. As predicted, the interaction term is negative and statistically significant. The regression results imply that at the mean level of state development, the marginal effect of the white line on growth is around 0.13, but at one standard deviation below the mean level of state development this more than doubles to 0.31.¹⁵⁸ Conversely, this suggests

¹⁵⁴ See app. VI for a correlation matrix of the relevant variables.

¹⁵⁵ In col. 3, the number of Europeans, the number of wage earners and revenue are all individually insignificant, but a test for their joint significance is positive.

¹⁵⁶ For example a larger labour market and greater taxation were both associated with closer administration. It is possible that a larger labour market has been beneficial but that greater colonial taxation has been detrimental, and together these effects have more or less cancelled each other out.

¹⁵⁷ If the number of Europeans is added to col. 2 (with fewer controls), it is still not individually significant at conventional levels, while the white line remains significant at the 1% level.

¹⁵⁸ Note that to ease interpretation the political centralisation variable, when interacted with the white line, has been standardised to have a standard deviation of one.

that the effects of indirect rule were smaller or even non-existent at higher levels of pre-colonial political centralisation.¹⁵⁹ While the limitations of this indicator of pre-colonial political centralisation should be acknowledged, it is likely that any measurement error creates a downward bias.¹⁶⁰ The result is robust to alternative measures of pre-colonial political centralisation.¹⁶¹ Other than the causal hypothesis, there is no obvious reason why the relationship between the white line and growth should depend on the level of pre-colonial state development in this way.¹⁶²

The results are economically as well as statistically significant. Taking the results literally, Sierra Leone – which had relatively decentralised pre-colonial political systems – would have grown one percentage point faster every year since independence had it been administered as closely as neighbouring Guinea.¹⁶³ This strongly suggests that colonialism (and pre-colonial institutions) mattered – and still matter – for growth.¹⁶⁴

Table 7 suggests that the legacy of the thin white line is not diminishing. The estimated effects of all the colonial variables on growth from independence to 1973 (the first oil shock) and to 1992 are compared. All the control variables appear to diminish in importance (they reduce in

¹⁵⁹ It might even be possible that at extremely high levels of political centralisation, increasing the number of administrators could have a negative effect on growth. However, even where pre-colonial institutions were the most state-like, the estimated effect of the white line on growth is not significantly less than zero. App. VII, fig. A1 shows precisely how the estimated effect of the white line on growth varies with the level of political centralisation.

¹⁶⁰ One limitation is that it gives just an average figure for each country, when in reality the degree of pre-colonial political centralisation could vary greatly within the territories of modern day states. But if Nigeria – the most obvious example of this – is dropped the significance of the interaction term only increases (to the 1% level).

¹⁶¹ See app. VIII.

¹⁶² This is also consistent with Bardhan's finding that state antiquity is a good predictor of present-day institutional quality, Bardhan, 'Institutions matter'.

¹⁶³ This amounts to an extra two administrators per 100,000 Africans. The calculation is based on the estimates reported in col. 5.

¹⁶⁴ This is not to say that policy since independence is irrelevant, although variables such as the average black market premium and years of civil war were not found to add any explanatory power when included in col. 5.

magnitude and statistical significance). This is reassuring regarding the quality of data. In contrast, the estimated effect of the white line remains unchanged.¹⁶⁵ Of course this is also consistent with the explanation that the correlation between the white line and growth is driven by unobserved and time-invariant country characteristics, but the extent to which the relationship depends on pre-colonial institutions does diminish. This lends further support to the causal hypothesis.

Table 7. The Legacy of the White Line Through Time

Variable	Estimated effect on growth	
	Up to 1973	Up to 1992
'Drain'	-33.67 (-4.15)	-20.20 (-3.59)
European population	0.653 (2.90)	0.206 (1.08)
Wage earners	0.068 (2.92)	0.028 (1.90)
Revenue	-2.837 (-5.50)	-0.781 (-1.84)
The white line	0.124 (1.30)	0.134 (3.76)
white line*political centralisation	-0.321 (-3.42)	-0.177 (-2.69)
N	29	30
R ²	0.79	0.80

Note: the estimates are obtained using the same specification as col. 5 in tab. 6. T-statistics (calculated using robust standard errors) are in parentheses. Growth 'up to 1973' is from 1960, growth 'up to 1992' is from 1960 or independence (which ever is earliest). See app. I for a description of all variables.

Recall that the literature on the legacies of indirect rule tends to focus either on fractionalisation and neo-patrimonialism or competition and uncertainty over land tenure. Ascertaining the relative importance of

¹⁶⁵ That the white line's T-statistic is relatively low for the growth up to 1973 regression does not mean that the white line was unimportant for growth, just that a significant effect cannot be identified *at the mean level of political centralisation*.

these potential causal mechanisms is difficult. It is likely that they were both at play, and in an interlinked manner.¹⁶⁶

It could be argued that indirect rule having worse consequences in the context of fragmented pre-colonial political systems is consistent with both stories. It is certainly true that the 'search for tradition' was more difficult under these circumstances and the necessary 'inventions' more open to challenge – this supports Berry's line of argument. One could also argue that the pre-colonial institutions to overcome social distance – which indirect rule undermined as Leeson has documented – were more important where political systems were less state-like.

But this is contrary to Englebert's argument that 'state illegitimacy' leads to lower 'developmental capacity'. He states that "societies with strong state traditions seem to find the post-colonial state less acceptable, less legitimate, more arbitrary than their more lineage-orientated counterparts that can be thought of as providing the modern state with an institutional blank page."¹⁶⁷ Englebert's argument is misleading because it is based on the faulty assumption that the colonial powers were able to import the institutions of their choosing. In reality they were forced to rely upon the authority generated by traditional African institutions, and where this was most difficult – in the absence of an established social hierarchy – European 'colonialism-on-the-cheap' has been the most detrimental. It appears that Berry's argument has more merit than those that only emphasise the political legacies of colonial rule.

¹⁶⁶ Drawing a clear line between these different stories is to simplify the arguments put forth in the literature. For example, Berry also highlights the political aspects of the problem and the 'fractionalisation' that indirect rule generated; she describes competition over resources as "the every-day politics of rent-seeking", 'Every-day politics'.

¹⁶⁷ Englebert, 'Pre-colonial institutions', p.20.

Table 8. Private Versus Public Investment.

	Private investment			Public investment		
	(1)	(2)	(3)	(4)	(5)	(6)
Initial income		-1.121 (3.527)	1.027 (5.557)		-2.761 (1.697)	1.024 (0.826)
Ethnic diversity		1.877 (3.141)	5.908 (5.974)		-5.096* (2.618)	0.476 (3.195)
'Drain'		-54.71* (30.60)	-76.90** (35.22)		0.713 (36.22)	-26.27 (25.62)
European population			1.329 (1.389)			1.832* (0.998)
Wage earners			0.073 (0.068)			-0.006 (0.040)
Revenue			-4.216 (3.716)			-5.621*** (1.517)
White line	0.922*** (0.227)	1.102*** (0.251)	0.927*** (0.248)	0.322 (0.194)	0.527 (0.308)	0.303 (0.198)
N	24	24	23	25	25	24
R ²	0.31	0.42	0.50	0.10	0.29	0.64

Robust standard errors are in parentheses. Significance at the 10, 5 and 1% level denoted by *, ** and *** respectively. Constant terms were included but not reported. Estimation technique is OLS. For description of variables and sources see app. I.

This is also suggested by an examination of the relationship between the white line and private – as opposed to public – investment since independence. Table 8 shows that the white line is much more strongly correlated with private than public investment: the coefficient on the white line is much higher in magnitude and statistical significance in columns 1-3. In contrast, the hypothesis that the white line has had no effect on public investment cannot be rejected.¹⁶⁸ Given the small sample size, not too much should be read into these results. But again the evidence seems to be more consistent with Berry's – as opposed to Englebert or Lange's – argument, and suggests that the forces Goldstein and Udry found to be operating in Ghana could be a work across much of the continent.

¹⁶⁸ Another noteworthy result is that higher colonial taxation is strongly associated with lower public (but not private) investment since independence.

V

V.1 The Difference Between the White Line and Indirect Rule

Thus far it has been assumed that the estimated effect of close administration is negatively related to the effect of indirect rule. But clearly there are factors which could have affected the degree of collaboration for any given number of administrators, and thus the stability of this relationship across different colonies. Although there is considerable overlap, these factors are not necessarily the same – or acting in the same direction – as those which determined the number of administrators. For example, where colonial rule placed more strain on indigenous society, both more administrators and more collaboration for any given number of administrators could have been required. While no clear causal link between the number of European *residents* and the number of administrators was established, in the settler colonies any given number of administrators may have collaborated with African elites less.¹⁶⁹ But given that these (and other similar) factors were controlled for in the regression analysis, the relationship between the effect of the white line and the effect of collaboration should be roughly stable across the sample, making it possible to correctly infer the effect of indirect rule from the estimation results.

One factor that was not controlled for however is the extent of coercion. It is possible that coercion and collaboration were to some extent substitutes. Robinson believes that “the military element in French imperialism in north and west Africa ... often made it less dependent on mediators than the British.”¹⁷⁰ Lange found the correlation between his measure of the extent of indirect rule and the number of police per capita

¹⁶⁹ The correlation between Lange’s measure of legal penetration and the number of Europeans is -0.88.

¹⁷⁰ Robinson, ‘non-European foundations’, pp.122-3.

to be -0.82.¹⁷¹ It is possible that direct colonial repression has negatively affected long-term economic performance; but it is likely that the number of police and military is positively correlated to the number of administrators.¹⁷² That a strong positive relationship was found between the number of administrators and subsequent growth is thus in spite of more administrators being associated with greater coercion. If anything, using the white line probably underestimates the negative effects of collaboration.¹⁷³

It is perhaps worthwhile to extrapolate Lange's measure of indirect rule to the rest of the sample. Broadly, one would expect the extent of collaboration to depend negatively on the amount of resources available to the colonial government, positively on the overall difficulty (or strategic importance) of maintaining order and negatively on the political desirability of ruling directly. By regressing Lange's index on revenue (which constrained the possibility of direct rule), Canova and Bertocchi's 'colonial drain' (which could have affected the difficulty or importance of maintaining control by any given means) and the number of Europeans (which influenced the desirability of indirect rule relative to other possible means of maintaining hegemony) the following equation is obtained:¹⁷⁴

$$\text{Extent of indirect rule} = -47.65 - 6.07 * \text{Revenue} + 3.64 * \text{Drain} - 12.25 * \text{Europeans}$$

¹⁷¹ Lange, 'British colonial legacies', p.909. Within mainland Africa this correlation is -0.76. Recall also that there were significantly more police employed in southern Nigeria than northern Nigeria, see tab. 3.

¹⁷² Across British colonies the correlation between the number of police and military per capita and the white line is 0.51. Unfortunately, data for the number of police and military across the whole sample was unavailable.

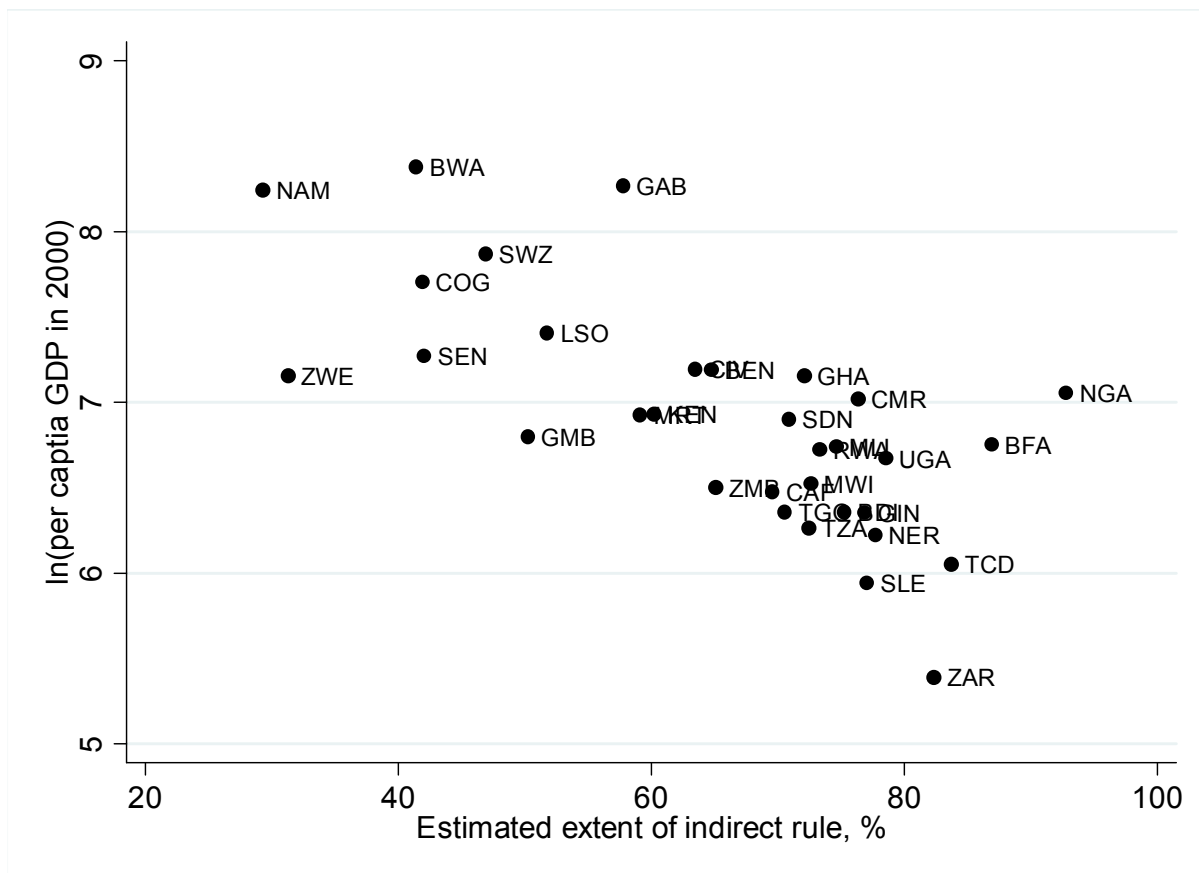
¹⁷³ One slight caveat is that the number of Africans directly employed (as clerks or messengers) by the colonial administration (which is also likely to have been positively correlated with the white line) could have worked in the opposite direction – positively affecting subsequent economic growth.

¹⁷⁴ Note that to ease interpretation all three dependent variables have been standardised to have standard deviation one.

Given a basis of just 14 observations, this exercise should be viewed as entirely tentative. That said, all three variables have the expected sign, are individually significant and together account for almost 90 percent of the variation in Lange's index. The estimated extent of indirect rule (obtained from this equation) is even more strongly related to economic performance since independence than the white line. Indeed, Figure 4 shows that half the variation in present-day income can be accounted for by this estimate.¹⁷⁵ Again this suggests that using the white line underestimates the negative legacies of indirect rule.

¹⁷⁵ The adjusted R^2 is greater when this linear combination of revenue, number of settlers and colonial drain is regressed on present-day income than when the three variables are regressed separately. While this clearly indicates a study along the lines of Lange's which focuses on Africa (and on economic rather than just political outcomes) would be worthwhile, recall the major limitation of Lange's measure: that it fails to distinguish between legitimate and 'created' chiefs, and thus how the impact of indirect rule varies with pre-colonial institutions.

Figure 4. Present-Day Income and the Estimated Extent of Indirect Rule



Correlation = -0.71, T-statistic = -5.46, $R^2 = 0.50$

Source: present-day income from Maddison, *Historical statistics*.

That the extent of indirect rule appears to be strongly and negatively associated with the number of Europeans could explain why no robust relationship was found between this variable and economic growth since independence. Contrary to AJR, perhaps the most important positive legacy of European settlement in Africa stems from the tendency for colonial administrators in the settler colonies to rely less on collaboration with Africans as a means of maintaining their hegemony.

V.2 Further Implications

Nathan Nunn has identified a negative relationship between the estimated number of slaves exported from each African country between

1400 and 1900 and their current income.¹⁷⁶ He claims that this correlation is the result of a causal relationship operating either through increased ethnic fractionalisation, weakened political structures or the evolution of a “culture of mistrust.”¹⁷⁷ Historians of Africa tend to be sceptical regarding these potential causal mechanisms, if there is no causal link however, the observed correlation (assuming it is not merely an artefact of poor quality data) still needs an explanation.¹⁷⁸

Table 9. The Slave Trade Versus Indirect Rule.

	Dependent variable is log of per capita GDP in 2000							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Slave exports	0.108*** (0.037)	0.145*** (0.044)	-0.071 (0.047)	-0.055 (0.044)	-0.248*** (0.088)	-0.087 (0.094)	-0.067 (0.095)	-
Estimated extent of indirect rule			-0.018* (0.009)	-0.022** (0.009)		0.020** (0.009)	0.024** (0.009)	0.024*** (0.008)
Geography controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coloniser fixed effects	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Estimation technique	OLS	OLS	OLS	OLS	2SLS	2SLS	2SLS	-
N	42	33	32	32	33	32	32	32
R ²	0.63	0.53	0.67	0.60	0.49	0.64	0.59	0.63

Standard errors are in parentheses. Significance at the 10, 5 and 1% level denoted by *, ** and *** respectively. Constant terms were included. ‘Geography controls’ are distance from equator, longitude, lowest monthly rainfall, average maximum humidity, average minimum temperature and ln(coastline/area). Coloniser fixed effects are dummy variables for colonisation by Britain and Belgium (France is omitted), except in col. 1 where Nunn’s dummy variables are used. The estimation technique refers to the method of estimation for slave exports. Where two staged least squares (2SLS) is used, the slave export variable is the fitted value obtained by regressing the slave exports estimate on Nunn’s instruments: the distance from the Atlantic, the distance from the Indian Ocean, the distance from the Sahara and the distance from the Red Sea. In col. 1, Nunn’s sample is used (which includes all of mainland sub-Saharan Africa). All data, except the estimated extent of indirect rule, is taken from Nunn, ‘Long-term effects’.

¹⁷⁶ Nunn, ‘Long-term effects’.

¹⁷⁷ In his original paper, Nunn favours the first two explanations. But he has since revised to argument to favour mistrust, Nunn and Wantchekon, ‘Origins of mistrust’.

¹⁷⁸ See Austin, ‘The reversal of fortune thesis’, for a qualitative critique of Nunn’s argument.

Nunn describes colonisation as “the other significant event in Africa’s past.”¹⁷⁹ Yet in his principal regressions, the colonial experience is only controlled for using dummy variables for the identity of the coloniser. This seems dubious given that it has been shown above – and by some others previously – that, statistically speaking, the identity of the coloniser seems to have had almost no effect. Perhaps a more appropriate control for differing experiences under colonialism would be the estimated extent of indirect rule discussed above (recall that this is merely a linear combination of three variables from the colonial period). Table 9 shows what happens to Nunn’s estimates when this control is used instead of (and in addition to) coloniser fixed effects.

When the estimated extent of indirect rule is included in Nunn’s regressions, the coefficient on his estimate for the number of slave exports is greatly reduced in magnitude and completely loses its statistical significance. The same pattern occurs – only more pronounced – when Nunn’s two staged least squares (2SLS) procedure is followed. In contrast, the coefficient on the estimated extent of indirect rule is stable in magnitude and consistently significant.

An alternative story, consistent with the correlation Nunn observes, is that decentralised societies suffered more from slave raids and then also suffered more under indirect rule, and that it is the later experience which has had the more pronounced economic legacy. Nunn himself identifies a correlation between slave exports and pre-colonial state development.¹⁸⁰ He sees the direction of causation running from slave trades to political instability and weakened states.¹⁸¹ It is more plausible however that those areas with less centralised political systems were

¹⁷⁹ Nunn, ‘Long-term effects’, p. 154.

¹⁸⁰ The correlation between Nunn’s estimate of slave exports and Rainer and Gennaioli’s measure of state development is (in my sample) -0.47, the T-statistic is -2.95 and the R^2 is 0.22.

¹⁸¹ Nunn, ‘Long-term effects’, pp. 165-6.

‘selected into’ the slave trades. “Most of the African rulers involved sought to protect their own subjects from enslavement while capturing, buying and selling or re-selling outsiders.”¹⁸² Some kingdoms (such as Benin and Kongo) even withdrew from the Atlantic slave trade altogether,¹⁸³ while some small states (such as Asante, Dahomey and Oyo) grew stronger because of their participation in the slave trade.¹⁸⁴ It is therefore the regions that were least politically centralised originally that ended up exporting relatively more of their population. Lower population densities in these areas could then have increased the difficulties associated with state development, so that they remained politically fragmented at the imposition of colonial rule. As shown above, colonial rule has had significant and negative economic legacies, and due to the nature of indirect rule these legacies have been the most detrimental where pre-colonial political fragmentation was high.

VI

Recent quantitative work by economists and political scientists supports the view that the colonialism (or the pre-colonial slave trade) has had long-term economic legacies for Africa. While highlighting the importance of institutions, this literature has so far failed to adequately reflect the complexities of the causal mechanisms involved. This is principally because the explanations put forth do not allow for the “power of indigenous agency ... as a determinant of institutional choice”¹⁸⁵ This omission is striking given that the thin white line fundamentally relied upon collaboration with Africans.

¹⁸² Austin, ‘The reversal of fortune thesis’, p.1005.

¹⁸³ Ibid., p.1004.

¹⁸⁴ Ibid., p.1005.

¹⁸⁵ Ibid., p.1020.

Europeans lacked both the capacity and the incentive to import their own institutions or 'invent' new ones. Colonial rule was not a "fundamental rupture", but neither was it "a mere interlude in the placid history of the continent."¹⁸⁶ The institutional environment of colonial and post-colonial Africa evolved through a series of interactions and competition between Europeans and Africans and, more importantly, between Africans and Africans; it was "a process marked by reinterpretation that was neither spurious nor false."¹⁸⁷ The weakness of these 'reinterpreted' institutions does not therefore lie in their extractive nature, foreignness or illegitimacy per se but the competitive manner in which they are derived: "in the long-run, it was the process of debate, rather than any particular interpretation, which shaped the actual exercise of power at all levels of society and its impact on conditions of access to resources."¹⁸⁸

It has been shown that a key variable in this process – the relative thinness of the white line – is strongly related to economic performance since independence, and in a way which depends on the nature of pre-colonial political institutions. While it cannot be conclusively proved that this correlation is the result of a causal relationship, the evidence is certainly consistent with this hypothesis and suggests that what mattered was not the 'strategy' of colonisation per se but how Africans responded to it within the pre-existing institutional environment. To further illuminate the legacies of colonialism within a quantitative framework it is therefore necessary to improve our understanding (and measurement) of the multiple facets of pre-colonial societies.

The most instructive way to consider the long-term impact of colonialism on African society is the framework put forward by Sara Berry.

¹⁸⁶ Chabal and Daloz, *Africa Works*, p.11.

¹⁸⁷ Spear, 'Neo-Traditionalism', p.4, footnote 2.

¹⁸⁸ Berry, *No Condition*, p.101.

The 'search for tradition' was never straightforward, particularly where the white line was weak or where the sought-for 'tradition' simply did not exist. In these circumstances, indirect rule – rather than creating the desired stability – increased competition, conflict and uncertainty over access to productive resources and political power. This has forced farmers and entrepreneurs to participate in the 'every-day politics of rent-seeking' at the expense of directly productive investment.

This complements rather than contradicts those arguments that emphasise colonialism's effect on post-colonial political economy. The fragmented nature of many African societies today is at least partly due to the 'faction fights' inadvertently generated by indirect rule. As well as directly undermining economic activity (and thus government revenue) these local disputes must have made it even more difficult for small-scale farmers to act collectively, perhaps contributing to the supposed 'urban bias' of economic policy.¹⁸⁹ Moreover, "local conflicts can accelerate the failure of states";¹⁹⁰ in the late twentieth century African states increasingly "disintegrated and fell prey to particularistic and factional struggles."¹⁹¹ Competing claims to land between and within communities "sowed the political landscape with multitudinous opportunities for conflict."¹⁹² In short, post-colonial Africa has too often been characterised by markets that fail to allocate resources efficiently and by governments that only exacerbate the situation; both these features can at least in part be traced back to the peculiar effects of European 'colonialism-on-the-cheap'.

¹⁸⁹ As Robert Bates famously argued in *Markets and States* (1981). The failure of Ghana's cocoa farmers to form a viable coalition after independence perhaps illustrates this point.

¹⁹⁰ Bates, *When things fell apart*, p.92.

¹⁹¹ Chabal and Daloz, *Africa Works*, p.14.

¹⁹² Bates, *When things fell apart*, pp.75-93, quote p.75.

APPENDIX I: Data Description and Sources

Black Market Premium

Log of 1 + foreign exchange black market premium, average for 1960 to 1990. Source: Englebert, 'Pre-colonial institutions'. Data not available for Namibia.

Capital Inflow During the Colonial Period

Per capita foreign capital invested from beginning of colonial period to 1936. Source Frankel, *Capital investment*. Only available for British colonies (excluding Swaziland and Lesotho) and the Belgian Congo.

Christians

Number of Christians (Protestant and Catholic) / total population in 1960. Source: Englebert, 'Pre-colonial institutions'. Data not available for Swaziland or Namibia.

Civil War

Number of years between independence and 1995 during which episodes of civil war were experienced. Source: Englebert, 'Pre-colonial institutions'.

Colonial Identity

The identity of the coloniser at the time of independence. So former German colonies Tanzania and Namibia are classified as British, Togo as French and Ruanda-Urundi as Belgian. Cameroon is classified as French (even though parts of the present-day country were under British administration).

Drain

GDP/GNP in the earliest year for which data is available, which is 1960 except in the following: Gambia (1966), Guinea (1970), Mali (1967), Namibia (1970), Senegal (1968), Sierra Leone (1964) and Tanzania (1970). Source: Heston and Summers. Note that while Canova and Bertocchi use GNP/GDP, here the reciprocal is taken to ease

interpretation. As this ratio increases so does the supposed economic penetration of the metropole in the colony.

Education

Primary and secondary school gross enrolment rates in 1950. Source: Easterly et al., 'Good policy'. Data not available for Benin, Burundi, Chad, Guinea, Lesotho, Mali, Namibia or Swaziland.

Literacy rate in 1955. Source: Morrison et al., *Black Africa*, tab. 4.11. Data not available for Zimbabwe or Namibia.

Ethnic Diversity

The probability any individual will be randomly matched with a member of a different ethno-linguistic group (in the 1960s). Source: Englebert, 'Pre-colonial institutions'. As used by Easterly and Levine, 'Growth tragedy', and based upon the soviet *Atlas Norodov Mirna*. Data not available for Swaziland or Namibia.

European Population

Log (number of European population/total population) in the 1930s. Sources: Kuczynski, *Colonial population*, for all British colonies, the Belgian Congo, Madagascar, Togo, and Cameroon (for 1935). *Annuire statistique de l'AEF* (1936) for the 4 territories of FEA and *Exposition coloniale internationale de 1931* for the 8 territories of FWA. Kucyinski only gives the aggregate African population for Ruanda-Urundi, which is divided between Rwanda and Burundi according to their relative populations in 1960 (source: World Bank, *World development indicators*). The number of Europeans in the two territories is given separately in *Rapport sur L'Administration Belge du Ruanda-Urundi* (1936). It should be noted that in many cases (especially in West Africa) the Europeans listed in the censuses were not 'settlers' in the sense that they had permanently migrated from Europe.

Initial Income

Log of GDP per capita in 1960 (or independence if earlier). Source: Englebert, 'Pre-Colonial Institutions'. Data not available for Namibia.

Governor's Salary

Log of the governor's salary in 1913. Sources: *Colonial office list* for 1913 for all British colonies except Tanzania (taken from the 1921 list) and Zambia (the 1925 list), and Sudan (for 1947) taken from Kirk-Greene ('Imperial administrators', tab. 7.3, p.233), which were deflated to 1913 prices using Officer, 'Purchasing power'. The figure for Nigeria is the average of the salaries of the North and South Governors just prior to amalgamation. Gann and Duignan, 'British Africa', tab. 13, p.159, give the salaries for the different classes of Belgian and French governors in 1913. These were assigned to each colony depending on the class of governor listed in *Exposition coloniale internationale de 1931* (for French colonies) and *Annuaire officiel pour 1940-1* (for Belgian). Data is not available for Zimbabwe. Gann and Duignan do not report the salary of a 2nd class French governor, so this is estimated as the average of the 1st and 3rd class salaries. This is a similar methodology to that used by Jones, 'History matters'. Salaries include any personal or duty allowances.

Growth up to 1992

The average annual growth in per capita GDP from 1960 (or independence if earlier) to 1992. Source: Englebert, 'Pre-Colonial Institutions'. Data not available for Namibia.

Growth up to 1973

The average annual growth in per capita GDP from 1960 to 1973, the date of the first oil shock. Source: Easterly et al., 'Good policy'. Data not available for Namibia.

Low Opportunities

A country is classified as having low opportunities for growth if it is landlocked and resource scarce, as defined by Ndulu et al, *Political*

economy. See app. I, tab. A1 for each country's classification. Note that DRC and Sudan are classified as landlocked.

Openness

The value of trade/ GDP in 1960. Sources: Heston and Summers, *Penn world tables*, for Cameroon, Gambia, Guinea, Mali, Tanzania and Zimbabwe, World Bank, *World development indicators*, for remaining. Data not available for Namibia or Sierra Leone.

Police

Number of European police and military / African population. Source: Hailey, *African survey*. Available for British colonies (excluding Sudan, Zimbabwe and Namibia) only.

Political Centralisation

In the main analysis, this is defined as the proportion of the population (in the 1960s) adjudged to belong to a 'centralised' ethnic group. Source: Gennaioli and Rainer, 'Modern impact'. The index is based on anthropological data from Murdock, 'Ethnographic atlas'. In the original material, the number of jurisdictional levels above the local community (up to a maximum of four) is estimated for each ethnic group. This "provides a measure of the degree of political complexity, ranging from 0 for stateless societies to 3 or 4 for those organized in large states."¹⁹³ Rainer and Gennaioli compress this classification into 'fragmented' (scores of 0 or 1) and 'centralised' (2 and above), then use data on the size of each ethnic group in each country (from the *Atlas Narodov Mira*) to calculate the share of each country's non-European population belonging to 'centralised' groups. For more information see Gennaioli and Rainer, 'Modern impact', app. 3. As a robustness check, app. VIII uses an alternative measure: "mean hierarchy above the family", source: Englebert, 'Pre-colonial institutions'. The source material is the same but the original data is not compressed into a binary measure and the value

¹⁹³ Murdock, 'Ethnographic Atlas', p. 269.

for each country is calculated simply as the mean value of all the ethnic groups present (not weighted by their population shares).

Population Density

Log (African population/land area) in the 1930s. Population statistics are from the same sources as 'European population'. Land area is from World Bank, *World development indicators*.

Present-Day Income

Log of GDP per capita in 2000. Source: Maddison, *Historical statistics*.

Private Investment

Average value of private investment as a percentage of GDP for the years 1970 – 1994. Source: World Bank, *Global development network growth database*. Data not available for Botswana, Burkina Faso, Chad, Guinea, Mali, Namibia, Sierra Leone, Swaziland or Tanzania.

Public Investment

Average value of public investment as a percentage of GDP for the years 1970 – 1994. Source: World Bank, *Global development network growth database*. Data not available for Botswana, Burkina Faso, Chad, Guinea, Mali, Namibia, Sierra Leone or Swaziland.

Region

Each country is classified as either west, east, equatorial or south. The classifications are the same as Nunn's, 'Long-term effects', although his 'central' is re-termed equatorial. See app. I, tab. A1 for the classification of each country.

Revenue

Total colonial revenue/African population in the 1930s. Sources: Frankel, *Capital investment*, and for FEA, *Annuire statistique de l'Afrique Equatoriale Francaise* (1936). The federations of FWA and FEA had general and local budgets. The general budget revenue is divided up among each individual territory according to its share of the total local budget revenue. In addition, FWA had a supplementary railway budget.

Railway revenue is divided between each territory according to its share of total kilometres of track in the federation (obtained from Hailey, *African survey*). Revenue for non British colonies was converted into pounds using Officer, 'Exchange rates'. All data for revenue is from 1935. Data for Madagascar was not available. The population data was obtained from the same sources as 'European population'.

Slave Exports

Log of number of slaves exported between 1400 and 1900 (as estimated by Nunn) / land area. Source Nunn, 'Long-term effects'.

Wage Earners

The number of wage owners/ the population aged 15-59, circa 1957. Source: Morrison et al., *Black Africa*, tab. 3.13. Data not available for Namibia. Unfortunately this data is far from reliable – it is likely that most figures are underestimates – and it is not clear whether the comparison is like for like as “there is considerable variation in the definition of wage earners.”¹⁹⁴ It should also be borne in mind that not all wage earners were employed by Europeans. The extent that this variable captures the colonial government's efforts to 'force' Africans into the labour market is therefore unclear.

White Line

The number of white administrators per 100,000 Africans in the late 1930s. For sources see text and app. II. Population statistics are from the same sources as 'European population'.

Urbanisation

Proportion of the population residing in urban areas in 1960. Source: World Bank, *World development indicators*.

¹⁹⁴ Morrison et al., *Black Africa*, p.78.

APPENDIX II: Constructing the White Line

Unfortunately, disaggregated data for FWA and FEA was not available for the desired time period. According to the *Annuaire du Ministère des Colonies* (1936), there were 483 administrators in FWA and 213 in FEA. In 1921, according to the *Annuaire du Gouvernement Général de l'AOF*, there were a total of 386 administrators divided as follows: 73 in Senegal, 71 in Guinea, 62 in Côte d'Ivoire, 44 in Dahomey, 88 in French Sudan, 31 in Upper Volta, 12 in Mauritania and 5 in Niger. It was assumed that this distribution remained constant over the following 15 years; the white line for each territory was calculated as its share of administrators in 1921 multiplied by the total number of administrators in 1936 (483). The *Annuaire du Gouvernement Generale de L'AEF* for 1913 revealed that in this year there were a total of 109 administrators in FEA; 41 in Gabon, 39 in Congo, 15 in Oubangui-Chari and 14 in Chad. In 1951, Chefs de district were distributed as follows, 24 in Gabon, 31 in Congo, 33 in Oubangui-Chari and 33 in Chad (*Annuaire de la fédération des territoires de l'Afrique Equatoriale Francaise*). The average of these two shares was then used to estimate how the 213 administrators in 1936 were distributed among the four separate territories.

The country that is now Cameroon was initially a German colony which was divided between French and British mandates after the First World War (with the majority of the country under French rule). Hailey, *African survey*, states that the total number of administrators in Nigeria and British Cameroon (in 1937) was 386. The Nigerian *Blue book* for 1937 lists only 353 administrators, implying a total of 33 administrators in British Cameroon. This is then added to the 80 administrators listed in the French *Annuaire du Ministère des Colonies* for 1936, to obtain a total of 113 administrators serving in what is now Cameroon. Kuczynski lists the

populations of French and British Cameroon separately, which are simply added. A similar (although more straightforward) process was followed for Tanzania, which was administrated as two separate colonies (Tanganyika and Zanzibar) by the British.

APPENDIX III: Colony Classification, Number of Administrators and
Population

Table A1.

Country	Code	Coloniser (at independence)	Region	Opportunities	Number of administrators	African population
Benin/ Dahomey	BEN	France	West	Coastal	65	978,725
Botswana/ Bechuanaland	BWA	Britain	South	Landlocked	20	263,857
Burkina Faso/ Upper Volta	BFA	France	West	Landlocked and resource scarce	39	3,239,722
Burundi	BDI	Belgium	East	Landlocked and resource scarce	26	1,708,536
Cameroon	CMR	France	Equatorial	Coastal	113	3,017,679
Central African Republic/ Oubangui-Chari	CAF	France	Equatorial	Landlocked and resource scarce	44	1,250,169
Chad	TCD	France	Equatorial	Landlocked and resource scarce	43	1,143,100
Congo/ Moyen Congo	COG	France	Equatorial	Coastal	66	385,648
Côte d'Ivoire	CIV	France	West	Coastal	78	1,722,931
Gabon	GAB	France	Equatorial	Coastal	61	649,400
Gambia	GMB	Britain	West	Coastal	11	197,594
Ghana/ Gold Coast	GHA	Britain	West	Coastal	91	3,568,961
Guinea	GIN	France	West	Coastal	89	2,093,726
Kenya	KEN	Britain	East	Coastal	164	3,066,354
Lesotho/ Basutoland	LSO	Britain	South	Landlocked and resource scarce	32	560,977
Madagascar	MDG	France	East	Coastal	162	3,799,033
Malawi/ Nyasaland	MWI	Britain	South	Landlocked and resource scarce	51	1,601,476
Mali/ French Sudan	MLI	France	West	Landlocked and resource scarce	110	2,633,163
Mauritania	MRT	France	West	Coastal	15	288,905
Namibia/ South West Africa	NAM	Britain	South	Coastal	8	328,467
Niger	NER	France	West	Landlocked and resource scarce	6	1,218,457
Nigeria	NGA	Britain	West	Coastal	353	19,919,006
Rwanda	RWA	Belgium	East	Landlocked and resource scarce	25	1,677,712
Senegal	SEN	France	West	Coastal	91	1,350,583
Sierra Leone	SLE	Britain	West	Coastal	40	1,889,282

Sudan	SDN	Britain	East	Landlocked and resource scarce	95	5,761,042
Swaziland	SWZ	Britain	South	Landlocked and resource scarce	15	143,280
Tanzania	TZA	Britain	East	Coastal	205	5,137,780
Togo	TGO	Britain	West	Coastal	21	763,002
Uganda	UGA	Britain	East	Landlocked and resource scarce	83	3,659,105
DRC/ Belgian Congo	ZAR	Belgium	Equatorial	Landlocked and resource scarce	728	10,981,320
Zambia / Northern Rhodesia	ZMB	Britain	South	Landlocked	109	1,368,087
Zimbabwe/ Southern Rhodesia	ZWE	Britain	South	Landlocked and resource scarce	47	1,233,581

APPENDIX IV: Raw Data for Fig. 3

Table A2.

Year	Revenue (£000)	Exports (£000)	Number of administrators	Total Europeans employed	European military personnel	African population
1912			278		296	17,470,630
1913	3,327	6,779				
1914				1641		
1919			239	1717	240	
1920			265			
1921			288	1907	277	18,365,634
1924	6,944	14,384	336	1934	219	
1925			333			
1927			393	2427	233	18,765,960
1928	5,895	16,927				
1929	6,045	17,581	435	2741	233	19,308,688
1930	5,622	14,778	431			
1931	4,858	8,552				
1932	4,985	9,267				
1933	4,887	8,460	392	2366	215	
1934	4,961	8,500				
1935	5,996	11,197	363			
1937				2048	193	
1938			372			20,261,796
1940			413			

Sources: Revenue and exports taken from Frankel, *Capital investment*. The number of administrators, total Europeans employed, Europeans military and African population for 1921, 1924, 1927, and 1929 is taken from the corresponding Nigerian *Handbooks*. The number of administrators for 1925, 1930, 1935, and 1940 is taken from Kirk-Greene, 'The thin white line', all other data is from the relevant *Blue books*. Note that in fig. 3 the data for revenue and value of exports was converted into 1913 pounds using Officer, 'Purchasing power', and all six series were scaled so that the value of their earliest entry was equal to 100.

APPENDIX V: Other Possible Determinants of the White Line

Table. A5 examines other possible determinants of the white line which could have affected growth in the post-colonial period, and thus bias the estimated effect for the effect of the white line on growth. None of the variables considered were found to have a statistically significant relationship with the white line (even foreign investment, due to the small sample size).

Table A3.

Variable	Number of observations	Correlation with white line	T-statistic when included in col. 6 of tab. 4
Initial income	32	0.51	0.76
Primary school enrolment, 1950	24	0.20	0.80
Secondary school enrolment, 1950	24	0.04	1.12
Literacy rate, 1955	31	0.09	-0.10
Foreign investment up to 1936	13	-0.11	-2.34
Urbanisation in 1960	33	0.42	1.09
Christians, 1960	31	0.39	1.30
Ethnic diversity	31	0.06	-0.18
Landlocked	33	-0.17	-0.81

For sources and description of each variable see app. I.

APPENDIX VI: Correlation Matrix

Table A4.

(N = 29)	The white line	Revenue	Wage Earners	European population	Governor's Salary	Drain	Political centralisation	Ethnic diversity
The white line	1							
Revenue	0.626	1						
Wage Earners	0.612	0.253	1					
European population	0.675	0.483	0.478	1				
Governor's Salary	-0.291	-0.147	0.234	-0.173	1			
Drain	0.120	0.064	0.180	-0.084	-0.022	1		
Political centralisation	-0.024	-0.143	0.027	0.248	0.077	0.242	1	
Ethnic diversity	0.051	0.169	0.096	-0.348	0.137	0.324	-0.610	1
Growth to 1992	0.371	0.047	0.246	0.551	0.058	0.463	0.248	-0.221

APPENDIX VII: The Estimated Marginal Effect of the White Line on Growth

Col. 5 of tab. 6 reports the estimation results of the following equation:

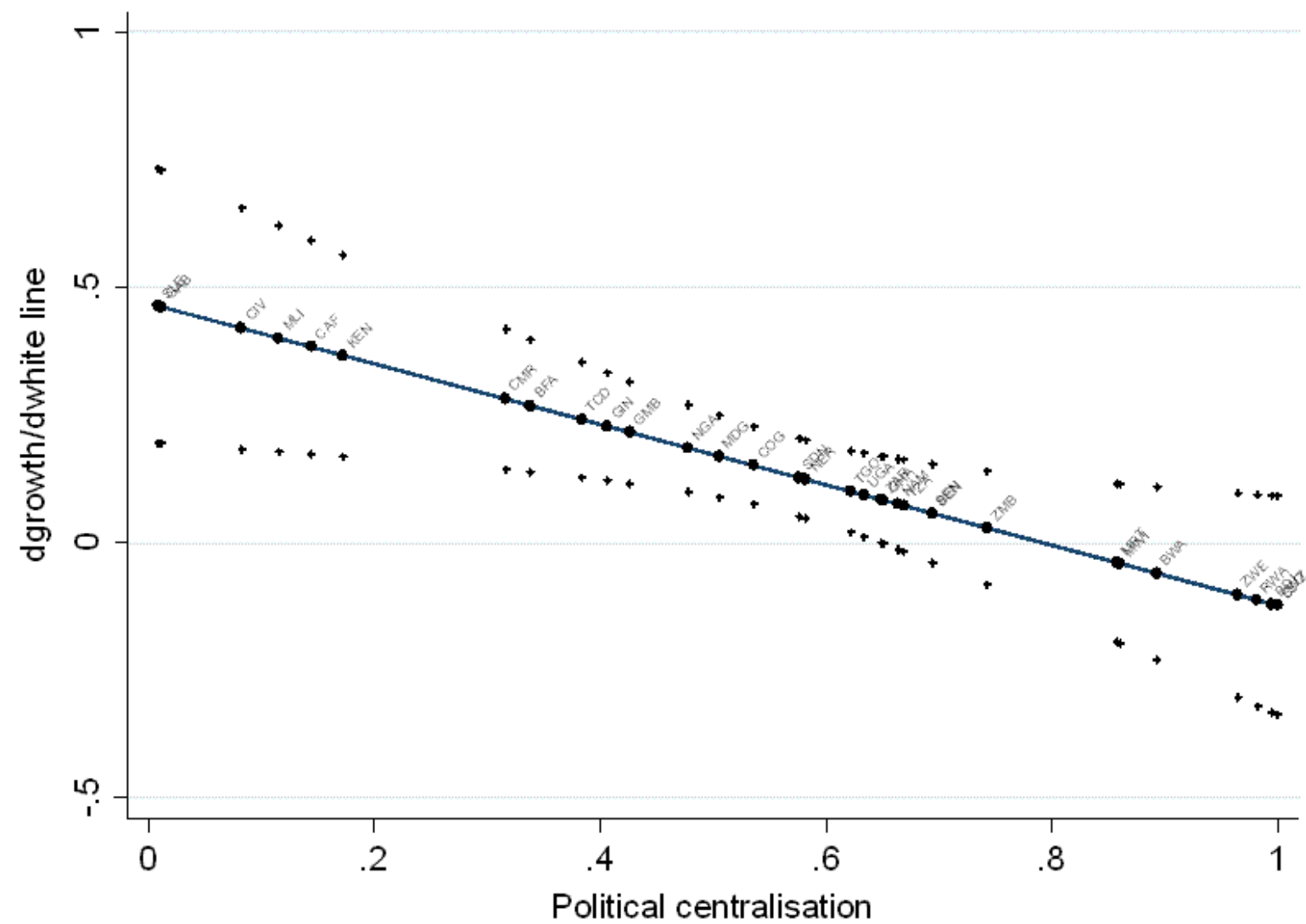
$$\text{Growth}_i = \beta_1 + \beta_2 (\text{white line}_i) + \beta_3 (\text{white line}_i * \text{political centralisation}_i) + \beta_4 X_i + \epsilon_i \quad (1)$$

Where X_i are control variables and ϵ_i is a random error term. The marginal effect of the white line on growth is obtained by differentiating equation (1) with respect to the white line:

$$\frac{\partial \text{growth}_i}{\partial \text{white line}_i} = \beta_2 + \beta_3 \text{political centralisation}_i$$

The estimated values of β_2 and β_3 are 0.134 and -0.177 respectively. That the estimate for β_3 is negative implies that the marginal benefit of closer administration is greater when political centralisation is lower. Fig. A1 shows how the estimated marginal effect of the white line on growth varies across the sample with the degree of pre-colonial state development. Upper and lower bounds for the 95% confidence interval are also included. Note that this interval is completely above zero for the majority of the sample and never completely below zero, even though the point estimate is negative for some countries.

Figure A1. Pre-colonial state development versus the estimated effect of the white line on growth



APPENDIX VIII: Alternative Measures of Pre-Colonial Political Centralisation

Tab. A5 lists Gennaioli and Rainer's measure of pre-colonial political centralisation and Englebert's measure of average hierarchy above the family. Gennaioli and Rainer's measure has the advantage of being weighted by the population share of each ethnic group, while Englebert does not compress the source data (see app. I). The final column – simply the product of the two indices – is intended to make use of both these features.

Table A5.

	Political centralisation	Hierarchy above family	Product
BENIN	0.695	2.67	1.856
BOTSWANA	0.893	2	1.786
BURKINA FASO	0.338	1.25	0.423
BURUNDI	0.995	3	2.985
CAMEROON	0.316	1.5	0.474
CAR	0.144	1.33	0.192
CHAD	0.384	2	0.768
CONGO	0.536	1.4	0.750
COTE D'IVOIRE	0.082	1.71	0.140
GABON	0.011	1	0.011
GAMBIA	0.426	1.6	0.682
GHANA	0.651	2	1.302
GUINEA	0.406	2	0.812
KENYA	0.172	1.83	0.315
LESOTHO	1	3	3.000
MADAGASCAR	0.505	2	1.010
MALAWI	0.861	1.8	1.550
MALI	0.115	2	0.230
MAURITANIA	0.858	1.67	1.433
NAMIBIA	0.664	.	.
NIGER	0.582	2.2	1.280
NIGERIA	0.478	2.25	1.076
RWANDA	0.982	3	2.946
SENEGAL	0.694	1.67	1.159
SIERRA LEONE	0.008	2.25	0.018
SUDAN	0.576	2	1.152
SWAZILAND	1	3	3.000
TANZANIA	0.669	1.67	1.117
TOGO	0.622	1.33	0.827

UGANDA	0.634	1.83	1.160
DRC	0.649	1.71	1.110
ZAMBIA	0.743	2	1.486
ZIMBABWE	0.965	.	.

Tab. A6 shows that the significance of the interaction term is robust to these alternative measures of pre-colonial political centralisation. Col. 1 repeats the results of col. 5 of tab. 6, col. 2 uses Englebert's measure and col. 3 the product. The slope on the interaction term is significantly below zero in all three cases. That the coefficient on the white line is not individually significant (in col. 2 and 3) means that no effect on growth can be statistically identified *at the mean level of political centralisation*. Interestingly, this increases the likelihood of indirect rule having only small negative effects, or even a positive legacy, in the most state-like societies. That said, if the interaction term is not included the coefficient on the white line is positive and highly significant in all three cases.

Table A6.

Dependent variable is the average per capita GDP growth from 1960 (or independence if earlier) to 1992			
	(1)	(2)	(3)
Initial income	-1.514* (0.742)	-1.417* (0.714)	-1.354* (0.700)
Limited opportunities	-1.555*** (0.478)	-1.505*** (0.466)	-1.533*** (0.470)
Ethnic diversity	0.095 (1.089)	-0.201 (1.068)	0.516 (1.513)
Drain	-20.197*** (5.620)	-19.107*** (5.689)	-20.614*** (5.855)
European population	0.206 (0.191)	0.260 (0.174)	0.268 (0.198)
Revenue	-0.781* (0.424)	-0.822 (0.507)	-0.869 (0.507)
Wage earners	0.028* (0.015)	0.045* (0.025)	0.038 (0.033)
Political centralisation	-0.180 (0.630)	-0.382 (0.412)	-0.073 (0.325)

The white line	0.134*** (0.036)	0.027 (0.064)	0.076 (0.061)
The white line * political Centralisation	-0.177** (0.066)	-0.121** (0.053)	-0.173** (0.084)
Political centralisation as measured by	Gennaioli and Rainer	Englebert	Product
N	30	29	29
R ²	0.80	0.79	0.79

Robust standard errors are in parentheses. Significance at the 10, 5 and 1% level denoted by *, ** and *** respectively. Constant terms were included but not reported. When the white line and political centralisation are interacted, the white line is centred around zero and political centralisation is standardised to have mean zero and standard deviation one.

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