Decolonization and Fiscal Capacity: Event Study Evidence from Africa

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Abstract

The determinants of variation in governments' fiscal capacity is a central question in the study of taxation and economic development. However, the impact of past foreign rule — as widely experienced by many developing countries — on taxation is unclear both conceptually and empirically. We use a recently-constructed dataset on the fiscal history of African countries over 1900-2015 to analyze the impact of decolonization on fiscal capacity (defined as revenue from taxes that are relatively difficult to collect and require more administrative infrastructure). The analysis adopts a staggered difference-in-difference approach, implemented using a stacked event study. It finds no discernible pre-trends prior to decolonization, and a substantial increase in fiscal capacity starting about 5-6 years following decolonization. This suggests that colonial rulers, on average, invested less in fiscal capacity than did post-independence governments. We show that this effect is not due to democratization (either at the time of decolonization or subsequently). Our conceptual framework instead posits that post-colonial states were able to increase tax revenues from hard-to-collect sources because their higher degree of legitimacy improved citizens' tax morale, which allowed the new governments to enforce tax payments at a lower cost. We offer historical evidence that is consistent with this channel.

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1) Introduction

There is growing scholarly interest across many academic disciplines in the consequences of colonial rule and of the decolonization process that unfolded in the mid-twentieth century. Some of this interest is motivated by the historical persistence of institutions. In particular, some scholars have argued that European colonial rule bequeathed to African countries a set of (arguably "extractive") institutions that have generally proven detrimental to their long-run economic performance (Young 1994; Easterly and Levine 1997; Acemoglu et al. 2001; Michalopoulos and Papaioannou 2016). Even if this is true, however, it also seems reasonable to suppose that Africans changed some of these institutions after independence. We investigate the extent to which newly empowered African leaders did so by focusing on changes in African fiscal capacity around decolonization events, using a stacked event study approach. In our definition, fiscal capacity refers to revenue from tax sources that require relatively sophisticated institutional arrangements, such as direct (i.e., income) taxes and certain broad-based indirect taxes (such as the value-added tax (VAT)). Fiscal capacity thus provides an aggregate measure of the degree to which a state is able to tax its citizens, as well as its potential to provide public goods conducive to economic development, such as infrastructure and schooling.

At the same time, there is a growing literature on taxation and development, within which a central question is (to quote the title of Besley and Persson (2014)): "Why do developing countries tax so little?" In particular, it has been established that developing countries tend to have substantially lower tax-to-GDP ratios and other measures of fiscal capacity, especially for taxes that are administratively more difficult to collect. This paper addresses the broader issue of the consequences of colonial rule and decolonization in one specific – but very important – sphere, namely that of taxation and fiscal capacity. It also contributes to the understanding of the historical origins of low fiscal capacity in countries formerly under colonial rule (as is true of much of the developing world). As opposed to much of the literature on the economic impact of colonialism, which tends to focus on long-run effects that are often difficult to disentangle from other country- or region-specific characteristics, our event-study perspective exploits variation in institutions over time. This permits us to use country fixed effects and thus control for geographical, cultural or other time-invariant factors that might be correlated with colonial institutions.

The analysis in this paper is based on an extensive and unique panel dataset of taxation in 44 African countries over 1900-2015, constructed by Albers, Jerven and Suesse (2023; hereafter

AJS). We construct a measure of fiscal capacity from the AJS data, measured in units of wage days (i.e., the number of days that a typical urban worker must work to earn an amount equal to nominal tax revenue per capita). This measure is thus independent of changes in the local currency and can be computed even when GDP data is unreliable or nonexistent. We combine this with information drawn from historical sources on the year of decolonization for each country in the sample, along with a broad range of covariates. In testing the impact of decolonization on fiscal capacity, we use a staggered difference-in-difference (DiD) design, as countries experienced decolonization at different times (albeit with a substantial cluster in the 1960s). To take account of the recent methodological literature that highlights the potential problems of dynamic treatment effects and treatment effect heterogeneity, we use a stacked event study approach (e.g., Cengiz et al., 2019; Baker, Larcker and Wang, 2022).

The paper's primary result is that, in this stacked event study framework, decolonization led to an increase in fiscal capacity. Importantly, there are no discernible pre-trends in fiscal capacity in the years leading up to decolonization. This suggests that the timing of decolonization was essentially random with respect to the outcome variable, and hence that a causal interpretation of the central finding is potentially reasonable. In particular, starting about five to six years after decolonization, there is a substantial increase in fiscal capacity among treated countries (i.e., those that experienced decolonization), relative to the control countries. Fiscal capacity ten years after decolonization is about six to seven labor days higher than under colonial rule, relative to a mean of about eight labor days in the year before decolonization. This is thus a quite substantial increase. The result is robust to the inclusion of control variables for armed conflict, coups, high inflation episodes, debt default, access to aid and loans, and commodity export prices. The length of the lag – while substantial – appears to be consistent with the time required to undertake significant investments in administrative capabilities to increase fiscal capacity. The result holds for alternative definitions of decolonization (in particular, for independence in the sense of sovereignty and for indigenous self-government).

These results have implications for our conceptual understanding of the fiscal impact of colonialism. The existing literature is split on this question (see, for instance, Dharmapala (2021) for a discussion). There is evidence that colonial states were hesitant to invest in the provision of public goods as they were they were insulated from the preferences of the local population (Huillery, 2009). Alternatively, it can be argued that foreign rulers may have over-invested in fiscal

capacity as an extractive mechanism because they did not internalize the burdens of taxation experienced by the local population to the same extent as would domestic rulers. Indeed, the early study of Naoroji (1901) formulated a "fiscal drain" theory which suggests that a country under foreign rule may be taxed excessively to finance the colonial power's administration and military ventures. The extractive nature of colonialism is also stressed by Acemoglu et al. (2001). Although contradicting each other in the direction of their predictions, both of these approaches assume that an increase in the alignment of rulers' preferences and those of the population should change tax revenues.

One natural mechanism for shifting rulers' preferences is democratization.[1] However, we are able to rule out this channel: decolonization did not generally lead to a substantial increase in the prevalence of democracy, and where it did, fiscal capacity did not change disproportionately. Even so, it is still possible that – for some reason other than democratization (such as lower cultural distance) - post-independence governments internalized the benefits of spending to the local population to a greater degree than did the prior colonial regimes. To test this channel, we code the ethnicity of post-independence leaders and construct a measure of the ethnic representativeness of these leaders in relation to the national population. We find no evidence of a stronger effect in countries where post-independence leaders were more ethnically representative. This casts some doubt on the possibility that leaders' internalization of benefits through lower cultural distance accounts for our basic result.

We therefore posit an alternative conceptual framework that focuses on "tax morale." In this framework, governments choose a taxation strategy consisting of tax rates and enforcement levels conditional on an economy's level of development and expected taxpayer resistance. Resistance by citizens to taxation, or tax morale, is in turn dependent on the perceived legitimacy of the state. We then show how tax morale may be lower, and resistance to taxation greater, when the rulers who impose taxation are foreign and perceived as lacking legitimacy. This may lead colonial regimes to impose low effective tax burdens in equilibrium (taking account of enforcement expenditures). Then, tax morale may increase upon decolonization to the extent that postcolonial governments are perceived as having greater legitimacy, and this would lead to higher taxation and enforcement, and thus fiscal capacity, in equilibrium.

[1] If we believe colonial states "underinvested" in fiscal capacity because they were dictatorships, more democratic independent states should tax more. If we believe, on the contrary, that colonial states "overinvested" in fiscal capacity because they were dictatorships, democratization in independent states should lead to *lower* taxes.

There is a vast literature across history and the social sciences that is of relevance to the study of the legacy of colonization and decolonization. Here, we briefly frame our contribution to this literature in the context of the most relevant prior work. The only prior paper of which we are aware that directly addresses the same question is Lee and Paine (2019). The authors find no detectable change in revenue growth following decolonization. However, as opposed to Lee and Paine (2019), we use a newly constructed dataset on real tax revenues that accounts for changes in prices and wages that often coincided with decolonization (see AJS). We also use a stacked event study approach that is robust to many problems associated with naïve two-way fixed effects models or naïve event studies in which already-treated countries form part of the control group.

Frankema (2011) studies budget data and constructs revenue and spending estimates for eight British colonies in Africa over 1880-1940 - Gambia, Sierra Leone, Gold Coast (Ghana), Nigeria, Nyasaland (Malawi), Kenya, Uganda, and Mauritius. Frankema (2011) finds wide variation across these colonies in revenue collection and in whether taxation appears to be "extractive" (in the sense of maximizing government revenue).[2] However, our dataset is much more comprehensive, covering virtually all African countries over 1900-2015. We also rely on causal inference methods rather than case studies. Frankema and van Waijenburg (2014) compare fiscal policies in French and British colonies. They argue that differences are due to the underlying characteristics of each colony (such as being coastal versus landlocked) rather than to the identity of the colonial power. Cogneau et al. (2021) compare fiscal capacity in the pre-independence period (1949-55) to a more recent period (2006-2016) for 18 former French colonies in Africa. They find little growth in fiscal capacity. However, their study is far more limited in coverage across countries and over time than ours. As noted above, we also use causal inference methods rather than descriptive comparisons over time.[3]

The rest of the paper proceeds as follows. Section 2 describes the conceptual framework, which is substantiated with historical and descriptive evidence. Section 3 describes the data and

[2] Frankema (2011) develops a conceptual framework involving a taxonomy of types of colonial regime; in addition to the "extractive" state, these include the developmental state (where comparatively high tax levels are used to finance public goods that support the accumulation of physical and human capital and economic development), the benevolent state (where low taxes are combined with high levels of human capital investment), and the minimalist state (where the colonial government primarily serves the political and military strategic concerns of the metropolis).

[3] Robinson (2023) argues that Africa is characterized by "tax aversion" relative to the rest of the world, and attributes this phenomenon to the nature of precolonial polities. This argument, while potentially relevant for understanding fiscal capacity in Africa, is not directly related to our analysis, which focuses on variation over time in colonial rule within African countries.

the various definitions of decolonization, while Section 4 explains our empirical strategy. Section 5 reports the results, and Section 6 concludes.

2) Conceptual Framework

2.1) A Model of Decolonization and Tax Morale

We start by modeling taxation strategies as a game between a government, denoted by *g* and a representative citizen, denoted by *c*. The main purpose of this simple model is to determine how decolonization can change the equilibrium tax revenues of a polity through changes in tax morale. We show how different tax strategies can arise even under colonial rule, and what this implies for the effects of decolonization. Crucially, this does not require us to assume a change in government preferences around decolonization. In this game, all governments "consume" net revenue. That means they maximize (tax) revenue net of expenditure, which includes non-discretionary expenditure *I*.[4] The assumption that governments consume revenue is not necessarily equivalent to the assumption that all governments are corrupt, as net revenue may also be spent on unproductive pet projects. For example, many colonial governments spent a large share of their revenue on paying relatively expensive European civil servants, a benefit to colonial officials even if this did not involve corruption in a legal sense (Gardner, 2012).

As spending on public goods is fixed, the government's problem is choosing a tax policy, which is a bundle consisting of a tax rate $0 < t_g \leq 1$ at which citizen's income *y* is taxed, as well as an enforcement level $0 \leq p_g < 1$.[5] Enforcement may involve investment in a monitoring apparatus, police and law enforcement to detect evasion. These investments make it less likely that citizens hide taxable income from the government, but they are also costly. Formally, we can express the utility of the government as follows:

$$U_g = t_g(\overline{y} - w_c) - \overline{I} - \delta p_g^2 + p_g \alpha w_c \quad (1)$$

where w_c is the share of income citizens withhold from the government. The term on the left therefore defines fiscal capacity, i.e., total government revenue from regular taxation, which is the main outcome variable in our empirical section. In the model, it is determined by the tax rate t_g,

[4] We treat *I* as the basic infrastructure required to keep the state running, i.e.. rudimentary administrative institutions. It should be emphasized that, during the time period under consideration (the late 1950s and early 1960s) spending by governments on additional services, such as health and education, was generally very low.

[5] Note that for simplicity we assume that citizen's incomes are exogenous and that we abstract from income inequality between citizens.

incomes y, and the degree of tax compliance -w_c. As will become clear, the latter is in turn influenced by the government's enforcement strategy. In a more direct sense, the government's choice of enforcement involves a cost to the government, dependent on the parameter δ and a benefit, in the form of additionally recovered income from the citizens w_c. In the formulation above, we assume that the cost of enforcement increases exponentially. This reflects how surveillance may not only be costly because it consumes government outlays, but because overbearing repression may create deadweight losses on society – and hence tax revenues – by discouraging productive activities. On the other hand, enforcement does allow the government to recover income proportional to its investment in enforcement and an enforcement effectiveness parameter $0 < \alpha < 1$.

The citizen, for her part, can decide to withhold a fraction of her income $w_c < y$ from the government, which is therefore not taxed. However, this withheld income may be subject to the government's confiscatory punishment as described above. Apart from taxed and untaxed income, two more arguments enter the citizen's utility function. One is trivial, namely the consumption of the minimum public good I enjoyed by each citizen. The second element is more innovative and incorporates the literature on state legitimacy and taxation (d'Arcy 2009). According to this literature, citizens' tax effort is partly determined by the degree to which they see the state's claim to their personal resources as legitimate. We model this by assuming that paying taxes to a state the citizen sees as illegitimate inflicts a disutility or psychic cost on the taxpayer. This cost is not present when paying taxes to a state regarded as legitimate (citizens do, of course, still incur the material cost of parting with their income).[6]

Defining state legitimacy (in the eyes of the taxpayer) as $s = [0,1]$ we then have:

$$U_c = I + \left(1 - t_g\right)(y - w_c) + \left(1 - p_g\right)w_c - (1 - s)\,\gamma\, t_g(y - w_c) \qquad (2)$$

where $0 < \gamma < 1$ is a preference parameter governing the weight the citizen attached to state legitimacy. The structure of the game is as follows. At the outset, incomes and state legitimacy are given. The government then decides its taxation policy, thus choosing tax levels and punishments. Finally, the citizen decides how much income to withhold from the government.

A few interim results are useful for the analysis. First, note that from the point of view of

[6] More generally, one could extend this concept to include the disutility a taxpayer incurs when she is forced to fund certain activities by the state that she disapproves of, such as armaments or subsidies to polluting enterprises. In the current rendering of the model, we abstract from this and treat the entire state structure as either legitimate or illegitimate in the eyes of the taxpayer.

the citizen, either full compliance or complete tax evasion is rational, that is: $w_c = [0, y]$.[7] Second, note that for a *legitimate* government, investment in punishment provides an upper bound for the tax rate. This is obvious by backward induction: whenever $s = 1$, legitimacy disappears as a concern influencing taxpayer decisions. Citizens face a straightforward choice between paying taxes at cost t_g and withholding at cost p_g, because compliance will generate higher utility when:

$$(1 - t_g)y \geq (1 - p_g)y \quad \rightarrow \quad p_g \geq t_{s=1} \tag{3}$$

For an *illegitimate* government, the level of punishment needed to ensure taxpayer compliance is higher. This is because taxpayers now face an additional cost of complying, in the form of the disutility of paying for the upkeep of a polity they regard as illegitimate. This implies that tax rates need to be lower and repression rates higher (relative to each other), because a taxpayer in an illegitimate state will only comply when:

$$\begin{gathered}(1 - t_g)y \geq (1 - p_g)y + t\gamma y \\ \frac{P_g}{(1 + \gamma)} \geq t_{s=0}\end{gathered} \tag{4}$$

Having derived the optimality conditions for the citizen, we now turn to the government. We can simplify the analysis by recognizing that a government will never set punishment levels in excess of the conditions specified above, i.e., in excess of the tax rate in the case of the legitimate government. Compliance is assured anyway if these conditions are fulfilled by equality, and further investment in enforcement is costly without yielding benefits. We can therefore write both inequalities as strict equalities.

Substituting the citizen's optimality condition into the government's objective function and omitting non-choice variables, we can write the payoff from a tax compliant citizenry as opposed to tax evasion for a *legitimate* government as:

$$p_g y - \delta p^2 > 0 \quad \rightarrow \quad p_g < y/\delta \tag{5}$$

In other words, the ratio of incomes to the cost of punishment provides an upper bound for punishment (and therefore tax) rates. In a very poor country, the government may choose to forego the cost of punishment and not tax its citizens.[8]

[7] This is a feature of the linearity of the taxpayer's utility function, an assumption made for the sake of simplicity. Similar results would hold if citizens were allowed to hide only a fraction of their income above a certain minimal threshold, while significantly complicating notation.

[8] It is worth noting that while the threat of punishment is crucial to compel citizens to pay taxes, it is never optimal for the government to invest in *some* level of punishment $p_g < t_g$ in order to recover some hidden revenues from citizens if it is clear that citizens will not comply with taxation. This is because the government's payoff from setting

The same operation for the *illegitimate* government yields:

$$\frac{p_g}{(1+\gamma)}\, y \;-\; \delta p^2 > 0 \quad \rightarrow \quad p_g < \frac{y}{\delta(1+\gamma)} \tag{6}$$

In order to "afford" the same level of taxation and enforcement as its legitimate peer, an illegitimate government requires higher levels of income. A corollary of this statement is that we are likely to see repressive colonial states only in the richest colonies, while poorer colonies are likely to resort to a low tax / low repression equilibrium. This is visible from the Figure 1, where we plot tax revenues against incomes for both types of states.

For very low income levels, we will observe little fiscal capacity in either group of states – potential tax revenues are too low to support the build-up of the necessary enforcement apparatus. At intermediate levels of income, legitimate states can afford to tax at positive rates, because the improved tax morale of their citizens requires only low levels of enforcement relative to tax revenues. Illegitimate states, which require higher levels of repression for any given tax rate, will only be able to afford the build-up of the required extensive security apparatus in relatively high-income settings.

In conclusion, we would predict that colonial states, regarded as illegitimate by the majority of their taxpayers, fall into two categories. First, poorer colonies (historically the majority) will forego repression and be content with lower tax revenues. Richer colonies can "afford" repression and experience both high levels of surveillance and higher tax revenues than their poorer peers. As we will see, the settler colonies of southern Africa are examples of this phenomenon. Decolonization, that is shifting from *s*=0 to *s*=1, will increase tax revenues across the board. However, the marginal impact of decolonization relative to existing revenues will be smaller in the case of the "settler" colonies that already tax heavily.

2.2) Descriptive and Historical Evidence

The historical record largely bears out these predictions. The historian Ronald Robinson famously described the British Empire in Africa as "a gimcrack effort run by two men and a dog", summarizing the skeletal nature of the colonial state in much of the continent. This was a reflection of low incomes, poor infrastructure and low levels of monetization that could not support a more extensive administrative apparatus (Frankema 2014). A further factor limiting the tax take was the

a compliance-ensuring tax rate is always higher than the payoff from recovering hidden wealth: $p_g y - \delta p^2 > \delta p_g^2 + p_g \alpha w_c$ simplifies to $p_g > \alpha p_g$ which is true by construction.

threat of revolts, which were frequent in the early days of colonial rule when authorities regularly overestimated the capacity of their African subjects to pay tax. These revolts also demonstrate clearly the extent to which taxation by the colonial state was regarded as illegitimate by African taxpayers. Examples of these tax revolts dot Africa's colonial history until World War II. Examples include the 1898 Hut Tax War in Sierra Leone, the 1916/1917 revolt against recruitment and tax extraction in French Dahomey (Benin), and the Aba Women's War in southeastern Nigeria in 1929. As colonial states did not have the funds to support an extensive security apparatus to compel unwilling taxpayers, most colonial states had by the late interwar period opted for an equilibrium of moderate tax rates, relatively low levels of enforcement, and hence modest revenues (Young 1994, Herbst 2000). Accordingly, the frequency of tax revolts decreased markedly without a concurrent increase in the repressive capacity of colonial states. Indeed, evidence assembled by Alexopoulou and Frankema (2018) indicates that outlays on security were fairly minimal across the British Empire.[9]

One reason for the scarce resources available to the colonial state was the hesitancy of metropolitan taxpayers to fund expensive colonial ventures. While colonies did sometimes receive metropolitan subsidies (often confined to emergency situations), colonial administrations were largely supposed to operate self-sufficiently, funding themselves from local sources. While some colonies could resort to issuing debt (more frequently in the British Empire than in its French counterpart) the ability to pay back this debt ultimately reflected local resources. Caught between parsimonious metropolitan overlords and rebellious local taxpayers, colonial states therefore were perennially short of revenues. Some colonial states attempted to supplement sparse local tax revenues by conscripting the one resource they deemed to be locally abundant: labor. The true extent of forced labor, euphemistically deemed *corvée* service, was often obfuscated, but evidence indicates that it was substantial especially for the French colonies in the Sahel zone, which constituted some of the poorest territories on the continent (Van Waijenburg 2018).

While it is important not to exaggerate the "weakness" of colonial states, nor minimize the heterogeneity among them, the descriptive evidence supports our theoretical priors and the existing

[9] Spending on repression, broadly defined, was much higher (as a percentage of total revenues) in the three Portuguese colonies Angola, Guinea-Bissau and Mozambique, which constitute somewhat of an exception to this trend. This is in part due to Portugal's weaker position among the imperial powers, i.e., motivated by "external" rather than "internal" security. When this repressive apparatus was used in an attempt to squash internal revolts in the twilight of Portugal's rule in the 1970s, it was mainly financed by metropolitan resources.

historiography. This is visible from Figure 2, where we plot the mean revenues from direct and "hard-to-collect" indirect taxes for all African polities over time. It is clear that tax revenues across the continent stagnated in the later phase of colonial rule. Real revenues increase again in the mid-1960s, when most polities had achieved their independence. This offers some *prima facie* descriptive evidence as to the effect of decolonization. As Figure 2 also indicates, this increase in fiscal capacity followed efforts by African governments to legitimize their rule. The legitimacy of the new states not only sprang from the fact that they were, for the first time, sovereign entities being governed by Africans, but also from the fact that many post-colonial governments adopted a developmental ethos. This meant that the professed aim of the new states was always to further economic development. While the tools employed in this endeavor ranged from free market approaches in Cote d'Ivoire and Kenya to more heavy-handed state involvement in Ghana or Tanzania, the objectives of state building and "national" development were similar across the continent. While dedicated opinion polls are rare for this time period, qualitative evidence indicates that most African governments, riding on a wave of African nationalism, were relatively popular in the first decade of their existence (Young 1982, Mkandawire 2001).

This enthusiasm generally waned by the 1970s, as the promised fruits of development remained elusive for the majority of Africans and corruption proliferated among the new elites. At the same time, some early experiments with democratization were often abrogated and the new regimes ossified into one-party or one-person rule. The reappearance of coups and civil wars would indicate that the legitimacy of the post-colonial states had been tarnished at that point (Young 2012). Nonetheless, it is likely that post-colonial states were, for the first decade at least, generally better at mobilizing revenue than their predecessors.

The trajectory turned out quite differently in the richer colonies, largely those mineral-rich territories of the southern cone. These territories not only contained a relatively wealthy European settler population, but incipient industrialization also led to the emergence of a Black working class of miners and laborers with taxable monetary income. Yet these states, run by European minorities, were also clearly illegitimate in the eyes of the majority of African taxpayers (Birmingham 2008). As a result, governments in Apartheid South Africa (including Namibia) and Rhodesia (Zimbabwe) settled into an equilibrium of high repression and relatively high tax revenues.[10] As Mkandawire (2010) has written, these "economies had more elaborate state

[10] Additional African territories with important settler populations were Kenya and Algeria. The latter was officially

structures, higher levels of regulatory reach and formidable repressive capacity. [F]airly elaborate tax collection mechanisms were in existence in these countries." After the transition to majority rule, however, the growth in real tax revenues started to stagnate, despite the improved legitimacy of the new governments. Although this is popularly attributed to increased levels of corruption, our model suggests that this may not be the whole story: the change in tax strategy brought about by the end of minority rule was smaller than that of other decolonization events given the already high levels of fiscal capacity. In addition, the new majority government was able to generate this revenue with a lower incidence of repression per tax dollar raised.

The end of Apartheid in 1994 provides the latest instance of decolonization (in the sense of indigenous self-government) in our dataset, and this allows the South African case to shed further light on our proposed mechanism. Although we have already shown that post-colonial governments invested in legitimacy after decolonization, the lack of opinion polls during the decolonization wave of the 1960s makes it hard to know whether these claims to legitimacy were taken seriously by taxpayers. For South Africa, however, we have survey data on tax morale from the World Value Survey starting in 1982. We plot this data by racial group in Figure 3. It shows that during white minority rule White South Africans were more willing to pay taxes than Black South Africans. More importantly, however, there is a substantial increase in tax morale – both absolutely and in relation to whites - among Black South Africans in the first survey carried out after the election of Nelson Mandela as South Africa's first Black president in April 1994. Thereafter, tax morale among Black South Africans resumes its pre-existing downward trend. This episode supports the idea that government legitimacy may change tax morale, even over relatively short time periods.

We can also further elucidate the relationship between the channel emphasized in our model, namely tax morale, and the provision of public goods. Foreign rulers may under-invest in developing fiscal capacity as they do not internalize the benefits of government spending on programs such as mass education to the same extent as would domestic rulers (Huillery, 2009). If post-colonial states were to properly appraise these benefits, one would expect them to tax more. In our framework, conversely, states are always revenue maximisers. Any improved provision of public goods after decolonization only enters the equation through an improvement in state legitimacy, as citizens may be more willing to pay taxes to a government from whom they have

treated as part of metropolitan France rather than a colony.

an expectation of receiving public goods in return. It should be noted that these public goods need not be material – as noted, the expansion of education and health infrastructure in most post-colonial states was rather sluggish. Rather, post-colonial populations may receive payoffs from newly-gained national identity, sovereignty etc., all of which can be deemed public goods provided by the new governments. In fact, most new governments in Africa invested substantial resources into this kind of "nation-building" (Suesse, 2023).[11] This much is visible from Figure 4, where we plot the ideological variations in the legitimacy claimed by governments in Africa over time. Clearly, nationalist ideology and with it the putative gains provided by sovereignty and independence provided an important ingredient into the legitimacy claims of the new states. Once decolonization had (mostly) run its course by the late 1960s, close to 60% of governments on the continent legitimated their rule by appealing to national sovereignty. In short, the prediction of our model that a higher degree of national legitimacy in Africa could have improved tax revenues seems to be borne out by the descriptive and historical evidence.

Our model does not incorporate voting on taxes and public goods as a determinant of government tax policies and instead focusses on national legitimacy. To what extent does this distort our view of decolonization? Figure 2 also plotted the participatory democracy score over time. This suggests that, on average, decolonization did not engender a large increase in the extent to which citizens were allowed to determine government policy. It seems unlikely that the increase in revenues can therefore be attributed to democratization (although we empirically explore this possibility in more detail below). Historically, the new rulers were not always legitimated through elections, instead (as suggested by Figure 4), most claimed some degree of popular legitimacy based on national sovereignty regardless of any actual electoral processes in place (Glickman 1987, Ake 2001).[12]

3) Data

[11] Flag waving often went hand in hand with more hands-on campaigns of "Africanization" involving the allocation of procurement contracts and jobs to indigenous elites. Kwame Nkrumah's Ghana provides a well-known example of such policies. There were thus also material payoffs from independence, although these typically remained confined to urban elites.

[12] Tanzania provides an example of a country whose population rallied around an explicitly non-ethnic national identity under Julius Nyerere. At the same time, while he did enjoy a relatively high degree of popular legitimacy, Nyerere essentially transformed Tanzania into a one-party state. Elections were held, but only candidates vetted by Nyerere's TANU party could stand.

3.1) Defining and Coding Decolonization

Our conceptual framework and the historical evidence imply that decolonization may have differential effects depending on whether a colony was a settler colony or not. This distinction is also reflected in our definition of decolonization. In the baseline analysis, the notion of decolonization that we use corresponds to national sovereignty as defined under international law. For example, Ghana is coded as experiencing decolonization in 1957, and Nigeria in 1960, the years in which these countries became sovereign states. We also define an alternative concept of decolonization. This defines decolonization as "indigenous rule", coding the year in which the African majority was able to govern the territory. This may include periods of self-government with respect to fiscal matters (even if the territory was not sovereign as defined under international law, and foreign affairs and defense were under the control of the colonial power). The various concepts of decolonization do not always coincide. For example, Ghana was granted indigenous self-government in 1951, but only became independent six years later. Conversely, South Africa became internationally sovereign with the Statute of Westminster in 1931, but internally, minority rule by European settlers and their descendants lasted until 1994. These distinctions matter because they might have different implications for fiscal capacity. Internationally sovereign polities will enjoy the "nationalist" legitimacy that our model emphasizes. But they also have privileged access to trade taxes and foreign credit, which are often said to decrease fiscal capacity (Bayart 2000). Countries that transition to majority rule may also find it easier to extend direct taxation to the bulk of the population as they enjoy greater legitimacy (Mkandawire 2010), but as predicted by our model they will already start out at a higher level of fiscal capacity due to more stringent enforcement.

Table 1 lists all 44 countries in the AJS dataset (which is described in the next subsection). It shows each country's colonial ruler(s) and the coding of the two notions of decolonization discussed above. Two countries – the ancient empire of Ethiopia and the much newer Republic of Liberia – are generally not viewed as having been colonized, and therefore did not experience decolonization (notwithstanding the brief Italian Fascist occupation of Ethiopia, which is generally viewed as being more analogous to the brief wartime occupation of many European countries by Axis powers, rather than to long-term colonial rule). They cannot be classified readily as either treatment or control countries (if we conceive of the counterfactual to decolonization as being to remain under colonial rule, rather than to never experience colonial rule). Thus, the analysis in this

paper excludes Ethiopia and Liberia. Three countries in southern Africa with large and dominant European minorities – Namibia, South Africa, and Zimbabwe – pose some challenges in coding decolonization. For the national sovereignty definition, these countries are coded as being decolonized upon effective independence from metropolitan (rather than local) European rule. Admittedly, this is rather formalistic, as "decolonization" in this sense did not involve African majority rule. However, the alternative notion of decolonization (as indigenous self-government) for these countries reflects the year of transition to majority rule.

3.2) Fiscal Variables

Our main dependent variables are constructed from tax revenues as collected in the AJS dataset. AJS hand-collect information on various components of tax revenues from colonial-era budget records, revenue statements and from more recent data sources, such as recently declassified IMF documents. Thus, the AJS dataset is based on combining and standardizing fiscal records that are scattered across various archives, primarily budgets and other revenue statements from both the colonial era and the post-independence years. The components of tax revenue are then classified in accordance with the categories used in current International Monetary Fund (IMF) government revenue statistics, into direct taxes, indirect taxes (divided into indirect taxes proper and trade taxes), non-tax ordinary revenue, resource income, and extraordinary revenue. This makes the components of tax revenue comparable across countries and across the 1900-2015 time period. As a next step, AJS deflate these nominal revenues using the contemporaneous nominal daily wage in the relevant country (while standardizing by population size). Revenue is thus measured in units of labor-day equivalents (i.e., the number of days of work the government taxes from each worker at the prevailing wage rate).

While the AJS dataset includes many different tax instruments, the analysis here focuses on a notion of fiscal capacity that emphasizes tax instruments that are more administratively difficult to implement (but which provide greater – and more stable - revenue streams in the long run). In particular, this measure includes direct taxes (such as personal and corporate income taxes) and certain broad-based indirect taxes (such as the value-added tax (VAT)), while excluding trade and resource taxes.

More formally, we denote nominal revenue from direct taxes for country i in year t by D_{it} and nominal revenue from broad-based indirect taxes for country i in year t by ID_{it} (each of which

is measured in the local currency used in country *i* in year *t*). Then, we define total nominal revenue from these types of taxes as $R_{it} = D_{it} + ID_{it}$. Scaling by the population of country *i* in year *t* (denoted by Pop_{it}), we can define nominal revenue per capita from "hard-to-collect" sources as $\frac{R_{it}}{Pop_{it}}$ (again, this is measured in the local currency used in country *i* in year *t*). The AJS dataset also includes information on the average nominal daily wage of an urban worker in country *i* in year *t*, which we denote by w_{it}. Our measure of fiscal capacity (i.e., of revenue from "hard-to-collect" sources) is then defined as follows for country *i* in year *t*:

$$FC_{it} = \frac{\frac{R_{it}}{Pop_{it}}}{w_{it}} = \frac{R_{it}}{Pop_{it} * w_{it}} \quad (7)$$

FC_{it} can be interpreted as the number of days that a typical urban worker would have to work to generate the nominal revenue per capita for country *i* in year *t*. While constructed based on nominal variables measured in the local currency, FC_{it} itself is measured in labor-day units. Thus, it is unaffected by changes in the currency used (which happened in some cases at or around the time of decolonization). Importantly, this measure can be constructed for country-years without reliable GDP data (which includes all or most of the colonial period for most countries).

One way to interpret the FC_{it} measure in Equation 7 is that it deflates nominal revenue (scaled by population) by the daily nominal wage. Some deflator for nominal revenue is essential, because currency changes and inflation lead to arbitrary changes in nominal revenues (and so comparisons of nominal revenue across time for a given country are not meaningful). It is, of course, more standard in studies of fiscal capacity to deflate nominal revenues by GDP, to derive a tax-to GDP ratio (or a ratio of "hard-to-collect" taxes to GDP).[13] This is not feasible in addressing our research question, as reliable GDP data is typically not available for the colonial period, and is often unreliable even thereafter (Jerven, 2013). However, AJS show[14] that for those years (typically after 1960) for which GDP data is available, the changes in the FC_{it} measure are very closely correlated with changes in the ratio of "hard-to-collect" taxes to GDP. Even so, there is a

[13] Note that, given the data-poor environment in African economic history, attempts to construct nominal GDP measures for African countries in the colonial era typically rely on the only two sub-series for which data is consistently available, namely trade and taxes. Eliminating the tax series, this ultimately implies that the fiscal capacity measure is affected by global demand for African export commodities.

[14] See p. 11 of their Appendix at: https://static.cambridge.org/content/id/urn:cambridge.org:id:article:S0020818322000285/resource/name/S0020818322000285sup001.pdf

concern that changes in the wage deflator could, other things equal, change the fiscal capacity measure. For instance, if urban wages fell around the time of decolonization, this would mechanically increase the FC_{it} measure. However, the available evidence suggests that wages were generally raised under newly independent governments, possibly for reasons of redistributive politics (for example, our data records several increases in the mandatory minimum wage after independence). This would tend to decrease the FC_{it} measure, so that the bias is most likely to work against our findings.[15]

In addition, AJS supply a number of useful fiscal covariates, in particular access to resource revenues and foreign aid. We complement this data with a range of covariates from secondary sources. These include the VDEM data set on democracy scores and regime change, ARCHIGOS for coups and UCDP for armed conflict. Crucially, all these covariates are defined so that they are consistently coded both before and after decolonization. For example, access to foreign aid includes both overseas development aid provided by modern donors, as well as colonial subsidies. Where this is not the case, such as for some conflict data, existing data sets are extended using their original coding methodology.

Table 2 provides descriptive statistics for the fiscal variables and the covariates used in the main analysis. For the reasons explained in Section 4 below, we use a truncated version of the AJS dataset that (in addition to the exclusion of Ethiopia and Liberia, as discussed above) is restricted to the years 1900-1972. Our baseline measure of fiscal capacity (defined in Equation (7)) has a mean of 7.5 labor days over this period. Adding trade taxes to this measure substantially increases the mean to about 13 labor days. Total revenue (from all sources) is on average equivalent to about 21 labor days. Thus, the subset of taxes that are administratively more difficult to collect (on which our analysis focuses) represents only about a third of revenue on average. Nonetheless, it is these hard-to-collect taxes that the literature on fiscal capacity has tended to emphasize because of their ability to provide stable revenue sources and because of what they reveal about the administrative capacity of the state.

4) Empirical Strategy

4.1) Implementing a Staggered DiD Design with a Stacked Event Study Approach

[15] Note that potential alternative deflators would also tend to face analogous problems. For instance, using grain prices as a deflator instead would change, but not eliminate the problem, as it would instead imply that the fiscal capacity measure would be swayed by the harvest (with fiscal capacity increasing mechanically during good harvests).

As decolonization occurred in different years for different countries, a staggered DiD approach is a natural one to use. Applied researchers have traditionally used the two-way fixed effects (TWFE) model to implement staggered DiD designs. While extreme temporal variation in tax revenues and the heterogeneity of country-specific factors that may influence taxation (geography, colonizer characteristics etc.) requires the use of year and country fixed effects in a setting such as ours, the recent methodological literature has highlighted potential problems of dynamic treatment effects and treatment effect heterogeneity that the TWFE model fails to address. Thus, we use a "stacked" event study approach (e.g., Cengiz et al., 2019; Baker, Larcker and Wang, 2022). This involves stacking a series of mini-datasets (each one including the countries that were "treated" – i.e., experienced decolonization events - in a particular year, along with a set of control countries) to construct a stacked dataset. Each stack consists of all countries that were treated in a particular year, along with the set of control countries.

The recent methodological literature on staggered DiD designs emphasizes the importance of using "clean" control units (in this instance, countries) that have not themselves experienced treatment. However, all of the countries in the sample eventually experienced decolonization at some point.[16] We therefore truncate the data and use those countries that have not undergone decolonization at the end of the truncated sample period as a control group. For decolonization conceptualized as sovereignty under international law, the analysis involves truncating the data to the years 1900-1972 and using the former Portuguese colonies Angola, Guinea-Bissau and Mozambique (which experienced decolonization relatively late, in the mid-1970s) as controls that are "never-treated" over this sample period.[17] When we conceptualize decolonization as transition to majority rule, we consider the same years, but can now in addition include the countries in southern Africa that experienced late transitions to African majority rule (1980 for Zimbabwe, 1990 for Namibia, and 1994 for South Africa) in the control group. Thus, our results do not rely solely on the former Portuguese colonies as the control group.

A natural concern in any DiD setting is the comparability of the treatment and control groups. Table 3 reports a comparison of the descriptive statistics for the treatment and control

[16] Of course, this excludes Ethiopia and Liberia, which were never colonized and therefore did not experience decolonization.

[17] Although decolonization in the sense of national sovereignty occurred in 1975 for these three countries, the alternative definition of decolonization occurred in 1973 for some of them. Thus, we end the sample in 1972 so that the same dataset can be used with both definitions of decolonization.

groups in our baseline analysis (where decolonization is defined as sovereignty under international law). The treatment group includes all the countries in Table 1 apart from Ethiopia, Liberia and the three control countries). The control countries are Angola, Guinea-Bissau, and Mozambique. For the treatment countries, these descriptive statistics are calculated only for years prior to the country's decolonization (for instance, for Ghana these descriptive statistics use data only from 1900-1956). This avoids the influence (if any) of the treatment effect on the treated countries' descriptive statistics. For the control countries, these descriptive statistics are calculated for 1900-1972, as (by definition) these never-treated countries were colonial territories for that entire period.

Table 3 suggests that the treatment and control countries are quite similar in terms of the baseline measure of fiscal capacity (with a mean of about 5.5 labor days for the former and about 7 labor days for the latter). Total revenue from all sources, however, is somewhat higher among the control countries. The treatment and control countries are remarkably similar in terms of average population size and area. However, there are some potentially important differences across the two groups. In particular, forced labor appears to be substantially more prevalent among the Portuguese-ruled control countries than among the treatment countries. The fraction of European settlers is also somewhat higher in the control group. These differences pose some significant concerns, which we address below in robustness checks that take account of forced labor in our measure of fiscal capacity and that analyze territories with and without European settlement separately (see Section 5 below).

To implement our analysis using a stacked event study approach, we construct a series of "stacks" (or mini-datasets). Each stack consists of a treatment group of countries that experienced decolonization in a particular year, along with the (fixed) set of control countries (Angola, Guinea-Bissau, and Mozambique in the baseline analysis defining decolonization as national sovereignty). For example, the 1956 stack consists of three treatment countries (Morocco, Sudan, and Tunisia) and the three control countries. The 1957 stack consists of one treatment country (Ghana) and the three control countries. The 1960 cohort of treatment countries is relatively large, but in general there is substantial dispersion across years of the treatment (i.e., decolonization). Each stack is a panel dataset over 1900-1972 (albeit with data for only a limited number of countries, as described above).

Within each stack, we construct a series of event-time dummies that we denote by b_{its}^{k}, where $b_{its}^{k} = 1$ when in stack s treatment country i is k years before or after decolonization in year

t (and zero otherwise). For control countries, all event-time dummies are equal to zero. In the results reported in the figures below, *k* takes on values from -10 to 10. In the regressions, the data are binned at the endpoints such that *k* = -11 includes all observations that are 11 or more years before decolonization and *k* = 11 includes all observations that are 11 or more years after decolonization. The event-year immediately prior to decolonization (*k* = -1) is excluded; its coefficient is normalized to zero and used as the benchmark.

The stacked event-study specification that we use can be expressed as:

$$FC_{its} = \sum_{\substack{k=-11, \\ k\neq -1}}^{11} \varphi_k b_{its}^k + (\omega \boldsymbol{X}_{it}) + \mu_{is} + \delta_{ts} + \epsilon_{its} \tag{8}$$

where, noting that $1\{.\}$ is the indicator function:

$$b_{its}^k = \begin{cases} 1\{t - t_{is}^* \leq -11\} \text{ if } k = -11 \\ 1\{t - t_{is}^* = k\} \text{ if } k \in [-10, 10] \\ 1\{t - t_{is}^* \geq 11\} \text{ if } k = 11 \end{cases} \tag{9}$$

where t_{is}^* is the year of decolonization in stack *s* (for instance, 1957 for the stack in which Ghana is the treatment country). FC_{its} is the baseline measure of fiscal capacity for country *i* in year *t* within the mini-dataset (or stack) *s*. φ_k represents the estimated coefficients of the event-time dummies, shown graphically in the figures below. $\boldsymbol{X}_{it}$ is a vector of time-varying covariates measuring access to external revenues (debt, aid, resource exports), as well as coups, civil conflict, and macroeconomic crisis indicators (debt default and inflation); these are excluded in the basic analysis but are included in a robustness check. μ_{is} is a country-by-stack fixed effect, and δ_{ts} is a year-by-stack fixed effect. ϵ_{its} is the error term. Standard errors are clustered at the country-by-stack level.

4.2) Historical Evidence for the Quasi-Random Timing of Decolonization

A crucial precondition for using an event study approach to make causal inferences is that the timing of treatment is quasi-random. While this claim is, in a statistical sense, supported by an examination of pre-trends in fiscal capacity (as discussed in Section 5 below), it also has considerable historical support. This is clear when examining the events leading up to the decolonization wave of the late 1950s early 1960s. While in theory one might be concerned about metropolitan authorities postponing the independence of colonies with a high tax yield, these concerns are contradicted by the historical record. First, colonizers typically did not extract tax

revenues from the colonies for metropolitan use.[18] As emphasized earlier, colonies were largely autonomous in a budgetary sense (Gardner 2012). Colonial powers did of course have commercial, rather than fiscal, interests in Africa in the form of investments by European firms in mining and cash crop production. Yet, by and large, European policymakers judged that these commercial interests could be maintained after independence, without the attendant international stigma of colonial rule.

Moreover, historians emphasize that the speed of decolonization came as a surprise to both colonial authorities and African independence activists. After WWII, it was clear to European leaders that sovereignty would eventually have to be extended to African territories. However, Europeans generally assumed that African territories were too "underdeveloped" to be granted independence in the foreseeable future (Hargreaves 2014), as a certain level of development was deemed a prerequisite for independence. Imperial planners therefore presumed that European rule would, albeit with cosmetic changes and concessions to African majorities, continue for many more decades. For example, the leading Belgian specialist of colonial law A.A.J. van Bilsen gave an indication of the assumed timeline in 1956 when he published his programmatic "Thirty-Year Plan for the Political Emancipation of Belgian Africa." As it turned out, van Bilsen and his colleagues overestimated the remaining duration of colonial rule by a factor of seven. Similarly, until the very end of colonial rule, most African political organizations advanced fairly modest aims that fell short of demanding full independence. This was hardly surprising – representation of Africans in the political life of the colonies was extremely limited (Mamdani 1996)[19], and discrimination against Africans in economic affairs was rife (Decker 2010).[20] African political parties, which often grew out of protest movements against these local inequities, were therefore initially focused on assuring a more equitable access to resources for Africans, and a seat at the decision-making table, rather than full national sovereignty.

[18] The direct extraction of revenues from the colonies for investment in the metropole did of course happen in earlier stages of colonization, most egregiously in Belgian King Leopold II's infamous Congo Free State (1885-1908).

[19] Within the enormous French Empire, only the inhabitants of the four "old" settlements (Gorée, Dakar, Rufisque, Saint-Louis) in Senegal were granted the rights of French citizens, an infinitesimal share of the overall African population of the Empire. Within the British Empire, legislative councils generally only had an advisory function to the governors, and even these toothless councils were predominantly staffed by Europeans, often appointed by the governors themselves. Kenya provides a good example of these dynamics (Gardner, 2012).

[20] For example, African cocoa traders in the Gold Coast (Ghana), British Togoland and Western Nigeria complained about discriminatory pricing policies by British trading houses for their crops and about the limited access to credit for Africans (Suesse 2023). In Tanzania locals campaigned for improved land rights for indigenous peoples and against an expansion of European landholdings.

The fact that the speed of decolonization often took local politicians, both African and European, by surprise suggests that its timing was unpredictable. This was in part due to strategic imperatives by the metropolitan authorities. Once they judged, after the independence of Ghana in 1957, that decolonization was inevitable, colonial planners frequently decided to *accelerate* the pace of decolonization, without regard for local conditions. This may be attributable to benign motives, or to the growing stigma associated with colonialism. A cynical view, on the other hand, might be that the calculation behind this policy was that upon their sudden independence, African states would be so institutionally weak and their politicians so inexperienced that they would be reliant on European guidance for a prolonged period. This sequence of events was most expressly visible in the case of the Belgian Congo, where decolonization proceeded at breakneck speed within one year with scant preparations, only to immediately descend into civil war and the intervention of Belgian troops (Hargreaves 2014).

In the French Empire, President de Gaulle suddenly decreed in 1959 that independence would be granted to all mainland African colonies by the next year, irrespective of local processes. The new African leaders were then presented with a take-it-or-leave-it offer that envisaged either continual cooperation with France in economic and military matters (including membership in the Zone Franc) or a complete suspension of French aid and an immediate withdrawal of all administrative and medical personnel on French payroll. Given these alternatives, with the notable exception of Guinea under Sékou Touré, all African leaders chose the first option and accepted blanket decolonization on essentially French terms (Chafer 2017). In summary, decolonization was in most cases a sudden event, often determined by macro-political forces beyond the control of African politicians or European officials in any individual colony.

5) Results

5.1) Baseline Results: Decolonization increases fiscal capacity

5.1.1 Decolonization as transition to international sovereignty

We present our baseline results in the Panel A of Figure 5, where we define decolonization as attainment of sovereignty under international law. First, it is important to note that, conditional on country-by-stack and year-by-stack fixed effects, there is no apparent pre-trend in fiscal

capacity prior to decolonization. As discussed in Section 4.2, it does not seem to be the case that particular polities "selected" into decolonization because colonizers granted sovereignty to territories with either high or low fiscal capacity. This suggests that the timing of decolonization was essentially random with respect to fiscal variables, and hence argues for a causal interpretation of our findings.

After decolonization, we observe a small (but statistically insignificant) dip in real tax revenues, before these pick up at around the fourth year of independence. The coefficients are statistically significant at the 5% level after five to six years, and the higher level of fiscal capacity appears to persist subsequently. This basic result suggests that decolonization had a positive effect on tax revenues from hard-to-collect taxes in the medium term. However, the lag in the materialization of the effect suggests that it either took some time for African countries to change their tax policy (and build a new administrative apparatus to enforce these taxes), and/or that tax morale did not improve instantaneously. Both channels are plausible in light of the historical evidence.

Our model in Section 2 emphasizes an increase in the tax rate after independence (as new states can tax with lower cost of repression per tax dollar raised), which is consistent with our empirical results. Historically, however, newly independent states could or did not adjust policies immediately. The sudden nature of decolonization implied that there were few experienced African civil servants and policy makers. Even avowed champions of Africanization, such as Ghana's Kwame Nkrumah, therefore had to rely on the economic policy advice from Western economists, who did not break radically with established precedent for the first years. Other leaders, including the Tanzanian pioneer of "African Socialism" Julius Nyerere, continued to staff their administration with former colonial civil servants for some time. The continuing links between the Francophone countries and metropolitan France have already been emphasized. This reflected the realization that without trained personnel, state administration was widely expected to deteriorate. There was therefore broad continuity in both policy and personnel in the early years of independence. This same continuity might have affected tax morale – as long as the same former colonial officials were in charge of running the state, the illegitimacy of colonial rule had not fully disappeared.

The size of the coefficient in both panels is of a considerable, but arguably realistic, magnitude. After ten years the impact of decolonization stands at more than 6.6 labor days,

implying that citizens in newly independent countries paid additional taxes worth about six to seven days of wages. This estimated effect should be compared to a mean of about eight labor days in event-year -1 (i.e., in the year before decolonization) for the fiscal capacity measure. We thus find a quite substantial increase in fiscal capacity following decolonization. It should be emphasized that this measure only includes revenue from "hard-to-collect" taxes – it does not count the revenue post-independence governments collected from trade taxes (including marketing boards), public companies or resource revenues. In other words, African governments appear to have engaged in what might be termed fiscal state-building.

5.1.2 Decolonization as transition to African rule

Not all colonies that became independent as sovereign subjects of international law were subsequently governed by indigenous African politicians. This matters for the mechanism: for instance, we would not expect countries dominated by European settlers to be regarded as legitimate by the majority of the population, even if the country were formally a sovereign state. Similarly, we would not expect European settlers to internalize the benefits to the African majority of public spending. Conversely, many countries (especially British colonies that achieved "responsible government"[21]) received a measure of self-rule before formal sovereignty, and this may have increased their legitimacy. The most relevant definition of decolonization in these cases would arguably be the transition to indigenous rule, rather than independence according to international law. We implement this new definition in Figure 6, distinguishing between all colonies (Panel A) and settler colonies only (Panel B).[22] This distinction reflects the different dynamics of state-building in settler colonies emphasized in our model and the historical overview: settler colonies could afford higher levels of repression and therefore exhibited higher fiscal capacity even before their transition to indigenous rule, and might therefore experience different dynamics after decolonization.

Overall, we obtain relatively similar results with our alternative definition of

[21] Responsible government refers to a constitutional structure in which the executive is responsible to an elected local legislature (as opposed, in particular, to executive power being vested in a governor appointed by the Colonial Office in London).

[22] Note that the control group differs across these cases. For all colonies, it consists of Angola, Guinea-Bissau and Mozambique as before. For settler colonies, we use in addition Namibia, South Africa and Zimbabwe as the control group as these underwent late transitions to indigenous rule. In this case, the treated settler colonies are largely those of eastern and northern Africa, such as Algeria. Data on European settler populations is from Acemoglu, Johnson and Robinson (2001).

decolonization as with the benchmark one (upper panel), although the magnitude of the coefficient is slightly smaller and it takes somewhat longer for the effect to materialize. A transition to indigenous rule increases fiscal capacity after about eight years. Overall, this confirms our original result. The effect is, however different for settler colonies, where the coefficient is close to zero, but standard errors are very large. As predicted by our model, the effect of decolonization is less ambivalent in non-settler colonies. These were generally poorer colonies with little initial tax enforcement, so that decolonization saw a shift to a new equilibrium with higher taxes and enforcement. For the settler colonies, which already had higher degrees of both, we see an apparent drop in tax revenues (albeit one that is statistically insignificant) immediately after decolonization without much of a subsequent recovery. This would suggest that in the richer settler colonies, that as our model predicts were already able to tax extensively before decolonization, the shift in regimes has little additional effect.

5.2) Robustness

An objection to our interpretation of these results would be that decolonization affected many aspects of African political economy, which could have had some bearing on tax policy and revenues. For example, the disappearance of colonial rule might have facilitated civil wars or coups, and the resulting regime instability may have affected the government's ability to tax. Although from a theoretical perspective, these factors should actually *decrease* tax revenues, it might nonetheless be important to control for them.[23] In Panel B of Figure 5 we therefore control for polity-specific time-varying indicator variables denoting the presence of coups, civil conflict, debt default or hyperinflation episodes. This does not decrease the coefficient on decolonization (defined here as attainment of international sovereignty) markedly, and therefore does not materially affect our conclusions.

The hypothesis that newly-independent countries invested in fiscal capacity is further supported when we investigate alternative sources of state revenue. Indeed, the results change radically when we replace our measure of fiscal capacity, which largely focuses on direct taxes, with total ordinary revenues. As is visible on the upper panel of Figure 7, the lags on the decolonization coefficient do not increase so sharply, and the estimates are highly imprecise (i.e.,

[23] Besley and Persson (2010) conjecture that frequent regime turnover should decrease fiscal capacity, while Ch et al (2018) show that the effects of civil wars (as opposed to interstate wars) on fiscal capacity is negative. AJS find empirical support for these hypotheses.

standard errors are sufficiently wide that the coefficient is rendered statistically insignificant).[24] The estimates, however, are substantially smaller in magnitude (relative to the level of total ordinary revenue in event-year -1) than those for fiscal capacity in Figure 5. This suggests that independent governments did not benefit from a general increase in revenues and that the increase we observe is specific to "hard-to-collect" taxes, that is, fiscal capacity more narrowly. It is of course exactly these taxes that are reflective of institution-building in collection, as well as being more dependent on the tax morale channel we analyze in our model. The bulk of ordinary revenue, on the other hand, consists of trade taxes, resource revenues, profits of public enterprises and sundry items like fees and licenses that would not be subject to improved tax morale to the same extent as direct taxes.

A second piece of evidence in support of our hypothesis concerning post-colonial state-building is offered by the inclusion of forced labor in our measure of fiscal capacity. This might be important because cash-strapped colonial states often supplemented their meagre revenues by forcing the local population to work for a certain number of days per year, often on public infrastructure projects. As such, forced labor was a way to directly commandeer individuals' work, rather than having to purchase such labor with monetary tax receipts. Ignoring these dynamics might lead us to understate the extractive capacity of colonial states, and overstate the capacity of their postcolonial successors, who generally did not resort to forced labor.[25] In the Panel B of Figure 7, we show that such concerns are unfounded. Including this odious "labor tax" in the outcome variable does not change the dynamics of the effect of decolonization substantially, and even accentuates its effect. Apparently, post-colonial states not only transitioned away from commandeering forced labor, but also successfully substituted for these in-kind revenues with monetary taxes.

A potential alternative explanation for our results might relate to the introduction and spread of the value-added tax (VAT) in Africa. Arguably, the introduction of VATs would lead to

[24] Observing the pre-trends on ordinary revenue, however, implies that colonisers did consider a territory's total capacity to yield revenue (rather than fiscal capacity more narrowly) when granting independence. The direction of the effect suggests that more developed colonies, measures in terms of total revenue, may have received independence earlier, because they were deemed "ready" (see section 4.2).

[25] In addition, while forced labor was generally being phased out in most colonial states after World War II due to international pressure, it continued being used more extensively in the Portuguese colonies which provide the control group. It is also important to note that the exact extent of forced labor was rarely documented by colonial states, given that the practice was controversial even at the time. Our estimates are from AJS, which in turn largely build on Van Waijenburg (2018).

increased fiscal capacity (as measured here) whether the VAT was introduced by a colonial ruler or by a post-independence government. However, the introduction of comprehensive VATs in Africa occurred mostly in the 1980s or later (e.g., Ebrill, Keen and Perry, 2001), a period subsequent to our truncated sample period of 1900-1972.

Finally, we might worry that our analysis puts disproportionate weight on a small and possibly specific control group, namely the Portuguese colonies (although our balance tests in table 3 do not find substantial differences between treatment and control groups, other than for forced labor, which is accounted for in the robustness check above, and to some degree the extent of European settlement, which is also discussed above). We therefore radically alter the control group in Figure 8 by running our event study with all countries attaining independence before 1960 comprising the treated group, and all countries attaining independence thereafter comprising the control group.[26] Similar to the benchmark, the results indicate no pre-trends in fiscal capacity, a steep upward trend after five years of independence, and an effect in the magnitude of 6-7 labor days. If anything, the coefficient is even more precisely estimated than in the benchmark analysis.

5.3) Alternative Mechanisms

We now explore the mechanism behind the observed increase in postcolonial tax revenues. Apart from the channel favored by our model, that is an increase in tax morale and enforcement through enhanced state legitimacy, there are at least four alternative channels through which independence could raise tax revenues.

5.3.1 Access to External Finance

Independence changed the menu of financing options available to African states more broadly. Specifically, the end of colonial rule might have increased governments' ability to 1) issue debt, 2) receive foreign aid or 3) tax resource exports. For example, the degree to which (especially French) colonies could resort to issue debt was closely circumscribed by the metropole through credit rationing (Accominotti et al 2009). Independence released African countries from these credit restrictions. Similarly, while colonies were dependent on subsidies from a single colonial power, sovereign African states during the Cold War could (and often did) play off potential donors

[26] The control group is then comprised of Algeria, Angola, Botswana, Burundi, Gambia, Guinea-Bissau, Kenya, Lesotho, Malawi, Mozambique, Rwanda, Sierra Leone, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.

against each other to increase aid receipts (Cooper 2012). Independent governments might also have been less constrained in taxing resource exports. While these external revenues are not counted in our fiscal capacity measure, it is conceivable that the sudden availability of "easy" external revenue might decrease a government's propensity to resort to presumably unpopular domestic taxes. If there is such a negative substitution effect between 'external' and 'domestic' taxes, our estimates might be biased downward. Figure 9, where we control for time-varying access to aid, debt and resource exports, suggests this might be the case to a limited extent.[27] The treatment effect of decolonization becomes significant slightly earlier than in our benchmark specification, where we did not control for external finance. However, the change is small, suggesting limited explanatory power for this channel.

5.3.2 Postcolonial Centralization

Our data measures central government revenues and does not capture revenues accruing to local bodies (districts or towns) if fiscal systems are decentralized. If the degree of decentralization changed around decolonization, this could affect the interpretation of our results. Some literature indeed suggests that colonial powers (especially the British) devolved certain elements of fiscal administration, including the authority to levy poll taxes, in the later phases of colonial rule to local bodies, such as Native Treasuries (Bolt and Gardner 2020). Postcolonial African governments, on the other hand, fearful of rival centers of power emerging, often disempowered local authorities, including traditional chiefs (Herbst 2000). This could have had the effect of recentralizing fiscal revenues after decolonization. Although this would still reflect some element of fiscal state building by central postcolonial governments, the channel would be slightly different from the one we emphasize. Although consistent data on changes in centralization does not exist, we can gauge the degree to which this channel might have operated by plotting the level of centralization in colonial times against changes in tax revenue after decolonization (Figure 10).[28]

[27] Data on aid and debt flows in the Global South is scarce, so that we opt for coding exposure or access to these sources of external finance instead. We measure access to international aid by interacting a country's diplomatic proximity (measured by voting records in the UN General Assembly) to the five permanent members of the UN Security Council with the budget balance of that UNSC member. The idea is that countries politically aligned with a Great Power should benefit from this alliance if that power is fiscally solvent. Credit market is proxied by interacting a country's credit status with the inverse of global interest rates. We capture the ability to tax resource exports by interacting a country's commodity export basket with the global market price for that commodity. This captures the idea that resource revenues should be more plentiful during boom times.

[28] Colonial centralization is measured on the horizontal axis by the population per Native Treasury, so that many such local bodies spread over a small population would signify low centralization. These institutions only operated in the

If postcolonial centralization were a decisive factor, we would expect the change in central tax revenues after independence to vary negatively with colonial centralization. However, the scatterplot does not indicate any strong relationship in any direction. While we cannot completely discount this channel, Figure 10 does not provide any evidence that centralization was a major factor.

5.3.3 Democratization

Our model stresses improved tax morale and enforcement by post-colonial governments as the channels behind the positive impact of decolonization on revenues. An alternative interpretation of our results would be that decolonization went hand-in-hand with more inclusive democratic institutions, which forced the new governments to align their taxation and spending policies closer to those preferred by the median voter. If the median voter demanded more public goods, implying higher tax rates, this would yield the results that we find. As emphasized in the historical overview, however, there was no large increase in democratization (measured by the VDEM participatory democracy score) around decolonization. This is largely because many post-colonial states were one-party regimes. We now also offer econometric evidence against this democratization hypothesis.

First, we divide countries according to whether they exhibit a participatory democracy score above or below the median in the first year of independence. In Panel A of Figure 11, we plot the results of our decolonization event study using only those countries with a high degree of democracy. If the extent to which citizens used participatory institutions were driving our results, we would expect to see a larger effect of decolonization in this group. However, the size of the coefficients is smaller compared to those of our benchmark regression. In addition, the rise in real revenues after decolonization occurs even more slowly in this high democracy group than in the pooled sample. Decolonization has a statistically strongly positive effect in these relatively democratic countries only by the ninth year (apart from a brief blip around year five), while this happens four years earlier in the pooled sample. This suggests that, quite in accordance with the descriptive evidence, much fiscal state-building in Africa was undertaken by non-democratic states.

Second, we construct a placebo test of the effect of democratization events on fiscal

British Empire.

capacity in independent African states, rather than decolonization events.[29] If our results were driven by the positive effect of democratization on fiscal capacity, then we would expect a strong impact of democratization on revenues. However, we find in the Panel B of Figure 11 that this is not the case. It is firstly clear that, unlike for decolonization, the timing of democratization events is not quasi-random. Countries with decreasing revenues are more likely to democratize, possibly as a reaction to political or economic crises (Acemoglu et al. 2019). Nonetheless, the onset of democratization is not associated with a large or statistically significant increase in fiscal capacity. This result carries with it several implications. For one, it suggests that the fiscal capacity effect we find is specific to the end of foreign rule, rather than applying to all instances of regime change or increased political accountability in general. Moreover, it casts some doubt on the possibility that the higher taxes levied by undemocratic post-colonial states were the result of extractive "over-taxation". If this were so, we would expect fiscal capacity to decrease following democratization as accountable governments reduce tax burdens. Yet tax revenues clearly do not decrease, on average, following democratization. Apparently, taxpayers funded independent African states regardless of these institutions. National legitimacy, rather than democratic accountability, seems a more powerful explanation. However, while democratization does not seem to explain our results, we cannot rule out the possibility that – for some reason other than democratization (such as lower cultural distance between rulers and the population) - post-independence governments developed increased fiscal capacity because they internalized the benefits of spending to the local population to a greater degree than did the prior colonial regimes.

5.3.4 Ethnic representation

In order to test whether reduced cultural distance between rulers and governed after independence explains our results, we code the ethnicity of each postcolonial leader and the share of their ethnic group in the total population. Calculating the mean of this share for the first ten years after independence provides us with a measure of the extent to which postcolonial rulers represented the population. We then calculate the change in ethnic representation during

[29] We code democratization events in the postcolonial period (until 2005) as discrete transitions from autocracy to democracy following Acemoglu et al. (2019). The control group (of never-treated countries) consists of countries that do not democratize during this period. Countries that democratize several times or are democracies from the very beginning (always-treated) are excluded. This leaves 18 countries with single treatments and 19 countries in the control group.

decolonization by subtracting the share of the European population in the polity (who are assumed to represent the ruling group under colonialism). This measure of ethnic representation can also be viewed as capturing the potential effects of intra-ethnic solidarity in mobilizing tax revenues, if taxpayers are more likely to part with their wealth in favor of those more similar to themselves on some dimension (Miguel 2004). Alternatively, in an environment of imperfect information ethnic networks can make it easier for African rulers to mobilize funds from co-ethnic taxpayers (Kasara 2007). For all these reasons, there might be a positive relationship between ethnic representation and tax revenues. As ethnic representation generally increased during decolonization, this could explain our results.

In Figure 12 we plot the effect of our decolonization treatment only for those polities with a change in ethnic representation during independence above the median. While the general trends for this group with high ethnic representation are quite similar to that of our benchmark results, the coefficient is smaller at just above four labor days, and only marginally statistically significant. That is, the effect does not appear to be stronger for countries where post-independence leaders were more ethnically representative. We therefore conclude that ethnic representation cannot explain our results.

6) Conclusion [to be written]

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Figure 1: Equilibrium tax rates, enforcement, and legitimacy in the government-citizen game

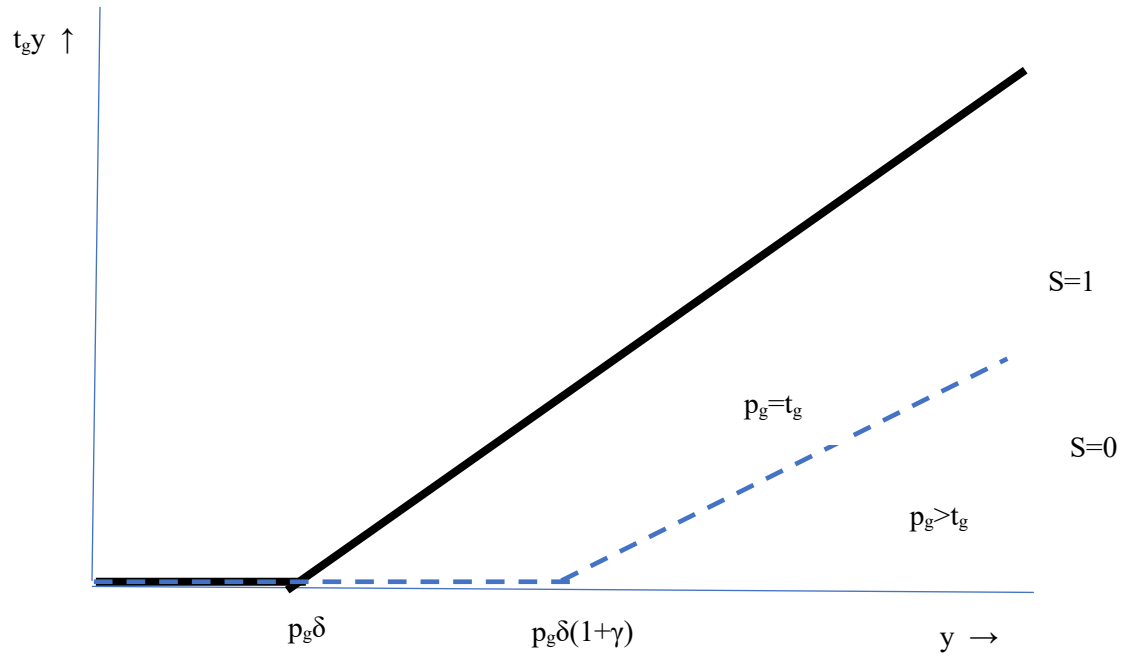
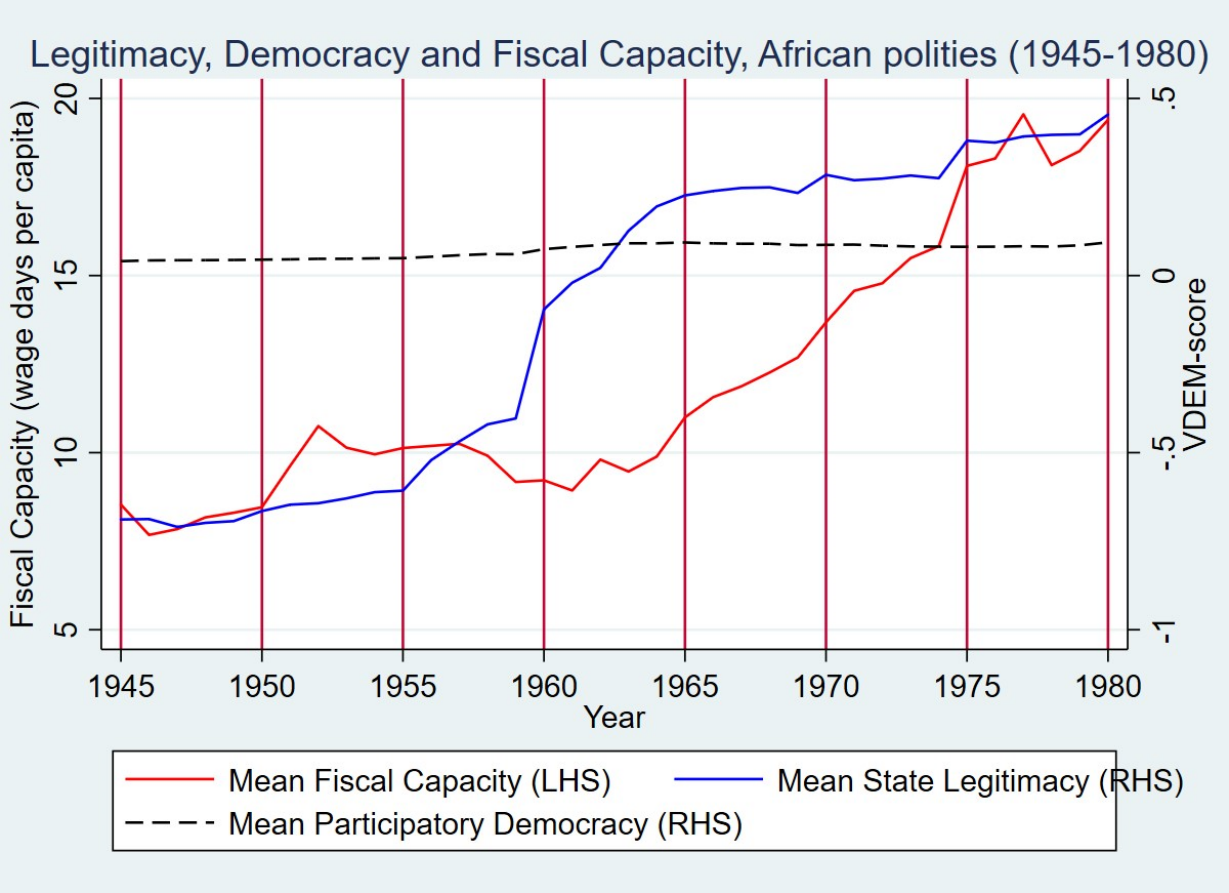
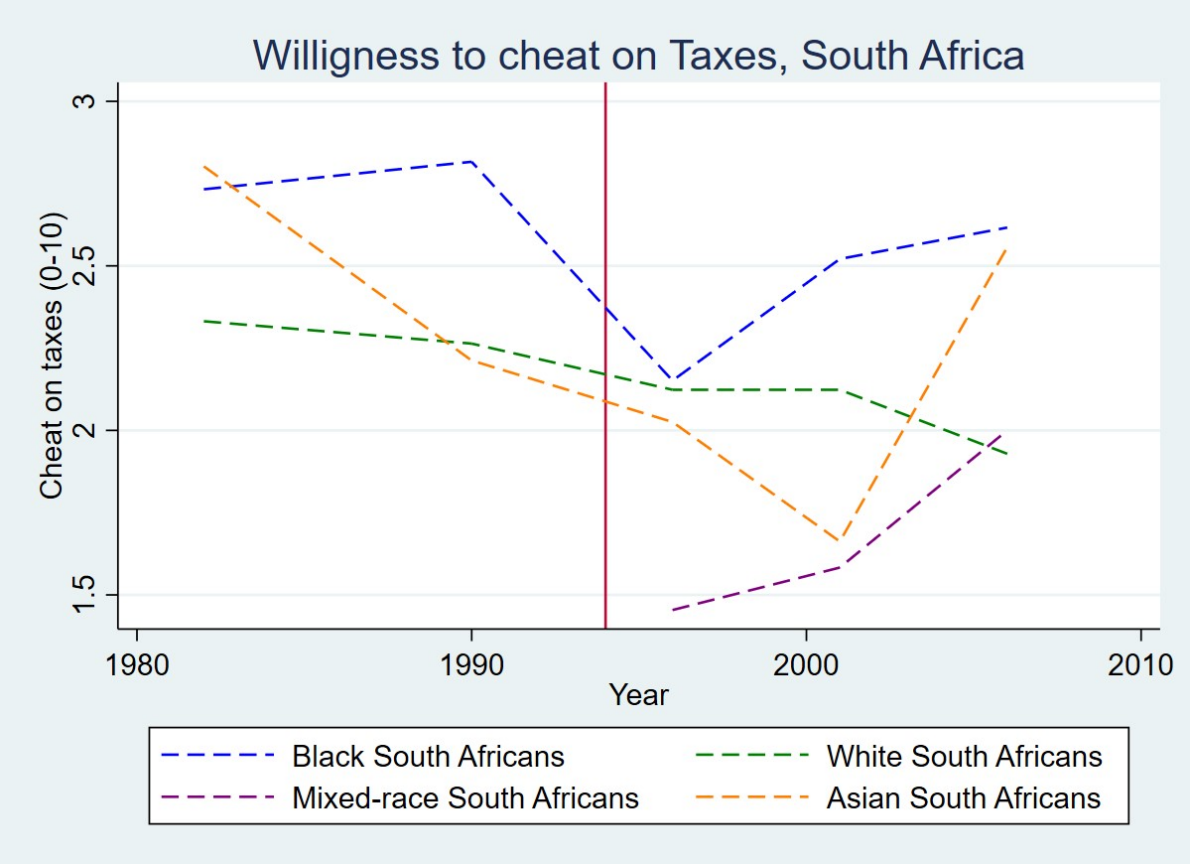


Figure 2: Fiscal capacity, legitimacy and democracy in African polities



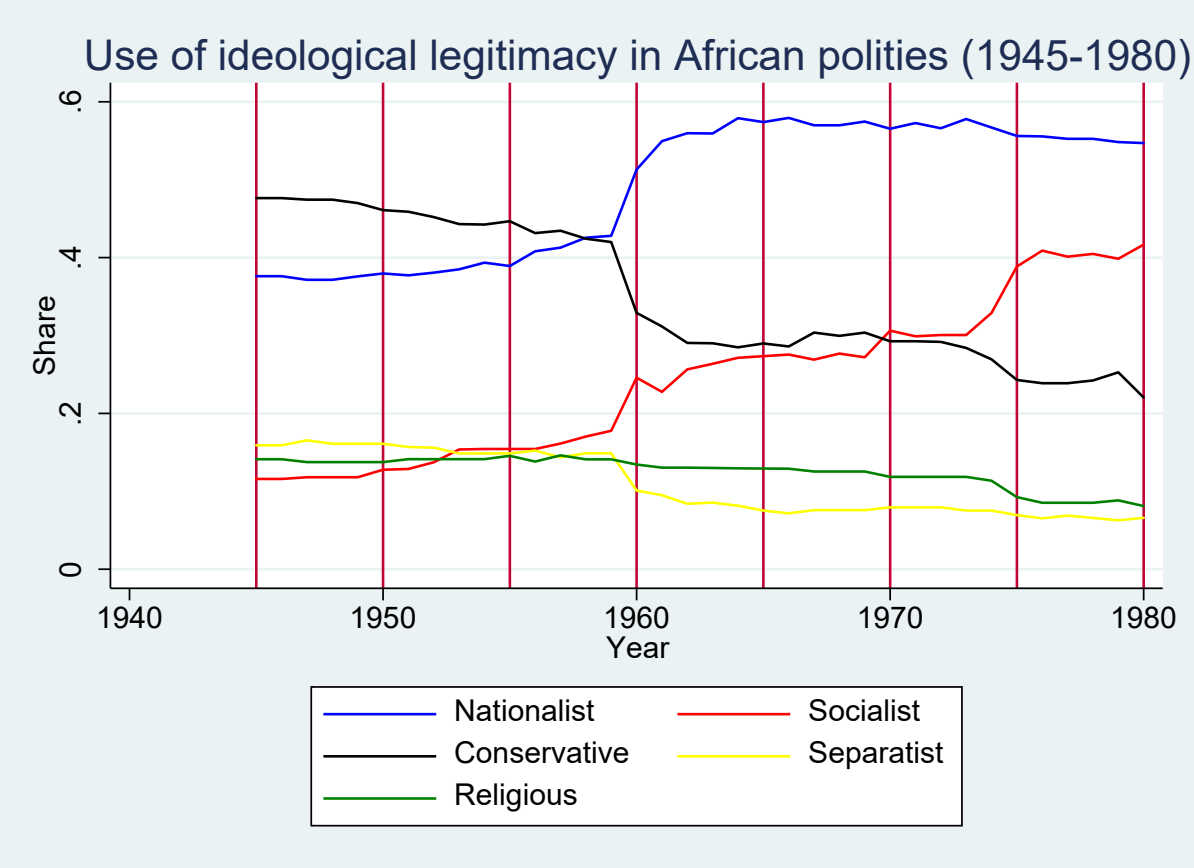
Note: Fiscal capacity is real tax revenue excluding trade and resource taxes in wage days per inhabitant, averaged over all polities. Legitimacy is the sum of the degree to which a government lays claim to one of four sources of state legitimacy (between -1 and 1): ideological, leader-focused, performance based or bureaucratic-rational (multiple sources or no sources possible). Democracy is the VDEM participatory democracy index (0-1) measuring the degree to which citizens can participate in political processes, electoral or otherwise.

Figure 3: Tax morale in South Africa during and after Apartheid, by race of respondent



Note: Tax morale is the answer to the question "Do you justify cheating on taxes if you have a chance?" from the World Value Survey. Answers range from 0 (never) to 10 (always).

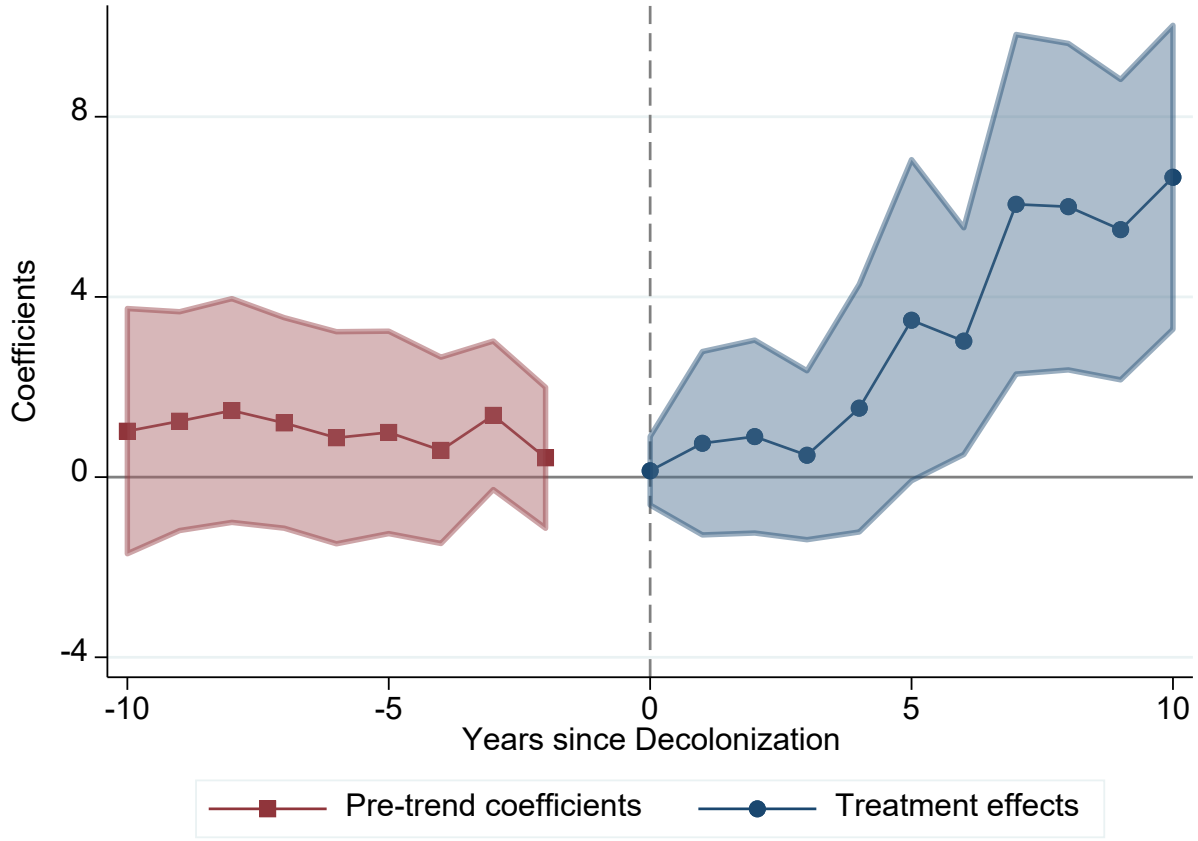
Figure 4: Sources of ideological legitimacy in African polities



Note: Share of African polities whose governments use one of five ideologies to claim legitimacy [0-1]. Multiple ideologies possible per polity.

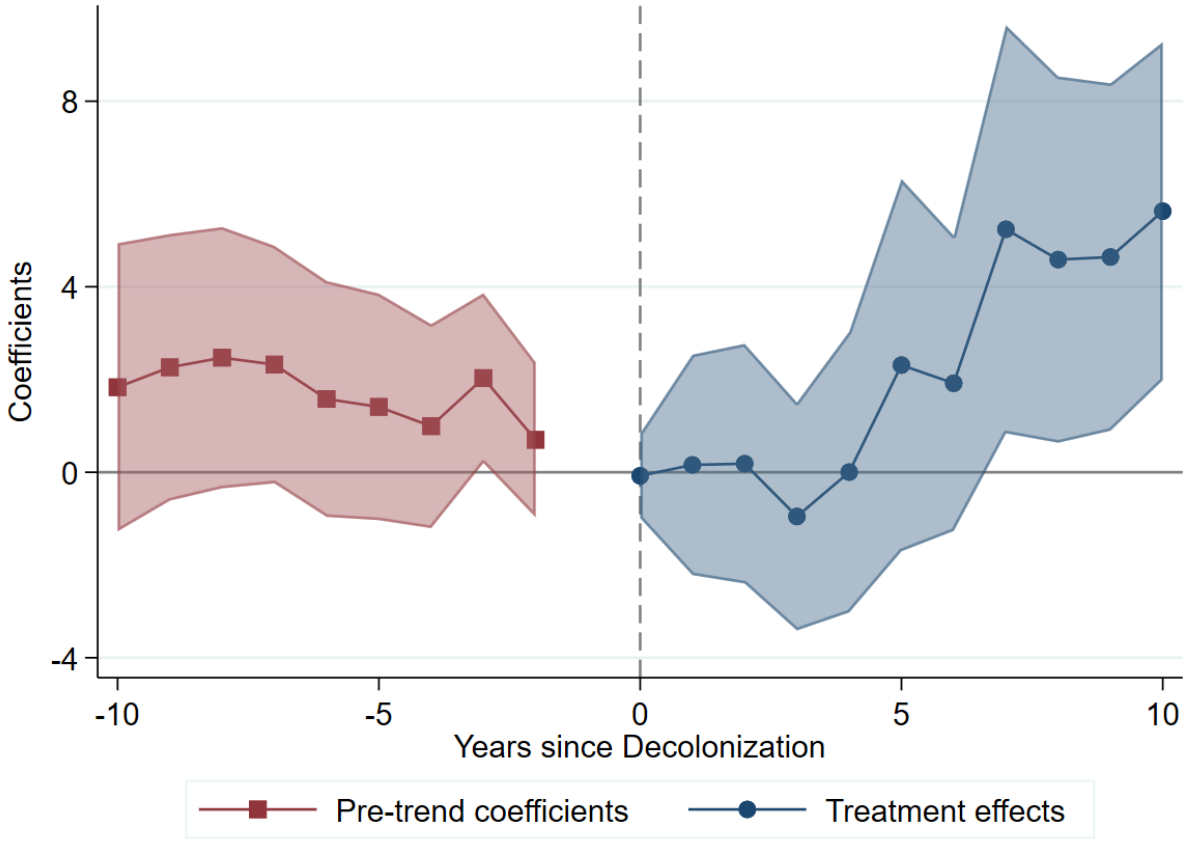
Figure 5: Baseline effects of decolonization events on fiscal capacity in African countries

Panel A: No Controls



Note: Fiscal capacity is in wage days taxed by the government. Decolonization defined as sovereignty according to international law. Specification includes country-by-stack and year-by-stack fixed effects, but does not include covariates. 95% confidence intervals are shown.

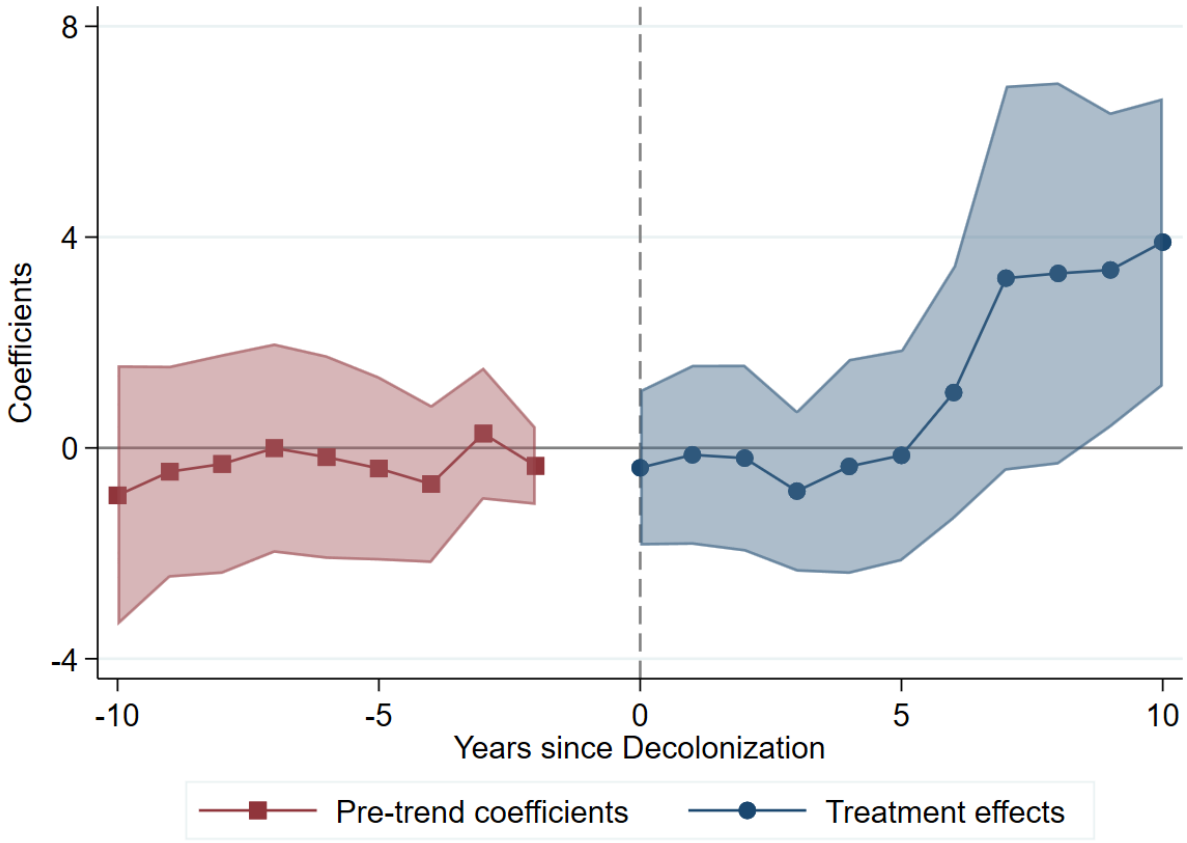
Panel B: Including Controls



Note: Fiscal capacity is in wage days taxed by the government. Decolonization defined as sovereignty according to international law. Specification includes country-by-stack and year-by-stack fixed effects, and controls for coups, civil conflict, hyperinflation and debt default events. 95% confidence intervals are shown.

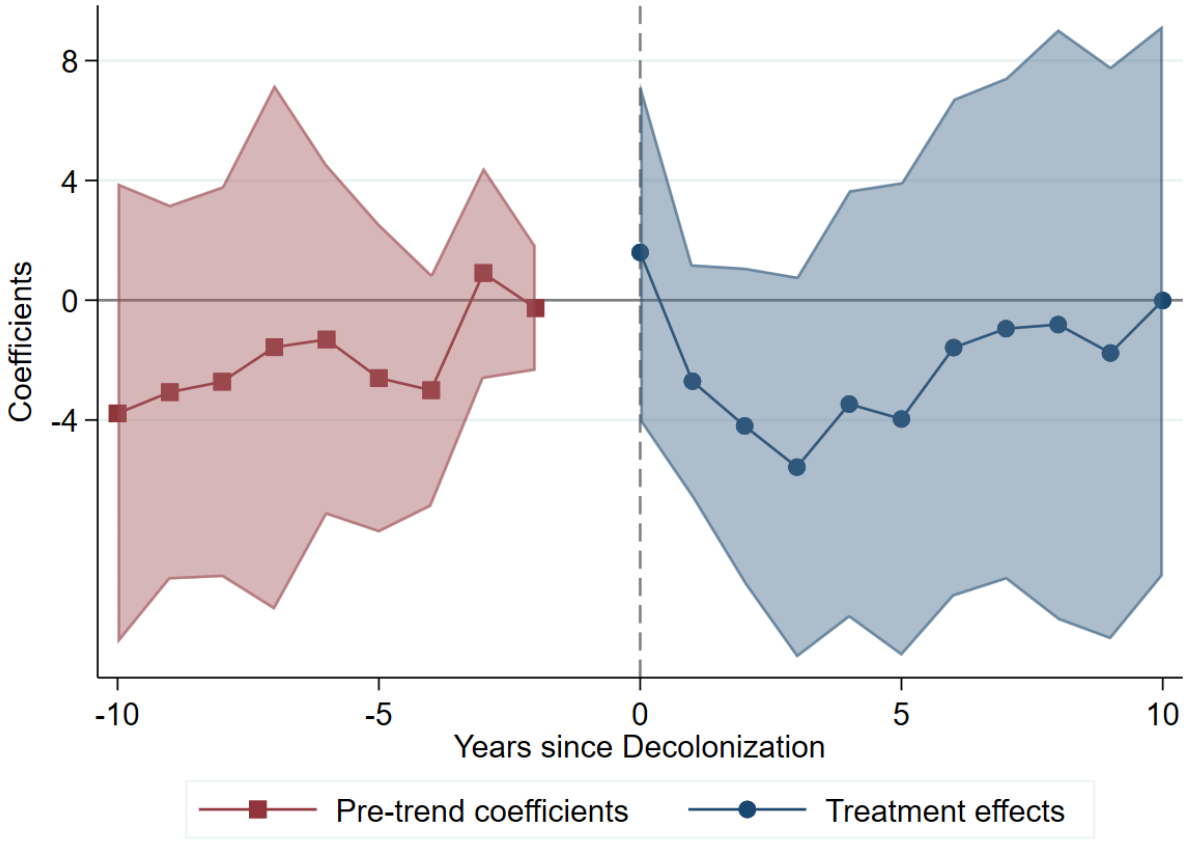
Figure 6: The effect of decolonization (as defined by transition to African majority rule) on tax revenues in African countries

Panel A: All colonies



Note: Revenue is in wage days taxed by the government. Decolonization is defined as rule by transition to African rule. 95% confidence intervals are shown.

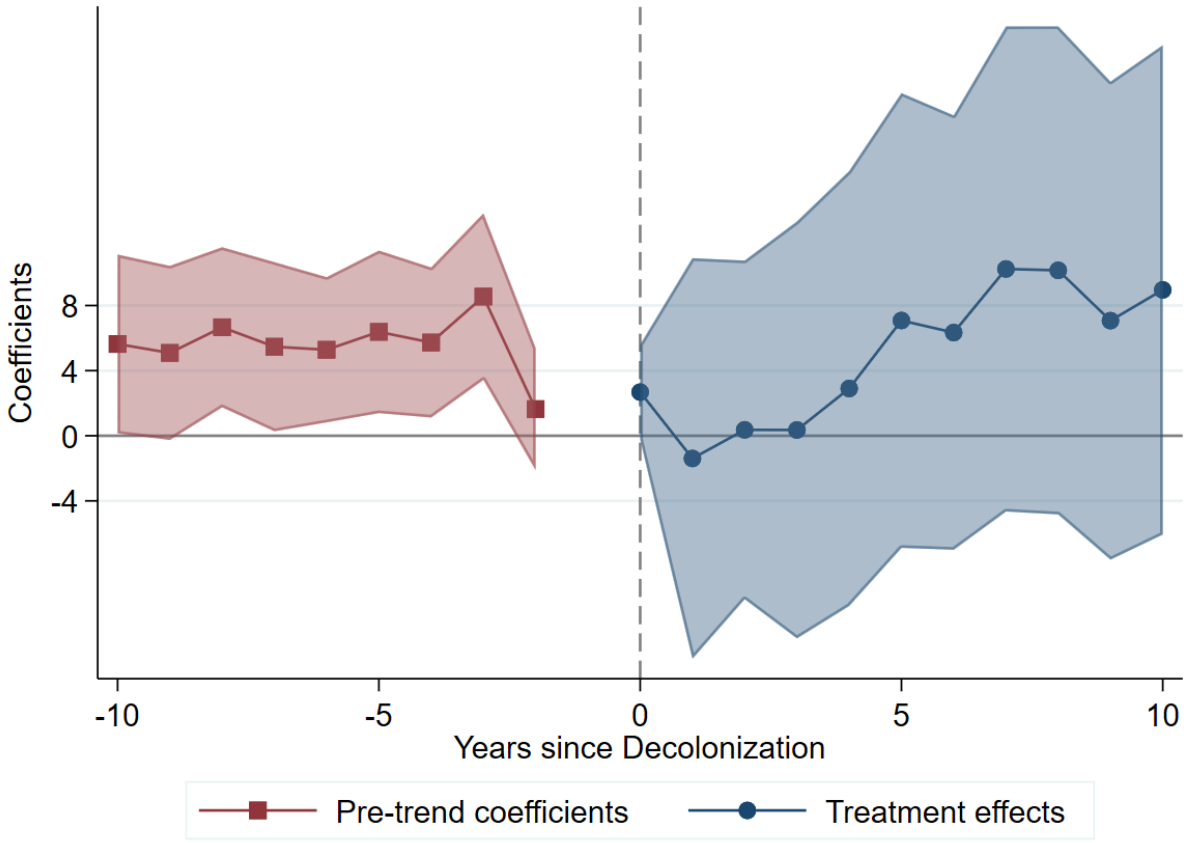
Panel B: Settler colonies only



Note: Revenue is in wage days taxed by the government. Decolonization is defined as rule by a majority African government. Only polities with a European settler population are included in treatment and control group. 95% confidence intervals are shown.

Figure 7: Alternative revenue measures and the effect of decolonization events in African countries

Panel A: Dependent variable is total ordinary revenue (all tax and non-tax revenue)

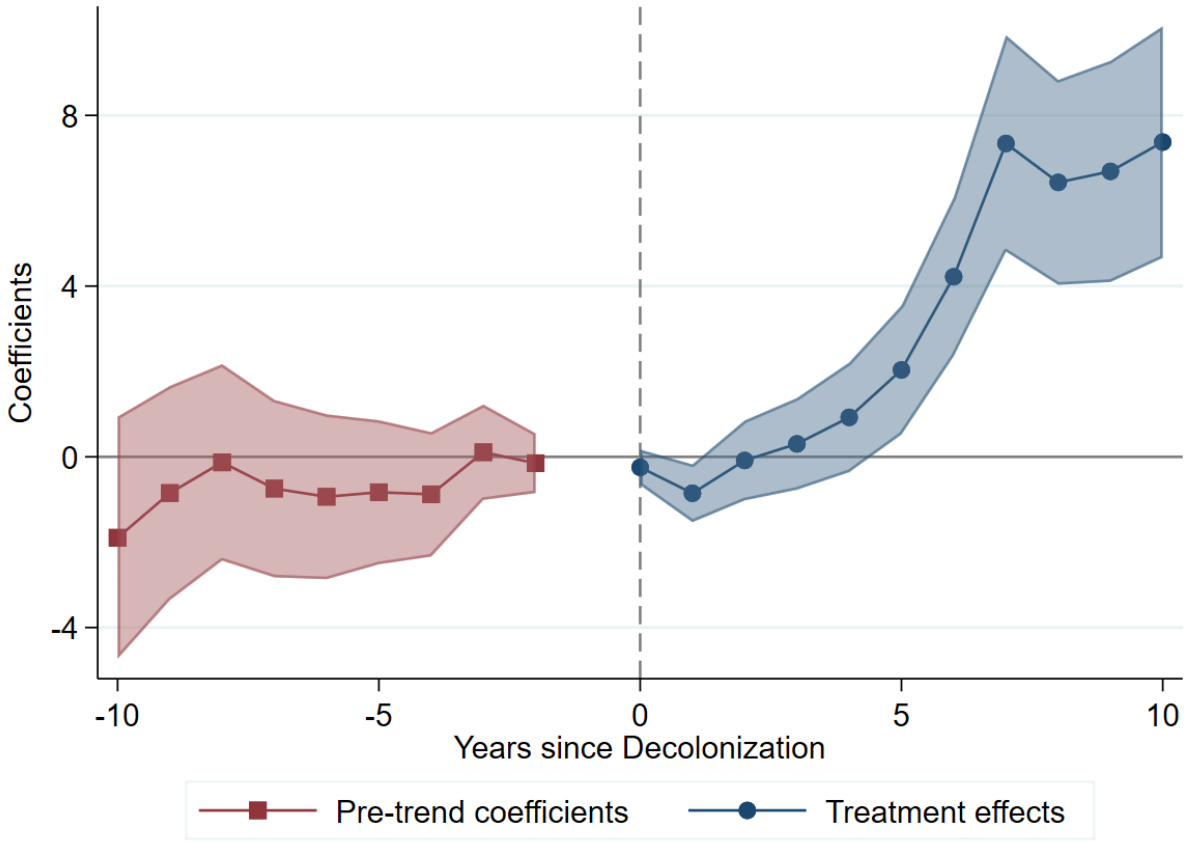


Note: Revenue is in wage days taxed by the government. Decolonization defined as sovereignty according to international law. The dependent variable is total ordinary revenue (all tax and non-tax income). 95% confidence intervals are shown.

Panel B: Dependent variable is fiscal capacity (including days of forced labor for the government)

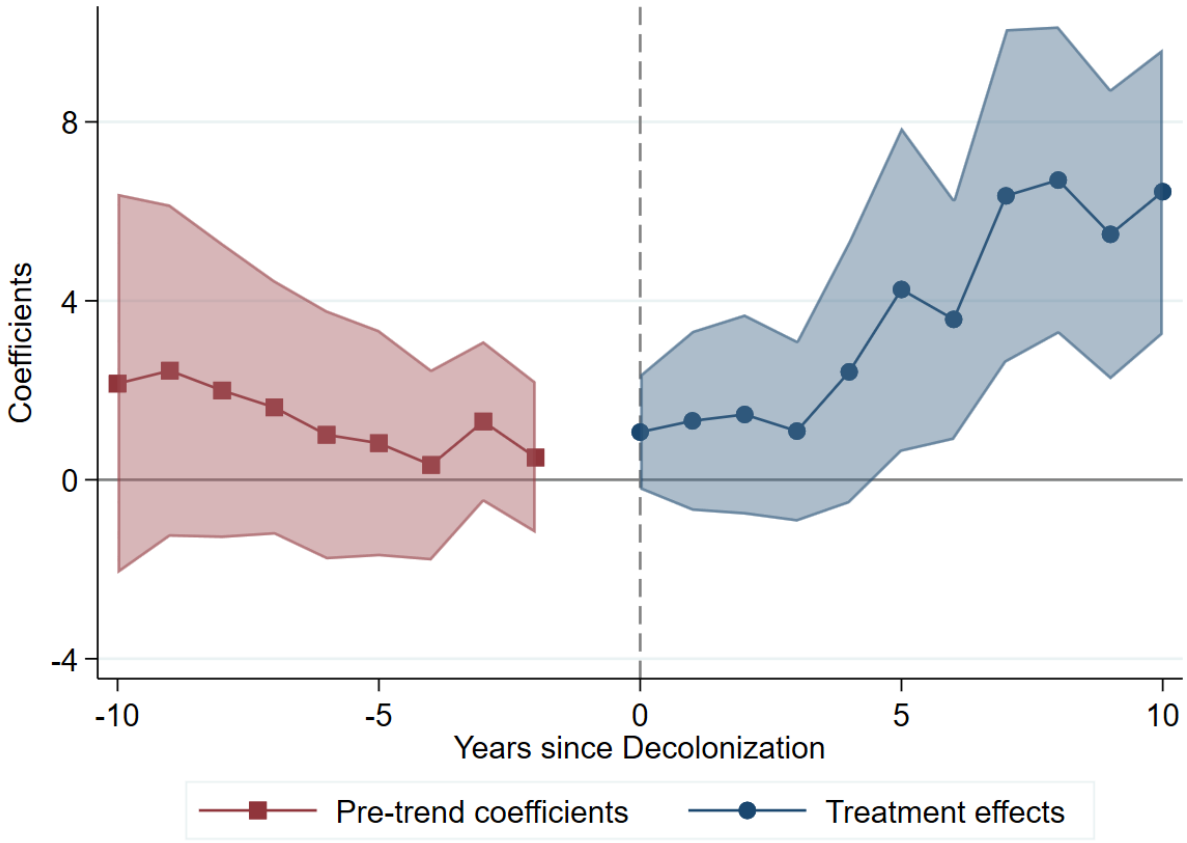
Note: Revenue is in wage days taxed by the government. Decolonization defined as sovereignty according to international law. The dependent variable is fiscal capacity including days of forced labor for government. 95% confidence intervals are shown.

Figure 8: Control group composition and the effect of decolonization on tax revenues in African countries



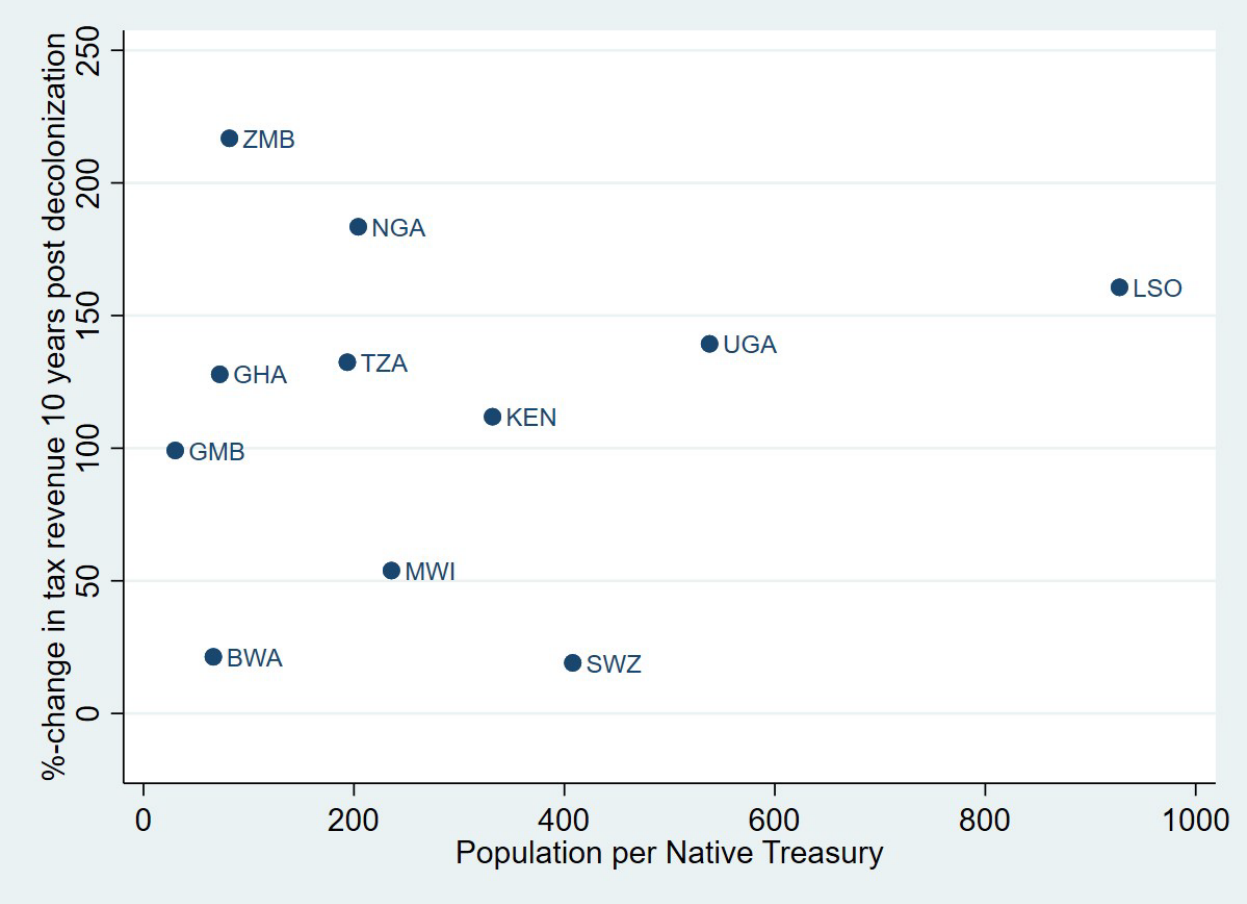
Note: Revenue is in wage days taxed by the government. Decolonization defined as sovereignty according to international law. The dependent variable is fiscal capacity. Control group includes: Algeria, Angola, Botswana, Burundi, Gambia, Guinea-Bissau, Kenya, Lesotho, Malawi, Mozambique, Rwanda, Sierra Leone, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.
95% confidence intervals are shown.

Figure 9: Access to external finance and the effect of decolonization on tax revenues in African countries



Note: Revenue is in wage days taxed by the government. Decolonization is defined as sovereignty according to international law. We control for time-varying polity-specific revenues from resource exports, access to international credit markets, and access to overseas development aid. 95% confidence intervals are shown.

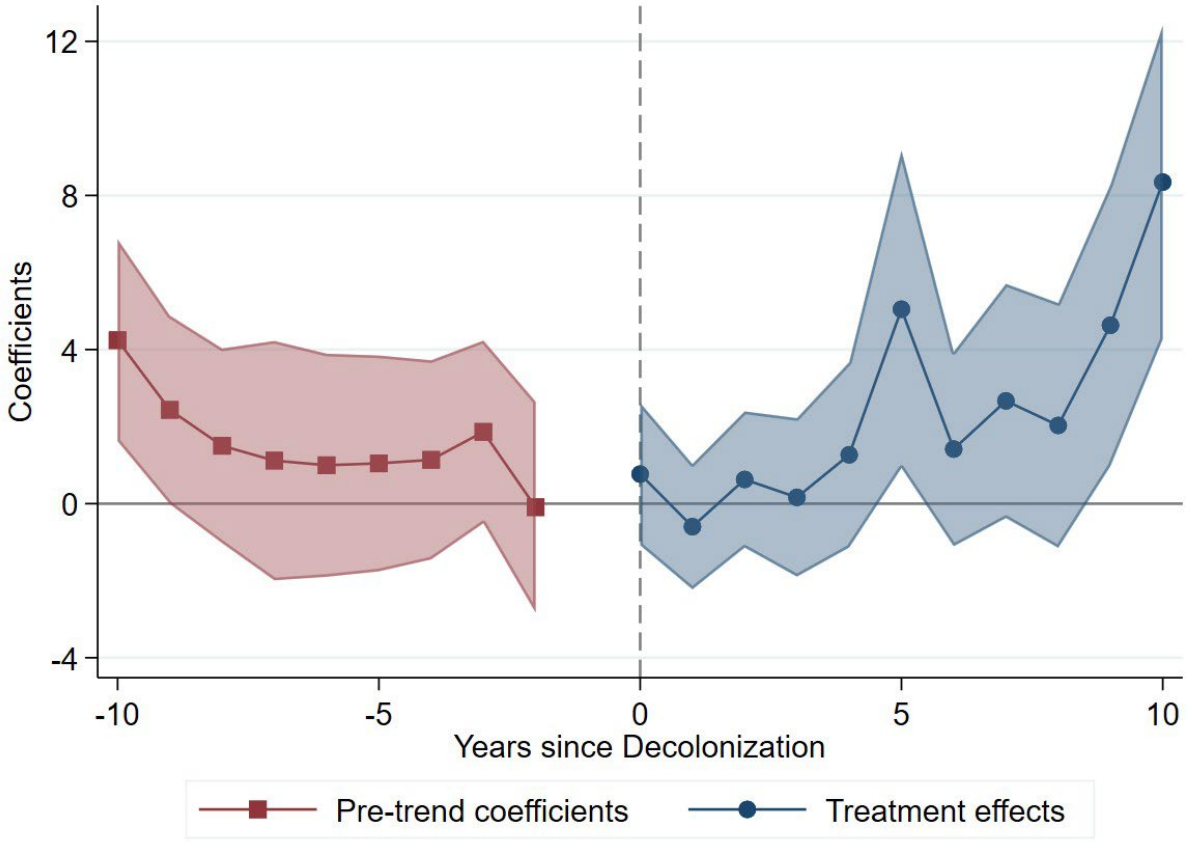
Figure 10: Change in tax revenues after independence and degree of colonial centralization



Note: Revenue is in wage days taxed by the government. Decolonization is defined as sovereignty according to international law. Population per Native Treasury divides the colony's population by the number of fiscally autonomous local bodies (Native Treasuries), yielding a measure of colonial centralization. Scatter plot omits Zimbabwe (Rhodesia), which was a unitary state.

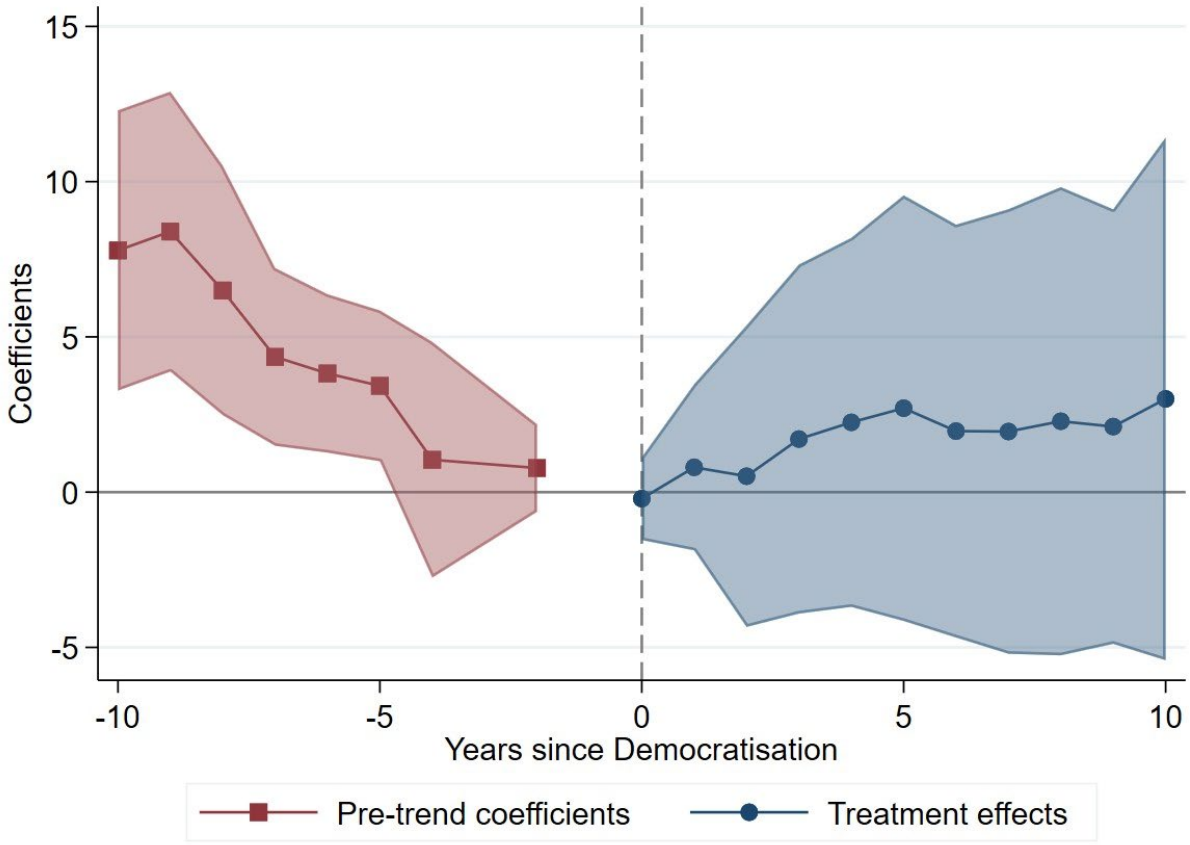
Figure 11: Decolonization and the effect of democratization on tax revenues in African countries

Panel A: Democracies only



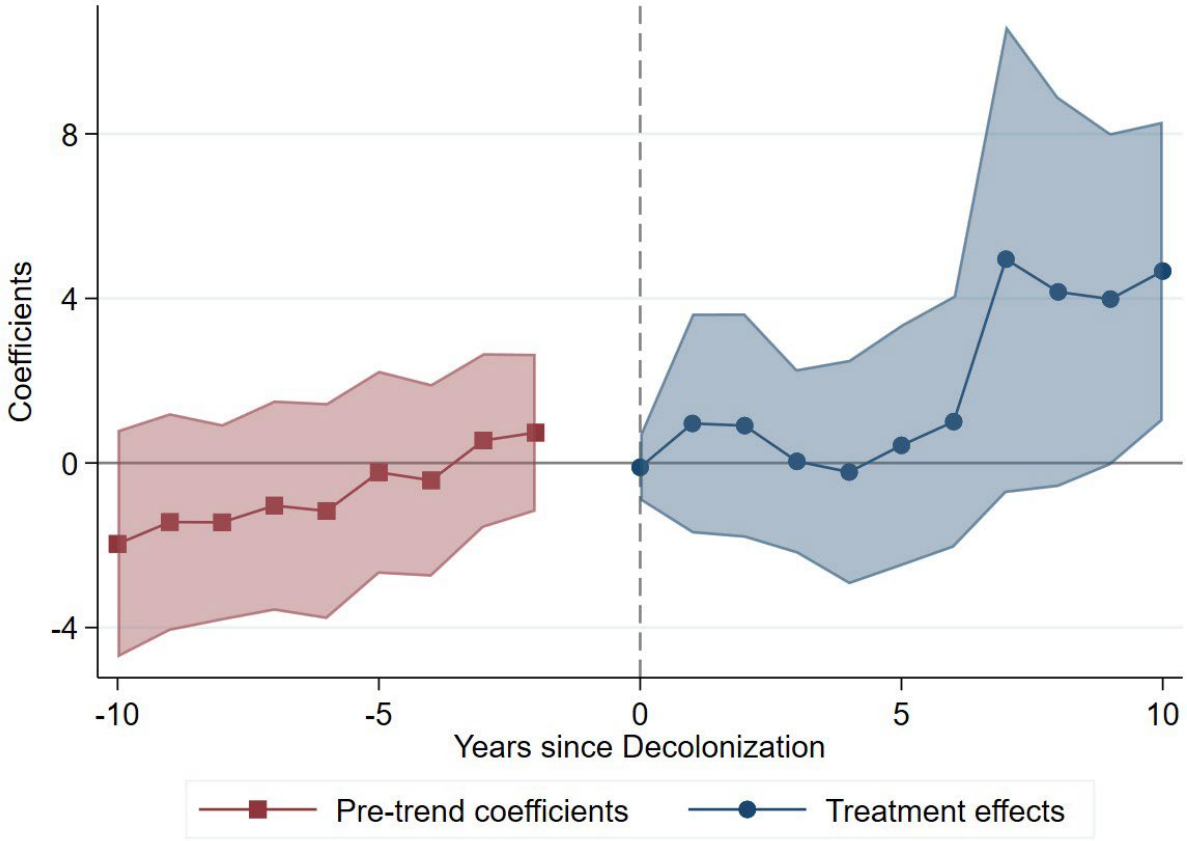
Note: Revenue is in wage days taxed by the government. Decolonization is defined as sovereignty according to international law. Only polities with a participative democracy score above the median according to VDEM are included. 95% confidence intervals are shown.

Panel B: The Effect of Democratization Events on Fiscal Capacity



Note: Revenue is in wage days taxed by the government. Decolonization is defined as sovereignty according to international law. The graph shows the effect of democratization events on revenue. 95% confidence intervals are shown.

Figure 12: Decolonization and the effect of changes in ethnic representation on tax revenues in African countries



Note: Revenue is in wage days taxed by the government. Decolonization is defined as sovereignty according to international law. Only polities whose ethnic representation share increases at a rate above the sample median around independence are included. See text for details. 95% confidence intervals are shown.

Table 1: List of Countries and Years of Decolonization

Country	Alternative Name(s)	Colonial Power(s)	Baseline Year of Decolonization (National Sovereignty)	Alternative Year of Decolonization (Indigenous Self-Government
Algeria		France	1962	1962
Angola		Portugal	1975	1973
Benin	Dahomey	France	1960	1958
Botswana	Bechuanaland Protectorate	UK	1966	1965
Burundi		Belgium	1962	1962
Burkina Faso	Upper Volta	France	1960	1958
Cameroon		France/UK	1960	1960
Central African Republic	Oubangui-Chari	France	1960	1958
Chad		France	1960	1958
Congo (Democratic Republic)	Zaire, Congo-Kinshasa	Belgium	1960	1960
Congo (Republic)	Congo-Brazzaville	France	1960	1958
Côte d'Ivoire	Ivory Coast	France	1960	1958
Egypt		UK/Turkey	1922	1922
Eswatini	Swaziland	UK	1968	1968
Ethiopia	Abyssinia	None		
Gabon		France	1960	1958
Gambia		UK	1965	1962
Ghana	Gold Coast	UK	1957	1951
Guinea		France	1958	1958
Guinea-Bissau		Portugal	1975	1973
Kenya	British East Africa	UK/Zanzibar	1963	1963
Lesotho	Basutoland	UK	1966	1966
Liberia		None		
Libya		Italy/UK/France	1951	1951
Madagascar	Malagasy Republic	France	1960	1958
Malawi	Nyasaland	UK	1964	1963
Mali		France	1960	1958
Mauritania		France	1960	1958
Morocco		France/Spain	1956	1956
Mozambique		Portugal	1975	1973

Namibia	South West Africa	South Africa	1931	1990
Niger		France	1960	1958
Nigeria		UK	1960	1954
Rwanda		Belgium	1962	1962
Senegal		France	1960	1958
Sierra Leone		UK	1961	1957
Sudan		UK/Egypt	1956	1956
Tanzania	Tanganyika	UK	1961	1960
Togo		France	1960	1956
Tunisia		France	1956	1956
Uganda		UK	1962	1962
South Africa		UK	1931	1994
Zambia	Northern Rhodesia	UK	1964	1964
Zimbabwe	(Southern) Rhodesia	UK	1965	1980

Note: This table lists the 44 African countries for which AJS collect historical fiscal data over 1900-2015. For each country, the table shows two alternative characterizations of decolonization – decolonization as national sovereignty in Column 4, and decolonization as indigenous self-government in Column 5. The former concept is used in the baseline analysis. For three countries in southern Africa with historically dominant European settler minorities (Namibia, South Africa and Zimbabwe), the former concept is defined as independence from metropolitan European rule, and the latter concept as African majority rule. In the baseline analysis, the dataset is truncated to the period 1900-1972, and the three Portuguese colonies (Angola, Guinea-Bissau, and Mozambique) are used as the "never-treated" control countries. In the alternative analysis using indigenous self-government, Namibia, South Africa and Zimbabwe are added to the group of "never-treated" control countries. Ethiopia and Liberia are excluded from the analysis, as they did not experience colonial rule and hence were not decolonized over this period (notwithstanding the brief Italian occupation of Ethiopia, which is generally viewed as being more analogous to the brief wartime occupation of many European countries, rather than to long-term colonial rule).

Table 2: Descriptive Statistics for the Truncated 1900-1972 Dataset

Variable	Observations	Mean	Standard Deviation
Fiscal capacity measure (baseline), in labor days	2,567	7.50135	8.088003
Direct and indirect tax revenue (incl. trade taxes) in labor days	2,567	13.1848	12.27921
Direct tax revenue in labor days	2,568	5.171478	5.870735
Indirect tax revenue (excl. trade taxes) in labor days	2,568	2.329934	3.708111
Trade tax revenue in labor days	2,569	5.681868	6.273891
Total revenue in labor days	2,551	21.27723	22.6496
Population	3,066	4269281	6012297
Area (sq. km)	3,066	657723.4	650935.4
Forced labor (lower bound) in labor days	3,066	1.282506	2.562273
Forced labor (upper bound) in labor days	3,066	5.760366	8.612347
Ethnolinguistic fractionalization index	3,066	.6144959	.2581564
European settlers in 1900 (fraction)	3,066	.0167619	.0421906
VDEM participatory democracy score	3,032	.0442314	.0391454
Democratization events	443	.0045147	.0671153
Coups (indicator=1)	3,066	.0172864	.153357
All wars (indicator=1)	3,066	.103392	.3045199
Hyperinflation episodes (indicator=1)	3,066	.1637312	.3700919
Sovereign default events (number)	3,066	.0228311	.2693729
Credit market access (indicator=1)	3,066	.5026093	.5000748
Real commodity price index	3,066	102.3452	42.90651

Note: This table reports descriptive statistics for the truncated dataset for years 1900-1972. Ethiopia and Liberia are excluded.

Table 3: Comparison of Descriptive Statistics for Treatment Countries (Pre-Decolonization) and Control Countries, Truncated 1900-1972 Dataset

Variable	Panel A: Treatment Countries (Pre-Decolonization Years Only)			Panel B: Control Countries, 1900-1972		
	Obs.	Mean	Standard Deviation	Obs.	Mean	Standard Deviation
Fiscal capacity measure (baseline), in labor days	1,860	5.545465	4.738109	142	7.075341	4.614509
Direct and indirect tax revenue (incl. trade taxes) in labor days	1,860	9.893586	7.795681	142	11.66022	6.541109
Direct tax revenue in labor days	1,860	4.118987	3.924802	143	5.486817	4.015594
Indirect tax revenue (excl. trade taxes) in labor days	1,861	1.425869	1.964943	142	1.60177	1.661177
Trade tax revenue in labor days	1,861	4.346746	4.836515	143	4.591402	2.540508
Total revenue in labor days	1,845	16.10657	12.1364	142	27.07706	17.80165
Population	2,269	3409345	4667243	219	3257891	2445299
Area (sq. km)	2,269	627789.2	662982.3	219	687066.7	503566.3
Forced labor (lower bound) in labor days	2,269	1.003157	1.519977	219	7.561644	4.846374
Forced labor (upper bound) in labor days	2,269	5.895673	7.830007	219	18.90411	12.11594
Ethnolinguistic fractionalization index	2,269	.6094255	.2574095	219	.7473229	.0660151
European settlers in 1900 (fraction)	2,269	.013331	.036528	219	.035	.0334931

Note: This table reports descriptive statistics separately for the treatment countries (a group that includes all the countries in Table 1 apart from Ethiopia, Liberia and the three control countries listed below) and the control countries (Angola, Guinea-Bissau, and Mozambique). For the treatment countries, these descriptive statistics are calculated only for years prior to the country's decolonization. For the control countries, these descriptive statistics are calculated for 1900-1972.