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Working Paper

The fiscal state in Africa: Evidence from a century of growth

Discussion Paper, No. 316

Provided in Cooperation with:

University of Munich (LMU) and Humboldt University Berlin, Collaborative Research Center Transregio 190: Rationality and Competition

Suggested Citation: Albers, Thilo N. H.; Jerven, Morten; Suesse, Marvin (2022) : The fiscal state in Africa: Evidence from a century of growth, Discussion Paper, No. 316, Ludwig-Maximilians-Universität München und Humboldt-Universität zu Berlin, Collaborative Research Center Transregio 190 - Rationality and Competition, München und Berlin

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The Fiscal State in Africa: Evidence from a Century of Growth

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Discussion Paper No. 316

January 29, 2022

The Fiscal State in Africa: Evidence from a Century of Growth*

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January 1, 2022

Abstract

What is the level of state capacity in developing countries today, and what have been its drivers over the past century? We construct a comprehensive new dataset of tax and revenue collection for 46 African polities from 1900 to 2015. Descriptive analysis shows that many polities in Africa have been characterized by strong growth in fiscal capacity. As a next step, we explain this growth using a fixed-effects long-run panel setting. The results show that canonical state-building factors such as democratic institutions and interstate warfare can increase revenue collection, while government turnover reduces it. Access to external credit and foreign aid are even more important, and both negatively affect fiscal capacity. In addition, access to external revenues, especially from commodity exports and debt, moderates the operation of canonical state-building factors such as democracy and conflict. These insights add important nuances to established theories of state building. Not only are states in Africa more capable than hitherto thought, but the international environment shapes their capacity, both directly and indirectly.

*We would like to thank the editors and referees for their insightful feedback. We are indebted to participants at various conferences and seminars for invaluable suggestions, and have also benefited from comments and advice from Gareth Austin, Oriana Bandiera, Timothy Besley, Catherine Boone, Denis Cogneau, Michelle D'Arcy, Yannick Dupraz, Ewout Frankema, Leigh Gardner, Abel Gwaindepi, Carl Henrik Knutsen, Sandrine Mesplé-Soms, Nathan Nunn, Pål Thonstad Sandvik, Susan Sebatindira, and Marlous van Waijenburg. We would like to thank Philip Jan Havik for sharing his taxation data on the Portuguese colonies. Giammarco Alderotti, Gráinne Fay, Katja Fuder, Mustapha Kokumo, Adrian Lopez, Neil Maher, Harry Morris, Kaman Lyu, Antonio Miguel Santos, Timo Stieglitz, and Felix Trotter provided invaluable research assistance. All errors and faults in this paper are our own. The research and data collection for this paper has been financed by Development Research Grant 2017-05564 from the Swedish Research Council, and the project has been hosted at the Economic History Department at Lund University. Thilo Albers acknowledges aid from the Deutsche Forschungsgemeinschaft through CRC TRR 190 (project number 280092119). We are grateful for the support.

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Abstract

What is the level of state capacity in developing countries today, and what have been its drivers over the past century? We construct a comprehensive new dataset of tax and revenue collection for 46 African polities from 1900 to 2015. Descriptive analysis shows that many polities in Africa have been characterized by strong growth in fiscal capacity. As a next step, we explain this growth using a fixed-effects long-run panel setting. The results show that canonical state-building factors such as democratic institutions and interstate warfare can increase revenue collection, while government turnover reduces it. Access to external credit and foreign aid are even more important, and both negatively affect fiscal capacity. In addition, access to external revenues, especially from commodity exports and debt, moderates the operation of canonical state-building factors such as democracy and conflict. These insights add important nuances to established theories of state building. Not only are states in Africa more capable than hitherto thought, but the international environment shapes their capacity, both directly and indirectly.

Keywords fiscal capacity · taxes · Africa · statehood · resources · external finance

The role of the state has been divisive in the study of African politics. While some authors have described the state in Africa as weak and barely able to collect enough revenues to fulfill its basic functions ([Herbst 2000](#); [Samatar and Samatar 2002](#)), others have pictured the African polity as too strong, invasive, and extractive ([Frimpong-Ansah 1992](#); [Young 1994](#); [Mamdani 1996](#); [Acemoglu et al. 2001](#)). Politicians have echoed these concerns: Amílcar Cabral, one of the heroes of the continent's wars of independence, saw the nature of the state as the root of a "failure of African independence" ([Cabral 1973](#), p. 43). Scholars of international relations have similarly expressed doubts whether states on the continent are capable actors in their own right, or whether they have been dwarfed by nonstate actors ([Dunn and Shaw 2001](#); [Lemke 2003](#); [Taylor 2001](#); [Cornelissen et al. 2012](#)). Some have gone so far as to depict states in Africa as mere fictions created by international law without any foundation in domestic authority or control ([Jackson 1990](#); [Herbst 2000](#); [Bates 2001](#)). Are African states just form without substance?

We seek to quantify the "substance" of states in Africa by measuring their capacity to tax. Taxes are the backbone of effective statehood: not only does their collection require domestic authority and control, taxes themselves are a prerequisite for a state to carry out its basic functions. As [Besley and Persson \(2014](#), p. 100) note, "The power to tax is about much more than raising tax revenues; it is at the core of state development". This has been a central notion in the social sciences since Joseph Schumpeter founded the study of fiscal states one century ago. Based on the centrality of taxation, our argument proceeds in three steps.

Our first contribution is an integrated historical analysis based on a comprehensive new dataset.¹ We harness rich archival material to create a database of disaggregated government revenues from the early days of colonial rule until the present. We standardize these data across polities, both by classifying them according to modern standards and by creating an accompanying set of deflators. The latter allows us to express government revenue in a comparable metric across time and space. To our knowledge, this represents the first long-run dataset of fiscal outcomes for a significant group of polities from the Global South. The new data show that measured in real terms, African polities have been capable of realizing large gains in total revenues since independence. Polities have also increased revenues from hard-to-collect taxes, a common measure of fiscal capacity. These results suggest that reports of the death of the state in Africa may have been premature. Our historical analysis further uncovers a pattern of strong growth in fiscal capacity whenever there was insufficient trade to be taxed (such as during the world wars). Conversely, when alternative finance was available through aid and debt in the decade following World War II, investment in fiscal capacity was low. The waves of democratization in the 1960s and 2000s coincide with high rates of growth in fiscal capacity, whereas the reverse is true for the period of instability in the 1980s or during decolonization in the late 1950s. The historical analysis thus reveals the importance of the international environment (wars, decolonization, access to external finance) in shaping domestic capacities.

As a second contribution, we draw on these insights to distill theories explaining fiscal capacity into testable hypotheses, which we take to our data. We commence with canonical theories of fiscal capacity as outlined by [Tilly \(1992\)](#), [Besley and Persson \(2009, 2010\)](#), and [Scheve and Stasavage \(2010\)](#). These approaches emphasize the importance of democracy, government turnover, and international conflict. However, the canonical variables are largely derived from the historical experience of state building in the West. We therefore complement these explanations with theories of ‘extraversion’. These approaches propose that development of statehood in the Global South, and Africa in particular, is conditioned by access to external rents, such as aid, resource exports, or credit ([Olukoshi and Laakso 1996](#); [Clapham 1996](#); [Bayart 2000](#); [Moore 2004](#)). This brings the external environment back into focus.² Testing these hypotheses in a fixed-effects panel specification, we find that the availability of external credit and aid indeed impedes investments in fiscal capacity. However, by leveraging newly collected data on commodity prices and exports for the entire century, we show that exogenous increases in resource incomes do not generally lead to lower fiscal capacity. The direct effect of canonical variables, with the exception of government turnover, is weak.

In a third step, we combine ‘extraversion’ theories with the canonical models of fiscal capacity by drawing on recent scholarship such as [Queralt \(2019\)](#). This literature emphasizes that the interaction of external and canonical factors shapes fiscal capacity. We find evidence that access to external rents

¹Despite promising recent work on individual country or period groupings ([Prichard and Leonard 2010](#); [Mansour 2014](#); [Frankema and van Waijenburg 2014](#); [Cogneau et al. 2021](#)), we do not systematically know how much revenue African polities have historically collected.

²When we label access to foreign aid, credit, and resource exports as representative of the external environment, we do not imply that canonical theories have neglected the international environment. (This is clearly not the case for international conflict). Instead, we mean that aid, credit, and resource revenues can be obtained only from interacting with the external environment. International wars, on the other hand, may well mobilize domestic resources.

indeed moderates the operation of canonical predictors of fiscal capacity. For example, we find that international wars in Africa stimulated fiscal capacity only when resource exports were stagnant, and external credit was scarce. Conversely, democracies with access to resource rents become potentially better state builders. These empirical results have important theoretical implications: states in Africa can mobilize resources when the international framework is favorable and domestic institutions are cohesive.

It is important to emphasize that we do not attempt to advance a general theory of state building in Africa. There are rich scholarly traditions within both political science and African Studies on the interaction of taxation with state formation and legitimacy that explore themes of identity, distributive politics, and elite power structures (Mamdani 1996; Kasara 2007; Kramon and Posner 2013). Our focus is on fiscal capacity more narrowly defined, although we do believe that raising taxes is a crucial element of state building more widely conceived. Moreover, we recognize that fiscal capacity is a concept with ambiguous normative implications. Governments can use taxes to increase funding for schools and infrastructure, as Mozambique did under Chissano in the 1990s, or Botswana did in the 1980s. Conversely, funds can be frittered away on prestige projects, or disappear in the pockets of corrupt government officials as they did in Mobutu's Zaire. In many of the colonial polities we study, tax revenues were used to cement white minority rule over African populations. In the cases of Rhodesia and South Africa, repressive minority rule continued even after independence, bolstered by an efficient fiscal apparatus (Mkandawire 2010b). While the theoretical framework we set out does not require an analysis of spending patterns, we do analyze the importance of representative institutions and suffrage. Moreover, despite the frequent misuse of government funds in African fiscal history, tax collection remains a necessary (though clearly not sufficient) condition for the extension of vital public services across the continent.

The remainder of the paper proceeds as follows. The next section describes the fiscal data we have collected. In section 2, we show through historical analysis how the novel data recasts the debates surrounding African statehood. Section 3 sets up a theoretical framework, while section 4 shows how we take these hypotheses to the data. Section 5 presents the results with panel data, while the last section concludes.

1 Data: Tax collection and fiscal capacity

Despite the centrality of taxes to statehood and economic development, large gaps exist in our knowledge about trends in taxation in Africa.³ These gaps emanate from two sources. First, while records of state revenues exist for almost all polities since 1900, they are scattered across numerous archives and their granularity varies substantially. Second, it is difficult to compare nominal revenues over time and across jurisdictions in the absence of reliable GDP data (Jerven 2013b). Our dataset employs a harmonization strategy that solves both problems.

³We survey existing data contributions in Appendix 1.

The dataset is based on revenue data for more than 4,700 country-year combinations extracted from a large variety of sources, mainly colonial budgets, revenue statements, and IMF Article IV consultation documents (see Appendix 2). Our first step was to break down any revenue data we found into its smallest constituent components, called items. These more than 135,000 items are usually revenue streams from individual taxes, such as income from a colonial hut tax or an export duty on copper. We then reclassified each item according to modern IMF definitions into direct taxes, indirect taxes (subdivided into indirect taxes proper and trade taxes), non-tax ordinary revenue, resource income and extraordinary revenue. We then summed all items within each category, which is now consistently coded.

Not all of these categories are relevant to fiscal capacity. In this paper, we define fiscal capacity as the tax revenue a government can collect in the long run. Following much of the literature, we measure this with tax revenue generated by hard-to-collect taxes, net of cyclical effects (Besley and Persson 2014). This builds on two assumptions. First, although hard-to-collect taxes require a substantial upfront investment, they eventually provide a larger revenue stream than that what can be provided by trade taxes. This assumption is consistent with the patterns in modern cross-sectional data: tax revenue as a share of GDP is larger when countries receive a higher share of their revenues from direct taxes (Besley and Persson 2014). Secondly, the revenue stream of hard-to-collect taxes will be less volatile than that generated by trade or resource taxes. Cagé and Gadenne (2018) document that the revenues of developing countries that rely on trade taxes are indeed more volatile than those that rely on direct taxes. Our data exhibit the same pattern: aggregate revenue volatility is systematically correlated with the share of trade and resource taxes.⁴

We thus exclude trade and resource taxes from our measure of fiscal capacity. The taxes that we define as hard-to-collect are direct taxes and indirect taxes proper, the latter including value-added taxes (VAT). In developed economies, indirect taxes are often treated as easy taxes (Besley and Persson 2014), but this characterization is not transferable to developing countries, where institutions and technology need to be built up before VAT can effectively be collected (Fjeldstad et al. 2020). Indeed, the recent literature on capacity building in developing countries has focused on measures that enhance the institutional capacity to collect VAT (Pomeranz 2015).

Finally, we need to deflate nominal revenues. The choice of deflator is motivated by a simple consideration: nominal incomes should be converted into real incomes using the prices of the relevant consumption basket. During much of our period, the main expenditure item for governments in Africa was their wage bill (Gardner 2012). We therefore take nominal wages as the deflator for the revenue series. For a polity i in year t we then have:

$$\text{real tax revenue per capita}_{i,t} = \frac{\text{nominal tax revenue}_{i,t}}{\text{nominal day wage}_{i,t}} \times \frac{1}{\text{population}_{i,t}} \quad (1)$$

⁴Note that the above statement does not imply that levying trade taxes is costless. However, taxing trade requires less human and capital resources than taxing private incomes. Accordingly, Appendix 2.4 shows that early colonial states preferred to tax trade whenever trade costs were low enough.

Our approach has four conceptual strengths. First, because we use daily wages and normalize by population, fiscal capacity is expressed in a meaningful unit: the number of work days the government collects from each worker.⁵ Second, we do not have to rely on inflation or nominal GDP estimates, which are rarely available before 1960 and often unreliable thereafter (Jerven 2013a). Wages, on the other hand, are relatively well recorded, which is why they are regularly used in contexts with limited data availability (for example, Karaman and Pamuk 2013, a study of fiscal capacity in early modern Europe). Third, we use data on urban wages only. These wages are not reflective of the country as a whole, but of the regions where governments tax and spend most actively due to the well-known urban focus of African politics (Bates 2005). Fourth, many colonial governments supplemented monetary taxes with forced labor. Our method allows us to capture this important feature of the colonial state, as we can add estimates of forced labor days to the estimates for monetary taxes, expressed in labor days.⁶

In Appendix 2.5, we provide two validation exercises for our measure of fiscal capacity. First, we check whether our measure is reflective of changes in tax policy. We run a fixed-effects regression of deflated direct tax revenues on the head tax rate in colonial polities. The results show a strong association between rates and revenues, as expected. In addition, the results show that there is substantial variation that is not explained by tax rates. In other words, factors such as the enforcement of existing rates, administrative capacity to conduct censuses, and taxpayer compliance, matter as well (Berwick and Christia 2018; Hanson and Sigman 2021). Our measure of fiscal capacity should be understood as a comprehensive measure encompassing all of these these facets. Second, for periods where nominal GDP data is available, we can compare our metric to tax revenues as a share of GDP. The correlation between these measures is high and both produce comparable patterns. If anything, our deflator is less volatile because it is not subject to idiosyncratic swings in GDP.

In a nutshell, our measure of real tax revenue provides a metric for resource collection by the state that is comparable both between African polities, and across the century. We have achieved near-comprehensive coverage for a balanced sample of 41 African polities. We also work with a full sample encompassing five additional polities (Djibouti, Ethiopia, Liberia, Libya, and Somalia) for which we have data coverage after World War II only.

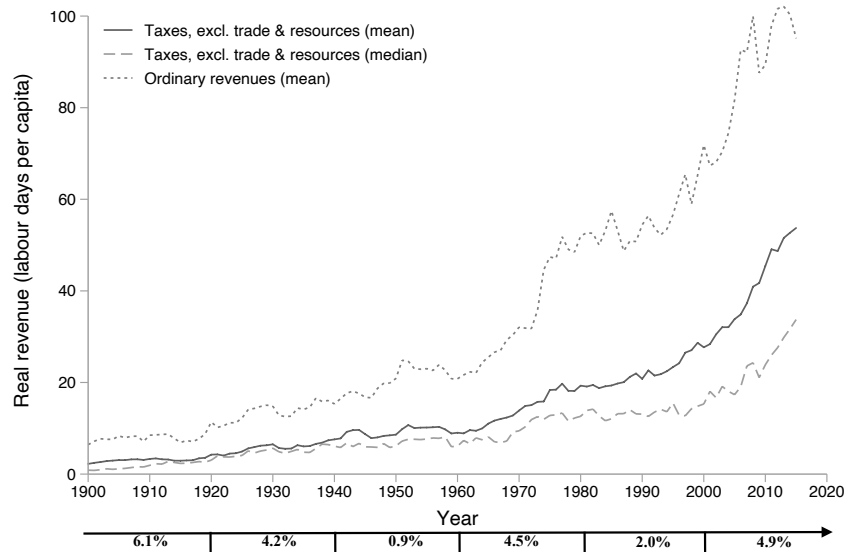
2 Revenue patterns in African polities since 1900

Figure 1 summarizes the evolution of fiscal states in Africa. Panel (a) reports the mean level of total ordinary revenues across polities, as well as the mean and median levels of fiscal capacity. Panel (b) shows the composition of revenues.

⁵Appendix 2.2 provides more information on the wage data. Note that it does not matter if wages are administratively set, as long as labor is actually remunerated at this rate. We are interested in the purchasing power of the government at the going wage rate, not the determination of this rate.

⁶The exact extent of forced labor is not known, as colonial authorities did not keep systematic records of these practices. We estimate lower and upper bounds based on secondary literature, in particular van Waijenburg (2018).

(a) Revenue levels



(b) Revenue composition

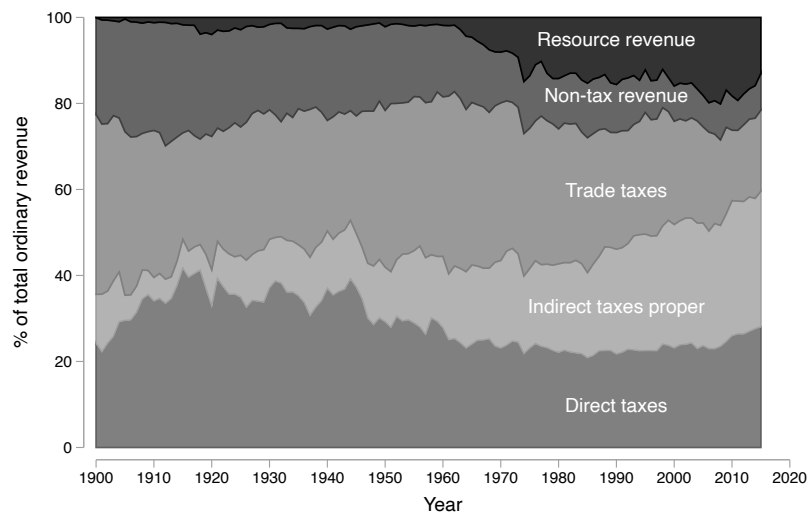


Figure 1: Real taxation, revenues, and their composition in Africa over the last century

Notes: For details on the data construction, see Appendix 2. Figures are averaged for all polities of the balanced sample (41 polities). Appendix 2.2 displays results for the full sample. Panel (a) presents real revenue levels. The line below panel (a) reports the mean annual growth of fiscal capacity across all polities. They exclude World War I (mean growth rate: 3.1%) and World War II (mean growth rate: 2.6%). Panel (b) averages the shares of the respective revenue category across the balanced sample. The resulting shares are rescaled such that they total 100%.

One previously underappreciated feature of the fiscal state stands out: the 20th century was a century of growth. Both ordinary revenue and fiscal capacity were more than 11 times larger per capita in 2000 than they were in 1900. This growth has not always been stable, as the growth rates below the graph show. However, the perception of “state weakness” largely stems from the crisis period between 1980 and 2000 and neglects periods of strong growth both before and after those decades. We also note that growth in revenues is not always due to a higher share of resource or trade

taxes. Since the 1990s, the share of hard-to-collect taxes has increased whereas the share of trade taxes has dropped significantly. Nonetheless, the average trend depicted in Figure 1 masks substantial heterogeneity across time and polities. This is partly illustrated by the widening difference between the mean and median since the 1960s in Panel (a). Before moving to a formal investigation of the polity-specific trajectories, this section investigates the broad trends qualitatively.

Early colonial period: 1900-1914 By the start of the sample period in 1900, most colonial polities had established some degree of territorial control (Young 1994). However, because control depended on European military conquest, it was fragile and was often challenged by African rulers.⁷ Especially in British colonies, administration could be executed only by incorporating pre-colonial rulers into the governance structure through systems of indirect rule (Müller-Crepon 2020). Initial fiscal capacity was correspondingly low; the average tax burden was equivalent to about 2.2 labor days in 1900. Nonetheless, metropolitan treasuries were generally unwilling to subsidize their colonies. Credit markets were an option only for the few polities that had a history of borrowing as sovereign states, such as Egypt, Morocco, and Madagascar.

Fiscal autonomy and low revenues gave rise to the revenue imperative as the overriding aim of the colonial polity (Gardner 2012). As evidenced by high growth rates in fiscal capacity, colonial states invested heavily in tax collection, often through the introduction of poll taxes (“hut taxes”) on the native population. Frequent tax rebellions, such as the Aba Women’s War in southeastern Nigeria, are clear examples of Africans contesting this fiscal expansion. Two alternatives were available to the early colonial polity: trade taxes and forced labor. Forced labor added on average between 2 and 12 labor days per capita to the state’s tax take, and even more in the Portuguese colonies (see Appendix Figure 2.4). Trade taxes, easily administered at ports, were a way of monetizing the suitability of colonial territories for growing cash crops, especially oil seeds, rubber, and cotton (Frankema and van Waijenburg 2014).

War and interwar period: 1915-1945 During the interwar period, metropolitan centers tentatively sought to “develop” their African holdings economically, which led to an increase in grants (Havinden and Meredith 1996). Access to capital markets was also eased through systems of imperial trusteeship (Sunderland 2007). However, the deteriorating economic situation in Europe quickly stymied these efforts. Cash crops continued to dominate and total revenues were high during the commodity boom of the late 1920s but fell precipitously during the Great Depression. Faced with volatile trade taxes and scarce grants, colonial polities continued to increase direct tax collection. Attempts to introduce income taxes were made, especially in areas such as Kenya, where an influx of white settlers provided a taxable base. However, settlers could also use local consultative assemblies to delay such measures (Gardner 2012). Now firmly entrenched, colonial governments were rarely challenged through armed rebellions and hence much of the growth in real tax income came from expanding the taxation of African populations. In so-called peasant colonies, where hut taxes were not established,

⁷In Appendix 1, we point to important case studies on taxation in pre-colonial African states.

export taxes were used to collect revenue. Here too, the economic burden was perceived to fall heavily on African farmers in the form of low producer prices.

The world wars had a profound fiscal effect on African polities. Loans became hard to obtain as the London market was closed to colonial issues, while colonies in the French Maghreb were still able to issue bonds (Havinden and Meredith 1996). Conversely, British colonies continued to receive some financial support from the metropole, while France, facing the threat of military annihilation at home, requested funds from its colonies (Huillery 2014). Resource exports oscillated dramatically and non-military commodities experienced a serious glut. Meanwhile, African polities on whose territory fighting took place had to shoulder the costs of equipping expeditions, recruiting soldiers, and hiring laborers (Young 1994). In many polities, direct tax collection thus increased strongly because shortfalls in alternative revenue sources left such expenditures otherwise uncovered. The humps in the share of direct taxes during the world wars in Figure 1b reflect this compositional effect. In absolute terms, the average annual growth rates of hard-to-collect taxes also remained high, accruing to 3.1% during World War I and 2.6% during World War II. Clearly, these growth rates mask substantial heterogeneity across countries and the highly erratic nature of revenue growth during the wars.⁸

Late colonial period: 1946-1959 Our results show that fiscal capacity grew slowly as the end of the colonial period drew nearer. Real tax and total revenues even declined as decolonization became imminent. In possible anticipation of political change, colonizers pursued only minimal state-building goals. Several other factors contributed to the lackluster expansion of fiscal capacity. Resource exports were generally buoyant in the mid-1950s. Colonial states levied export taxes, often through marketing boards for cash crops, thus prolonging the pronounced reliance of the African fiscal state on trade taxes displayed in Figure 1. Credit market access became near universal, bolstered by investment programs from multilateral agencies such as the IBRD. Metropolitan transfers picked up, too, as colonizers at last expanded the range of public goods they supplied beyond administration and security, following ideas of development planning that became increasingly popular after the war (Havinden and Meredith 1996).

Early independence period: 1960-1979 At independence, African governments may have taken over the developmental ethos of the state from the former colonizers, but our data suggests that they significantly increased its reach. As Figure 1 shows, real tax revenues grew rapidly from 1960 until at least the mid-1970s. Over the first two decades of independence, African states doubled their real tax take from the equivalent of 9 days of labor to 18 days. Total revenues rose even more strongly, largely reflecting the strong growth in resource revenues. Yet resource revenues were quite compatible with increases in fiscal capacity.⁹ Moreover, the expansion of direct tax revenue was accompanied by a continued reliance on trade taxes, a characteristic feature of developmental states that used export taxes to finance investment in industry.

⁸See Appendix 4 for the corresponding growth rates and standard deviations.

⁹Some of the polities with the largest increases in capacity during this period were mineral exporters, including Botswana (diamonds), Zambia (copper), and Gabon (oil).

Clearly then, sovereign African polities were able to grow fiscally when the conditions were right. What were those conditions? Independence was accompanied by a sharp, albeit short-lived, surge in popular participation, before many polities settled into the relative stasis of one-party rule (Young 2012). Although there was significant institutional continuity between metropolitan transfers and the aid former colonizers provided, the amounts offered declined strongly (Pacquement 2010). Aid was forthcoming from new players, in particular the United States and the USSR, but this was tied to significant political concessions. Polities did make use of their de jure complete access to credit markets, but global interest rates generally increased over the period, limiting the attractiveness of this option.

Crisis: 1980-1999 Our results corroborate the common view of the 1980s as a crisis period for African states. Growth in real tax revenues averaged close to 0% across polities and collapsed in many. Growth in total revenues was also low, affected by the reduction in trade taxes through trade liberalization programs (Cagé and Gadenne 2018) and the slashing of non-tax revenues in the wake of privatization. Although average tax revenues recovered slightly in the 1990s, the median tax level in Figure 1 suggests that the majority of polities did not exit this crisis until the turn of the century. The causes of this crisis have been analyzed elsewhere (Frimpong-Ansah 1992; Bates 2001). For present purposes we note that this period combined frequent and often irregular changes in leadership with generally undemocratic governments that lacked the legitimacy to tax. Sometimes, changes in government were associated with civil war. These factors likely eroded incentives for investment into fiscal capacity. African states also made increased use of multilateral loans: the IMF granted access to its financial facilities in the form of structural adjustment loans from 1979 onwards (Van de Walle 2001).

Recovery: 2000-2015 We detect a strong recovery in real tax revenue at the start of the new century. The data in Figure 1b suggests that much of this expansion was driven by an increase in indirect taxes proper (VAT), which casts new light on a literature that has hitherto been skeptical about the effect of this tax (Ahlerup et al. 2015; Moore 2014). We also detect an increase in direct tax revenue. The strong increase in tax revenues is concurrent with several instances of democratization, that have transformed the political landscape of the continent, although not all democratizations have proved permanent (Young 2012). We also find that even during this period of fiscal expansion, resource revenues have remained buoyant. However, not all countries have participated in this pattern of growth. The large gap between median and mean fiscal capacity has remained constant over the past two decades (Figure 1) and no significant convergence in fiscal capacity among African polities has taken place.

3 Theory

Our historical analysis points to the importance of domestic political institutions and international conflict in shaping fiscal capacity. Additionally, the narrative highlights the crucial role of access to

external finance for the African polity. We now develop a common framework for understanding these disparate factors.

3.1 Canonical factors

We commence with the widely-used approach established by [Besley and Persson \(2009\)](#) and [Besley et al. \(2013\)](#) that defines a government as a group of political decision makers with similar preferences. We also build on the premise that increasing revenue from hard-to-collect-taxes, i.e. fiscal capacity, entails short-term expenses for a government in conducting censuses, assessing incomes, and building institutional infrastructure. These investments may yield a positive return to the government in the future, as permanently higher levels of taxation are unlocked. Tax revenues may yield utility to the government through direct consumption or through spending on public goods that are closely aligned to the government's preferences.

Government turnover The government's decision problem is complicated by the fact that the returns on investments in fiscal capacity are uncertain because of government turnover. For example, the current government may not be in power anymore by the time higher tax revenues materialize. This is likely to reduce the expected payoff from investments either because they cannot be consumed directly or because the spending preferences of the new government are likely to differ. A precarious government that is likely to lose power quickly will therefore not commit to the costly investments of hard-to-collect-taxes and may prefer to fund itself through easily obtainable means, such as trade taxes. This leads us to the following hypothesis:

H1 (Government turnover): Investment in fiscal capacity will decrease if it is likely that the current government will lose power.

Cohesive institutions If it has lost power, the extent to which the former government enjoys the fruits of its investment will depend on the institutional environment. If the *new* government faces institutional constraints on its spending decisions such as a powerful legislature or a rule-bound bureaucracy, it will not be able to use the newly materialized tax revenues exclusively to its own advantage. If such cohesive institutions exist, the former government may be more likely to conclude that investments in fiscal capacity are outlays for a common future good that exceeds an election period. The former government now has the potential to influence spending decisions from the opposition benches and revenues will not be redistributed solely to the benefit of the new government. This will increase the attractiveness of fiscal investments. Such democratic polities could also see a greater degree of tax compliance from citizens, who now have a stake in the future of their polity. This relationship between democratization, broadly conceived, and fiscal capacity is corroborated by empirical evidence for contemporary developing countries ([Profeta and Scabrosetti 2010](#); [Ricciuti et al. 2019](#)). We therefore propose:

H2 (Cohesive institutions): Investment in fiscal capacity will increase if purely redistributive spending by the executive is constrained.

It is important to consider H1 and H2 jointly in our empirical analysis. We would clearly expect the largest increases in fiscal capacity to occur in democracies with low rates of government turnover, such as Botswana after independence. Nonetheless, colonial autocracies could sustain prolonged periods of state building, given the extended time horizon of colonial rulers. This also implies that we would expect the prospect of decolonization to diminish the state-building tendencies of these autocrats.

Common interest shocks Government and opposition may also be bound together in their spending preferences by common interests rather than by restrictive rules. This is most likely to be the case if exogenous shocks, such as war, threaten the survival of both. In such an emergency, government and opposition may assent to programs that increase tax collection. This proposition has a pedigree: in what is now known as the bellicose theory of capacity, the fiscal history of Europe is often explained by competing states constructing tax systems to fund their military exploits.¹⁰

However, scholars working on African history have been skeptical of the bellicose theory because much of the literature points to the dearth of interstate conflict in Africa. [Herbst \(2000\)](#) argued that the relatively benign interstate environment did not threaten the survival of either the colonial or sovereign African polity, a view [Dincecco et al. \(2019\)](#) have reinforced. On the other hand, [Alexopoulou and Frankema \(2018\)](#) argue that military spending accounted for about a third of total outlays of colonial governments in the interwar period, which suggests that security was an important motive. In fact, as we discussed in section 2, African polities were strongly affected by conflicts initiated by their colonial rulers, most notably the two world wars that increased revenue needs. Our data show increases in real tax revenues during these periods. We therefore do not discount the bellicose theory at the outset.

H3 (Common interest shocks): Shocks demanding a unified response from all interest groups within a polity will lead to an increase in tax collection.

However, we recognize the need to adjust the bellicose theory to our context. At first glance, wars during the colonial period do not seem to fit with notions of common interest shocks emphasized by scholars such as [Tilly \(1992\)](#) for Europe. However, in the African context, the pressure of war unified factions within the colonial elite. This often meant a softening of the antagonism between white settler representatives (who were more prone to advocate taxing African populations) and colonial authorities (who were more inclined to tax lightly in fear of rebellion). This temporary alignment spurred higher tax rates on native populations during and directly after wars ([Gardner 2012](#)). Nonetheless, these considerations imply that it is important to distinguish between wars in the colonial and post-colonial period because the composition of elites will differ. Another important distinction is between international and domestic conflict. Civil conflicts may intensify tax pressure on a central government, similar to international conflicts. However, civil wars will also diminish a government's ability to control territory, and present a sign of divided, rather than common, interests. In this vein, the evidence presented by [Bates \(2001\)](#); [Besley and Persson \(2008\)](#); [Ch et al. \(2018\)](#) may lead one to blame the erosion of fiscal capacity in many African countries in the 1980s and early 1990s on civil conflict.

¹⁰The hypothesis goes back at least to Schumpeter and is now usually associated with the work of [Tilly \(1992\)](#). For more recent empirical work, see [Scheve and Stasavage \(2010\)](#).

3.2 Extraversion factors

The three canonical variables outlined above affect the payoff to a current government from investing in hard-to-collect taxes. However, this calculus must be conditional on the opportunity cost of the investment, that is the payoff from tapping into other revenue sources. This has been the focus of a burgeoning literature on state building in developing countries that has investigated how the availability of windfall revenues has stymied capacity in the Global South (Gadenne 2017; Bates 2001). In an African context, this is summarized by the idea of ‘extraversion’, or how governments leverage Africa’s tight integration into the world economy to access external revenues. For example, close relations to (former) colonial powers can unlock aid or subsidies, multinational private and public lenders offer standardized credit contracts, and globalized commodity markets provide an outlet for taxable resource exports. Governments will therefore not turn to domestic revenues, but control and exploit the ever tighter links between African territories and the world economy (Olukoshi and Laakso 1996; Clapham 1996; Bayart 2000). In particular, the literature points to: (i) exporting natural resources, which effectively allows governments to tax foreign commodity consumers rather than domestic populations (Collier and Hoeffler 2005; Besley and Persson 2010); (ii) procuring intergovernmental aid, which may be acquired through international political maneuvering rather than fiscal prudence (Moore 2004; Djankov et al. 2008); and (iii) accessing international credit, which helps governments soften their revenue constraints (Moore 2004). These insights are in line with much of our historical analysis, which pointed to the importance of access to external finance in shaping the dynamics of real revenues. Our fourth hypothesis thus is:

H4 (External revenues): Investment in fiscal capacity will decrease if:

1. *The value of resource incomes increases,*
2. *The availability of intergovernmental transfers such as aid increases,*
3. *Access to external credit markets increases.*

3.3 Interaction effects

Yet historical analysis also cautions against blanket statements regarding the enfeebling effect of external revenues. For example, our analysis suggested that lack of access to international aid was particularly crucial during times of high revenue pressure, such as during the world wars. An emerging literature stresses exactly this point. Queralt (2019) shows how states in Latin America struck by wartime expenditures turned to issuing debt if conditions on international financial markets were favorable. Only in these cases was domestic fiscal capacity reduced. Leander (2004) makes a similar argument for Africa, noting that the internationalization of the African state severs the Tillian link between war and state making. The link between other canonical variables and fiscal capacity may be similarly moderated. The turn to external revenues may be particularly attractive if governments are fragile or domestic institutions are not cohesive (Findley et al. 2017). An effective government, on the

other hand, could conceivably utilize aid or oil receipts to fund the extension of its tax bureaucracy. In this vein, [Mehlum et al. \(2006\)](#) have famously argued that institutional quality is an important factor in determining whether resource incomes are a blessing or a curse. Therefore, our fifth hypothesis is that the interaction between external revenues and canonical factors such as institutional quality and conflict matters.

H5 (Interaction effects): The availability of external revenues moderates the effect of domestic institutions, government turnover, and conflict on fiscal capacity.

In other words, our use of interaction effects combines both the canonical and ‘extraversion’ perspectives on fiscal capacity building. More broadly, we can explore how a variety of historical factors, such as colonialism, shapes the operation of the canonical variables.

4 Empirical strategy

Our theoretical framework has narrowed down the explanations for the divergent trajectories of Africa’s fiscal states to three canonical variables (democracy, turnover, conflict) and three measures of external finance (access to aid, credit, exports). We will now explain how we operationalize these six variables empirically and embed them in a fixed-effects regression setup.

4.1 Operationalizing canonical and extraversion forces

Government turnover We assume incumbents infer the probability of a change in government from the frequency of past turnover.¹¹ Building on the dataset of the Varieties of Democracy project (V-Dem), we code past government turnover as a dummy representing either i) a change in the party that provided the chief executive after an election in the case of democracies; or ii) a change in the ruling regime (through whatever means) in the case of autocracies. In accordance with our theoretical framework, government turnover thus reflects changes in the group holding executive power, rather than a change in the individual leader.¹²

Cohesive institutions The V-Dem project provides a set of indicators describing the ‘quality’ of democracy for a given polity throughout our sample period, including the colonial period. V-Dem indices are bounded between 0 and 1 and are based on expert assessment for each polity and year. Among its five top-level indices, the ‘liberal democracy’ index matches our theoretical considerations

¹¹Note that this formulation implies backward-looking expectations. Apart from the difficulty in grasping forward-looking “rational” expectations empirically, much evidence supports the prevalence of backward-looking expectations in practice ([Gennaioli et al. 2016](#); [Frydman and Nave 2017](#)).

¹²Consider the example of Tanzania. The polity is coded as experiencing a change in government in 1916, when effective control of the colony passed from Germany to Britain, and again in 1961 and 1962 (independence and establishment of the republic, respectively). Thereafter, no change is recorded until 2015, as all of the country’s chief executives have hailed from the ruling TANU/CCM party.

most closely. Putting the emphasis on the extent of executive constraints and the protection of minorities, it reflects the inability of governments to redistribute at will to their own group, in line with our concept of cohesive institutions.¹³

Conflict Following our theoretical considerations, we use two criteria to classify armed conflicts: the era of the conflict (colonial or postcolonial) and the nature of the adversary (state or non-state). This leaves us with four types of conflict: (i) colonial international wars; (ii) international wars since independence; (iii) anticolonial uprisings; and (iv) civil wars since independence.¹⁴ Note that we only analyze conflicts in which the government of an African polity is a participant and that are fought on the territory of the polity concerned. All wars are coded as an indicator variable, taking 1 in the year of war and 0 otherwise. For the postcolonial period, we rely on the UCDP/PRIO database. For the colonial period, we code conflicts based on the list provided by [Brecke \(1999\)](#).

External aid For the postcolonial period, we proxy access to aid with the political proximity of African polities to the five permanent members of the UN Security Council (UNSC). This captures the idea of ‘extraversion’, according to which leaders operationalize the international system to access rents. Such an idea fits the historical context of independent African states particularly well, when aid was partly determined by maintaining of close ties to the principal former colonial powers Britain and France or by aligning with the interests of the USA, the Soviet Union or China.¹⁵ Moreover, some aid receipts will reflect domestic fiscal pressures, raising serious endogeneity concerns. Aid disbursement stemming from international political alliances, on the other hand, is plausibly exogenous to domestic tax receipts ([De Mesquita and Smith 2009](#); [Alesina and Dollar 2000](#)).

We weigh the political proximity of an African polity to a UNSC-member with the budget balance of that member, to take their capacity to disburse aid into account. For any sovereign African polity i in year t , access to external aid is defined as:

$$A_{i,t} = \sum_j (S_{i,j,t} \times B_{j,t}) \quad (2)$$

where j is the permanent UNSC member, S is the [Signorino and Ritter \(1999\)](#) index of similarity between the alliances of the African polity and the UNSC power, and $B_{j,t}$ reflects the budget balance of the UNSC power. For the colonial period, we treat all African polities as being and exclusively

¹³In appendix figure 5.3, we check our measure against other top-level V-Dem scores, which measure elements of democracy such as participation and equality. Note that most indices of democracy other than V-Dem code sovereign polities only.

¹⁴Civil conflict in the colonial era thus involves colonial governments fighting rebellions, such as the Maji Maji uprising in German East Africa (1905-1907). International conflict during this era consists of wars fought by the colonizers against other state actors. Apart from the world wars that were fought partially on African soil, this includes the wars fought by colonizers against indigenous African states.

¹⁵For example, while it was a colony, Guinea’s access to transfers depended solely on the priorities of the French Treasury. At independence, Guinea’s leader Sékou Touré distanced himself from French plans for continued cooperation. Touré instead aligned himself with the Soviet Union and China, which provided funds. Guinea eventually pivoted to the USA, drawing aid from that donor ([Young 2012](#)).

aligned with their imperial metropolis ($S_{i,j,t} = 1$), so that transfers received during the colonial period are determined by the budgetary situation in the metropolis alone.

Capital market access In colonial times, the imperial metropolis tightly regulated the ability of colonies to borrow on international markets (Accominotti et al. 2010). We therefore code a time-varying dummy $D_{i,t}$, assigning it the value of 1 if a colony was institutionally able to issue debt. As an illustration, consider the case of the British colonies in Africa. The willingness of investors to purchase colonial stock depended crucially on its designation as trustee stock, which provided bondholders with additional protection in case of default (Sunderland 2007). The 1900 Colonial Stocks Act accorded this privilege to Crown Colonies (Gardner 2017). This effectively granted Gambia, a Crown Colony, access to credit markets, while Kenya was excluded until it was granted Crown Colony status in 1920 (Sunderland 2007). Therefore, Gambia's $D_{i,t}$ takes the value of 1 after 1900, while Kenya is coded as 0 until 1920. We interact this dummy for institutional access with the inverse of global interest rates r_t to reflect the idea that credit market access is more important in times of low interest rates:

$$C_{i,t} = D_{i,t} \times \frac{1}{r_t} \quad (3)$$

where i is the polity and t the year.¹⁶ All polities are coded as having full access to credit markets after attaining sovereignty.

Resource exports The value of resource exports depends on fluctuating world market prices, which are exogenous to the polity's domestic fiscal pressures. We have compiled a new dataset of commodity export shares for all African polities, in addition to world market prices for these commodities. This is done by extending the commodity dataset by Bazzi and Blattman (2014), which commences in 1957, to the early colonial period using British trade statistics and a variety of colonial records. We interact world market prices for each commodity $P_{t,k}$ with the share of that commodity in a polity's export basket $s_{i,T,k}$ to produce our index of resource exports:

$$R_{i,t} = \frac{\sum_k (s_{i,T,k} \times P_{t,k})}{\Pi_t} \times X_{i,T} \quad (4)$$

where i refers to the polity, t to the year, and k to a commodity. T refers to the period before or after 1957. As nominal prices P are denoted in British pounds (before 1957) and US dollars (after 1957), we deflate nominal prices with the British and US price indices Π to produce a real index. As Bazzi and Blattman (2014) did, we weight the final index for each polity by the share of primary exports in its GDP, $X_{i,T}$. This reflects the idea that swings in commodity prices should have a larger effect on a polity heavily dependent on primary exports such as Libya.¹⁷

¹⁶We proxy global interest rates with the Bank of England rate.

¹⁷The export shares s and trade weights X are fixed within each period T .

4.2 Specification

We collected our fiscal data and covariates at an annual frequency. For the formal analysis, we average this data over five-year periods. Although this reduces the number of observations, it has distinct advantages. Conceptually, we are interested in fiscal capacity as the product of structural forces in the medium term. We therefore want to disregard confounding annual variations in tax collection that may be due to idiosyncratic factors such as business cycle movements. Moreover, five years corresponds to the average length of a legislative term in most countries, and therefore to the time horizon of rulers.¹⁸

Our framework explains the evolution of fiscal capacity – that is, real tax collection per capita net of resource and trade taxes. Our theory makes predictions about the incentives to *invest* in – that is to change – fiscal capacity. For example, we expect that the pressure of war may lead a government to *increase* tax collection; we do not necessarily expect this government to tax at a higher level than other countries. It is thus natural to analyze changes in rather than levels of fiscal capacity. Moreover, the interpretation of two-way fixed effects regressions in levels raises conceptual difficulties that we avoid (Kropko and Kubinec 2020). Our benchmark specification for examining hypotheses H1–H4 therefore is:

$$\Delta \text{fiscal capacity}_{i,t} = \alpha + \sum_c \beta_c \text{canonical}_{c,t} + \sum_e \beta_e \text{extraversion}_{e,t} + Z_{i,t} + \mu_i + \gamma_t + \epsilon_{i,t} \quad (5)$$

where i is the polity and t is the five-year period. Subscript c denotes the four canonical variables (government turnover, democratic constraints, civil conflict, and international conflict). Note that we lag the incidence of conflicts and government turnover by one period to rule out confounding contemporaneous effects (such as physical destruction caused by wars). We index the variables corresponding to the extraversion factors (exposure to aid, resource exports, and access to credit) with e . We use μ_i and γ_t to denote polity and period fixed effects respectively. Because the dependent variable denotes growth in tax revenues, the period fixed effects control for all factors that affect the average growth across the sample in a given period (such as a global crisis). The polity fixed effects control for all time-invariant factors that affect a polity’s average growth in revenues.¹⁹ In addition, $Z_{i,t}$ is a vector of time-varying controls, comprising dummies for sovereign polities, territorial changes, hyperinflation episodes, socialist economic systems, and continuous variables for drought magnitude, real GDP growth, and years in sovereign default.

Examining hypothesis H5 requires us to augment the previous specification because external revenues (aid, resources, credit) moderate the effect of the canonical variables (turnover, democracy,

¹⁸Even autocratic governments in Africa have often engaged in five-year planning exercises. Appendix 5.2 documents the qualitative insensitivity of the results to the precise definition of this window. As expected, confidence intervals are often wider for annual data, but point estimates are comparable.

¹⁹This includes the steady trend towards fiscal decentralization experienced in countries such as Kenya, as well as increasing urban-rural cleavages in many others (Gardner 2010).

conflict). Thus, for each of the canonical variables of interest, we run three additional regressions. These interact the canonical variable with each of the three sources of external revenue:

$$\Delta \text{fiscal capacity}_{i,t} = \alpha + \sum_c \beta_c \text{canonical}_{c,t} + \sum_e \beta_e \text{extraversion}_{e,t} + Z_{i,t} + \mu_i + \gamma_t + \beta_{c,e} \text{canonical}_{c,t} \times \text{extraversion}_{e,t} + \epsilon_{i,t} \quad (6)$$

Throughout, we allow for the nonlinearity of the interaction effects. As [Hainmueller et al. \(2019\)](#) suggest, we bin the moderators (our ‘extraversion’ variables) into low, middle, and high categories. We then interact each category separately with the canonical variable of interest.

5 Panel data results

We commence by examining the direct effects of canonical and extraversion forces, before investigating the interaction effects between both sets of explanations.

5.1 Direct effects of canonical and extraversion forces

Table 1 presents our benchmark results for the correlates of growth in fiscal capacity, using our full panel of 46 African polities from 1900–2015. The first two columns display the results for the canonical variables (H1–H3 from the theoretical framework). We gradually add the variables modeling access to external sources of finance (H4) in columns (3)–(5). The full specification in column (6) includes all variables and controls, while column (7) displays the standardized coefficients.

The results generally point in the direction predicted by theory and our historical analysis. Polities with higher democracy scores experience higher investments in fiscal capacity, whereas frequent changes in government in the past five-year period are associated with reduced growth. Similarly, the results suggest that governments of polities with greater access to external credit or aid face weaker incentives to invest in raising domestic tax revenue. The standardized beta coefficients suggest that the importance of the international environment is substantial. For example, an increase of one standard deviation in exposure to international credit markets decreases tax revenues by 0.22 standard deviations. A similar-sized increase in access to foreign aid decreases domestic tax revenues by 0.18 standard deviations.

However, we note that some coefficients, especially the democracy score, are only marginally significant. Moreover, the magnitude of most direct effects, apart from external credit and aid, is quite small. Conflict incidence (domestic as well as interstate) is not statistically significant at all. Neither do resource exports seem to affect incentives to invest in fiscal capacity, which is seemingly at odds with expectations.

Table 1: Direct effects of canonical and extraversion forces

	Dependent variable: Change in real tax collection per capita, excluding trade & resource taxes						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Canonical factors		External finance			Full specification	
			Resources	Aid	Credit	with controls	standardized
Government turnover	-0.71** (0.35)	-0.71** (0.34)	-0.69** (0.34)	-0.66** (0.33)	-0.68** (0.33)	-0.66* (0.33)	-0.055* (-1.97)
Liberal democracy score	0.13* (0.06)	0.13* (0.06)	0.13* (0.07)	0.12* (0.06)	0.13** (0.06)	0.09 (0.06)	0.141 (1.47)
Civil wars		-0.11 (1.11)	-0.12 (1.11)	-0.10 (1.12)	-0.11 (1.11)	0.06 (1.07)	0.003 (0.05)
International wars		0.20 (1.24)	0.21 (1.22)	0.32 (1.22)	0.25 (1.24)	0.17 (1.31)	0.004 (0.13)
Resource exports			-0.01 (0.03)			0.00 (0.03)	0.005 (0.08)
Exposure to foreign aid				-4.67** (1.99)		-4.69** (1.97)	-0.177** (-2.39)
Credit market access					-9.70** (4.75)	-8.00* (4.42)	-0.215* (-1.81)
Polity fixed effects	✓	✓	✓	✓	✓	✓	✓
Period fixed effects	✓	✓	✓	✓	✓	✓	✓
Controls						✓	✓
Adjusted R^2	0.19	0.19	0.19	0.19	0.19	0.21	0.21
Observations	873	873	873	873	873	873	873

Note: Sample: African polities, 1900–2015 (5 year averages). See Appendix 4 for summary statistics and section 4.1 for variable definitions. Controls include droughts, independent statehood, socialist economic systems, territorial changes, hyperinflation episodes, real GDP growth, and sovereign debt default (see Appendix 5.1 for full results). All regressions are OLS. Standard errors are clustered at the polity level and are shown in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01.

These results are not attributable to measurement error. One might be concerned that our measures of access to external finance do not adequately capture the actual uptake of external funds. For example, not all countries facing high commodity prices are able to export freely and realize large resource rents. We therefore gathered new data on debt issuance and aid receipts for our African polities, in addition to the unused figures on resource revenues from our fiscal dataset. In all cases, these uptake variables correlate well with our measures of access to external finance.²⁰ We also experimented with a broad array of different definitions of access to aid and resource exports. Throughout we found that access to aid negatively determines fiscal capacity, while the direct effect of resource exports is unremittingly close to 0.²¹ Measurement error does not explain these results.

A more convincing explanation is that examining only direct effects might not present a complete picture given the vast heterogeneity in local experiences discussed in our historical analysis. This interpretation is supported when we vary the sample composition. While most variables, such as aid exposure, exert a relatively constant effect across subsamples, this is not true for other variables, such as access to credit. Clearly, a range of factors may moderate the operation of our main variables of interest. This heterogeneity underlines the importance of examining interaction effects, as emphasized by H5. We do this in the following section.

Before proceeding, it is worth emphasizing that the conclusions presented above are qualitatively robust to (i) shifting the 5-year windows; (ii) employing annual data rather than 5-year windows; (iii) the omission of potentially “bad” controls such as GDP growth or sovereign default; (iv) incorporat-

²⁰See Appendix 2 for the corresponding tables.

²¹See Appendix 5.4. We also ensure that our results are not driven by the presence of some large exporters with market power in our sample (such as Ghana for cocoa). Similarly, we do not find an effect of resource exports in different periods or for different commodity groups, with the possible exception of oil.

ing forced labor estimates into our dependent variable. Finally, we construct a quasi-placebo test. A potential concern is that our covariates might generally correlate with factors that affect government revenues rather than fiscal capacity per se. For example, frequent changes in government could undermine a government’s ability to raise any type of revenue effectively. If this were true, we would expect total government revenue and fiscal capacity to react in the same way. This, however, is not the case. When we use total ordinary revenues rather than fiscal capacity as a dependent variable, results show that most of the variation is explained by GDP, and variables such as government turnover and credit market access become insignificant. This suggests that our original measure captures fiscal capacity as intended.²²

5.2 Indirect effects of external factors

The evidence presented so far provides mixed support for the direct effect of canonical forces on investments in fiscal capacity. Government turnover has strong direct predictive power (H1), democracy less so (H2), and the war-taxation nexus (H3) does not turn out to be significant in the benchmark specification. Extraversion forces (H4) are important: access to international credit and aid directly impede the buildup of fiscal capacity. Yet there is no evidence for a similar effect of resource exports. We now turn to investigate the validity of H5, that is the interaction of external finance with the canonical variables. In addition, we show how historical factors such as colonialism have shaped the relationship between African polities and the international system, and therefore their ability to increase fiscal capacity.

Executive turnover International trends in regime change can shape leaders’ perceptions of their propensity to survive. The century of African fiscal data and the continent’s critical historical junctures allow us to elucidate the proposed mechanism, namely that anticipated political change discourages rulers to invest in fiscal capacity. The process of decolonization is well suited for exploring this mechanism. For many observers, Ghana’s landmark declaration of independence in 1957 ushered in the age of independence (Young 1994). From this declaration onward, it became increasingly unlikely that colonial governments could sustain their power for long. Correspondingly, they were unlikely to invest in fiscal capacity. We thus introduce a decolonization dummy that takes the value of 1 for any polity that was still a colony after Ghana’s declaration of independence. Table 2 indeed suggests that investments in fiscal capacity decreased substantially. In accordance with theory, colonial governments invested in tax collection only as long as their rule was expected to last. Because many countries were affected, the mechanism plays a substantial part in explaining the slow growth throughout continent in the late 1950s.

In columns (2), (3) and (4) of Table 2, we explore how access to external finance moderates the effect of government instability. We interact government turnover with access to aid, credit, and resource exports. The marginal effects in the bottom panel show that for medium or high degrees

²²See Appendix 5.1 and 5.2 for these robustness checks. We also show that results do not differ greatly when using the balanced sample.

Table 2: **Government turnover and fiscal capacity**

	Dependent variable: Change in real tax collection per capita, excluding trade & resource taxes			
	(1)	(2)	(3)	(4)
	Interaction with external finance			
	Decolonialization	Aid	Credit	Resources
Government turnover (Δ GOV)	-0.74** (0.35)	-0.01 (0.66)	-0.24 (0.60)	-0.64 (0.47)
Decolonialization	-2.49* (1.30)	-2.87** (1.31)	-1.96* (1.01)	-2.53** (1.24)
Δ GOV \times external factor (med)		-1.05 (0.92)	-0.06 (0.93)	-0.40 (0.68)
Δ GOV \times external factor (high)		-1.01 (0.76)	-1.32 (1.14)	0.18 (0.60)
<u>Moderator coefficient</u>				
- medium		0.51	-0.90	0.06
- high		-1.22	-0.97	-0.01
<u>Interaction: marginal effects if...</u>				
...moderator low		-0.01	-0.24	-0.64
...moderator medium		-1.06*	-0.30	-1.05**
...moderator high		-1.02**	-1.56*	-0.46
Polity fixed effects	✓	✓	✓	✓
Period fixed effects	✓	✓	✓	✓
Controls	✓	✓	✓	✓
Hainmueller et al. Wald test (p -value)	-	0.74	0.00	0.34
Observations	873	873	873	873
Adjusted R^2	0.21	0.21	0.21	0.20

Note: Sample: African polities, 1900—2015 (5 year averages). See Appendix 4 for summary statistics. The same controls and main covariates as in column (6) in Table 1 are included, but not shown. Change in government refers to the number of changes in the party or regime holding power in the previous five years. Standard errors are clustered at the polity level and are shown in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

of access to external finance, government turnover leads to lower fiscal capacity. In the presence of medium or high levels of aid, credit, or exports, an additional regime change reduces the growth of domestic tax collection by 1.0 to 1.5 wage days per period – a sizable magnitude. On the other hand, high government turnover does not play a notable role in diminishing fiscal capacity if rulers cannot rely on external financing. In other words, the external environment accentuates the effect of domestic instability. Rulers faced with a high possibility of dismissal and easy access to external revenues will not invest domestically.

This finding ties in with a literature that emphasizes the nexus between political instability and a lack of “developmental” rule in African polities (Goldsmith 2004). These contributions corroborate that when chief executives on the continent face a shorter time horizon, they are less willing to invest in projects with a long-term benefit, and have greater incentive to engage in short-term “corrupt” practices. Our results suggest that this dynamic is particularly prevalent when external sources of finance are plentiful. For example, we register 10 changes in government in Burundi in the postcolonial period, making it once of the most unstable polities in Africa. Our fiscal data also identifies it as one of the slowest-growing countries. At the same time, Burundi has become notorious not only for its heavy reliance on foreign aid but also for the way some of its governments have embezzled external funds (Nduwimana 2006; International Crisis Group 2012). Consistent with our hypotheses, the availability of external funding seems to have led precarious governments to avoid building domestic capacity.

Importantly, the theoretical argument regarding the effect of government turnovers on fiscal capacity pertains to a *group* in power rather than an *individual*. In the context of the extraction of external rents such as aid and credit, it should not matter if the leader changes, as long as the group maintains power. We explore this conjecture in Appendix 5.5, where we re-estimate the regressions in Table 2 but replace the group turnover variable with one for individuals holding executive power. This includes changes in colonial governors and changes in the president for sovereign polities, even if both presidents are from the same party. The results are markedly different: turnover defined in this way is never a statistically significant predictor of fiscal capacity. This confirms our theoretical expectation: the possibility of revenues being redistributed to members of another group, rather than leadership change per se that decreases the incentive to invest in fiscal capacity.

Cohesive institutions The benchmark results in Table 1 suggest a positive, albeit weak, direct association between democratic institutions and tax collection. Here, we explore the role of historical trajectories in affecting this relationship; that is, Africa’s place in the state system as shaped by the colonial powers. We then analyze the interaction between democracy and external finance according to H5.

An influential literature explains how colonizers shaped local institutions through implementing metropolitan legal frameworks (Ali et al. 2010), facilitating the immigration of European settlers (Acemoglu et al. 2001), and sharpening ethnic fractionalization (Ndegwa 1997). Have these colonial legacies shaped the extent to which democracies engage in state-building? Following this literature, we interact the democracy score with a British colony dummy, and with the share of European settlers (columns (1) and (2) of Table 3). We find that polities that are more democratic and have a history as a British colony tax more. Similarly, democracies that have received large inflows of European settlers invest more in fiscal capacity. These two characteristics – European settlement and British occupation – are indeed emblematic of the classic settler colonies in Africa: South Africa, Zimbabwe, and to a lesser extent Kenya and Botswana. Our descriptive data shows these to be polities with relatively high growth rates in fiscal capacity. At first glance, this seems to confirm an established literature that argues that European settlers created democratic institutions in the colonial period which then persisted into the postcolonial era (Acemoglu et al. 2001; Hariri 2012).

This first glance, however, is misleading. Acemoglu et al. (2001) emphasize how settlement determined the extent to which the executive was checked by constraints. Our results suggest that settlement had an effect on fiscal institutions *in conjunction with* constraints on the executive (which are measured by the ‘liberal democracy’ index). In other words, there is something specific about the “democratic” institutions of settler colonies that allowed them to tax more. The historical record suggests that the answer lies in ethnic discrimination: the law in settler colonies sharply distinguished between natives and non-natives (Mamdani 2001). Voting rights were no exception and were granted only to the settler minority. Our index of executive constraints does not capture this limited extent of the franchise. Fiscal systems mirrored this segregationist politics and this is why settler states were able to tax more: governments introduced separate taxes and separate public goods for the settler minority. As Mkandawire (2010b, p. 1654) stresses, the fact that democratic voice and public goods

Table 3: Cohesive institutions and fiscal capacity

	Dependent variable: Change in real tax collection per capita, excluding trade & resource taxes					
	(1)	(2)	(3)	(4)	(5)	(6)
	Colonizer	Settler	Ethnic frac.	Interaction with external finance		
			Aid	Credit	Resources	
Liberal democracy score (LD)	-0.02 (0.05)	-0.01 (0.05)	0.30*** (0.08)	0.14* (0.08)	-0.06 (0.09)	-0.02 (0.05)
LD × (former) British colony	0.17* (0.10)					
LD × settler share (med.)		0.16 (0.15)				
LD × settler share (high)		0.17*** (0.04)				
LD × ethnic fractionalization (med.)			-0.26** (0.11)			
LD × ethnic fractionalization (high)			-0.35*** (0.11)			
LD × external factor (med)				-0.03 (0.07)	-0.04 (0.05)	0.05 (0.04)
LD × external factor (high)				-0.12** (0.05)	0.21 (0.19)	0.23** (0.11)
Moderator coefficient						
- medium	—	absorbed	absorbed	0.48	-0.17	-0.82
- high	absorbed	absorbed	absorbed	-0.33	-2.82	-3.21**
Interaction: marginal effects if...						
...moderator low	-0.02	-0.01	0.30***	0.14*	-0.06	-0.02
...moderator medium	—	0.15	0.03	0.11	-0.10	0.02
...moderator high	0.15**	0.16***	-0.06	0.02	0.15	0.21**
Polity fixed effects	✓	✓	✓	✓	✓	✓
Period fixed effects	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Hainmueller et al. Wald test (<i>p</i> -value)		0.36	0.03	0.01	0.00	0.89
Observations	873	873	873	873	873	873
Adjusted <i>R</i> ²	0.22	0.22	0.24	0.21	0.22	0.22

Note: Sample: African polities, 1900–2015 (5 year averages). See Appendix 4 for summary statistics. The same controls and main covariates as in column (6) in Table 1 are included, but not shown. The liberal democracy score is rescaled as a percentage. Standard errors are clustered at the polity level and are shown in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

were not extended to the African majority lay at the root of the ability of states such as segregationist South Africa and Rhodesia to tax their white minority populations heavily: “Whites paid income taxes while natives were confined to ‘poll taxes’ or to service user charges. In such an order it was important to ensure that none of the tax collected from whites ‘leaked’ to other sections of the population. The segregation of local authorities in these economies ensured that there was no transfer of revenue among the various racial groups.” More “democratic” former settler colonies left behind strong fiscal states, but these were built on discrimination.

The importance of ethnicity extends into the present, even after discriminatory fiscal systems have been dismantled. Experiments and case studies suggest that ethnic fractionalization can restrict tax contributions if the willingness to share revenue with other ethnic groups is limited (Miguel 2003). A natural conjecture from this literature is that the success of democracy in increasing fiscal capacity is conditional on low levels of ethnic fractionalization. Column (3) tests this conditionality by interacting the V-Dem democracy score with a binned index of ethnic fractionalization. We see that even at medium levels of ethnic fractionalization, democratic polities tax less than those with low fractional-

ization. The effect becomes stronger with high degrees of ethnic divisions. This provides evidence that in ethnically divided societies, democratization may not generate fiscal capacity, because taxpayers may worry about revenues being redistributed to other ethnic groups. However, as the marginal effects in the lower panel of table show, in ethnically homogenous polities, democracy is associated with higher investment in fiscal capacity.²³

To summarize, colonialism shaped the institutional and ethnic politics of African states. This conditions how “canonical” factors such as democracy can grow fiscal capacity. We find that other external factors, namely aid and resource exports, exercise a similar conditioning role. In column (4) we interact access to international aid with our democracy index. We find that democracies with high access to aid tax less than those faced with limited access. The marginal effects in the lower panel suggest that democracies are more likely to invest in fiscal capacity as long as access to external aid is restricted. Among others, [Mkandawire \(2010a\)](#) argues that aid can indeed change the inner workings of African democracies. For example, commitments to foreign donors may decrease democratic governments’ accountability to local populations. In effect, aid-dependent democracies become more autocratic in their practical operations (though not necessarily on a constitutional level). This limits the otherwise positive impact of democracy for fiscal capacity. This effect seems to dominate despite the greater propensity by Western donors since the end of the Cold War to push for democratic reforms as a precondition for aid ([Dunning 2004](#)).

In column (6), we show that resource exports similarly moderate the effect of democratic institutions. As the coefficient on the interaction demonstrates, polities that are more democratic and export valuable resources invest *more* in fiscal capacity. Once we account for the interaction effect, the coefficient on the moderator (high resource exports) in the lower panel becomes negative and statistically significant. Whereas the unconditional direct effect of resource exports in the benchmark regression was close to 0, we now see that resource exports can dilute fiscal capacity depending on the cohesiveness of domestic institutions. This is in line with the results of our historical overview, where we noted that some commodity exporters did experience high growth in fiscal capacity.²⁴ This suggests that, during boom periods, democratic governments can use resource revenues to invest in fiscal capacity ([Deaton 1999](#)). It also ties in with a literature that emphasizes that commodity resource exporters can experience rapid economic growth, as long as they have strong domestic institutions ([Mehlum et al. 2006](#); [Moore et al. 2018](#)).

Conflict Our theoretical framework postulates that common interest shocks, in particular interstate wars, can increase fiscal capacity. Yet our historical analysis cautions against treating all inter-state wars the same way. It suggests that interstate wars coincided with periods of fiscal capacity growth

²³Of course, it may be that democracy is endogenous to changes in fiscal capacity. [Prichard \(2015\)](#) analyzes how increased political participation leads to a reformulation of tax policy in four African polities. However, we mitigate this concern by using a measure of democracy that focuses on executive constraints, rather than political participation.

²⁴The argument holds for tax levels as well: The top quartile of countries by level of fiscal capacity for the period 2010–15 includes (in that order) Botswana (diamonds), South Africa (diamonds, gold), Namibia (diamonds), Gabon (oil), Ghana (cocoa, gold, oil). At the same time, many autocratic resource-dependent polities such as Nigeria and Libya rank low.

during the colonial period, but that the continuance of this relationship is uncertain for sovereign polities. In Table 4, we therefore analyze interstate wars separately in the colonial and postcolonial period.

Table 4: **International wars and fiscal capacity**

	Dependent variable: Change in real tax collection per capita, excluding trade & resource taxes							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Direct effects		Interaction with external finance					
	Colonial	Independent	Colonial polities			Independent polities		
		Aid	Credit	Resources	Aid	Credit	Resources	
War _{t0}	1.82** (0.84)	-1.15 (1.29)						
War _{t-1}			1.50 (3.50)	2.09 (3.30)	7.90*** (0.42)	2.42 (1.49)	3.09** (1.48)	2.84 (2.50)
War _{t-1} × external factor (med.)			-0.27 (3.82)	1.07 (3.21)	-7.28*** (0.45)	-3.60 (2.39)	-4.42** (1.89)	0.61 (3.37)
War _{t-1} × external factor (high)			0.69 (2.18)	-6.81** (3.18)	-7.27*** (2.41)	-0.32 (3.16)	0.56 (4.45)	-6.42** (2.59)
Moderator coefficient								
- medium	—	—	-0.27	0.26	-0.14	3.10	-4.90	0.46
- high	—	—	-1.53**	1.31**	0.01	1.46	-	0.50
Interaction: marginal effects if...								
...moderator low	—	—	1.50	2.09	7.90***	2.42	3.09**	2.84
...moderator medium	—	—	1.23	3.16	0.62*	-1.19	-1.33	3.45
...moderator high	—	—	2.19	-4.72***	0.63	2.10	3.65	-3.57**
Polity fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Period fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Hainmueller et al. Wald test (<i>p</i> -value)	-	-	0.00	0.00	0.00	0.02	0.00	0.04
Observations	384	489	384	384	384	489	489	489
Adjusted <i>R</i> ²	.10	.24	0.07	0.11	0.10	0.23	0.24	0.23

Note: Sample: African polities, 1900–2015 (5 year averages). See Appendix 4 for summary statistics. The same controls and main covariates as in column (6) in Table 1 are included, but not shown. Standard errors are clustered at the polity level and are shown in parentheses; * *p* < 0.1, ** *p* < 0.05, *** *p* < 0.01.

A comparison of columns (1) and (2) shows a marked difference in the contemporaneous effect of interstate wars in both periods. While the coefficients for colonial interstate wars are positive and significant, the reverse is true for sovereign African polities. This offers some support for the bellicose hypothesis. The differential effect of wars in both periods is already conditional on access to external finance, and thus variation in external finance alone cannot explain the difference between these periods. One factor may be the larger scale of the conflicts in colonial time (including during the world wars), which is not captured by our measure of conflict incidence. By contrast, African interstate wars since independence were relatively rare and were not as global in their extent. Moreover, the degree of control colonial governments exercised by the start of World War I made it comparatively easy for them to shift the burden of wartime taxation to African populations. Sovereign governments may have been less willing to do this. Instead, they turned to alternative revenue sources that we may not be able to capture perfectly. Postcolonial governments, for example, have been able to turn to privatization receipts.²⁵

Another explanation of the differential power of the bellicose hypothesis is that external factors moderate the “canonical” effect of wars. The degree to which external revenue sources could be mar-

²⁵For example, Prichard (2015, 172-174) recounts how the Ethiopian government had few incentives to increase tax rates during the Ethiopian-Eritrean war of 1998–2000, one of the few large postcolonial international confrontations in Africa. In addition to the fact that aid and credit market access resumed quickly, the government was able to use one-off receipts from privatization to fund the war.

shalled specifically to finance the needs of war may have differed across the two periods. Examining the interactions between war and finance in columns (3) through (8), we find that access to aid to finance wars did not disproportionately affect fiscal capacity in either period. On the other hand, access to credit for war finance did matter profoundly for African polities. The magnitude of the effects is large: medium or high levels of access to international credit reduces domestic tax extraction by approximately 4.4 to 6.8 wage days. The importance of credit during wartime echoes the mechanism [Queralt \(2019\)](#) explores for Latin America: faced with an unexpected war shock, governments turned to international credit for help. If credit markets were contracting, however, only domestic resources could be mobilized. In the African setting, low levels of credit market access during war are similarly associated with higher investments in fiscal capacity. Conversely, governments substituted foreign funds for domestic funds during emergencies if this avenue was open to them. In the colonial period, this depended crucially on the degree of leeway imperial policies of credit rationing gave colonies ([Accominotti et al. 2010](#)). After independence, the configuration of global interest rates is what matters most. If credit rationing was particularly tight during colonial wars, as indicated by our historical analysis, interstate wars may have led to African states to invest in domestic capacity.

A similar mechanism seems to have operated for resource exports (columns 5 and 8). Polities that exported commodities in high demand during wartime may have financed their additional expenses easily, while those facing a commodity glut needed to build domestic capacity. There are, nonetheless, subtle differences in the effects of resources during wars in the colonial and postcolonial periods. The effects of resources in the colonial period are more pronounced and statistically very strong. Low commodity prices during wartime triggered a large increase in domestic tax revenues, whereas polities facing high prices did not register a marginal effect on tax revenues. This reflects the extraordinary price swings during the world wars, when global shocks related to the war led to a sharp price divergence between booming military commodities (metals and minerals) and sluggish agricultural products ([Havinden and Meredith 1996](#)). For sovereign polities, our results show that booming resource exports during wartime lead to a decline in fiscal capacity, while sluggish exports did not engender a buildup of capacity. As such, there was no configuration of resource prices under which a war shock would lead to an investment in domestic tax institutions for sovereign African states.

Table 5 shifts the focus towards civil wars in both the colonial and postcolonial periods. As in the benchmark regressions, we do not find that civil wars significantly erode the capacity to tax. This holds for both periods under consideration.

One explanation may be that higher tax revenues encourage civil uprisings. For modern civil conflicts, this is known as the “greed hypothesis”, which posits that plentiful state revenues constitute a more desirable prize to capture ([Collier et al. 2009](#)). The high tax revenues that cause civil conflict could then counteract the negative effects of destruction on tax revenues, leading to our null result. In the colonial era, grievances were a factor in rebellions, as many uprisings during this period were a form of protest against high tax rates, a circumstance easily inferred from the names bestowed upon these conflicts (such as the 1898 Hut Tax War in Sierra Leone). Colonial rebellions may therefore also have been endogenous to tax revenues. However, these conflicts often led imperial officials to push for

a decrease in tax rates in order to stave off further unrest (Ochiai 2017). If the endogeneity of tax rates to conflict were driving our results, we would then expect the contemporaneous correlation between the change in tax revenues and civil wars in column (1) to be strongly negative, but this is not the case.

Table 5: Civil wars and fiscal capacity

	Dependent variable: Change in real tax collection per capita, excluding trade & resource taxes							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Direct effects		Interaction with external finance					
	Colonial	Independent	Colonial polities			Independent polities		
		Aid	Credit	Resources	Aid	Credit	Resources	
War _{t₀}	0.50 (0.34)	-0.13 (1.27)						
War _{t-1}			0.07 (1.24)	-0.14 (0.64)	-0.19 (0.70)	-0.52 (1.95)	1.51 (1.39)	0.25 (2.39)
War _{t-1} × external factor (med.)			0.66 (1.13)	-1.63 (1.36)	- (1.77)	0.12 (1.77)	-1.10 (1.17)	-1.41 (2.56)
War _{t-1} × external factor (high)			-1.31 (1.42)	1.96 (1.23)	-1.11 (1.43)	1.47 (2.14)	-2.77 (2.07)	1.09 (3.14)
Moderator coefficient								
- medium	—	—	-0.17	0.50	-0.29	2.62	-4.88	0.52
- high	—	—	-1.34**	1.15*	-0.13	0.82	0.00	-0.10
Interaction: marginal effects if...								
...moderator low	—	—	0.07	-0.14	-0.19	-0.52	1.51	0.25
...moderator medium	—	—	0.73	-1.77	-	-0.40	0.42	-1.16
...moderator high	—	—	-1.24	1.82*	-1.30	0.94	-1.26	1.34
Polity fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Period fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Hainmueller et al. Wald test (<i>p</i> -value)	-	-	0.04	0.17	0.13	0.62	0.00	0.75
Observations	384	489	384	384	384	489	489	489
Adjusted <i>R</i> ²	0.09	0.24	0.07	0.09	0.09	0.23	0.24	0.23

Note: Sample: African polities, 1900–2015 (5 year averages). See Appendix 4 for summary statistics. The same controls and main covariates as in column (6) in Table 1 are included, but not shown. Standard errors are clustered at the polity level and are shown in parentheses; * *p* < 0.1, ** *p* < 0.05, *** *p* < 0.01.

If endogeneity is not decisive, it may be that the negative effect of destruction and loss of control emphasized in the literature (Besley and Persson 2008; Ch et al. 2018) is counteracted by another positive factor: the need to raise revenues to fund the fighting. An element of the bellicose theory of state building would then operate even in the context of civil wars. In any case, our results do not support the narrative that civil conflicts were decisive in eroding the capacity of African polities to tax. We similarly do not find robust evidence that the occurrence of civil conflict interacts with access to aid, credit, or resource exports.²⁶ Overall, civil conflict does not seem to lead governments to turn to external finance at the expense of building domestic capacity.

6 Conclusion

Employing comprehensive long-run panel data, our empirical analysis shows that the African experience adds important nuances to established theoretical and empirical analyses of fiscal capacity. The fact that fiscal capacity building is a process implies that one has to put its observed modern levels into historical perspective. We have argued that, on the revenue side, the trajectory of fiscal capacity building in many African polities is one of growth, rather than failure. Historically, governments in

²⁶We find a negative effect of resource exports in times of civil conflict once we restrict ourselves to linear interactions. Indeed, resources played a major role in some conflicts in Sub-Saharan Africa in the 1980s and 1990s.

Africa have realized large gains in their capacity to tax when the circumstances were favorable. To the extent that fiscal capacity is a proxy for state building more generally, this may cast a new light on the capabilities of the state in Africa.

Notwithstanding this general picture, substantial variations over time and across countries are manifest in our data. We have argued that the degree of embeddedness of African polities in the international environment explains this heterogeneity. The relatively easy availability of foreign aid and international credit has led some governments to turn to external over domestic revenues, in a process some have termed the ‘extraversion’ of the African state. Such external dependence has historically had less bearing in a European context. Yet the process of ‘extraversion’ is not linear, and its effects are not always direct. Rather, we show that the availability of external revenues shapes the way traditional state-building factors, such as democratization, rulers’ time horizons, and armed conflicts, operate. For example, conflicts during the colonial period could lead to higher state capacity, in line with the bellicose theory, but only if resource exports were lagging, or if international credit was not abundantly available. On the other hand, booming resource exports may benefit polities that are already relatively democratic. Government instability, in turn, can decrease investment in fiscal capacity, but it does so foremost in polities with easy access to external aid. Finally, the international system can matter directly because macro-trends such as decolonization shaped rulers’ time horizons, and therefore their propensity to invest domestically.

In their survey of Africa’s international relations, [Cornelissen et al. \(2012, p. 8\)](#) warn that “broad-brush categorizations of the African state as fragile, weak or disconnected from a wider geo-economic order misrepresent an important evolving reality on the continent”. Our results support this assertion by showing that the domestic politics of modern African states are an integral part of and partially dependent on a dynamic global order. We also caution against uncritically equating the use of external revenues with state “weakness” or “failure”. Tapping into external finance does not always lead to lower capacity. Exports of natural resources are a case in point here. In these cases, globalization may increase the funding available to states even as it embeds them in interdependent global networks.

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