Taxation in Africa from Colonial Times to Present Evidence from former French colonies 1900-2018

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Abstract

This paper sheds light on the fiscal trajectories of 18 former French colonies in Africa from colonial times to the present. Building upon own previous work about colonial public finance (Cogneau *et al.*, 2021), we compile a novel dataset by combining previously available data with recently digitized data from historical archives, to produce continuous and comparable public revenue data series from 1900 to 2018. This allows us to study the evolution of the level and composition of fiscal revenues in the post-colonial decades, with a special focus on the critical juncture of independence. We find that very few countries achieved significant progress in fiscal capacity between the end of the colonial period and today, if we set aside income drawn from mineral resources. This is not explained by a lasting collapse of fiscal capacity at the time of independence. From 1960 to today, the reliance on mineral resource revenues increased on average and dependence on international commodity prices persisted, with few exceptions. The relative contribution of trade taxes declined after the structural adjustments, and lost trade revenues were not compensated by a sufficient increase in domestic taxes. However, for the most recent period, we do note an improvement in the capacity to collect taxes on the domestic economy.

1 Introduction

The ability of a government to raise taxes and the strategies deployed to do so are a core feature of state capacity. For this reason, the history of taxation is narrowly intertwined with that of state-building (Moore, 1966; North, 1990; Tilly, 1990). The dismantlement of the French empire in Africa that occurred between 1956 and 1962 through decolonization is a major overhaul of the state's identity and practices. Over a few months' time the legitimacy to raise tax revenue shifts from metropolitan France to newly formed independent governments. Little is known about how this in-depth political transition affected the level and composition of fiscal revenue, notably because of the scarcity of information on the public finances of African countries between independence and the 1980s. In this paper, we reconstruct the fiscal trajectories of eighteen former French colonies in Africa spanning years 1900-2018, linking colonial and post-colonial decades with an unprecedented level of detail on the composition of tax revenue.

Importantly, the building of a strong fiscal capacity is today recognized as a crucial piece of successful development policies (Besley & Persson, 2011), and in this respect, many African countries still have a long way to go.[1] Contemporary data suggests that Sub-Saharan African countries only collect half of potential revenues (Caldeira *et al.*, 2019).[2] In contrast, most colonial states in French or British Africa exhibited a larger fiscal capacity than many independent countries with similar levels of development at the time (Cogneau *et al.*, 2021). A historical perspective can help better understand this developmental failure, especially in light of a growing body of research highlighting the long standing historical legacies that contribute in explaining contemporary state-building and development (Xu, 2019).

Beyond the *level* of revenue, its *composition* is also strongly related to the state-building process. Indeed, the structure of revenue directly defines what the state is dependent on in order to be able to function. Sources of revenue define the types of interactions that occur between the administration and economic agents, and strongly impact citizen-state relationships. Direct forms of taxation have been found to increase demand for accountability (Prichard, 2015; Weigel, 2020), while on the other end of the spectrum, an extensive literature shows that easy-to-collect rents from mineral resources worsens governance outcomes and are less likely to translate into social expenditure (Ross, 2012; Gadenne, 2017; Martinez, 2019). In spite of the importance of these mechanisms to better describe the state-building process of post-independence African countries, data limitations have to date made it extremely challenging to reconstruct the composition of public revenue in the

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[1]It is important to put this tenet into perspective. The work of the first development economists after World War II saw the state as a central provider of services and support to the private sector, and considered that taxation was only one tool among others (borrowing, aid, money creation) for financing public expenditure. However, in light of the macroeconomic difficulties in many developing countries that followed the oil crises of the late 1970s, borrowing and money creation were no longer seen as sustainable sources of expenditure financing and the IMF and the World Bank called for fiscal discipline as a condition for debt restructuring. Nowadays, reinforcing taxation continues to be highly prioritized in the international development agenda, although the Sustainable Development Goals have shifted budgetary policies towards issues of poverty reduction and equity.

[2]Potential revenues are evaluated based on countries' characteristics such as income level, trade openness, size of the agricultural sector, resource rents and financial development, in line with the tax effort literature (Sen Gupta, 2007).

decades following independence. The revenue composition of the countries in our sample display two broad characterizing features: a strong reliance on trade taxes, inherited from the late colonial period, and a reliance on mineral resource revenue that expanded after independence. Reforms of the 1990s have sought to mitigate this reliance, by focusing efforts on domestic and less irregular sources. Studying historical patterns can help assess the extent to which these ambitions to transform the structure of revenue proved successful.

At the core of this paper is the creation of a revenue dataset for former French colonies in North and Sub-Saharan Africa over years 1900-2018. More precisely, we create a continuous series, allowing to zoom in on the crucial period of independence. Additionally, our series includes six revenue variables –total revenue, tax revenue, trade versus domestic taxes, direct versus indirect taxes, non-tax revenue, and mineral resource revenue – which enables us to analyze the changes in the structure of revenue. We draw from a newly published database on colonial public finance in the French empire (Cogneau *et al.*, 2021) and extend it the post-colonial period.[3] We also compile extensive qualitative evidence on fiscal policies in the years following independence, extracted from IMF reports, to better document the observed trends. Finally, we estimate country-level panel regressions over years 1962-2018 to establish the relationship between tax pressure and "external" factors: (i) the sensitivity to international commodity prices; (ii) the relation between domestic and trade taxes; (iii) how each of these changes after 1990 when the structural adjustments kick in – providing a novel depiction of long term evolutions since independence in the composition of fiscal revenue for African countries.

We find that very few countries achieved significant progress in fiscal capacity between the end of the colonial period and today, if we set aside income drawn from mineral resources: the average revenue to GDP ratio in former French colonies in Africa is just below 14 percent[4] for years 2006-2016 – strikingly at the same level as in the years before the start of the decolonization process (1949-1955).

Perhaps the most important of our findings is that decolonization entails only a temporary dip in fiscal pressure, on average, the level of revenue of the 1950s was recovered between 1965 and 1970. This happened in spite of the dismantlement of the colonial federations,[5] the departure of French administrators, and the flight of French capital. We assess the robustness of this result by establishing it both at the level of the federations, and at the level of each colony. Contributing to this stability is the fact that the regressive head tax (*capitation*), a quintessentially colonial tax instrument, was maintained in the majority of countries until the 1970s, though its name changed, and sometimes its collection modalities. Indeed, the more modern and progressive tax systems that were gradually put in place could not yield sufficient revenue immediately.

Third, we show that socialist regimes established in the aftermath of independence (Algeria,

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[3]Ongoing work by Albers *et al.* (2020) and Bachas *et al.* (2020) aims at providing long term taxation series including former colonies albeit for a slightly different set of countries, and with different focuses and purposes.

[4]This figure corresponds to the average revenue to GDP ratio, excluding mineral resource revenues. The average revenue to total GDP is equal to 20%.

[5]Under colonial rule, eight countries from our sample were reunited into the federation of French West Africa, and four formed the federation of French Equatorial Africa.

Benin, Congo, Guinea, Madagascar), which might have been expected to have a higher tax burden given their higher ambitions (at least stated) for public spending and interventionism, did not achieve a higher fiscal pressure than their counterparts.

Lastly, our findings about the *composition* of revenues are threefold. First, the contribution of trade taxes to total revenue was over 30 percent on average in the late colonial period and remained at such high levels until the late 1980s, after which they were halved (17.5 percent in 1986-2018). Second, we find a strong correlation between international commodity prices and total revenue throughout all post-colonial decades – a doubling of prices increases the revenue ratio by more than 4 percentage points – driven mostly by mineral resource revenue. There is no significant difference after the structural adjustment period. Finally, although the structural adjustment reforms aimed at maintaining or increasing total tax pressure by reinforcing domestic taxation to compensate for reduced trade taxes, we find that this did not occur in our sample: foregone tax revenue was not fully compensated. Taken together, these results show that the dependency of African tax systems to 'external' factors (trade and mineral resources) has been constant since the late colonial period, and that recent reforms have not succeeded in profoundly reversing this sensitivity. We still do find a positive trend in the domestic tax ratio for the very end of the period: its average was 11 percent over 2000-2018, which is higher than in any other decade since independence.

The different segments of analysis are mainly descriptive, since the primary objective is to take stock of what this unique dataset reveals on long term trends in taxation. However, the creation of the dataset paves the way for future work to explore heterogeneity in revenue trajectories, determinants of observed trends, and relations between taxation trends and political or governance dimensions.

When taking stock of quantitative work on taxation in Africa, existing studies seem to be divided into four strands. The first one analyzes fiscal capacity under colonial rule (Austin, 2010; Frankema & van Waijenburg, 2014; Gardner, 2012; Cogneau *et al.*, 2021). A second strand sheds light on the turning point of independence and interrogates the continuities in state structures and the relevance of colonial heritage (Dumont, 1966; Amin, 1970, 1971; Cooper, 2002). A third one focuses on fiscal reforms during the structural adjustment programs and analyzes their efficiency in increasing domestic taxation (Shalizi & Squire, 1988; Chambas, 1994; Stotsky & WoldeMariam, 1997). Finally a (larger) set of studies focuses on contemporaneous fiscal capacity, and, in a way, takes stock of the tax reforms undertaken at the turn of the 1990s, such as the introduction of VAT (Chambas, 2005; Keen & Mansour, 2009; Auriol & Warlters, 2012; Mansour, 2014; Ahlerup *et al.*, 2015; Moore *et al.*, 2018; Jacquemot & Raffinot, 2018; Caldeira *et al.*, 2019). With this paper, we link these different strands of research, through a systematic and data driven exploration of experiences of public revenue consolidation over the very long run. Our work speaks to the recent (more qualitative) investigation on the history of taxation in Africa of Moore *et al.* (2018).[6] Our result on

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[6]The authors distinguish three periods in the post-colonial decades, that our quantitative results allow to support and quantify. They label the 1960-1980 era as the *extractive era*, when "a mixture of nationalist, socialist and developmentalist ideas pointed towards large public sector investments" while at the same time "the scope for raising tax revenue was limited". Second, they characterize the period spanning from the mid-1980s to the mid-1990s as the *aid era*: as extraction

the structural adjustments period corroborates the findings in Cagé & Gadenne (2018), and our investigation of the role of mineral resource rents speaks to a plentiful literature on oil states and the resource curse (Ross, 2012; Crivelli & Gupta, 2014; Mosley, 2017; Prichard *et al.*, 2018).

We start by describing our data collection and the contents of our novel database in Section 2. We then provide a comparative overview of total revenue between the years just before independence and the most recent period in Section 3. In Section 4, we study in more detail the transition occurring at independence. In Section 5 we assess the dependence of public revenue on external factors (exports and mineral resources) and whether it amplified between independence and today. Finally, Section 6 provides evidence on the taxation trends since structural adjustments and recent reforms. Section 7 concludes.

2   Data

The major contribution of this study is to produce continuous and comparable public revenue series from 1900 to 2018 for former French colonies in Africa, filling in the data gap between 1960 and 1980. Our sample includes North African countries (Algeria, Morocco, Tunisia), countries of the former federation of French West Africa (Benin, Burkina Faso, Guinea, Côte d'Ivoire, Mali, Mauritania, Niger, Senegal), countries of the former federation of French Equatorial Africa (Central African Republic, Congo, Gabon, Chad), and Togo, Cameroon, Madagascar. Figure A.1 shows the countries of our sample on a map of the African continent. Former French colonies in Africa that are *not* in our dataset are Djibouti and the Comoros islands.

For the colonial period, data originates from previous work by Cogneau *et al.* (2021). For the 1960 to 1980 period, we digitize and combine data from several sources, the main one being different IMF reports (Article IV reports, Statistical appendix, development economic reports) recently available on the IMF Archive website, complemented with data from Zone Franc reports, BCEAO[7] reports, GFS, and country specific sources. For the post-1980 period, we mostly rely on the ICTD-GRD dataset, with some corrections and complements using other sources. The database contains all public revenues, that is not only the revenues collected by the central government, but also the revenues of auxiliary and regional budgets, when they exist.[8] We pay particular attention to the consistency of the definitions of each tax category. For example, we try as far as possible to compile exhaustive revenues from mining and oil resources for the whole period under study. We complement public revenue series with GDP and trade flows. In the colonial period, data comes from Cogneau *et al.* (2021). In the post-colonial period, GDP, trade, and natural resource rent data come from the World Development Indicators. The methodological choices for the creation of the

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became more difficult, and aid – often coming with structural adjustment programs – became more available, African governments received more through aid than from their taxpayers. Finally, the upward trend we find in domestic taxes since 2000 corroborates what the authors label as the *tax era*, noting that taxes now correspond to the dominant source of public revenue on average on the continent.

[7]*Banque centrale des Etats d'Afrique de l'Ouest.*, Central Bank of West African States

[8]During the colonial periods, some colonies were organized in federations (French West Africa and French Equatorial Africa). In that case, our database comprises federal revenues as well as colonial revenues.

dataset are documented in detail in Appendix A.1, and the final dataset will be made publicly available.[9]

Our analysis relies on six main revenue variables of interest for which we are able to create consistent series throughout the period: total revenue, tax revenue, trade versus domestic taxes, direct versus indirect taxes, non-tax revenue, and mineral resource revenue – both in nominal terms and as a share of GDP, the latter being the preferred indicator throughout this paper.

Under colonial rule, eight colonies of West Africa were grouped into the federation of French West Africa [10] and four colonies of Equatorial Africa were grouped into the federation of French Equatorial Africa.[11] Taxes were levied both at the level of the federation, and at the colony level, and historical archives do not allow us to assign with certainty federal revenues to each colony. For this reason, we conduct our full time period analysis (spanning 1900-2018) on a sample of eight entities, at the federation level for the twelve French West Africa and French Equatorial countries, and at country level for the six countries outside the federations. In this case, the tax ratios for the federations are computed as the total sum of revenues over total nominal GDP, for both colonial and post-colonial years.

Additionally, we create a 1949-2018 *country* level series including all eighteen contemporary countries of our sample. To do so, we allocate federal revenues to colonies using the following assumptions for the years 1949-1960.[12] Before independence, revenues raised in each colony within a federation consisted of trade taxes, fully collected at the federal level and that we observe in the historical data at federal level until 1959, domestic revenues collected at the local (colony) level that we observe directly at colony level in the historical data, and domestic revenues collected at the federal level – only a very small portion of total domestic revenue – also present in our data until 1959. Thus the aim of the exercise is to attribute to each colony its share of trade taxes and federally collected domestic revenue. We attribute federally collected domestic taxes to each colony in proportion to the colony's GDP. To allocate trade taxes and compute the 1959 trade tax to GDP ratio, we use the 1961 trade tax to GDP ratio as a benchmark.[13] We multiply the 1961 ratio by a factor that acccounts for the aggregate change in trade taxes of the federation between 1959 and 1961 – this allows to make use of all the information observed in the historical data. This results in estimating 1959 trade tax ratios that are equal to the same colony's 1961 trade tax ratio multiplied by a common factor across all colonies. We replicate the same computation to estimate the 1958 trade tax ratio, this time using the 1959 ratio as the benchmark. See Appendix A.1 for a more formal description of the methodology. This provides to our knowledge the first opportunity to study taxation trends throughout the years of decolonization at the country level for all former

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[9]We referenced the retained source for each country-year-variable in an online appendix available here: Online Data Source Appendix.

[10]Henceforth, (former) French West Africa. In French, *Afrique Occidentale Française* or A.O.F.

[11]Henceforth, (former) French Equatorial Africa. In French, *Afrique Equatoriale Française* or A.E.F.

[12]We do not create the series for years prior to 1949, because the absence of national account data for previous years prevents from conducting the GDP extrapolations we resort to in order to determine colony level GDP.

[13]We choose to use 1961 since 1960 being the year of independence, there is potential variations across countries in what months exactly the reported tax amounts cover.

French colonies in Africa.

We develop two robustness checks to ensure that our results – notably those regarding the crucial period of transition to independence – are not sensitive to the allocation methodology. First, we produce a similar series with an alternative allocation method, in which we use year 1962 as the benchmark year for the trade tax to GDP ratio. Second, as an informative complement, we plot the trends in colony level domestic tax revenues in years 1949 and following. Because the portion of domestic taxes that are collected at the federal level is minimal, this series is substantially less dependent on the allocation method. Finally, it is important to keep in mind that the independence years results at the federal level are not based on any of the aforementioned assumptions.

3   Government revenue from colonial times to present: an overview

Our novel dataset allows us to assess the evolution in revenues from the time of decolonization until today. Figures 1 and 2 show the evolution in the total government revenue to GDP ratio for North Africa and Sub-Saharan Africa respectively between 1900 and 2018.[14] In North Africa (Figure 1), the revenue to GDP ratio grew steadily throughout the 20th century and in the beginning of the 21st century it stood well above the levels reached in the end of the colonial period. In Sub-Saharan Africa, though the revenue to GDP ballooned around 1980, contemporary levels of fiscal pressure do not appear to be significantly higher than in the end of the colonial period, with the exception of former French Equatorial Africa.

In Table 1, we compare, for each country of our sample, the average total revenue to GDP ratio in the years before the decolonization process started (1949-1955, Column 1),[15] and in the most recent period (Column 2, 2006-2016).[16] In Column 3, we show revenue growth between the two periods, calculated as Column 2 minus Column 1. Countries are ordered by values of Column 3, so that countries at the very top, like Guinea, are the ones that saw their revenue to GDP ratio decline between the two dates.[17] We find that total revenue was 14 percent of GDP on average in the years just before independence, and is at 20 percent in the recent period, suggesting an average growth of 5.9 percentage points. Five countries experienced a decline or no growth (Guinea, Côte d'Ivoire, Central Africa, Mali, Madagascar), while the thirteen other countries experienced growth in total revenue spanning between 2 and 22 points of GDP.

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[14]Government revenue includes all tax and non-tax public revenue, excluding grants and loans, and social security contributions.

[15]The dates of independence of the countries in our sample are: 1956 (Morocco, Tunisia); 1958 (Guinea); 1960 (all colonies of French West Africa except Guinea, all colonies of French Equatorial Africa); 1962 (Algeria). We compute the average until 1955 because at that date none of the countries were independent, and furthermore, in countries of French West Africa and French Equatorial Africa, in 1956 the new *Deferre* legal framework introduced important differences in the governance of these territories, just before independence.

[16]We have data until 2018 for some countries but to minimize the number of missing observations we choose to stop in 2016 in this exercise.

[17]For countries that belonged to federations, country-level total revenue is estimated by assigning a share of federation-level revenues to a given country, separately for trade taxes and domestic taxes, as described in Section 2 and in Appendix A.2.

The picture is substantially different, however, if we consider total revenue *excluding* the mineral resource revenue that came to represent an important source of income for governments after independence. Within our sample, Algeria and Gabon since the late 1950s, Congo since the 1970s, Cameroon since 1977, and Chad since 2003 are oil producers.[18] Other countries have non-oil forms of mineral resources that also yield high resource revenues: bauxite in Guinea, iron and copper in Mauritania, uranium in Niger, diamonds in Central African Republic, gold in Burkina Faso, Mali and Madagascar, phosphates in Togo and Morocco. Mineral resource revenues are not generally seen as a good indicator of fiscal capacity, because they are rents accruing from an immovable tax base that yields revenue irrespective of the quality of fiscal policies or governance, and more importantly, because an abundant historical, political science, and economic literature has highlighted that the effects of resource revenues in terms of state-building and governance are hardly comparable to the ones of tax revenues, and even potentially extremely negative, as suggested by the concept of the resource-curse (Ross, 2012; Crivelli & Gupta, 2014; Mosley, 2017; Prichard *et al.*, 2018). Column 4 in Table 1 shows the ratio of mineral resource revenue to GDP in the recent period – it stands at 6.2 percent on average. In four countries, Chad, Gabon, Algeria and Congo, the resource revenue ratio is above 10 percent, and all four are in the top-five countries with the largest growth in total revenue since independence. As shown in the last row of Column 4, there is a high correlation (0.77) between the overall change in total revenue and the resource revenue ratio in the recent period.

Therefore, to assess progress in terms of fiscal capacity since independence, it is important to tease out the contribution of mineral resource revenues. In Column 5, we show the ratio of non-resource revenue to GDP, and in Column 6 the growth in non-resource revenue since decolonization, computed as Column 5 minus Column 1.[19] The results are bleaker when considering growth in non-resource revenue: the sample average is -0,2, suggesting that on average there was a very slight decrease in the revenue ratio, from 14.0 percent in 1949-1955 to 13.8 percent of GDP in 2006-2016. The growth in the non-resource revenue ratio is positive in only seven countries out of eighteen.

Thus, we find that there has not been any progress in the non-resource revenue ratio between decolonization and nowadays for former French colonies in Africa on average. This statement obviously hides some heterogeneities, across countries – non-resource grew by 15.3 percentage points in Morocco, around 4-5 percent in Niger, Burkina Faso, Togo – and also heterogeneities over time, that we explore in the following sections.

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[18]Côte d'Ivoire also, although to a lesser extent and only significantly since the 2000s.

[19]There were no mineral resource revenues in the countries of our sample before independence, except in Morocco from the extraction of phosphates, and in Algeria mainly from iron mines. We take them into consideration for the calculation here although they account for less than 1 percent of GDP, see Table 1 footnote.

4 Decolonization

A central result of our paper is the relative stability of revenues in the years following independence. In this section we provide the empirical foundations of this finding, and explore the fiscal instruments that made this continuity possible.

4.1 Independence: a slight and temporary dip in fiscal pressure

There are several reasons to expect a deterioration of fiscal capacity at the time of independence.

First, economic activity was reorganized, as many French settlers and expatriates left, as well as capital and foreign firms. In the settlement colonies of North Africa, European settlers represented an important source of tax revenues. For 1955, Amin (1966) estimates the European share of income at respectively 47, 43 and 37 percent, in respectively Algeria, Tunisia and Morocco. Even in colonies with small European populations, their share of income was significant: Cogneau *et al.* (2021) estimate it at 27 percent in Madagascar, and 12 percent in French West Africa.[20] Given these shares, the contribution of Europeans to the total revenue was major in North Africa, and quite important elsewhere. In Tunisia in 1955, Alvaredo *et al.* (2021) find that Europeans (French and Italians mainly) made up three quarters of the total number of taxpayers for the income tax. In Senegal, the 1964 IMF Article XIV report notes that the departure of the French military personnel will have a negative impact on income tax revenues.[21] In Guinea, the departure of foreign owners and managers strongly affected the banana sector in general, one of the most important economic sectors. Similarly, the manufacturing sector in Morocco and the wine sector in Algeria were affected by these departures.[22] Furthermore, the end of preferential access to the French market at prices above world market for certain cash crops lowered the volume and price of exports and the associated custom revenues, at a period where they represented a large share of total government revenues – this was the case for groundnuts in Senegal and Niger, bananas in Guinea.[23]

Second, a large share of the civil servants had to be replaced, resulting in an administration that was often under-staffed and/or under-qualified. Financial services was specifically a sector where more French employees were found. In North Africa, more than half of civil servants in financial services were French. The abrupt (Algeria) to rapid (Tunisia and Morocco) departure of French civil servants triggered the mass recruitment of autochthonous employees. In other colonies, French civil servants only represented 10 percent of public employment, yet were also more present in financial services and tax administration. They were also quickly replaced by a larger number of autochthons, for instance in Cameroon (Alvaredo *et al.*, 2021). However, lack of

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[20]These estimates include the Jewish autochthonous population in North Africa, and Asian minorities in Madagascar, see Cogneau *et al.* (2021), Appendix 4, for more details.

[21]IMF Senegal 1964 Article XIV Consultations, p.13.

[22]IMF Guinée Documentation de base pour les consultations 1965 au titre de l'Article XIV, p.9. IMF Morocco 1966 Article XIV Consultation, p.10 and p.15. IMF Algeria Rapport et recommandations des services du Fonds Consultation 1965 au titre de l'article XIV, p.2-3.

[23]IMF Senegal 1964 Article IV Consultations, p.2 and 12; IMF Niger 1966 Article XIV Consultation, p. 1-2, 4 and 6; IMF Guinée Documentation de base pour les consultations 1965 au titre de l'Article XIV, p. 5.

qualified personnel, and in some cases, lack of equipment, are mentioned as important obstacles to revenue mobilization in IMF reports for Burkina Faso, Chad, Cameroon, Niger, Mauritania. This problem was long-lasting as it is mentioned in IMF reports well into the 1960s and in the 1970s.[24] In Chad, the 1965 report mentions an "embryonic administrative infrastructure", in Mauritania, the report mentions a lack of funds to run the country and of qualified personnel to staff the administrations.[25]

Finally, for some countries decolonization was associated with profound political upheavals. Algeria became independent after an eight year war with France. In Guinea, decolonization was extremely sudden – in two months' time, French staff and equipment had left the country, and diplomatic hostilities began between the new socialist regime and the French government. In Cameroon, the French fought the independence party *Union des Populations du Cameroun* (UPC) for years before granting independence to a pro-French government that continued fighting the UPC, while in 1961, part of formerly British Cameroon was reunited with newly independent Cameroon to form a federal state with two distinct administrations and tax systems.[26]

Despite all of this, fiscal capacity did not collapse after independence. Though we observe a slight dip in government revenue, often starting in the years preceding independence, colonial levels of revenue to GDP ratio were reached again by the mid-1960s. The upper left panel of Figure 3 plots the revenue to GDP ratio for the three North African colonies around the year of independence: 1956 for Morocco and Tunisia, and 1962 for Algeria. In Algeria total revenue increased between 1960 and 1962, slightly decreased by 3 to 5 percentage points in the two years following independence, and was back to its 1961 level (26 percent) by 1966. In Morocco, there was no dip at the time of independence. We do observe a stagnation in total revenue, but it kicked in only two years after independence followed by a slight decline until 1964 (11 percent of GDP against 14 percent in 1960). After that date, total revenue increased again. Tunisia displayed a slight decrease in the revenue ratio, at 16 percent in 1963 down from 21.5 percent in 1956. But the recovery was swift since by 1969 the ratio exceeded 21 percent again.

The upper right panel of Figure 3 plots the same ratio for French West Africa, French Equatorial Africa, Togo, Cameroon, and Madagascar.[27] The overall pattern is the same for all regions: total revenue started declining before independence, from 1956 to 1960, but started increasing again in the years after independence, back to its 1956 levels by 1970 in all cases except in French West Africa. The reduction of taxes in the second half of the 1950s coincided with the dismantling of the federations, which disorganised tax collection. After independence, there were heterogeneous trajectories within French West Africa as shown in the bottom left panel of Figure 3 for three illus-

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[24]IMF 1980 Upper Volta Recent Economic Developments, p.39. IMF 1965 The Economy of Chad, p.5. IMF 1976 Cameroon Recent Economic Developments, p.47. IMF Niger 1966 Article XIV Consultation, p.6 and p.9.

[25]IMF 1965 The Economy of Chad, p.5. IMF 1970 Mauritania Recent Economic Developments, p.33.

[26]Cameroon stopped functioning as a federal state, and adopted a unified legislation notably for taxation matters, in 1972.

[27]For each regional bloc, the revenue to GDP ratio is computed as the sum of all countries' revenues, over the sum of all countries' GDPs, converted into the same currency, and deflated using a regional deflator.

trative cases.[28] Total revenue in Burkina Faso displayed a decrease from 10.8 percent in 1955 down to 5.8 percent in 1960, and then a long stagnation, reaching 10 percent again only in 1977. In the Côte d'Ivoire, the recovery was quicker: after declining from 22.7 percent in 1955 to 19 percent in 1960, the revenue ratio reached 22 percent again in 1965. Guinea provides an illustration of a case without recovery. The revenue ratio kept declining, from 1955 onwards: from 25 percent in 1955 it was down to 7 percent in 1970. The lower right panel of Figure 3 plots the country-level trends for French Equatorial Africa. The pattern is the same: a decline in total income before independence, followed by a period of catching up that ended in 1963, followed by strong increases in Gabon, Congo and the Central African Republic, and stagnation in Chad at the levels reached in the 1950s, i.e. 8-9 percent.

Figures A.2 and A.3 provide robustness complements to this result of an overall relative stability of revenues in the years following independence. In Figure A.2, we plot the trends for domestic tax ratio for the same country groups. Only for Algeria and Guinea do we observe a fall in revenue following independence, other than that, the domestic tax ratio is stable or slightly increases just after independence. In Figure A.3, we use the alternative allocation method using the 1962 benchmark for trade taxes instead of 1961 for French West Africa (bottom left panel) and French Equatorial Africa (bottom right panel). The results are extremely similar to the ones from our main series.

Appendix Table A.2 summarizes the patterns of change around independence by country. Column 1 shows total revenue averaged over the years 1949-1955, before the decolonization process, Column 2 shows total revenue for the years 1956-1964, during the decolonization process, and Column 3, for the post-colonial period 1965-1973.[29] The average revenue ratio was 14 percent in the first period, 12.6 percent in the decolonization years, and 15 percent in the third period. The only case of a collapse in fiscal capacity after independence is Guinea, where government revenue fell from 24.3 percent of GDP in the late colonial period to 10.2 in 1965-1973. Only three countries saw the ratio of revenue to GDP increase by more than 5 percentage points during this period: Gabon (+7 point), the Central African Republic (+7.3 points) and Algeria (+13 points). In Algeria and Gabon, the resources of the oil sector largely explain the increase. Overall, Appendix Table A.2 corroborates our graphical findings of a slight dip and a swift recovery in total revenue. Appendix Table A.3 presents the same figures, but using the alternative allocation method for years 1949-1959. The average revenue to GDP ratio for periods 1949-1955 and 1956-1964 are within 0.3 percentage points of the main results from Appendix Table A.2.

How was this continuity in fiscal capacity achieved? First, the transition in the administrative staff was often gradual. For example, it is only in 1961 in Togo, 1964 in Congo, and 1971 in the Central African Republic, that the Treasury administration fully switched from French to local management and staffing. The 'localization' of civil servants was still ongoing in Madagascar

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[28]Federal-level revenues are attributed to each colony based on the methodology presented in Section 2 and Appendix A.2.

[29]We chose 1973 rather than 1975 as an endpoint to avoid considering the consequences of the first oil shock.

in the 1970s, with foreign technical advisors still present.[30] In Senegal, technical advisors were still numerous after independence (around 2,000 in 1965), and some French nationals held major positions such as Jean Collin who became Minister of Finance in 1964.[31] Second, in some cases, there was also direct financial support from France to the former colonies' budget, that may have contributed to help the administration perform its tasks, including tax enforcement. Finally, the colonial tax system was not totally revamped from one day to the next, on the contrary, newly independent governments had to rely on existing colonial tax instruments, while a more modern and progressive tax system took much longer to materialize. We explore this in the following section.

4.2 Breaks and continuities in fiscal instruments

While all countries within our sample modified the tax code in the decade following independence, most often these modifications did not occur in the first years following independence but were rather delayed to the mid- to late 1960s. The extent of the transformations also varied from one country to another. Tunisia and Morocco, which obtained their independence earlier, in 1956, conducted more extensive and earlier reforms. Tunisia increased income and sales taxes in 1966 and conducted a wide-ranging reform of taxes and the administration in 1968; as soon as 1965, Morocco displayed "improved collection procedures", and had already increased the rates of modern instruments of direct taxation in 1964.[32] Sub-Saharan countries, which obtained their independence in 1960 only, conducted reforms later. In some of them, the tax system remained very stable until 1965 – as in Mauritania for example where by this date "the tax system ha[d] not undergone any extensive change since independence".[33] During the first ten years after independence, reforms were also adopted in the realm of tax administration, with the aim of modernizing the system and facilitating revenue collection, like the withholding of the income tax on wages (see thereafter). Many of the reforms stated simplification as an objective.

4.2.1 Direct taxation: Head tax and income tax

In terms of direct taxation of individuals, two developments occurred in parallel: first, most countries preserved the head tax (*capitation*), albeit with some transformations and, sometimes, directing its revenues to subnational governments. Second, governments reinforced more modern income taxation and increased its rates, scope, and progressivity. The two systems coexisted in most cases throughout the 1960s and early 1970s.

In the French colonial system, the *capitation* was a lump-sum tax levied on every individual

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[30]IMF Togo 1964 Article XIV Consultations, p.50. IMF 1966 The Economy of Congo, p.31. IMF 1971 Central African Republic Recent Economic Developments, p.43. IMF 1975 Malagasy Republic Recent Economic Developments, p.39.

[31]Born and educated in France, Jean Collin took the Senegalese nationality in his adult life. IMF Senegal 1964 Article IV Consultations, p.2 and p.47.

[32]IMF Tunisia 1968 Article XIV Consultation, p6-7, p.15 and p.41. IMF Morocco 1966 Article XIV Consultation, p.28 and p.35

[33]IMF 1965 The Economy of Mauritania, p.36.

except children, soldiers and their families, and the physically impaired. The nomadic populations of pastoralists were rather subject to a lump-sum tax on heads of cattle, in particular in Mauritania and Niger. Although it had existed before colonization, the head tax did not apply to Algeria and Morocco, and was removed after the Second World War in Tunisia. In French West Africa, Cogneau *et al.* (2021) estimate that the compliance to *capitation* was high, averaging 90 percent from the 1910s to the 1950s, except in Mauritania and Niger where nomadic population were taxed on cattle. Head tax rates were different across districts, depending on urbanization and affluence, and were adjusted across time according to the business climate. At the beginning of the 1950s they started to depend on individual occupation or income, hence becoming mildly progressive.[34] The *capitation* did not keep its colonial name and became, depending on the country, the minimum lump-sum tax (*impôt minimum forfaitaire*) or the regional tax; in some countries, the name of the tax appealed to patriotic sentiments: civic tax in Cameroon and Chad, national solidarity tax in Benin established in 1971, patriotic tax in Burkina Faso in 1967.[35] The modalities of the tax also changed, for example the precise definition of the taxpayer population, but the basic principle was maintained. Thus, far from a sudden removal of this 'colonial' fiscal instrument, newly independent countries adapted it to the new era and often increased its rates, like in Senegal in 1969, in Mauritania in 1962, in Niger in 1966.[36] IMF reports mention a type of head tax in 13 of the 15 Sub-Saharan African countries in our sample, the two exceptions being Côte d'Ivoire and Congo, where we found no mention of this type of tax. On top of the head tax, lump-sum taxes on livestock were maintained until the 1970s, in Western Cameroon, Chad, Madagascar and Niger or even the 1980s Burkina Faso.[37] The main reason for the continuation of the head tax was the importance of this fiscal resource in colonial budgets: between 1949 and 1960, we estimate that it represented on average 16 percent of total revenue in French West Africa, 12 percent in Madagascar, 9 percent in French Equatorial Africa, 6 percent in Cameroon and 3 percent in Togo. Among the 15 countries studied for which we know that taxes very similar to the colonial head taxes were maintained after independence, we are able to identify the importance of these taxes in public revenue for 7 of them: Burkina Faso, Benin, Cameroun, Mali, Niger, Senegal and Chad.[38] Head taxes as a share of GDP were roughly at similar levels in 1949-55 and after independence in Niger and Chad: 1.4 percent in Niger and 0.8 in Chad after 1960, against, respectively 1.7 and 1.0 percent. In other countries, these shares

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[34]For details on the colonial *capitation*, see Cogneau *et al.* (2021), in particular Appendix 3, and p.7 of Appendix 4.

[35]FMI Cameroun 1967 Rapport préparé apr les représentants des services du Fonds en vue des consultations de 1967 avec le Cameroun, p.64. IMF 1965 The Economy of Chad, p.38. IMF 1971 Dahomey Recent Economic Developments, p.40-41. FMI 1971 Haute-Volta Evolution Récente de l'économie, p.84.

[36]FMI Sénégal Evolution économique récente 1971, p.47-49. IMF 1965 The Economy of Mauritania, p.36. IMF Niger 1966 Article XIV Consultations, p.7.

[37]FMI Rapport préparé par les représentants des services du Fonds en vue des consultations de 1967 avec le Cameroun, p.64. IMF Chad 1970 Recent Economic Development, p. 45. IMF 1975 Malagasy Republic Recent Economic Developments, p.39. IMF Niger 1971 Evolution récente de l'économie, p. 42. IMF Upper Volta, 1983, Recent Economic Development, p. 69

[38]It should be noted that the examination of head taxes after independance was possible only for some years when the information was found: Burkina Faso 1966-72, Benin 1963, Cameroon 1966-71, Mali 1970-72, Niger 1965-68, Senegal 1962-70, Chad 1965-72. For the other countries, either we could not be 100 percent sure that our database contains them because they were collected in local budgets not included in our database, or because we couldn't extract them from the direct tax aggregate.

decreased by almost half. However, the head tax still constituted the main direct tax for Burkina Faso, Benin, Mali and Niger. Except in Burkina Faso and Chad where the tax was collected and used by central government, these revenues accrued to local governments throughout the 1960s and 1970s, and represented one of their main sources of revenue.

The majority of countries repealed the successor of the colonial head tax after 1965: 1965 in Mauritania and Togo, 1967 in Cameroon, 1973 in Madagascar, 1976 in Gabon,1978 in Niger, nd as late as 1981 in Mali or even 1994 in Burkina Faso.[39] Yet in some countries the successor of the colonial head tax still exists today although some exemptions apply, for example the minimum lump sum tax in Senegal.

The repeal of the head tax was accompanied by an extension of a more modern and more progressive income tax. The latter kind of tax had been introduced in Algeria in 1920 (*impôt complémentaire sur le revenu*), in Tunisia in 1928 (*contribution personnelle d'Etat*) and applied to all taxpayers whether European or autochthon. It cohabited with schedular taxes on salaries, rental income, and profit income of non-salaried individual. In Algeria, Tunisia, Madagascar and French Equatorial Africa, shareholders' dividends were taxed at lower rates than France, the tax being withheld at the companies' headquarters (*impôt sur le revenu des valeurs mobilières*, introduced in France in 1872).[40] In other colonies than Algeria and Tunisia, a progressive income tax was introduced in the 1930s, yet only applied to Europeans.[41] As already mentioned, head tax rates had already started to be differentiated not only by district, but also by occupation (Benin, Côte d'Ivoire, Guinea and Niger) or even brackets of income (Togo). Non-agricultural occupations were not frequent at the time, so that more than 90 percent of the population remained subject to the base rate.[42] In French Cameroon in 1937, the French administration had set a two tier system whereby autochthons earning below a certain threshold were still in the head tax system while a flat rate income tax (of 4 percent as of 1945) was set up for individuals above the threshold (Alvaredo *et al.*, 2021). In former British Western Cameroon (merged with French Cameroon in a federal state at the time), after 1966 the income tax started to be paid by nationals rather than only foreigners.[43] In Burkina Faso, wage earners were no longer subject to the "minimal lump-sum tax" after 1971, but to a progressive income tax.[44] Thus the modern income tax was developed, expanded, rates were increased as well as their progressivity in the years following independence. Introduction of a progressive income or schedular wage tax applying to Africans occurred in Togo in 1965, in Mali in 1964, in Burkina Faso in 1966 (as well as expansion to lower wage earners), in Chad in 1969 where a single

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[39]Year of repeal determined as last year of occurrence in the yearly IMF consultation reports.

[40]See Woker (2020) p. 393-394 (Tunisia is said to have had no tax of this kind, which seems wrong).

[41]It started as a tax on "reputed income" based on "external signs" of wealth such as hiring "boys" or having an automobile, then was transformed in a proper income tax from 1937 (Cameroon) to 1946 (Madagascar). See Woker (2020), p. 383-385. In the Tax introduction database (TID) (Genschel & Seelkopf, 2019), information on French colonies comes from our database.

[42]Besides, progressivity was attenuated by the fact that even rich men would pay the base rate for their wife or their children above 15 year-old (and actually 0 for schooled teenagers). See Cogneau *et al.* (2021) Appendix 4 p.7.

[43]FMI Cameroun 1967 Rapport préparé apr les représentants des services du Fonds en vue des consultations de 1967 avec le Cameroun, p64.

[44]FMI Haute-Volta Evolution récente de l'économie, p.51, p.84.

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progressive income tax replaced a combination of multiple schedular taxes. In 1974, Madagascar amplified the progressivity of the income tax.[45] Rates of direct income taxation were increased in Tunisia in the early 1960s, in Morocco in 1964 and again in 1969, in Benin, Madagascar throughout the 1960s, in 1969 in Senegal. The withholding of earned wage income was widely adopted (e.g. Senegal in 1969, Burkina Faso in 1971).[46]

4.2.2 Direct taxation: Corporate taxes

A true general corporate tax on firms' profits was created in France as late as in 1948. At the same time, schedular taxes on salaries, rental income or individual profit income were suppressed and merged into a general income tax (Piketty, 2018). This reform was not enacted in the colonies. French firms operating in colonies strongly opposed the taxation of their profit (Woker, 2020), so that only non-salaried individuals like traders or professionals were taxed. In Algeria in 1958, a profit tax on firms only applied to the newly appeared oil companies. Likewise, in Cameroon and French Equatorial Africa in the 1940s, a tax on gold mining or a levy on war profits made minor exceptions. All countries started to tax more profits after independence. In Sub-Saharan Africa, profit taxation appears in the mid- to late 1960s, however it is still difficult to know from the IMF reports whether they were taxes levied only on the income of individuals or also on companies. Profit taxation existed by the early 1970s in Cameroon, Congo, Côte d'Ivoire nd Togo.[47] In Madagascar it was introduced only in 1978 (Genschel & Seelkopf, 2019). It therefore seems that the creation or the reinforcement of taxes on profits (individual or from corporations) was an important tax reform after independence. In the 1970s, we estimate that profit taxes represented between 10 percent of direct taxes in Mauritania and 80 percent in Guinea and Togo or even 90 percent in Gabon, essentially from mining companies. However, at the turn of the 1980s, with the implementation of structural adjustment programs, this tax tool fell in disfavor; fears that excessive tax rates would restrict investments by national and multinational companies led to a decrease in the tax pressure on profits (Chambas, 1994; Moore *et al.*, 2018).[48]

4.2.3 Trade taxes and customs unions

Trade taxes are an appealing fiscal tool for countries with a relatively limited administrative capacity. Their collection, if it requires customs agents in the country's main ports of entry to collect

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[45]IMF Togo 1964 Article XIV Consultations, p.50. IMF 1964 Mali Economy, p.18. FMI Haute Volta Rapport et projet de décision des services du Fonds Consultations 1967 au titre de l'article XIV, p.9,p.77,p.93. IMF 1969 Chad Recent Economic Developments, p.44. IMF 1975 Malagasy Republic Recent Economic Developments, p.39.

[46]IMF Tunisia 1968 Article XIV Consultations, p.41. Morocco 1966 Article XIV Consultation, p.35. IMF 1970 Morocco Recent Economic Developments, p.28. IMF 1965 The Economy of Dahomey, p.27. IMF Malagasy Republic 1967 Article XIV Consultation, p.49. FMI 1971 Senegal Evolution économique récente, p.47. FMI 1971 Haute-Volta Evolution récente de l'économie, p.84.

[47]IMF Togo 1964 Article XIV Consultations, p50. IMF 1966, The Economy of Congo (Brazzaville), p27. IMF 1974 Cameroon Recent Economic Developments, p49. IMF Ivory Coast Recent Economic Developments 1970, p37.

[48]Bachas *et al.* (2020) find that the effective taxation of capital resumed growth at the end of the 1990s in low and middle-income countries, yet mainly in countries with large population or oil-rich countries.

information about the volume and value of trade, does not require the collection of detailed economic data on individuals or firms. This is perhaps why, in the last decade of the colonial period, the French colonizer relied extensively on trade taxes to increase fiscal pressure, especially in Sub-Saharan Africa (Cogneau *et al.*, 2021). Frederick Cooper famously described African states before and after independence as "gatekeeper states", controlling the interface (or the gate) between their country and the rest of the world, and taxing the products coming in and out (Cooper, 2002).Colonial states mainly relied on custom duties and on excise taxes on imported goods, and refrained from taxing too much the export sector they wanted to develop (Cogneau *et al.*, 2021). As will be seen thereafter, export taxation *per se* also remained very much limited after independence, except indirectly through the taxation of oil and mining companies, or through the marketing boards for export crops to which we get back in section 5. The management of taxes on international trade, especially imports, was particularly crucial throughout independence because of their importance in total revenue. Between 1960 and 1973, trade taxes accounted on average for 33 percent of total revenue in our sample. Decolonization allowed postcolonial states to tax more the imports from France, which had before enjoyed privileged access except where international treaties opposed preferential treatment (Morocco, Togo, Cameroon, Congo basin); in the late 1950s, imports from the metropolis accounted for more than 70 percent of total imports of French colonies.

Early on, Sub-Saharan African countries tried to form trade and economic unions with their counterparts from the former colonial federations, with the ambition to set up common external tariff systems as well as harmonize domestic tax rules. The UDEAO, *Union Douanière des Etats d'Afrique de l'Ouest* was established in 1966, bringing together countries of the former French West Africa, except Guinea and Niger.[49] The UDEAO was replaced in 1973 by the CEAO, *Communauté Econmique de l'Afrique de l'Ouest*, along with the signature of a new treaty on monetary union (UMOA, *Union Monétaire de l'Afrique de l'Ouest*, created in 1962, with the CFA franc as common currency). The same path was followed by Cameroon and the countries of the former French Equatorial Africa: the Central African Republic, Congo, Gabon and Chad. The UDEAC – *Union Douanière et Economique de l'Afrique Centrale* was formed in 1964 (effective 1966). However, as of today, not all of the objectives of these unions have been realized, and even the common external tariffs have been set up only decades later.[50]. As such, these unions do not play an important role when analyzing trends in trade taxes in the years closely following independence.

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[49]Guinea never joined the regional agreements, but taxation on international trade was strongly increased in Guinea in the late 1960s: introduction of import surcharge and increase in excises for imports (IMF 1970 Guinea Recent Economic Developments, p.58). Mauritania and Senegal also created a two-member customs union that ceased to exist in 1970.

[50]The CEAO failed to achieve an effective customs union and entered into crisis in the 1980s. Fiscal harmonization was only revived later under the UEMOA (*Union Economique et Monétaire Ouest Africaine*), created in 1994 in the aftermath of the large CFA franc devaluation of 50 percent. A common external tariff was finally put in place in 2000 among all former French West Africa countries except Guinea and Mauritania, with also Togo and the former Portuguese colony of Guinea-Bissau. Tariffs on imports were thereafter set jointly, while export tariffs were set by each country, and trade barriers within the regional blocs were deleted. The harmonization process for domestic taxes is still under way as of 2021. The UDEAC was followed by the CEMAC in 1994 (effective in 1999)– *Communauté Economique et Monétaire de l'Afrique Centrale*. The former Spanish colony of Equatorial Guinea joined UDEAC in 1984. A common external tariff is finally applying across all countries in CEMAC.

4.2.4 Indirect domestic taxation

Indirect domestic taxation through a sales or turnover tax was the less developed domain of fiscal policy at the time of decolonization. Algeria and Tunisia had a turnover tax since the 1930s, and excise taxes on alcohols and gasoline.[51] Tunisia introduced a new tax on sales in 1948. Morocco only had excise taxes, like Madagascar (local alcohols and tobacco). After 1945 and before their dismantlement in the late 1950s, French West Africa had a tax on the circulation of goods, applying both to imports and domestic goods, and French Equatorial Africa had a general consumption tax; Togo had the same tax as French West Africa, and Cameroon the same tax as French Equatorial Africa. Cameroon and Côte d'Ivoire introduced a turnover tax in the late 1950s, and all other countries followed but only after independence in the 1960s and 1970s. Côte d'Ivoire was the first to introduce a Value Added Tax in 1964. A turnover tax was introduced in Madagascar in 1961, replaced by a value-added tax (VAT) in 1969. Senegal replaced its turnover tax by a VAT in 1979.[52]

4.3 A specificity of Socialist states?

A certain number of newly independent African states chose the path of socialism. In most cases, this was accompanied by a break in the ties with the former colonizer. There is a general premise that socialist governments intend to grow larger states and levy higher taxes. Whether this holds on average remains an empirical question. In a cross-country analysis of the determinants of fiscal capacity, Besley & Persson (2009) find no specificity of socialist legal origin. On the other hand, Torgler (2002) documents a higher tax morale in Eastern Germany than Western Germany. Finally, in an analysis of what defines a socialist state Naughton (2017) highlights the major criteria that is the size of the State's assets – which are not directly captured in tax revenues.[53]

In the context of newly independent African states, assessing whether there was a differential fiscal pressure in socialist states encompasses two questions. First, whether levying more tax revenues was indeed a stated objective of these governments. Second, whether they had the administrative capacity to do so. Within our sample, the five regimes that we classify as socialist in the post-colonial period are the following. First, Algeria, between 1962 (date of independence), when Ahmed Ben Bella became the *de facto* political leader before becoming the first president in 1963, and 1988 with the end of the one-party system. Second, Benin, under Mathieu Kérékou, from 1975, year in which he made marxism-leninism the state's doctrine, to 1990, when he first renounced power in a democratization process. Third, Madagascar (renamed Democratic Republic of Madagascar) under Didier Ratsiraka, between 1975, when he became president for the first time and established a socialist charter, and 1990 with economic and political liberalization reforms leading to his demise at open presidential elections in 1993. Fourth, Guinea during the whole pres-

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[51] And only in Algeria on tobacco, sugar, coffee and tea.

[52] IMF Ivory Coast 1965 Article XIV Consultations, p52. Malagasy Republic 1967 Article XIV Consultation, p49-52. IMF 1971 Malagasy Republic Recent Economic Developments, p36. FMI 1980 Sénégal Evolution récente de l'économie, p27.

[53] In our case, a caveat of our analysis is that we do not as of today have comparable cross-country data on state-owned companies and their profits.

idency of Ahmed Sékou Touré (1959-1984). Fifth, Congo (renamed Popular Republic of Congo), under Marien Ngouabi then Denis Sassou-Nguesso, between 1970 when marxism was adopted, and 1992 when structural adjustment and liberalization reforms were launched.[54]

Our detailed analysis of IMF reports reveals that fiscal instruments were not systematically transformed under socialist rule.[55] Can we nevertheless detect any differential fiscal pressure for socialist regimes? We carry out a simple exercise where the evolution of total revenue of each socialist regime is plotted against the one of the closest comparators. Comparators are chosen mainly based on geographical proximity, status in terms of mineral resources (resource rich/non-rich), and revenue patterns before socialism. The exercise is carried out in the spirit of the synthetic controls method (Abadie *et al.*, 2010).[56] Results are shown in Figures A.4 to A.8.[57]

In Algeria, the tax to GDP ratio declined compared to its North African counterparts, but this was aggravated after the socialist era with liberalization reforms starting in 1988, followed by a decade of civil war starting in 1991 (Figure A.4). Benin under socialist rule seemed to perform worse than its closest comparators, although the boom in oil revenue in Cameroon and in phosphate revenue in Togo render the comparison difficult, even when considering only domestic taxes as we do here (Figure A.5).[58] Yet, it is striking to see that domestic tax revenue jumps by 5 percentage points of GDP very soon after 1990 and the end of Kérékou regime. Guinea is compared with Côte d'Ivoire, which is the only retained comparator when we conduct a more formal synthetic control method; the results in Figure A.6 indicate a non-ambiguous monotonic decrease in the tax ratio in Guinea under the socialist regime. Again, it is very striking that the total tax revenue to GDP bumps by more than 10 percentage points after the death of Sékou Touré. Finally, when compared to Gabon, another oil producer, Congo did not perform any better or worse, rather both trajectories are strongly shaped by fluctuations in oil revenue (Figure A.7). For Madagascar, Figure A.8 plots the result of the synthetic control approach, we observe a strong and lasting decline in total revenue from the beginning of the socialist regime onwards.[59]

However, it is possible that socialist regimes have had an impact on the structure of tax revenues. On the one hand, they may have adopted the import substitution policy more radically

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[54]Other countries with regimes favorable to socialism were not classified as such because their stated doctrine was not marxism-leninsm strictly speaking. Another criterion to select socialist cases studies was the duration of the regime, keeping cases where it was long enough to have potential visible effects in our yearly data. Excluded cases are in particular: Tunisia under Habib Bourguiba and between 1960 and the demise of Ahmed Ben Salah in 1969; Senegal under Mamadou Dia (1960-62) (Diop, 2009); Mali under Modibo Keita (1960-68) (Zobel, 2013).

[55]The IMF reports state that the tax administration in Madagascar was paralyzed after the coup in 1975 (IMF 1976, Democratic Republic of Madagascar Recent Economic Developments, p.40.). In Algeria, income redistribution is stated as a goal of the government, but there were no concrete reforms of the direct taxation system that were associated with the transition to socialism (FMI Algérie Rapport et recommandations des services du Fonds Consultations 1965 au titre de l'article XIV, p.6).

[56]We carried out a formal synthetic control method and found simiar results, but chose to report the Figures with "raw" comparators to ease interpretation. We show the synthetic method result for Madagascar for which finding comparators is less straightforward.

[57]We use either total revenue, total tax or domestic taxes depending on what is most relevant based on the country's characteristics notably mineral resource production.

[58]Actually, natural ressource revenue are levied by trade and domestic taxes.

[59]The synthetic control method is applied by using total revenue in the years before 1975 as control variables.

than other countries and therefore applied higher import taxes, but on the other hand they may have suffered from lower trade flows and consequently lower trade taxes. We observe that during the periods of socialist rule in Benin, Congo and Guinea, the shares of trade revenues decreased significantly relative to their counterparts in the same period, while the share of domestic taxes increased more. Algeria is an exception in that the share of trade taxes increased slightly relative to Morocco and Tunisia. This have been accompanied by a decline in the ratio of imports to GDP for Algeria, Congo and Guinea.[60,61]

To conclude, we cannot distinguish any systematic relationship between socialism and fiscal pressure in post-colonial decades in our sample. It is not empirically the case that these socialist governments levied more revenues as a share of GDP, if anything they seemed to perform worse than their counterparts.

However, important transformations occurred in the realm of public enterprises. Unfortunately, some associated revenues are captured in our revenue series but not necessarily in their entirety, and we cannot distinguish them from revenues originating from private firms. The socialist governments under study carried out widespread nationalizations: in Guinea, in 1974, 53 percent of tax revenues were from public firms, 86 percent in 1979 (this is normally captured in our series). The number of public firms increases from 70 in 1970, to 200 in 1974. In Madagascar, commercial banks, insurance companies, trading firms, mining, petroleum transportation and distribution, were all nationalized. In Algeria, over 400 foreign firms were nationalized. In 1970, these accounted for 20 percent of revenue.[62] The fact that these public assets could have allowed these socialist regimes to provide more public services is out of this analysis but a flag for future work. Likewise, the impact on socialism on social spending (education and health in particular) is left to further investigation on public expenditure patterns.

4.4 Caveats: forced labor, tax morale and informal taxation

In addition to public entreprises, there are some dimensions of levy by the state that we do not account for due to data availability, and that would be worth investigating in future research to confirm the main result presented in this section – the relative stability of total revenue in the years immediately following independence.

Forced labor was widespread in French colonial Africa, until 1946, and recent work has shown that this taxation in kind could represent up to a quarter of the size of in-cash taxation in the 1930s (van Waijenburg, 2018). We believe that accounting for forced labor as a form of taxation would not change the two main results presented so far, the continuity in revenue levels observed at independence, and the fact that socialist governments do not exert a significantly stronger tax

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[60]We run difference-in-difference regressions to compare the share of trade taxes and domestic taxes in total revenue during the socialist regime of these 4 countries to their level before and to evolution of these taxes in their closest comparators.

[61]Due to missing data on trade taxes between 1980 an 1989, we are not able to analyse the structure of public revenue for Madagascar.

[62]FMI 1974 Guinée Evolution récente de l'économie, p.37-39. IMF 1976, Democratic Republic of Madagascar Recent Economic Developments, p.33. FMI 1970 Algérie Evolution récente de l'économie, p.22, p.42.

pressure than comparators. In 1946, general forced labor[63] was abolished, and in 1950, so was its last remnant, a segment of the military.[64] Therefore when looking at the transition to independence ten years later, accounting for forced labor would not lead to a sudden drop in revenues that would change the picture. Mali and Senegal displayed a type of forced labor under the form of civic service and youth camps in the early 1960s (Tiquet, 2020; Barrows, 1994). This mobilized only a few hundred of youth in Senegal, and an estimated 40,000 in Mali. Sekou Touré in Guinea introduced "patriotic labor", but to our knowledge the exact figures of its extent are not available. Without this data it is not possible to quantify with precision the extent to which this would increase total revenue, although it seems reasonable to assume that it would not reverse the steep downward trend observed in Guinea after independence.

Beyond the fiscal instruments defined by the tax code, tax collection effort and procedures obviously play an important role in determining the observed level of tax revenue. While a detailed exploration of tax collection methods is beyond the scope of this study, due to lack of adequate data, it is important to note that the transition to independence did not mean that tax morale suddenly surged to the point that compliance was voluntary. Quite the opposite, scholars of African decolonization have shed light on coercion exerted by newly formed governments to collect tax revenue (Bayart, 1983).[65]

Finally, tax revenues captured in official national budgets do not necessarily cover the entirety of payments that African citizens redeem to local or national administrations and that fund public services. Payments made outside of the statutory tax code, labeled as informal taxation, are estimated to account for a non minor share of total tax payments based on contemporary survey data (Olken & Singhal, 2011; van den Boogaard *et al.*, 2018). Finding equivalent data for the 1955-1965 period is obviously quite challenging.

5   The natural resource dependence of tax systems

In this section, we investigate the dependence of the fiscal systems in our sample to natural resource extraction, considering both agricultural primary products and mineral resources. The dependence of tax systems on natural resources is a potential problem for three main reasons: first, because it makes government revenues, and therefore government expenditure, more volatile, as the income from natural resources is dependent on international prices (Ehrhart & Guerineau, 2013). Second, because natural resource rents can be taxed using tools that require only light administrative capacity, weakening the incentive to invest in increasing fiscal capacity. Third, and as already mentioned in Section 3, because a large literature suggests that resource revenues and tax revenues are spent in a different way, and that resource revenues typically do not end up financing

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[63]The forced labor system in French colonial Africa was called the *prestations*.

[64]This system involved the requisition for public works of the labor of young men fit for military service but not drafted as conscripts in peace time (*seconde portion du contingent*).

[65]In *Les sociétés africaines face à l'Etat*, Bayart writes that tax collection in post-independence years "gives rise to brutal police operations" (Bayart, 1983).

development enhancing expenditure (Ross, 2012; Crivelli & Gupta, 2014; Mosley, 2017; Prichard *et al.*, 2018).

5.1 Trade taxes and marketing board revenues

In Section 4.2.3, we highlighted the importance of trade taxes for the countries in our sample throughout decolonization. In this paragraph we investigate the dependence on trade revenue over the longer term.

Figures 4 and 5 display trade taxes as a percentage of GDP and effective tax rates on trade from 1900 to 2018 in the North African and Sub-Saharan African countries of our sample.[66] In Algeria and Tunisia, trade taxes increased very sharply in the decade following independence (Figure 4). In Tunisia, they went from representing about 2 percent of GDP just before independence (in 1956) to about 5 percent in 1970 and up to 10 in the middle of the 1980s. In Algeria, which before independence formed a customs union with France, trade taxes went from representing about 0.5 percent of GDP in 1962 to about 2.5 in the 1970s. In Morocco, trade taxes already represented above 2.5 percent of GDP before independence and increased to a peak of 5 in the end of the 1970s. In the three countries, these variations in trade taxes were almost entirely the result of an increase in the rates rather than the base of taxation.[67] In Algeria, the effective rate of trade taxation increased from less than 1% just before independence to 5% in the 1980s. In Tunisia, it increased from 4% just before independence to 15% in the 1980s. The three North African countries lowered their reliance on trade taxes towards the end of the 1980s or beginning of the 1990s, following the advice of international organization and the "Washington consensus". The fall in effective rates of trade taxation was drastic: around 2010, in the three countries, the effective rate of taxation was below 3% and trade taxes represented no more than 2% of GDP. In the next section, we analyze in greater detail the consequences of structural adjustment programs for the fiscal capacity of countries in our sample.

In the countries of Sub-Saharan Africa, the hump-shaped pattern of trade taxes' evolution during the 20th century is even more striking than in North Africa (Figure 5). The first boom in trade taxes occurred in the late colonial period (after World War II), when they became an essential element of a rapid increase in fiscal pressure. In French West Africa for example, trade taxes jumped from an average of 2.4 percent of GDP in the 1930s to an average of 5.5 in the 1950s. This is explained both by an increase in total trade value from 30 to 35% of GDP and by an increase in effective rates from an average of 8% to an average of 14%. After independence, trade taxes stabilized at a high level in former French West Africa, but elsewhere, they increased further. In Cameroon for example, they went from representing about 6 percent of GDP in the 1950s to 10 percent around 1970. The weight of trade taxes started decreasing from the early 1980s onwards, as Sub-Saharan African countries underwent economic crises followed by structural adjustment

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[66]Effective tax rates on trade are obtained by dividing the value of trade tax revenues by the total value of trade.

[67]The total value of trade increased in the three countries over the period, but the ratio of trade value to GDP remained relatively stable, except in Tunisia where it increased from around 35% in the 1960s to more than 60% in the 1980s.

programs, but the decline was not as marked as in North Africa.

Table 2 summarizes the evolution of trade taxes since 1960, giving the average for all countries in our sample for three periods: the decolonization decade 1960-1973 (Column 1), the commodity boom decade 1974-1985 (Column 2), and the trade liberalization decade 1986-2018 (Column 3). Trade taxes were already important at the onset of decolonization (5.1% of GDP on average over the period 1960-1973) and gained even more weight during the commodity boom decade (5.8% of GDP on average over 1974-1985). However, they declined after 1986 and the beginning of the structural adjustment programs, representing 3.2% of GDP on average over 1986-2018. In the rest of Table 2, we decompose trade taxes into import and export taxes, and we further decompose import and export taxes as a share of GDP between imports and exports as a share of GDP and effective tax rates.[68] The bulk of trade taxes since 1960 has been taxes on imported, rather than exported products. In the period 1960-1973, import taxes represented 4.2% of GDP, against 0.8% for export taxes. In the trade liberalization period (1986-2018), import taxes represented 2.7% of GDP against 0.4% for export taxes. The table also confirms that the fall in trade tax revenues was predominantly the result of a fall in tax rates: while imports and exports as a share of GDP increased between 1974-1985 and 1986-2018, the effective tax rate on imports was almost halved, going from 21% to 11%, and the effective tax rate on exports was divided by three, going from 4.5 to 1.4%.

Figures 6 and 7 display import and export taxes as a percentage of GDP from 1900 to 2018 in the North African and Sub-Saharan African countries of our sample. The limited reliance on export taxes concerns every country, except Madagascar between WWII and the 1980s and Togo in the 1970s, and appears to be inherited from the colonial period. This is an important difference with some former British colonies like Ghana, where export taxes (mainly on cocoa exports) represented 38 percent of total trade taxes in the 1940s, 50 in the 1950s and 39 in the 1960s [69]

Importantly, in the former French colonies of Africa, taxes on exports were not the predominant tool for the taxation of cash crop production. We now turn to a revenue extracting instrument specific to Sub-Saharan African countries in the decades around independence: the surpluses of marketing boards or stabilization funds. These were public agencies holding a monopsony for the purchase and export of certain agricultural products. They were originally created to stabilize the price received by cash crop producers for their goods: the agency would buy products at a price lower that the world market price when times were good, and accumulate surpluses to be used to support the price of crops when times were bad. In a seminal study, Robert Bates (1981) showed how the surpluses of these marketing boards became a tool for financing the development expenditure of African states, and in particular the expenditure targeted towards urban areas and the industrial sector. Bates predominantly centered his analysis on the study of former British colonies, like Ghana, Nigeria, Kenya, Tanzania and Zambia, but the former French colonies of our

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[68]Effective tax rates on trade are obtained by dividing trade tax revenues by the value of total trade.

[69]Sources: Gold Coast Estimates 1940-41, 1943-44, 1950-51, 1955-56, 1958-59 and IMF, Ghana - Recent Economic Development and Policies, 1967, 1972. The difference between Côte d'Ivoire and Ghana with respect on import and export taxation was already noted by Eshag & Richards (1967).

sample had marketing boards as well (*offices de commercialisation*), most often called stabilization funds (*caisses de stabilisation*). In British colonies, marketing boards were created during the Great Depression of the 1930s, but in French colonies, they were created in the late colonial period (Jones, 1987). In Côte d'Ivoire, stabilization funds (*caisses de stabilisation*) for coffee and cocoa were created in 1955. A stabilization fund for cocoa was also created in French Cameroon in 1955.[70] Almost all countries in our sample had at least one marketing board during the period considered.[71] Using the surplus revenues of marketing boards to finance current government expenditure amounts to a tax on exports. The price received by the producer of a commodity is lower than the selling price of the commodity on world markets, and the difference is pocketed by the government to finance public expenditure. However, this source of revenue is not as straightforward to identify as taxes on exports. In the 1960s, the revenues of marketing boards in IMF reports do not appear as items of budgetary revenue but as "deficit financing instruments": the Treasury, responsible for managing the surpluses of marketing boards, used their funds for short term financing. These loans however, were seldom repaid and, as the revenues of marketing boards increased in the 1970s, the revenues of marketing boards started appearing as items of budgetary revenue in IMF reports. We carefully reconstructed the revenues of marketing boards for Côte d'Ivoire using IMF reports, and we are currently doing the same for all the countries of our samples. Figure 8 displays government revenue as a share of GDP in Côte d'Ivoire from 1960 to 2018, separated into three categories: tax revenue, the revenues of stabilization funds, and other non tax revenues. Tax revenue does not display important ups and down: it stays very close to 20 percent of GDP until the end of the 1980s, falls to a bit over 15 percent thereafter and has increased only very slowly since. Revenues of stabilization funds represent only a small part of government revenue in the 1960s and beginning of the 1970s. But starting in the mid-1970s, during the boom in the international price of coffee and cocoa, the revenue of stabilization funds balloons to very high levels: in 1977, they represent 15 percent of GDP and 41 percent of total revenue. Stabilization funds continue to yield large revenue in the first half of the 1980s, but their contribution then returns to very small levels. In 2000, the stabilization system was eliminated, and Côte d'Ivoire only resorted to an export tax fixed in CFA francs per kilograms.[72] In Côte d'Ivoire, the short term ups and downs in government revenue since 1960 are almost entirely explained by the revenues of stabilization funds, themselves

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[70]IMF, Cameroun - Evolution récente de l'économie, 1971, p. 14.

[71]In Sénégal, the *Office de Commercialisation Agricole*, for groundnuts mainly. In Mali, the *Office des Produits Agricoles*. In Mauritania, the *Société Mauritanienne pour la commercialisation de poisson*, for fish. In Burkina Faso, the *Caisse de Stabilisation des Produits Agricoles*. In Niger, the *Caisse des stabilisation des prix des produits du Niger*, for groundnuts mainly, then the *Caisse de stabilisation des produits pétroliers*, for oil. In Togo, several *caisses de stabilisation des prix*, for cotton, groundnut, cocoa, and coffee. In Gabon, two *Caisses de Stabilisation et de Péréquation*, for oil, and for coffee/cocoa. In Congo, the *Caisse de Stabilisation des Prix des Produits Agricoles et Forestiers*. In Chad, the *Caisse de Stabilisation des Prix du Coton*, for cotton. In the Central African Republic, the *Office de Réglementation, de Commercialisation et du Contrôle des Produits Agricoles*. In Madagascar, several marketing boards, called *caisses de stabilisation* and *offices de commercialisation*, for commodities such as cassava, aleuritis, vanilla, cofee, cotton, black pepper, groundnut, cloves, and rice. In Algeria, the *Office National de Commercialisation*. In Tunisia, the *Office du Commerce de Tunisie*. In Morocco, the *Office de commercialisation et d'exportation*.

[72]The tax is called DUS, "Droit Unique de Sortie". Source: IMF, Côte d'Ivoire - Selected Issues and Statistical Appendix, 2000, p. 61: "The stabilization system will be eliminated from 2000 onwards; from that point, registration taxes from the coffee/cocoa sector will be included in indirect taxes."

tributary of the vagaries of international cash crop prices.

5.2 Mineral resource revenue

While the importance of trade taxation and, to a certain extent, marketing boards were inherited from the colonial period, the key contribution of mineral resource revenue to total government revenue emerged after decolonization, in some cases a decade or two after. Most of the oil and mining resources discovered during the colonial period had not begun being commercially exploited before independence, and more discoveries occurred after independence. Furthermore, the importance of these revenues was greatly amplified by the oil boom of the 1970s, and of the 2000s.[73]

Our database allows us to track the contribution of mineral resource revenues from 1960 to 2018 in most countries of our sample. These mineral resource revenues consist in both tax revenues (like corporate taxes on a few specific firms involved in mineral resource extraction) and non-tax revenues (like the revenues of state-owned public firms involved in resources extraction, or royalties paid by private firms to the government for the right to extract mineral resources). The last row of Table 2 displays the contribution of resource revenue to total government revenue since 1960, giving the average for all countries in our sample for three periods: the decolonization decade 1960-1973 (Column 1), the commodity boom decade 1974-1985 (Column 2), and the trade liberalization decade 1986-2018 (Column 3). The increase in the contribution of resource revenue is striking: they represent 8 percent of total revenue on average in 1960-1973; the figure jumps to 20 percent for the second period (1974-1985), and keeps increasing to represent 26.6 percent in 1986-2018. The rise in oil prices starting in the early 2000s largely explains the high figure in the recent period.

Appendix Figure A.11 shows how strongly mineral resource revenues shape aggregate revenue trends, for three illustrative oil producers, Algeria, Cameroon, and Congo. These figures show first that resource revenues can represent a large share of total revenue, especially in boom periods. Since the turn of the millennium, they have represented more than half of total revenue in Algeria and Congo. Second, these figures show that, in oil producing countries, the ups and downs in government revenue are largely explained by the variations in mineral resource revenues, themselves explained by the vagaries of international oil prices.

5.3 Measuring resource dependence

To measure the dependence of government revenue on natural resources, we estimate the correlation between the revenue to GDP ratio and the commodity export price index built by Gruss & Kebhaj (2019) for the period 1962-2018 using international commodity prices and country-level trade data.[74] The use of a commodity price index allows us to isolate the variations in natural

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[73]See Section 3 for the list of mineral exporters and their main mineral commodities.

[74]To ensure that the index reflects changes in international prices rather than supply responses to price variations, we use the commodity export price index built using fixed weights corresponding to average trade flows over 1980-2015.

resource rents due to exogenous variations in world prices from the variations due to endogenous variations in production that might be correlated to a country's fiscal capacity. We estimate the following model:

$$TotRev_{it} = \alpha_0 + \alpha_1 CEPI_{it} + \alpha_2 Country_i + \alpha_3 Country_i \times t + \varepsilon_{it} \qquad (1)$$

where $TotRev_{it}$ is the ratio of government revenue to GDP in country i and year t and $CEPI_{it}$ is the log of commodity export price index of Gruss & Kebhaj (2019). The advantage of using the log of the price index is that results are not dependent on the specific base year chosen. We include a vector of country fixed effects and a country-specific linear time trend. Results are displayed in the top panel of Table 3. The correlation between commodity export prices and government revenue is very high: a log point increase in the commodity export price index (that is a multiplication of prices by 2.7) increases the revenue to GDP ratio by 6 percentage points (Column 1). The increase is split almost equally between tax revenue (about 3 percentage points) and non-tax revenue (about 2 percentage points). Trade tax revenue displays no correlation with commodity prices (Column 4), which should not surprise us given that, in former French colonies, export taxes were typically not used to extract revenue from natural resources. Column 4 displays the correlation between mineral resource revenue and the commodity export price index: the dependence of government revenue on export prices is almost entirely explained by the dependence of mineral resource revenue on export prices.[75] The dependence of government revenue on export prices might be explained by the overall dependency of a country's national income on natural resource rents combined with the fact that government revenue as a share of GDP tends to increase with GDP. In the second panel of Table 3 (Model 2), we add the log of real GDP as a control and find that a one log point increase in the export price index increases the revenue to GDP ratio by 4.5 percentage point, an increase almost entirely explained by resource revenue. It appears that, above and beyond the dependence of national income on resource rents, the tax systems of African countries in the last 60 years have been particularly sensitive to variations in export prices.

Have the fiscal reforms initiated in many countries since the turn of the 1990s weakened the dependence of African tax systems on natural resources? To answer this question, we estimate equation (1) interacting the log commodity export price index with a binary variable for years after 1990. Results are displayed in the third panel of Table 3. The coefficient of the interaction between the post-1990 binary and the log export price index is negative, but small (-0.564) and not statistically significant. Controlling for the log of real GDP interacted with a post-1990 dummy does not change the picture. Overall, we find no evidence that the reforms of the last 30 years weakened the dependence of African tax systems on natural resources.

An interesting exercise would be to estimate the dependency of tax systems to natural resource

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Commodities are weighed by the ratio of export to total commodity export.

[75]In column 4, the sample is greatly reduced because a lot of country-year observations have missing mineral resource revenue. However, when we estimate the correlation between the commodity export price index and total revenue on the subsample of country years with non-missing mineral resource revenue, we find a coefficient of 6.9, very similar to the coefficient on the whole sample.

prices in the colonial period and compare it to our results for the 1962-2018 period. This would allow us to understand to which extent the resource dependence of the tax system is a colonial legacy and to what extent it is a development of the post-colonial period (and notably of the development of mineral resource extraction). Undertaking such an exercise requires the construction of commodity export price indices for the colonial period from product level colonial trade data and international commodity price data. This is still in progress but should yield interesting insights in the future.

6 Structural adjustments and reforms between the late 1980s and 2018

After the 1980s, all countries within our sample underwent some form of structural adjustment plan. At the same time, the so-called Uruguay Round (1986-1994) of trade negotiations strongly pushed trade liberalization worldwide, and finally gave birth to the World Trade Organization in 1995. These policy packages had strong implications for the relative importance of different fiscal instruments. Governments were incentivized to lower taxation on international trade – which happened, on average between 1985 and 2011, the trade tax to GDP ratio decreased by 2.3 percentage points[76] and the average weight of trade taxes in total revenue was almost halved – 20 percent in the 1986-2018 period against 36 percent in the 1974-1985 decade)– as can be seen in Table 2. To compensate for lost revenues, governments were encouraged to strengthen domestic taxation – what Chambas (2005) calls the "fiscal transition", see also Cogneau (1999). There was indeed an increase in the ratio of domestic taxes to GDP on average, by 2.8 percentage points between 1985 and 2011.[77] However, these averages mask some heterogeneity, and in some countries, the loss in trade taxes was never compensated by a large enough increase in domestic taxation.

Appendix Figure A.12 displays two different illustrative cases of this phenomenon: in Cameroon (upper panel), we observe a sharp drop in trade taxes after 1975, and at the same time, an increase in domestic taxes suggesting that foregone revenue was compensated. In Togo (lower panel), we observe that trade taxes were decreasing after 1975, but so were domestic tax revenues, at least until 2002, suggesting that lost trade revenues were not compensated.

To examine how this plays out statistically in the whole sample, we run the following regression at the country level after 1960:

$$DomTax_{it} = \beta_0 + \beta_1 TradeTax_{it} + \beta_2 TradeTax_{it} \times Post1990_t + \beta_3 ImportRatio_{it}$$
$$+ \beta_4 ExportRatio_{it} + \beta_5 lnGDP_{it} + \beta_6 Country_i + \beta_7 Country_i \times t + \epsilon_{it} \tag{2}$$

where $DomTax_{it}$ is the ratio of domestic tax to GDP of country i in year t, $TradeTax_{it}$ is the ratio of trade taxes to GDP, $Post1990_t$ is a dummy equal to one after 1990, $ImportRatio_{it}$ is the ratio of imports to GDP, $ExportRatio_{it}$ is the ratio of exports to GDP, $lnGDP_{it}$ is the logarithm of real GDP. We include a country fixed effect and a country specific time trend. Results are shown in

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[76]The trade tax to GDP ratio increased in only three out of eighteen countries of our sample, Guinea, Niger, Mali.

[77]The domestic tax to GDP ratio decreased in only three countries of the sample.

Table 4, Column 1. In Column 2, we run the same regression, but the dependent variable is *TotRev* the ratio of total revenue to GDP. In Column 1, we find that after 1990, a one percentage point decrease in the trade tax ratio is significantly associated with a 0.68 percentage point increase in the domestic tax ratio - showing that there was some compensation, and more than in the pre-1990 period (0.33 percentage point increase in domestic tax). Looking at Column 2, we find that after 1990, a one percentage point decrease in the trade tax ratio was associated with a 0.33 percentage point decrease in total revenue. On average, foregone revenue on trade was not fully compensated, in spite of the revenue mobilization strategies instigated by the reforms. This confirms the findings of Cagé & Gadenne (2018), on a wider sample of countries, according to which trade liberalization that happened after 1970 in less developed countries led to an overall loss in fiscal revenues.[78]

How did governments attempt to strengthen domestic revenue mobilization in the light of decreasing trade taxes? One notable policy was the introduction of the value-added tax (VAT). This tax instrument was adopted mostly in the 1990s (between the 1980s and 2001) in all the countries of our sample.[79] However, the literature suggests that the effect of introducing the VAT did not live up to its promises on the African continent.[80] Ebrill *et al.* (2001) find that the efficiency of the VAT is the lowest in Sub-Saharan Africa, and that the region also performs the worst in terms of correlation between the existence of the VAT and the level of revenues (when controlling for country-level economic factors); additionally, recent micro-level evidence highlights the difficulties of VAT enforcement in low administrative capacity settings (Pomeranz, 2015; Gerard & Naritomi, 2018; Almunia *et al.*, 2020). The economic transformations triggered by the structural adjustment reforms themselves potentially had effects on tax revenues. For instance, Rodrik (1990) suggests that liberalization and deletion of some price controls might have led some segments of the economy to formalize, increasing domestic tax revenues (e.g. in Ghana in the early 1980s). Finally, governments pursued reforms aiming to modernize their tax administrations, collection and enforcement processes. An illustrative example is the acceleration in the creation of Large Taxpayer Units (LTUs) (Bachas *et al.*, 2019). More and more countries opted for the integration of all steps of the fiscal chain within tax administrations (Chambas, 2005). On a panel of African countries for years 1980-2010, Ebeke *et al.* (2016) find that the creation of semi-autonomous revenue administrations and the introduction of the VAT are associated with gains in non-resource revenue. The effect of LTUs is insignificant but seems to be a pre-condition for the adoption of the other reforms.

Overall, in spite of the fact that on average post-1990 the decline in trade taxes was associated with a decline in total taxes, it is important to take note of progress nevertheless observed in the most recent period, regarding domestic taxes. The ratio of domestic tax to GDP has been having an upward trend, and its average in our sample is 11 percent over 2000-2018. This is higher than

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[78]Note that Cagé & Gadenne (2018) do not implement the same methodology as ours. They define trade liberalisation as a large fall in trade tax revenues not accompanied by a decrease in trade and compute the percentage of trade liberalization episodes with public revenue recovery. They show that this percentage is much lower for low income countries than in other countries.

[79]It was modernized in the few countries that had introduced the VAT in the 1960s or 1970s.

[80]More precisely, Sub-Saharan Africa in this literature

in any other decade since independence,[81] which brings a note of optimism.[82]

7   Conclusion

Thanks to a novel dataset on public revenue in the former French colonies in Africa, spanning years 1900-2018 and eighteen contemporary countries, we are able to take stock of long run trends in taxation in a unique way. This allows us in particular to study fiscal capacity during the critical moment of independence, in a way that was until today made impossible by the lack of comparable data and the lack of connection between series of the colonial and the post-colonial eras. Second, although the literature on public revenue in Africa after 1980 is more abundant, we are able to add more depth and perspective to the analysis by extending existing research investigations to the 1960-1980 period.

We find that when comparing the years just before independence (1949-1955) with the most recent period (2006-2016), on average, total revenue increased by 5.9 points of GDP, from 14 to 20 percent of GDP. However this is strongly driven by revenues from mineral resources, if excluded, total revenue has in fact stagnated on average (decreased by 0.2 points of GDP). This is not due to a long lasting collapse of fiscal capacity after independence. Quite the opposite, we find that although the years before independence are characterized by a dip in revenue, fiscal pressure is back to its pre-decolonization levels by the mid-1960s or 1970 for most countries. Socialist regimes in place in five countries of the sample did not achieve higher tax capacity. The most important gains in the following decades are attributable to mineral resources, and dependence of revenue to the international prices of the main commodity exports did not decrease. Trade revenues, that account for around a third of total revenue between the 1940s and the 1970s, decline under the influence of structural adjustment plans, and although there is a meager strengthening in domestic taxation at the same time, it is not enough on average to overcome the decrease in trade taxes. The latest years, post-2000, do offer some optimism with an upward trend in domestic taxation - the domestic tax ratio is 11 percent on average since 2000, which is higher than in any post-colonial decade.

Building on these findings, future work could take the following directions. First, the transition to independence could be analyzed in a more refined way, for instance by putting fiscal capacity into perspective with the nature of decolonization (the degree of its conflictuality), the extent to which French administrative support played a role, and the share of educated workers in the pop-

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[81]6, 8, 9, 8 percent respectively in 1960-1970, 1970-1980, 1980-1990, 1990-2000.

[82]Because revenues from mineral resources play such a substantial role, it is important to try assessing revenue patterns "cleared" of their effect. To do so, we plot the ratio of domestic taxes to non-resource GDP, in Figures A.9 for North Africa and Figure A.10 for Sub-Saharan Africa. See Appendix A.1 for details on how the variables used in the ratio are computed. The main pattern is not changed for Morocco and Tunisia. Algeria displayed a drop in the domestic tax to GDP ratio after 1985, and the ratio only reached 12 percent by the end of the period – confirming the strong reliance on oil revenues. This was in part the result of the following policies: in 1975, Algeria increased petroleum taxation, while in parallel, decreased domestic taxation by exempting lower income groups and farmers from income taxation, and extended exemptions on indirect taxation and import taxes. Regarding Sub-Saharan African regions, the upward trend in the latest period is confirmed.

ulation. Second, the long run taxation trends after independence could be put into perspective with measures of administrative capacity – such as indicators on the number and qualifications of the personnel of administration, tax enforcement policies, reforms of the tax administration – and variables exploring taxpayers' willingness to comply with taxation, such as trust in the government, experience with a given tax instrument, episodes of resistance to taxation. Finally, a fruitful path that we are envisaging is to conduct an equivalent data collection and harmonization work on the *expenditure* side and investigate the relationship between sources of revenue and types of public expenditure over all post-colonial decades.

Figure 1
## Total revenue 1900-2018 in North Africa
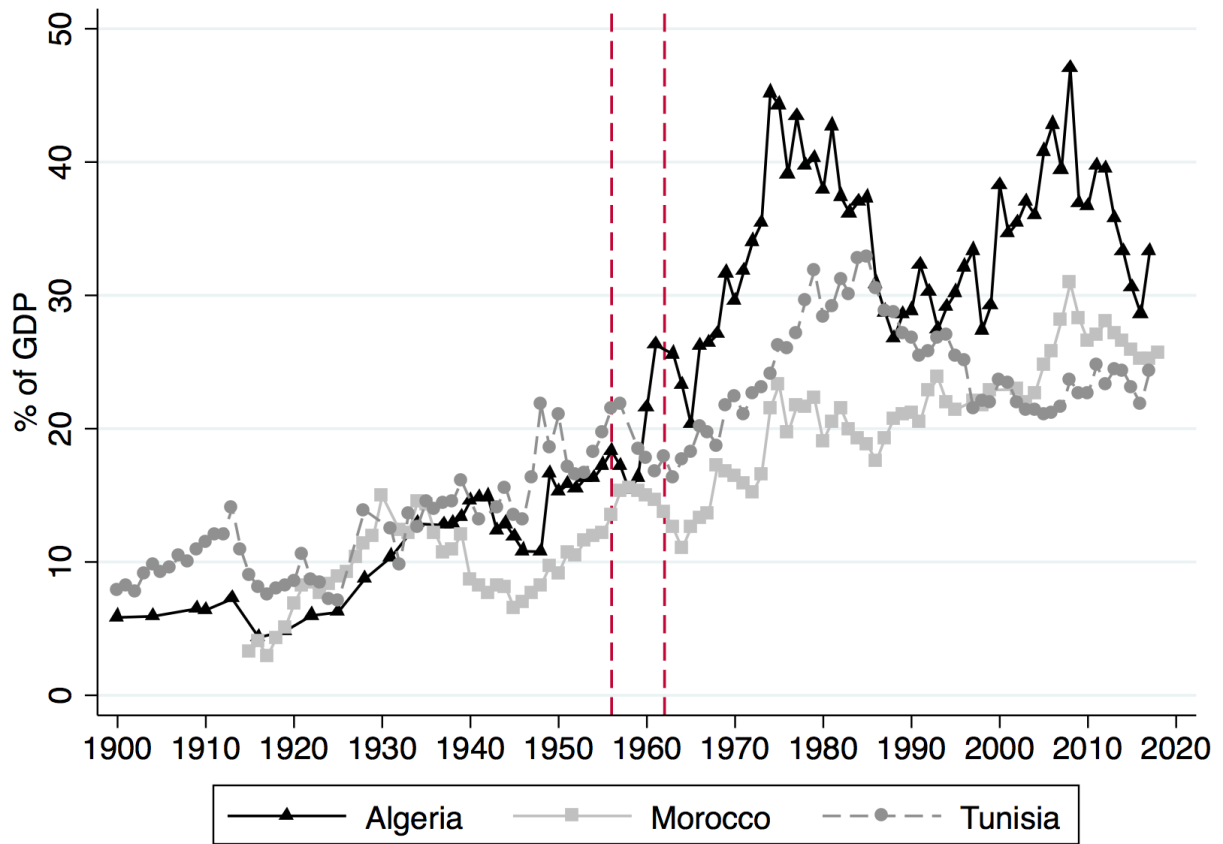
Note: This Figure displays total revenue as share of GDP for the three North African countries in our sample, for the colonial and post-colonial period. Total revenue includes all tax and non-tax revenues, excluding grants. The red vertical lines indicate the years of independence. Source: see Appendix A.1.

Figure 2
Total revenue 1900-2018 in Sub-Saharan Africa
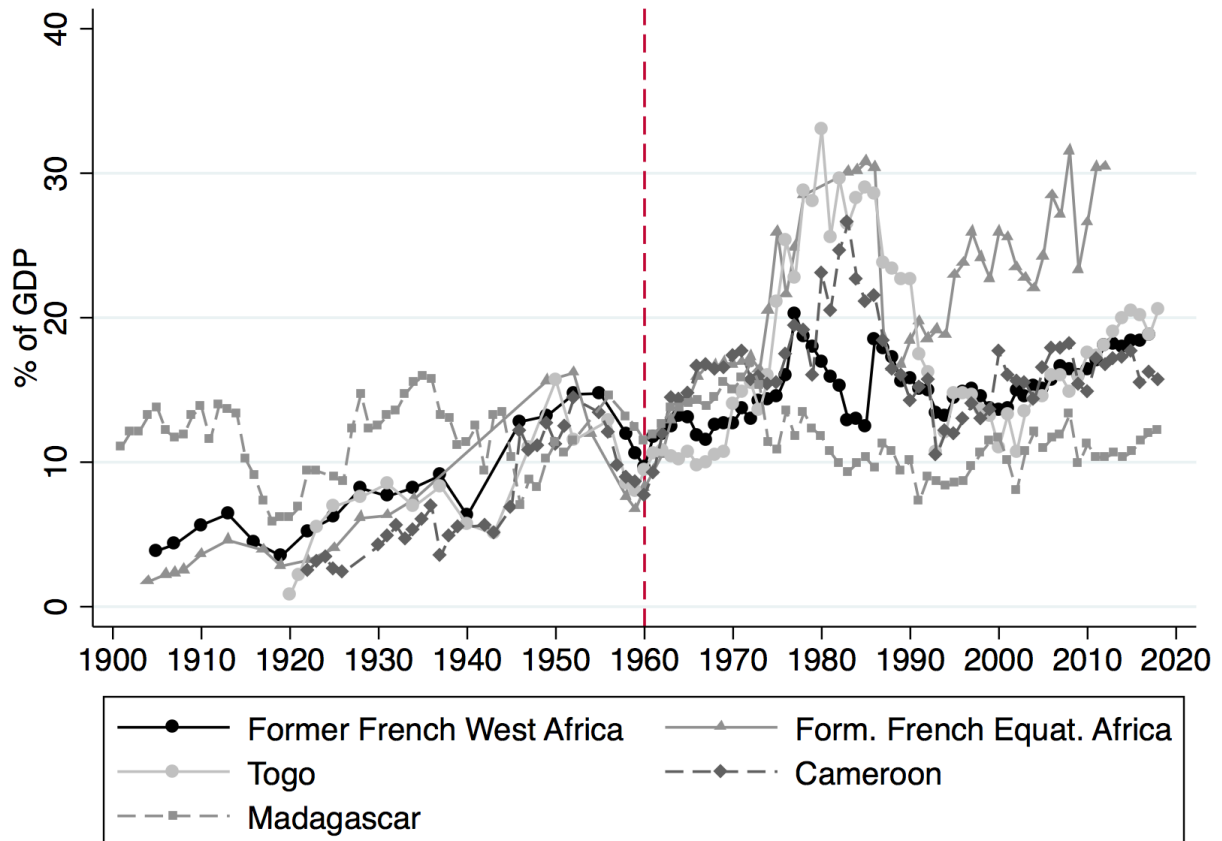
Note: This Figure displays total revenue as share of GDP for the Sub-Saharan African countries in our sample, for the colonial and post-colonial period. Total revenue includes all tax and non-tax revenues, excluding grants. Because revenues are defined at the regional level for French West Africa and French Equatorial Africa in the colonial period, post-colonial revenues are also aggregated by region. The revenue to GDP ratio for a given region is computed as the sum of total nominal revenues divided by the sum of nominal GDP for all countries within the region. Any given region-year observation is dropped if data is missing for one country within the region. French West Africa: Benin, Burkina Faso, Guinea, Côte d'Ivoire, Mali, Mauritania, Niger, Senegal. French Equatorial Africa: Central African Republic, Congo, Gabon, Chad. The red vertical line indicates the year of independence. Source: see Appendix A.1.

Figure 3
## Total revenue around independence years
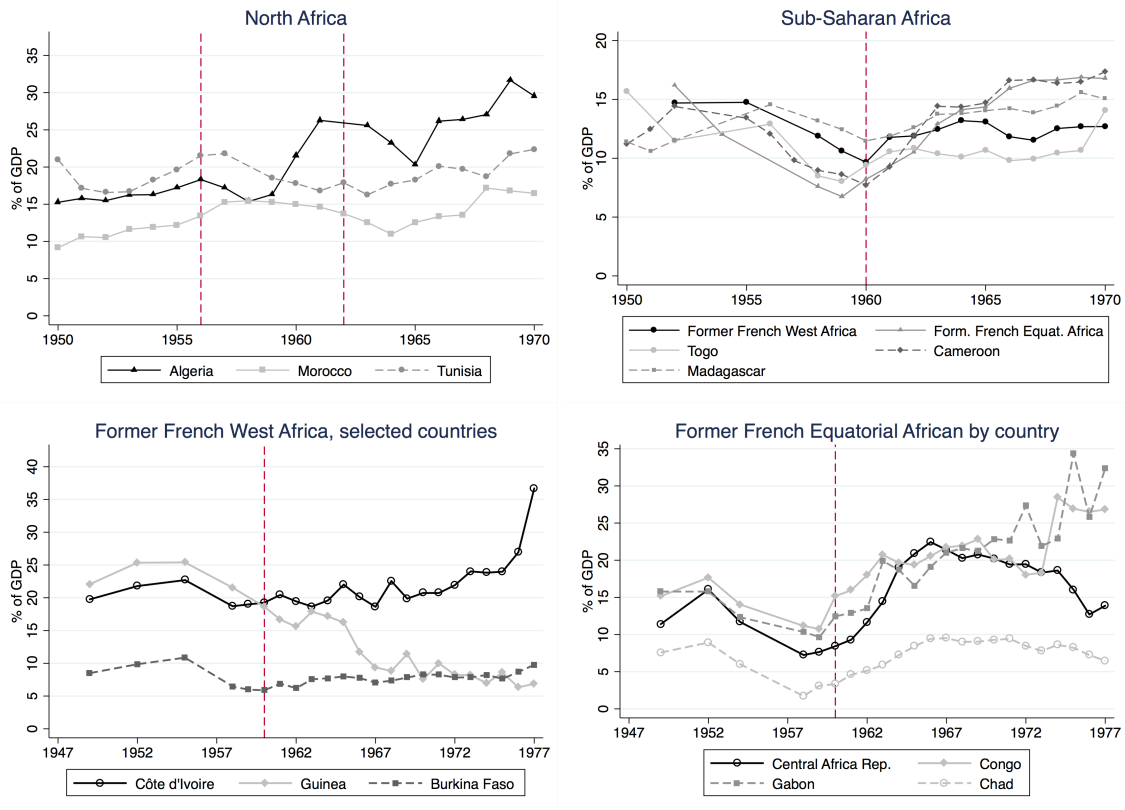
Note: These Figures display total revenue as share of GDP, for years around independence (red lines). Total revenue includes all tax and non-tax revenues, excluding grants.

In the Figure on the right top, because revenues are defined at the regional level for former French West Africa and former French Equatorial Africa in the colonial period, post-colonial revenues are also aggregated by region. The revenue to GDP ratio for a given region is computed as the sum of total nominal revenues divided by the sum of nominal GDP for all countries within the region. Any given region-year observation is dropped if data is missing for one country within the region. French West Africa: Benin, Burkina Faso, Guinea, Côte d'Ivoire, Mali, Mauritania, Niger, Senegal. French Equatorial Africa: Central African Republic, Congo, Gabon, Chad.

The Figures at the bottom display total revenue as share of GDP for the countries within former French West Africa or French Equatorial Africa. For years 1949-1960, we assign a share of the Total Revenues of the federation to each country (see Appendix A.2), based on the 1961 country-level trade tax to GDP ratio multiplied by an adjustment factor that accounts for the change in aggregate region-level trade taxes, and based on each colony's GDP compared to counterparts in the federation for the share of domestic taxes collected at federal level. Note that the largest share of domestic taxes was collected at colony level and are attributed without any assumptions. Source: see Appendix A.1.

Figure 4
## Trade taxes 1900-2018 in North Africa
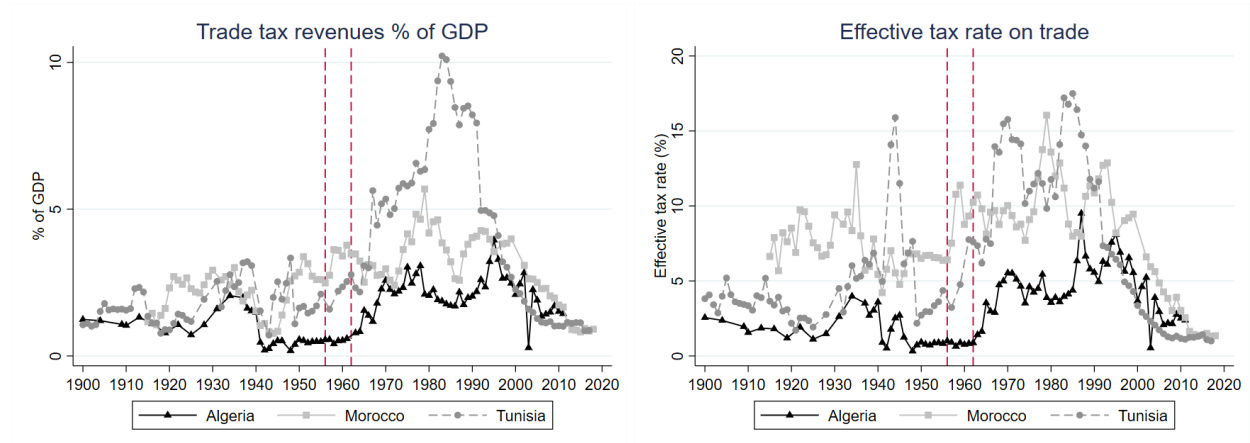
Note: This Figure displays trade taxes as share of GDP and effective tax rates on trade (trade tax revenues divided by total trade value) for the three North African countries in our sample, for the colonial and post-colonial period. The red lines indicate the years of independence (1956 for Morocco and Tunisia, 1960 for Algeria). Source: see Appendix A.1.

Figure 5
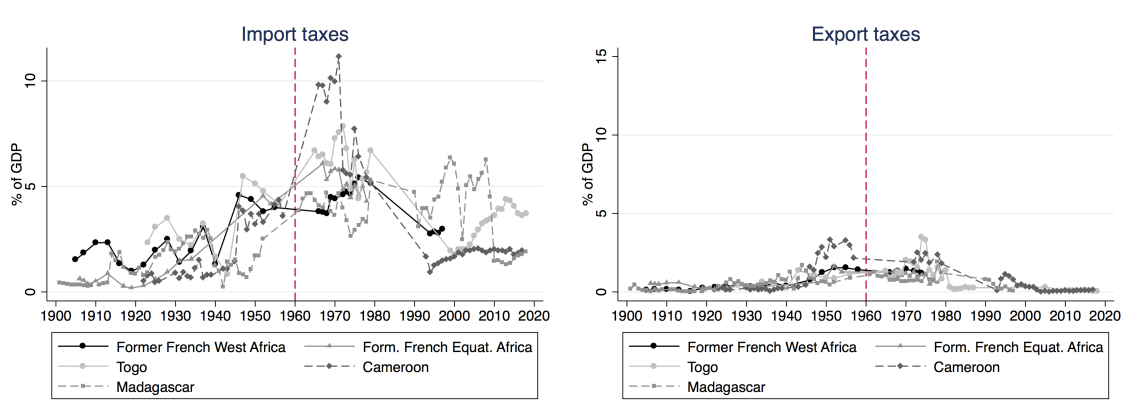## Trade taxes 1900-2018 in Sub-Saharan Africa
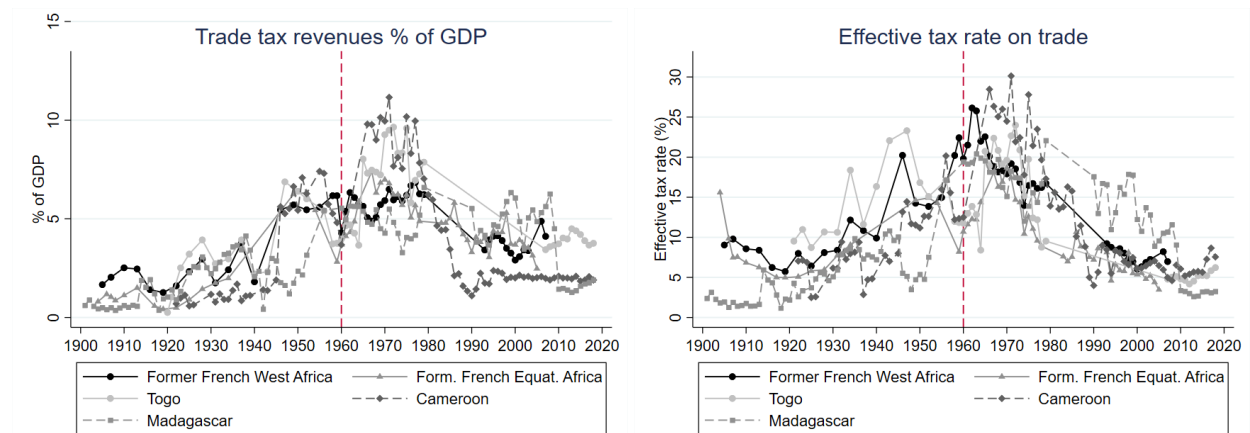
Note: This Figure displays trade taxes as share of GDP and effective tax rates on trade for the Sub-Saharan African countries in our sample, for the colonial and post-colonial period. Because revenues are defined at the regional level for French West Africa and French Equatorial Africa in the colonial period, post-colonial revenues are also aggregated by region. The trade tax to GDP ratio for a given region is computed as the sum of total trade tax revenues divided by the sum of nominal GDP for all countries within the region. The effective tax rate on trade is computed as the sum of total trade tax revenues divided by the sum of total trade values for each country within the region. Any given region-year observation is dropped if data is missing for one country within the region. French West Africa: Benin, Burkina Faso, Cote d'Ivoire, Guinea, Mali, Mauritania, Niger, Senegal. French Equatorial Africa: Central African Republic, Congo, Gabon, Chad. The red vertical line indicates the year of independence (1960). Source: see Appendix A.1.

Figure 6
## Import and export taxes 1900-2018 in North Africa
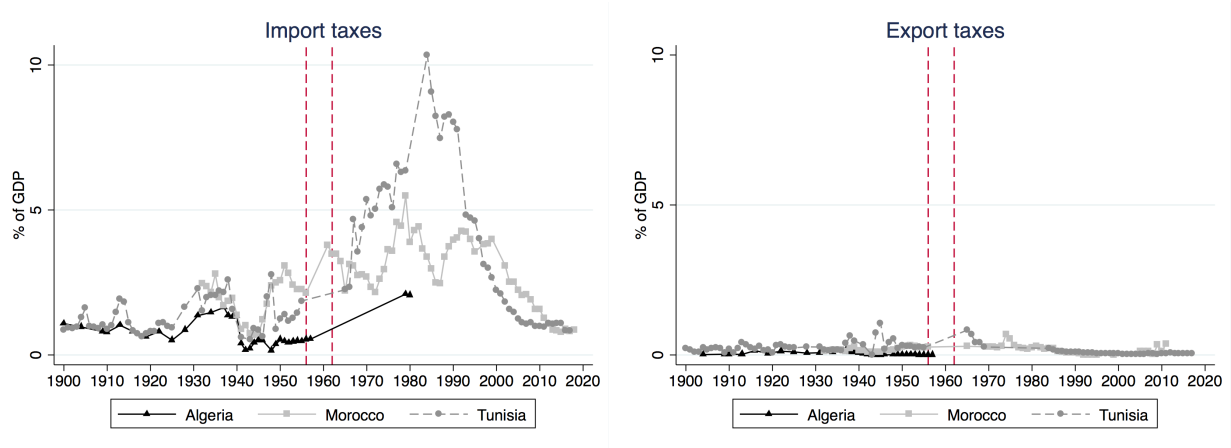
Note: This Figure displays import and export taxes as share of GDP for the three North African countries in our sample, for the colonial and post-colonial period. The red lines indicate the years of independence (1956 for Morocco and Tunisia, 1960 for Algeria). Source: see Appendix A.1.

Figure 7
Import and export taxes 1900-2018 in Sub-Saharan Africa

Note: This Figure displays import and export taxes as share of GDP for the Sub-Saharan African countries in our sample, for the colonial and post-colonial period. Because revenues are defined at the regional level for French West Africa and French Equatorial Africa in the colonial period, post-colonial revenues are also aggregated by region. The trade tax to GDP ratio for a given region is computed as the sum of total trade tax revenues divided by the sum of nominal GDP for all countries within the region. Any given region-year observation is dropped if data is missing for one country within the region. French West Africa: Benin, Burkina Faso, Cote d'Ivoire, Guinea, Mali, Mauritania, Niger, Senegal. French Equatorial Africa: Central African Republic, Congo, Gabon, Chad. The red vertical line indicates the year of independence (1960). Source: see Appendix A.1.

Figure 8

The revenues of stabilization funds in Cote d'Ivoire
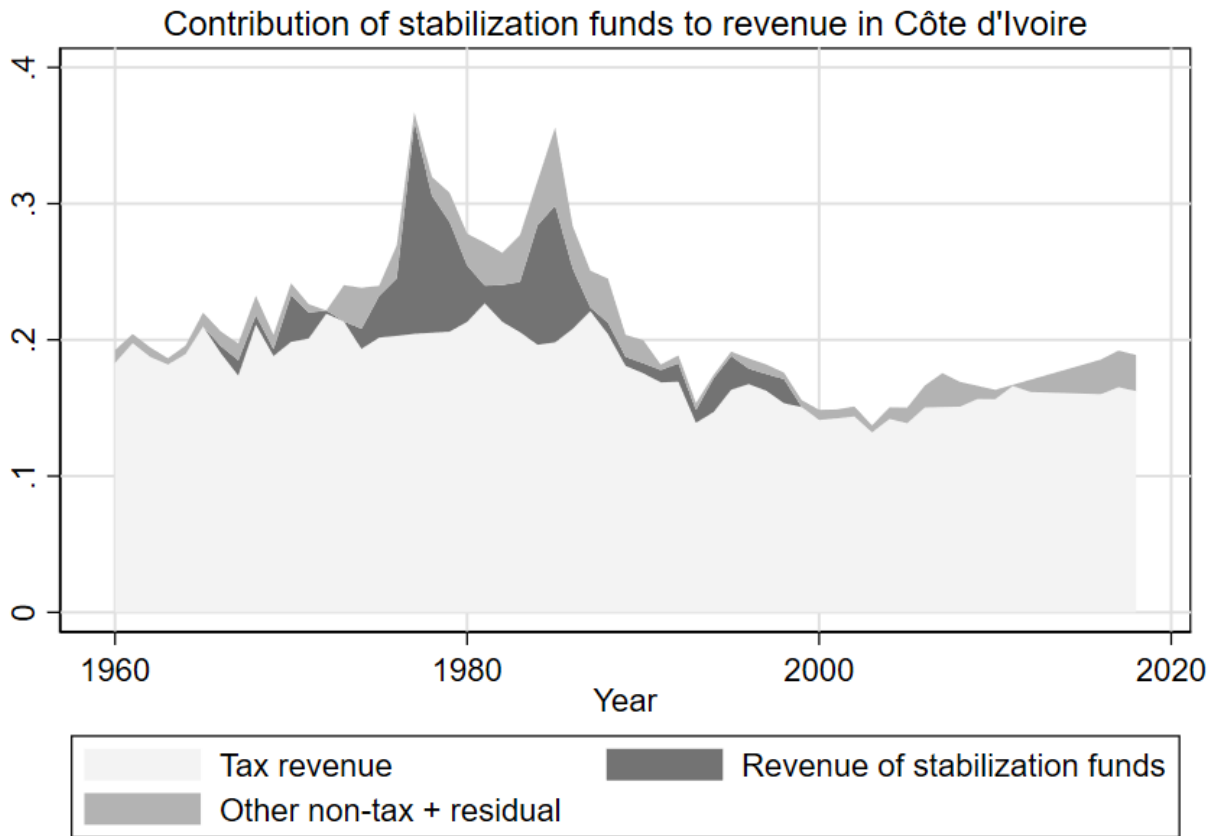
Note: this graphs displays total government revenue in Cote d'Ivoire as a share of GDP, distinguishing between three sources of revenue: tax revenue, the revenue of stabilization funds, and other non-tax revenues (and residual revenue). Source: see Appendix A.1.

Table 1
Total Revenue 1949-1955 and 2006-2016

	(1) Total Revenue 1949-1955	(2) Total Revenue 2006-2016	(3) Change (2)-(1)	(4) Resource Revenue 2006-2016	(5) Non Resource Revenue 2006-2016	(6) Change (5)-(1)
Guinea	24.3	16.2	–8.1	3.4	12.8	–11.5
Côte d'Ivoire	21.4	17.6	–3.9	1.6	16.0	–5.4
Central African Rep.	13.1	9.4	–3.7	1.1	8.3	–4.8
Mali	15.6	14.9	–0.7	2.7	12.2	–3.4
Madagascar	10.7	10.7	0.0	1.1	9.6	–1.1
Benin	12.4	14.7	2.3	0.0	14.7	2.3
Senegal	12.7	15.9	3.3	0.3	15.7	3.0
Cameroon	12.8	16.9	4.0	4.6	12.2	–0.6
Tunisia	18.3	23.0	4.8	2.0	21.1	2.8
Togo	13.6	18.9	5.4	0.9	18.1	4.5
Burkina Faso	9.7	16.4	6.6	1.8	14.6	4.8
Mauritanie	15.9	22.8	6.8	8.0	14.8	–1.1
Niger	7.4	15.3	7.9	2.7	12.7	5.3
Chad	7.5	16.8	9.3	11.0	5.8	–1.7
Gabon	14.6	27.2	12.6	14.4	12.8	–1.9
Maroc	10.8	27.3	16.4	2.0	25.3	15.3
Algeria	16.1	37.3	21.2	24.3	13.0	–3.1
Congo	15.6	38.5	22.8	29.5	8.9	–6.7
Mean	14.0	20.0	5.9	6.2	13.8	–0.2
Correlation with (3)	.	.	.	.77	.	.32

Notes: This Table displays for each country in our sample total revenue averaged over two periods: the years before decolonization (1949-1955, Column 1), and the recent period (2006-2016, Column 2). Column 3 displays the difference between Column 1 and 2. Countries are sorted by values of Column 3, meaning that countries at the top are the ones for which total revenue declined the most between the two periods. Columns 4 and 5 decompose total revenue into resource and non resource for the recent period, and Column 6 displays the change in total revenue when excluding resource revenue. In this Table, we replace missing resource revenue values with data from EITI when available (Burkina Faso, Central African Republic, Congo, Cote d'Ivoire, Mali, Mauritania, Niger, Togo; see https://eiti.org/). We replace missing resource revenue for Morocco with data from Azizi (2017). We delete country-year observations for which total revenue or resource revenue are missing in the recent period. In Table A.1 we show the same Table without replacements using EITI data. Only Algeria and Morocco are found to have significant mineral resource revenue in 1949-1955, respectively for 0.11 (all mines) and 0.86 (phosphates) percent of GDP on average; this initial contribution is taken into account in Column 6, this makes that Column 6 is not exactly equal to Column 5 minus Column 1 in the case of these two countries. Source: see Appendix A.1

Table 2

Dependence on trade taxes and natural resources

	1960-1973	1974-1985	1986-2018
Trade taxes as % of GDP	5.1	5.8	3.2
Import taxes as % of GDP	4.2	5.1	2.7
Imports as % of GDP	18.3	25.7	25.9
Effective tax rate on imports (%)	22.9	20.9	11.1
Export taxes as % of GDP	0.8	0.6	0.4
Exports as % of GDP	17.1	19.8	29.8
Effective tax rate on exports (%)	4.9	4.5	1.4
Resource Revenue as % of GDP	1.0	3.5	4.7
Trade tax as % of Total Revenue	35.5	35.7	20.0
Import trade tax as % of Total Revenue	29.7	30.5	16.1
Export trade tax as % of Total Revenue	5.1	4.3	2.8
Resource revenue as % of Total Revenue	7.2	14.7	23.3

Notes: This Table displays the evolution of the weight of trade taxes and resource revenue in GDP and in total revenue, for three different periods of the post-colonial era, for all 18 countries of our sample. We drop country-year observations where trade taxes or resource revenues are missing. Source: see Appendix A.1.

Table 3
Measuring natural resource dependence

	(1) Total Revenue (% GDP)	(2) Tax Revenue (% GDP)	(3) Non-tax Revenue (% GDP)	(4) Trade Tax (% GDP)	(5) Resource Revenue (% GDP)
Model 1					
Log Commodity Export Price Index	6.028***	3.251***	1.952**	0.592	6.049***
	(1.184)	(0.684)	(0.767)	(0.515)	(1.493)
Country F.E.	✓	✓	✓	✓	✓
Country Year trend	✓	✓	✓	✓	✓
Observations	1,008	961	918	913	491
Countries	18	18	17	18	16
Model 2					
Log Commodity Export Price Index	4.427***	2.008***	1.253	0.671	4.836***
	(1.278)	(0.588)	(0.950)	(0.528)	(1.385)
Log real GDP	9.459***	6.474***	3.944	-0.519	9.393***
	(2.118)	(1.547)	(2.421)	(1.105)	(2.926)
Country F.E.	✓	✓	✓	✓	✓
Country Year trend	✓	✓	✓	✓	✓
Observations	1,008	961	918	913	491
Countries	18	18	17	18	16
Model 3					
Log Commodity Export Price Index	5.467***	2.624***	1.750*	0.429	6.268***
	(1.316)	(0.663)	(0.958)	(0.514)	(1.815)
Log Commodity Export Price Index × after 1990	-0.564	-0.553*	-0.183	-0.140	0.311
	(0.404)	(0.317)	(0.268)	(0.152)	(0.602)
Country F.E.	✓	✓	✓	✓	✓
Country Year trend	✓	✓	✓	✓	✓
Observations	1,008	961	918	913	491
Countries	18	18	17	18	16
Model 4					
Log Commodity Export Price Index	4.820***	1.138	1.806	0.893	8.288***
	(1.507)	(0.862)	(1.089)	(0.608)	(2.017)
Log Commodity Export Price Index × after 1990	-1.207	0.343	-1.057	-0.742	-3.356*
	(1.356)	(0.993)	(0.873)	(0.580)	(1.806)
Log real GDP	8.722***	6.049***	3.576	-0.965	9.108***
	(1.702)	(1.501)	(2.081)	(1.015)	(2.638)
Log real GDP × after 1990	0.145	-0.124	0.157	0.092	0.620**
	(0.180)	(0.137)	(0.120)	(0.074)	(0.254)
Country F.E.	✓	✓	✓	✓	✓
Country Year trend	✓	✓	✓	✓	✓
Observations	1,008	961	918	913	491
Countries	18	18	17	18	16

Notes: This Table shows the results from OLS regressions where the dependent variables are: total revenue (Column 1), tax revenue (Column 2), non-tax revenue (Column 3), trade taxes (Column 4) and resource revenue (Column 5), all expressed as a share of GDP. Observations are at the country-year level for years 1962-2018. Standard errors clustered by country in parentheses. Significance levels denoted by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. The Commodity Export Price Index is computed by applying yearly international commodity prices to a fixed country-specific combination of exported commodities over years 1980-2015. Source: see Appendix A.1.

Table 4

Structural adjustments: Trade and Domestic taxes

Dependent Variable as share of GDP	OLS	
	(1) DomTax	(2) TotRev
Trade Tax	-0.330**	0.762***
	(0.121)	(0.127)
Trade Tax × Post 1990	-0.354***	-0.428**
	(0.116)	(0.172)
ImportRatio	0.099**	0.105***
	(0.037)	(0.028)
ExportRatio	0.014	0.143*
	(0.042)	(0.071)
Log real GDP	5.522***	10.383***
	(1.596)	(2.290)
Constant	-138.631***	-267.767***
	(42.275)	(62.036)
Country FE	Yes	Yes
Country Year trend	Yes	Yes
N	906	937

Notes: This Table shows the results from an OLS regression where the dependent variable is domestic tax (Column 1), and total revenue (Column 2), both expressed as a share of GDP. The sample includes 18 countries for years 1960-2018. Trade tax is the ratio of Trade taxes to GDP. Post 1990 is a dummy equal to one for years after 1990. ImportRatio (resp. ExportRatio) is the ratio of imports (resp. exports) to GDP. We include country fixed effects and country specific year trends. Standard errors are clustered by country. Significance levels denoted by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Source: see Appendix A.1.

References

ABADIE, ALBERTO, DIAMOND, ALEXIS, & HAINMUELLER, JENS. 2010. Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program. *Journal of the American Statistical Association*, **105**(490), 493–505.

AHLERUP, PELLE, BASKARAN, THUSHYANTHAN, & BIGSTEN, ARNE. 2015. Tax Innovations and Public Revenues in Sub-Saharan Africa. *The Journal of Development Studies*, **51**(6), 689–706.

ALBERS, THILO, JERVEN, MORTEN, & SUESSE, MARVIN. 2020. The Fiscal State in Africa: Evidence from a century of growth. *African Economic History Working Paper Series*, **N 55/2020**.

ALMUNIA, MIGUEL, HJORT, JONAS, KNEBELMANN, JUSTINE, & TIAN, LIN. 2020. Strategic or Confused Firms? Evidence from "Missing" Transactions in Uganda. *Mimeo*.

ALVAREDO, FACUNDO, COGNEAU, DENIS, & PIKETTY, THOMAS. 2021. Income Inequality Under Colonial Rule. Evidence from French Algeria, Cameroon, Tunisia, and Vietnam and Comparisons with British Colonies 1920-1960. *Journal of Development Economics, forthcoming*.

AMIN, SAMIR. 1966. *L'Economie du Maghreb*. Editions de Minuit.

AMIN, SAMIR. 1970. *Maghreb in the Modern World*. Penguin.

AMIN, SAMIR. 1971. *L'Afrique de l'Ouest bloquée: l'économie politique de la colonisation 1880-1970*. Editions de Minuit.

AURIOL, EMMANUELLE, & WARLTERS, MICHAEL. 2012. The marginal cost of public funds and tax reform in Africa. *Journal of Development Economics*, **97**(1), 58–72.

AUSTIN, GARETH. 2010. African Economic Development and Colonial Legacies. *International Development Policy*, **1**, p. 11–32.

AZIZI, JAMAL. 2017. Economic impacts of phosphate extraction and valorization on the Moroccan economy: An input-output analysis. *Mimeo.*

BACHAS, PIERRE, JAEF, ROBERTO, & JENSEN, ANDERS. 2019. Size-Dependent Tax Enforcement and Compliance: Global Evidence and Aggregate Implications. *Journal of Development Economics*.

BACHAS, PIERRE, FISHER-POST, MATTHEW, JENSEN, ANDERS, & ZUCMAN, GABRIEL. 2020. Globalization, Factor Shares, and Factor Income Taxation. *mimeo*.

BARROWS, LELAND CONLEY. 1994. Fall (Babacar) : Le Travail forcé en Afrique occidentale française (1900-1946). *Revue française d'histoire d'outre-mer, tome 81, n°305, 4e trimestre 1994.*

BATES, ROBERT. 1981. *Markets and States in Tropical Africa: The Political Basis of Agricultural Policies*. University of California Press.

BAUNSGAARD, THOMAS, & KEEN, MICHAEL. 2005. Tax Revenue and (or?) Trade Liberalization. *IMF Working Paper*, **05/112**.

BAYART, JEAN-FRANÇOIS. 1983. Les sociétés africaines face à l'état. *Pouvoirs*, 04, 23–39.

BESLEY, TIMOTHY, & PERSSON, TORSTEN. 2009. The Origins of State Capacity: Property Rights, Taxation, and Politics. *American Economic Review*, **99**(4), 1218–44.

BESLEY, TIMOTHY, & PERSSON, TORSTEN. 2011. *Pillars of Prosperity: The Political Economics of Development Clusters*. Princeton: Princeton University Press.

CAGÉ, JULIA, & GADENNE, LUCIE. 2018. Tax Revenues and the Fiscal Cost of Trade Liberalization, 1792-2006. *Explorations in Economic History*.

CALDEIRA, ÉMILIE, COMPAORE, ALI, DAMA, ALOU ADESSÉ, MANSOUR, MARIO, & ROTA-GRAZIOSI, GRÉGOIRE. 2019. Effort fiscal en Afrique subsaharienne : les résultats d'une nouvelle base de données. *Revue d'Economie du Développement*, **27**.

CHAMBAS, GÉRARD. 1994. *Fiscalité et Développement en Afrique Sub-Saharienne*. Economica.

CHAMBAS, GÉRARD. 2005. *Afrique au Sud du Sahara : quelle stratégie de transition fiscale ?* Working Paper. halshs archives ouvertes 00564676.

COGNEAU, DENIS. 1999. Transition fiscalo-douanière et répartition dans un pays en développement: éléments de réflexion et application aux cas du Cameroun et du Maroc. *Pages 217–238 of:* GASTELLU, JEAN-MARC, MOISSERON, JEAN-YVES, & POURCET, GUY (eds), *Fiscalité, développement et mondialisation.* Paris: Maisonneuve & Larose.

COGNEAU, DENIS, DUPRAZ, YANNICK, & MESPLÉ-SOMPS, SANDRINE. 2021. Fiscal Capacity and Dualism in Colonial States: The French Empire 1830-1962. *Journal of Economic History.*, **81**(2).

COOPER, FREDERICK. 2002. *Africa Since 1940: The Past of the Present.* Cambridge: Cambridge University Press.

CRIVELLI, ERNESTO, & GUPTA, SANJEEV. 2014. Resource blessing, revenue curse? Domestic revenue effort in resource-rich countries. *European Journal of Political Economy*, **35**.

DIOP, MOMAR-COUMBA. 2009. Du "socialisme africain" à la "lutte contre la pauvreté". *Pages 323–373 of:* DAFFÉ, GAYE, & DIAGNE, ABDOULAYE (eds), *Le Sénégal face aux défis de la pauvreté.* CRES Karthala CREPOS.

DUMONT, RENÉ. 1966. *False Start in Africa.* Frederick A. Praeger.

EBEKE, CHRISTIAN, MANSOUR, MARIO, & ROTA-GRAZIOSI, GREGOIRE. 2016. The Power to Tax in Sub-Saharan Africa: LTUs, VATs, and SARAs. *FERDI Working Paper*.

EBRILL, LIAM, KEEN, MICHAEL, & PERRY, VICTORIA. 2001. Understanding the Revenue Performance of VATs. *The Modern VAT*. International Monetary Fund.

EHRHART, HELENE, & GUERINEAU, SAMUEL. 2013. Commodity price volatility and tax revenue: evidence from developing countries. *Document de travail banque de France*, **423**.

ESHAG, EPRIME, & RICHARDS, P.J. 1967. A Comparison of Economic Developments in Ghana and the Ivory Coast since 1960. *Bulletin of the Oxford University Institute of Economics & Statistics*, **29**(4), 353–372.

FRANKEMA, EWOUT, & VAN WAIJENBURG, MARLOUS. 2014. Metropolitan blueprints of colonial taxation? Lessons from fiscal capacity building in British and French Africa, c.1880-1940. *The Journal of African History*, **55**(3), 371–400.

GADENNE, LUCIE. 2017. Tax Me, but Spend Wisely? Sources of Public Finance and Government Accountability. *American Economic Journal: Applied Economics*, **9**(1), 274–314.

GARDNER, LEIGH. 2012. *Taxing Colonial Africa. The Political Economy of British Imperialism.* Oxford Historical Monographs.

GENSCHEL, PHILIPP, & SEELKOPF, LAURA. 2019. *Tax introduction database (TID).* Database. Department of Political and Social Sciences Retrieved from Cadmus, European University Institute Research Repository.

GERARD, FRANÇOIS, & NARITOMI, JOANA. 2018. Value Added Tax in developing countries: Lessons from recent research. *International Growth Centre Research Brief.*

GRUSS, BERNARD, & KEBHAJ, SUHAIB. 2019. *Commodity Terms of Trade: A new Database.* Working Paper WP/19/21. IMF.

JACQUEMOT, PIERRE, & RAFFINOT, MARC. 2018. La mobilisation fiscale en Afrique. *Revue d'économie financière*, 243–263.

JONES, WILLIAM O. 1987. Food-Crop Marketing Boards in Tropical Africa. *The Journal of Modern African Studies*, **25**(3), 375–402.

KEEN, MICHAEL, & MANSOUR, MARIO. 2009. Revenue Mobilization in Sub-Saharan Africa: Challenges from Globalization. *IMF Working Paper*, **09/157**.

MANSOUR, MARIO. 2014. A Tax Revenue Dataset for Sub-Saharan Africa: 1980-2010. *Ferdi Working Paper*, **19**.

MARTINEZ, LUIS. 2019. Sources of Revenue and Government Performance: Evidence from Colombia. *mimeo. available at SSRN.*

MONÉTAIRE DE LA ZONE FRANC, COMITÉ. 1959. *La Zone Franc en 1959*. Secrétariat du Comité monétaire de la zone franc,Paris: Imprimerie nationale, [BnF: NUMP-10930].

MOORE, BARRINGTON. 1966. *Social Origins of Dictatorship and Democracy. Lord and Peasant in the Making of the Modern World.* Boston: Beacon Press.

MOORE, MICK, PRICHARD, WILSON, & FJELDSTAD, ODD-HELGE. 2018. *Taxing Africa: Coercion, Reform and Development.* Zed Books.

MOSLEY, PAUL. 2017. *Fiscal policy and the natural resources curse: How to escape from the poverty trap.* Taylor & Francis.

NAUGHTON, BARRY. 2017. Is China Socialist? *The Journal of Economic Perspectives*, **31**(1), 3–24.

NORTH, DOUGLAS. 1990. *Institutions , Institutional Change and Economic Performance.* Cambridge: Cambridge University Press.

OLKEN, BENJAMIN A., & SINGHAL, MONICA. 2011. Informal Taxation. *American Economic Journal: Applied Economics*, **3**(4), 1–28.

PIKETTY, THOMAS. 2018. *Top incomes in France in the Twentieth Century. Inequality and Redistribution. 1901-1998.* Cambridge University Press.

POMERANZ, DINA. 2015. No Taxation without Information: Deterrence and Self-Enforcement in the Value Added Tax. *American Economic Review*, **105**.

PRICHARD, WILSON. 2015. *Taxation, Responsiveness and Accountability in Sub-Saharan Africa The Dynamics of Tax Bargaining.* Cambridge University Press.

PRICHARD, WILSON, COBHAM, ALEX, & GOODALL, ANDREW. 2014. The ICTD Government Revenue Dataset. *ICTD Working Paper*, **N 19**.

PRICHARD, WILSON, SALARDI, PAOLA, & SEGAL, PAUL. 2018. Taxation, non-tax revenue and democracy: New evidence using new cross-country data. *World Development*, **109**, 295–312.

RODRIK, DANI. 1990. How should structural adjustment programs be designed? *World Development*, **18**.

ROSS, MICHAEL. 2012. *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations.* Princeton University Press.

SEN GUPTA, ABHIJIT. 2007. *Determinants of tax revenue efforts in developing countries.* Working Paper WP/07/184. IMF.

SHALIZI, ZMARAK, & SQUIRE, LYN. 1988. *Tax Policy in Sub-Saharan Africa*. Vol. 2. World Bank Publications.

STOTSKY, JANET GALE, & WOLDEMARIAM, ASEGEDECH. 1997. *Tax effort in sub-Saharan Africa.* Working Paper WP/97/107. IMF.

TILLY, CHARLES. 1990. *Coercion, Capital, and European States, AD 990–1992.* Basil Blackwell, Cambridge.

TIQUET, ROMAIN. 2020. Education Through Labor: From the deuxième portion du contingent to the Youth Civic Service in West Africa (Senegal/Mali, 1920s-1960s). *Pages 83–105 of:* MATASCI, DAMIANO, JERÓNIMO, MIGUEL BANDEIRA, & DORES, HUGO GONÇALVES (eds), *Education and Development in Colonial and Postcolonial Africa.* Global Histories of Education. Springer.

TORGLER, BENNO. 2002. Does Culture Matter? Tax Morale in an East-West-German Comparison. *FinanzArchiv / Public Finance Analysis*, **59**(4), 504–528.

VAN DEN BOOGAARD, VANESSA, PRICHARD, WILSON, & JIBAO, SAMUEL. 2018. Informal taxation in Sierra Leone: Magnitudes, perceptions and implications. *African Affairs*, **118**(471), 259–284.

VAN WAIJENBURG, MARLOUS. 2018. Financing the African Colonial State: The Revenue Imperative and Forced Labor. *Journal of Economic History*, **78**(1), 40–80.

WEIGEL, JONATHAN L. 2020. The Participation Dividend of Taxation: How Citizens in Congo Engage More with the State When it Tries to Tax Them*. *The Quarterly Journal of Economics*, **135**(4), 1849–1903.

WOKER, MADELINE. 2020. *Empire of inequality: The Politics of Taxation in the French Colonial Empire, 1900-1950s*. PhD dissertation, New-York: Columbia University.

XU, GUO. 2019. The Colonial Origins of Fiscal Capacity: Evidence from Patronage Governors. *Journal of Comparative Economics*, **47**(2), 263–276.

ZOBEL, CLEMENS. 2013. Le Mali postcolonial. *Pages 57–81 of:* GONIN, PATRICK, KOTLOK, NATHALIE, & PÉROUSE DE MONTCLOS, MARC-ANTOINE (eds), *La tragédie malienne*. Vendémiaire.

A Appendix

A.1 Creation of the dataset

In this Appendix we outline the methodology used to create our public revenue series that spans both the colonial and post-colonial period. We plan on making the data series publicly available. Our series covers eighteen contemporary countries that are all former French colonies in Africa: three North African countries (Algeria, Morocco, Tunisia), the eight countries of former French West Africa (Benin, Burkina Faso, Guinea, Ivory Coast, Mali, Mauritania, Niger, Senegal), the four countries of former French Equatorial Africa (Central African Republic, Congo, Gabon, Chad), and Togo, Cameroon, Madagascar.[83] For the two federations, French West Africa and French Equatorial Africa, public revenues from the historical archives of the colonial period are reported at the level of the federation and not of individual colonies. As a result we create two series: one at the level of the federations and countries that were not in federations, between 1900 and 2018; and a second one at the country level for all eighteen countries from 1949 to 2018.

A.1.1 Sources

To create the dataset, we first relied on previous work on the colonial period from Cogneau *et al.* (2021). Second, we compared and combined data from various sources for the post-colonial period. Data from several of these sources was digitized for the purpose of this project, and to our knowledge are utilized for the first time in a systematic cross-country review. In this section we describe each of these data sources. In the following section, we explain how they were combined.

Afristory dataset. This dataset spans the whole colonial period and includes all countries of our sample. Includes public revenue variables, GDP, population, imports and exports. For more information see Cogneau *et al.* (2021) and the associated data appendix.[84]

IMF Archives (IMF). We digitized data from different IMF reports (Article IV report, Statistical appendix, recent economic development report) available on the IMF Archive website for years 1960-1980, for all eighteen countries of our sample.[85] Variables: we retain the consolidated revenue variables that we can compute in a harmonized way across countries and years: total revenue, total taxes, direct taxes, indirect taxes, trade taxes, non-tax revenue, natural resource revenue. Natural resource revenue includes royalties on oil and mineral resources, corporate taxes paid by resource firms, non tax public revenue from resource revenues and unclassified revenue from resources government revenue. There are more specific tax heads in the original documents, among them taxes on individuals and on corporates that we mobilize sometimes for our analysis. The exact scope of some of these aggregates varies for some country-years. We paid particular attention to the homogenisation of the consolidated revenue variables of this database with those of the ICTD

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[83]Former French colonies in Africa that are not in our dataset are Djibouti, and the territories of the Indian Ocean: Mauritius, Seychelles, Comoros.

[84]Dataset available on https://www.openicpsr.org/openicpsr/project/133361/version/V1/view

[85]https://archivescatalog.imf.org/search/simple

database. As the overall coverage is better than the Zone Franc data, we gave priority to IMF archives when both data were available.

ICTD/UNU-WIDER Government Revenue dataset (ICTD). The dataset includes all eighteen countries of our sample, and spans years 1980-2018.[86] Variables: We retain the consolidated revenue variables that we can compute in a harmonized way across countries and years: total revenue, total taxes, direct taxes, indirect taxes, trade taxes, non-tax revenue, natural resource revenue. There are more specific tax heads in the original data. For more information on the creation of the ICTD-GRD dataset see Prichard *et al.* (2014). As the overall coverage of this database is better than the other data, we gave priority to ICTD dataset for the period 1980-2018.

Central Bank of West African States, (*Banque centrale des Etats d'Afrique de l'Ouest***, BCEAO)**. The dataset spans years 1960-2017 and includes only West African countries of our sample: Burkina Faso, Benin, Ivory Coast, Mali, Niger, Senegal, Togo.[87] Our analysis suggests that there was less harmonization work done in the creation of this dataset than in the ICTD-GRD dataset since in some cases the level of one tax instrument for a given country suddenly falls to zero from one year to another. Overall however when total revenue is compared to total revenue from ICTD, the levels and evolutions are very similar. We use a few observations from this dataset to fill in some missing observations in the other series, when they are consistent with the totals in the main sources: total revenue, Ivory Coast 2012-17; total taxes, Niger 2004-05; trade taxes, Ivory Coast 1981-85, 2006-17, Niger 1977-78, 1981-82, Senegal 1980-90; non taxes revenues, Senegal 1978.

Foundation for studies and research on international development dataset (FERDI). Data available from 1980 to 2010, for fourteen countries from our sample (excludes North African countries and Mauritania).[88] Variables: total taxes, direct and indirect taxes, natural resource revenue, trade taxes (no variable for total revenue). The reasons why we do not rely extensively on this data are: missing total revenue; differences in the the breaking up of tax revenue between trade and indirect taxes compared to ICTD, however the ICTD documentation is more detailed; in former French Equatorial Africa, FERDI tax ratios are lower than ICTD revenue ratios, which hints to the possibility that some aggregates are not included in FERDI dataset. However we do fill in a small number of missing values with FERDI data when they are consistent with the totals in the main sources: trade taxes, Cameroon 1980-92, Chad 1983-84; indirect taxes, Ivory Coast 1981-85, Gabon 1990-91, Madagascar 1980-89, Niger 1981-82, Senegal 1980-90, Chad 1980-85, Togo 1982-2006; direct taxes, Cameroon 1980-92, Madagascar 1981-89, Niger 1981-82, 2006-10, Senegal 1981-92, natural resource revenue, Cameroon 1984-89.

Government Finance Statistics (GFS). Data available between 1972 and 2017. Includes all eighteen countries in our sample.[89] Variables: we retain the consolidated revenue variables that we can obtain in a harmonized way across countries and years total revenue, total taxes, direct

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[86]We use the 2020 version of the dataset, which is the latest available. https://www2.wider.unu.edu/crm/content/grd-data-download

[87]https://edenpub.bceao.int/

[88]https://ferdi.fr/en/indicators/tax-revenue-dataset-for-sub-saharan-africa-1980-2010

[89]https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405

taxes, indirect taxes, trade taxes, non-tax revenue. There are more specific tax heads in the original data. This data is the starting point for the ICTD dataset, but the ICTD dataset is computed with additional harmonization work, which is why it was privileged in our analysis. We use some observations from the GFS series for non tax revenue Tunisia 1974-82.

National Statistical Agency, Algeria (ONS). Data available from 1963 to 2011, Algeria only.[90] Variables: total revenue, total taxes, direct tax, indirect tax, trade tax, non-tax revenue, natural resource revenue. We drew from this dataset total taxes, trade taxes, direct taxes and indirect taxes from 1981 to 2011, since these variables are missing for Algeria in the other series.

OECD Africa Revenue Dataset (OECD). Data available from 1990 onwards (at least, within our sample of countries) Includes only eight countries out of the eighteen of our sample: Cameroon, Ivory Coast, Morocco, Niger, Senegal, Togo, Tunisia.[91] The definitions used for the breaking up between indirect (domestic) taxes and trade taxes seem to vary over time for a given country, while the split seemed more documented and homogeneous in the ICTD dataset (for instance, in Togo and Tunisia, trade taxes suddenly drop to very low levels, partly reclassified as indirect taxes, while in ICTD, the classification is made consistent over time for a given country whenever possible). At the end, we do not mobilize this dataset in our analysis.

Zone Franc Reports (ZF). These documents are published by the French Central Bank. The digitalization of this data started for Afristory dataset was extended in the context of this project. Available between 1955 and 1990. Includes all eighteen countries in our sample. Variables: we retain the consolidated revenue variables that we can compute in a harmonized way across countries and years: total revenue, total taxes, direct taxes, indirect taxes, trade taxes, non-tax revenue, natural resource revenue - defined as the sum of royalties on oil and mineral resources, corporate taxes paid by resource firms and other public revenue on resources. There are more specific tax heads in the original documents. We mainly use this dataset for the 1960s: total revenue, Gabon 1965, Madagascar 1960-73, Morocco 1960, Senegal 1960, Chad 1960, Tunisia 1961;

Zone Franc Government Financial Operations Tables (ZFT). Data digitized in the context of the project. Data available from 1980 to 1990, for West African countries (Burkina Faso, Benin, Congo, Gabon, Mali, Niger, Senegal, Togo). When comparing with ICTD for the same years, the ratios are extremely close or similar. No additional information than in the ICTD data. Finally, we do not mobilize this dataset in our analysis.

Extractive Industries Transparence Initiative (EITI). Includes data on revenues from natural resources, starting in 2001. Includes fourteen countries of our sample (excluding Algeria, Tunisia, Morocco, Benin).https://eiti.org/explore-data-portalcompare-key-figures-in-eiti-reports The data is compiled using reports from natural resource companies combined with reports from the government, which could lead to declaration biases, as some companies might not have joined the intiative. Therefore we do not rely on this data to be included in our main data series, but we use it to fill in some gaps for the analsyis presented in Table 1.

Ministry of Finance, Morocco, in Azizi (2017). This study reports the share of total govern-

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[90]http://www.ons.dz/-Retrospective-1962-2011-.html
[91]https://stats.oecd.org/Index.aspx?DataSetCode=RS_GBL

ment revenues that are associated with phosphates (more precisely, the OCP, the 95 percent state-owned phosphate miner and producer[92]), either as corporate income tax or dividends. We use these figures for Table 1 only and do not integrate them in our main dataset, since they are only available for years 2009-2014.

World Development Indicators (WDI). Data available between 1960 and 2018 and includes all countries in our sample.[93] Used for the following variables: GDP, exports, imports, natural resource rents.

A.1.2 Methodology

The steps taken to create the post-colonial data series were as followed. First, we constructed the same aggregates in all of the data sources mentioned above, in the most comparable way. These aggregates are: total revenue, total tax, total non tax, trade tax, domestic tax, direct tax, indirect tax, resource revenue(see below the exact definition of these aggregates). Each of these aggregates is not available or can't be computed in each dataset. Second, we systematically compared the different data sources by country-year for these aggregates, starting by total revenue. These comparisons were done both visually and by computing the percentage differences between the different sources. We also generated information on the coverage of each data source by country and type of tax. The criteria used to identify which sources to retain were: i. possibility to link the series with the colonial series in the 1960s with the same revenue aggregates and seemingly coherent levels, and quality of the continuity with the other retained series; ii. possibility to define harmonized revenue aggregates over the long run and across countries, extent of information in the documentation; iii. extent of coverage in terms of countries and years.

This led us to define the following as the *main* sources by period.

- Colonial period: Afristory.

- 1960-1980: IMF.

- 1980-2018: ICTD-GRD.

Then, we used the *secondary* sources to fill in some missing values, or for some corrections. This was not done systematically but on a case by case basis. The replacement was done only if the imputed value seemed consistent with values in previous and following years, and consistent with the totals from the other retained sources of the same country-year. This was also done only in cases where we were confident about the definitions of the tax aggregates. Finally, we express all variables as a share of GDP.

Our total revenue variable is missing only for 18 out of 1,061 country-year observations between 1960 and 2018. Between 1960 and 1980, the source for this variable is IMF in 85 percent of cases, ZF in 9 percent of cases, and a Sum we constructed in 4 percent of cases. After 1980, the

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[92]Formerly, *Office Chérifien des Phosphates.*
[93]https://databank.worldbank.org/source/world-development-indicators

source is ICTD in 96 percent of cases, a Sum we constructed in 2 percent of cases, and BCEAO or IMF each in 1 percent of cases.

We referenced the retained source for each country-year-variable in an online appendix available here: Online Data Source Appendix.

A.1.3 Scope and caveats

Geographical scope. For information on the geographical scope of territories in the colonial period, see Cogneau *et al.* (2021). After independence, in 1961, Cameroon was subject to a modification of its borders, when sourthen Cameroon under British rule became part of the newly independent country.

Budget account considered. Our series include total aggregated revenues both at the central level and subnational level. Colonial period: the data combines revenues from all layers of government as federations, colony, provincial or regional revenues. Public revenues collected at the municipality level are not included.[94] For the post-colonial period, our main data sources (IMF and ICTD) also aim at including both central and subnational revenues. However some verifications and adjustments had to be made, notably for countries with important regional budgets. **Algeria**: Regional budgets are available and included in the aggregates until 1979, but after the information are missing. As they amount to 5-6 percent of total revenue, this is a caveat. **Madagascar**: 1961-62 provincial budgets are missing and interpolated using their ratio to total revenue in 1963, the missing 1967-73 provincial budgets are extrapolated using their ratio to total revenue in 1974. **Mali**: regional budgets are created in 1963. 1963-1965: we interpolate regional budgets using detailed data from 1966 (source: IMF Archives). 1966-1971: regional revenues are not classified by category in IMF data. We add total regional revenues to total taxes. 1971 onwards: regional revenues are correctly distributed into the different revenue categories in the IMF and ICTD data. We also made sure to take into account any net public revenues from budget financing public services, which are sometimes entered in auxiliary accounts. This is sometimes the case for postal services. Due to missing information, we had to made some estimations: **Algeria** interpolation of auxiliary accounts that include posts and telegraphs from 1963 to 1964 using the ratio between the auxiliary budget and the total revenue in 1965, and extrapolation from 1975 to 1980 using 1974 information.

Fiscal year. For some countries in our sample, there was a change in the definition of a fiscal year following independence, from a January to December fiscal calendar to a June to May fiscal calendar (Cameroon 1960-2002, Senegal 1962-92, Mali, 1964-68) or to a September to October fiscal calendar (Guinea 1963-76, Niger 1962-89). Therefore we paid particular attention to the data in the different sources used for these semesters and years, since some values in the historical archives are reported for a shorter or larger period than 12 months for the transition year. We needed to extrapolate data to compute 12-months figures only for Senegal 1961 and Mali 1968.

Resource revenue. This variable is the hardest to recover in a harmonized way and with a

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[94]Municipalities did not weigh as much except in North Africa. The series being incomplete, they were therefore not included in the colonial dataset. See Cogneau *et al.* (2021), online data appendix for more details.

satisfactory coverage. First, it is often missing in the existing datasets. Second, the scope and definition may vary, from one source to another and from one country to another. For this reason we conducted in-depth verification work to create the series in the most comprehensive way we considered possible while keeping values missing when information was insufficient. The resulting aggregate aims at encompassing all tax and non-tax revenues accruing from mineral resources (oil, mining). In the IMF data: we compute resource revenue as the sum of resource direct taxes, resource indirect taxes, resource non-tax revenues. In the ICTD data: we use the resource revenue variable, that has already been subject to harmonization work. In the ZF data: we compute this aggregate by adding up revenues from oil royalties and taxes on benefits of oil and mining companies. The variable exists in the ONS data for Algeria.

VAT, taxes on turnover on import or export and trade taxes. All countries in our sample introduce the VAT at some point in time. There is some ambiguity regarding the classification of revenues from the VAT on imports: in some countries, these revenues are classified as trade taxes, and in others, as domestic indirect taxes. The international rules for these classification have also changed over time (Prichard *et al.*, 2014; Baunsgaard & Keen, 2005; Keen & Mansour, 2009). In the ICTD dataset, the intention is to classify VAT on imports as domestic indirect tax and not trade tax. It is done in the majority of cases, although for some countries the distinction was not possible. In these cases, the priority was given to produce series that are consistent for a given country over time. We attempted to stick with the same definition when connecting IMF and ICTD data. We studied the continuity between the different series around 1980. It is why for Benin and Togo, trade taxes include VAT on imports. We also noticed that taxes on turnover on import or export are defined as trade taxes in the ICTD database for Senegal, Cameroon and Tunisia, while for the other countries of our sample, they are one of the components of indirect taxes. When compiling the IMF data, we adopted these same choices in order not to introduce discontinuities between the two databases.

A.1.4 Definition of main variables

Total revenue (TotRev). Total public revenue excluding social contributions, grants and loans. It is the sum of tax revenues and non-tax revenues. It is also the sum of resource and non-resource revenues.

Total tax (TotTax). Total tax revenues. It is the sum of domestic and trade taxes.

Total non tax (TotNonTax). Total non-tax revenues.

Domestic tax (DomTax). Domestic taxes, total taxes minus trade taxes. We calculate this variable from our total tax and trade tax variables.

Trade tax (Trade). All taxes from international trade (includes import and export taxes).

Direct tax (Direct). All direct taxes (they are all domestic taxes).

Indirect tax (Indirect). All indirect taxes. In our series this variable only includes domestic indirect taxes. Thus domestic tax is the sum of direct and indirect taxes.

Resource Revenue (ResRev). All resource revenues (when available). This includes resource taxes and resource non-tax revenue.

Tax Residual (TaxResid). For some country-year observations, the sum of direct tax, indirect tax and trade tax is not exactly equal to total tax. In these cases we define a tax residual. This can be caused by some unclassified tax revenues, or by discrepancies across sources. These cases are rare and small in magnitude.

Residual (Resid). For some country-year observations, the sum of tax and non-tax revenue is not exactly equal to total revenue. In these cases we define a residual. This can be caused by some unclassified revenues, or by discrepancies across sources. These cases are rare and small in magnitude.

For sake of analysis, we extracted profit taxes and head taxes from the direct tax aggregate on the years around independance. Head taxes contents all lump-sum taxes levied on individuals or on livestock. Head tax aggregate was available only for some cases: Burkina Faso 1949-55 1966-72, Benin 1949-55 1963, Cameroon 1949-55 1966-71, Mali 1949-55 1970-72, Niger 1949-55 1965-68, Senegal 1949-55 1962-70, Chad 1949-55 1965-72.

A.2 Estimating revenues at the level of the colony within federations for years 1949-1959

In the federations of French West Africa and of French Equatorial Africa, taxes were collected either at the federal or colony level. The historical archives and thus Afristory dataset do not allow to know exactly what share of federal tax revenues was collected from each colony. Trade revenues were fully collected at the level of the federation. We provide an estimated decomposition of federal revenues across colonies, based on economic flows at the colony level. Because of these assumptions, the country level series between 1949 and 1960 should be considered as an indication of general trends for each aggregate, and not as the result of a straightforward data digitization from historical archives. We estimate revenues at the country level for years 1949, 1952, 1954 (FWA), 1955 (FEA), and 1959 using the following assumptions.[95] First, we estimate the ratio of trade taxes to GDP in each pre-independence year and for each colony by assuming that it is equal to the 1961 country-level ratio multiplied by an adjustment factor that accounts for the change in total trade tax revenues of the federation between 1959 and 1961. Second, in each pre-independence year, we assign federal domestic tax revenues based on the GDP of each colony relative to the overall GDP of the federation. These are added to local domestic taxes of the colony to generate total colony level domestic taxes.

More precisely, our methodology can be outlined as follows. For every year t and country i we consider the three following tax heads:

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[95]These years correspond to the years available in the Afristory database at the colony and federal levels for the period after world war 2; we do not estimate the revenues at the colony level before 1949 due to the fact that the method adopted is based on retrospective extrapolations of GDPs that cannot be extended beyond the 1950s because of the lack of national accounts data at the colony level.

$$Trade\_Tax\_Tot_{i,t} = Trade\_Tax\_Fed_{i,t}, \quad Dom\_Tax\_Tot_{i,t} = Dom\_Tax\_Fed_{i,t} + Dom\_Tax\_Loc_{i,t},$$
$$Non\_Tax\_Tot_{i,t} = Non\_Tax\_Fed_{i,t} + Non\_Tax\_Loc_{i,t}.$$

Fed is the component originating from the Federation, and *Loc* is the local component originating from the colony. In years before independence, we observe $Dom\_Tax\_Loc_{i,t}$, $Non\_Tax\_Loc_{i,t}$. Federal revenues are only observed at the aggregate level. In years after independence, we observe $Trade\_Tax\_Tot_{i,t}$, $Dom\_Tax\_Tot_{i,t}$, $Non\_Tax\_Tot_{i,t}$. There are no local trade revenues before independence.

Trade taxes We make the following assumption:

$$\frac{Trade\_Tax\_Tot_{i,1959}}{GDP_{i,1959}} = b \cdot \frac{Trade\_Tax\_Tot_{i,1961}}{GDP_{i,1961}}$$

meaning that the ratio of total trade tax to GDP in colony *i* in year 1959 is equal to the ratio of total trade tax in 1961, multiplied by an adjustment factor *b* that enables to take into account disruptions occurring at independence.[96] We estimate *b* as follows:

$$b = \frac{Trade\_Tax\_Fed_{F,1959}}{Trade\_Tax\_Fed_{F,1961}}$$

where $Trade\_Tax\_Fed_{F,t}$ are total trade taxes aggregated at the level of the federation. Note that $Trade\_Tax\_Fed_{F,1961}$ is "fictional", it is not observed since after independence there are no longer any revenues collected at the level of the federation. We compute $Trade\_Fed_{F,1961}$ by summing $Trade\_Tax\_Fed_{i,1961}$ over all colonies *i* of federation *F*.

This procedure yields $Trade\_Tax\_Tot_{i,1959}$. We then replicate the same process, using 1959 as the reference year instead of 1961, to compute the series further back in time, for year 1958. We proceed in the same way to recover estimates for years 1955, 1952 and 1949.

The result of this methodology is that between t and t+1, the trade tax to GDP ratio of each country within a federation changes in the same proportion, it is multiplied by factor *b*.

Domestic taxes and Non tax revenue

We make the following assumption: for years 1949 to 1959,

$$Dom\_Tax\_Tot_{i,t} = Share_{i,t} \cdot Dom\_Tax\_Fed_{F,t} + Dom\_Tax\_Loc_{i,t}$$

with $Share_{i,t} = \frac{GDP_{i,t}}{GDP_{F,t}}$, meaning that we allocate domestic federal tax revenues to each colony in proportion to the colony's GDP relative to the total GDP of the federation. We do the same for $Non\_Tax\_Tot_{i,t}$.

Before conducting these computations, for French West Africa we make the following adjustment: in 1959, Senegal and Mali belonged to the Malian federation that lasted only one year. We

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[96]We use year 1961 as the reference because 1960 – the year of independence in almost all countries of our sample – is a very specific year with potential caveats on the recording of the data. Furthermore, although import and export flows are available for FWA colonies in 1955, 1958 and 1959, and for FEA colonies in 1958 and 1959, we do not rely on them for our estimation of tax bases, because as underlined in the 1959 Franc zone report (monétaire de la zone franc, 1959), p. 39, these estimates of trade flows do not correctly allocate to each country the trade flows that transit from coastal ports to landlocked colonies (Mali, Burkina Faso, Niger, Chad, Central African Republic).

allocate taxes collected by this federation to Senegal and Mali as follows: trade taxes based on each country's imports as a share of both countries' imports, and non-trade revenues based on each country's GDP as a share of both countries' GDP.

A.3 Qualitative data collection

We conduct a systematic and manual review of the IMF Article IV staff reports produced for all countries within our sample from 1960 to 1980. The focus of this work was mainly on the decolonization period for which the literature on public finance is more scarce. We use the information recovered from these sources to shed light on the following set of questions: 1. what are the main challenges for revenue mobilization that are mentioned at the time of independence; 2. what do we learn about the creation of new state administrations; 3. what do we learn about the conservation, modification or creation of fiscal instruments in the years following independence; 4. additional information on the sources of revenue, the yields from different tax heads, and important fiscal reforms over time; 5. what do we learn about the fiscal policies implemented by socialist regimes.

Figure A.1
Sample: Former French colonies in Africa
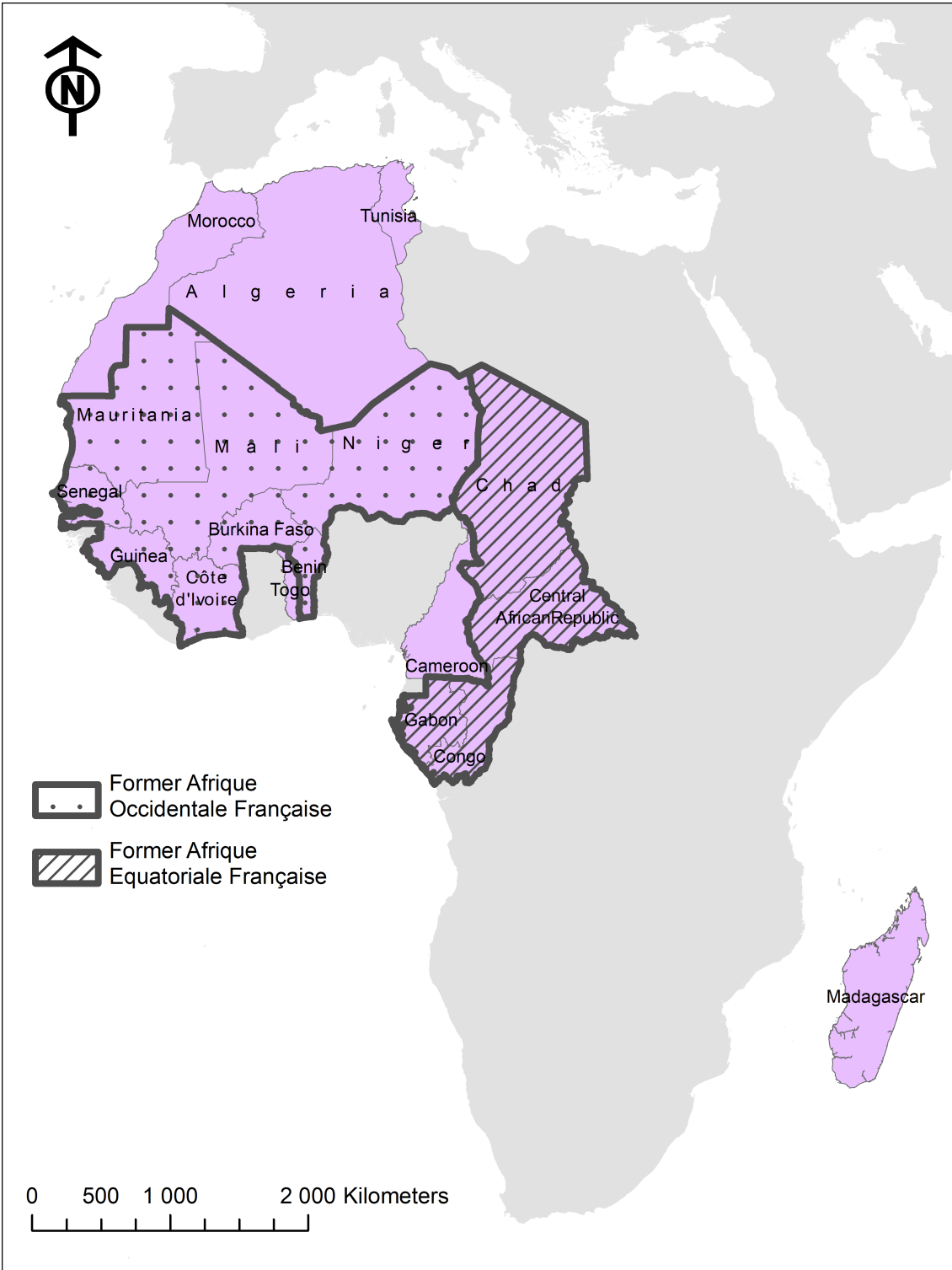
Notes: This map displays the countries within our sample as well as the former federations of colonies.

Figure A.2
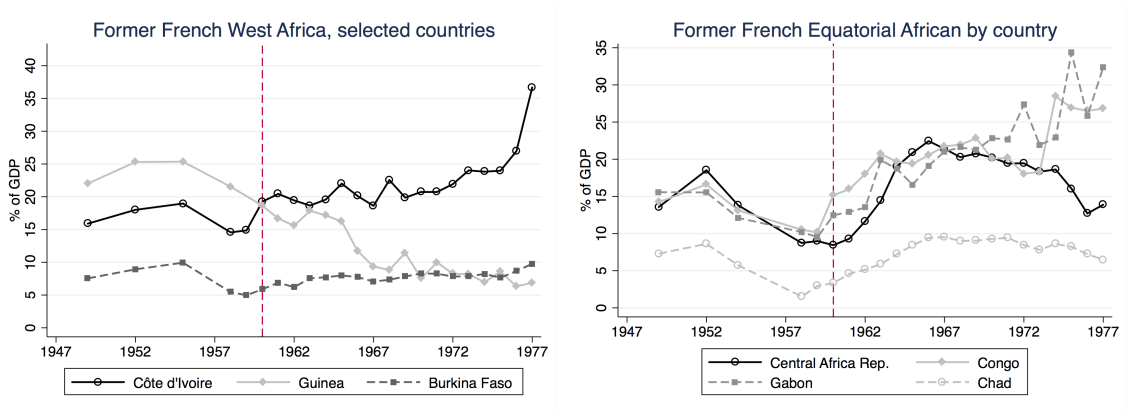## Total domestic tax around independence years
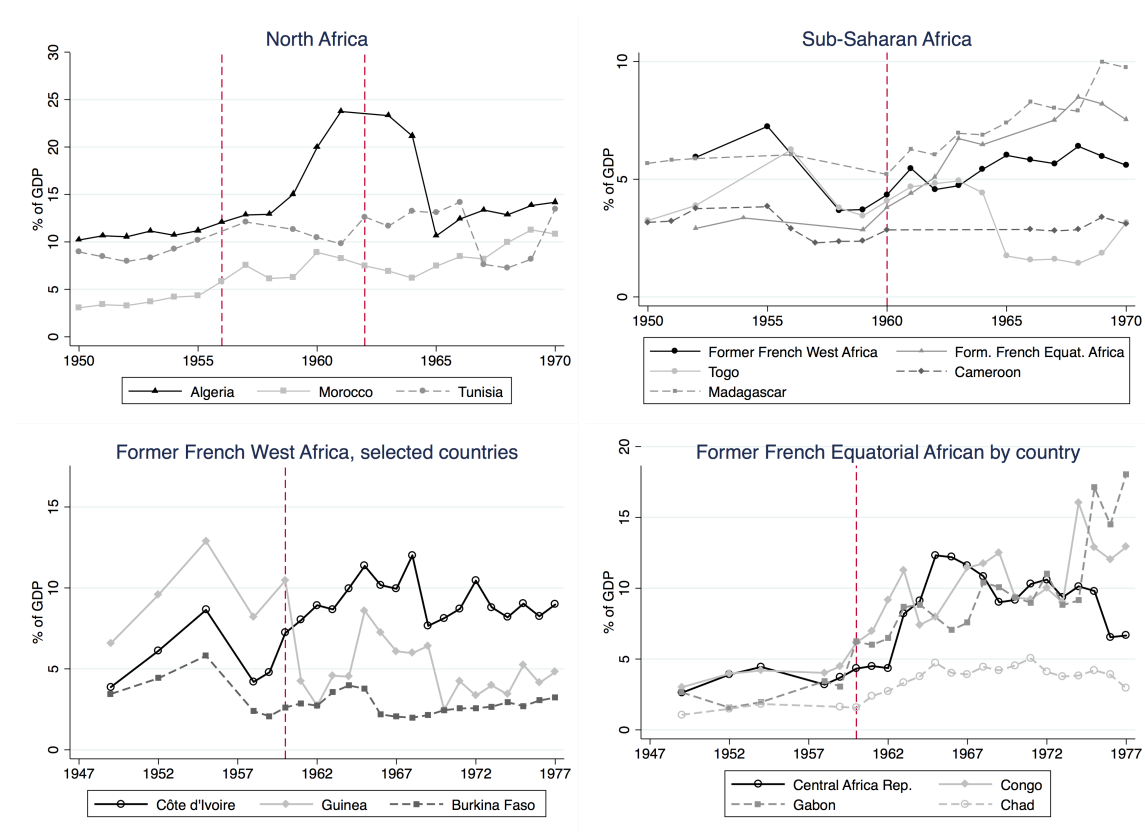
Note: These Figures display domestic tax revenue as share of GDP, for years around independence (red lines).

In the Figure on the right top, because revenues are defined at the regional level for former French West Africa and former French Equatorial Africa in the colonial period, post-colonial revenues are also aggregated by region. The revenue to GDP ratio for a given region is computed as the sum of nominal domestic tax revenues divided by the sum of nominal GDP for all countries within the region. Any given region-year observation is dropped if data is missing for one country within the region. French West Africa: Benin, Burkina Faso, Guinea, Côte d'Ivoire, Mali, Mauritania, Niger, Senegal. French Equatorial Africa: Central African Republic, Congo, Gabon, Chad.

The Figures at the bottom display domestic tax revenue as share of GDP for the countries within former French West Africa or French Equatorial Africa. For years 1949-1960, we assign a share of domestic taxes collected at federal level to each colony (see Appendix A.2), based on each colony's GDP compared to counterparts in the federation. Note that the largest share of domestic taxes was collected at colony level and are attributed without any assumptions. Source: see Appendix A.1.

Figure A.3
Total revenue around independence years: alternative method to allocate federal revenues to each colony


Note: These Figures display total revenue as share of GDP, for years around independence (red lines). Total revenue includes all tax and non-tax revenues, excluding grants.
For years 1949-1960, we assign a share of the Total Revenues of the federation to each country (see Appendix A.2), based on the 1962 – instead of 1961 in the main series – country-level trade tax to GDP ratio multiplied by an adjustment factor that accounts for the change in aggregate region-level trade taxes, and based on each colony's GDP compared to counterparts in the federation for the share of domestic taxes collected at federal level. Note that the largest share of domestic taxes was collected at colony level and are attributed without any assumptions. Source: see Appendix A.1.

Figure A.4
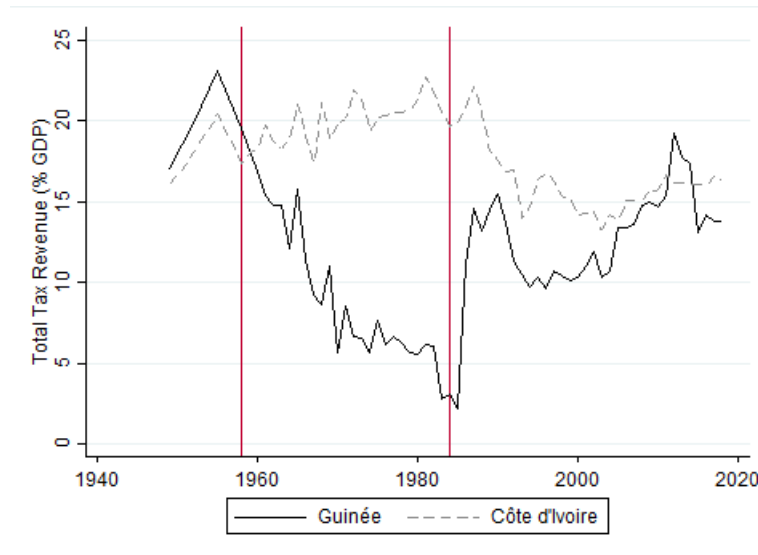### Socialist regimes and their comparators (1/5)
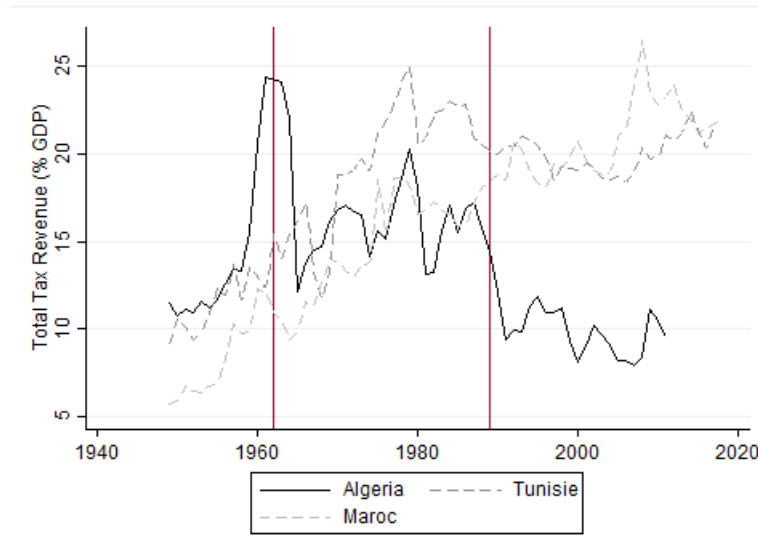
This Figure displays the ratio of total tax to GDP for Algeria and two comparators. The vertical red lines indicate the beginning (1962) and end (1989) of the socialist regime. Source: see Appendix A.1.

Figure A.5
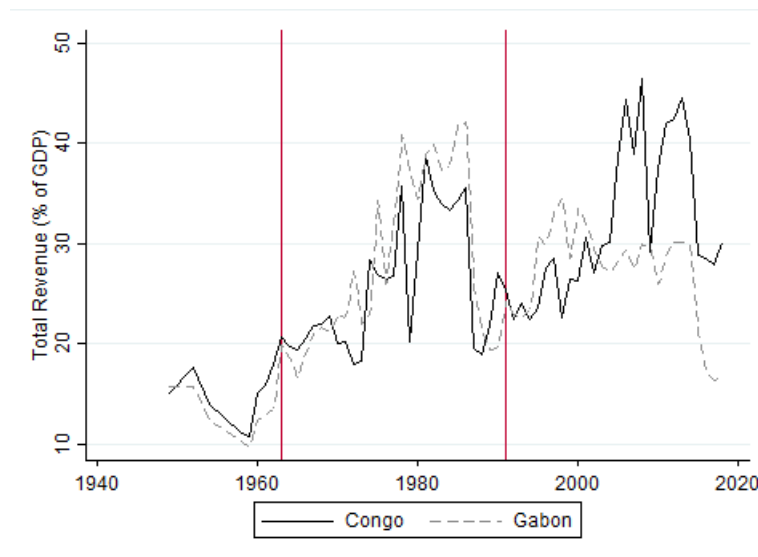### Socialist regimes and their comparators (2/5)
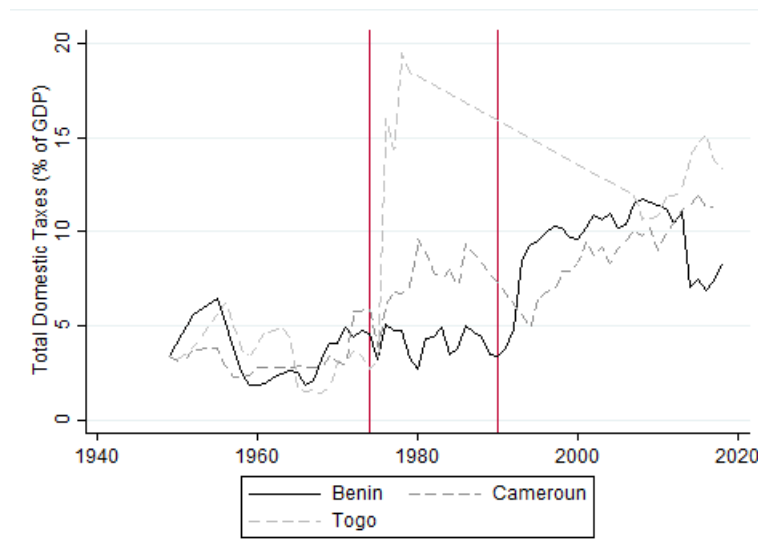
This Figure displays the ratio of domestic tax to GDP for Benin and two comparators, Cameroun and Togo. The vertical red lines indicate the beginning (1974) and end (1990) of the socialist regime. Source: see Appendix A.1.

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Figure A.6
Socialist regimes and their comparators (3/5)

This Figure displays the ratio of total tax to GDP for Guinea and one comparator, Côte d'Ivoire. The vertical red lines indicate the beginning (1958) and end (1984) of the socialist regime. Source: see Appendix A.1.

Figure A.7
Socialist regimes and their comparators (4/5)

This Figure displays the ratio of total revenue to GDP for Congo and one comparator, Gabon. The vertical red lines indicate the beginning (1963) and end (1991) of the socialist regime. Source: see Appendix A.1.

Figure A.8
Socialist regimes and their comparators (5/5)
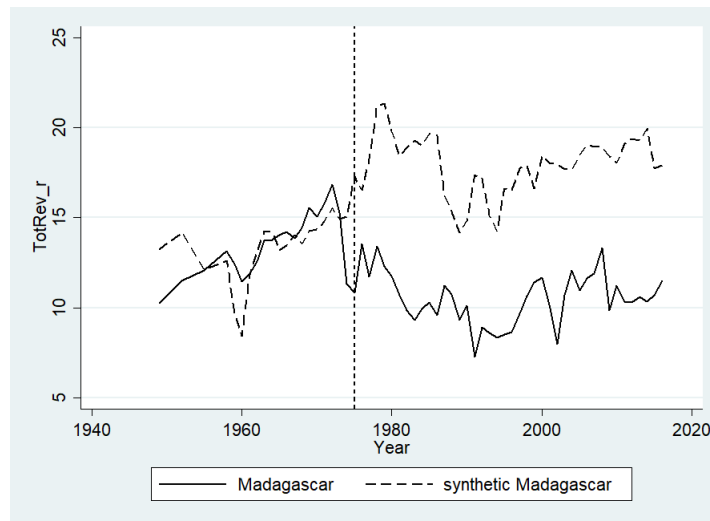
This Figure displays the ratio of total revenue to GDP for Madagascar and a synthetic control. The synthetic control method is applied by using total revenue in the years before 1975 as control variables. The retained synthetic control is a weighted average of Côte d'Ivoire, Gabon, Mali, Niger, Senegal. The vertical line indicates the beginning (1975) of the socialist regime. Source: see Appendix A.1.

Figure A.9

Domestic tax to non-resource GDP ratio in North Africa
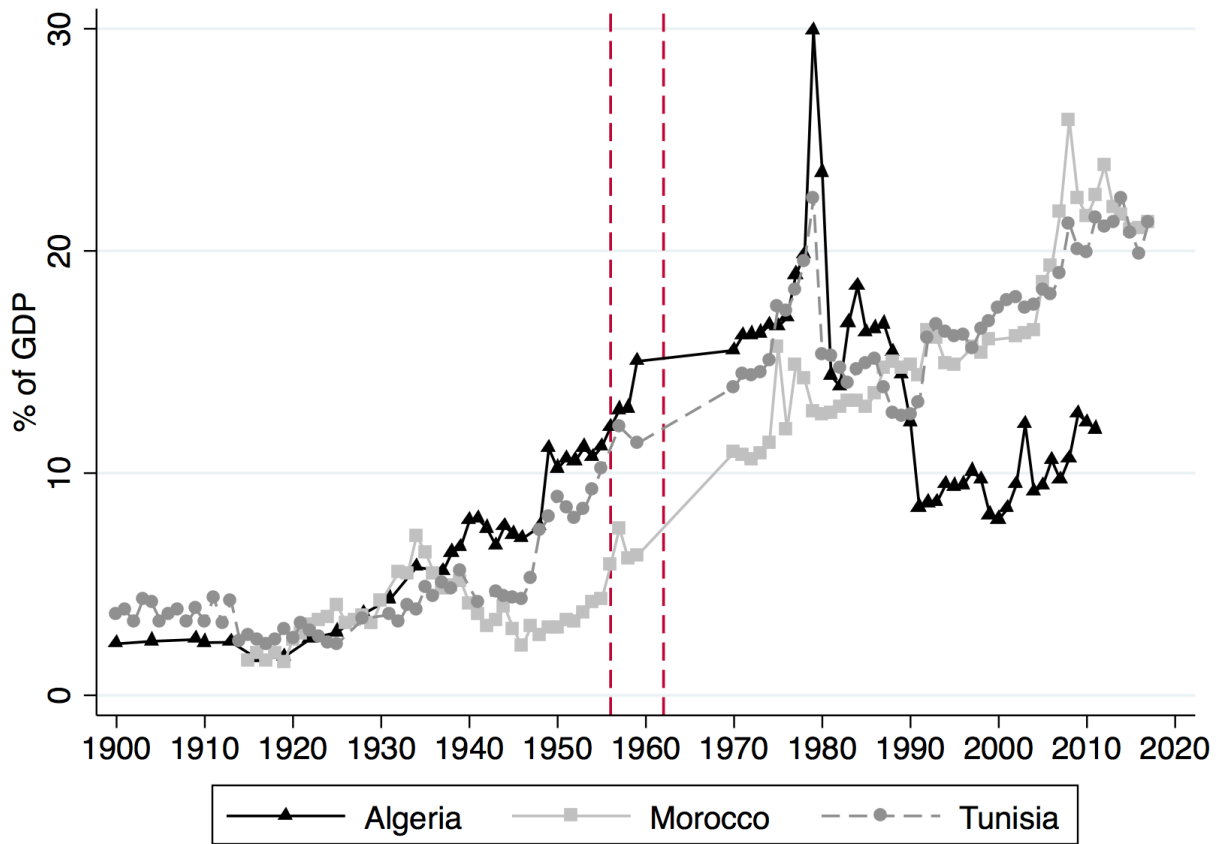
Note: This Figure displays domestic taxes as share of non-resource GDP for the three North African countries in our sample, for the colonial and post-colonial period. Non-resource GDP is estimated by subtracting resource rents from GDP. The red vertical lines indicate the years of independence. Source: see Appendix A.1.

Figure A.10

Domestic tax to non-resource GDP ratio in Sub-Saharan Africa
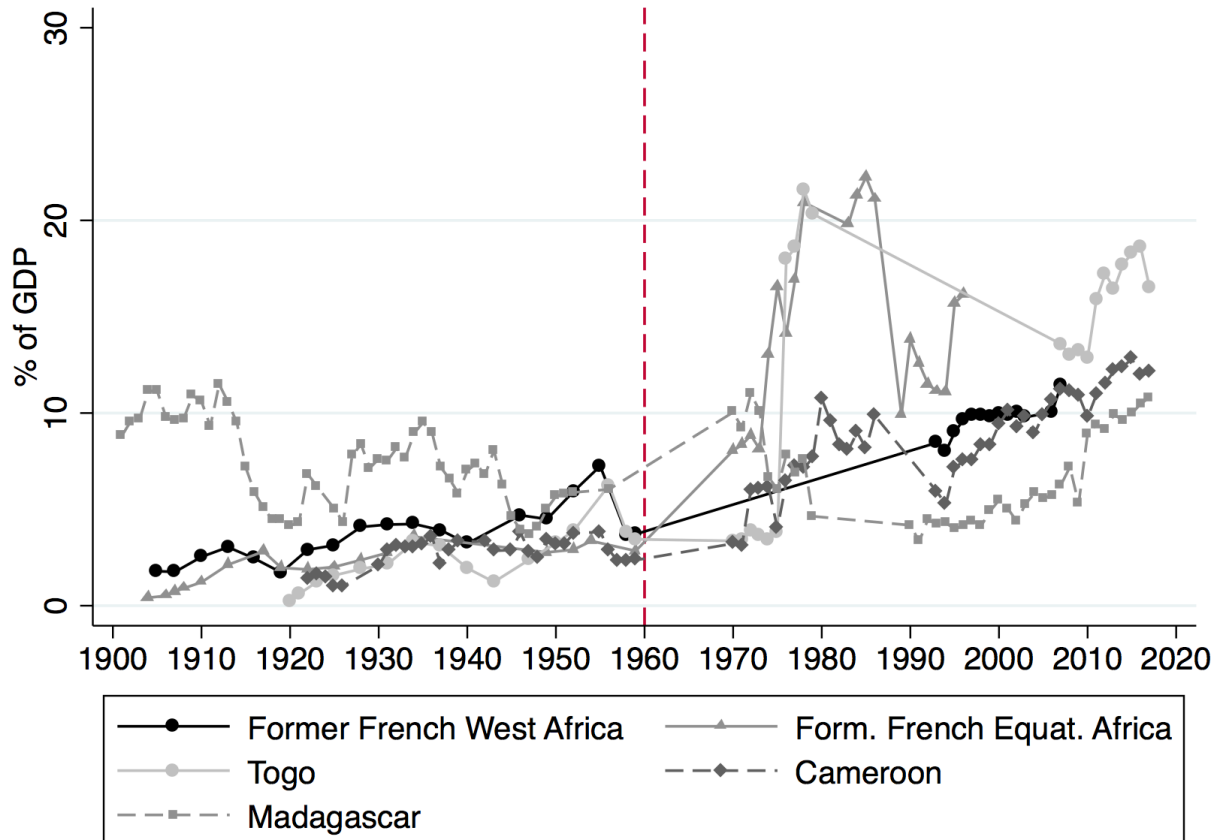
Note: This Figure displays domestic taxes as share of non-resource GDP for the Sub-Sahara African countries in our sample, for the colonial and post-colonial period. Non-resource GDP is estimated by subtracting resource rents from GDP. Because revenues are defined at the regional level for French West Africa and French Equatorial Africa in the colonial period, post-colonial revenues are also aggregated by region. The revenue to GDP ratio for a given region is computed as the sum of total nominal revenues divided by the sum of nominal GDP for all countries within the region. Any given region-year observation is dropped if data is missing for one country within the region. French West Africa: Benin, Burkina Faso, Guinea, Côte d'Ivoire, Mali, Mauritania, Niger, Senegal. French Equatorial Africa: Central African Republic, Congo, Gabon, Chad. The red vertical line indicates the year of independence. Source: see Appendix A.1.

Figure A.11
Total revenues and resource revenues for selected oil producers
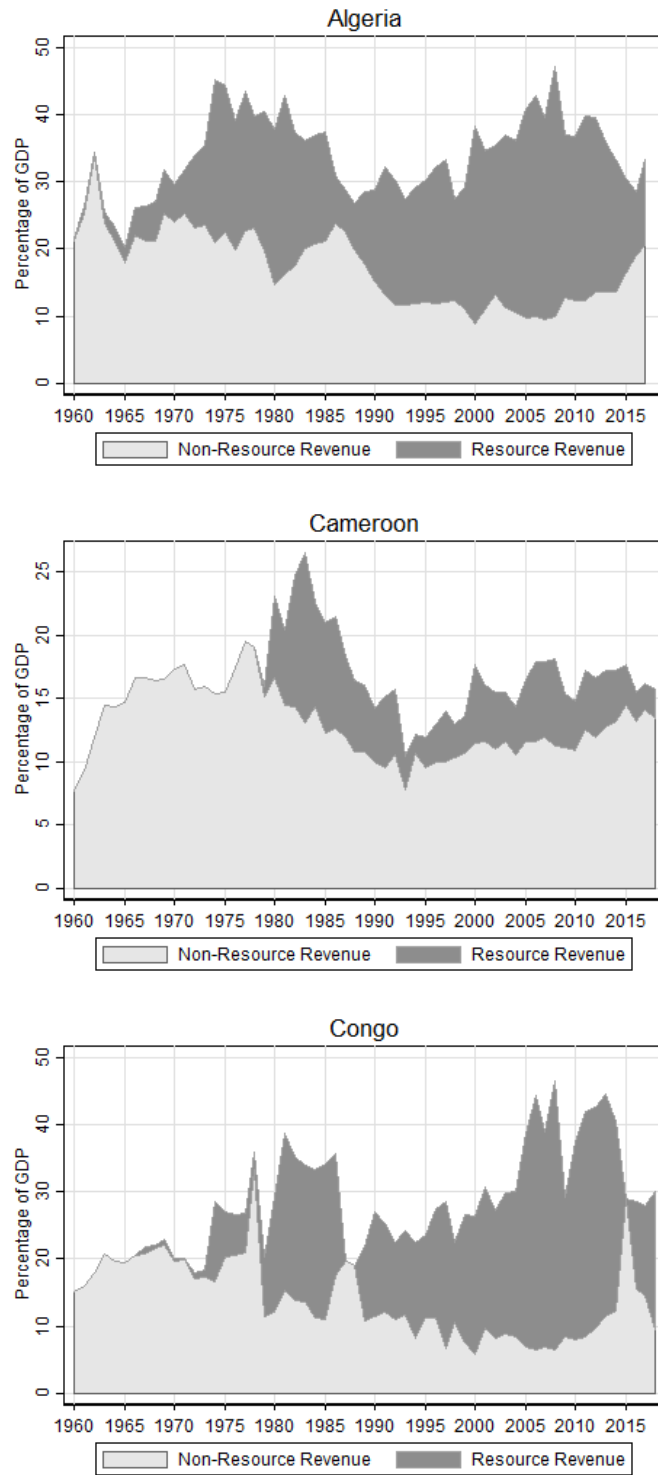
This Figure shows non-resource revenue and resource revenue as a share of GDP for Algeria, Cameroun and Congo, three oil producing countries, between 1960 and 2018. Source: see Appendix A.1.

Figure A.12
Domestic and trade taxes selected countries
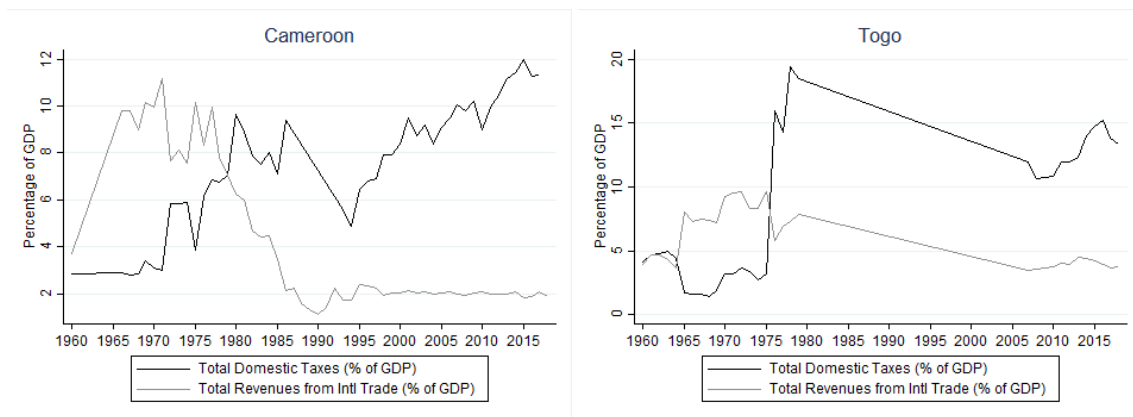
This Figure shows total domestic taxes and trade taxes as a share of GDP for Cameroun (left panel) and Togo (right panel), between 1960 and 2018. Source: see Appendix A.1.

Table A.1
Total Revenue 1949-1955 and 2006-2016

	(1) Total Revenue 1949-1955	(2) Total Revenue 2006-2016	(3) Change (2)-(1)	(4) Resource Revenue 2006-2016	(5) Non Resource Revenue 2006-2016	(6) Change (5)-(1)
Guinea	24.3	16.2	–8.1	3.4	12.8	–11.5
Central African Rep.	13.1	9.3	–3.8	.	.	.
Côte d'Ivoire	21.4	17.6	–3.8	.	.	.
Mali	15.6	14.9	–0.7	.	.	.
Madagascar	10.7	11.1	0.4	.	.	.
Senegal	12.7	15.9	3.3	0.3	15.7	3.0
Benin	12.4	16.2	3.8	.	.	.
Cameroon	12.8	16.9	4.0	4.6	12.2	–0.6
Togo	13.6	17.8	4.2	.	.	.
Tunisia	18.3	23.0	4.8	2.0	21.1	2.8
Burkina Faso	9.7	15.8	6.1	2.6	15.3	5.6
Mauritanie	15.9	22.8	6.8	.	.	.
Niger	7.4	15.5	8.1	.	.	.
Chad	7.5	16.8	9.3	11.0	5.8	–1.7
Gabon	14.6	27.2	12.6	14.4	12.8	–1.9
Morocco	10.8	27.2	16.4	.	.	.
Algeria	16.1	37.3	21.2	24.3	13.0	–3.1
Congo	15.6	38.5	22.8	30.0	9.4	–6.2
Mean	14.0	20.0	6.0	10.3	13.1	–1.5
Correlation with (3)	.	.	.	.88	.	.04

Notes: This Table displays for each country in our sample total revenue averaged over two periods: the years before decolonization (1949-1955, Column 1), and the recent period (2006-2016, Column 2). Column 3 displays the difference between Column 1 and 2. Countries are sorted by values of Column 3, meaning that countries at the top are the ones for which total revenue declined the most between the two periods. Columns 4 and 5 decompose total revenue into resource and non resource for the recent period, and Column 6 displays the change in total revenue when excluding resource revenue. We delete country-year observations for which total revenue or resource revenue are missing in the recent period. Source: see Appendix A.1.

Table A.2
Total Revenue during Decolonization

	(1) Total Revenue 1949-1955	(2) Total Revenue 1956-1964	(3) Total Revenue 1965-1973	(4) Change (3)-(1)	(5) Change (2)-(1)	(6) Change (3)-(2)
Guinea	24.3	17.9	10.2	–14.1	–6.4	–7.7
Mali	15.6	13.5	12.2	–3.3	–2.1	–1.3
Mauritanie	15.9	12.9	12.7	–3.2	–3.0	–0.2
Benin	12.4	7.7	9.8	–2.6	–4.7	2.1
Burkina Faso	9.7	6.7	7.8	–1.9	–3.1	1.1
Togo	13.6	10.1	12.2	–1.4	–3.5	2.1
Niger	7.4	4.0	6.2	–1.2	–3.4	2.2
Senegal	12.7	11.4	11.7	–0.9	–1.3	0.4
Côte d'Ivoire	21.4	19.3	21.2	–0.2	–2.1	1.9
Chad	7.5	4.4	8.9	1.4	–3.1	4.5
Tunisia	18.3	18.6	20.9	2.6	0.4	2.2
Cameroon	12.8	10.8	16.4	3.5	–2.0	5.6
Madagascar	10.7	12.4	15.0	4.3	1.7	2.6
Maroc	10.8	14.0	15.3	4.5	3.2	1.2
Congo	15.6	15.9	20.3	4.7	0.3	4.4
Gabon	14.6	13.9	21.6	7.0	–0.7	7.7
Central African Rep.	13.1	11.1	20.4	7.3	–1.9	9.2
Algeria	16.1	22.0	29.2	13.0	5.9	7.1
Mean	14.0	12.6	15.1	1.1	–1.4	2.5

Notes: This Table displays for each country in our sample total revenue averaged over three periods around independence: pre-independence years: 1949-1955 (Column 1), the years of independence: 1956-1964 (Column 2), post-independence years: 1965-1973 (Column 3). Column 4 displays overall change between the third and first period. Countries are sorted by this value, meaning that countries at the top display the largest decline in total revenue. Column 5 and 6 decompose this overall change into the change between the second and first period (Column 5) and the change between the third and second period (Column 6). For years 1949-1960, we assign a share of the Total Revenues of the federation to each country (see Appendix A.2), based on the 1961 country-level trade tax to GDP ratio multiplied by an adjustment factor that accounts for the change in aggregate region-level trade taxes, and based on each colony's GDP compared to counterparts in the federation for the share of domestic taxes collected at federal level. Note that the largest share of domestic taxes was collected at colony level and are attributed without any assumptions. Source: see Appendix A.1.

Table A.3

Total Revenue during Decolonization (alternative method to allocate federal revenues to each colony)

	(1) Total Revenue 1949-1955	(2) Total Revenue 1956-1964	(3) Total Revenue 1965-1973	(4) Change (3)-(1)	(5) Change (2)-(1)	(6) Change (3)-(2)
Guinea	24.2	17.9	10.2	–14.1	–6.3	–7.7
Senegal	16.2	12.5	11.7	–4.5	–3.7	–0.7
Mali	15.9	13.6	12.2	–3.7	–2.3	–1.4
Benin	11.3	7.4	9.8	–1.5	–3.9	2.4
Togo	13.6	10.1	12.2	–1.4	–3.5	2.1
Niger	7.5	4.0	6.2	–1.3	–3.5	2.2
Burkina Faso	8.8	6.4	7.8	–1.0	–2.4	1.4
Chad	7.2	4.4	8.9	1.7	–2.8	4.6
Mauritanie	10.6	11.2	12.7	2.2	0.7	1.5
Tunisia	18.3	18.6	20.9	2.6	0.4	2.2
Cameroon	12.8	10.8	16.4	3.5	–2.0	5.6
Côte d'Ivoire	17.6	18.1	21.2	3.6	0.5	3.1
Madagascar	10.7	12.4	15.0	4.3	1.7	2.6
Maroc	10.8	14.0	15.3	4.5	3.2	1.2
Central African Rep.	15.3	11.5	20.4	5.1	–3.8	8.8
Congo	14.7	15.7	20.3	5.7	1.1	4.6
Gabon	14.4	13.9	21.6	7.2	–0.5	7.7
Algeria	16.1	22.0	29.2	13.0	5.9	7.1
Mean	13.7	12.5	15.1	1.4	–1.2	2.6

Notes: This Table displays for each country in our sample total revenue averaged over three periods around independence: pre-independence years: 1949-1955 (Column 1), the years of independence: 1956-1964 (Column 2), post-independence years: 1965-1973 (Column 3). Column 4 displays overall change between the third and first period. Countries are sorted by this value, meaning that countries at the top display the largest decline in total revenue. Column 5 and 6 decompose this overall change into the change between the second and first period (Column 5) and the change between the third and second period (Column 6). For years 1949-1960, we assign a share of the Total Revenues of the federation to each country (see Appendix A.2), based on the 1962 – instead of 1961 in the main series – country-level trade tax to GDP ratio multiplied by an adjustment factor that accounts for the change in aggregate region-level trade taxes, and based on each colony's GDP compared to counterparts in the federation for the share of domestic taxes collected at federal level. Note that the largest share of domestic taxes was collected at colony level and are attributed without any assumptions. Source: see Appendix A.1.