

The Black Man's Burden: The Cost of Colonization of French West Africa

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Abstract

Was colonization costly for France? Did French taxpayers contribute a lot to colonies' development? This view has been widely accepted among French historians, though little empirical evidence has been provided. Using original data from the colonial budgets of French West Africa and the central budgets of France, this paper provides new insights into colonial public finances in this region. It reveals that the cost of colonization of French West Africa for French taxpayers was extremely low: French public aid to French West Africa accounted for 0.008 percent of annual total metropolitan expenses. Most of the expenses for French West Africa were for military conquest and central administration: including these costs raises the cost of French West Africa to 0.27 percent of total metropolitan expenses. This means that colonization was profitable for France as soon as its impact on domestic production exceeded 2,904 million 1914 Francs (total) over 1844-1957 (representing a 0.3 percentage points increase of the average annual tax revenue). From the West African perspective, French taxpayers' contribution was almost negligible: public aid to French West Africa amounted to 0.4% of its revenue. However, metropolitan public investors provided 5.7% of French West Africa's revenue through loans and cash advances. On the contrary, colonization turned out to be a considerable burden for Africans since French government officials were paid by Africans taxpayers until 1956 and absorbed a disproportional share of the public expenditures.

Key words: colonization, public finances, West Africa

JEL classification: N10, O16, H50

1 Introduction

On February 23th 2005, the French parliament adopted a law imposing the recognition of the positive role of colonization in French history textbooks (law n° 2005-158¹). The proponents of this law argue that French colonization allowed the colonies to benefit from massive investments in education, health, infrastructure, agriculture etc. that boomed their development. This view

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¹Article 4: "Les programmes scolaires reconnaissent en particulier le rôle positif de la présence française outre-mer, notamment en Afrique du Nord"

that French colonization provided such massive investments comes usually with two corollaries: first, colonization brought some benefit for the colonies, and second, colonization was a burden for metropolitan public finances. But opinions on the positive role of colonization diverge dramatically and the law caused a raging public debate: On the one hand, some scholars support the idea that colonies were very expensive for French taxpayers since the metropole funded large public investments in education, health and infrastructure in the colonies (Bloch-Lainé, 1956; Jeanneney, 1963; Marseille, 1984; Lefeuvre, 2005). On the other hand, a number of recent history books denounce the more general extractive strategy of France in the colonies which affected not only the long term economies but also politics by shaping poor-quality governance and institutions (Ferro, 2003; Liauzu, 2004; Le Cour Grandmaison, 2005; Blanchard, Bancel et Lemaire, 2005; Manceron, 2005). After several weeks of an intense debate among both academic historians and the civil society, the controversial article of the law was finally amended.

Whether French taxpayers paid for massive public investments in the colonies or whether colonial institutions have been detrimental to long term development is part of a broader debate on the costs and benefits of colonization. The question is vast, including economic aspects (costs and benefits from private and public investments as well as from colonial trade for both the metropole and the colonies), political aspects (state building, legal system, institutions and their quality) and demographic aspects (importation/exportation of new diseases, colonial contingents during WWI and WWII, among others). On the *economic* costs and benefits of colonization, the first pieces of research in the 1970's brought a rather positive picture of how colonization was beneficial for the metropole: they claimed that the French productive sectors benefited greatly from colonial experience thanks to low cost imports, especially agricultural imports, and to a protectionist commercial policy giving a large advantage to French exports compared to other countries' exports to the colonies (Arghiri, 1969; Vanhaeverbeke, 1970; Amin, 1971; Amin, 1973). But Marseille (1984) broke the common opinion by claiming that colonization was costly to French economy for three reasons: first, public investments in the colonies were burdensome for French taxpayers; second the metropolitan private sector suffered from colonization because some private investments fled towards the colonies and the returns to colonial investments were not as high as expected; Finally, colonial trade had negative externalities on the modernization of national productive sectors, because of the perverse effects of lack of competition and colonial protectionism on innovation and competitiveness. The corollary is that colonies at least benefited from these public and private

investments (Marseille, 1996; Lefeuvre, 2005).

Both views are supported by little and incomplete evidence and leave a large share to opinion and interpretation. One reason for the lack of evidence is the nature of the costs and benefits of colonization: some costs and benefits like the quality of institutions, the psychological effects of being colonized / being the colonizer on collective self-esteem and trust towards the institutions, or loss of life during WWI and WWII, would definitively be a stretch for a quantitative assessment. A second reason for the lack of hard evidence is that very question of the costs and benefits of colonization would require an estimation of the *impact* of colonization which can hardly be identified due to the absence of counterfactual: Africa was entirely colonized, except Egypt. Similarly, it might be difficult to find productive sectors in France that were not potentially affected by colonization to serve as a control group. The immediate consequence is that the causal impact of colonization on African and French economies remain unknown: we don't know what would have been African and French performances (e.g. investments in education, level of and returns to private investments, domestic production or more generally the welfare) had colonization not exist.

The question that I want to address in this paper is therefore more modest: I take the levels of public resources in both France and the colonies as given and ask who supported the cost of public expenses in the colonies. This question remains crucial since the usual argument from those scholars and politicians claiming on the “positive role” of colonization is that French taxpayers paid for the public investments made in the colonies. Taking the amount of public resources in the metropole and in the colonies as given (i.e. ignoring the endogeneity of tax revenue in both France and the colonies), the questions addressed in this paper are: what share of French tax revenue was allocated to the colonies? What share of local public resources was received from the metropole? In the 1970's, a team of French economic historians supervised by Jean Bouvier and Catherine Coquery-Vidrovitch² started the collection of the colonial budget data. François Bobrie and Catherine Coquery-Vidrovitch produced some evidence on the financial transfers between the metropole and the colonies, but unfortunately the analysis remained incomplete³ (Bobrie, 1976; Coquery-Vidrovitch, 1973 and 1982). Jacques Marseille has been credited as the one who provided a final answer to the question of the cost of colonization for French taxpayers when he published his dissertation in 1984 (Marseille, 1984) , but his analysis is not based on reliable evidence and

²Recherche Coopérative sur Programme (RCP), CNRS, « Commerce, investissements et profits dans l'empire colonial français », n°326, 1973-1979.

³Part of the collected data was lost while the university moved, especially data on French West Africa

therefore remains unconvincing (Huillery, 2009). New insights into the colonial public finances are therefore needed, and this paper is an attempt to fill the gap.

I use a new dataset on the financial transfers between the metropole and French West Africa to calculate the actual cost of colonization of French West Africa for French taxpayers. French West Africa (Afrique Occidentale Française, thereafter AOF) was a federation of eight colonies: Bénin (called Dahomey during the colonial period), Burkina-Faso (called Haute-Volta during the colonial period), Côte d'Ivoire, Guinée, Mali (called Soudan français during the colonial period), Mauritanie, Niger and Senegal. I collected budgetary data from 1844 to 1957 at the local, federal and central levels so as to get a comprehensive view on financial transfers in both directions –from the metropolitan budget to colonial budgets and from colonial budgets to the metropolitan budget. This study focuses on one specific territory of the former French empire, AOF, which was part of a vast empire⁴ including colonies: Vietnam, Algeria, French Equatorial Africa⁵ and Madagascar; protectorates: Tunisia, Morocco, Cambodia and Laos; and mandates: part of the Cameroon, part of the Togo, Syria and Lebanon. Since there is no reason why AOF can be seen as representative of French colonies, the purpose of this study is to answer the question for one specific territory without claiming on external validity. This study is a building block of a larger study on the whole French empire. Colonization varied significantly from a territory to another within French empire, largely adapting both institutions and the economic strategy to local context. For this reason, it seems crucial to differentiate the analysis by territory to paint an accurate picture of the cost of French colonization. From the former colonies' point of view, whose development paths since independence differed significantly, it is also more informative to learn about each territory separately rather than the average.

Results show that the financial cost of AOF for the metropole was low: on average, public aid to French West Africa accounted for 0.008 percent of annual total metropolitan public expenditures. The cost of the military conquest and central administration represented the vast majority of the metropolitan expenditures for this territory: including these costs raises the share devoted to French West Africa from 0.008 to 0.27 percent of total metropolitan public expenditures. This allows us to conclude that colonization of French West Africa was a profitable experience for France as soon as its impact on domestic production exceeded 2,904 million 1914 Francs, which represents a 0.3 percentage points increase in the average annual tax revenue over the 1844-1957 period.

⁴I let aside the territories that remain French today, since colonization is still ongoing there.

⁵Gabon, Congo-Brazzaville, Tchad and Centrafrique.

On the French West African side, metropolitan public aid was not as beneficiary as is often presented: it accounted for 0.4 percent of total local public revenue. In addition to subsidies, the metropole also offered West African officials the opportunity to borrow some financial resources abroad. Including public loans and cash advances, which were systematically reimbursed in due time during colonial times as shown by colonial budgets, total metropolitan financial transfers represented on average 5.7 percent of total local public revenue. Local taxes thus accounted for the vast majority of French West Africa's revenue. These results can explain why public investments in French West Africa were so scarce: budget data show that there were only 1,000 teachers, 1,400 doctors and 300 schools in the whole West African territory on average from 1907 to 1956. Some infrastructure was constructed, mainly to serve transportation of local products from inland to coastal export seaports. However, my data show that the final amount devoted to infrastructure remained very low (). The scarcity of colonial public investments in West Africa can first be explained by the low level of financial support from the metropole. Nevertheless, the analysis of colonial budgets gives a second crucial explanation: the cost of colonial public goods was disproportionately high compared to the limited financial capacity of the local population, due to the very fact that public resources were collected on an African basis while spent on a French basis. French teachers, doctors, engineers, lawyers etc. and administrative staff were actually all paid on a metropolitan basis and got an additional allowance for being an expatriate, resulting in a disproportionately high income compared to local incomes (). These salaries were charged on local colonial budgets rather than on the metropolitan budget. To give an idea on how much the French staff salaries weighed heavily on local budgets, the only governors, district administrators and their respective cabinets altogether accounted for 20 percent of total local public expenses. The colonial system therefore turned out to be more of a black than white man's burden.

This paper attempts to clarify the debate on the cost of French colonization in the specific case of French West Africa. With respect to the existing literature, the paper innovates in using original and first-hand budgetary data on the whole colonial period. I also distinguish subsidies (public aid) from loans and cash advances (investments), which was a reason why the budgetary cost of colonization has been misinterpreted in the existing research. Moreover, the paper considers both transfers from the metropole to AOF and transfers from AOF to the metropole which, when ignored, caused another misleading caveat in the existing literature. Finally, the paper does not make any assumptions in the calculation of financial transfer balance from the metropole to AOF

but simply uses actual data on colonial public financial transfers, as opposed to the leading part of the existing literature. The paper therefore provides a reliable and comprehensive view on the colonial public finance system and public investments in French West Africa. Yet an important limitation of the paper is the restricted geographical coverage. The results on French West Africa should be considered as specific until a more extended study is performed on the whole French colonial empire. It seems likely that North Africa, especially Algeria, might have experienced a different – more generous – colonial finance system.

This paper is structured as follows: Section 2 formalizes the welfare effects of colonization on taxpayers to clarify what questions are (not) addressed in this paper. Section 3 presents the empirical strategy that is developed to answer these questions. Section 4 presents data sources and gives a description of collected data. Section 5 presents evidence on the main variables of interest, while section 6 presents the main results of the paper, that is the cost of AOF colonization for French taxpayers and the benefits of AOF colonization were for West Africans. Section 7 gives further evidence on public expenditures in AOF. Section 8 concludes.

2 Formalizing the Welfare Effect of Colonization on Taxpayers

In this section, I consider the basic channels through which colonization could have affected the welfare of taxpayers. Taxpayers' welfare W is a strictly increasing function f of disposable income, which depends on domestic production Y , tax rate τ and public expenditures G : $W = f((1-\tau)Y + G)$. The economy is therefore defined by the triplet (Y, τ, G) .

The counterfact that I consider here is the absence of colonization between the metropole and the colony, with no other colony for the metropole and no other metropole for the colony⁶. In the absence of colonization (hereafter, tilda refers to this counterfact), the amount of public expenditures are simply equal to the tax revenue: $\tilde{G} = \tau\tilde{Y}$, and thus the welfare of taxpayers depends only on domestic production: $\tilde{W} = f(\tilde{Y})$. In the presence of colonization, the metropole and the colony increase their bilateral trade of goods and capitals, which has an impact on domestic production Y . Transfers of public resources also take place between the metropole and the colony: T_o denotes public transfers going out of the economy (to the other economy) and T_i denotes public transfers

⁶Another plausible reading of the late 19th century's history would be to consider the most likely alternative to French colonization to be Portuguese, Spanish or British rule, not independent African rule.

going in the economy (from the other economy). So in presence of colonization, public expenditures are defined by: $G = \tau Y + T_o - T_i$ and $W = f((1 - \tau)Y + G) = f(Y + T_i - T_o)$.

Whether colonization increases the welfare of taxpayers is therefore simple to characterize (we assume that f is continuous):

$$\begin{aligned} \tilde{W} \leq W &\Leftrightarrow f(\tilde{Y}) \leq f(Y + T_i - T_o) \\ &\Leftrightarrow \tilde{Y} \leq Y + T_i - T_o \\ &\Leftrightarrow T_o - T_i \leq Y - \tilde{Y} \end{aligned}$$

Meaning that colonization improves the welfare of taxpayers as long as the variation in domestic production due to colonial trade is higher than the net public transfer from the economy to the other. This simple formalization of the problem leads therefore to clear welfare effects on taxpayers:

- For the economy which transfers relatively less public resources (negative net transfer), colonization is beneficiary for taxpayers for any increase in domestic production as well as for small enough decreases in domestic production, such that the loss in domestic production is compensated by the gain from bilateral public transfers.
- For the economy which transfers relatively more public resources (positive net transfer), colonization is beneficiary for taxpayers only for large enough increases in domestic production, such that the increase in domestic production compensates the loss in bilateral public transfers.

The contribution of the paper is to provide T_o and T_i for both the metropole and French West Africa, which gives the lower bound of the variation in domestic production that would make colonization beneficiary for French and West African taxpayers: $T_o - T_i$. Our work also gives τY (tax revenue) in French West Africa, from which we could infer Y using an estimation of the average tax rate⁷. Data on Y in metropole is already available from French national statistic records. The remaining parameter, \tilde{Y} , is the counterfactual domestic production in the absence of colonization. A challenge for future research is to give evidence on \tilde{Y} and compare this evidence with the $T_o - T_i$ bound to conclude on the welfare effects of colonization on taxpayers.

⁷Such an estimation is not an easy task but I think that it would be feasible since the colonial budgets report the tax rate for each tax (or at least the main ones) in the economy.

3 Empirical Strategy

3.1 Background on the Colonial Public Finances in AOF

French colonial public funding was based on three levels of budgets: the metropolitan level, the federal level and the local level (Figure 1). This section provides a description of revenues and expenses at each level in the case of French West Africa.

At the metropolitan level, the colonial expenses were supported by the budget of the French Ministry of Colonies (before 1894, Ministry of Navy Forces and Colonies). These expenses were three-fold: (1) military expenses for the colonial conquest and pacification, corresponding to military personnel salaries, accommodation and transport, and military material; (2) running costs of central administration in the metropole: the Ministry of Colonies, Geographical Unit, Inspection Units and Registration Units, communication costs (mails, telegraphs) and advertisement costs (propaganda material, grants to emigrants to the colonies, grants to the school for colonial officials (ENFOM), the colonial exhibitions; (3) transfers to AOF: subsidies, cash advances (to be reimbursed in the short run with an interest rate) and loans (to be reimbursed in the long run with an interest rate) to both the public sector (federal government and public companies) and to the private sector⁸.

At the federal level, the federal budget received most of its revenue from federal taxes, mostly trade taxes and fiscal taxes. The federal budgets also received subsidies and cash advances from the national budget. The expenses of the federal budget covered the running costs of federal administration (federal personnel salaries, material and furniture), and also some equipment expenses related to large-scale infrastructure like trans-colonial railways and seaports. The federal budget also transferred some funds towards the metropole: public loans repayments, cash advances repayments and subsidies. Finally, the federal budget provided some subsidies to the colonies (which are partly rebates to colonies on the customs revenue taken out of each colony) and to private companies.

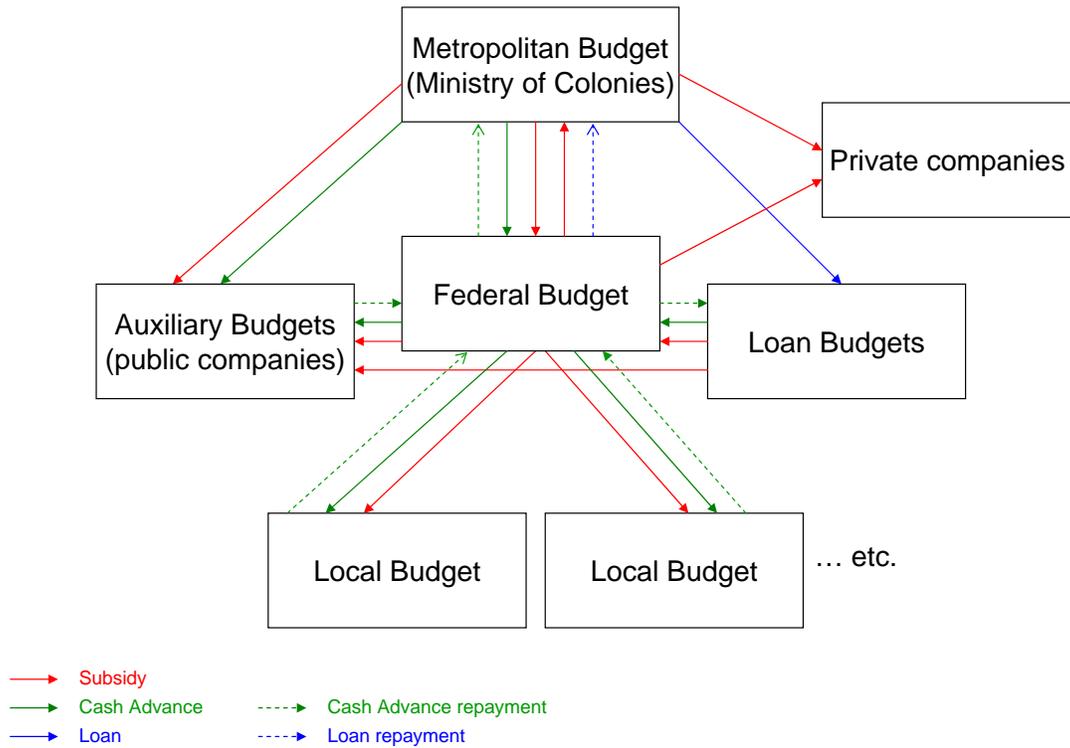
Auxiliary budgets existed at the federal level in addition to the federal budget: first, the “loan budget”, whose revenue was based entirely on public loans contracted with the metropole. Funds from loans were allocated to large-scale infrastructure, and marginally to investments in health and education. Second, “special budgets” (“budgets spéciaux”) devoted to the accountability of public

⁸For instance, the private railway company La Société de Construction des Batignolles received subsidies from the metropole to construct the line Dakar-Saint-Louis from 1882 to 1885. The metropolitan budget continued to transfer resources to the company to fill the gap between running cost and revenue until 1928. The other railway lines (Thiès-Kayes-Koulikoro, Conakry-Kankan, Abidjan-Ouagadougou and Porto-Novo-Cotonou-Parakou) were constructed by public railway companies, i.e. railway companies that were owned by the government.

companies like railway companies, the port of Abidjan, the port of Dakar and the port of Conakry. The revenue of these auxiliary budgets were four-fold: subsidies and cash advances from the federal budget, subsidies and cash advances from the national budget, cash transfers from the loan budget and finally self-generated resources from the company’s activities. These auxiliary budgets received cash assets from the metropole but the repayment of the corresponding loans or cash advances was charged on the federal budget.

At the local level – the level of the colonies, the budgets received revenue from local taxes, plus subsidies from the federal budget. Local budgets covered all the running costs related to local colonial administration: the government of the colony and the administration of districts and subdivisions, the costs of judicial processes, security and treasury, the costs of public support to agricultural and industrial activities, and the costs of public investments at the local level: education, health and infrastructure.

Figure 1 – Structure of Colonial Public Finances in AOF



The organization of French colonial public funding reflects largely the fundamental principle adopted by the law of April 13th 1900, entitled “Loi d’autonomie financière des colonies” (law of

financial autonomy of the colonies). The running costs and equipment expenses in the colonies were structurally supported by the federal and local budgets, with the metropolitan budget supplementing at the federal level with subsidies, cash advances and loans when necessary. The contribution of the metropolitan budget was thought of as temporary with the objective of reaching financial autonomy of the federation as soon as possible.

3.2 Discussion about Transfers Between AOF and the Metropole

This paper proposes to give evidence on the size of the public financial transfers between AOF and the metropole. More specifically, we propose to measure T_o and T_i for both the metropole (transfers in and out of the metropole) and AOF (transfers in and out of AOF). But the way to measure T_o and T_i is not straightforward because of the various nature of the transfers. This section discusses the nature of the transfers to help figuring out what measures of T_o and T_i should be considered.

3.2.1 The Asymmetry Between Transfers out of the Metropole and Transfers in AOF

A logical approach of the financial transfers between AOF and the metropole would be to consider that they are symmetric because what one economy transferred to the other is what the latter received from the former. Under this view, measuring the (in and out) transfers from one economy's point of view is equivalent, *mutatis mutandis*, to measuring the transfers from the other economy's point of view. This symmetry holds for transfers out of AOF: they are equal to transfers in the metropole since AOF all the expenses supported by the federal, local, loan and auxiliary budgets are disbursed for the sake of local development (including state building, infrastructure, institutions, public services etc.), except the transfers to the metropole.

However, one can adopt another approach under which transfers *in AOF* are not equal to transfers *out of the metropole*: the metropolitan budget supported expenses that did not go into AOF's budgets: type 1 expenses (military costs of conquest and pacification) and type 2 expenses (running cost of the central administration). These two types of expenses can be interpreted as the cost of "being the colonizer": they occurred asymmetrically because colonization itself is asymmetric, one economy dominating the other -at least politically and institutionally. The domination happened at a cost which is the costs of the military conquest and central administration, that is, the difference between the transfers out of the metropole and the transfers in AOF.

3.2.2 Transfers to the Private Sector

Both the metropole and AOF provided resources to private colonial companies (although for the metropole, this support was quite limited since it provided resources to one single private company in AOF: a subsidiary society of La Société de Construction des Batignolles, which was selected among other companies to construct and operate the Dakar-Saint-Louis railway line). These transfers aimed at providing support to private agents to help them creating income generating activities in AOF. It is not clear how they should be considered in our framework. One possible counterfactual is that the financial support to the private sector was a transfer from French taxpayers (that is, decreasing metropolitan public expenditures G) to AOF taxpayers who would have had to pay for the construction and operating costs of the private companies in the absence of metropolitan support (that is, increasing AOF public expenditures G). Under this view, the financial transfers from the metropole to private colonial companies should be included in transfers out of the metropole / in AOF. Another possible counterfactual is that these transfers are not going *out* of the metropole nor *in* AOF because the beneficiaries are French private entrepreneurs who benefited from public support to operate their business. Under this view, AOF taxpayers would not have provided resources to these private colonial companies in the absence of metropolitan support and the firms would have incurred the normal market conditions while operating their business.

3.2.3 Differentiating Financial Investment and Cost

Financial transfers are not of the same nature: some correspond to financial investment while others are just cost. Actually, loans and cash advances that come with an market interest rate are financial investment making both the borrower and the lender better-off if everything with the credit goes well. On the contrary, subsidies are really a cost for the donor. However, loans and cash advances can be contracted at concessional financial terms, i.e. at a preferential interest rate in comparison to what the market would have offer to both the borrower and the lender. In this case, loans and cash advances entail an aid component that represents a form of subsidy from the lender to the borrower. Whenever the interest rate charged for a credit is lower than the discount rate, the present value of the debt is smaller than its face value, with the difference reflecting the (positive) grant element of the credit. Following the definition of “Official Development Assistance” (ODA) introduced by the OECD in 1969, a minimum grant element of at least 25 per cent is required so that a loan can be considered as public aid.

3.3 Counterfactuals of Interest

To synthesize this discussion, transfers from the metropole to AOF can be decomposed in five components:

$$\begin{array}{ccccccccc}
 & & (1) & & (2) & & (3) & & (4) & & (5) \\
 \text{Transfers from} & = & \text{Cost of} & + & \text{Cost of} & + & \text{Loans and} & + & \text{Subsidies to} & + & \text{Public Aid} \\
 \text{the Metropole} & & \text{Conquest} & & \text{Central} & & \text{Cash} & & \text{Private} & & \text{(ODA)} \\
 \text{to AOF} & & & & \text{Administration} & & \text{Advances} & & \text{Companies} & &
 \end{array}$$

and transfers from AOF to the metropole can be decomposed in two components:

$$\begin{array}{ccccccc}
 & & & & (6) & & (7) \\
 \text{Transfers} & = & \text{Repayment of} & + & \text{Public Aid} \\
 \text{from AOF} & & \text{Loans and} & & \text{(ODA)} \\
 \text{to the Metropole} & & \text{Cash Advances} & &
 \end{array}$$

We propose to consider several counterfactuals of transfers between the metropole and AOF.

A=“Aid-to-AOF”=(5)-(7) This counterfactual focuses on the amount of money that was *given* to AOF by French taxpayers, i.e. public aid to AOF. I thus limit the transfers from the metropole to AOF to the definition of ODA so that the cost of colonization for the metropole is limited to the net subsidy to AOF. Note that the “aid component” of loans and cash advances are included in the definition of ODA so are included in this counterfactual.

B=“Cash-Assets-Received-by-AOF”=(3)+(5)-(6)-(7) This counterfactual focuses on the cash assets that AOF received from the metropole and consequently increased AOF taxpayers’ welfare. This counterfactual ignores the cost of “being the colonizer” (the cost of conquest and central administration) because this cost does not correspond to transfers received in AOF. This counterfactual also ignores the cost of the financial support to French colonial entrepreneurs because the French entrepreneurs cannot be considered as AOF agents (stockholders were French).

C=“Charges-for-French-Taxpayers”=(1)+(2)+(4)+(5)-(7) This counterfactual takes into account all expenses related to colonization that were supported by French taxpayers, including the cost of “being the colonizer” (cost of conquest and central administration) and the

support to French colonial private companies. This corresponds to the total amount of resources that was taken on the metropolitan budget for funding AOF colonization⁹. It differs from the “Transfers-in-AOF” counterfactual in two dimensions: first, resources spent on colonial-related activities outside AOF are included because these resources were taken away from the metropolitan budget; second, loans and cash advances -net of their aid component- are excluded because the corresponding resources were invested in AOF, not taken away from the metropolitan budget.

To our sense, there is no reason why one counterfactual should dominate the others since all of them give an interesting information on colonial public finances. Their relative relevance depends on the question at stake. As exposed in introduction, this paper proposes to answer two questions: what share of French tax revenue was allocated to AOF? What share of local public resources was received from the metropole?

The first question should be addressed using counterfactuals A and C. Under counterfactual A, “Aid-to-AOF”, we focus on the contribution of French taxpayers to the development of AOF with the hanging question about the “positive role of colonization”. Under counterfactual C, “Cost-for-French-Taxpayers”, we focus on the total cost of colonization for French taxpayers, not only the expenses that benefited directly to AOF development. Using this counterfactual thus gives the minimum increase in domestic income required to make colonization a profitable investment from French taxpayers’ point of view.

To answer to the second question on the share of local public resources received from the metropole, both counterfactuals A and B are interesting: “Transfers-in-AOF” gives the cash assets provided by the metropole, which would be particularly relevant had colonization have provided access to credit to regions that would not have had access to it in the absence of colonization. “Aid-to-AOF” gives a more restrictive vision of what AOF received from the metropole, which would be particularly relevant had AOF have had access to credit anyway.

4 Data

The original datasets used in this paper and related documentation are available online at <http://econ.sciences-po.fr/staff/elise-huillery> (“Public Finance Data”)

⁹Just a reminder that this is not equivalent to the amount of resources that would have been available at the metropolitan level had colonization not occurred since colonization itself might have changed the French tax revenue.

4.1 Data Sources

I collected data from all colonial budgets: central (metropolitan), federal, loan, auxiliary and local budgets, and all the colonial period: 1844-1957¹⁰. All these budgets can be found at the National Archives of Senegal, Dakar, and also at the Bibliothèque Nationale de France, Paris. In Dakar, access to budgets is easy, whereas in Paris it is more difficult because budgets are not publicly available when their preservation is judged too bad. Finally, few volumes of the federal budgets can be found at the Centre des Archives Economiques et Financières à Savigny-le-Temple, but only for few dispersed years.

The documents are organized by year. For each year, two types of budgetary documents exist: first, a budget established before the beginning of the year which reports anticipated revenues and expenses; second, a final account established after the end of the year described realized revenues and expenses. I used mostly final accounts rather than budgets because they reflect what really happened in terms of revenue and expenses, except when final accounts were not available or do not report the variable of interest.

Finally, data on metropolitan total public expenditures come from the *Annuaire Statistique de la France*¹¹, which reported budgetary data from the Ministry of Finance.

4.2 Data Description

I first constructed a dataset which entails local budgetary data by year and by colony. Using disaggregated data allowed me to compute budgetary data by colony even when colonies split or when borders moved a little bit: for instance, Upper Volta was suppressed from 1932 to 1947 and its districts were distributed among the Ivory Coast, Niger and Mali. In 1947, Upper Volta was reunified. Thanks to district level data, I was able to construct the amount of expenses and revenue corresponding to Upper-Volta between 1932 and 1947 even if there were no budgetary data for Upper Volta during this period of time. Because collecting data at the district level was over the time I had, I did not collect data from the local budget for every year of the colonial period, but for 25 years: 1907-1920, 1923, 1925, 1928, 1930, 1933, 1936, 1939, 1943, 1946, 1949, 1953 and 1956.

¹⁰Central budgets start to allocate funds to colonization in AOF in 1844. Federal budgets start in 1905 in the colonial archives so I start the collection at this date. It is likely that no federal budget exist before since AOF was created in 1904. Local budgets were collected from 1907 though some data exists before, because before 1907 the civil administration was not already running or only in very small localities as Dakar and Saint-Louis, so the local budgets before 1907 are very sporadic and concern only few limited areas on the coast. Most of local budgets do not exist before 1907. The loan budget start in 1903 when AOF contracted the first public loan from the French Treasury. Finally, auxiliary budgets start in 1898.

¹¹*Annuaire Statistique de la France, Résumé rétrospectif*, Paris, INSEE, 1966.

Data are presented in two categories: revenue and expenses. Among the components of local revenue, I reported all main direct taxes (personal tax, prestations, income tax, land tax, residential tax, tax on trading license, tax on cattle and tax on turnover), total direct taxes and total revenue. Among the components of local expenses, I reported: administrative staff, security staff, education staff, the number of schools and pupils –when available, doctors and nurses, expenses for public works, indemnities to pre-colonial chiefs, number of African chiefs and finally African chief salaries and primes.

The other dataset I constructed from the federal, loan and auxiliary budgets entails expenses and revenue at the federal level by year. The data come from final accounts so they represent realized expenses rather than anticipated provisions, for every year from 1907 to 1957 (1898 to 1957 for the auxiliary budgets, and 1903 to 1957 for the loan budgets). Among the components of federal revenue, I reported: indirect taxes (trade taxes, tax on consumption, registration fees and transaction fees), receipts from public companies (mail, phone, telegraph, railways and ports, hospitals and printing works), financial income (yields from capital investments, loan and cash advances reimbursements, land revenue), financial transfers from the metropole (loans, cash advances and subsidies), total indirect taxes and total revenue. Among the components of federal expenses, I reported: financial transfers to the metropole (loans repayments, cash advances repayment and subsidies), subsidies to local budgets and private companies, infrastructure, aid to productive sectors, expenses in education, health, security and justice, the costs of public services (mail, phone, telegraph, hospital, printing works, railways and ports) and finally the costs of federal administration. I reported all components of the revenue of loan budgets: loan disbursements from the metropole, cash advances and subsidies from the metropole and from the federal budget. I reported the expenses of loan budgets by category: infrastructure, education, health and aid to productive sectors. Finally, I reported the revenue of the auxiliary budgets by category: receipts from their own activities, cash advances and subsidies from the metropole, and cash advances and subsidies from the federal budget.

The time period over which I collected data from the budgets is as large as possible. Data from auxiliary budgets are complete. Data from loan budgets are complete except two missing points in 1918 and 1938. Finally, data from the local and federal budgets were collected from 1907 only because before this year, either budgets do not exist, that is the civil administration was not running everywhere over the territory until 1907, or because budgets cannot be accessed because of their

old and fragile state. Finally, 1958 was the date when the 5th Republic was established in France and when the French colonial empire's status changed from 'French Union' to 'French Community'. As a federation, the French Community gave a real autonomy to colonies which notably became 'States' governed by African heads of State. Guinea decided to leave the French Community in 1958, as did Mali in 1959, and then all colonies acceded independence in 1960. Budgets after 1958 are absent in the colonial archives since each new State had from then on its independent accounting system. After 1958, financial transfers from France to Africa were considered as public aid rather than colonial funding.

A challenge that I faced during data collection was recurring changes in organization of the budgets (from a year to another and, to a lesser extent, from a colony to another regarding the local budgets). Much attention was paid to construct variables that represent the same revenue / expense: I carefully analyzed the structure of each budget to understand the correspondance over time and over the territory (documentation on this is available upon request).

Because budgetary data are monetary variables, I corrected data using 1914 Francs as a reference unit. I adjusted monetary variables using the price consumption index from INSEE¹². This allows me to compare the results with the existing literature since most papers on the cost of colonization express monetary values in 1914 Francs.

5 Financial transfers between the metropole and AOF

The first transfer from the metropole to AOF occurred in 1898. It was a cash advance from the Caisse des Dépôts et Consignations for the construction of the Kayes- Niger railway line. The first loan to AOF was signed and disbursed (also by the Caisse des Dépôts et Consignations) in 1903 and amounted to 65 million Francs (about 77.8 million 1914 Francs). The first subsidy from the metropole to AOF occurred in 1915 and amounted to 0.38 million 1914 Francs. This section presents the total transfers between AOF and the metropole under counterfactuals A, B and C.

5.1 Transfers from AOF to the Metropole

Public transfers from AOF to the metropole during colonial times were of three types: i) repayment of loans, ii) repayment of cash advances, and lastly iii) subsidies. All these transfers were exclusively charged on the federal budget. Subsidies from AOF to the metropole intended to contribute to

¹²The consumer price index (CPI) used here is the official Insee-SGF consumer price index from Piketty (2011).

metropolitan expenses related to colonization: cost of colonial conquest and central administration. After 1945, these subsidies were not only meant to cover the cost of colonization in the metropole, but also to help finance expenses for French reconstruction and various metropolitan organizations such as the Ecole Coloniale, ORSTOM, or the Cité Universitaire Internationale in Paris.

Data on the federal budget are available from 1907. But cash advances from the metropole to construct the railway line Kayes-Niger was disbursed in 1898 and the first loan from the metropole to AOF was signed in 1903, so it is likely that AOF started to repay these credits before 1907 (some qualitative information suggest that the repayments started in 1904). Since I have no data before 1907, I prefer to make the conservative assumption that there were no financial transfers from AOF to the metropole from 1898 to 1906. As soon as 1907, data shows the existence of subsidies, cash advance repayments and loan repayments from AOF to the metropole.

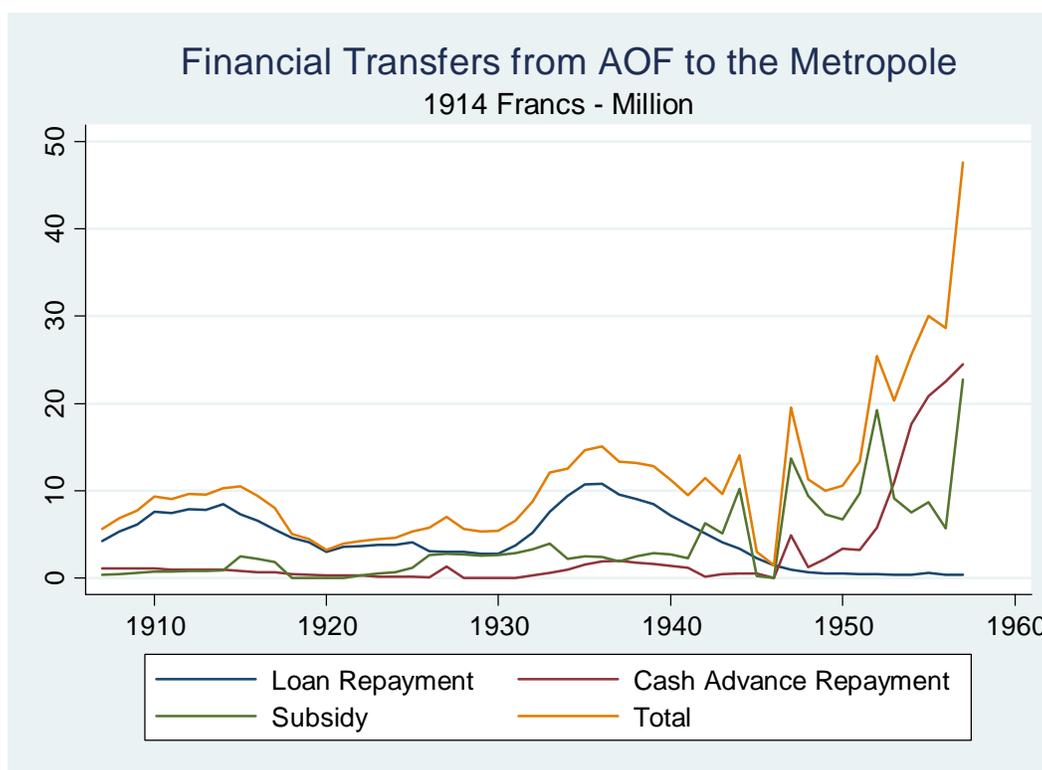
Total transfers from AOF to the metropole between 1907 and 1957 reached 572 million 1914 Francs. These transfers can be detailed as follows:

Table 1: Financial Transfers from AOF to the Metropole, total over 1907-1957

	1914 Francs (Million)
Loan Repayment	228.5
Cash Advance Repayment	145.1
Subsidy	198.3
Total	571.9

Repayments of loans represent 40% of total transfers from AOF to the metropole, subsidies 35% and repayment of cash advances 25%. Figure 2 illustrates the evolution of financial transfers from AOF to France. Until the early 1940s, repayments of loans represented the main part of the transfers from AOF to the French State, being replaced after 1945 by subsidies and repayments of cash advances.

Figure 2 – Financial Transfers from AOF to the Metropole, 1907-1957



5.2 Counterfact A: Public Aid Received by AOF

This counterfact takes into account subsidies plus the aid component of loans and cash advances from the metropole to the AOF public sector. This gives the public aid from the metropole to AOF, from which I subtract the subsidies from AOF to the metropole as presented in the previous section.

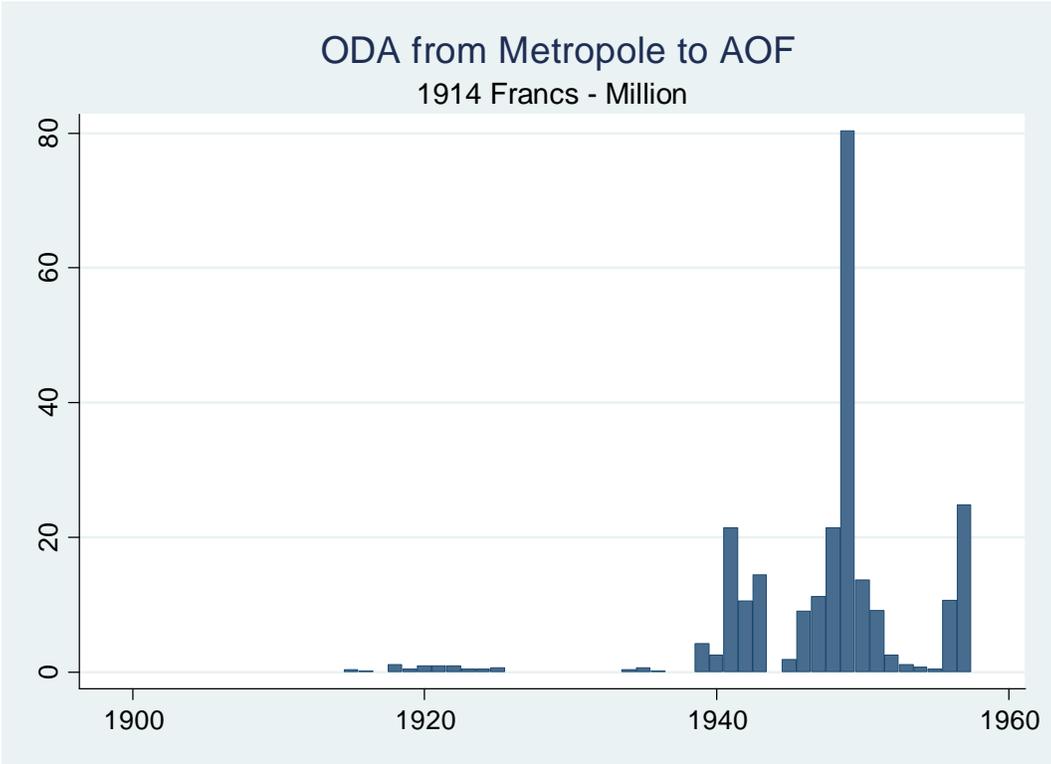
Cash advances conceded by the metropole to AOF after 1946 came with an interest rate of 3 to 4 percent. Being short term loans of only a few years, they do not allow the “aid component” to surpass 10 percent¹³. The interest rate for all six loans contracted by AOF from the metropole varied from 5 to 6.5 percent. Terms varied from 30 to 50 years. None of these loans had an aid component above 25 percent, the highest one being 17 percent for the 1903 loan. According to international definitions adopted in 1969, public aid from the metropole to AOF is then limited to subsidies from the metropole to AOF.

The total amount of subsidies (ODA) given by the metropole to AOF during the whole colonial

¹³To calculate the “aid component” of loans and cash advances, I used the online IMF service: <http://www.imf.org/external/np/pdr/conc/>

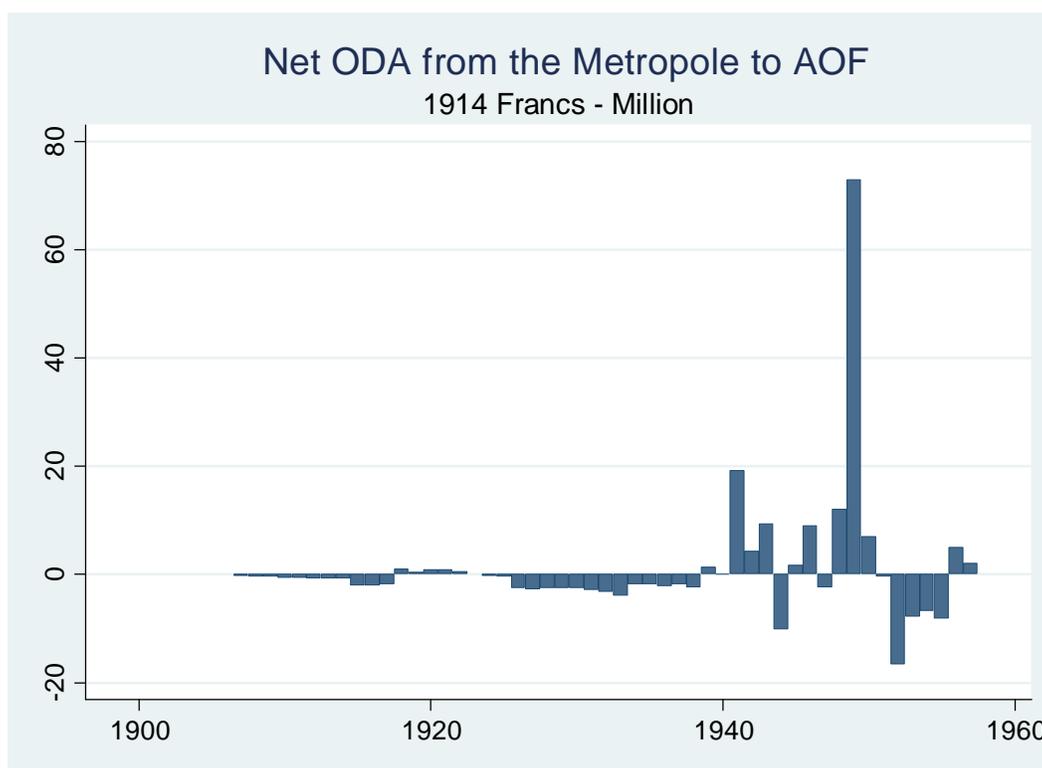
period until 1957 is 247.1 million (1914 Francs). Figure 3 shows how the ODA from the metropole to AOF was distributed over the colonial period.

Figure 3 – ODA from the Metropole AOF, 1898-1957



To construct counterfact A, I subtract year by year the subsidies from AOF to the metropole from the subsidies from the metropole to AOF. Figure 4 shows the net ODA from the metropole to AOF during the whole colonial period.

Figure 4 – Net ODA from the Metropole AOF, 1898-1957



As we can see in Figure 5, public aid given by the metropole to AOF is not very often positive during colonial times. Until 1941, public aid from AOF to the metropole have often been superior to public aid from the metropole to AOF. Overall, the net ODA from the metropole to AOF is positive and amounts to 48.8 million 1914 Francs. The year 1949, with a net subsidy of 73 million 1914 francs from the metropole to AOF, explains by itself this positive balance. 1949 is the only year when AOF benefited from a very large subsidy – on account of FIDES. The principle of financial autonomy of the colonies in AOF was mostly maintained after World War II. The metropole slightly increased the amount of subsidies given to AOF (see Figure 2) but in a “give and take” logic since at the same time, subsidies from AOF to the metropole also increased (see Figure 3). On the whole colonial period, net ODA given to AOF by the metropole amounts to 48.8 million 1914 Francs.

5.3 Counterfact B: Cash Assets Received by AOF

This counterfact takes into account all the cash assets: loans, cash advances and subsidies, received by AOF from the metropole. Table 1 shows the total cash assets that went from the metropole to AOF between 1898 and 1957. In 60 years of colonization, 1,304 million (1914 Francs) were

transferred from the metropole to AOF:

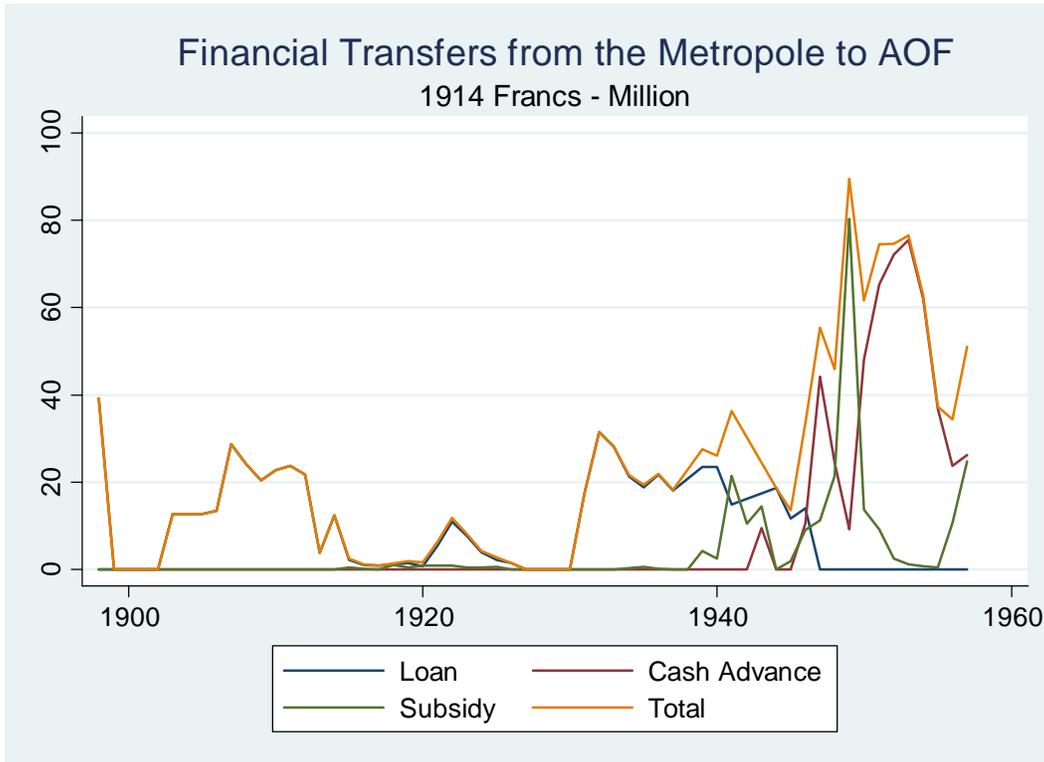
Table 2: Financial Transfers from the Metropole to AOF, total over 1898-1957

	1914 Francs (Million)
Loan	509.7
Cash Advance	547.2
Subsidy	247.1
Total	1 304

Loans accounted for 39% of total transfers from the metropole to AOF. Cash advances accounted for 42% and subsidies for 19%. The part of metropolitan financial transfers which were recovered through repayments – loans and cash advances – represented 81% of total metropolitan financial transfers.

Figure 5 shows the evolution of all three types of metropolitan transfers to AOF from 1898 to 1957. Six loans were contracted by AOF from the French Treasury in 1903, 1907, 1910, 1913, 1931 and 1932. It is clear that loans were the unique form of transfer until 1940 and remained the main form of transfer between 1940 and 1945. They totally disappeared after 1946 and were replaced by cash advances and subsidies. The increase in advances and subsidies after 1946 is explained by the creation of a fund dedicated to large scale infrastructure and equipment in colonies in 1946: the Fond d'Investissement pour le Développement Economique et Social (FIDES). Subsidies actually remained limited, except in 1949 when they reached 80 million (1914 Francs). Beyond this exceptional year, subsidies from the metropole never exceeded 25 million (1914 Francs), and were above 20 million in only 3 years (1941, 1948 and 1957). During the last decade of colonization, cash advances from the metropole to AOF replaced loans: after 1946, 73% of transfers were cash advances and only 27% were subsidies.

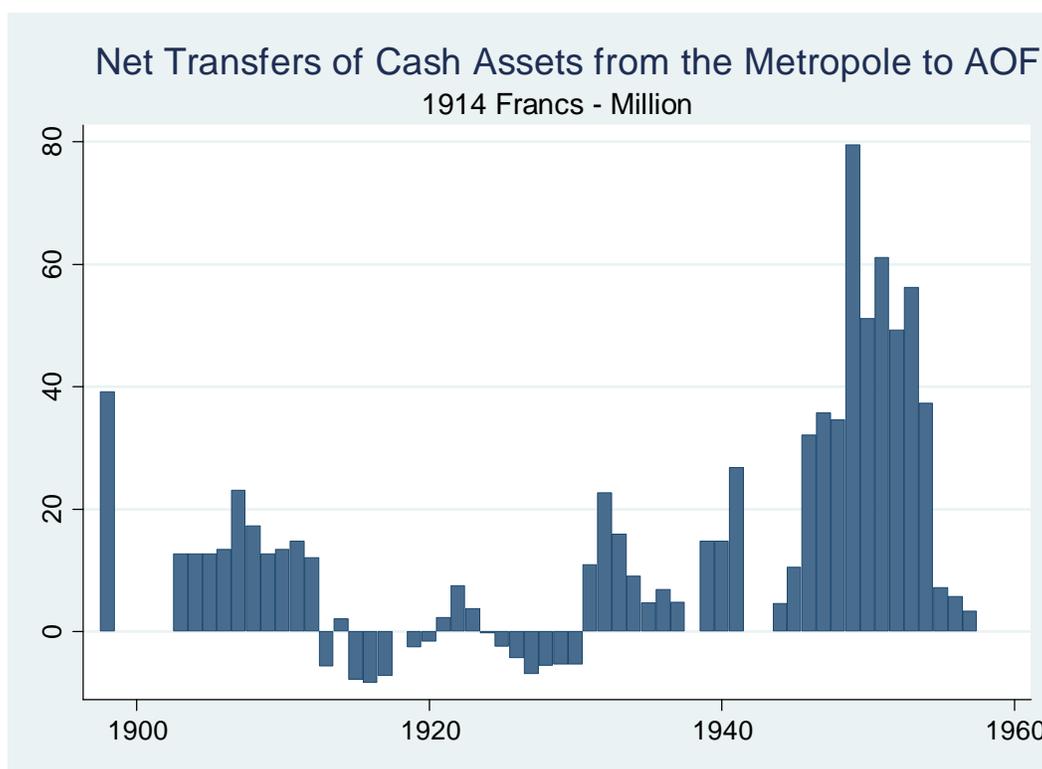
Figure 5 – Financial Transfers from the Metropole to AOF, 1898-1957



As a whole, France transferred 1,304 million 1914 Francs to AOF, with 697 million (53%) after 1946 and 1,057 million (81%) as loans or cash advances to be repaid by AOF.

This allows now to construct counterfact B: year by year, I subtract subsidies, cash advance repayment and loan repayment from AOF to the metropole to the cash assets received by AOF from the metropole. Results are presented in Figure 6.

Figure 6 – Net Cash Assets Provided by the Metropole to AOF, 1898-1957



The metropole transferred more cash to AOF than AOF did to the metropole: the net transfer of cash assets from the metropole to AOF amounts to 732 million 1914 Francs. As Figure 6 shows, the metropole became a creditor of AOF structurally after 1931. During the first half of the colonial period, the financial transfer balance from the metropole to AOF is alternatively positive and negative. It is surprising to find out that colonies have been from time to time creditors of the metropole, as it is rarely, if not ever, the idea one has. After successive loans at the beginning of the century that allowed significant transfers from the metropole to AOF, came a relatively long period of repayments from 1913 to 1930 when transfers from AOF to the metropole dominated. The second (and last) period of loans that took place in 1931 and 1932 again initiated a period of positive balance from the metropole to AOF in the 1930s. After World War II, a period of subsidies and more significant cash advances developed from France to AOF. The post-war colonial policy, through the explosion of cash advances from the FIDES, demonstrated a more evident willingness to invest in colonial equipment and ensured that the positive transfer balance of the metropole vis-à-vis AOF.

5.4 Counterfact C: Charges Related to AOF Colonization for French Taxpayers

This counterfact takes into account all the expenses related to the colonization of AOF charged on the metropolitan budget. It is the cost of colonization for French taxpayers in the sense that this counterfact represent the amount of the domestic tax revenue that was allocated to expenses related to AOF colonization: military cost of conquest and pacification, the cost of the central administration, and the subsidies to the private and the public sectors. Our data do not allow for disentangling between subsidies to the private and to the public sector, although we know that the last subsidy provided to the private sector occurred in 1928.

Table 3 presents the total amount of the charges related to AOF colonization for French taxpayers as well as the decomposition by category of charges:

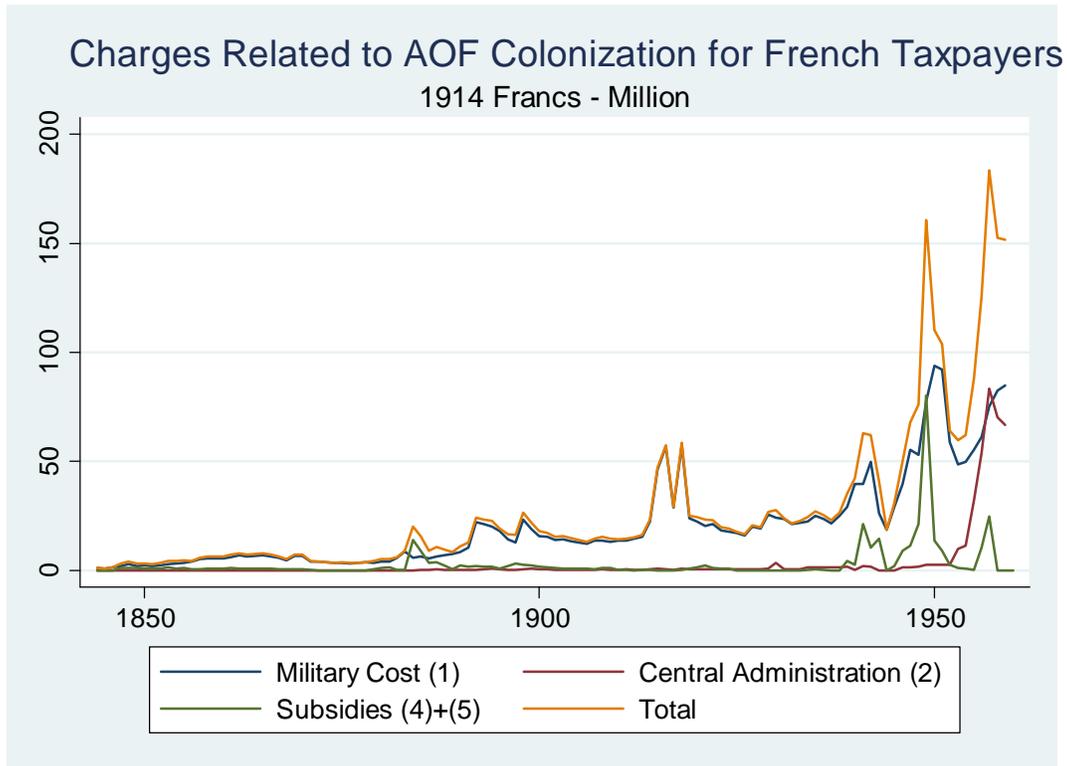
Table 3: Charges Related to AOF Colonization for French Taxpayers, total over 1844-1957

	1914 Francs (Million)
Military Cost of Conquest and Pacification of AOF (1)	2 378.4
AOF's Share of the Cost of Central Administration (2)	384.1
Subsidies to the Private and Public Sectors (4) + (5)	340.2
Total	3 102.7

Military cost of conquest and pacification accounted for 77% of the charges related to AOF colonization, while the cost of the central administration accounted for 12% and the subsidies to the private and the public sectors for 11%.

Figure 7 shows the evolution of the charges related to AOF colonization over the colonial period.

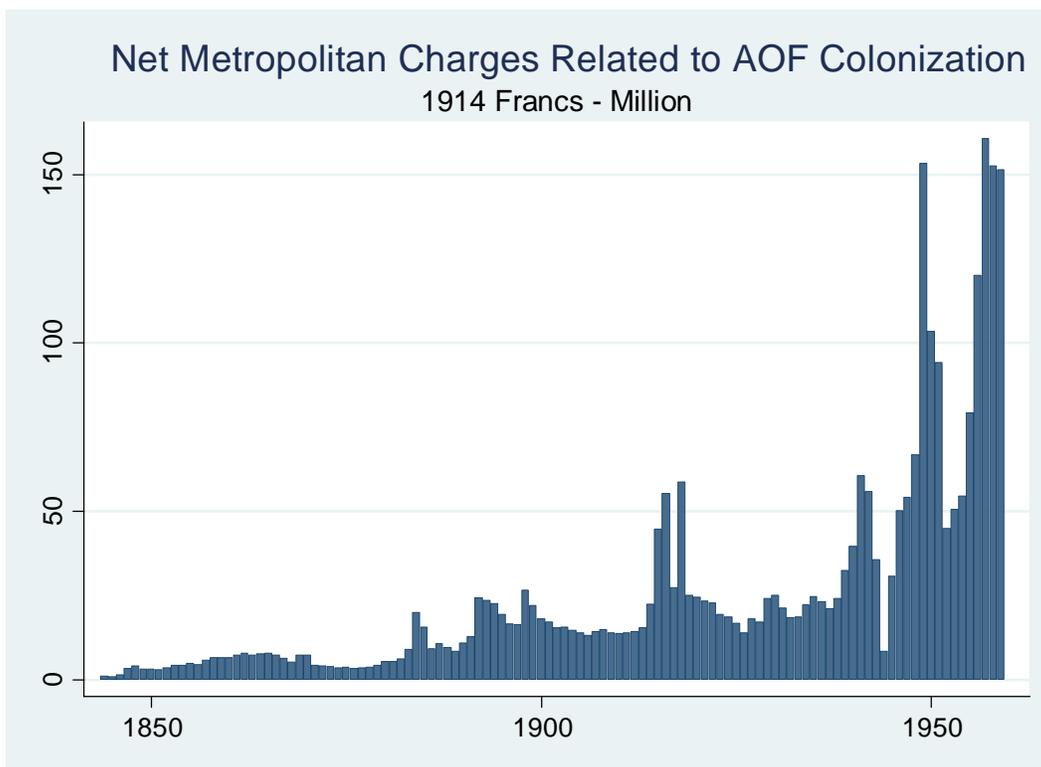
Figure 7 – Charges Related to AOF Colonization for French Taxpayers, 1844-1957



We can observe that the military cost of conquest and pacification accounts for a very large share of the cost of AOF colonization until 1945 (88%). We can also observe that the cost of the central administration exploded at the end of the colonial period. This sharp increase is due to the decision to transfer some personal expenses from the local budgets to the metropolitan budget at this date.

This allows us to construct counterfactual C: year by year, I subtract subsidies from AOF to the metropole from the cost of AOF colonization for French Taxpayers. Results are presented in Figure 8. The total of net charges related to AOF colonization over 1844-1957 amounted to 2,904.4 million (1914 Francs). This corresponds to the total of charges related to AOF colonization reported in Table 3 (3,102.4 million 1914 Francs) minus the total of the subsidies paid by AOF to the metropole reported in Table 1 (198.2 million 1914 Francs).

Figure 8 – Net Charges Related to AOF Colonization for French Taxpayers, 1844-1957



6 Main Results

6.1 How Expensive was Colonization of French West Africa for French Taxpayers?

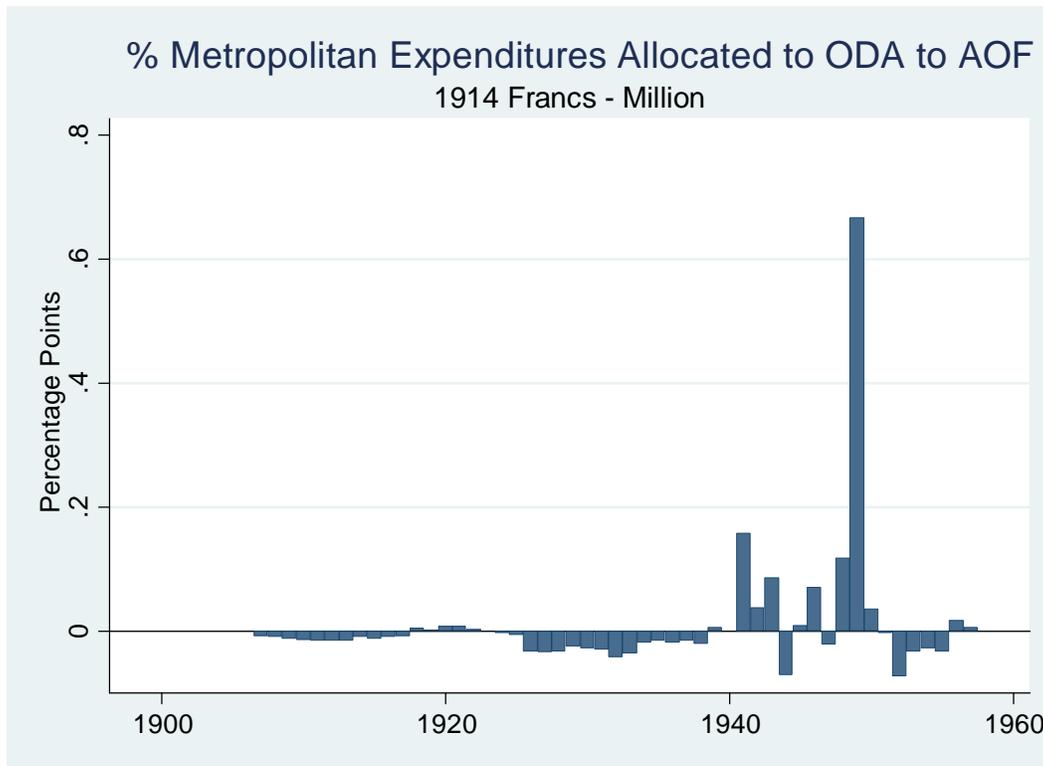
Bobrie (1976) estimates that metropolitan expenses devoted to the colonies from 1850 to 1913 accounted for somewhere between 3% and 7% of total expenses. Note that this estimate includes the costs of operating a central administration dedicated for the colonies in France as well as military expenses. But the paper clearly overestimates the cost of the colonies for French taxpayers since it does not take into account the financial transfers from the colonies to France, especially transfers from Algeria whose fiscal revenue was fully translated into metropolitan revenue.

Marseille (1996) estimates that metropolitan expenses devoted to the colonies accounted for 8% of total expenses in the twenties, and 9% of total expenses from 1945 to 1962. But this estimation is based on the assumption that all trade deficits of the colonies towards France were compensated by equivalent financial transfers from France to the colonies. It is not clear whether these financial transfers were public or private financial transfers, and whether they were loans and cash advances

(which are investments) or subsidies. Moreover, the assumption needs to be verified because there are ways by which colonial trade deficits could be paid other than financial transfers from France. Therefore, evidence from actual budgets is needed.

Figure 9 presents the share of the metropolitan public expenditures allocated to ODA to AOF (counterfact A). It shows that the maximum share of metropolitan public expenditures allocated to ODA in AOF was 0.067% in 1949, which remains very low. On average over 1898-1957, the share of total metropolitan expenses devoted to AOF is 0.001. Considering ODA only (counterfact A), the share of total metropolitan public expenditures devoted to ODA to AOF is 0.008%. It appears clearly that ODA received by AOF was not burdensome for French taxpayers.

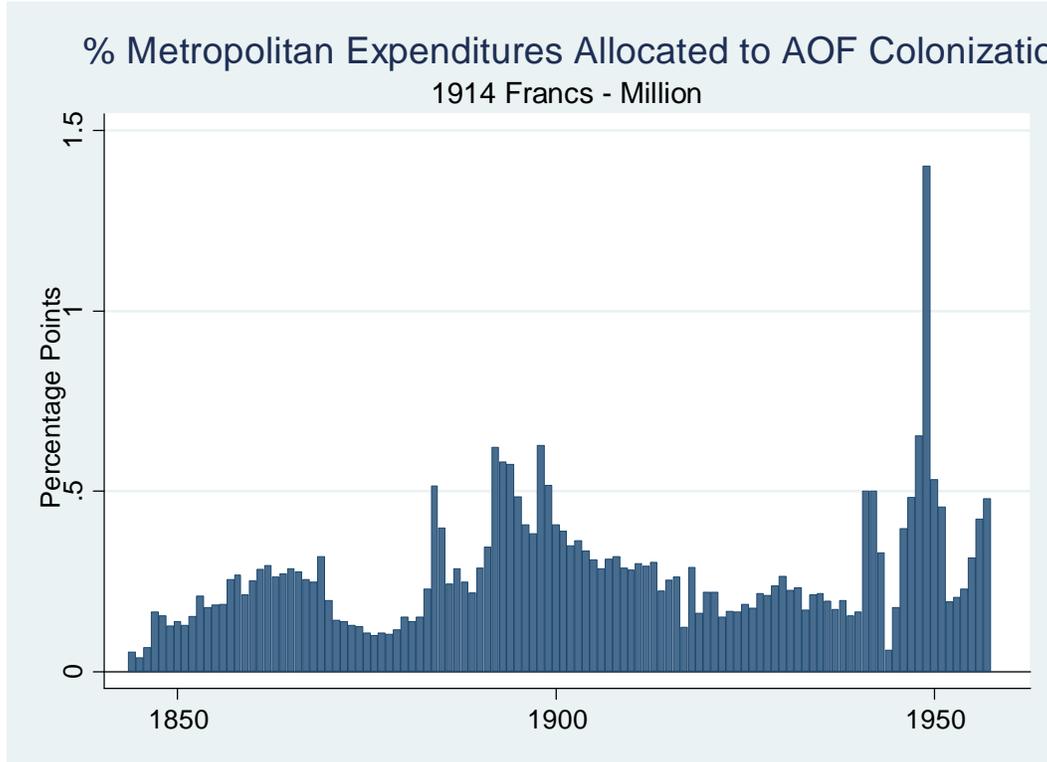
Figure 9 – Share of Metropolitan Public Expenditures Allocated to ODA to AOF, 1898-1957



However, the total cost of AOF colonization including the cost of “being a colonizer” and the support to French colonial companies is likely to be larger. Figure 10 presents the total cost of AOF colonization (counterfact C) as a share of metropolitan public expenditures. The average share of

metropolitan public expenditures allocated to AOF colonization is 0.27% over the colonial period.

Figure 10 – Share of Metropolitan Public Expenditures Allocated to AOF Colonization, 1844-1957



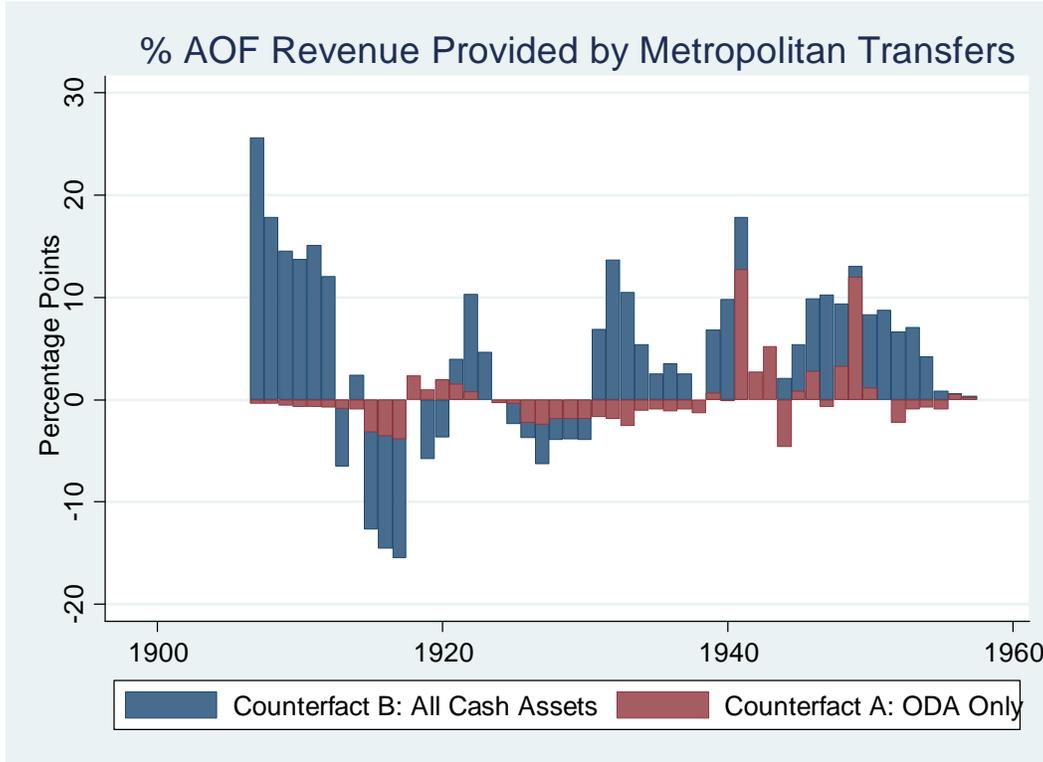
6.2 How Beneficial was Colonization for the West Africans?

The question now is whether the transfers received by AOF from the metropole represented a significant share of AOF's public resources. There is a large consensus in France regarding the idea that metropolitan financial transfers to the colonies funded most of public investments there. It is indeed possible that colonial public transfers did not cost much for French taxpayers but still accounted for a large part of local revenue.

To answer this question, I gathered all data from local, federal, loan and auxiliary budgets to calculate AOF's total revenue (Appendix 1 presents descriptive statistics on AOF's total tax revenue). Figure 11 presents the share of AOF total revenue provided by the metropolitan transfers, under both counterfact A (in red) and counterfact B (in blue). It shows that the share of AOF total revenue provided by all cash assets (counterfact B) varied a lot across the periods, from 25% in 1907 (which means that AOF received 25% of its revenue from metropolitan cash assets in 1907)

to -15% in 1917 (which means that AOF gave 15% of its revenue to metropolitan cash assets in 1917). On average, metropolitan cash assets provided 5.7% of AOF total revenue over 1907-1957.

Figure 11 – Share of AOF Revenue Provided by Metropolitan Transfers, 1907-1957



However, metropolitan ODA represents a very small share of this. On average, metropolitan ODA provided 0.4% of AOF total revenue over 1907-1957. Public aid from the metropole was therefore almost insignificant to AOF. This share varied a lot over the colonial period 1907 and 1957. It remained between +5% and -5% over the whole colonial period except in 1941 and 1949. 1941 was the year when the Fond de Solidarité Coloniale was created, as a precursor of the well-known FIDES (Fonds d'Investissement et de Développement Economique et Social) which was created in 1946 (with the difference that the latter provided rather cash advances whereas the former provided subsidies). The metropole gave a significant subsidy to this fund when it was created in 1941, as to the FIDES in 1949. Except in these two years, the metropolitan public aid to AOF remained very low as compared to AOF's own public revenue. Local revenue therefore represented the very essential part of AOF public resources.

6.3 Summary of the Main Results

AOF relied essentially on local revenue. Metropolitan public aid accounted for an average of 0.4% of AOF revenue and 0.008% of metropolitan public expenditures. Including the loans and cash advances that the metropole provided to AOF, the contribution of metropolitan assets to AOF revenue amounts on average to 5.7%. Finally, our results show that all costs implied by AOF colonization amounted on average to 0.27% of metropolitan public expenditures. Table 3 sums up these findings:

Table 4: Summary of the Weights of Transfers between the Metropole and AOF, 1844-1957

	Amount (Million 1914 Francs)	% of AOF Revenue	% of Metropolitan Public Expenditures
<u>Counterfact A</u> Net Metropolitan ODA (Public Aid) to AOF: <ul style="list-style-type: none"> • Subsidies • Aid Component of Loans and Cash Advances 	732	0.4	0.008
<u>Counterfact B</u> Net Metropolitan Transfers Received by AOF: <ul style="list-style-type: none"> • Loans • Cash Advances • Subsidies 	48,8	5.7	-
<u>Counterfact C</u> Net Metropolitan Charges Related to AOF Colonization: <ul style="list-style-type: none"> • Cost of Conquest and Pacification • Cost of Central Administration • Subsidies to the Private and the Public Sector 	2,904.4	-	0.27

7 Further Results on Public Expenditures in French West Africa

From the previous section we know that public financial transfers from the metropole to AOF were not burdensome for French taxpayers and not super beneficiary neither for AOF. So definitively AOF paid almost all its own public investments. Now the question is: how large were these investments?

In France, there is actually not only a belief that French taxpayers paid for public investments in the colonies, but also that these investments were large. French President Nicola Sarkozy pronounced a controversy speech in Dakar on July, 26th 2007 in which he mentions how beneficiary colonial public investments were for local population, referring to schools, roads, hospitals, dispensaries, bridges etc¹⁴. So even if public investments were funded by local people, colonization could have benefited to AOF in the sense that colonial power organized tax collection, logistics and management of large colonial public investments. Before colonial times, some Muslim schools ('écoles coraniques') existed but no public schools delivering a classical lecture, writing and mathematics curriculum. Neither modern medical practices nor modern infrastructure could be found. Nobody knows what would have been public investments in AOF during the twentieth century had the territory not been colonized. But still it is true that colonization did organized public investments in the colonies and that the amount of colonial public investments can be used as an indicator of how much colonial organization benefit to AOF.

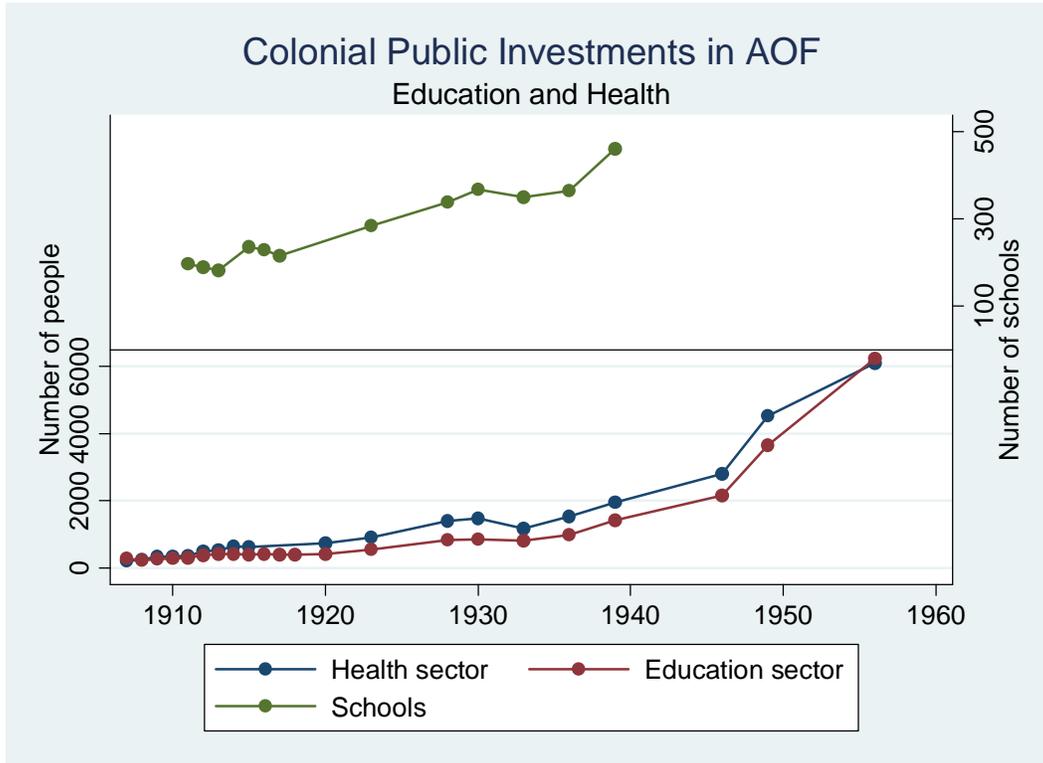
7.1 The Magnitude of Public Investments in French West Africa

Colonial public investments can be categorized as follows: education, health, infrastructure and support to productive sectors. In education, most of the investments were made in primary education in both rural and urban areas, and less importantly in secondary education in urban areas. Education staff was heterogenous, going from highest ranked French teachers ('hors-classe') to simple African monitors. Local budgets reported the number of teachers and schools in colonies, so I was able to calculate the total number of teachers and schools in AOF for some years. Figure 12 reports the total number of teachers and schools for the years when the total was available in budget data. In 1907, 282 teachers and a bit less than 200 schools were located in AOF – there were 198 schools in 1911, which is the earliest data on total schools. According the colonial censuses, AOF population was 11,982,491 people in 1910, so there was basically one teacher per 42,500 people in AOF in 1910. This tiny amount of teachers increased greatly over the colonial period; at the end of the period in 1956, there were 6,244 teachers in AOF, which represented one teacher per 2,800 people . Despite a significant improvement, the situation is still far from providing a sufficient supply of education. The latest data I have on the total of schools in AOF is 1939: at this date,

¹⁴Nicolas Sarkozy's speech in Dakar, July 26th, 2007 is available (in French) on: http://www.elysee.fr/elysee/elysee.fr/francais/interventions/2007/juillet/allocation_a_l_universite_de_dakar.79184.html

there were 461 schools in AOF, which is still few compared to the size of the territory.

Figure 12: Colonial Public Investments in Education and Health, 1907-1957

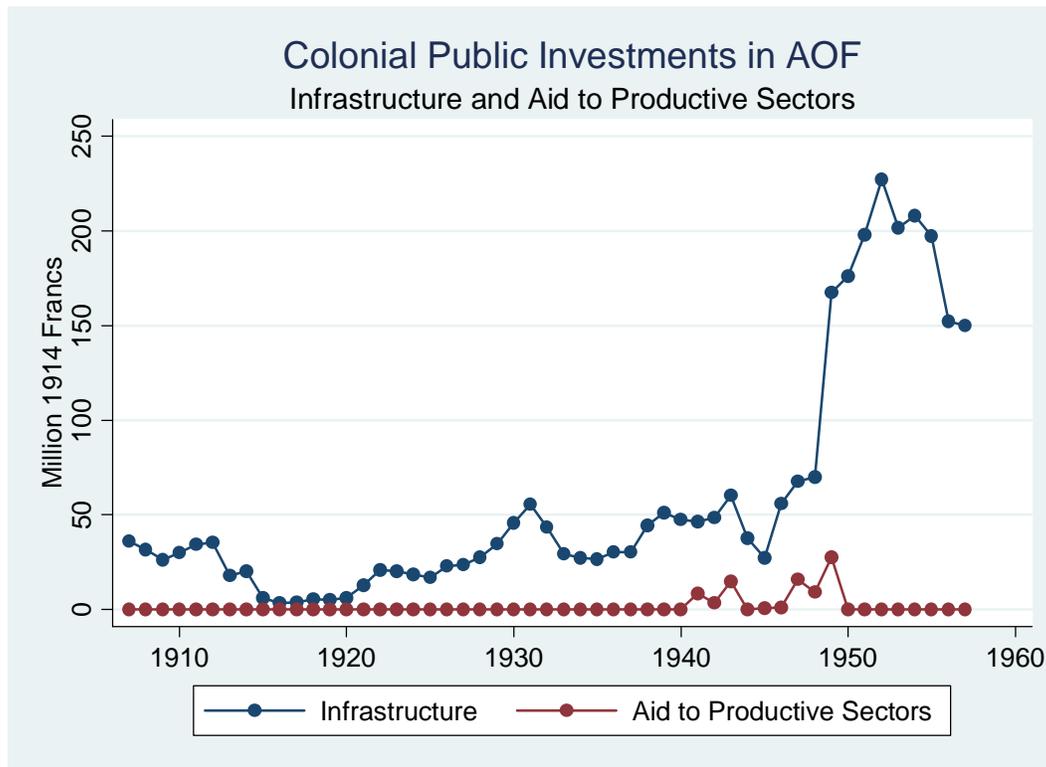


In the health sector, the local budgets give data on the number of doctors and nurses in each colony. Health staff was as heterogeneous as education staff, entailing both highest ranked military doctors and simple African unskilled workers. Figure 12 reports the total health staff for each year this data is available. It is noticeable that the evolution of education and health staffs are very similar. There were 247 health care employees in AOF in 1907, while 6,104 in 1956. As in education, these amounts seem very low compared to the size of the territory.

In the infrastructure sector, the colonial budgets do not detail the number of road kilometers or bridges or whatever –which would have been impossible actually, but do give the amount of expenses in infrastructure by category by type of infrastructure (transport, buildings, water and improvement) and by type of work (construction or reparation). Note that the expenses devoted to infrastructure were mostly made of material rather than personal; the costs of personal for infrastructure was low compared to material because most people doing public works were not paid

for that –the colonial power included a number of days everyone had to spend on doing public works as a tax, which was nothing but coerced labor . Figure 13 shows the evolution of expenses devoted to infrastructure from 1907 to 1956. It shows a bigger variability than expenses in education and health, which makes sense since it is easier to compress expenses in material than expenses in personal.

Figure 13: Colonial Public Investments in Infrastructure and Productive Sectors, 1907-1957



Finally, support to productive sectors (almost all agriculture) remained completely marginal. This support was supposed to provide agriculture or industry innovation capacity. Some money was devoted to this in the 1940s, but overall it remains very rare. The annual average expenses devoted to support to productive sectors is only 1.6 million 1914 Francs. This confirms Jean Dresh’s analysis on colonial economic system, which he calls “économie de traite”: colonial investments focused on infrastructure supporting export/import transportation rather than on transforming and improving local productive capacity.

Table 5 sums up the average annual amounts of public investments in AOF over 1907-1957. For instance, there were on average 1,003 teachers in AOF over the whole colonial period, with a progression of 352 over 1907-1920, 906 over 1921-1940 and 4,019 over 1941-1956. The late colonial period clearly appears like a huge increase in public investments, which is of course consistent with the creation of the FIDES. It is also worth noting that total metropolitan subsidies to AOF over the colonial period (48.8 million 1914 Francs) is in the same kind of range that the annual average public expenses in infrastructure (58 million 1914 Francs).

Table 5: Summary of Colonial Public Investment in AOF

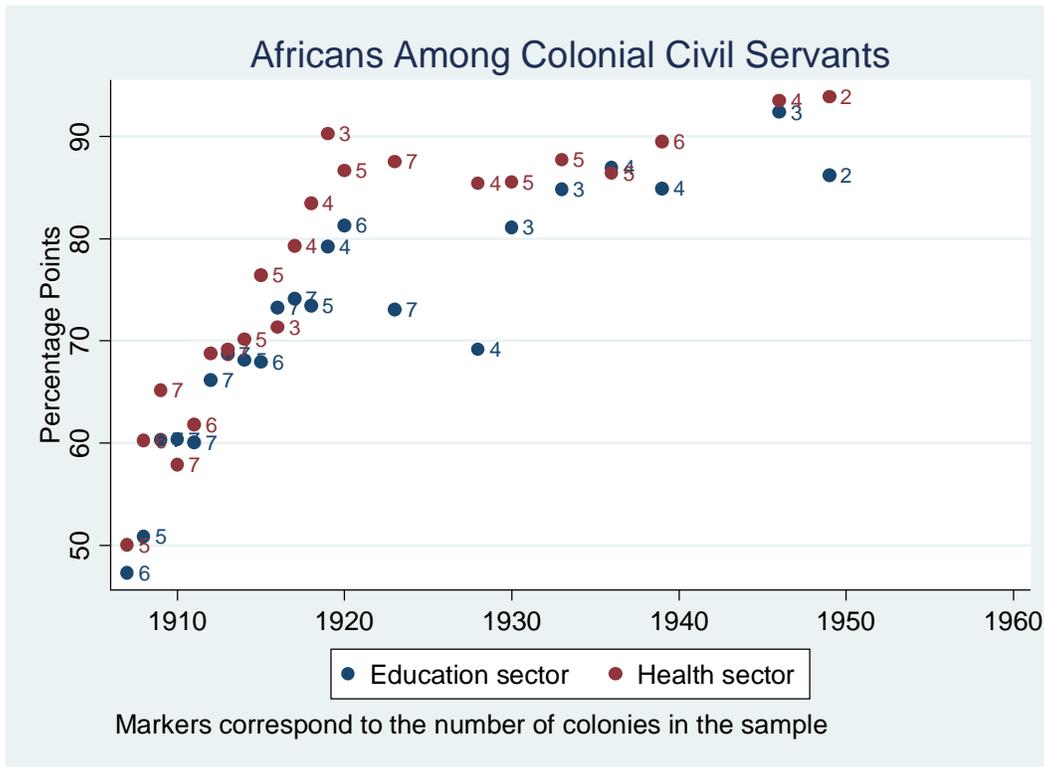
	Infrastructure (1914 Francs, Million)	Aid to Productive Sectors (1914 Francs, Million)	Number of Teachers	Number of schools	Number of doctors
<u>All Colonial Times</u> Annual mean over 1907-1956	58	1,6	1 003	285	1 389
<u>Early Colonial Times</u> Annual mean over 1907-1920	19	0	352	208	451
<u>Mid Colonial Times</u> Annual mean over 1921-1940	31	0	906	361	1,408
<u>Late Colonial Times</u> Annual mean over 1941-1956	119	4,5	4 019	-	4 480

7.2 Human Capital Transfers from the Metropole to AOF

Another way through which AOF could have benefited from colonization is human capital transfer. French emigrants in AOF embodied some general skills that could have been transferred to African people. So the idea is that a large number of French emigrants in AOF could have resulted in a significant increase in local human capital.

As to the public sector, some budgets –mostly the earlier ones, distinguished between French and African civil servants. This allowed me to compute the proportion of Africans among colonial civil servants (or at least an estimate of it based on available data). Figure 14 reports this proportion in education and health sectors from 1907 and 1957.

Figure 14: Africans Among Colonial Civil Servants in AOF, 1907-1950



While the proportion of Africans among education and health staff was about 50 percent at the beginning of the colonial period, it increased rapidly after 1910 up to 80 percent in 1920, and almost reached 90 percent after 1930. So basically there were very few education and health care employees, among which a large part were Africans. Human capital transfers from the public sector were thus not very likely to be significant.

On the private side –trade companies, banks or other colonial activities, colonial censuses show that the total French population living in AOF (male, female and children altogether) amounts 7,160 people in 1910, 13,239 people in 1925 and 53,087 people in 1950. French emigrants represented therefore respectively 0.06, 0.1 and 0.3 percent of total population in 1910, 1925 and 1950. AOF

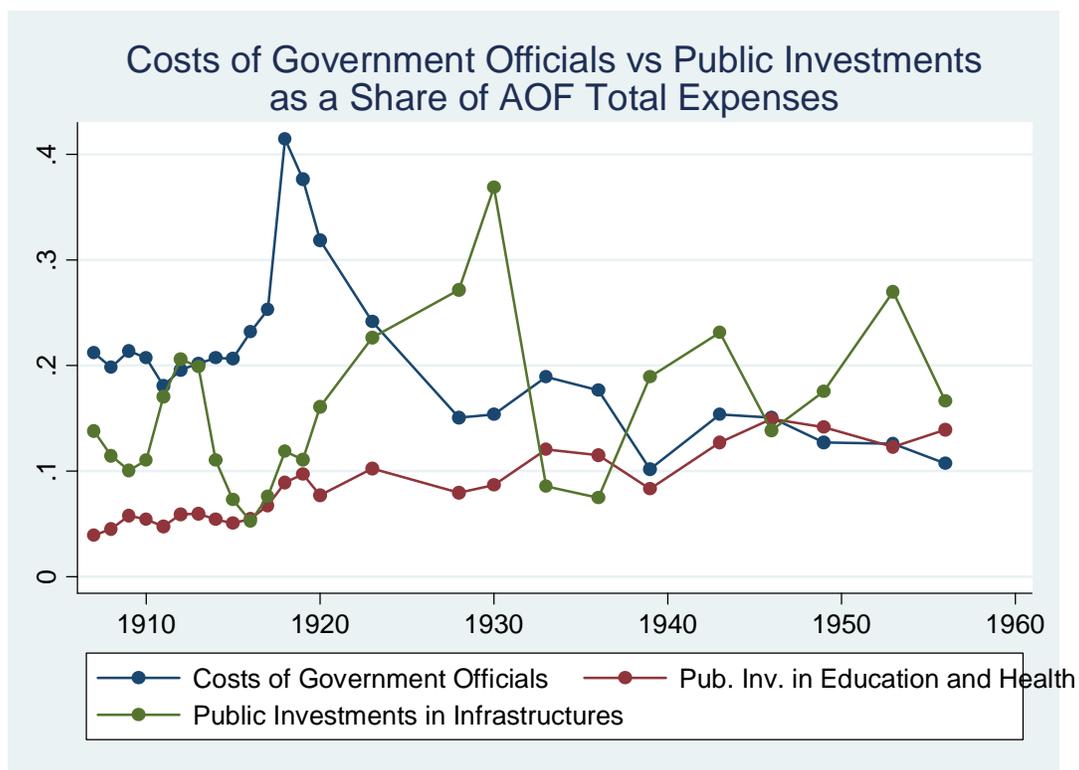
was clearly not a settlement colony like Algeria. Human capital transfers could yet be positive, but the poor amount of French emigrants shows that they could not be huge.

7.3 Understanding Scarcity: The Cost of Colonial Public Investments

Previous sections show that colonial investments were almost scarce. One obvious reason for this scarcity is the high cost of public investment, resulting in a severe constraint on the supply side. The analysis of the colonial budgets gives actually a new insight in the cost of colonial public investments: While having poor revenue from both local sources –because of a poor global wealth and economic environment, and metropolitan sources –because of poor financial transfers from French taxpayers, the colonial budgets supported the very high charges of French salaries for French civil servants involved in AOF. On top of usual high French salary, French civil servants involved in AOF also received a significant expatriation premium: for instance, the salary of a French administrator (1st rank) in 1910 amounts 14,000 Francs a year; expatriation premium amounts 4,000 Francs a year. So the total cost of a French administrator (1st rank) was 18,000 Francs a year. At this date, Africans paid a poll-tax of 3 Francs per year. 6,000 taxpayers were therefore needed to cover the cost of one French administrator. In the same range of ideas, the basic salary of a French teacher was 6,000 a year and the salary of a French doctor was 12,000 a year, while the salary of an African instructor amounts 600 Francs a year. One French teacher costs as much as ten African teachers. It is clear that the cost of French teachers –as well as French civil servants in general, was huge for such a poor population.

Figure 15 shows the costs of government officials as a share of AOF total expenses. It also reports the share of investments in education and health for comparison purpose. Costs of government officials entails personal and material expenses related to the federal government, the local government and district commandments. On average over 1907-1957, costs of government officials represented 20 percent of AOF total expenses. This share varies from 11 percent and 41 percent. The costs of the government officials at the colony level only (neither the federal nor at the district level) amounts 64 million 1914 Francs over 1907-1957, which is more than the metropolitan subsidies to AOF over the same period. The metropolitan subsidies did not even cover costs of colony level government officials.

Figure 15: The Weight of Government Officials in AOF Expenditures, 1907-1957



To conclude, costs of French civil servants can explain some part of why public investments were so scarce. AOF not only received few financial transfers from the metropole, but also supported very high charges due to French administration, which were a lot of a black man's burden. This situation might explain why some of Governors and Administrators' salaries turned to be supported by the national budget after 1949. Yet local budgets kept paying for all the French civil servants ranked below, so most of the French civil servants. How much detrimental was the local charge of French civil servants for local population? This question is definitely a stretch. On the one hand, it is likely that this dampened the capacity to invest more in public services due to high cost. But on the other hand, one can argue that the difference in productivity of French civil servants compared to local officers was as high as the difference in their salary; and that the high salaries paid to French officers might have benefited to local population through local consumption. Both arguments are dubious though: whether French teachers were well-adapted and more efficient than African teachers is highly questionable since education in French made it difficult for children -who were not French-speakers at all- to adapt; and we can wonder to what extent the salaries of French civil servants were remitted to France rather than consumed locally.

8 Conclusion

Using original data from AOF colonial budgets, this paper shows that AOF did not cost much for French taxpayers. A very small share of metropolitan total public expenses was devoted to AOF, even as we consider loans and cash advances on top of subsidies. In contrast with what colonies have a reputation for, AOF was therefore far from a black hole. AOF public funding was almost autonomous and therefore colonial investments were almost funded by Africans themselves rather than by French taxpayers.

Results in this paper are not in line with the existing literature, which underlines the costs of colonies for French taxpayers. This divergence can be explained in five ways. First, most of the existing papers do not cover the whole colonial period. Second, all of the existing papers, except Coquery-Vidrovitch (1982), do consider financial transfers from the metropole to colonies but not from colonies to the metropole. Third, all of the existing papers assimilate loans, cash advances and subsidies and therefore consider financial investments as costs. Fourth, some of the existing papers focus on the 1950s and generalize their observations to the whole colonial period. Finally, Jacques Marseille's analysis is based on the assumption that colonies' trade gaps were compensated by metropolitan public financial transfers, which is wrong in the case of AOF. This paper therefore addresses major caveats in the existing literature.

Many Africans still believe that they owe French colonizers their schools, hospitals and infrastructure. But the reality is that they financed with their own resources almost the totality of these public investments. Moreover, they supported the high cost of French colonial administration. Colonization therefore reveals to have been more of a black than white man's burden.

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Appendix 1: Descriptive Statistics on AOF total tax revenue

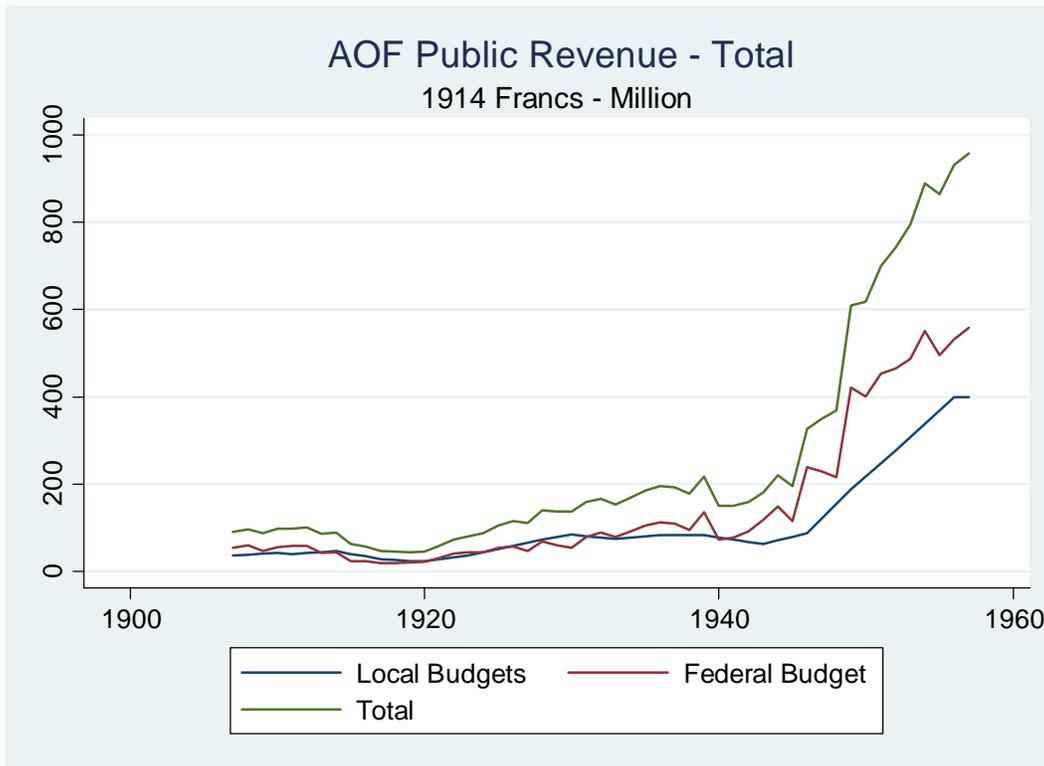
At the federal level, most of the revenue came from trade taxes (68 percent on average over 1907-1957). Nine percent came from own generated income (receipts from public companies and financial yields). Nine percent came from metropolitan cash advances and subsidies. Revenue for the loan budget came from loan disbursements from the metropole (64 percent of total revenue over 1903-1957), while the 36 percent left came from cash advances and subsidies from the metropole and the federal budget. Revenue for auxiliary budgets came mostly from receipts from their own activities (92 percent of total revenue over 1898-1957), while the eight percent left came from cash advances and subsidies from the metropole and the federal budget.

At the local level, most local revenue came from direct taxes (54 percent on average over 1907-1957). The rest of the local revenue came from indirect taxes and subsidies from the federal budget. Most direct taxes were based on individuals, through personal taxes: capitation, “prestations¹⁵”, residential tax and income tax. Personal taxes account for 44% of total local revenue over 1907-1957. Finally, among personal taxes, the most important tax was capitation, which was equal for all individuals whatever their income and wealth. Capitation accounts for 39 percent of total local revenue over 1907-1957. Income tax, which was introduced in 1933 in AOF, did not catch up with capitation: in 1956, income tax accounted for 25 percent of personal taxes whereas capitation accounted for 75 percent of personal taxes. The general picture that emerges from budget data is that local people, especially poor people, contributed significantly to public funding during colonial times.

Figure A1 shows the evolution of AOF total public revenue from 1907 to 1957. The overall growth of AOF total revenue was slow from 1907 to 1945, with two significant recession periods corresponding to the two World Wars. The decrease in AOF total revenue during the two World Wars was due to the decrease in trade taxes at the federal level as a consequence of worldwide trade contraction.

Figure A1 – AOF Public Revenue (Federal and Local), 1907-1957

¹⁵The « prestations » were simply coerced labor, due by each individual above 8 or 10 –depending on the period. Each taxpayer must do public works during a given number of days in the year, except those who could give money in exchange of labor.



After 1945, the growth of AOF total revenue is spectacular: it was multiplied by five in 13 years. Both federal revenue and local revenue grew fast during this period, federal revenue in a higher speed than local revenue, though.

Appendix 2: Discussion on Jacques Marseille's Hypothesis

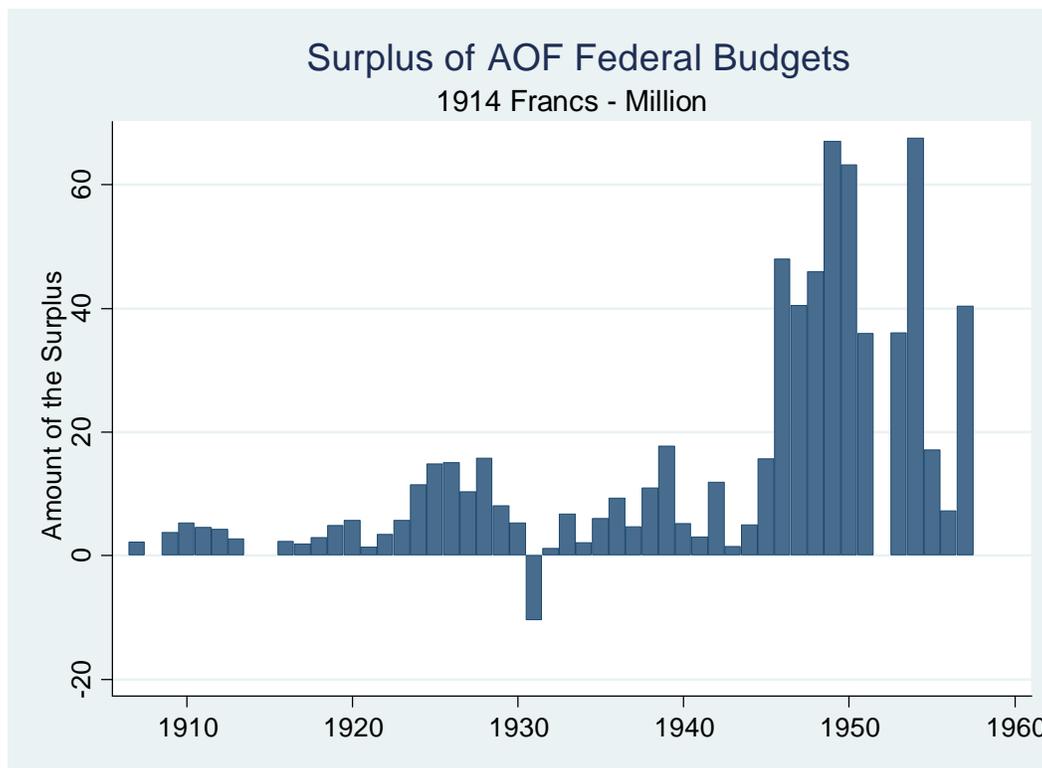
As documented in Marseille (1996), the French colonies in general and AOF in particular experienced structural trade gaps towards the metropole during the colonial period. Marseille argues that some metropolitan public financial transfers to the colonies compensated these trade gaps, which were therefore a big burden for French taxpayers¹⁶. This argument is based on the fact that the balance of payments requires financial transfers to be balanced, which is true. But there are ways by which payments between the metropole and the colonies could be balanced other than through metropolitan public financial transfers.

First, the metropolitan financial transfers to the colonies could have been private investments, which do not seem like a cost for French taxpayers but a source of income for French investors. According to the returns on investment reported in Coquery-Vidrovitch (1973) and Marseille (1984), private investments cannot be considered as part of public aid but were on the contrary often very profitable.

Second, imports from the metropole in the colonies could have been paid in cash. In this case, payments are balanced between the metropole and the colonies. An African company could pay in cash in two ways: either the company has the money, or it borrows the money at an African bank. An African company could therefore pay its imports in cash if there were enough local savings. I do not have any evidence on private savings during colonial times in AOF, but I do have evidence on public savings from budget data. At each budget level, public savings can be calculated by subtracting total expenses from total revenue. Figure 10 shows public savings at the federal level by year from 1907 to 1957. The total of public savings in AOF from 1907 to 1957 is 941.6 millions (1914 Francs). The total of trade gaps in AOF from 1907 to 1957 is 2,309.1 millions (1914 Francs). AOF public savings therefore accounts for 41 percent of AOF trade gaps. The possibility that African companies could borrow money from local banks to pay their imports is thus worth considering.

Figure A2 – Surplus of AOF Federal Budgets (Final Accounts), 1907-1957

¹⁶Jacques Marseille, *La balance des paiements de l'outre-mer sur un siècle, problèmes méthodologiques*, Actes du colloque « La France et l'outre-mer, un siècle de relations monétaires et financières », Comité pour l'Histoire Economique et Financière de la France, Imprimerie Nationale, 1997, in *Empire colonial et capitalisme français*, op. cit., p. 546.



To conclude, there is not enough evidence on payments between the colonies and the metropole to understand exactly how payments were balanced during colonial time. However, the analysis of the colonial budgets definitely shows that AOF trade gaps towards the metropole were not compensated by public metropolitan financial transfers. Using trade gaps is therefore a misleading way to measure the cost of colonization for French taxpayers.