Fiscal Capacity and Dualism in Colonial States: The French Empire 1830-1962

Denis Cogneau, Yannick Dupraz and Sandrine Mesplé-Somps

Appendix 3 – *Capitation*: compliance and collection cost

In this appendix, we use district-level data on population, *capitation* rate, and *capitation* revenue to compute rates of compliance to the *capitation* (the ratio of revenue to the theoretical tax bill) in French West Africa (AOF). We also use district-level data on wages paid to chiefs and the fraction of tax revenue kept by chiefs as a reward to compute the collection cost of *capitation* in AOF.

Compliance

To compute the theoretical tax bill, we need precise information on the tax rate (the lump sum amount due by each individual) and the tax base (the population eligible to pay the *capitation*). Both varied across space and over time.

Tax rates: Rates in francs were fixed at the district-level ("*cercle*"). They were higher in wealthier or more urbanized districts. Women, men and children sometimes paid different rates, and rates could even vary across subdivisions of the same district or across ethnic groups. We compute district-level rates for AOF from 1910 to 1956 using data collected by Huillery (2009).[1]

Tax base: In AOF, the *capitation* initially applied to all individuals older than eight or ten, with some exceptions.[2] In 1937, the age threshold was moved to 14 almost everywhere.[3] Military conscripts, veterans, and policemen (and their families) were exempt from the tax, as well as schoolchildren and disabled persons. Nomadic people, who represented a large share of the population in colonies like Mauritania and Niger, paid a tax on cattle (*zekkat*), and were therefore exempt from the *capitation* or paid lower rates. To obtain the eligible population in each district at each date, we use our colony-level estimates of population and we distribute

[1] When rates varied within districts, we produced weighted averages of these rates to get at district-level rates, using the number of taxpayers in each subdivision as weights.

[2] In Senegal before 1911, and in Niger and Guinea before 1918, all individuals were eligible, even small children. In Côte d'Ivoire and Senegal after 1926, the eligibility age threshold was increased to ten.

[3] In Dahomey, the eligibility age threshold was increased to 16 as early as 1926.

population across districts using a 1925 district-level population enumeration.[4] This means we might underestimate the population of more urbanized districts that attracted migrants after 1925. This would lead to a slight underestimation of the theoretical tax bill. We also must make assumptions on the share of population above the age eligibility threshold, which decreased over time because of demographic growth. These assumptions come from the age distribution of the autochthonous population in Tunisia and Algeria in 1925 and from Tabutin and Schoumaker (2004) for 1950 (see online Appendix 1).[5] For instance we assume that the population older than 8 represented 83% of total population in 1925, 80% in 1935, 77% in 1945 and 73% in 1955.

Theoretical tax bill, actual tax revenue and compliance rate: For each district in each year, multiplying tax rates by the eligible population provides an estimate of the theoretical tax bill. The district-level actual *capitation* revenue from 1920 to 1956 comes from Huillery (2009).[6,7] We define compliance as the ratio of the actual revenue to the theoretical tax bill.

Table A3.1 – Compliance ratio (%) for the *capitation* tax in French West Africa

	1910-19	1920-29	1930-39	1940-49	1950-56
Dahomey	66	76	74	79	
Côte d'Ivoire	85	104	106	96	80
Guinea	111	118	107	96	92
Senegal	81	76	82	83	88
French Sudan	91	90	88	90	88
Upper Volta	105	108	95	84	89
All non-nomadic colonies	**91**	**94**	**93**	**88**	**88**
Mauritania	17	17	8	17	6
Niger	50		77		

Notes: Compliance ratio is the ratio of the revenue raised to the estimate of the tax bill. In some years, some districts have missing data for the tax rate or the tax revenue. However, in each year, districts with non-missing data make at least 70% of the total population of each colony, and most often more than 95%. ***Sources:*** see text and online Appendix 1.

Table A3.1 displays *capitation* compliance ratios by colony for five periods between 1910 and 1956. They are very high. If we exclude Niger and Mauritania and consider only

[4] These population estimates include Europeans, who also paid *capitation*, but represented a very small minority of taxpayers. In some cases, the data on amounts collected do not distinguish the two kinds of taxpayers.

[5] We make assumptions for the years 1925, 1935, 1945 and 1955 and let the shares vary linearly between these dates.

[6] In some cases, the district-level amount is the forecast rather than the actual amount collected. It is not really a concern: from one year to the other, forecasts were closely met, as they were simply updates of the revenue collected in the previous year.

[7] The sum of the district-level amounts equals to the colony-level revenue collected in our data.

non-nomadic colonies, the average lies between 88% and 94%. Colonies like Côte d'Ivoire, Guinea and Upper Volta display compliance ratios above 100% in the early decades. This suggests that their population could be underestimated.[8] Population data for 1955 is quite reliable, because it is anchored on the population censuses of the 1960s. Estimated compliance is still high in the 1950s, but never above 100%. Even assuming higher population figures in the 1920s, we obtain high compliance ratios: if we halve demographic growth between 1925 and 1955, we obtain a compliance ratio of 74% in the 1920s. If we make the extreme assumption that population in 1925 was as high as in 1955, we still obtain a relatively high compliance ratio of 58% on average.[9]

Collection Cost

The capitation was collected by local chiefs who received a wage payment and a share of the amount collected (called "*remise*"). Does it mean that the collection cost was high or low? To answer this question, we use district-level data from Huillery (2009) on wages and *remises* and compare them to the *capitation* revenue. As seen in Table A3.2, wages paid to chiefs represented 2 to 3% of the capitation revenue, while rewards were around 4%, for a total between 6 and 7%. We conclude that the cost of capitation collection was limited.

Table A3.2 – Collection costs for the capitation in French West Africa

Ratio to revenue: (%)	1910-19	1920-29	1930-39	*1940-49*	*1950-56*
Wages paid to chiefs	3.3	2.0	2.4	*2.2*	*3.1*
Tax kept by chiefs as reward	4.1	4.3	3.7	*3.6*	*4.0*
Total	7.4	6.3	6.1	*5.8*	*7.1*

Notes: Mauritania and Niger excluded. Only colony-years with non-missing values for both wages and rewards are considered. The composition of the sample is different across decades: Dahomey and Côte d'Ivoire have no data for the 1940s and 1950s; Upper Volta has not data for the 1940s; Senegal has no data for the 1950s. ***Sources:*** see text and online Appendix 1.

[8] If we use instead of our estimates the district-level enumeration of 1925, the compliance ratios for 1920-29 are even higher because our population estimates are slightly higher than the enumeration (except in Sudan and Guinea).

[9] In our data, AOF population increased by 62% between 1925 and 1955.

References

Huillery, Elise. “History Matters: The Long-Term Impact of Colonial Public Investments in French West Africa”, *American Economic Journal - Applied Economics*, 1(2): 176-215, 2009.

Tabutin, Dominique and Bruno Schoumaker. “The Demography of Sub-Saharan Africa from the 1950s to the 2000s [A Survey of Changes and a Statistical Assessment]”, *Population*, 59, no. 3-4 (2004): 457-555.