

# Skill or Race? Inequality in the Wage Labour Sector in British Tanganyika

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Over the last decade, research on income inequality in colonial sub-Saharan Africa has seen a resurgence. A recurrent theme within these studies is that of high racial income differences (Aboagye, 2020; Alfani and Tadei, 2019; Bolt and Hillbom, 2016). A second, understudied theme is that of high skill premiums. In British Africa during the 1920s-40s, they ranged from 200 to 490 per cent (Frankema and van Waijenburg, 2012), compared to 50 to 100 per cent in pre-industrial Europe (van Zanden, 2009).

Skill premiums have been identified as a predictor of long-run economic growth, a measure of institutional quality, and, importantly, a driver of income inequality (Acemoglu, 2002; Acemoglu and Autor, 2012; Goldin and Katz, 2008; van Zanden, 2009). The skill premium denotes the ratio of the wages of skilled workers to those of unskilled workers, and depends on the relative supply of each. Given high skill premiums in colonial Africa, it appears likely that they had an impact on overall levels and trends in income inequality. Furthermore, given skill differences between colonizers and the colonized population, it is possible that racial income inequality is, in part, driven by skill premiums.

This paper seeks to address the shortage of in-depth studies on colonial-era skill and race premiums by estimating income inequality in the wage-earning sector in colonial Tanganyika and answering three questions: Why were skill premiums so high? What impact did high skill premiums have on income inequality? And can part of the average race premium be explained by implicit skill premiums?

The focus of this paper is the formal wage-earning sector in British Tanganyika. Like other East African colonies, Tanganyika's population consisted not only of Africans and Europeans, but also an Asian minority, originating from the Indian subcontinent. A three-tiered racial hierarchy, with Europeans at the top, Asians in the middle, and Africans at the bottom existed and is indicative of the prevalence of racial discrimination (Mangat, 1969; Rothermund, 1965). Yet, Tanganyika was a colony under League of Nations and United Nations mandate, which instructed the British to prioritize African development, and provided oversight that should, theoretically, have prevented rampant exploitation and racial discrimination. Indeed, previous research has argued that mandate colonies did focus on 'peasant development' and maintained a 'pro-African ethos', which included higher investments in human capital and led to comparatively good conditions for the colonized populations (Bowden et al., 2008).

When analysing the formal sector in colonial Tanganyika, the main determinants of income inequality amongst the wage-earning population can be identified as the relative wages of the different groups (race and skill premiums) and the relative size of each group within the overall population (compositional effects). Skill premiums are best analysed using a simple supply and demand framework. On the supply side, high land-labour ratios in colonial Tanganyika, as elsewhere in sub-Saharan Africa, meant that unskilled labour tended to be scarce (Austin, 2008). Because of the mandate, common methods to increase the supply of unskilled labour – increasing the demand for cash (through taxation), limiting alternative income-earning opportunities (subsistence and cash-crop production), and creating artificial land scarcity (through resettlement and land alienation) – could only be employed to a limited extent by the colonial administration (Dougherty, 1966; Iliffe, 1979, p. 303; Paton, 1995). As a consequence, unskilled labour had to be recruited mostly on the market (Native Labour 1932, Manpower 1951).

Despite this, skill premiums were very high (Frankema and van Waijenburg, 2012), suggesting a high demand for and insufficient supply of skilled labour: a likely scenario given

the wide variety of new technologies and skilled occupations (like clerks, engine drivers, agricultural overseers) that colonialism introduced. Akin to processes observed in industrialized countries during the 20th century, this points to skill-biased technological change as a potential driver of skill premiums and income inequality, through an increase in the quantity and productivity of skilled labour employed (Acemoglu, 2002; Goldin and Katz, 2008).

The colonial administration could compensate for the lack of African skilled labour by ‘importing’ European and Asian skilled labour, because the new technologies introduced, while new to Tanganyika, were already established on a global scale. This raises the question to what extent racial income differences can be explained by implicit skill bias instead of outright institutional discrimination. This is reinforced by the fact that discrimination is costly (Becker, 1995, pp. 14–21): Hiring Europeans and Asians, who command globally, not locally, competitive wages, was more expensive than hiring equally skilled Africans (Cooper, 1996, pp.445–6, Hutt, 1964, p. 56).

To answer the questions posed in this paper, the first step is estimating the levels and trends of income inequality in the formal sector, for which Gini coefficients were used. The primary sources of wage and employment data used to calculate these, as well as the different premiums, are the Blue Books (1921–48), the Annual Reports of the Labour Department (1944–59), and the Annual Reports of the East African Income Tax Department (1950–63). Gini coefficients for 1930–47 were calculated using social tables, which sort the working male population into six classes: African unskilled, semi-skilled, blue-collar skilled, and white-collar skilled; Asians; and Europeans. African employment numbers were drawn from the Blue Books and Labour Department Reports. African average wages were estimated using lognormal averages of minimum and maximum wages. Asian and European employment numbers were derived from census information (extrapolating from the censuses of 1931 and 1948). Average wages for Asians were estimated in the same manner as African wages for employees in the Public Works and Railways and Harbours divisions of the colonial administration, which, due to a lack of other Asian income data, were assumed to represent average wages of Asians also in the private sector. The European average wage is the actual average wage of the civil establishment, which again was assumed to represent average incomes in the private sector.

For 1949–59, Gini coefficients were computed using African income groups from the Labour Department reports, as well as income groups found in the tax reports for those earning higher incomes (overwhelmingly Europeans and Asians).

Skill premiums were calculated for the African population according to Equation 1, following the approach by van Zanden (2009):

$$SP = \frac{w_S - w_U}{w_U}, \quad [1]$$

where  $w_S$  = skilled wage and  $w_U$  = unskilled wage For 1921–48, the wages employed are lognormal averages, as described above. For the period from 1949–1959, wages are weighted averages.

Race premiums were calculated in an analogous manner to the skill premiums, as seen in Equation 2, following Becker’s (1995, p. 17) formula for the market discrimination coefficient:

$$RP = \frac{w_H - w_L}{w_L}, \quad [2]$$

where  $w_H$  = wage of the higher group in the hierarchy and  $w_L$  = wage of the lower group. Race premiums were calculated for both lognormal average and maximum wages for selected occupations. Due to the limited availability of clearly defined Asian and European wages, race premiums were only calculated for employees of the Tanganyika Railways from 1930–47. The maximum-wage race premium serves as a check on compositional effects caused by the Africanization of the economy, which saw the number of European employees in mid-level positions shrink significantly. To illustrate: while in 1934, there were 12 European and 67 African clerks, by 1947 these numbers had changed to 1 and 145, respectively. Thus, the average race premium, which compares the wages of often supervisory European staff to

African wages which include both senior and entry-level workers, risks overstating the difference between workers of similar skill and experience level.

The trends in income inequality are shown in Figure 1. Overall income inequality was relatively high already in 1930 and increased after the Great Depression. The Second World War saw a brief decline, but inequality increased again with the beginning of the ‘developmental era’ in the late 1940s and declined only slightly towards the end of the colonial period. Income inequality amongst Africans follows the overall trend before World War II. In the 1950s, however, we see a divergence: overall inequality falls, while inequality amongst Africans increases.

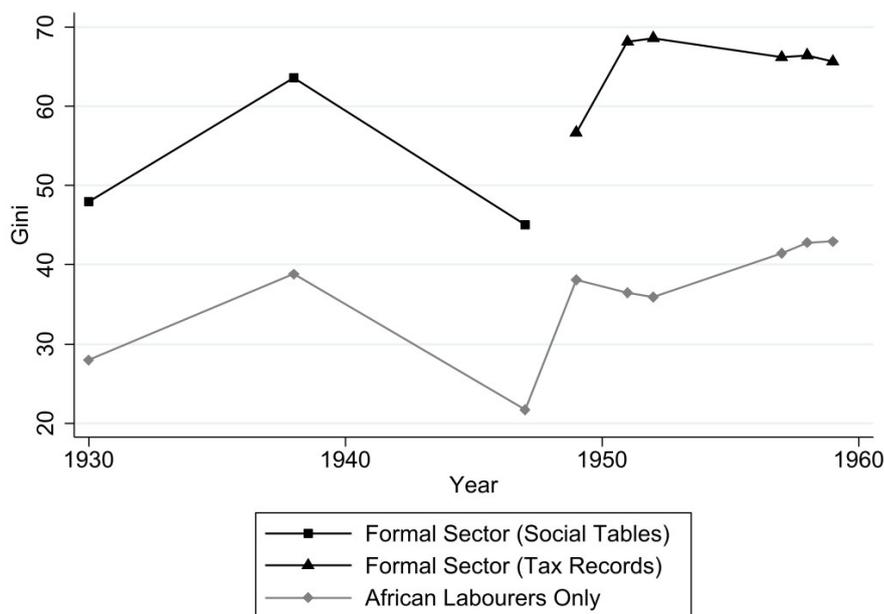


Figure 1: Gini coefficients, Tanganyika Territory.

Before World War II, the trends in African skill premiums, shown in Figure 2, match the trends in income inequality. The economic recovery after the First World War led to an increased demand for all labour (Labour in Tanganyika, 1926). This demand was relatively greater for skilled labour, exceeding supply and increasing the skill premium. Financial constraints during the economic crisis of the 1930s meant that employers aimed to lower their need for overall labour by improving labour productivity through retaining high-paid skilled labour while reducing the relative use of unskilled labour and depressing unskilled wages, reinforcing this trend (Fuggles-Couchman, 1964, pp.26–29). Throughout this period, skilled labour supply fell short of demand. This shortage was rooted in a number of factors: first and foremost deficiencies in educational provision by an administration which focused primarily on rural food security and peasant development, but also the absence of effective training schemes. Figure 3 shows the low enrolment in public and government-aided primary schools: by 1948, only 4.5 per cent of all children had been enrolled. These numbers corroborate qualitative accounts of an education system that was both of low quality and racially biased (Iliffe, 1979, pp. 354–361).

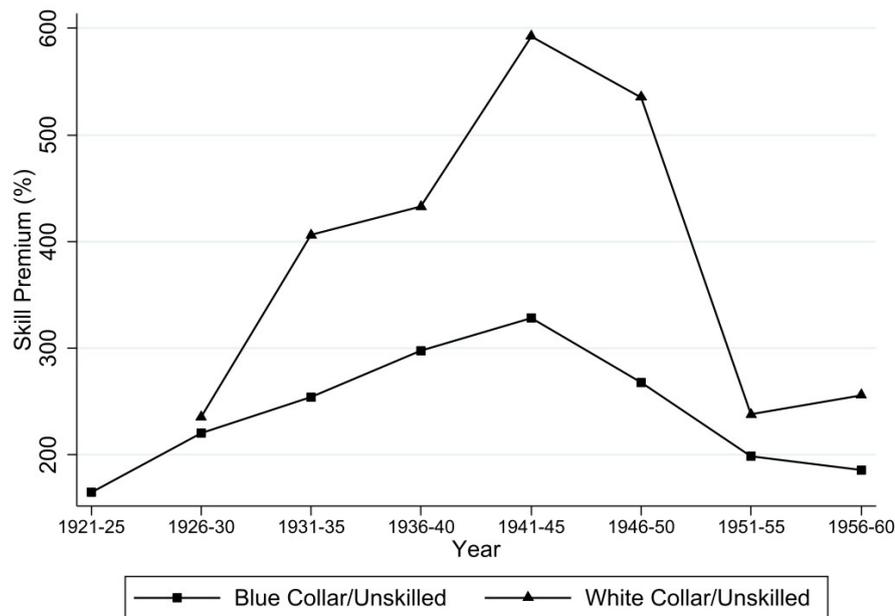


Figure 2: African skill premiums (five-year averages).

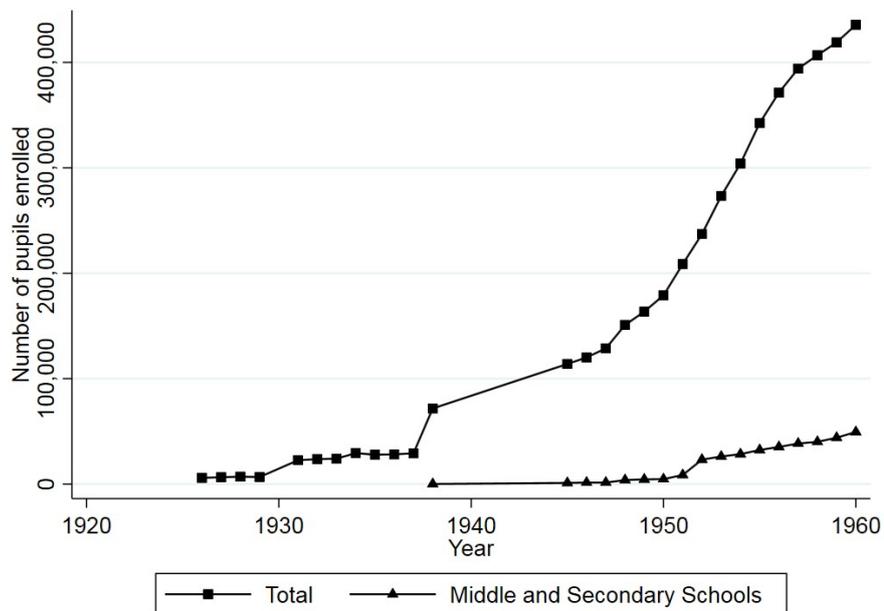


Figure 3: Enrolment of African pupils in public and government-aided schools.

On-the-job training was haphazard, with government plans to formalize it stalling until the 1950s, and could initially not make up for the deficiencies in public education (Manpower 1951). Nonetheless, skill premiums declined after 1945 while at the same time, the skilled labour share as percentage of total employment rose (see Figure 4). With educational provision still lagging, on-the-job training and the progressive build-up of skill within the existing labour force were likely the main drivers behind this trend. The increase in the share of the skilled labour force – that is, compositional effects – can also be identified as the main cause of rising inequality within the African population in the 1950s, despite the concurrent decrease in skill premiums.

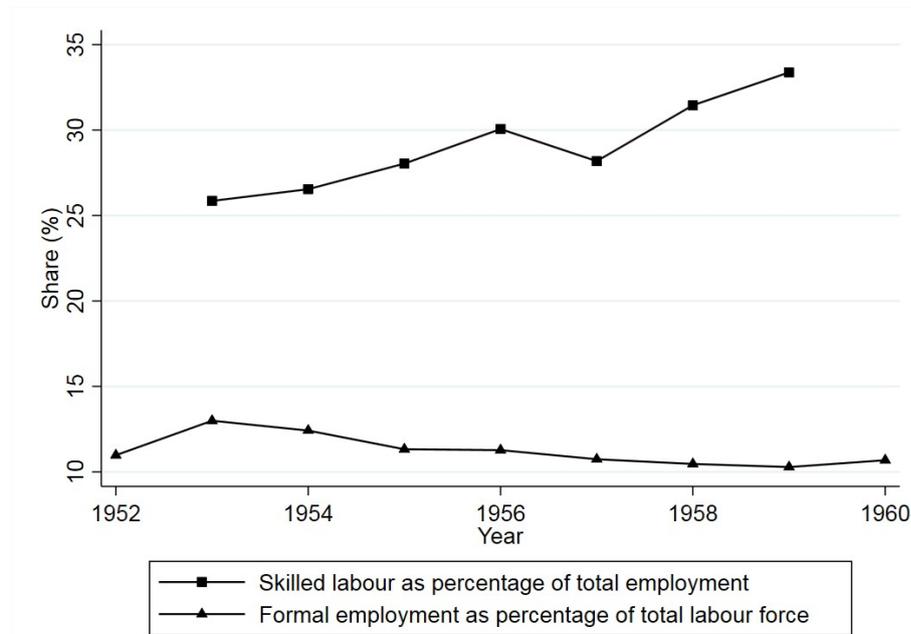


Figure 4: Employment shares, African population.

Looking again at Figure 1, the existence of large racial income differences is clear. Between 1930 and 1947, Europeans earned, on average, between 30 to 60 times the average African income. However, given the shortage of African skilled labour, implicit skill premiums also played a role. Figure 5 shows the average European-African race premium based on equivalent occupations. They ranged ‘only’ from 400 to 700 per cent (i.e., five to eight times), which is similar in magnitude to the African white-collar skill premium in the same time period. For maximum attainable instead of average income, they are even lower (see Figure 6).

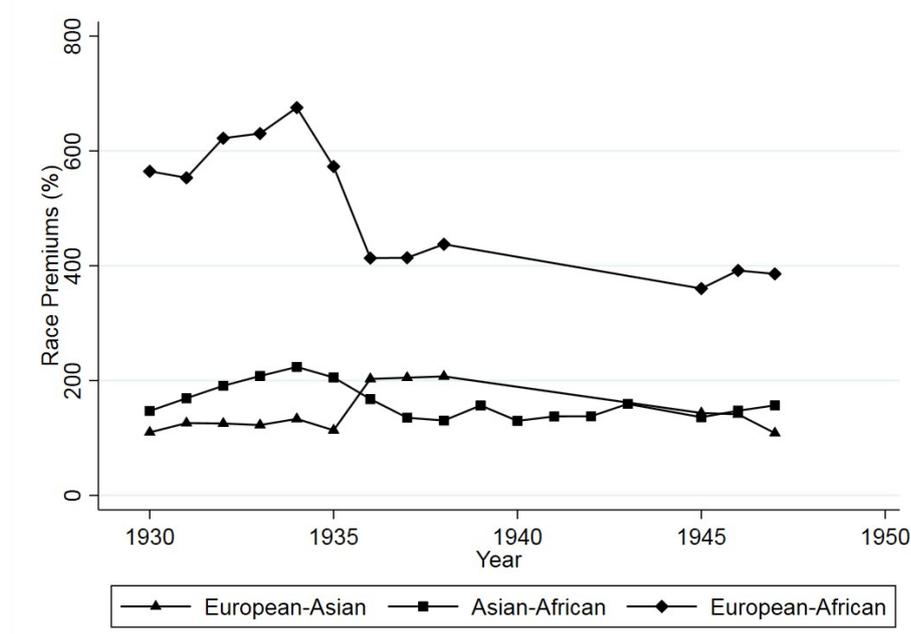


Figure 5: Race premiums for different populations using average wages.

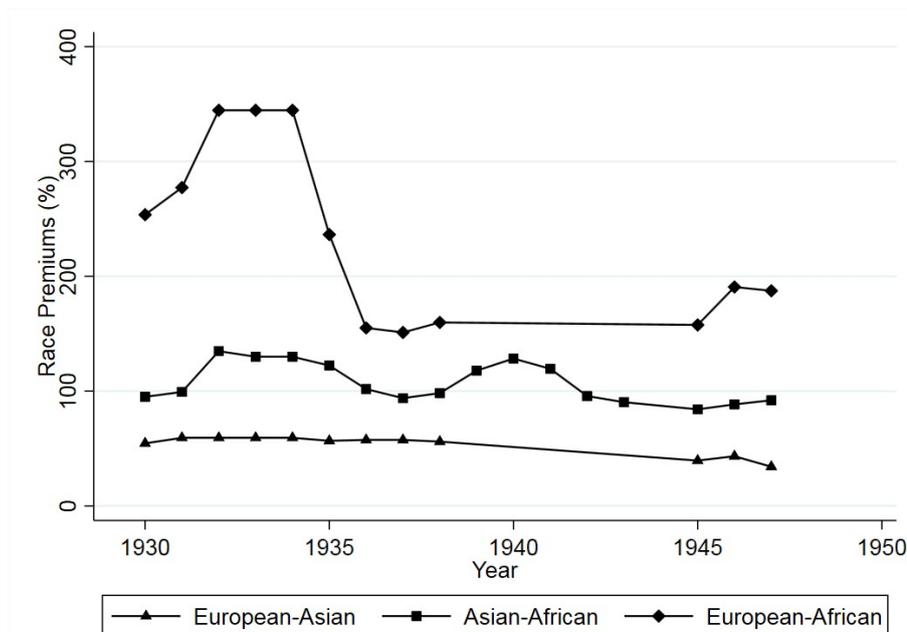


Figure 6: Race premiums for different populations using maximum wages.

From Figures 5 and 6, we can see that outright racial wage discrimination existed. Yet, following the arguments of the economics of discrimination (Becker 1995), the existence of racial wage discrimination should have encouraged the Africanization of the public sector, as Africans of the same skill level could be employed cheaper than Asians or Europeans. To some extent, this was the case, for example in the Tanganyika Railways (Railways 1930/1), but large average racial income differences remained, pointing to the presence – and persistence – of occupational segregation.

Initially, occupational segregation was indeed a *de jure* phenomenon: until the 1940s, Africans and Asians were barred from higher-ranking positions in the colonial administration altogether (Cooper 1996). Later, *de jure* segregation declined – partly because discrimination was costly – yet *de facto* segregation remained. This was not only due to racial prejudice (although this played an important role). More important were the deficiencies in educational provision, which meant that, even if Africans *legally* could take higher-paying jobs in the public or private sector, and even though there existed strong financial incentives for employers to Africanize their labour force, most Africans tended to lack the educational qualifications necessary to work in higher-skilled and better-remunerated occupations.

The lack of educational provision itself could, of course, be interpreted as the outcome of racial prejudice and discrimination (for example, because the colonisers viewed educated Africans as ‘troublesome’). Generally, the low levels of educational provision were however due to the administration’s focus on peasant development, which led to an unwillingness to expand African education, and financial and personnel constraints after World War II, when Africanization and African education were pursued with more vigour (Cameron 1967).

To conclude, while skill premiums did play a role in determining the level and trend of income inequality in the formal sector in colonial Tanganyika, racial wage discrimination and occupational segregation had a greater impact overall. The constant shortage of African skilled labour was met with the substitution of Asian and European labour, which commanded higher wages. This led to high overall income inequality within the formal sector. While racial wage discrimination declined throughout the colonial period and was eventually abolished, this development was countered by persistent (*de facto*) occupational segregation and biased wage-setting in European-dominated occupations.

Underlying skill premiums and racial income differences as well as the overall trend in income inequality was the failure of the colonial administration to provide adequate education and training to increase the supply of skilled labour. This failure proved to be a main obstacle for African advancement. Contrary to the hypothesis of Bowden et al. (2008), a focus on

‘peasant development’ in Tanganyika led to low levels of African education, which hampered the development of the colonial economy, impeded broad-based improvements in African welfare, and meant that at independence, Tanzania did not possess a broad human capital base which could serve as the backbone of postcolonial economic development.

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