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**THE GREAT CONVERGENCE. SKILL  
ACCUMULATION AND MASS  
EDUCATION IN AFRICA AND ASIA,  
1870-2010**

Ewout Frankema and Marlous Van Waijenburg

**DEVELOPMENT ECONOMICS  
ECONOMIC HISTORY**



# **THE GREAT CONVERGENCE. SKILL ACCUMULATION AND MASS EDUCATION IN AFRICA AND ASIA, 1870-2010**

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## Abstract

While human capital has gained prominence in new vintages of growth theory, economists have struggled to find the positive externalities of mass education in developing economies. We shed new light on the economic significance of the global 'schooling revolution' by looking at a different indicator of human capital accumulation – the relative price of skilled labor –, and placing it in a long-term global perspective. Based on a new wage dataset we constructed for various blue- and white-collar occupations in 50 African and Asian countries between 1870-2010, we reveal that skill-premiums have fallen dramatically everywhere in the course of the 20th century, and that they have now converged with levels that dominated in the West already for centuries. While such a 'great convergence' in skill-premiums is not a sufficient condition for Schumpeterian growth by itself, the growing availability of affordable skills is a necessary condition. Our findings, therefore, shed a more optimistic light on the long-term economic gains of mass education in the global South than standard growth regressions have hitherto done.

JEL Classification: J24, J31, N30

Keywords: Africa, Asia, skill premium, mass education, History

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While human capital has gained prominence in new vintages of growth theory, economists have struggled to find the positive externalities of mass education in developing economies. We shed new light on the economic significance of the global ‘schooling revolution’ by looking at a different indicator of human capital accumulation – the relative price of skilled labor –, and placing it in a long-term global perspective. Based on a new wage dataset we constructed for various blue- and white-collar occupations in 50 African and Asian countries between 1870-2010, we reveal that skill-premiums have fallen dramatically everywhere in the course of the 20<sup>th</sup> century, and that they have now converged with levels that dominated in the West already for centuries. While such a ‘great convergence’ in skill-premiums is not a *sufficient* condition for Schumpeterian growth by itself, the growing availability of affordable skills is a *necessary* condition. Our findings, therefore, shed a more optimistic light on the long-term economic gains of mass education in the global South than standard growth regressions have hitherto done.

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## 1. Introduction

Over the past two centuries global income disparities have climbed to unprecedented heights. Until the 1970s, growing income gaps were mainly driven by an industrializing ‘West’ versus an impoverished ‘rest’, with the notable exception of Japan. But if the ‘rest’ was ever a useful category to begin with, it certainly became an obsolete one in the past fifty years. Several Asian economies caught up with astonishing speed, while another sizeable group, clustered mainly in Sub-Saharan Africa, only saw the gap widening further. Catch-up growth has remained partial and diffuse at best: it put an end to the era of the ‘Great Divergence’, but it did not herald a ‘Great Convergence’ (Austin et al. 2017, Milanovic 2018, Pomeranz 2000).

An educated workforce is key to modern economic growth and thus to possibilities for global income convergence. ‘Modern’ economic growth refers to sustained long-term increases in labor productivity and per capita income levels, and is driven by self-propelling forces of technological innovation and Schumpeterian ‘creative destruction’. This process is mediated by human knowledge and skills. The widespread availability of skilled craftsmen has long been recognized as a crucial factor in the First Industrial Revolution (Epstein and Prak 2008, Mokyr 2009). As capital mobility surged and science and technology advanced at an ever higher pace during the long 20<sup>th</sup> century, the demand for a better trained and more diversely skilled workforce rose further. The U.S. led the ‘race’ between education and technology in what Claudia Goldin and Lawrence Katz have called the “Human Capital Century”. Public investments in mass education raised the supply of skilled workers ahead of demand, stimulated income growth, enhanced American technological leadership, and suppressed domestic wage inequality until skill-biased technological change reversed this trend in the post-1980 era (Goldin and Katz, 2008, pp. 1-2; Katz and Murphy 1992).<sup>1</sup>

By the 1990s, human capital had become *the* central factor in the *new* or *endogenous growth theory*, replacing older neoclassical growth models that postulated diminishing marginal factor returns and steady-state levels of output per worker determined by exogenous rates of technological progress (Mankiw et al. 1992, Romer 1986, Solow 1956). Conceptually, ‘human capital’ refers to both physical health as well as manual skills and cognitive ability, but it is education that shapes capital-skill complementarities that can generate increasing factor returns. Educated people are not just more productive, they also disseminate their knowledge and skills at relatively low costs. Such positive externalities – at least in theory – can offset diminishing returns to capital accumulation (Lucas 1988), while targeted innovation and schooling efforts can overcome technological lock-in effects (Grossman and Helpman 1991).<sup>2</sup>

But the new growth theory wrestles with a major problem: it captures the relationship between educational expansion and income growth much better for the economically advanced, high-income countries than for the much more diffuse group of low- and middle-income countries. While human capital gained further prominence in the theoretical literature over the last two decades (Acemoglu 2002, Aghion and Howitt 1998, Galor and Moav 2004), empirical studies struggled to demonstrate the positive externalities of investments in mass education at

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<sup>1</sup> Goldin and Katz link skill-biased technological change to the ICT revolution and the slowdown in the expansion of education (2008, see especially chapter 3).

<sup>2</sup> Grossman and Helpman (1991) have pointed out that human capital embodied in persons can only be used for a specific set of tasks and that they can claim property rights to it. In that sense, the marginal costs of technology diffusion may be lower than that of knowledge and skill dissemination.

a global plane. In a landmark article, *Where Has All the Education Gone?*, Lant Pritchett (2001) pointed out that despite impressive investments in schooling in large parts of the developing world, the *individual* returns to years of schooling had been consistently larger than the *social* returns.<sup>3</sup> Indeed, the evidence for the link between education and productivity *within* countries appears much stronger than across countries (Gennaioli et al. 2013). In a recent study of students attending the first regional schools in colonial Benin, Wantchekon et al. (2015) demonstrate that early educated cohorts obtained significantly higher living standards, that they were less likely to become farmers, and that they were more likely to be politically active. Moreover, they also observe large positive village-level externalities among the uneducated in villages with early schools, as well as substantial positive family externalities. Alesina et al. (2019) confirm the importance of early educational investments in Africa, revealing a strong effect of literacy acquired by older generations on subsequent intergenerational mobility.

Pritchett was not the first to raise the issue. Several studies in the 1990s that adopted a cross-country framework reported a *negative* relationship between expansion of schooling and GDP growth (Lau et al. 1991, Spiegel 1994) or found a very weak relationship (Behrman 1987, Dasgupta and Weale 1992). Recent work by Robert Barro and Jong-Wha Lee has echoed these findings, showing that attainment rates explain only 10% of cross-country differences in per worker output in a standard growth accounting framework (2015, p. 134), and that attainment growth has a weak and insignificant effect on labor productivity growth in the half century between 1960 and 2010 (pp. 148-9). This remains striking, as the race between education and technology was not only relevant for advanced economies. Globalization – including the elements that were enforced through colonization – made a wide range of new technologies available across the global South. Colonial governments, foreign companies, and indigenous entrepreneurs had little interest in a labor force capable of shifting the technology frontier outwards, but they had clear stakes in a labor force with a diverse range of affordable skills to facilitate the construction of infrastructure, the development of plantations, the exploitation of mines, including the use of machinery, tools, and electrical appliances. Mass education was considered to be essential to expand the supply of skills complementing imported and/or embedded technology and to staff the expanding colonial administrations (Lugard 1930, Hailey 1938, chapter 18).

What are we to make of the fact that the global diffusion of mass education has failed to produce greater economic convergence? And why does the growth theory of the ‘West’ not match the experiences of the ‘rest’? We believe that economic historians can shed further light on this puzzle. Our core argument is that the time-horizons adopted in the growth literature are not long enough to capture all of the *economically meaningful gains* from the global schooling revolution. To trace an important, but so far unobserved gain from the expansion of mass education in the global South, we focus on a different indicator of human capital accumulation: the long-term trend in the relative price of skilled labor. Although wage-premiums are determined by several factors that either directly or indirectly affect the supply of and demand for educated workers, the historical record suggests that the relative cost of skilled labor moves towards a *lower bound ‘steady state’* when educational institutions work well. As we will

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<sup>3</sup> There is a vast literature using the Mincer equation to obtain comparable estimates of the marginal returns to years of education, see Mincer (1974), Lemieux (2006) and Heckman et al. (2006).

elaborate on in the next section, it has been argued that structurally lower skill-premiums for artisanal labor gave Western Europe a significant advantage in the lead-up to modern economic growth (van Zanden 2009). However, we know remarkably little about the comparative levels and development of skill-premiums in developing economies.

This is the first study to explore how skill-premiums have developed over more than a century in what were two of the poorest regions of the world at the start of the 20<sup>th</sup> century: Africa and Asia.<sup>4</sup> As detailed in our 65-page appendix, we have collected a vast body of colonial and post-colonial sources on wages and salaries to construct a skill-premium database for five occupations: carpenters, electricians, mechanics, bank tellers and entry-level clerks. Our dataset covers wage trends in 16 Asian and 34 African colonies/countries since 1870. Unlike most growth studies, which predominantly focus on the post-1960 period, this expanded time-frame captures the *full era* of the schooling revolution (Barro and Lee 2015). For comparative purposes, all our data in principle refer to the wages of adult indigenous male laborers whose occupations were explicitly specified in the historical sources.

Our extensive new database reveals three major ‘stylized facts’ that so far have gone unnoticed. First, until the start and during the initial phases of the schooling revolution skilled labor tended to be *far more expensive* than it had been in pre-industrial Europe. Second, the relative price of skills was, on average, distinctively higher in Africa than in Asia. This tells us something about the relative scarcity of labor skills in societies with different apprenticeship systems for the transfer of knowledge and skills in the era before mass education spread. Third, we document a ‘free-fall’ in skill-premiums in both regions during the 20<sup>th</sup> century, converging to levels long witnessed in the West. The timing and intensity of the decline in skill-premiums varied from place to place, but the free-fall was universal. Using a panel regression framework, we show that there is a strong negative association between the expansion of school attainment and the relative price of labor skills, notwithstanding the fact that globalization, decolonization, unionization and factor-biased technological change, have co-determined the relative price of skills in various ways. Our dataset does not allow us to tease out the exact contribution of all these factors, but this is not the purpose of our paper. Instead, we call attention to the role mass education has played in the ‘race’ between education and (imported) technology, not only via the supply side, but also through its impact on labor policy and international trade.

To be sure, the great convergence in wage-premiums for basic and medium skilled labor does *not* explain why some economies have caught up with the early industrializers and others have not. That puzzle is far more complicated. Our point is that the global convergence in the relative price of skills marked a *fundamental transition* in the structure of labor markets that supported Smithian processes of labor-specialization and economic diversification, and in so doing, established one of the preconditions for Schumpeterian growth. A historical perspective thus calls for a more optimistic assessment of the long-term gains of the schooling revolution than suggested by the output of growth regressions, even though a less favorable interpretation is also possible: the marginal returns to one year of schooling have decreased enormously, as the numbers of educated workers rose across the globe.

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<sup>4</sup> Here, we refer to all countries (or colonies) South of the Sahara, excluding South Africa. Asia refers to all of South and Southeast Asia. We use the more recent names of countries, also when referring to colonial times.

## 2. Where has all the education gone?

Why is it so difficult to demonstrate the relationship between rising school attainment levels of the labor force and aggregate labor productivity growth, while private returns to education are easy to demonstrate in virtually all national census data? Explanations of this ‘macro-micro’ paradox may be summarized in two views. The first view holds that ‘extractive institutions’ have led to an unproductive use of the available human capital (Pritchett 2001, p. 369). Private returns to schooling may be generated through rent-seeking, rather than through value adding activities. Well-connected groups of educated elites redistribute income from, for example, monopoly rents of natural resources, land sales, construction contracts, or through high-salaried public offices that do little to facilitate markets or provide public services (North et al. 2009). Such practices of rent-seeking raise private returns, but may crowd out industries that enhance employment and productivity growth at the aggregate level. The accumulation of human capital thus fails to stimulate social returns, while individual returns to schooling stay high, especially when access to higher schooling levels is restricted to the children of the better-off. In this line of reasoning, the schooling revolution is thus not the problem; what matters is the way in which human capital is allocated and put to productive use, or not.

The second explanation, in contrast, sees education systems themselves as the problem. In a recent book, *The Rebirth of Education*, Pritchett (2013) has (re-)emphasized that “schooling ain’t learning”, arguing that years of attainment are a very poor indicator for what children actually learn at school. This ‘quality-over-quantity’ thesis finds support from studies that correct attainment levels for quality indicators (e.g. cognitive abilities in math, science, reading) that are offered by international test scores. It turns out that quality-adjusted indicators of human capital can explain much more of the cross-country variation in income growth than studies relying exclusively on attainment levels. In a seminal study that included 31 countries, Eric Hanushek and Dennis Kimko (2000) showed how the inclusion of cognitive skills in growth regressions reduced the effects of years of schooling on growth to insignificance; a result that has been replicated in several consecutive studies with larger sample sizes (Hanushek and Woessmann 2007, 2012).<sup>5</sup>

While the incorporation of educational quality indicators in the empirical testing of new growth theory has been a major step forward, the use of international test scores (PISA) restricts analyses to more advanced industrial economies for which such data is available. The sample of 50 countries used by Hanushek and Woessmann (2012) includes only three Sub-Saharan African countries (Ghana, Zimbabwe, and South Africa). Moreover, since the PISA data are available only for relatively recent years, the timeframe of these growth regressions is short, meaning that deeper questions on the long-term development of educational quality cannot be addressed with this type of data. The recent extension of the Barro and Lee global educational attainment database back to 1870, in contrast, underlines a growing awareness that capturing the economic significance of the *full* schooling revolution will require a longer time-frame than

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<sup>5</sup> Hanushek and Woessmann (2012) find a robust and significant positive growth effect of cognitive skills when instrumented by institutional features of school systems, including an external exit exam, educational policy autonomy and higher shares of enrolment in private education. They also report complementary effects of basic literates and ‘high performers’ – i.e. people with top-level skills - on growth, with a stronger effect of the latter in poorer countries that successfully adopted industrial imitation policies.

most growth studies have used (Barro and Lee 2015). For our study, the expanded BL dataset allows us to link attainment levels and skill-premiums for a period of almost 150 years.

Skill-premiums can be considered as an indicator of the *relative scarcity* of a particular skill-set and provide an indication of the effectiveness of educational institutions in tailoring supply to changes in demand (Tinbergen 1975, Goldin and Katz 2008). There are few occupations, however, where the key skills required for this profession have remained sufficiently stable over time and for which sufficient historical observations are available, to gauge changes in the relative price *over centuries*. Carpenters are among the exceptions and, therefore, widely used in economic historical analysis (Allen 2001; Clark 2007, p. 180; van Zanden 2009).

Figure 1 presents the carpenter premium in Britain over a time span of 750 years (1250-2000AD). The graph shows that between the early 15<sup>th</sup> and the late 19<sup>th</sup> century, the average carpenter's wage-premium hovered within a narrow bandwidth of 40 to 60%. This remarkable stability reveals how British apprenticeship systems were effective in forging a long-run price equilibrium for artisanal skills, in which supply responded adequately to fluctuations in demand. This price stability also remained unaffected by the onset of 'modern' economic growth: it had existed long before, and continued long after the start of the First Industrial Revolution. Similar premiums characterized large parts of pre-industrial continental Europe, even though differences existed between Western and Central Europe (ca. 40-60%), Southern Europe (ca. 60-80%) and Eastern Europe (ca. 60-100%) (van Zanden 2009, p. 127).

Two main trend breaks can be observed in the series. The first occurred in the aftermath of the Black Death during the second half of the 14<sup>th</sup> century. This trend break can be attributed to the sudden scarcity of casual labor as a result of the ongoing demographic collapse. Nominal and real wages for unskilled workers rose sharply in the wake of the Black Death, much more so than the wages of skilled construction workers, including carpenters (Allen 2011). However, the carpenter premium never reverted back to the higher equilibrium of the 13<sup>th</sup> century in the following centuries, when population and employment recovered.

Although economic historians have long recognized the success of Europe's elaborate system of apprenticeships (Allen 2001, Epstein and Prak 2008, Humphries 2003, De La Croix et al. 2018, Minns and Wallis 2013, Mokyr 2019, Zeev et al. 2017), they were certainly not exclusive to Europe. Such pre-modern systems of knowledge transmission also functioned well in many commercialized parts of medieval and early modern Asia (Moll-Murata 2008, Roy 2008). Scattered wage evidence for these countries though, suggests that artisanal premiums still tended to exceed 100% (Saito 1978, p. 88; van Zanden 2009, p. 132). Typical white labor skills were even much more expensive, as evidenced by primary sources from 17<sup>th</sup> and 18<sup>th</sup> century India.<sup>6</sup> This was significantly higher than in most parts of Europe but, as we will show below, much lower than in Africa, where pre-modern institutions of knowledge and skill transfer were less advanced.

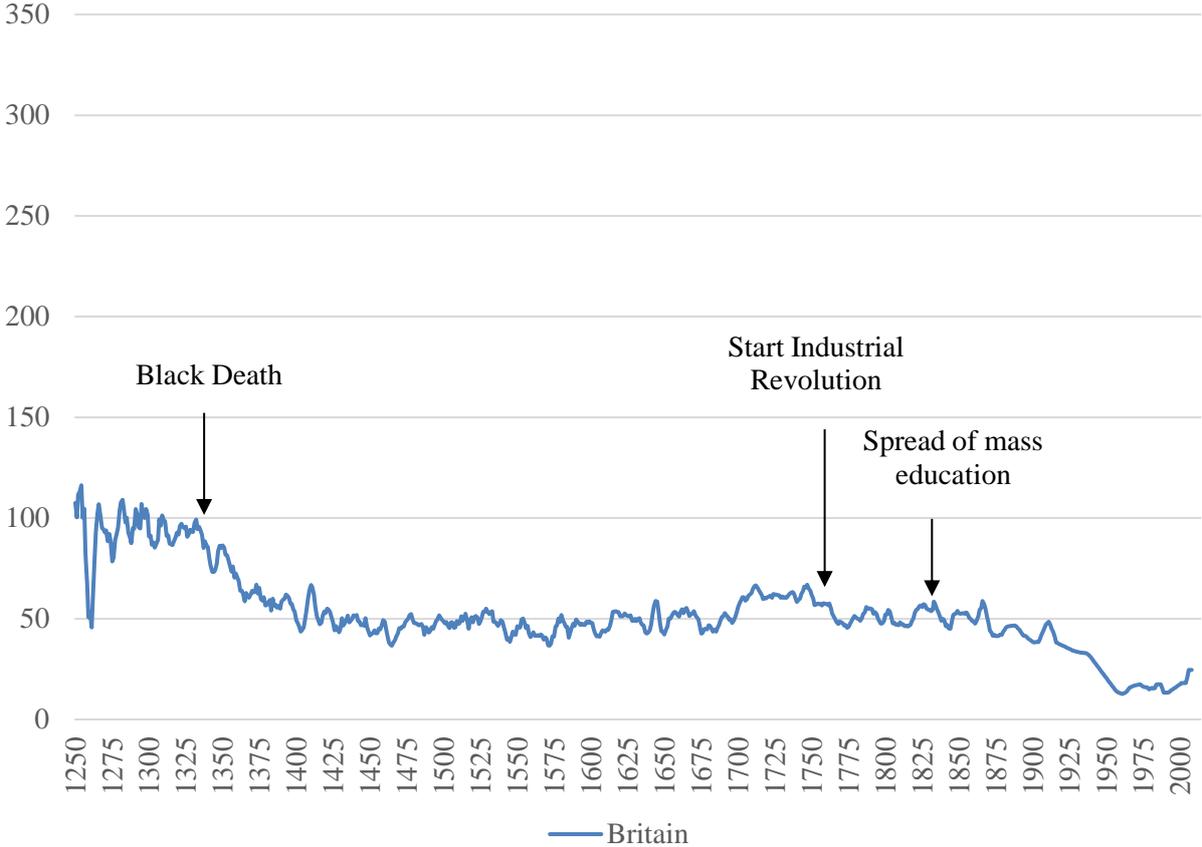
The ascent of mass education during the 19<sup>th</sup> century was another game-changer, producing one more trend break. Mounting public investment in schooling greatly expanded the *general* levels of numeracy, literacy, and basic arithmetic, and significantly enlarged the

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<sup>6</sup> Based on personal correspondence with Pim de Zwart and Jan Lucassen, who have assembled a large wage dataset for early modern India, including 'accountants', 'writers', 'clerks' and 'carpenters.'

pool of labor that could acquire more *specific* types of vocational training (Lindert 2004, chapter 5). Although the 19<sup>th</sup> and 20<sup>th</sup> century saw rapid ‘de-skilling’ in certain trades, in which a range of artisanal tasks were replaced by machines and factory lines (e.g. spinners, weavers, potters), technological change in construction was slower and less invasive, and the basic skills craftsmen in building trades needed (e.g. carpenters, masons, plumbers) did not change as drastically (van Zanden 2009, p. 122).

**Figure 1: Wage premium of British carpenters in percentage of unskilled worker’s wage, c. 1250-2000 (5-year average, in %)**

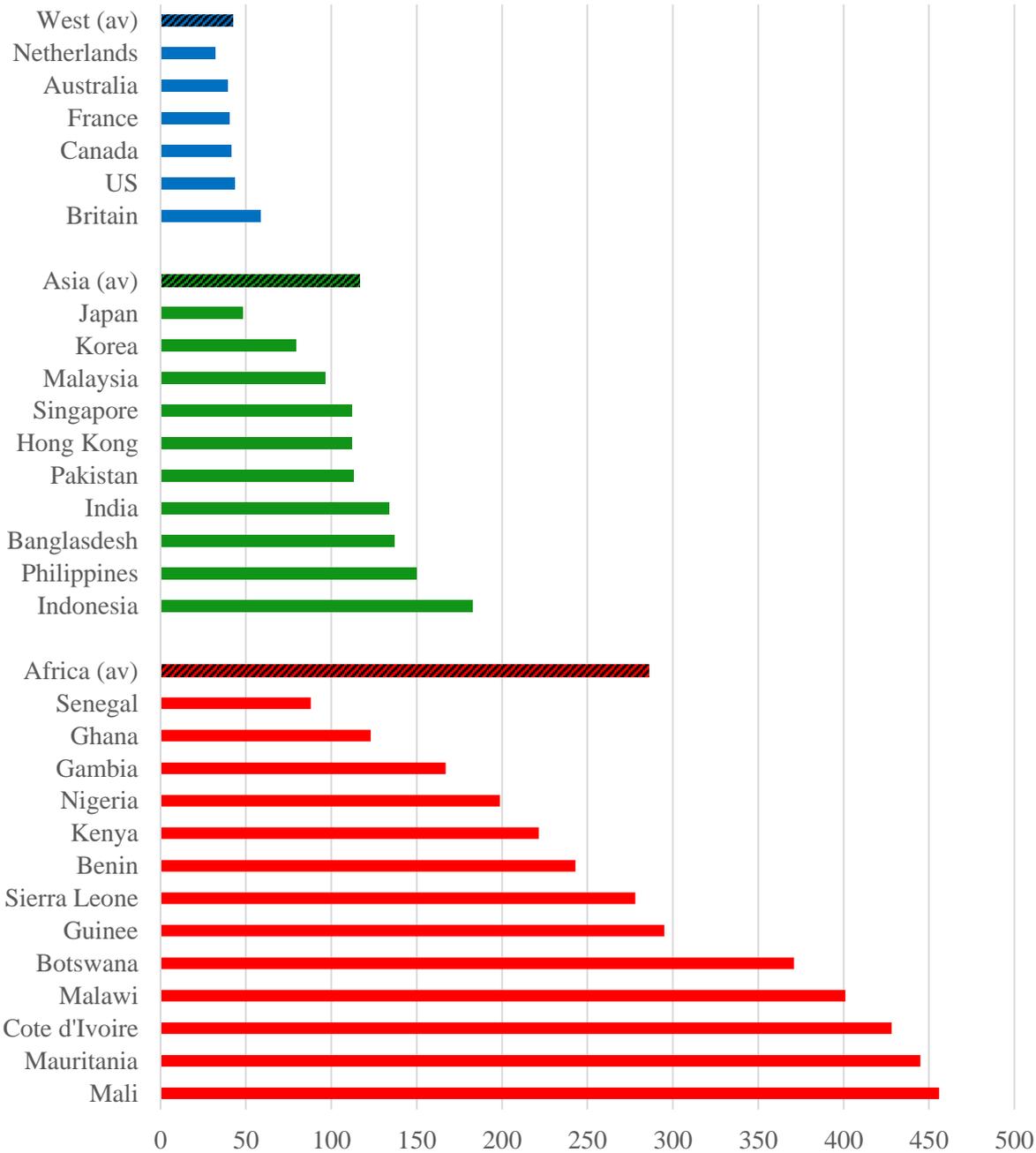


*Sources:* Wages for Britain were taken from Allen (2001). Wages after 1913 were taken from the ILO’s occupational wage data series (see appendix A.1)

*Notes:* Series are shown as 5-year moving averages. Following the historical literature, we express the premium as a percentage share of an average unskilled worker’s wage in the construction sector. We interpolated missing years on the basis of a linear trend.

From a global comparative perspective, a carpenter’s premium in the order of 40-60% of an unskilled worker’s wage was already *exceptionally low* for a pre-industrial economy, but these rates kept falling after 1870. As illustrated in figure 2, very few economies outside Europe recorded a carpenter premium below 100% on the eve of the 20<sup>th</sup> century. The only notable exceptions to this rule were the major Western offshoots (the U.S., Canada, New Zealand and Australia) and Asia’s industrial frontrunner Japan, where premiums were already aligned with those in the West. In virtually all of the ‘less developed’ Asian and African economies, however, hiring a carpenter, or other types of skilled labor (see appendix tables A.1-4) was far more expensive.

**Figure 2: Skill-premium for carpenters, c. 1900 (in %)**

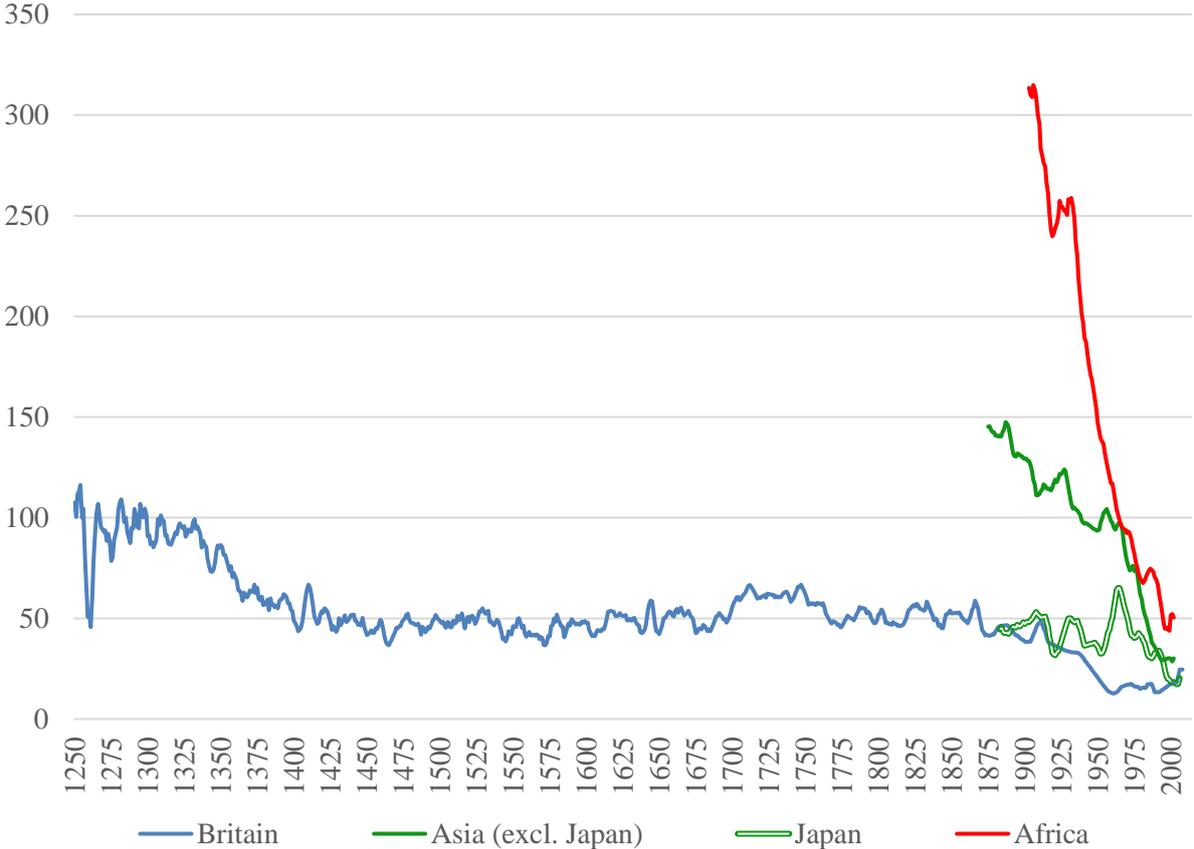


Sources: Wages for Britain, France and the Netherlands were taken from Allen (2001); the US observation was taken from the *US Historical Statistics*; the two Western ‘off-shoots’ (Canada and Australia) from the *Statistical Tables of the British Empire*. We took the year 1900 for all Western countries, as yearly fluctuations in the skill-premium for carpenters were negligible in this era. Only for the US the observation refers to 1914, which was the earliest year we could find in the source. For all Asian and African countries, we took the 5-year average that we constructed for this paper that was closest to 1900. For most countries the observations refer to 1900-1904, but for Benin, Guinée, Côte d’Ivoire and Mauritania, the skill-premiums refer to 1905-1909. As a result, the African average refers to 1900-1909. For a detailed description of the underlying data, see appendix A.1.

Figure 3 shows the ‘great convergence’ that has taken place in the relative price of basic artisanal labor skills in the course of the 20<sup>th</sup> century, with carpenter-premiums in virtually all of the world’s ‘poor’ economies falling to levels earlier observed in the West (for country-level data see appendix tables A.2a-b). Only in Japan were carpenter-premiums at par with levels in

Europe since at least the late 19<sup>th</sup> century. As we will show in section 3, this fall in wage-premiums did not only occur for ‘traditional’ artisanal labor, but also for new professions associated with the introduction of general-purpose technologies such as electricity and motor transportation (electricians and mechanics), and for typical white-collar jobs (office clerks and bank tellers).

**Figure 3: African and Asian carpenter premiums in global historical perspective, c. 1250-2000 (5-year average, in %)**



*Sources:* Wages for Britain were taken from Allen (2001). Wages after 1913 were taken from the ILO. See for a detailed description of the underlying data of our new African and Asian series appendix A.1.

*Notes:* Series are shown as 5-year moving averages. Following the historical literature, we express the premium as a percentage share of an average unskilled worker’s wage in the construction sector. We interpolated missing years on the basis of a linear trend.

Two other observations stand out from figure 3. First, when viewed from a long-run comparative perspective, the fall of skill-premiums in Africa and Asia occurred at an extremely fast pace. Indeed, the long 20<sup>th</sup> century saw a *fundamental global break away* from price structures that had prevailed in many pre-industrial societies. Second, the figure reveals how unequal premiums in Africa and Asia were in the early 20<sup>th</sup> century. In many parts of Africa, hiring a carpenter was extremely expensive. Where carpenters in Africa could command a wage somewhere between 2-5 times that of an unskilled worker, the norm in Asia hovered around 1-2 times. As illustrated by table 1, this difference was not driven by higher nominal or real wages for unskilled labor in Asia (see also: Frankema and van Waijenburg 2012, 2018).

**Table 1: Nominal wages and skill-premiums in pence per day, c. 1910**

	In pence (£/240)		Skill-premium
	Unskilled wage	Carpenter wage	
<i>French Africa</i>			
Benin	9.3	31.6	238.8
Cote d'Ivoire	9.1	51.2	460.4
Congo	9.0	26.3	190.9
Gabon	9.1	49.1	438.0
Guinea	9.5	36.6	285.0
Mauritanie	14.0	65.8	370.7
Mali	7.6	29.4	286.3
Niger	4.1	23.9	481.4
Senegal	22.7	54.9	141.4
<b>Average</b>	<b>10.5</b>	<b>41.0</b>	<b>321.4</b>
<i>British West Africa</i>			
Gambia	15.8	42.4	168.0
Ghana	11.6	29.3	152.2
Nigeria	12.2	34.6	184.5
Sierra Leone	9.7	32.9	239.8
<b>Average</b>	<b>12.3</b>	<b>34.8</b>	<b>186.1</b>
<i>British East Africa</i>			
Kenya	3.7	11.3	209.9
Malawi	2.8	13.9	401.8
Uganda	2.5	7.7	213.9
<b>Average</b>	<b>3.0</b>	<b>11.0</b>	<b>275.2</b>
<i>East Asia</i>			
Japan	12.9	19.5	50.9
South Korea	12.2	20.7	70.0
<b>Average</b>	<b>12.6</b>	<b>20.1</b>	<b>60.5</b>
<i>South &amp; Southeast Asia</i>			
India	3.2	6.6	110.1
Indonesia	5.4	14.1	163.0
Malaysia	10.9	24.6	125.6
Pakistan	5.9	13.2	125.6
Singapore	7.6	16.2	114.8
<b>Average</b>	<b>6.6</b>	<b>15.0</b>	<b>127.8</b>

*Sources:* For historical exchange rates see: <https://www.historicalstatistics.org/Currencyconverter.html>. For data sources and construction see appendix A.1.

*Notes:* In principle, we took the year 1910 for this table. Where no data was available for 1910 we took the closest surrounding year. For Kenya and Malawi the figures refer to 1909, for Congo and Gabon to 1915, for Niger to 1914, and for Senegal to 1912. For years before 1913, we used official exchange rates of the gold standard era. The following rates applied: Japanese Yen/GBP 0.1017; Dutch Guilder/GBP 0.827; Indian Rupee/GBP 0.0625; Straits Dollar/GBP 0.1167; and French Franc/GBP 0.0396 before 1913. For Niger (1914) the exchange rate was French Franc/GBP 0.0399, and for Gabon and Congo (1915) French Franc/GBP 0.0380.

It may be the case that the very high skill premiums recorded in several African economies around 1900 were partly driven by a spike in demand for skills by newly established colonial governments and companies, which enlarged the gap between demand and supply to levels that were unprecedented for these economies. But this does not resolve the question why the decline was so dramatic and universal. We will argue in the following sections that among the several forces that play a role in this transition, the spread of mass education was the only veritable *conditio sine qua non*. This puts the *economic significance* of the global ‘schooling revolution’ into its proper dimension. Without mass education, skilled workers could never have become so much cheaper to hire than they were a century ago. The great expansion of affordable skills did not translate (directly) into sustained labor productivity everywhere, but it did allow for Smithian processes of labor specialization and economic diversification, especially in the rapidly urbanizing economies of Africa and Asia and, in doing so, fulfilled a crucial precondition for Schumpeterian growth.

### **3. Different paths, a universal decline**

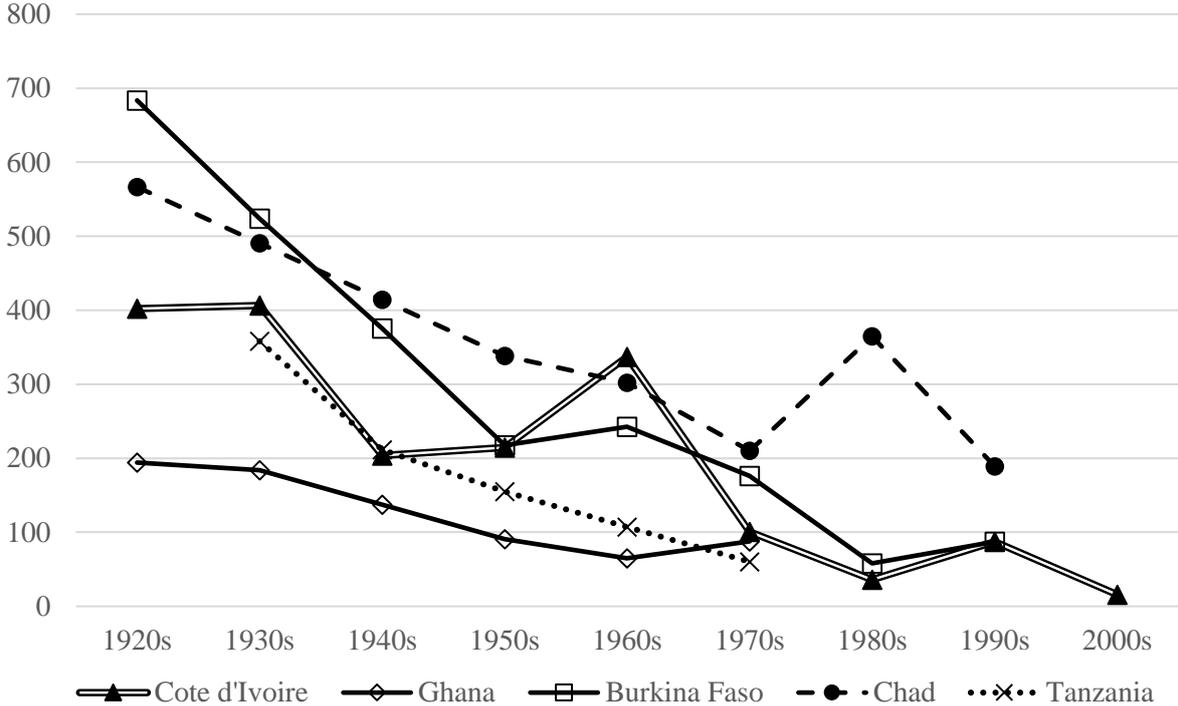
To get a better feel for the universality of the skill-premium decline, and for the variation across countries in terms of timing and intensity, we review the trends of four additional occupations: electricians, mechanics, entry-level office clerks, and bank tellers. These occupations capture a spectrum of basic to medium skill-types, of blue- and white-collar work, and of more recent skill-sets associated with Second Industrial Revolution technologies (McCraw 2003, Smil 2005). Indeed, in contrast to carpenters, electricians and mechanics were ‘new’ occupations that catered to the growing application of electricity, motors, and machines in production and transportation processes. The introduction of electricity and motor vehicles did not only raise the demand for complementary skills in the industrialized West (Goldin and Katz 1998), but also in developing economies, albeit at a slower pace. The same applied to bank tellers and office clerks. These basic white-collar occupations required greater proficiency in literacy and numeracy; skills that tended to be extremely scarce in pre-industrial societies, and were not infrequently rewarded five to ten times the wage of an unskilled, illiterate worker.<sup>7</sup>

Figures 4a and 4b show the trends in the skill-premium of (automobile) mechanics in a selection of African and Asian countries between the 1920s and 2000s. The cross-regional variation follows the patterns just observed for carpenters. The initial wage-premiums in Africa were much higher than in Asia, but the drop in the skill-premium occurred everywhere. Within Africa, the premium of mechanics in Ghana was much lower than in Chad or Burkina Faso in the 1920s, but levels largely converged in the course of the 20<sup>th</sup> century. In Asia the relative price for mechanic services also fell, leading to much less variety in the skill-premium than there was in the 1950s. Interestingly, in the Philippines, where mass education spread faster than in other parts of Southeast Asia (Booth 2008, p. 252, Frankema 2014, p. 4), the premium for mechanics dropped much earlier. The ‘American Century’ of human capital formation, which gave the US a clear lead over Europe, seems to have also affected the relative price of skills in America’s main overseas colony.

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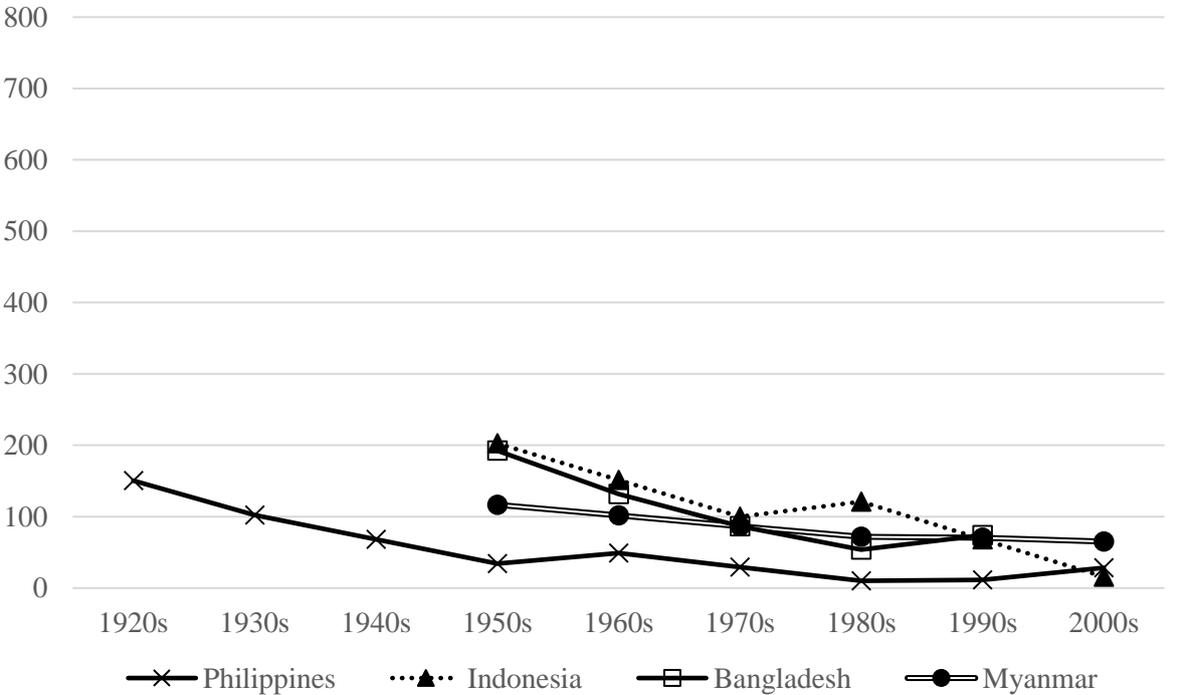
<sup>7</sup> See the earliest observations in appendix tables A2.4a-b for countries in our sample.

**Figure 4a: Skill-premiums for mechanics in Africa, 10-year averages (in %)**



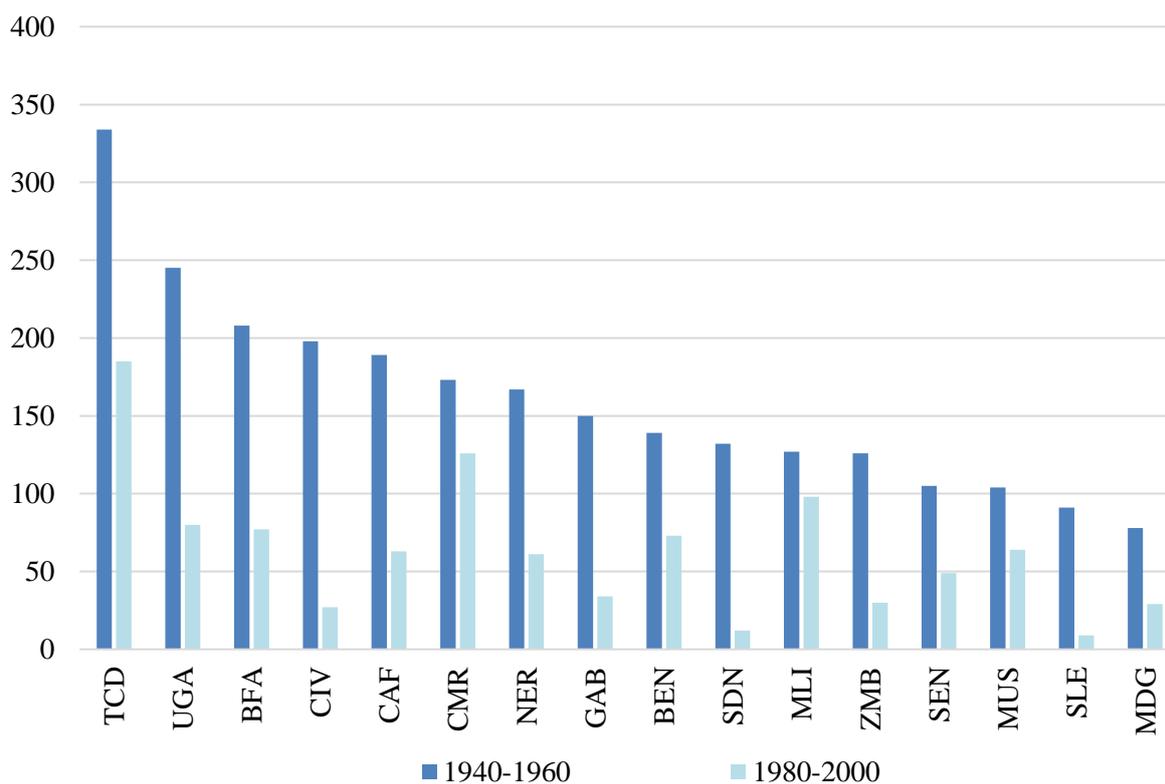
*Sources:* For a detailed description of the underlying wage series see appendix A.1.  
*Notes:* Since historical data for mechanics is sparser than that for carpenters, we show the trend in 10-year averages. Where (reliable) observations for an entire decade were missing, we interpolated that decade in this figure. This was done for Ghana for the 1940s, for Sierra Leone for the 1980s, and for Chad for the 1930s and 1940s.

**Figure 4b: Skill-premiums for mechanics in Asia, 10-year averages (in %)**



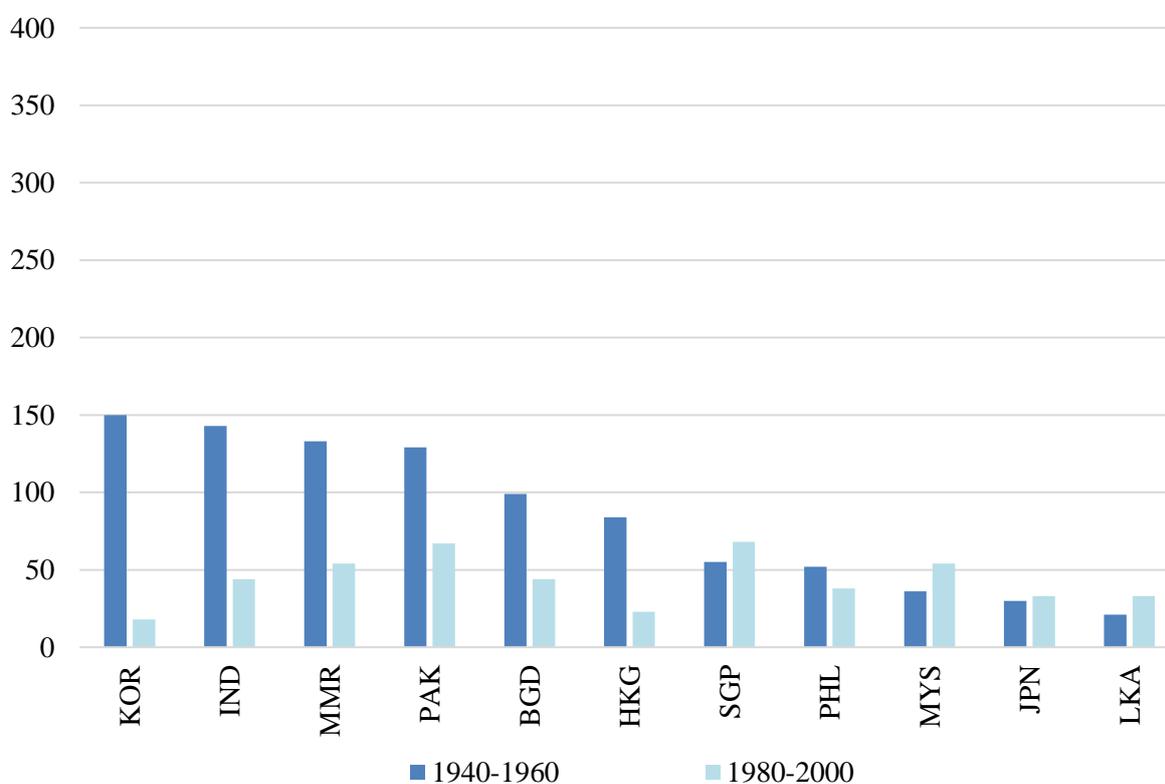
*Sources:* For a detailed description of the underlying wage series see appendix A.1.  
*Notes:* Since historical data for mechanics is sparser than that for carpenters, we show the trend in 10-year averages. Where (reliable) observations for an entire decade were missing, we interpolated that decade in this figure. This was done for the Philippines for the 1970s, for Indonesia for the 1960s, and for Myanmar for the 1960s and 1970s.

**Figure 5a: Skill-premiums for electricians in Africa (av. 1940-60 and 1980-99, in %)**



Sources: For a detailed description of the underlying wage series see appendix A.1.

**Figure 5b: Skill-premiums for electricians in Asia (av. 1940-60 and 1980-99, in %)**

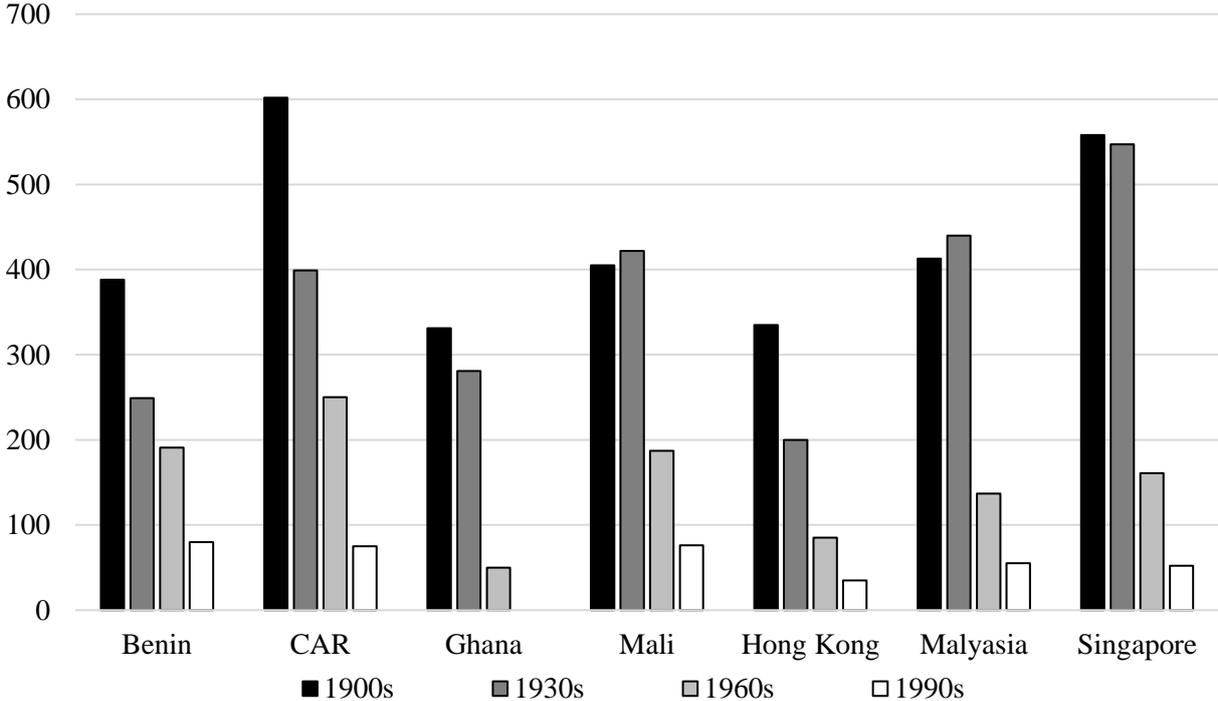


Sources: For a detailed description of the underlying wage series see appendix A.1.

Figures 5a and 5b present the skill-premiums of electricians in the middle (1940-59) and closing decades of the 20<sup>th</sup> century (1980-99). At the close of the 20<sup>th</sup> century, almost all Asian countries had converged on a premium of 20-70% of an unskilled worker’s wage, while in countries like Angola, Chad, Eritrea and Liberia the additional costs of hiring an electrician were in the order of 150%. In Japan, electrification drove rapid industrialization in the interwar era, allowing for rapid specialization in manufacturing production in thousands of small and medium-sized enterprises (Minami 1977). This development was facilitated by ample and relatively cheap supplies of electricians. Yet, in most parts of Asia, and virtually all of Africa, the real surge in electrification was a post-war phenomenon. The wage observations we collected for the late 1920s and early 1930s indicate that electricians in Africa were extremely expensive. Even in the midst of the Great Depression electricians could command a premium in the order of 500-700% of an unskilled worker’s wage, similar to the skill-premium of a mechanic in Chad or Burkina Faso at the time. For comparison: an electrician in the 1930s in Britain would receive a premium around 35% (ILO 1938, p. 153).

The skill-premiums of entry-level office clerks (white-collar workers) are shown in figure 6. Clerks form a more heterogenous category of workers, making their tasks and skills harder to compare over time and space than for craftsmen. To improve comparability, we have limited our data collection to entry-level clerks working in the post and telegraphs department of colonial governments. These departments were often present from the start of the colonial period and among the first to hire large numbers of clerks that were involved in relative straightforward administrative tasks. European clerks were often working alongside indigenous clerks, but paid much higher salaries and pension schemes. This created incentives for colonial governments and major companies to invest in education in order to hire more personnel locally (White 1996).

**Figure 6: Skill-premiums for lower-level clerks in 1900s, 1930s, 1960s and 1990s (in %)**

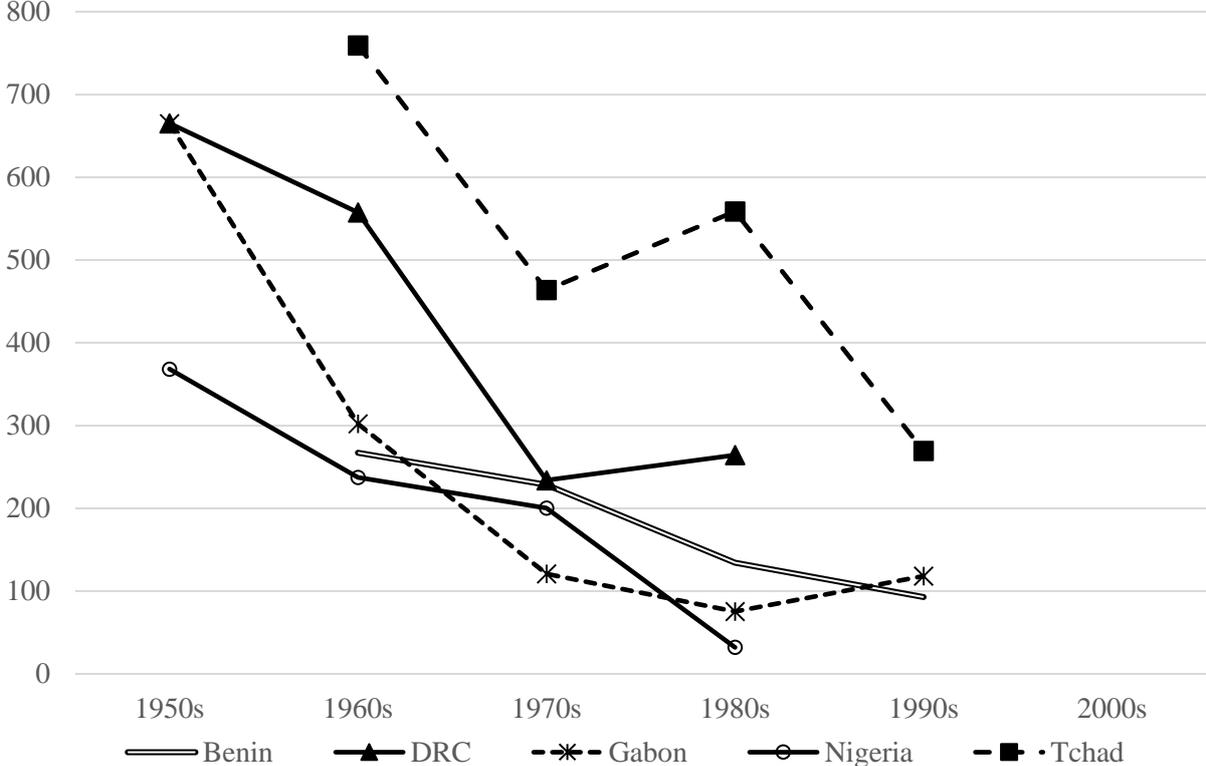


Sources: For a detailed description of the underlying wage series see appendix A.1.

The observed cross-country variations in clerk premiums should certainly not be attributed to market forces alone. Salary scales for administrative personnel tended to be fixed for significant stretches of time and the development of colonial bureaucracies, including their remunerations, was a deeply political issue. The fact that clerk premiums stayed very high in the 1930s, for instance, may as well be attributed to salary-scales that were not adjusted for falling price levels as to changing supply and demand conditions. That said, the overall trend is unambiguous. The relative cost of hiring a worker with some more advanced reading, writing and numeric skills at the close of the 20<sup>th</sup> century was much lower than at the start. This was certainly not due to a long-term slide in demand for clerks, on the contrary. Lower-level white-collar jobs in both the private and the public sector were one of the fastest expanding group of occupations during the 20<sup>th</sup> century, even though demand for clerks may have risen faster in some areas than in others. ICT applications may have reversed that trend in the past two to three decades in the more advanced economies, but cannot account for the free-fall witnessed before the 1990s.

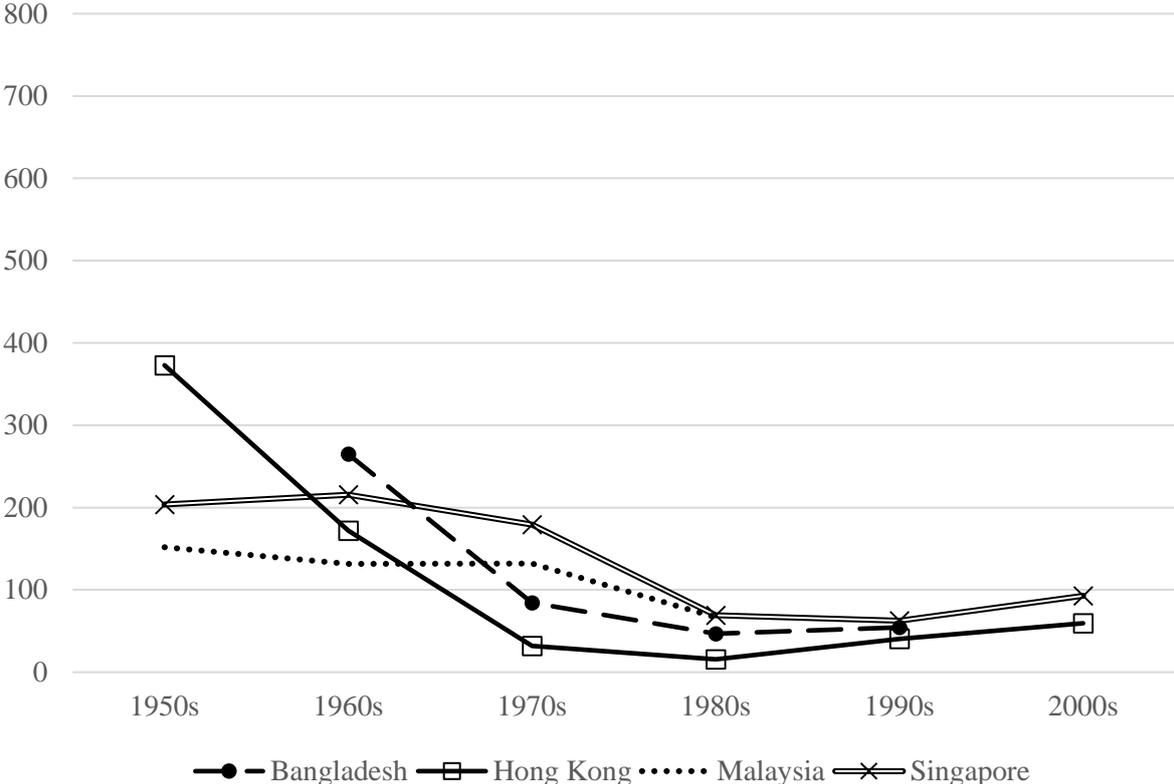
Our final series, shown in figures 7a and 7b, are for bank tellers – another group of lower- to medium-level white-collar workers. Unlike the other series, the data we used for bank tellers stem from a single source (the ILO’s October Inquiries) and only start in the 1950s. This, however, puts us in the appropriate time-frame to capture the development of the skill-premium for this occupation. Before the Second World War, there were only a small number of commercial banks in sub-Saharan Africa. And although there was on average more money in circulation (in per capita terms) in Asia, the big expansion in the provision of financial services was a post-1950 phenomenon.

**Figure 7a: Skill-premiums in Asian countries for bank tellers, 1950s-2000s (in %)**



Sources: For a detailed description of the underlying wage series see appendix A.1.

**Figure 7b: Skill-premiums in Asian countries for bank tellers, 1950s-2000s (in %)**



Sources: For a detailed description of the underlying wage series see appendix A.1

The figures show that, similar to electricians, mechanics, and office clerks, bank tellers were extremely expensive once the demand for these workers started to take off. It is likely that the tasks performed by bank tellers changed somewhat over time. The slight uptick in bank teller premiums in places like Hong Kong and Singapore at the end of the 20<sup>th</sup> century, for example, may point to a growing complexity of the tasks bank tellers performed in these rapidly growing global financial hubs. One way or another, even though the skill set required to operate banks or insurance companies in the 2000s may have shifted from what was required in the 1950s, nowhere did the skill-premium bank tellers could command revert back to mid-20<sup>th</sup> century levels.

**4. Explaining the free-fall**

To explain the free-fall of the wage-premiums of basic to medium skilled workers, we need to consider four factors, which played out in different ways. We will review these factors in the context of the long transition of colonial to post-colonial labor regimes.

*4a. The de-skilling thesis*

The de-skilling thesis holds that the relative price of particular skills drops as a result of factor-biased technological change associated with industrialization. Put in more straightforward terms, the standardization, mechanization and automation of production processes that come with industrialization make specific manual skills redundant, while raising the demand for lower skilled factory workers who concentrate on a narrow sub-set of routine-based tasks in the

assembly line. There is a large body of literature – much of it in the Marxist tradition and focusing on de-skilling in Western economies – showing how artisanal crafts (e.g. spinners, weavers, blacksmiths, potters, glassblowers, coopers) lost out as a result of new industrial technologies and factory production (Bythell 1969, Braverman 1974, Hobsbawm 1985, Katz and Margo 2014). Additionally, new materials, such as plastics, have replaced products that were traditionally made by artisans from clay, iron, glass or wood. To what extent have these mechanisms also undermined the income position of artisanal labor in Africa and Asia during the 20<sup>th</sup> century, and more specifically, can this account for the universal (cross-occupational) decline of the premiums of the occupations under survey in this study?

We think the explanatory power of this force is limited at best. While the relative demand for workers with skills in spinning and weaving has evidently declined everywhere, as textile production became increasingly factory-based and globalized, the relative demand for electricians and mechanics has only risen in the global South as a result of the expansion of machine-based production processes. Rising numbers of motor vehicles and machines required maintenance by mechanics. Electrification spurred the demand for electricians who mastered the skills associated with this new general-purpose technology. The per capita consumption of electric power in Africa rose from virtually nothing in the early 20<sup>th</sup> century to ca. 260 kWh in 1970, climbing further to 730 kWh in 2010, while in the low- and middle-income countries of East Asia consumption rose to exceed 3,000 kWh by 2010 (data from ADI 2013, WDI 2019).

White-collar workers were a different story altogether. The demand for bank tellers and office clerks rose exponentially. Administrative services became increasingly important to monitor, coordinate, and record collective sector arrangements and private business affairs. One may think of government departments, tax agencies, accounting companies, post offices, banks, archives, libraries, notaries and all sorts of other administrative institutions. To be sure, automatization due to ICT applications may have reduced the demand for office clerks and bank tellers in the most advanced economies in our sample (e.g. Japan, South Korea, Taiwan, Singapore, Hong Kong), but this effect only played out after 1990, when skill-premiums in these countries had already converged to levels in the industrialized world.

The demand for carpenters is perhaps the least clear-cut case as changes in construction techniques, such as the use of concrete and pre-fabricated wood frames, may have reduced the demand for carpenters after some point in time. For carpenters, ‘de-skilling’ did not occur in the sense that their skills became redundant, but rather because pre-fabricated substitutes increased their productivity, thereby lowering overall demand. Yet, for most of the 20<sup>th</sup> century, the rise in infrastructural projects (ports, railways, bridges, utility works), urban construction, and the consumption of household furniture first enhanced demand, before it started to fall. In the majority of African and Asian economies, beds, chairs, carts, cabinets, tables, window frames, doors, roofs, boats and canoes remained hand-made by craftsmen, not by factory machines. Moreover, the use of pre-fab products has especially remained limited in the poorest economies in our sample, and these are the economies where the skill-premium fall has been the steepest.

#### *4b. Globalization*

A second possible explanation could lie in the impact of global market integration. The first wave of economic globalization accelerated with the transport and communication revolutions

of the mid-19<sup>th</sup> century and with the growing adherence among European powers to trade liberalization (O'Rourke and Williamson 1999, Jacks and Meissner 2010). This global trade boom continued throughout most of the 20<sup>th</sup> century, albeit with some serious interruptions during the interwar era and the economic crises of the 1970s and 1980s. The growing integration of Africa and Asia in the global economy could have affected skill-premiums in two main ways.<sup>8</sup>

First, the standard Heckscher-Ohlin model predicts that economies will specialize in products that use more of the relatively abundant production factors. In the majority of African and Asian countries, where skilled labor was scarce, this meant that these economies would specialize in export commodities that required large amounts of unskilled labor, agricultural land or other natural resources. Indeed, for much of the late 19<sup>th</sup> and 20<sup>th</sup> centuries, Africa and Asia (with the exception of Japan) have specialized in the export of (sub-)tropical cash crops, minerals, metals, ores and tropical wood, while importing growing volumes of higher value-added manufactures with a higher skill-intensity. According to the H-O model, the long-term rise in international trade and the ensuing North-South division of labor and skills, would thus have generated an upward push of unskilled labor wages in the South, thereby reducing the wage-premiums of skilled labor. How likely is the H-O effect to drive the fall we observe in skill-premiums?

Although we cannot rule out that factor-biased trade specialization plays any role in the decline, a pure H-O interpretation of this historical phenomenon is unlikely. The stylized H-O model, for one, assumes that technology is equal across all trading partners, before and after the opening of world trade. That was not the case for the vast majority of economies in our sample. Exposure to world trade went hand in hand with colonization and introduction of new crops and cultivation techniques, as well as new modes of transportation, communication and administration. Prior to the rise of world trade during the age of globalization, it is hard to think of any African tradeable commodities (e.g. slaves, palm oil, ivory, beeswax, groundnuts) that used significant inputs of skilled labor. The introduction of new technologies likely increased the relative demand for skilled blue- and white-collar labor in the 20<sup>th</sup> century, due to the growth in non-tradeable goods and services, such as construction, infrastructural development, and the expansion of administrative services (most in the colonial bureaucracy). It is hard to imagine that the abstract prediction of the H-O model would hold in this case, let alone that it can explain the dramatic, persistent, and universal decline we find in skill-premiums across our sample.

Second, globalization could have affected skill-premiums through an inflow of skilled migrant labor. In this scenario, the increase in the supply of skills reduced the premium, but not through the education of indigenous workers. Other than the settlement of Europeans in the colonies, Asian migrant labor also could have created such an effect. In the wake of the abolition of slavery, a sizeable system of indentured Indian and Chinese 'coolie' labor migration had developed, responding to the pressing need for (plantation) labor in the Americas, South Africa, and parts of Asia (Roy 2012, pp. 142-146; Persaud 2018). While the vast majority of these

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<sup>8</sup> These effects would have likely been stronger for Africa, as Asia's relative integration in the world economy had earlier roots (see De Zwart (2016) and De Zwart and Van Zanden (2018)).

‘coolies’ were unskilled agricultural workers, artisans also took part in this wave of labor migration.

The spread of such migrant workers and European settlers, however, was uneven across our sample of countries. While a number of (British) East African colonies relied heavily on skilled and unskilled indentured Indian labor for the construction of infrastructural projects<sup>9</sup>, the import of migrant labor on this scale was uncommon in West and Central Africa (Phillips 1989, p. 28; Sautter 1969, pp. 254-256). In similar vein, the distribution of skilled European labor in mining enclaves was highly uneven. In other words, while skilled migrant labor could have produced downward pressure on skill-premiums in some places, this mechanism was not at work everywhere. Moreover, in those places where migrants took up skilled labor, they were paid much more than indigenous workers. This created incentives to replace the more expensive migrant workers with indigenous skilled labor.

#### *4c. Colonial labor regimes*

In global comparative terms, skilled labor was certainly scarce relative to unskilled labor in most parts of Africa and Asia. But unskilled labor was not necessarily the most abundant production factor. Especially in many parts of the thinly-populated African continent and some parts of tropical Asia, land was the abundant production factor, and labor was scarce relative to land. As volumes of works on African history have documented, settler farmers, colonial governments, chartered companies, and mining enterprises had problems attracting a stable and cheap supply of labor (Austin 2008, Fenske 2012, Hopkins 1973, Iliffe 2007). In colonies where Europeans (largely) allowed markets to mediate the supply and demand of labor (e.g. the Gold Coast, Nigeria) labor scarcity translated into comparatively high real wages for unskilled workers and encouraged voluntary labor migration (Frankema and van Waijenburg 2012, 2018; Hill 1969). In other places, however, colonial administrations relied on a range of coercive labor market institutions, such as forced recruitment, vagrancy laws, and high direct burdens, raising the supply of labor and suppressing its market-clearing rate (Fall 1993, van Waijenburg 2017).

Although the ultimate abolition of colonial forced labor policies did in most parts of Empire not occur until after the Second World War, the downward pressure such policies exerted on wages was already relieved at an earlier stage. The growing international momentum to end unfree labor practices in the course of the 1920s and 1930s exerted pressure on colonial governments to rely on voluntary labor only (Fall 1993, Okia 2012, van Waijenburg 2017). While the complete abandonment of forced labor was certainly not fully embraced, even the most notorious work sites, such as the Congo-Ocean railways, saw significant wage increases and growing numbers of voluntary workers in the course of the 1930s (Azevedo, 1981). In parts of the Central African Copperbelt, wages rose in the course of the 1920s as the result of deliberate labor stabilization policies (Northrup 1988, Juif and Frankema 2018). Wages and improvements in the labor conditions for African workers further improved in the course of the 1940s and 1950s, as a result of unionization and rising concerns about decolonization (Cooper 1996, see especially chapters 7-8).

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<sup>9</sup> Most notable was the construction of the Ugandan railway, which was completed with the labor of more than 30,000 Indian migrant workers (Wolmar 2010, p. 187)

The abolition of coercive labor market regimes and the growing bargaining power that came with unionization could have affected the development of skill-premiums in the following ways. If relatively more unskilled workers were subjected to forced labor than skilled workers, this would have resulted in greater downward pressure on the wages of the former. In this scenario, the very high skill-premiums that we observe for the early period would be exaggerated, reflecting not just the relative scarcity of skilled labor, but also the disproportional repression of the costs of unskilled labor. The fall in skill-premiums here, would at least in part reflect the gradual abandonment of labor repression. Additionally, this effect would be further enhanced by the momentum unskilled workers enjoyed in the late colonial period.

Although the decline of forced labor and the rising power of labor unions likely have some explanatory power, they cannot explain the long-term fall in skill-premiums on their own. For one, the relative cost of skilled labor has fallen for *all* occupations, not just those that were relatively less affected by forced labor schemes. The data for bank tellers, for example, only starts in the mid- to late-1950s, and is therefore mostly untouched by the effects that post-WWII unionization and the abolition of forced labor had on the price for unskilled labor. While clerks were exclusively made up of voluntary labor, this was not necessarily the case for skilled blue-collar workers. The expansion of physical infrastructure demanded large numbers of laborers and artisans, and skilled workers were conscripted as well. Although there are unfortunately no historical records detailing the relative numbers of unskilled and skilled workers that were compelled to work on public works projects, some surviving qualitative sources suggest that the threat of conscription was even worse for artisans exactly *because* they were so scarce. In the report of an inquiry that was done on forced labor conditions in the Portuguese colonies, the author, Professor Edward Ross (1925) notes the following:

“A carpenter questioned tells that he has given three months unrequited work on the buildings at the Post. No rations. He was assisting a first class native carpenter who worked for months without wages or rations. For the industrial department of a mission school to make a native skillful is a doubtful kindness, for the skilled worker is likely to be kept working for nothing for the Government a longer time than the unskilled. It is harder to replace the carpenter when his term is up than the hoe man; so they keep him on.” (p. 16)

“Villages deep in the bush suffer as much from labor exactions as those near. More is required from villages with skilled workers than those without schools. Hence parents hesitate to let their boys learn a trade.” (p. 18)

If the downward pressure on the wages of skilled workers was stronger than that on unskilled wages, the observed skill-premiums in the early 20<sup>th</sup> century would be a lower bound.

Second, the dramatic fall is observed both in countries that had high *and* low levels of labor coercion. While we cannot exclude the possibility that the fall has been a bit steeper in places where forced labor regimes were more widespread (e.g. in Cote d’Ivoire and in large parts of East and Central Africa), the fall itself is universal. Finally, with respect to the role of unionization, the mere fact that unskilled laborers demanded better pay vis-à-vis skilled workers, already reflects that a large enough body of skilled workers had formed. While the supply of such workers may still not have kept up quickly enough with demand in the 1940s

and 1950s, the extreme scarcity of skilled labor that had characterized the early decades of the 20<sup>th</sup> century had been alleviated. Indeed, the expansion of the absolute numbers and relative shares of skilled workers in the labor force was primarily the result of the expansion formal schooling. We turn to this most important factor separately in the next section.

## **5. The global schooling revolution**

The schooling revolution in Africa and Asia was by and large a 20<sup>th</sup> century phenomenon. In most places investments in formal education began to rise at some point between 1890 and 1920, but with major differences in timing and intensity. The schooling ‘revolution’ involved more than just the spread of schools and related increases in enrolment and attainment rates. It more broadly, meant a transition in the way societies organized the transfer of knowledge and skills, moving them from the realm of informal relationships – often embedded in kinship or community ties – to more systematic and coordinated ways of learning, with shared pre-set curricula and generic means to test student capacities.

Table 2 shows the accumulation of years of attainment in primary education for some of the world’s ‘leaders’ and ‘laggards’. From a global comparative perspective, the attainment rates of the American workforce stand out, already holding about 5 years of primary school attainment in 1900 (Barro and Lee, 2015).<sup>10</sup> Catch-up in other parts of the Western world ensued quickly in the early 20<sup>th</sup> century, but this remained a much slower process in Africa and Asia. Throughout the 20<sup>th</sup> century, African attainment rates remained behind of those in Asia, with a time-lag of about three decades. By 1950 about one-third of the Asian population aged 15+ had enjoyed some years in primary school, whereas in Africa this was about one-fifth. By 2010, the share of the labor force that had never been in school had fallen to circa one quarter in Asia and one-third in Africa. Although the accumulation of years of schooling of the working age population (15+) was still low by global standards in 1950, the expansion during the first half of the 20<sup>th</sup> century was actually more rapid if we account for the fact that primary school attainment rates in many places were still close to zero in the late 19<sup>th</sup> century.

The table shows significant variation in initial levels and growth rates, both within and across regions. In the late 19<sup>th</sup> century, Japan was already well ahead of most other Asian and African countries and quickly converged with attainment rates in the West, rising from a little over one year in 1880 to almost five years of schooling by 1940. Similar quick results were achieved in parts of the Japanese Empire. Japan’s comparatively ambitious colonial education policies pushed attainment rates in Korea from virtually zero in 1880 to almost four years on the eve of WWII. American schooling efforts in the Philippines also translated in a quick take-off of attainment rates in the early 20<sup>th</sup> century (Furnivall 1943, Booth 2007, Frankema 2014). This pace was noticeably slower in other parts of Asia, such as Pakistan and Bangladesh (then part of British India), where attainment rates remained lower until today. Similar diverging patterns can be observed within Africa. While intra-region variation in attainment rates in Africa was overall much smaller the late 19<sup>th</sup> century than in Asia, a widening gap had formed by 2000 between slow and rapid adopters.

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<sup>10</sup> In similar vein, the big push in secondary education was full four decades ahead of the Western European average in the U.S. (Goldin and Katz 2008, p. 26).

**Table 2: Average years of primary schooling for males, 1880-2000**

	1880	1900	1920	1940	1960	1980	2000
<i>Africa</i>							
Kenya	0.01	0.04	0.91	1.31	2.11	3.85	4.98
Mauritius	0.47	1.24	1.86	2.50	3.18	3.93	4.77
Ghana	0.03	0.08	0.40	0.71	1.45	3.63	4.43
Togo	0.02	0.05	0.19	0.48	0.84	2.83	4.32
Malawi	0.00	0.01	0.45	0.99	1.55	2.69	4.02
Cote d'Ivoire	0.01	0.02	0.19	0.37	1.03	1.92	3.37
Benin	0.01	0.01	0.04	0.51	0.85	1.34	2.76
Niger	0.00	0.00	0.11	0.50	0.66	0.89	1.55
Mozambique	0.00	0.01	0.04	0.55	1.32	1.78	1.37
Mali	0.00	0.00	0.03	0.14	0.28	0.74	1.26
<b>Africa av.</b>	<b>0.04</b>	<b>0.11</b>	<b>0.36</b>	<b>0.70</b>	<b>1.37</b>	<b>2.47</b>	<b>3.55</b>
<i>Asia</i>							
South Korea	0.00	0.43	1.87	3.89	4.30	5.60	5.93
Japan	1.07	2.01	3.75	4.48	5.42	5.73	5.90
Taiwan	0.00	0.02	0.53	1.79	3.23	4.54	5.56
Hong Kong	0.06	0.62	1.49	3.52	4.30	5.25	5.40
Malaysia	0.03	0.10	0.72	1.98	3.38	4.47	5.40
China	0.01	0.02	0.13	1.34	2.69	4.55	5.33
Philippines	0.05	0.16	0.92	1.35	2.36	4.10	4.98
India	0.05	0.22	0.73	1.20	1.53	2.23	3.65
Bangladesh	0.02	0.06	0.56	0.96	1.21	2.23	3.04
Pakistan	0.01	0.02	0.55	0.83	1.11	1.81	2.62
<b>Asia av.</b>	<b>0.14</b>	<b>0.37</b>	<b>1.01</b>	<b>1.88</b>	<b>2.75</b>	<b>3.93</b>	<b>4.65</b>
<i>West</i>							
US	4.10	4.71	4.88	5.30	5.43	5.92	5.95
Australia	2.24	3.02	3.98	4.99	5.53	5.89	5.87
Canada	3.04	3.32	4.07	4.83	5.35	5.67	5.87
UK	0.97	2.58	3.96	4.79	5.13	5.34	5.55

Source: Barro and Lee 2016

Unlike in the West, the early stages of the schooling revolution were in many parts of the global South not tied to an emergent wave of ‘economic nationalism’ or deliberate ‘development’ policies. Especially in many African societies, formal schooling began as a (semi-)private initiative of Christian missionary societies, Islamic institutions (e.g. Quranic schools) and/or other religious organizations (Berman 1975). There was significant variation in the curriculum and skill training offered by different missionary groups, and the spread of schooling was as much a marker of global economic change as of religious globalization and local adaptation to those forces.

While a *central aim* of most of these (often government-assisted) religious schools was to convert and ‘civilize’ indigenous populations, training in artisanal skills was not confined to advanced-level vocational schools. Combined with a focus on “agriculture and animal husbandry”, “reading, writing and arithmetic”, training in “village crafts” was deeply embedded in elementary education at the local level (Lugard 1930, p. 6). Where traders hoped to secure a greater supply of “well-trained artisans to drive his motor lorries, build his houses and manage his mechanical and electrical plants”, and governments sought to “advance the economic development of the country,” missionaries saw education in ‘practical’ manual skills as a means to instil indigenous boys with a Christian ‘work ethic’ (citation from Manley 1920, p. 232; see also Walker 1917, p. 285). For girls, education focused more on Victorian-style values, such as hygiene, nursing, house-keeping, and child-rearing (Bantebya-Kyomuhendo and McIntosh 2006, p. 54). The most talented students at such village schools could receive more advanced education in an expanding number of vocational and central (secondary) government schools (Harward 1916, Lugard 1930, Vischer 1915), opening up new routes to becoming a clerk, teacher, interpreter, or high-skilled (master) artisan.

The spread of missionary education, however, remained uneven across colonial Africa and Asia. On the whole, British African colonies experienced a more rapid expansion of missionary education than French and Portuguese territories, as British governments tended to be more tolerant of missionary initiatives (Gallego and Woodberry 2010, Cogneau and Moradi 2014). Islamic societies in both Africa and Asia tended to draw few missionaries, in part because colonial governments halted the wave of Christian missionary zeal at the frontier of Islamic heartlands. The most important factor determining the pace of missionary school expansion though, was the *adoption* of Christianity by different groups and communities (Frankema 2012). In Africa, the far majority of priests, pastors, and school teachers were of African origin and were financed by local resources rather than Western church donations or central colonial government subsidies (De Haas and Frankema 2017, Jedwab et al. 2018).

While colonial governments increasingly recognized the importance of education for their economic and social development agendas, they often remained heavily restrained by limited fiscal capacity and metropolitan insistence on balancing colonial budgets (Gardner 2012, Frankema and van Waijenburg 2014). With some notable exceptions, such as Mauritius, the Philippines and the Japanese colonies, spending on education remained limited until well into the colonial period relative to investments in physical infrastructure, maintaining law and order, and expansion of the colonial bureaucracy (Booth 2008, Frankema 2011, Huillery 2014). While such budget constraints were gradually alleviated over time, the real ‘big push’ in educational investments was mostly a late colonial and early post-colonial affair.

The expanded Barro and Lee dataset (2015) allows us to test whether there is a direct relationship between the fall in the skill-premium and the global expansion of mass education. We follow Katz and Murphy (1992) and Goldin and Katz (2008) in formalizing the relationship between the relative supply of skills as the log of the share of educated to non-educated,<sup>11</sup> and the skill-premium, measured as the log of the ratio of skilled to unskilled labor. The estimated equation regresses the log of relative wages on the log of the relative supply of skilled labor:

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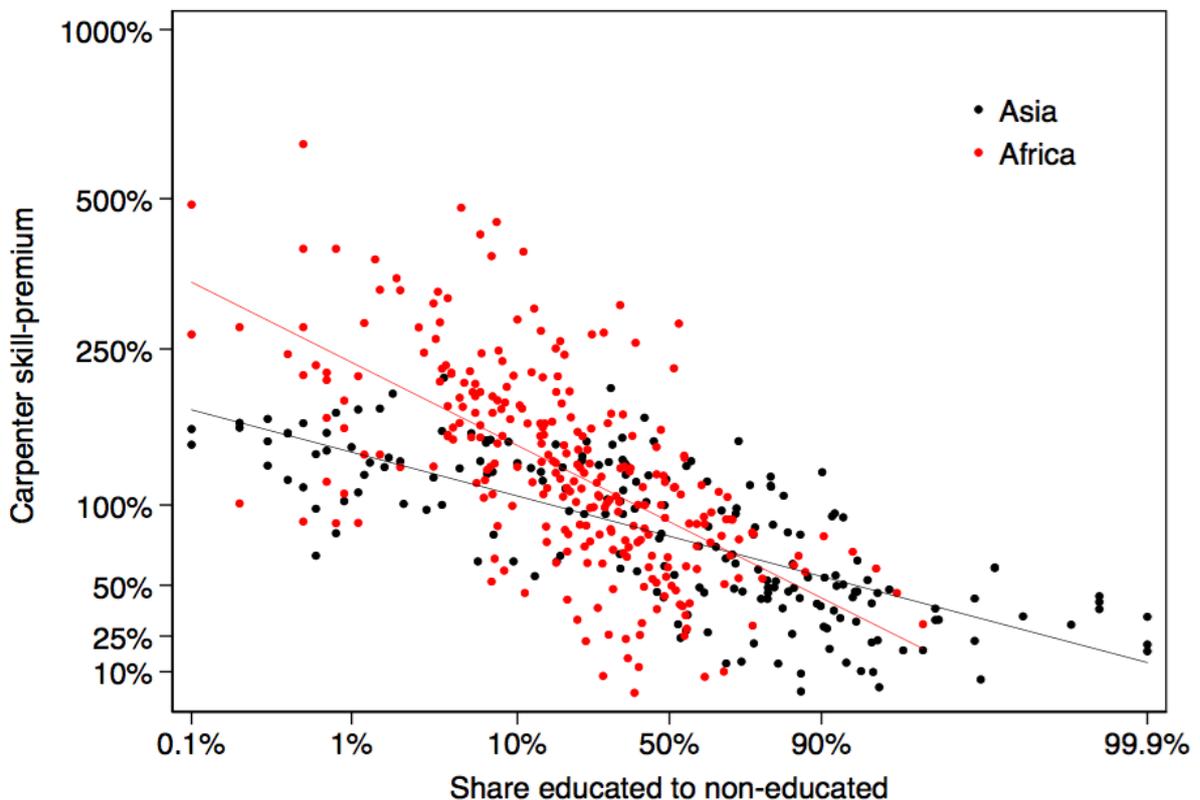
<sup>11</sup> For the non-educated we took the share of the male population that had not enjoyed any schooling from the Barro and Lee dataset (2016). The educated are all the rest. This ratio corresponds to Goldin and Katz’s 2008 ratio of college graduates to non-college graduates.

$$\log \frac{w_{ct}^s}{w_{ct}^u} = \alpha + \beta \log \frac{L_{ct}^s}{L_{ct}^u} + \epsilon_{ct}$$

As in Katz and Murphy (1992), the coefficient on the log of the relative supply of skilled labor is  $\beta = -\frac{1}{\sigma}$ , where  $\sigma$  is the elasticity of substitution between the two types of labor in a CES production function, and the constant and the error term represent the relative demand shocks.

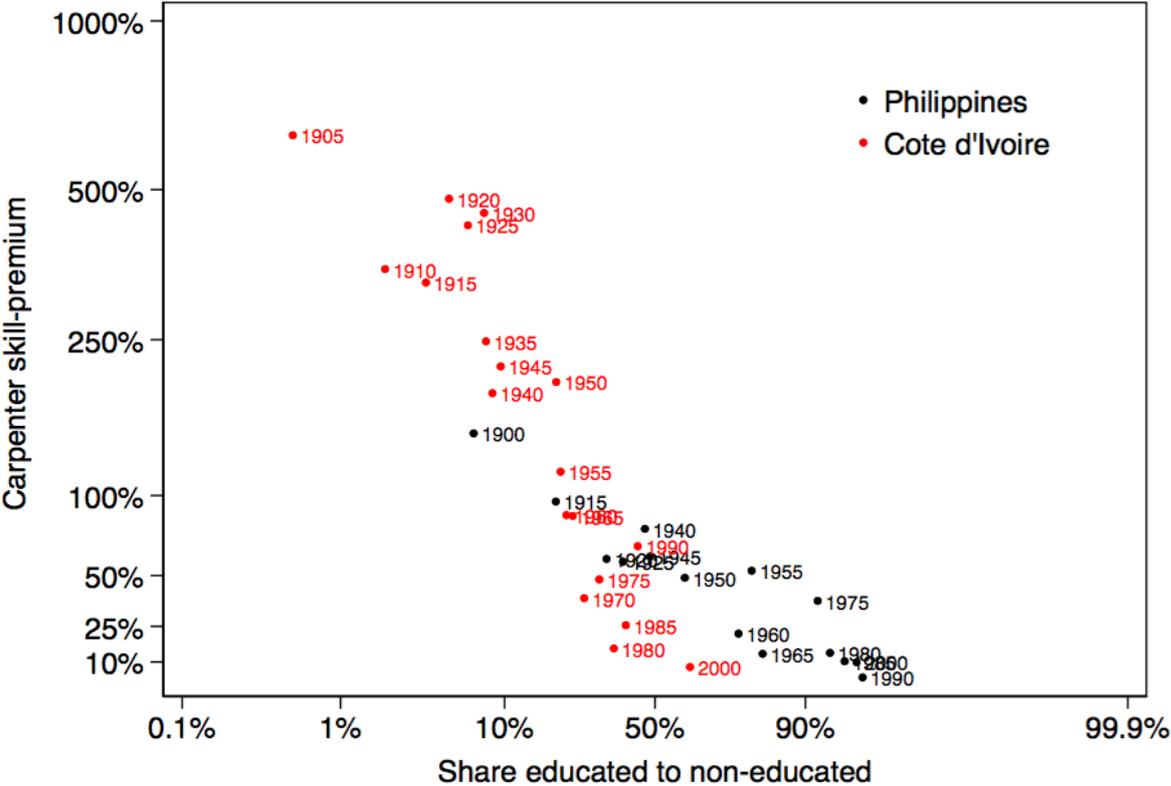
To be clear, the measure for the relative supply of skills that we have is a very rough proxy for the real variable of interest. For example, we would expect the skill-premium for carpenters to be directly related principally to the supply of carpenters, which was partly mediated by the share enrolled in vocational schooling, rather than to the general supply of educated workers. The premise of this exercise is that *in the long-run* the two must be correlated, but at a finer resolution of the idiosyncratic factors could create discrepancies between the real supply of carpenters and the general level of education in the country. As a result, one should expect the long-run patterns to be informative regarding the effect of education on skill-premiums, but the identifying power that can be extracted from the proxy is likely limited.

**Figure 8a: Carpenter skill-premium and the relative supply of male educated workers, c. 1870-2010**



Notes: The panel includes 28 periods and 42 countries. Education is the log of the share of educated to uneducated, where educated is an indicator for any schooling (Barro and Lee 2016). The carpenter skill-premium is the log of the ratio of the carpenter wage to the unskilled wage.

**Figure 8b: Carpenter skill-premium and the relative supply of male educated workers in the Philippines and Cote d'Ivoire, c. 1870-2008**



Notes: Education is the log of the share of educated to uneducated, where educated is an indicator for any schooling (Barro and Lee 2016). The carpenter skill-premium is the log of the ratio of the carpenter wage to the unskilled wage.

Figure 8a plots this relationship for the carpenter premium, the category for which we have the most balanced panel. Each observation in this figure corresponds to a country half-decade.<sup>12</sup> If the increase in the supply of educated workers translated into a drop in the skill-premium, this should show up as a negative correlation between the relative price and the relative supply of skilled labor. As expected, for both regions we observe a clear negative correlation, with an overall coefficient of -0.66. Figure 8b illustrates the temporal pattern at a single country level for two countries, the Philippines and Cote d'Ivoire that represent two ends of the spectrum. While Cote d'Ivoire was lagging behind the Philippines in terms of educational attainment, these two economies, which surely had many differences, were nevertheless aligned along the same literacy-skill-premium curve, both sliding downwards decade by decade.

To be sure, the negative correlation between schooling and the skill-premium seen in figures 8a-b could be driven by other factors, including those discussed in the previous section. For example, if the opening up of African and Asian economies to world trade caused a demand-driven fall in the skill-premium (as discussed in section 4b) and there was a simultaneous expansion of education, this would cause a correlation between the skill-premium and education that is not the result of a causal effect. Tables 3a-c examine the robustness of the correlation

<sup>12</sup> For each 5-year benchmark in the Barro and Lee data, we took the average of the skill-premium for the next 5-years (e.g. matching Barro and Lee's observation for 1900 with the average of our skill-premiums for 1900-1904).

between the skill-premium and the supply of educated workers. The first column in table 3a reports the uncontrolled regression that corresponds with figure 8a. Based on these estimates, when the share of educated rises from 1% to 10%, the predicted skill-premium falls by 56.5 percentage points, from 188.4% to 131.9%. As is made clear in figure 8a and tables 3b-c this relationship appears to have been twice as strong in Africa as in Asia. This is not surprising considering the more established tradition in many countries of transferring artisanal skills via forms of apprenticeships that the Barro and Lee dataset does not capture.

**Table 3a: OLS-regressions of the skill-premium and relative supply of educated workers in Africa and Asia**

<b>Effects of basic education on skill-premium in Africa and Asia</b>					
	1	2	3	4	5
Education	-0.091*** (0.005)		-0.057*** (0.007)	-0.089*** (0.007)	0.001 (0.015)
Country FE	NO	NO	NO	YES	YES
Time FE	NO	YES	YES	NO	YES
Africa		0.222*** (0.024)	0.121*** (0.026)		
Constant	0.641				
R-squared	0.44	0.46	0.59	0.58	0.71
Adj. R-squared	0.44	0.46	0.57	0.54	0.65
N	469	469	469	469	469

*Notes:* panel includes 28 periods and 42 countries. Education is the log of the share of educated to uneducated, where educated is an indicator for any schooling (Barro and Lee 2016). The dependent variable is the log of the ratio of skilled to unskilled wage.

**Table 3b: OLS-regressions of the skill-premium and relative supply of educated workers in Africa**

<b>Effects of basic education on skill-premium in Africa</b>				
	1	2	3	4
Education	-0.124*** (0.009)	-0.143*** (0.011)	-0.059*** (0.013)	-0.002 (0.022)
Country FE	NO	YES	NO	YES
Time FE	NO	NO	YES	NO
Constant	0.633			
R-squared	0.39	0.54	0.60	0.72
Adj. R-squared	0.39	0.50	0.55	0.65
N	274	274	274	274

*Notes:* The panel includes 28 periods and 26 countries. Education is the log of the share of educated to uneducated, where educated is an indicator for any schooling (Barro and Lee 2016). The dependent variable is the log of the ratio of skilled to unskilled wage.

**Table 3c: OLS-regressions of the skill-premium and relative supply of educated workers in Asia**

	Effects of basic education on skill-premium in Asia			
	1	2	3	4
Education	-0.066*** (0.004)	-0.057*** (0.006)	-0.063*** (0.008)	-0.011 (0.023)
Country FE	NO	YES	NO	YES
Time FE	NO	NO	YES	NO
Constant	0.581			
R-squared	0.54	0.64	0.64	0.75
Adj. R-squared	0.54	0.61	0.57	0.68
N	195	195	195	195

Notes: The panel includes 28 periods and 16 countries. Education is the log of the share of educated to uneducated, where educated is an indicator for any schooling (Barro and Lee 2016). The dependent variable is the log of the ratio of skilled to unskilled wage.

In column 2 of table 3a, we add an indicator for Africa and time fixed-effects, that are meant to control for globally correlated demand shocks for skilled labor, keeping in mind that there may still be idiosyncratic demand shocks that are correlated with other factors affecting the skill-premium, or that the global shocks affect countries in a different manner. We show that there were indeed systematic differences between the two continents. Within half-decades, the skill-premium in Africa was on average 25% (0.222 log points) larger than in Asia. Column 3 shows, however, that once we control for education, almost half of this gap disappears. It is likely that part of the remaining gap is explained by greater availability of unmeasured skill in Asia.

In column 4 we control for country fixed-effects, which does not affect the magnitude of the education variable much relative to the uncontrolled specification in column 1. When we combine time- and country-fixed effects in column 5, however, the coefficient of the education variable is reduced to zero, which is not consistent with our hypothesis. Yet, as mentioned above, this result could very well be driven by the weaknesses of the education variable as a proxy for supply of skilled labor in a particular occupation. To be useful for identification under time- and country-fixed effects, the half-decade to half-decade variation within countries in the supply of carpenters needs to correspond closely with the concomitant variation in the general levels of education. It is hard to imagine that such a close short-run correlation ever existed.

In sum, the correlation between the education data and the skill-premium supports our argument for the long-run relationship between skill accumulation and mass education. The long-term decline in skill-premiums went hand in hand with the spread of mass schooling, and this can explain a large part of the skill-premium gap between Africa and Asia. At a finer level, within country-half-decade, the evidence does not support our hypothesis, but there is more than a slight suspicion that this is due to the limitations of the available proxy for the supply of skilled labor.

## 6. Conclusions

This paper has explored the long-term relationship between skill accumulation and mass education in 50 (former) developing economies in Asia and Africa, exploiting an extensive new occupational wage dataset to shed light on the relative price development of manual and cognitive skills. Our analysis has uncovered three major stylized facts. First, in the late 19<sup>th</sup> century, skill-premiums in Africa and Asia were very high relative to the levels that had dominated in Western European societies since the late Middle Ages. Second, in this period skill-premiums were on average about twice as high in Africa than in Asia. Finally, and most significantly, we documented a dramatic and universal ‘free-fall’ in wage premiums for all occupations between in the long 20<sup>th</sup> century. On the eve of the 21<sup>st</sup> century, skill-premiums in most African and Asian countries had largely converged with levels that had been common in Western Europe for centuries.

We have argued that the forces of globalization, de-skilling, and changes in (colonial) labor market policies had rather diverse and ambiguous effects on the skill-premium trends observed, and that there is only one factor that is powerful enough to explain the universality and structural nature of the decline. The real *conditio sine qua non* is the rapid growth in school attainment rates between 1870-2010, which raised the total supply of educated workers that could specialize in obtaining specific sets of skills for which local demand rose everywhere, albeit with varied intensity. Our baseline regressions, and the ones in which we control for country-fixed effects, show a strong negative relationship between skill-premiums and educational attainment rates. Additionally, they can account for part of the skill-premium gap between Asian and African countries.

The economic significance of the profound transformation in the cost structure of skilled labor is threefold. First, the historical evidence for Western Europe suggests that modern economic growth is only feasible when the price of skills have come down to a certain lower bound. That condition seems to have been fulfilled in a growing number of economies in the course of the long 20<sup>th</sup> century. Second, wider access to cheaper skilled workers has greatly improved conditions for labor specialization and economic diversification, thus allowing for processes of Smithian growth. Third, the larger the share of educated workers in the total labor force, the higher the potential of generating the positive externalities of human capital as postulated in endogenous growth theory. The pressing question remains though, why the free-fall of skill-premiums has failed to induce more Schumpeterian growth across the board?

One of the keys to understanding this puzzle may be related to an issue that we left undiscussed so far. Our study has focused on the relative price of basic to medium skilled workers, but not on the higher skilled segment of the labor force. In a world where the technology frontier is moving so fast, demand for highly educated workers who can adapt, operate, and maintain the latest machines and infrastructure continues to grow. The price of highly skilled workers, however, may be prohibitively high in a sub-set of developing economies – future research will have to shed further light on this. Moreover, highly educated workers may also have greater opportunities for labor-migration (brain drain) and/or domestic rent-seeking activities that jeopardize aggregate labor productivity growth. It remains unclear how the ‘race’ between education and technology is playing out here: will we observe a similar free-fall in premiums for those workers that are operating at the current technology frontier? Nonetheless, our study has shown that an important precondition for Schumpeterian growth has

been laid. Indeed, the gains of the schooling revolution have been historically unprecedented and have shown up in virtually every corner of the globe.

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## APPENDIX 1: SOURCES

### LIST OF SOURCES

Our series are covered by the following sources that are abbreviated in the following manner:

AS: The *Annuaire Statistiques* for the federations and/or the French Empire at large

BB: The colonial *Blue Books* that contain statistics on the (former) British territories

BG: The *Budgets Generals* that contain detailed lists on the (former) French territories

CF: The annexed *Budgets du Chemin de Fer* of the French colonial Budgets

CD: The *Comptes Definitifs* of the French colonial budgets when the BGs did not report wages

JCS: The Japanese Colonial Statistics

OI: The ILO's annually conducted '[October Inquiry](#)'. These surveys contain wage information on various occupations and were conducted between 1950-2008. These surveys were published in the following publications:

- 1950-1957: *Yearbook of Labour Statistics*
- 1950-1963: *International Labour Review Statistical Supplement*
- 1964-2008: *Bulletin of Labour Statistics October Inquiry Results*

OWS: The *Occupational Wage Surveys* that were published in post-WWII India

SBPI: The *Statistical Bulletin of the Philippine Islands*

ST: *Statistical Tables Relating to the British Self-governing Dominions, Crown Colonies, Possessions, and Protectorates*

- Note that there is overlap between the wages reported in this publication and the BBs of the individual colonies

SL: the *Staff Lists* produced by British colonial governments (available on microfilm)

SP: The *Sessional Papers* contain various departmental reports for the former British colonies

YoLS: The ILO's annually published *Yearbook of Labour Statistics*

1. This source also contained other wage information before the systematic appearance of the OI

YoPS: The *Yearbook of Philippine Statistics*

### GENERAL CONSTRUCTION AND REPORTING PRINCIPLES

1. Where a single year was missing for one of the components needed to calculate a skill-premium, and the surrounding years were close in value, the missing year was interpolated as a trend.
2. Where wage rates were given as a range between a minimum and a maximum, we took a lognormal of the two reported values. Where we deviated from this approach, we report this below.
3. To convert annual and monthly wages to day wages we took respectively 312 and 26 days a year. To convert an hourly wage to a daily wage, we took 8 hours. Where we deviated from this approach we report so below.
4. For British Africa, we in principle maintained our series from the 2012 JEH article. In order to make these series compatible with the French African series, which also include rural wages, we used both rural and urban rates to compute the average country-wide unskilled wage rate. The datasheet from our 2012 article, containing both of the wage series, is available on the website of the Global Price and Income History Group: <https://gpih.ucdavis.edu>. Additionally, we returned to the original sources and to complementary sources (BBs, DCS, SPs, STs) to find data on other skilled personnel (mechanics, electricians and clerks).

5. We consulted the same BBs and STs construct skill-premiums for former British territories in Asia (Hong Kong, Malaysia, Singapore, and Sri Lanka). Where the gap between the minimum and maximum rates for unskilled labor was larger than 200%, we excluded such observations from our sample. This occasionally occurred for some of our earliest years (pre-1914), and our concern here was that this is a reporting anomaly (capturing a number of more skilled workers in the unskilled category). Additionally, for these earliest years (which report wage data in lesser detail), we tossed observations that have a sudden and unexplained trend-break in the nominal wage series (the pre-1914 era was one of great price stability). Where we did so, we report this below.
6. For the French African colonies, we used the unskilled wage series (*manoeuvres*, c. 1900-1937) from van Waijenburg 2018 (JEH). These series were derived from the Budgets of the individual colonies. We consulted the same sources for data on carpenters (*menuisiers* or *charpentiers*), electriciens (*electriciens*), mechanics (*mecaniciens*) and clerks (*commis*). In many cases, the data specifically indicated that concerned indigenous workers (*personel indigene*). In cases where this was not explicitly stated, we only took those wages that did not have a ‘colonial supplement’ (supplement colonial), which was generally not paid to African workers. Additionally, we tried to avoid those artisanal workers that were listed as *contractuel*, as we worried these might receive other premiums (comparing rates suggests this). Where part of the series are still based on benchmark years with significant, requiring a final round of archival work, we have indicated this with an \*.
7. We constructed our pre-1950 clerk series according to the following principles. Since we are interested in basic literacy skills, we selected entry level clerks from the ‘Post and Telegraphs’ departments. Both the British and French sources contain wages paid to clerks in this department, but the reporting and ‘scaling’ of clerks differed slightly.
  - a. For the British colonies, we selected the lowest salary reported for clerks in the lowest grade of the Posts and Telegraphs section of the Blue Books, or in the Staff Lists. We then multiplied this lowest rate by 1.25 to reflect a wage that would find itself a bit more in the middle of the rates that were reported in that scale (usually there were 5 or 6 scales of postal clerks with a range of salaries paid within these scales). This makes our selected rate more comparable to the average rates for each scale that were reported in the French sources. Where we deviated from this principle, we report so below.
  - b. Since salary scales for white-collar workers were generally more ‘sticky’ than day wages for artisans, we carefully evaluated the values for 1920 and 1921, when there as severe post-war inflation. Where the value of the skill-premium clearly indicated a time-lag in adjusting the scales, we omitted one of both of these years. Where we have done so we indicate this below.
  - c. The French colonies, in contrast, usually worked with 2 types of clerks: the *commis* (clerks) and the *commis auxiliaires* (supporting clerks). Since the highest class of the *commis auxiliaires* were often paid the same (or close to the same) as the lowest level of the regular *commis*, we selected this rate for the following reason. Not every pay scale for the *commis* and *commis auxiliaires* were present each year (e.g. the state might not have employed a *commis 4e classe* and *commis 6e classe* in a given year). However, for most years, it was possible to interpolate the ‘missing scales’ on the basis of regular pay steps between the classes that were visible for that year. Because of such interpolations, we believed it was better to select the highest rate for *auxiliaires* than the lowest rates for the regular *commis* as the total number of pay scales

expanded and contracted over the years, and we could not establish with certainty what the lowest scale would have been (getting to the top scale is easier). For years where no or insufficient information was available to derive the top scale of the *commis auxiliaires* we took the lowest grade of the reported *commis* instead. For occasional years where we could not find any information in the section *Postes and Telegraphes*, we selected another department where multiple scales for *commis* were reported. Such occasionally substitutions should not distort our series, as the pay grades across the administration for the same scale of *commis* were generally the identical or very close.

- d. In many French colonies the titles of the types of clerks change in the course of the colonial period. For example, the *commis* would become *commis ordinaires*, and the *commis auxiliaires* would be relabeled as *commis adjoints*. By tracing the same department carefully over the years, we were able to identify such switches and continue collecting data for the same group of clerks.
  - e. The administrative categories in Equatorial Africa deviated a bit those in the other (mostly West) African colonies, and the standard categories of *commis* and *commis auxiliaire* as described in point 7c were not available yet until later in the colonial period. For the early years we instead took the minimum of the category *écrivain (interprète) indigène*. From the late 1920s onwards, we were able to continue our series by taking the minimum of *commis indigène*. The minimum rates of these groups overlapped closely.
8. In the AS for the French West Africa (wages 1949-1957), we used category 1 (*manoeuvres ordinaires*) for the unskilled workers and a lognormal of categories 4 (*ouvrier spécialisé*) and 6 (*ouvrier qualifié*) as the distribution for artisanal wages broadly defined (carpenters, electricians, and mécaniciens). Based on overlapping years between the ILO data and the AS, we were able to tell that wage rates for these 3 groups of artisans/technicians were very similar (if not exactly the same).
  9. In the AS for French Equatorial Africa (wages 1953 and 1955), we used the average of the category 1 scale (*manoeuvres ordinaires* and *manoeuvres de force*) for unskilled workers, and a lognormal of the minimum values in category 3 (*ouvrier spécialisé*) and category 5 (*ouvrier hautement qualifié*) as the distribution for artisanal wages.
  10. Where wage series from the OIs and the AS or BBs/SPs overlapped in the 1950s, we took the average SP of these (often closely corresponding) values.
  11. We in principle relied on male wages. In the ILO's OIs this was indicated by the letter 'B' in the LABORSTA code. If for the post-1983 years information on male wages was absent, but a solid series could still be made by taking the wage rates for men and women combined (indicated by the letter 'A' in the LABORSTA code), we did so.
  12. The OIs reported wage rates in different forms, both over time and across spaces. Where different types of rates were reported for a country-year, we maintained the following order of preference:
    - a. Where "average rates" or "prevailing rates" were available selected those
    - b. If option (a) was not available, we took "average earnings" instead
    - c. If neither option (a) or (b) were available we took "minimum rates" where these looked reliable enough (that is, not masking the 'variance' in the skilled occupations too much). We determined such reliability on surrounding years where categories (a) or (b) were available (giving us some sense of the variation). Specific choices are motivated with the individual country descriptions below.
  13. Some African countries had large communities of Asian migrant workers. Although most sources explicitly state whether the data refers to African or Asian labor, not all

- did. Where we were concerned that reported rates referred to either just Asian labor or Asian and African labor combined (Asian rates for example being the maximum), we dropped such observations. Where we did so, we report this below.
14. The series reported by the ILO varied between being a reference to the country as a whole, to certain regions of a given country, and/or to one or more cities. For countries where more than one rate was given (e.g. several cities), we took the average of the all reported rates. Where a series for one country switched over time from referring to the main city to the country as a whole, we assessed whether the nominal wage series and resulting skill-premiums for those years yielded unexplained trend breaks. In the few cases where it did, we omitted the outlying observations and have reported so below.
  15. Although the ILO's OI data collection effort started in 1950, we started our series 1-2 years later to take in an 'adjustment' phase (when governments were systematizing the collection efforts/presentation of the requested data).
  16. To further alleviate concerns about 'poor numbers' (Jerven 2013) in the post-colonial era, we carefully looked at two aspects of the ILO data:
    - a. We scrutinized the reported data for years where inflation rates exceeded 20%. For cases where such years constituted a significant trend break with the rest of the SP series, we omitted these years out of concern that one of the two wages (e.g. the daily paid unskilled wage) reflects an inflation-adjusted rate, whereas the other wage (e.g. the monthly paid and annual set salary) might other not yet reflect such price increases at the moment of reporting. Problems along these lines were rare, but where we omitted observations for this reason, we report this below. Historical inflation rates were derived from the World Bank (accessed July 22, 2019).
    - b. We carefully looked at the nominal wage series for each occupation to see whether there were any strange trend-breaks in the time-series. Where significant outliers in the nominal rates could not be explained by external circumstances (e.g. wars, the economic turmoil surrounding the oil crises, decolonization struggles), we worried that such nominal wage volatility reflects (temporary) changes in reporting, and we omitted such observations from the series. In the few instances where the entire series displayed great volatility, we did not include the series for that occupation at all. Where we made such decisions, we report this below.
  17. From 1983 onwards the number of occupations that are covered in the OI increased from 49 to 159. Before the ILO's transition to their new [LABORSTAT database](#), the post-1983 data could be downloaded on the previous [LABORSTA website](#). Where we consulted these digital versions of the OI as well, we will report the codes from the downloaded spreadsheet and the date it was extracted as well.
  18. For the OIs between 1953-1982, we in principle used the following categories of labor:
    - Labourer: 33 (construction - labourer)
      - Here and there supplemented with categories 35 (labourer, electric light and power), or 41 (labourer, municipal government) if not 33 was not available
      - Note that this category was listed before 1953 as category 32
    - Carpenters: 29 (construction - carpenter)
      - Note that this category was listed before 1953 as category 28
    - Mechanic: 25 (garage mechanics)
      - Note that this category was listed before 1953 as category 24
    - Electrician: 32 (construction – electrical fitter)

- Here and there supplemented with 34 (electrical fitter, electric light and power) if 32 was not available)
      - Note that this category was listed before 1953 as category 31
    - Bank teller: 37 (banks and other financial institutions)
      - Note that this category was listed from 1953 onwards in Part II of the OI, as part of the monthly salaries
      - Clerk: we collected the rates for both stock clerks and steno-dactylographers. We either took the average SP of these two categories, or selected one of the two based on the (nominal wage) fit with preceding and subsequent years (the colonial data and the post-1983 ILO data)
19. For the OIs between 1983-2008, we used the following categories of labour:
- Labourer: 90 (construction - LA)
    - Here and there we supplemented with unskilled labourers in “spinning, weaving and finishing textiles” (28B) “printing” (51, FB) and “electric light and power” (80, KA). We did so in cases where 90, LA was either not available (or only partly), or when a matching within-industry pair could be made (e.g. electrician 78, KA with unskilled labourer 80, KA)
  - Carpenters: 88 (construction - carpenter)
    - Here and there we supplemented with cabinet makers (40, EB – carpenters of furniture). We did so in cases where 88, LA was not available
  - Electrician: 81 (construction – building electrician)
    - Here and there we supplemented with electric power linemen (78, KA). We did so in cases where 81, LA and/or 90, LA were not available (or only partly), and a matching electrician-labourer within-industry pair could be made in the ‘KA industry’ (electric light and power).
  - Mechanic: 110, NB or 159, PF (automobile mechanic), depending on availability
  - Clerk: 46, FB (office clerk in printing, publishing and allied industries) or 142, PA (office clerk in printing or public administration), depending on availability
    - Here and there we supplemented with office clerks in ‘electric light and power’ (77, KA), which we then matched with labourers in that sector (80, KA). We did so in cases where 46, FB or 142, PA were not available.
20. For occasional years where we had a negative skill-premium (raising questions about a time-lag in observing rates in an inflationary context and/or clerical errors), or where we did not see any variation in rates across an entire a sector (yielding a skill-premium of 0), we omitted such observations. Where we did so, we report this below.
21. We report our source for each country below for each period for which we found data in the same source. Note though that not all intermittent years were necessarily present in the periods indicated.

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## AFRICA

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### ANGOLA

*1. Carpenter premium*  
 1959-1982: OI-BoLS

- 1986-1999:
    - Part I – Hourly Wages: labourer (category 33)
    - Part I – Hourly Wages: carpenter (category 29)
- 1986-1999: OI-BoLS<sup>1</sup>
- AGO\_LA\_90\_MF (labourer, 1986-1999)
  - AGO\_LA\_88\_MF (carpenter, 1986-1999)

### 2. Electrician premium

- 1959-1982: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1986-1999: OI-BoLS<sup>1</sup>
- AGO\_LA\_90\_MF (labourer, 1986-1999)
  - AGO\_LA\_81\_MF (carpenter, 1986-1999)

### 3. Mechanic premium

- 1959: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1986-1999: OI-BoLS<sup>1</sup>
- AGO\_LA\_90\_MF (labourer, 1986-1999)
  - AGO\_PF\_159\_MF (automobile mechanic, 1986-1999)

### 4. Clerk premium

- 1986-1999: OI-BoLS<sup>1</sup>
- AGO\_LA\_90\_MF (labourer, 1986-1999)
  - AGO\_PA\_142\_MF (office clerk, 1986-1999)

### 5. Bank teller premium

- 1982: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

#### Notes:

1. LaborSta sheet AGO\_O1\_1983-2008 extracted on 08/07/2014
2. Note that we excluded the bank teller observations for the 1990s, as the sudden high rates we found for this period them raised concerns over it (also) reflecting non-African workers and/or changes in reporting

## BENIN

### 1. Carpenter premium

- 1905-1939: BG
- Unskilled: *manoeuvres*
  - Skilled: *charpentiers, menuisiers*
- 1949-1957: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1985-1988: OI-BoLS<sup>1</sup>

- BEN\_LA\_90\_M (labourer, 1985-1988)
- BEN\_LA\_88\_M (carpenter, 1985-1988)

## 2. Electrician premium

1939-1941: BG

- Unskilled: *manoeuvres*
- Skilled: *electriciens*

1949-1957: AS

- Unskilled: *manoeuvres ordinaires* (category 1)
- Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)
- Part I – Hourly Wages: electrical fitter (category 34 (1974 only))

1985-1991: OI-BoLS<sup>1</sup>

- BEN\_LA\_90\_M (labourer, 1985-1988)
- BEN\_LA\_81\_M (building electrician, 1985-1988)
- BEN\_KA\_80\_M (labourer, 1990-1991)
- BEN\_KA\_78\_M (electrical power lineman, 1990-1991)

## 3. Mechanic premium

1907-1936: BG

- Unskilled: *manoeuvres*
- Skilled: *mechanicien*

1949-1957: AS

- Unskilled: *manoeuvres ordinaires* (category 1)
- Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1990-1991: OI-BoLS<sup>1</sup>

- BEN\_LA\_90\_M (labourer, 1990)
- BEN\_NB\_110\_M (automobile mechanic, 1990)
- BEN\_KA\_80\_M (labourer, 1991)
- BEN\_PF\_159\_M (automobile mechanic, 1991)

## 4. Clerk premium

1900-1938: BG

- Unskilled: *manoeuvres*
- Skilled: *commis auxiliaire*

1960-1981: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer

1983-1991: OI-BoLS<sup>1</sup>

- BEN\_LA\_90\_M (labourer, 1983-1990)
- BEN\_PA\_142\_M (office clerk, 1983-1990)
- BEN\_FB\_51\_M (labourer, 1991)
- BEN\_FB\_46\_M (office clerk, 1991)

#### *5. Bank teller premium*

- 1964-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1987-1991: OI-BoLS<sup>1</sup>
- BEN\_KA\_80\_M (labourer, 1987-1991)
  - BEN\_OA\_131\_M (bank teller, 1987-1991)

#### Notes:

1. LaborSta sheet BEN\_OI\_1983-2008 extracted on 08/07/2014

### **BOTSWANA**

#### *1. Carpenter premium*

- 1904-1924: BBs
- Unskilled: Praedial
  - Artisanal: Trades<sup>1</sup>
- 1951-1963: SP (unskilled, carpenter)
- 1975-1978: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35 (1977 only))
  - Part I – Hourly Wages: carpenter (category 29)

#### *2. Electrician premium*

- 1975-1977: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35 (1977 only))
  - Part I – Hourly Wages: carpenter (category 32)

#### *3. Mechanic premium*

- 1976-1978: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35 (1977 only))
  - Part I – Hourly Wages: carpenter (category 25)
- 1984: OI-BoLS<sup>3</sup>
- BWA\_KA\_80\_MF (labourer, 1984)
  - BWA\_PF\_159\_MF (automobile mechanic, 1984)

#### *4. Clerk premium*

- 1984: OI-BoLS<sup>3</sup>
- BWA\_KA\_80\_MF (labourer, 1984)
  - BWA\_PF\_77\_MF (automobile mechanic, 1984)

### 5. Bank teller premium

- 1975-1978: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35 (1977 only))
  - Part II – Monthly Salaries: bank teller
- 1984: OI-BoLS<sup>3</sup>
- BWA\_KA\_80\_MF (labourer, 1984)
  - BWA\_OA\_131\_MF (bank teller, 1984)

#### Notes:

1. Until 1921, rates for Trades were only available for Europeans. From 1922 onwards rates were available for both Native and Europeans in this category. We used the 1922-ratio between Europeans and Natives to extrapolate the pre-1922 years.
2. Note that the year 1975 was dropped for mechanics (yielded a SP of 0)
3. LaborSta sheet BWA\_O1\_1969-2008 extracted on 16/01/2015
4. No carpenter or electrician wages were available in the post-1983 database

## BURKINA FASO

### 1. Carpenter premium

- 1924-1941: BG<sup>1</sup>
- Unskilled: *manoeuvres*
  - Skilled: *charpentiers, menuisiers*
- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1981: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1988-2000: OI-BoLS
- BFA\_LA\_90\_M (labourer, 1985-2000)
  - BFA\_LA\_88\_M (carpenter, 1985-2000)

### 2. Electrician premium

- 1928-1941: BG<sup>1</sup>
- Unskilled: *manoeuvres*
  - Skilled: *electriciens*
- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1981: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1988-2000: OI-BoLS
- BFA\_LA\_90\_M (labourer, 1988-2000)
  - BFA\_LA\_81\_M (building electrician, 1988-2000)

### 3. Mechanic premium

- 1921-1941: BG<sup>1</sup>
- Unskilled: *manoeuvres*
  - Skilled: *mechanicien*
- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1982: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35 (1982 only))
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1988-1991: OI-BoLS
- BFA\_LA\_90\_M (labourer, 1988-1991)
  - BFA\_NB\_110\_M (automobile mechanic, 1988-1991)

### 4. Clerk premium

- 1921-1932: BG
- Unskilled: *manoeuvres*
  - Skilled: *commis*
- 1956: BG/AS
- Unskilled: *manoeuvres ordinaires* (AS, category 1)
  - Skilled: *commis* (BG)
- 1960-1982: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: stock clerk
- 1988-2000: OI-BoLS
- BFA\_LA\_90\_M (labourer, 1988-1991)
  - BFA\_PA\_142\_M (office clerk, 1988-1991)
  - BFA\_PF\_51\_M (labourer, 1997-2000)
  - BFA\_PF\_46\_M (office clerk, 1997-2000)

### 5. Bank teller premium

- 1960-1982: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1990-2000: OI-BoLS<sup>1</sup>
- BFA\_LA\_90\_M (labourer, 1990-2000)
  - BFA\_OA\_131\_M (bank teller, 1990-2000)

#### Notes:

1. Note that the years 1940-1941 were derived from the BG of Côte d'Ivoire. Burkina Faso (then Upper Volta) was recurrently subdivided between a number of surrounding French African colonies, including Côte d'Ivoire.
2. Note that the year 1966 was omitted due to a strange trend break in the nominal wage series
3. No LaborSta file was downloaded for this country

## BURUNDI

### 1. Carpenter premium

- 1968-1984: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35, 1984 only)
  - Part I – Hourly Wages: carpenter (category 29)
- 1985-1992: OI-BoLS<sup>2</sup>
- BDI\_FB\_51\_M (labourer, 1985-1992)
  - BDI\_LA\_88\_M (carpenter, 1985-1992)

### 2. Electrician premium

- 1968-1984: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35, 1984 only)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1985-1992: OI-BoLS<sup>2</sup>
- BDI\_FB\_51\_M (labourer, 1985-1992)
  - BDI\_LA\_81\_M (building electrician, 1985-1992)

### 3. Mechanic premium

- 1968-1984: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35, 1984 only)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1985-1992: OI-BoLS
- BDI\_FB\_51\_M (labourer, 1985-1992)
  - BDI\_NB\_110\_M (automobile mechanic, 1985-1992)

### 4. Clerk premium

- 1984-1986: OI-BoLS<sup>2, 3</sup>
- Part I – Hourly Wages: labourer (category 35, 1984 only)
  - BDI\_FB\_51\_M (labourer, 1986)
  - BDI\_FB\_46\_M (office clerk, 1986)

### 5. Bank teller premium

- 1964-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 35, 1984 only)
  - Part II – Monthly Salaries: bank teller
- 1985-1992: OI-BoLS<sup>2</sup>
- BDI\_FB\_51\_M (labourer, 1985-1992)
  - BDI\_OA\_131\_M (bank teller, 1985-1992)

### Notes:

1. Note that (following principle 15 above), the year 1963 was omitted. The year 1963 was the first ILO observation in the series for Burundi, provided by a new government in the first year after independence. The rates reported for this year stood out from the larger trend (both cross-sectionally and temporally). We decided to start with the next

first available year: 1968. From 1968 onwards consistent wage rates were provided (almost annually) by the Burundi government.

2. No LaborSta file was downloaded for Burundi
3. Note that we did not use the stock clerk or the dactylographer series from the OI, because the nominal salary rates were too volatile to be usable for a time-series.

## CAMEROON\*

### 1. Carpenter premium

1924-1936: BG<sup>1</sup>

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1985-1987: OI-BoLS<sup>1, 2</sup>

- CMR\_LA\_90\_MF (labourer, 1985-1988)
- CMR\_LA\_88\_MF (carpenter, 1985-1988)

### 2. Electrician premium

1959-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1985-1986: OI-BoLS<sup>1, 2</sup>

- CMR\_LA\_90\_MF (labourer, 1985-1988)
- CMR\_LA\_81\_MF (building electrician, 1985-1988)

### 3. Mechanic premium

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1985-1986: OI-BoLS<sup>1, 2</sup>

- CMR\_LA\_90\_MF (labourer, 1985-1986)
- CMR\_LA\_81\_MF (building electrician, 1985-1986)

### 4. Clerk premium

1985-1987: OI-BoLS<sup>1, 2</sup>

- CMR\_FB\_51\_MF (labourer, 1985-1987)
- CMR\_FB\_46\_MF (building electrician, 1985-1987)

### 5. Bank teller premium

1959-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

1985-1987: OI-BoLS<sup>1, 2</sup>

- CMR\_LA\_90\_MF (labourer, 1985-1987)
- CMR\_OA\_131\_MF (bank teller, 1985-1987)

Notes:

1. LaborSta sheet CMR\_O1\_1969-2008 extracted on 16/01/2015
2. Note that the data in the OIs after 1988 is no longer usable for the purpose of our study, as the BoLS (1989) states that the reported rates are “not classified by individual occupations but by groups of occupations” (p. 18, footnote 1)

**CENTRAL AFRICAN REPUBLIC**

*1. Carpenter premium*

- 1919-1925: BG<sup>1</sup>
- Unskilled: *manoeuvres*
  - Skilled: *charpentiers, menuisiers*
- 1953-1955: AS
- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
  - Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 5)
- 1956-1979: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1987-1997: OI-BoLS<sup>2</sup>
- CAF\_LA\_90\_M (labourer, 1987-1997)
  - CAF\_LA\_88\_M (carpenter, 1987-1997)

*2. Electrician premium*

- 1953-1955: AS
- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
  - Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 5)
- 1956-1979: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1987-1997: OI-BoLS<sup>2</sup>
- CAF\_LA\_90\_M (labourer, 1987-1997)
  - CAF\_LA\_81\_M (building electrician, 1987-1997)

*3. Mechanic premium*

- 1915-1919: BG<sup>1</sup>
- Unskilled: *manoeuvres*
  - Skilled: *mecanicien*
- 1953-1955: AS
- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
  - Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 5)
- 1956-1976: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1987-1997: OI-BoLS<sup>2</sup>

- CAF\_LA\_90\_M (labourer, 1987-1997)
- CAF\_PF\_159\_M (automobile mechanic, 1987-1997)

#### 4. Clerk premium

1911-1934: BG<sup>1</sup>

- Unskilled: *manoeuvres*
- Skilled: *commis indigene*

1987-1995: OI-BoLS<sup>2</sup>

- CAF\_FB\_51\_M (labourer, 1987-1995)
- CAF\_FB\_46\_MF (office clerk, 1987-1995)

#### 5. Bank teller premium

1959-1976: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

1993-1997: OI-BoLS<sup>1</sup>

- CAF\_LA\_90\_MF (labourer, 1991-1997)
- CAF\_OA\_131\_MF (bank teller, 1991-1997)

#### Notes:

1. From 1935 onwards, the individual colonies of the AEF were merged. A few colony-level observations for the late 1930s, however, could be found in the Budget General of the AEF.
2. LaborSta sheet CAF\_OI\_1969-2008 extracted on 16/01/2015

## CÔTE D'IVOIRE

### 1. Carpenter premium

1906-1941: BG

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1949-1956: AS

- Unskilled: *manoeuvres ordinaires* (category 1)
- Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)

1956-1980: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1985-2001: OI-BoLS<sup>1, 2, 3</sup>

- CIV\_LA\_90\_M (labourer, 1985-2001)
- CIV\_LA\_88\_M (carpenter, 1985-2001)
- CIV\_KA\_80\_M (labourer, 1990)
- CIV\_LA\_88\_M (carpenter, 1990)

### 2. Electrician premium

1921-1941: BG

- Unskilled: *manoeuvres*
- Skilled: *electriciens*

- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1981: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1985-2001: OI-BoLS<sup>1, 2, 3</sup>
- CIV\_LA\_90\_M (labourer, 1985-2001)
  - CIV\_LA\_81\_M (building electrician, 1985-2001)
  - CIV\_KA\_80\_M\_LEA (labourer, 1990)
  - CIV\_LA\_81\_M\_LEA (building electrician, 1990)

### 3. *Mechanic premium*

- 1921-1941: BG
- Unskilled: *manoeuvres*
  - Skilled: *mecanicien*
- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1980: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1985-2001: OI-BoLS<sup>1, 2</sup>
- CIV\_LA\_90\_M (labourer, 1985-2001)
  - CIV\_PF\_159\_MF (automobile mechanic, 1985-2001)

### 4. *Clerk premium*

- 1903-1941: BG
- Unskilled: *manoeuvres*
  - Skilled: *commis indigène*
- 1958-1980: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: stock clerk and steno-dactylographer (average)
- 1985-2001: OI-BoLS<sup>1</sup>
- CIV\_LA\_90\_M (labourer, 1985)
  - CIV\_FB\_46\_MF (office clerk, 1985)
  - CIV\_KA\_80\_M (labourer, 1990-1997)
  - CIV\_KA\_77\_MF (office clerk, 1990-1997)
  - CIV\_LA\_90\_M (labourer, 2000-2001)
  - CIV\_FB\_46\_MF (office clerk, 2000-2001)

### 5. *Bank teller premium*

- 1958-1980: OI-BoLS<sup>4</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1985-1997: OI-BoLS<sup>1, 2, 3</sup>
- CIV\_LA\_90\_M (labourer, 1985-1997)
  - CIV\_OA\_131\_MF (bank teller, 1985-1997)

- CIV\_KA\_80\_M (labourer, 1990)<sup>2</sup>
- CIV\_OB\_131\_MF (bank teller, 1990)

#### Notes:

1. LaborSta sheet CIV\_O1\_1983-2008 extracted on 15/10/2014
2. Note that the years 1994-1997 (carpenters), 1994 (electricians), and 2000-2001 (bank tellers) were omitted due to negative values and/or a lack of within-industry variation.
3. The year 1990 gave the same min-max range in rates for all occupations in construction (LA). In order to capture an unskilled worker, we took the laborer from electric light and power (KA, 80B). For the artisanal skill-premium of construction workers (carpenters and building electricians) We combined this laborer with the lognormal of the minimum and maximum rates that were given for 88B (carpenters) and 81B (electricians).
4. Note that the year 1959 (bank tellers) was omitted due to an unexplained trend-break in the nominal wage series (suggesting a temporary deviation in the manner of reporting).

## CHAD

### *1. Carpenter premium*

1926-1937: BG

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1953-1955: AS

- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
- Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 4)<sup>1</sup>

1956-1970: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1986-1999: OI-BoLS<sup>3</sup>

- TCD\_LA\_90\_M (labourer, 1986-1999)
- TCD\_LA\_88\_M (carpenter, 1986-1999)

### *2. Electrician premium*

1953-1955: AS

- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
- Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 4)<sup>1</sup>

1956-1983: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)
- Part I – Hourly Wages: labourer (category 35, 1983 only)
- Part I – Hourly Wages: electrical fitter (category 34, 1983 only)

1986-1999: OI-BoLS<sup>3</sup>

- TCD\_LA\_90\_M (labourer, 1986-1999)
- TCD\_LA\_81\_M (carpenter, 1986-1999)

### *3. Mechanic premium*

- 1927: BG
- Unskilled: *manoeuvres*
  - Skilled: *mecanicien*
- 1953-1955: AS
- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
  - Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 4)<sup>1</sup>
- 1956-1970: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1986-1999: OI-BoLS<sup>3</sup>
- TCD\_LA\_90\_M (labourer, 1986-1999)
  - TCD\_PF\_159\_M (automobile mechanic, 1986-1999)

#### 4. Clerk premium

- 1921-1934: BG
- Unskilled: *manoeuvres*
  - Skilled: *commis indigène*
- 1986-1999: OI-BoLS<sup>3</sup>
- TCD\_LA\_90\_M (labourer, 1986-1999)
  - TCD\_PA\_142\_M (office clerk, 1986-1999)

#### 5. Bank teller premium

- 1958-1983: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: labourer (category 48, 1983 only)
  - Part II – Monthly Salaries: bank teller
- 1986-1999: OI-BoLS<sup>3</sup>
- TCD\_LA\_90\_M (labourer, 1986-1991)
  - TCD\_OA\_131\_MF (bank teller, 1986-1991)
  - TCD\_LA\_90\_M (labourer, 1996-1999)
  - TCD\_OA\_131\_M (bank teller, 1996-1999)

#### Notes:

1. From 1935 onwards, the individual colonies of the AEF were merged. A few colony-level observations for the late 1930s, however, could be found in the Budget General of the AEF.
2. Note that category 5 was unavailable for Tchad for 1955, so we took the value for category 4 instead for both 1953 and 1955
3. LaborSta sheet TCD\_O1\_1969-2008 extracted on 16/01/2015

### DEMOCRATIC REPUBLIC OF THE CONGO

#### 1. Carpenter premium

- 1951-1983: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)

## *2. Electrician premium*

1951-1983: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 29)

## *3. Mechanic premium*

1951-1979: OI-BoLS<sup>1,2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

## *4. Clerk premium<sup>3</sup>*

n.a.

## *5. Bank teller premium*

1957-1983: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

### Notes:

1. LaborSta file DOC\_O1\_1983-2008 was extracted on 16/01/2015, but contained no further wage data
2. Note that the year 1983 was omitted (mechanics) due to an unexplained trend break in the skill-premium series (both temporally and cross-sectionally).
3. Note that some scattered observations for stock clerks were available in the OI, but that we deemed the series too erratic to construct a timeseries.

## **ERITREA**

### *1. Carpenter premium*

1993-2000: OI-BoLS<sup>1</sup>

- ERI\_LA\_90\_M (labourer, 1993-2000)
- ERI\_LA\_88\_M (carpenter, 1993-2000)

### *2. Electrician premium*

1993-2000: OI-BoLS<sup>1</sup>

- ERI\_LA\_90\_M (labourer, 1993)
- ERI\_LA\_81\_M (building electrician, 1993)
- ERI\_LA\_90\_M (labourer, 1999-2000)
- ERI\_LA\_81\_MF (building electrician, 1999-2000)

### *3. Mechanic premium*

1993-2000: OI-BoLS<sup>1</sup>

- ERI\_LA\_90\_M (labourer, 1993-2000)
- ERI\_PF\_159\_M (automobile mechanic, 1993-2000)

### *4. Clerk premium*

1993-2000: OI-BoLS<sup>1</sup>

- ERI\_LA\_90\_M (labourer, 1993-2000)

- ERI\_PA\_142\_MF (office clerk, 1993-2000)

#### 5. *Bank teller premium*

1993-2000: OI-BoLS<sup>1</sup>

- ERI\_LA\_90\_M (labourer, 1993-2000)
- ERI\_OA\_131\_MF (bank teller, 1993-2000)

Notes:

1. No LaborSta file was downloaded for Eritrea

## ETHIOPIA

#### 1. *Carpenter premium*

1951-1976: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

#### 2. *Electrician premium*<sup>2</sup>

n.a.

#### 3. *Mechanic premium*<sup>2</sup>

n.a.

#### 4. *Clerk premium*

1955-1976: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer

#### 5. *Bank teller premium*

1951-1976: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

Notes:

1. No LaborSta file was downloaded for Ethiopia. The year that was available in BoLS did not have any unskilled workers in them.
2. Note that some observations were available in the BoLS, but that the data were so volatile (compared to the other artisan series – the carpenters) that we omitted them.

## GABON

#### 1. *Carpenter premium*

1915-1937: BG<sup>1</sup>

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1956-1984: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1986-1992: OI-BoLS
- GAB\_LA\_90\_M (labourer, 1986-1992)
  - GAB\_LA\_80\_M (carpenter, 1986-1992)

### 2. Electrician premium

- 1956-1984: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1986-1992: OI-BoLS
- GAB\_LA\_90\_M (labourer, 1986)
  - GAB\_LA\_81\_M (building electrician, 1986)
  - GAB\_KA\_80\_M (labourer, 1989)
  - GAB\_KA\_78\_MF (electric power lineman, 1989)
  - GAB\_KA\_80\_M (labourer, 1991-1992)
  - GAB\_KA\_78\_M (electric power lineman, 1991-1992)

### 3. Mechanic premium

- 1915-1934: BG<sup>1</sup>
- 1956-1984: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1991-1992: OI-BoLS
- GAB\_LA\_90\_M (labourer, 1991)
  - GAB\_PF\_159\_M (automobile mechanic, 1991)
  - GAB\_LA\_90\_M (labourer, 1992)
  - GAB\_NB\_110\_M (automobile mechanic, 1992)

### 4. Clerk premium

- 1911-1934: BG<sup>1,3</sup>
- Unskilled: *manoeuvres*
  - Skilled: *commis indigène*
- 1959-1978: OI-BoLS<sup>2,4</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: steno-dactylographer
- 1989-1992: OI-BoLS<sup>2</sup>
- GAB\_FB\_51\_M (labourer, 1989-1992)
  - GAB\_FB\_46\_M (office clerk, 1989-1992)

### 5. Bank teller premium

- 1959-1984: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1986-1992: OI-BoLS<sup>2</sup>
- GAB\_LA\_90\_M (labourer, 1986-1992)
  - GAB\_OA\_131\_M (bank teller, 1989-1992)

Notes:

1. From 1935 onwards, the individual colonies of the AEF were merged. A few colony-level observations for the late 1930s, however, could be found in the Budget General of the AEF.
2. Note that 1957 (carpenters), 1957 and 1962 (electricians), 1964 and 1966 (mechanics), 1963 and 1991 (clerks), and 1986 and 1992 (bank tellers) were omitted as a result of strange trend-breaks in the nominal wages series.
3. Note that the year 1921 was omitted due to inflation-related distortions in the skill-premium
4. Note that we took the minimum values for 1966-1967 (clerks), as these were more in line with the nominal wage trend than the lognormal of the minimum and maximum value.
5. No LaborSta file was downloaded for Gabon

## THE GAMBIA

### 1. Carpenter premium<sup>1,2</sup>

1870-1959: BBs/SPs/STs

### 2. Electrician premium<sup>1,2</sup>

1959: SPs

### 3. Mechanic premium<sup>1,2</sup>

n.a.

### 4. Clerk premium<sup>1,2</sup>

1900-1964: BBs/SL

### 5. Bank teller premium<sup>1,2</sup>

n.a.

#### Notes:

1. Note that the single year that was available in the ILO database (1983) gave the same wage rate for all occupations in construction (LA). Without an unskilled rate we were unable to compute a skill-premium for all categories.
2. No LaborSta sheet was extracted for Gambia

## GHANA

### 1. Carpenter premium

1881-1958: BBs/SPs/STs

1954-1979: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

### 2. Electrician premium

1933-1958: BBs/SPs/STs

- 1954-1979: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)

### 3. *Mechanic premium*

- 1925-1938: BBs
- 1954-1979: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

### 4. *Clerk premium*

- 1902-1932: BBs<sup>2</sup>
- 1957-1979: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: stock clerk and steno-dactylographer

### 5. *Bank teller premium*

- 1957-1979: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

### Notes:

1. LaborSta file (1983-2008) extracted on 16/01/2015, but due to more than 3 decades of heavy inflation, and only 2 observations that were available (2006-2007), we could not assess the reliability of this data available.
2. Note that we took grade 5 instead of grade 6 as the minimum for the years 1902-1911. We did so because the minimum pay levels in grade 6 were below that of a letter carrier, and we worried grade 6 was a *stagaire* level.
3. Note that the years 1967-1970 (stock clerks) were omitted due to negative values. Our series for these years reflect just the stenographer typists, and not the average of the two series.

## GUINEA

### 1. *Carpenter premium*

- 1905-1940: BG
- Unskilled: *manoeuvres*
  - Skilled: *charpentiers, menuisiers*
- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1957: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)

### 2. *Electrician premium*

- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1957: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)

### 3. *Mechanic premium*

- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1957: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

### 4. *Clerk premium*

- 1906-1911: BG
- Unskilled: *manoeuvres*
  - Skilled: *commis indigène*

### 5. *Bank teller premium*

n.a.

Notes:

1. No LaborSta file was downloaded for Guinea

## **KENYA**

### 1. *Carpenter premium*

- 1905-1955: BBs/SPs/STs
- 1984-1985: OI-BoLS<sup>1, 2</sup>
- KEN\_LA\_90\_M (labourer, 1984-1985)
  - KEN\_LA\_88\_M (carpenter, 1984-1985)

### 2. *Electrician premium*

- 1984-1985: OI-BoLS<sup>1, 2</sup>
- KEN\_LA\_90\_M (labourer, 1984-1985)
  - KEN\_LA\_81\_M (building electrician, 1984-1985)

### 3. *Mechanic premium*

- 1984-1985: OI-BoLS<sup>1, 2</sup>
- KEN\_LA\_90\_M (labourer, 1984-1985)
  - KEN\_PF\_159\_M (building electrician, 1984-1985)

### 4. *Clerk premium*

- 1947-1952: SPs

- 1984-1985: OI-BoLS<sup>1</sup>
- KEN\_PA\_142\_M (labourer, 1984-1985)
  - KEN\_PA\_142\_M (bank teller, 1984-1985)

*5. Bank teller premium*

- 1984-1985: OI-BoLS<sup>1, 2</sup>
- KEN\_LA\_90\_M (labourer, 1984-1985)
  - KEN\_OA\_131\_M (bank teller, 1984-1985)

Notes:

1. We omitted the years 1958-1967 out of concerns they include wages paid to non-African minorities.
2. LaborSta sheet KEN\_OI\_1983-2008 extracted on 18/08/2012

**LIBERIA**

*1. Carpenter premium*

- 1960-1981: OI-BoLS<sup>1, 2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)

*2. Electrician premium*

- 1960-1981: OI-BoLS<sup>1, 2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)

*3. Mechanic premium*

- 1960-1974: OI-BoLS<sup>1, 2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 25)

*4. Clerk premium<sup>3</sup>*

n.a.

*5. Bank teller premium*

- 1958-1967: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

Notes:

1. No Laborsta sheet was extracted for Liberia
2. Note that the year 1979 was omitted for carpenters and electricians and the year 1981 for mechanics due to a strange trend-break in the nominal wage series
3. Note that some observations were available for stock clerks and steno-dactylographers, but that we considered the reported rates too volatile to construct a reliable time-series.

## MADAGASCAR\*

### 1. Carpenter premium

1920-1936: BG

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1956-1977: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1987-2000: OI-BoLS

- MDG\_FB\_51\_M (labourer, 1987)
- MDG\_LA\_88\_M (carpenter, 1987)
- MDG\_LA\_90\_M (labourer, 1994-1995)
- MDG\_LA\_88\_M (carpenter, 1994-1995)
- MDG\_LA\_90\_MF (labourer, 1999-2000)
- MDG\_LA\_88\_MF (carpenter, 1999-2000)

### 2. Electrician premium

1956-1977: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1987-2000: OI-BoLS

- MDG\_FB\_51\_M (labourer, 1987)
- MDG\_LA\_81\_M (building electrician, 1987)
- MDG\_LA\_90\_M (labourer, 1994-1995)
- MDG\_LA\_81\_M (building electrician, 1994-1995)
- MDG\_LA\_90\_MF (labourer, 1999-2000)
- MDG\_LA\_81\_MF (building electrician, 1999-2000)

### 3. Mechanic premium

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1987-2000: OI-BoLS

- MDG\_FB\_51\_M (labourer, 1987)
- MDG\_NB\_110\_M (automobile mechanic, 1987)
- MDG\_LA\_90\_M (labourer, 1994-1995)
- MDG\_NB\_110\_M (automobile mechanic, 1994-1995)
- MDG\_LA\_90\_MF (labourer, 1999-2000)
- MDG\_NB\_110\_MF (automobile mechanic, 1999-2000)

### 4. Clerk premium

1987-2000: OI-BoLS

- MDG\_FB\_51\_M (labourer, 1987-1995)
- MDG\_FB\_46\_M (office clerk, 1987-1995)
- MDG\_FB\_51\_MF (labourer, 1999-2000)
- MDG\_FB\_46\_MF (office clerk, 1999-2000)

### 5. Bank teller premium

1959-1977: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1987-2000: OI-BoLS
- MDG\_LA\_90\_M (labourer, 1994-1995)
  - MDG\_OA\_131\_M (bank teller, 1994-1995)
  - MDG\_LA\_90\_MF (labourer, 1999-2000)
  - MDG\_OA\_131\_MF (bank teller, 1999-2000)

Notes:

1. No Laborsta sheet was extracted for Madagascar

## MALAWI

### *1. Carpenter premium*

- 1904-1954: BBs/SPs
- 1965-1968: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)<sup>1</sup>
- 1994-2002: OI-BoLS<sup>2</sup>
- MWI\_LA\_90\_M (labourer, 1994-2002)
  - MWI\_LA\_88\_M (carpenter, 1994-2002)

### *2. Electrician premium*

- 1965-1968: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1994-2001: OI-BoLS<sup>2, 3</sup>
- MWI\_LA\_90\_M (labourer, 1994-2001)
  - MWI\_LA\_81\_M (building electrician, 1994-2001)

### *3. Mechanic premium*

- 1949-1954: BBs/SPs
- 1966-1968: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1997-2002: OI-BoLS<sup>2, 3</sup>
- MWI\_LA\_90\_M (labourer, 1997-2002)
  - MWI\_PF\_159\_M (automobile mechanic, 1997-2002)

### *4. Clerk premium*

- 1949-1958: SPs<sup>3</sup>
- 1996-2002: OI-BoLS<sup>2</sup>
- MWI\_LA\_90\_M (labourer, 1996-1997)
  - MWI\_FB\_46\_M (office clerk, 1996-1997)
  - MWI\_LA\_90\_M (labourer, 1998-2002)
  - MWI\_PA\_142\_M (office clerk, 1998-2002)

### *5. Bank teller premium<sup>4</sup>*

n.a.

Notes:

1. The provided rates for the years 1976-1978 were dropped as these referred to the whole country and gave a strange upward dent in the series. For 1966 the rate for mechanics was dropped as well out of concerns about the inclusion of migrant/European workers in this rate (generating a skill-premium of 1,100%).
2. LaborSta sheet MWI\_O1\_1983-2008 extracted on 08/08/2012
3. Note that due to different ways of reporting of clerk wages in the SPs, we took a lognormal distribution of the provided rates (making it consistent with the way the unskilled rate was computed)
4. Note that we did not include the bank teller observations, as the exceptionally high rates we found for them raised concerns over these rates (also) reflecting non-African workers.

## MALI

### *1. Carpenter premium*

- 1903-1948: BG
- Unskilled: *manoeuvres*
  - Skilled: *charpentiers, menuisiers*
- 1949-1957: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1983: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1985-1990: OI-BoLS<sup>1</sup>
- MLI\_LA\_90\_M (labourer, 1985-1989)
  - MLI\_LA\_88\_M (carpenter, 1985-1989)
  - MLI\_LA\_90\_M (labourer, 1990)
  - MLI\_LA\_88\_M (carpenter, 1990)

### *2. Electrician premium*

- 1938-1948: BG
- Unskilled: *manoeuvres*
  - Skilled: *electricien*
- 1949-1957: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1983 OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1990: OI-BoLS<sup>1, 2</sup>
- MLI\_KA\_80\_M (labourer, 1990)
  - MLI\_KA\_78\_M (electric power lineman, 1990)

### 3. Mechanic premium\*

- 1949-1957: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1983 OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1990: OI-BoLS<sup>1, 2</sup>
- MLI\_KA\_80\_M (labourer, 1990)
  - MLI\_PF\_159\_M (automobile mechanic, 1990)

### 4. Clerk premium

- 1903-1948: BG
- Unskilled: *manoeuvres*
  - Skilled: *commis* (entry level)
- 1963-1983: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: stock clerks and steno-dactylographers
- 1985-1990: OI-BoLS<sup>1</sup>
- MLI\_LA\_90\_M (labourer, 1985-1989)
  - MLI\_PA\_142\_M (office clerk, 1985-1989)
  - MLI\_LA\_90\_M (labourer, 1990)
  - MLI\_PA\_142\_M (office clerk, 1990)

### 5. Bank teller premium

- 1970-1982: OI-BoLS<sup>4</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1985-1990: OI-BoLS<sup>1</sup>
- MLI\_LA\_90\_M (labourer, 1985-1989)
  - MLI\_PA\_142\_M (office clerk, 1985-1989)
  - MLI\_LA\_90\_M (labourer, 1990)
  - MLI\_PA\_142\_M (office clerk, 1990)

### Notes:

1. LaborSta sheet MLI\_O1\_1983-2008 extracted on 17/01/2015
2. For electricians and mechanics we did not use the reported wage observations for the years 1985-1989, as these did not refer to Bamako and were a clear break in the trend and levels of the nominal wage series and the SPs. For the other occupations, no such break in levels could be detected.
3. Note that we omitted the year 1970 (stock clerks), as it constituted a clear trend break in the nominal wage levels. The source reports that the stated wage includes “miscellaneous premiums” in this year.
4. Note that we started this series in 1970 instead of 1963, as the observations for 1962 and 1965 were minimum rates, and a clear deviation from the surrounding years that were average rates.

## MAURITANIA

### 1. Carpenter premium

1903-1934: BG

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1959-1967: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

### 2. Electrician premium

1959-1967: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

### 3. Mechanic premium

1931-1934: BG

- Unskilled: *manoeuvres*
- Skilled: *mecanicien*

1959-1967: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

### 4. Clerk premium

1963-1982: OI-BoLS<sup>1,2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: stock clerk

### 5. Bank teller premium

1961-1965: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

#### Notes:

1. No Laborsta sheet was extracted for Mauritania, and no wages were available in the AS
2. Note that we only took observations that were specified as “European”, and dropped the years 1962 and 1964 as a result.

## MAURITIUS

### 1. Carpenter premium

1871-1953: STs/BBs/SPs

1954-1984: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1985-2008: OI-BoLS<sup>1,2</sup>

- MUS\_LA\_90\_M (labourer, 1985-2008)
- MUS\_LA\_88\_M (carpenter, 1985-2008)

## 2. Electrician premium

1947-1953: SPs<sup>1</sup>

1954-1983: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1985-2008: OI-BoLS<sup>2</sup>

- MUS\_KA\_80\_M (labourer, 1985-2008)
- MUS\_KA\_78\_M (electric power lineman, 1985-2008)

## 3. Mechanic premium

1954-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1985-2008: OI-BoLS<sup>2</sup>

- MUS\_LA\_90\_M (labourer, 1985-2008)
- MUS\_PF\_159\_M (automobile mechanic, 1985-2008)

## 4. Clerk premium

1954-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: stock clerk

1983-2008: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33, 1983-1984 only)
- MUS\_LA\_90\_M (labourer, 1985-2008)
- MUS\_PA\_142\_MF (office clerk, 1985-2008)

## 5. Bank teller premium

1954-1984: OI-BoLS<sup>1, 3</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1985-2008: OI-BoLS<sup>2</sup>

- MUS\_LA\_90\_M (labourer, 1985-1998)
- MUS\_OA\_131\_M (bank teller, 1985-1998)
- MUS\_LA\_90\_M (labourer, 1999-2008)
- MUS\_OA\_131\_MF (bank teller, 1999-2008)

### Notes:

1. Note that the years 1956 (carpenters) and 1990 (bank tellers) were dropped due to strange trend break in the nominal wage series.
2. LaborSta sheet MUS\_OI\_1983-2008 extracted on 18/08/2012
3. Note that for the colonial period we selected only the minimum rate, out of concerns that the maximum rates may reflect (in part) a race-premium.

## MOZAMBIQUE

### 1. Carpenter premium

1988-1989: OI-BoLS<sup>1</sup>

- MOZ\_LA\_90\_M (labourer, 1988-1989)
- MOZ\_LA\_88\_M (carpenter, 1988-1989)

#### 2. Electrician premium

1988-1989: OI-BoLS<sup>1</sup>

- MOZ\_LA\_90\_M (labourer, 1988-1989)
- MOZ\_LA\_81\_M (building electrician, 1988-1989)

#### 3. Mechanic premium

1988-1989: OI-BoLS<sup>1</sup>

- MOZ\_LA\_90\_M (labourer, 1988-1989)
- MOZ\_NB\_110\_M (automobile mechanic, 1988-1989)

#### 4. Clerk premium

1987-1989: OI-BoLS<sup>1</sup>

- MOZ\_LA\_90\_M (labourer, 1987-1989)
- MOZ\_PA\_142\_M (office clerk, 1987-1989)

#### 5. Bank teller premium

1989: OI-BoLS<sup>1</sup>

- MOZ\_LA\_90\_M (labourer, 1989)
- MOZ\_OA\_138\_M (bank teller, 1989)

#### Notes:

1. No LaborSta file was downloaded for Mozambique

## **NIGER**

#### 1. Carpenter premium

1914-1940: BG

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1949-1955: AS

- Unskilled: *manoeuvres ordinaires* (category 1)
- Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)

1956-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1986-1987: OI-BoLS<sup>1</sup>

- NER\_LA\_90\_M (labourer, 1986-1987)
- NER\_LA\_88\_M (carpenter, 1986-1987)

#### 2. Electrician premium\*

1931-1940: BG

- Unskilled: *manoeuvres*
- Skilled: *electriciens*

1949-1955: AS

- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1986-1987: OI-BoLS<sup>1</sup>
- NER\_LA\_90\_M (labourer, 1987-1987)
  - NER\_LA\_81\_M (building electrician, 1986-1987)

### 3. *Mechanic premium\**

- 1924-1940: BG
- Unskilled: *manoeuvres*
  - Skilled: *mecaniciens*
- 1949-1955: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1984: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1986-1987: OI-BoLS<sup>1</sup>
- NER\_LA\_90\_M (labourer, 1985-1989)
  - NER\_PF\_159\_M (automobile mechanic, 1986-1987)

### 4. *Clerk premium*

- 1912-1940: BG
- Unskilled: *manoeuvres*
  - Skilled: *commis*
- 1959-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: stock clerk
- 1986-1987: OI-BoLS<sup>1</sup>
- NER\_FB\_51\_M (labourer, 1986-1987)
  - NER\_FB\_46\_M (office clerk, 1986-1987)

### 5. *Bank teller premium*

- 1959-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1986-1987: OI-BoLS<sup>1, 2</sup>
- NER\_LA\_90\_M (labourer, 1986-1987)
  - NER\_OA\_131\_M (bank teller, 1986-1987)

### Notes:

1. LaborSta sheet NER\_O1\_1983-2008 extracted on 17/01/2015
2. Note that we omitted the years 1957-62 (mechanics), and 1961-1962 (bank tellers) due to strange trend breaks in the nominal wage series

## NIGERIA

### *1. Carpenter premium*

1870-1958: BBs/SPs/STs

1951-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1985: OI-BoLS<sup>1, 2, 3</sup>

- NGA\_LA\_90\_M (labourer, 1985)
- NGA\_LA\_88\_M (carpenter, 1985)

### *2. Electrician premium*

1951-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1985: OI-BoLS<sup>1, 2, 3</sup>

- NGA\_LA\_90\_M (labourer, 1985)
- NGA\_LA\_81\_M (building electrician, 1985)

### *3. Mechanic premium*

1920-1924: BBs/SPs

1951-1984: OI-BoLS<sup>4</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

### *4. Clerk premium*

1956-1981: OI-BoLS<sup>4</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer and stock clerk

1985: OI-BoLS<sup>1, 2, 3</sup>

- NGA\_FB\_51\_M (labourer, 1985)
- NGA\_FB\_46\_M (office clerk, 1985)

### *5. Bank teller premium*

1951-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

### Notes:

1. LaborSta sheet NGA\_OI\_1983-2008 extracted on 18/08/2012
2. Note that the observations 1993-1997 were omitted due to a high inflation period
3. Note that we selected the average earnings series over the average rates series for 1985, as the latter gave a strange trend break, whereas the former fit near perfectly
4. Note that the years 1977 (mechanics) and 1959 and 1965 (stock clerks) were omitted due to respectively negative values and unexplained trend breaks in the nominal wage series.

## REPUBLIC OF THE CONGO

### 1. Carpenter premium

1919-1937: BG<sup>1</sup>

- Unskilled: *manoeuvres*
- Skilled: *charpentiers, menuisiers*

1953-1955: AS

- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
- Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 5)

1956-1979: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

### 2. Electrician premium

1919-1939: BG<sup>1</sup>

1953-1955: AS

- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
- Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 5)

1956-1979: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

### 3. Mechanic premium\*

1953-1955: AS

- Unskilled: *manoeuvres ordinaires* and *manoeuvres de force* (category 1)
- Artisanal: lognormal of the minimum value for *ouvrier spécialisé* (category 3) and the (only) value for *ouvrier hautement qualifié* (category 5)

1956-1976: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

### 4. Clerk premium\*

1960-1978: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer and stock clerk

### 5. Bank teller premium

1959-1979: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

Notes:

1. From 1935 onwards, the individual colonies of the AEF were merged. A few colony-level observations for the late 1930s, however, could be found in the Budget General of the AEF.
2. No LaborSta file was extracted for the Republic of the Congo

## SENEGAL

### 1. Carpenter premium

- 1982-1941: BG<sup>1</sup>
- Unskilled: *manoeuvres*
  - Skilled: *charpentiers, menuisiers*
- 1949-1957: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1968: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1992: OI-BoLS<sup>3</sup>
- SEN\_LA\_90\_MF (labourer, 1992)
  - SEN\_LA\_88\_MF (carpenter, 1992)

### 2. Electrician premium\*

- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1968: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1992: OI-BoLS<sup>3</sup>
- SEN\_LA\_90\_MF (labourer, 1992)
  - SEN\_LA\_81\_MF (building electrician, 1992)

### 3. Mechanic premium\*

- 1949-1956: AS
- Unskilled: *manoeuvres ordinaires* (category 1)
  - Artisanal: lognormal *ouvrier spécialisé* (category 4) and *ouvrier qualifié* (category 6)
- 1956-1968: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

### 4. Clerk premium\*

- 1960-1968: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: steno-dactylographer and stock clerk
- 1992: OI-BoLS<sup>3</sup>
- SEN\_LA\_90\_MF (labourer, 1992)
  - SEN\_PA\_142\_MF (office clerk, 1992)

### 5. Bank teller premium

- 1956-1968: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

- 1992: OI-BoLS<sup>3</sup>
- SEN\_LA\_90\_MF (labourer, 1992)
  - SEN\_OA\_131\_MF (bank teller, 1992)

Notes:

1. Note that the unskilled wage for Senegal before 1902 refers to combination of *canotiers* and *manoeuvres*. We did so, because few or no rates at all were available for *manoeuvres* in this period. For years where both categories were available, the rates paid to these two categories of unskilled labor were at par. Note that the artisanal rate for the years 1903 and 1904 refers to *forgerons* (blacksmiths). This category also moved at par with carpenters in other years, and was commonly included in the British sources under the broader category of ‘Trades’.
2. Note that observations after 1968 were omitted due to a lack of within-industry variation, which means we did not have an unskilled laborer.
3. LaborSta sheet SEN\_O1\_1983-2008 extracted on 15/10/2015

**SIERRA LEONE**

*1. Carpenter premium*

1870-1965: BBs/SPs/STs

1954-1980: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1986-1996: OI-BoLS<sup>1, 2</sup>

- SLE\_LA\_90\_M (labourer, 1986-1996)
- SLE\_LA\_88\_M (carpenter, 1986-1996)

*2. Electrician premium*

1946: SPs

1954-1980: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1986-1996: OI-BoLS<sup>1</sup>

- SLE\_LA\_90\_M (labourer, 1986-1996)
- SLE\_LA\_81\_M (building electrician, 1986-1996)

*3. Mechanic premium*

1932-1946: BBs/SPs

1954-1980: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1992-1996: OI-BoLS<sup>1, 3</sup>

- SLE\_LA\_90\_M (labourer, 1986-1996)
- SLE\_NB\_110\_M (automobile mechanic, 1986-1996)

*4. Clerk premium*

1978-1980: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)

- 1986-1996:      ▪ Part II – Monthly Salaries: steno-dactylographer and stock clerk  
 OI-BoLS<sup>1</sup>
- SLE\_FB\_51\_M (labourer, 1986-1992)
  - SLE\_FB\_46\_M (office clerk, 1986-1992)
  - SLE\_LA\_90\_M (labourer, 1993-1996)
  - SLE\_PA\_142\_M (office clerk, 1993-1996)

5. *Bank teller premium*<sup>4</sup>

n.a.

Notes:

1. LaborSta sheet SLE\_O1\_1983-2008 extracted on 18/08/2012
2. Note that the years 1992-1994 (carpenters), due to a lack of within-industry variation
3. Note that the years 1986-1987 and 1993-1994 (mechanics) were omitted due to temporary negative values. We worried about inflation-driven problems here, but could not check, as the World Bank did not have any inflation data for Sierra Leone.
4. Note that we did not use the bank teller series, as these series were very volatile and gave negative values. Since the World Bank did not have any data on inflation rates for Sierra Leone, we were unable to check whether shocks in the overall price level and time-lags in adjusting salary rates were driving this volatility.

**SUDAN**

1. *Carpenter premium*

- 1949-1981:      OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)

- 1990-1993:      OI-BoLS<sup>2</sup>
- SDN\_LA\_90\_MF (labourer, 1990-1993)
  - SDN\_LA\_88\_MF (carpenter, 1990-1993)

2. *Electrician premium*

- 1949-1981:      OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)

- 1990-1997:      OI-BoLS<sup>2</sup>
- SDN\_LA\_90\_MF (labourer, 1990-1993)
  - SDN\_LA\_81\_MF (bulding electrician, 1990-1993)
  - SDN\_KA\_80\_MF (labourer, 1997)
  - SDN\_KA\_78\_MF (electric power lineman, 1997)

3. *Mechanic premium*

- 1949-1977:      OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

- 1990-1997:      OI-BoLS<sup>2</sup>
- SDN\_FB\_51\_MF (labourer, 1990-1997)

- SDN\_NB\_110\_MF (automobile mechanic, 1990-1997)

#### 4. Clerk premium

1957-1959: OI-BoLS<sup>3</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer

1990-1997: OI-BoLS<sup>2</sup>

- SDN\_FB\_51\_MF (labourer, 1990-1997)
- SDN\_NB\_110\_MF (office clerk, 1990-1997)

#### 5. Bank teller premium

1957-1981: OI-BoLS<sup>3</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

1990-1993: OI-BoLS<sup>2</sup>

- SDN\_FB\_51\_MF (labourer, 1990-1993)
- SDN\_OA\_131\_MF (bank teller, 1990-1993)

#### Notes:

1. Note that we dropped the year 1976 (carpenters, electricians) due to a lack of within industry variation, the years 1977-1978 (carpenters, electricians) due to concerns about a temporary, but large peak in the skill-premium that we worry reflects inflation issues/oil crisis, and the years 1978-1981 (mechanics) due to negative values.
2. No LaborSta file was extracted for Sudan
3. Note that we dropped the data observations for the years 1970s (clerks and bank tellers) out of concerns of inflation-related volatility (reflecting a time-lag in adjusting salaries rather than a real phenomenon)

## TANZANIA

#### 1. Carpenter premium

1921-1941: BBs/SPs<sup>1</sup>

1953-1983: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

#### 2. Electrician premium<sup>3</sup>

n.a.

#### 3. Mechanic premium

1931-1948: BBs/SPs<sup>1</sup>

1953-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

#### 4. Clerk premium<sup>3</sup>

n.a.

### 5. *Bank teller premium*<sup>3</sup>

n.a.

#### Notes:

1. Note that when we returned to the original sources to create series for electricians and mechanics, we updated our JEH series to ensure that we only capture African labor in the carpenter series (and not Asian labor). Both our unskilled and carpenter wages now come from the section public works
2. No Laborsta file was extracted for Tanzania and no wages were available in the post-1983 ILO database
3. Note that we omitted the electrician, clerk, and bank teller series for Tanzania due to concerns about a change in reporting/the inclusion of Asian labor. With respect to the skill-premium for electricians, this series dropped from 460% in 1954 to 58% in 1964 (we do not observe similar volatility in the other artisan series).

## **TOGO\***

### *1. Carpenter premium*

1960-1983: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1990-1995: OI-BoLS<sup>1</sup>

- TGO\_LA\_90\_M (labourer, 1990-1995)
- TGO\_LA\_88\_M (carpenter, 1990-1995)

### *2. Electrician premium*

1960-1983: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1990-1995: OI-BoLS<sup>1</sup>

- TGO\_LA\_90\_M (labourer, 1990-1995)
- TGO\_LA\_81\_M (building electrician, 1990-1995)

### *3. Mechanic premium*

1960-1977: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

### *4. Clerk premium*

1960-1983: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer and stock clerk

### *5. Bank teller premium*

1960-1977: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

Notes:

1. No LaborSta file was extracted for Togo
2. Note that the years 1982-1983 were omitted due to a strange trend break in the nominal wage series that was not observed for the other artisans.

**UGANDA**

*1. Carpenter premium*

1907-1958: BBs/SPs<sup>1</sup>

1966-1967: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1993: OI-BoLS<sup>3</sup>

- UGA\_LA\_90\_MF (labourer, 1993)
- UGA\_\_LA\_88\_MF (carpenter, 1993)

*2. Electrician premium*

1947-1959: BBs/SPs

1966-1967: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1993: OI-BoLS<sup>3</sup>

- UGA\_LA\_90\_MF (labourer, 1993)
- UGA\_LA\_81\_MF (building electrician, 1993)

*3. Mechanic premium*

1966-1967: OI-BoLS<sup>2</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1993: OI-BoLS<sup>3</sup>

- UGA\_LA\_90\_MF (labourer, 1993)
- UGA\_PF\_159\_MF (automobile mechanic, 1993)

*4. Clerk premium<sup>4</sup>*

n.a.

*5. Bank teller premium<sup>4</sup>*

n.a.

Notes:

1. Note that we redid our original JEH series for the year before 1919, as the unskilled rate for those years was extrapolated backwards on the basis of a fixed carpenter-laborer SP.
2. Note that we dropped the year 1954 as these were minimum wages only and did not capture the scope of skilled labor (it created a significant deviation in skill-premiums from the rates reported in the SPs)
3. LaborSta sheet UGA\_O1\_1983-2008 extracted on 18/08/2012

4. Note that we did not include a series for clerks and bank tellers out of concerns about the inclusion of Asian labor.

## ZAMBIA

### *1. Carpenter premium*

1924-1963: BBs/SPs<sup>1, 2</sup>,

1951-1984: OI-BoLS<sup>3</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1985-1991: OI-BoLS<sup>4</sup>

- ZMB\_LA\_90\_M (labourer, 1985-1991)
- ZMB\_LA\_88\_M (carpenter, 1985-1991)

### *2. Electrician premium*

1951-1984: OI-BoLS<sup>3</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1985-1991: OI-BoLS<sup>4</sup>

- ZMB\_LA\_90\_M (labourer, 1985-1991)
- ZMB\_LA\_88\_M (carpenter, 1985-1991)

### *3. Mechanic premium*

1950-1963: BBs/SPs

1951-1984: OI-BoLS<sup>3, 6</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1986-1991: OI-BoLS<sup>4</sup>

- ZMB\_LA\_90\_M (labourer, 1986-1991)
- ZMB\_PF\_159\_MF (automobile mechanic, 1986-1991)

### *4. Clerk premium*

1974-1982: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: steno-dactylographer and stock clerk

1991: OI-BoLS<sup>4</sup>

- ZMB\_FB\_51\_M (labourer, 1991)
- ZMB\_FB\_46\_MF (office clerk, 1991)

### *5. Bank teller premium*

1975-1982: OI-BoLS<sup>5</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly Salaries: bank teller

1986-1988: OI-BoLS<sup>4, 6</sup>

- ZMB\_LA\_90\_M (labourer, 1986-1988)
- ZMB\_OA\_131\_MF (bank teller, 1986-1988)

Notes:

1. Note that the year 1953 (carpenters) was omitted due to a strange trend break in the nominal wage series from both the SPs and the ILO.
2. Note that we used the average of minimum and maximum rates (carpenters) for the 1950s instead of a lognormal based on wage distribution tables
3. Note that the years 1961-1964 (carpenters, electricians, and mechanics) were omitted due to concerns about a race premium (nominal wage series suddenly increase more than 10-fold)
4. No LaborSta file was extracted for Zambia
5. Note that years before 1975 (bank tellers) were excluded, as these referred to Europeans.
6. Note that the years 1976 (mechanics), and 1991 (bank tellers) were omitted as it generated a negative value.

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## ASIA

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### BANGLADESH

#### *1. Carpenter premium*

1870-1922: W&P, paper mill Bengal<sup>1</sup>

1952-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

1987-1998: OI-BoLS<sup>2</sup>

- BGD\_LA\_90\_M (labourer, 1987-1998)
- BGD\_LA\_88\_M (carpenter, 1987-1998)

#### *2. Electrician premium*

1952-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

1987-1998: OI-BoLS<sup>2</sup>

- BGD\_LA\_90\_M (labourer, 1987-1998)
- BGD\_LA\_81\_M (building electrician, 1987-1998)

#### *3. Mechanic premium*

1962-1984: OI-BoLS<sup>3</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1986-1998: OI-BoLS<sup>2</sup>

- BGD\_LA\_90\_M (labourer, 1989-1998)
- BGD\_PF\_159\_M (automobile mechanic, 1989-1998)

#### *4. Clerk premium*

1987-1998: OI-BoLS<sup>2, 3</sup>

- BGD\_LA\_90\_M (labourer, 1987-1998)
- BGD\_PA\_142\_MF (office clerk, 1987-1998)

### *5. Bank teller premium*

1962-1984: OI-BoLS

- Part I – Hourly Wages: labourer (category 33)
- Part II – Monthly salaries: bank teller

1986-1992: OI-BoLS<sup>2</sup>

- BGD\_LA\_90\_M (labourer, 1989-1992)
- BGD\_OA\_131\_MF (bank teller, 1989-1992)

#### *Notes:*

1. We used data for Western India (Bengal) for the earliest years, as Bangladesh was still part of British India at that time.
2. LaborSta file (1983-2008) extracted on 16/01/2015
3. Note that the years 1974-1975 (mechanics) and 1986 (clerks) were omitted due to negative values

## **CAMBODIA**

### *1. Carpenter premium*

1997-2001: OI-BoLS<sup>1,2</sup>

- KHM\_3C\_LA\_90\_MF (labourer, 1997-2001)
- KHM\_3C\_LA\_88\_MF (carpenter, 1997-2001)

### *2. Electrician premium*

1997-2001: OI-BoLS<sup>1,2</sup>

- KHM\_3C\_LA\_90\_MF (labourer, 1997-2001)
- KHM\_3C\_LA\_81\_MF (building electrician, 1997-2001)

### *3. Mechanic premium*

1997-2001: OI-BoLS<sup>1,2</sup>

- KHM\_3C\_LA\_90\_MF (labourer, 1997-2001)
- KHM\_3C\_OA\_133\_MF (automobile mechanic, 1997-2001)

### *4. Clerk premium*

1997-2001: OI-BoLS<sup>1,2</sup>

- KHM\_3C\_LA\_90\_MF (labourer, 1997-2001)
- KHM\_3C\_PA\_142\_MF (office clerk, 1997-2001)

### *5. Bank teller premium*

1997-2001: OI-BoLS<sup>1,2</sup>

- KHM\_3C\_LA\_90\_MF (labourer, 1997-2001)
- KHM\_3C\_OA\_131\_MF (bank teller, 1997-2001)

#### *Notes:*

1. LaborSta file KHM\_O1 1969-2008 extracted on 16/01/2015
2. Note that observations for the period 1993-1996 were omitted as these referred to state-owned enterprises

## CHINA

### 1. Carpenter premium

1929-1931: Yan 2007<sup>1</sup>

1990-2005: OI-BoLS<sup>2</sup>

- CHN\_FB\_51\_M (labourer, 1990-1993)
- CHN\_EB\_40\_M (cabinet maker, 1990-1993)
- CHN\_FB\_51\_MF (labourer, 2004-2005)
- CHN\_LA\_88\_MF (carpenter, 2004-2005)

### 2. Electrician premium

1990-1996: OI-BoLS<sup>2, 3</sup>

- CHN\_LA\_90\_M (labourer, 1990-1996)
- CHN\_LA\_81\_M (building electrician, 1990-1996)

### 3. Mechanic premium

1990-2005: OI-BoLS<sup>2, 3</sup>

- CHN\_LA\_90\_M (labourer, 1990-1996)
- CHN\_LA\_110\_M (automobile mechanic, 1990-1996)
- CHN\_LA\_51\_MF (labourer, 2004-2005)
- CHN\_LA\_110\_MF (automobile mechanic, 2004-2005)

### 4. Clerk premium

1870-1936: Yan 2007<sup>1</sup>

1990-1998: OI-BoLS<sup>2</sup>

- CHN\_KA\_80\_M (labourer, 1990-1998)
- CHN\_KA\_77\_M (office clerk, 1990-1998)

### 5. Bank teller premium

1990-2005: OI-BoLS<sup>2</sup>

- CHN\_FB\_51\_M (labourer, 1990-1998)
- CHN\_OA\_131\_M (bank teller, 1990-1998)
- CHN\_FB\_51\_MF (labourer, 2004-2005)
- CHN\_OA\_131\_MF (bank teller, 2004-2005)

#### Notes:

1. The Yan (2007) data is based on more than 44,000 wage and salary observations from the Chinese Maritime Customs (CMC) department. We combined table 4 and appendix table 2 to derive the clerk premium for China in this period. We adjusted the average rates Yan reports for unskilled and skilled (table 4) on the basis of the ratio of ‘coolies’ and ‘postal clerks’ to the median pay in each category. We computed the 1929-1931 carpenter premium on the basis of table 2.
2. LaborSta sheet CHN\_OI 1969-2008 extracted on 16/01/2015
3. Note that the years 1991, 1993-1994, and 1997-1998 (electricians), and the years 1992-1993, and 1997 (mechanics) were omitted due to negative values

## HONG KONG

### 1. Carpenter premium

- 1876-1940: BBs/STs<sup>1</sup>
- Labourer (1876-1940)
  - Carpenters (1876-1940)
- 1952-1983: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1993-2001: OI-BoLS<sup>3</sup>
- HKG\_LA\_90\_M (labourer, 1985-2003)
  - HKG\_LA\_88\_MF (carpenter, 1985-2003)

## 2. Electrician premium

- 1933-1940: BBs
- Labourer (1933-1940)
  - Electrician (1933-1940)
- 1951-1983: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1993-2001: OI-BoLS<sup>3</sup>
- HKG\_LA\_90\_M (labourer, 1985-2003)
  - HKG\_LA\_81\_MF (building electrician, 1985-2003)

## 3. Mechanic premium

- 1951-1968: OI-BoLS<sup>4</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

## 4. Clerk premium

- 1903-1939: BBs
- 1985-2008: OI-BoLS<sup>3, 5</sup>
- HKG\_FB\_51\_M (labourer, 1985-2008)
  - HKG\_FB\_46\_M (office clerk, 1985-2008)

## 5. Bank teller premium

- 1952-1983: OI-BoLS<sup>5</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: bank teller (category 37)
  - Part II – Monthly Salaries: bank teller
- 1985-2008: OI-BoLS<sup>3</sup>
- HKG\_FB\_51\_M (labourer, 1985-2008)
  - HKG\_OA\_131\_M (bank teller, 1985-2008)

## Notes:

1. The reported carpenter wages between 1897-1921 stated that these workers also received “board and lodging”. From 1922 onwards two types of rates for carpenters were reported: one with “board and lodging” and a second one “without board and lodging”. We corrected the pre-1922 series for the difference in rates between with and without board and lodging as observed in 1922 (34% extra).
2. Note that the year 1951 (carpenters) was omitted due to a strange trend break in the nominal wage series (potentially a problem of principle 15)

3. LaborSta sheet HKG\_O1 1969-2008 extracted on 16/01/2015
4. Note that we omitted all observations after 1968 (mechanics), and the years 1970-1983 (bank tellers) as these yielded negative values.
5. Note that we did not include the stock clerks and steno-dactylographer series for Hong Kong as the rates did not connect well with the preceding and subsequent office clerk series, and we worried about these salaries referring to slightly different tasks.

## INDIA

### 1. Carpenter premium

- 1870-1922: W&P, Orissa canals<sup>1</sup>  
 1938: YoLS 1938, p. 157<sup>2</sup>  
 1967-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1985-2000: OI-BoLS<sup>3</sup>
- IND\_LA\_90\_M (labourer, 1985-2000)
  - IND\_LA\_88\_M (carpenter, 1985-2000)

### 2. Electrician premium

- 1967-1983: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1985-2000: OI-BoLS<sup>3</sup>
- IND\_LA\_90\_M (labourer, 1985-2000)
  - IND\_LA\_81\_M (building electrician, 1985-2000)

### 3. Mechanic premium

- 1986-2000: OI-BoLS<sup>3</sup>
- IND\_LA\_90\_M (labourer, 1986-2000)
  - IND\_PF\_159\_M (automobile mechanic, 1986-2000)

### 4. Clerk premium

- 1986-2000: OI-BoLS<sup>3,4</sup>
- IND\_LA\_90\_M (labourer, 1986-2000)
  - IND\_PA\_142\_M (office clerk, 1986-2000)

### 5. Bank teller premium

- 1967-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1990-2000: OI-BoLS<sup>3</sup>
- IND\_LA\_90\_M (labourer, 1985-2000)
  - IND\_OA\_131\_MF (bank teller, 1985-2000)

## Notes:

1. We took the average of the wages that were reported for the two divisions (the Mahandi Division and the Brahmini-Baitari Division)

2. We took Bombay “coolies” for unskilled labor and “semi-skilled and skilled workers” for the artisanal skill-premium.
3. LaborSta sheet IND\_O1 1983-2008 extracted on 18/08/2012
4. Note that the years 1986 and 1999 (clerks), and the years 1994-1999 (mechanics) were omitted due to negative values

## INDONESIA

### 1. Carpenter premium

1870-1915: Dros 1992, Table 5.4, pp. 75-88

1951-1972: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: carpenter (category 29)

2005-2006: OI-BoLS<sup>2</sup>

- IDN\_LA\_90\_M (labourer, 2005-2006)
- IDN\_LA\_88\_M (carpenter, 2005-2006)

### 2. Electrician premium

1951-1972: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: electrical fitter (category 32)

2005-2006: OI-BoLS<sup>2</sup>

- IDN\_KA\_80\_MF (labourer, 2005-2006)
- IDN\_KA\_78\_MF (electric power lineman, 2005-2006)

### 3. Mechanic premium

1951-1972: OI-BoLS<sup>1</sup>

- Part I – Hourly Wages: labourer (category 33)
- Part I – Hourly Wages: garage mechanic (category 25)

1988-2006: OI-BoLS<sup>2</sup>

- IDN\_FB\_51\_MF (labourer, 1988-1989)
- IDN\_NB\_110\_MF (automobile mechanic, 1988-1989)
- IDN\_LA\_90\_M (labourer, 2005-2006)
- IDN\_NB\_110\_M (automobile mechanic, 2005-2006)

### 4. Clerk premium

1988-2006: OI-BoLS<sup>2</sup>

- IDN\_FB\_51\_MF (labourer, 1988-1989)
- IDN\_OC\_137\_MF (clerk of works, 1988-1989)
- IDN\_KA\_80\_MF (labourer, 2005-2006)
- IDN\_KA\_77\_MF (office clerk, 2005-2006)

### 5. Bank teller premium

1988-1991: OI-BoLS<sup>2, 3</sup>

- IDN\_FB\_51\_MF (labourer, 1988-1991)
- IDN\_OC\_131\_MF (bank teller, 1988-1991)

Notes:

1. Note that the years 1959-1963 were omitted due to concerns about the period of severe inflation following independence.
2. LaborSta sheet IDN\_O1 1969-2008 extracted on 17/01/2015
3. Note that we have omitted the year 1992 (bank tellers) due to a skill-premium of 0.

## JAPAN

### 1. Carpenter premium

- 1885-1921: LTES, table 16-1
- day labourer (miscellaneous)
  - carpenter (building)
- 1931-1939: LTES, table 16-2
- day labourer (stevedores and day labourers)
  - carpenter (construction)
- 1950-2004: LTES, table 19-40
- labourer (construction)<sup>1</sup>
  - carpenter (construction)

### 2. Electrician premium

- 1951-2004: LTES, table 19-40
- labourer (construction)<sup>1</sup>
  - electrician (construction)

### 3. Mechanic premium

- 1984-2004: LTES and OI-BoLS<sup>2,3</sup>
- LTES, table 19-40 (labourer<sup>1</sup> 1984-2004)<sup>3</sup>
  - JPN\_PF\_133\_M (automobile mechanic, 1984-2004)

### 4. Clerk premium

n.a.

### 5. Bank teller premium

- 1954-1958: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

### Notes:

1. After 1950, the LTES give different rates for day labourers that perform heavy and light work. We took an average of the two. For years where information on “labourers, light (male)” were missing, we interpolated on the basis of the trend of “labourers, light”.
2. LaborSta sheet JPN\_O1\_1983-2008 extracted on 18/08/2012, but no labourers were listed in it.
3. Note that we omitted the years 1995-2000 (mechanics) due to negative values.

## LAOS

*1. Carpenter premium*

- 1955: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)

*2. Electrician premium*

- 1955: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrician (category 32)

Notes:

1. No Laborsta file was extracted for Laos, and no observations were available for the post-1983 years.

**MALAYSIA**

*1. Carpenter premium*

- 1870-1939: BBs<sup>1</sup>
- Unskilled: Praedial
  - Artisanal: Trades
- 1953-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1988-1993: OI-BoLS<sup>2</sup>
- MYS\_LA\_90\_M (labourer, 1988-1993)
  - MYS\_LA\_88\_M (carpenter, 1988-1993)

*2. Electrician premium*

- 1953-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1988: OI-BoLS<sup>2</sup>
- MYS\_LA\_90\_M (labourer, 1988)
  - MYS\_LA\_81\_M (building electrician, 1988)

*3. Mechanic premium*

- 1953-1956: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

*4. Clerk premium*

- 1881-1938: BBs\*
- 1957-1981: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: steno-dactylographer
- 1993: OI-BoLS<sup>2</sup>
- MYS\_LA\_90\_M (labourer, 1993)

- MYS\_LA\_46\_M (office clerk, 1993)

### 5. Bank teller premium

- 1956-1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1988: OI-BoLS<sup>2</sup>
- MYS\_LA\_90\_M (labourer, 1988)
  - MYS\_LA\_131\_M (bank teller, 1988)

### Notes:

1. For the years 1879-1924, we took the average of the rates that were reported for Penang, Malacca and Dingdings. Note that the years 1871-1879 were not included due to a strange trend break in the nominal wage series for unskilled labor.
2. LaborSta sheet MYS\_OI\_1969-2008 extracted on 17/01/2015
3. Note that the year 1955 (mechanics) and 1982-1983 (clerks) were omitted due to negative values.

## MYANMAR

### 1. Carpenter premium

- 1951: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1985-2004: OI-BoLS<sup>1</sup>
- MMR\_LA\_90\_MF (labourer, 1985-1993)
  - MMR\_LA\_88\_M (carpenter, 1985-1993)
  - MMR\_LA\_90\_MF (labourer, 1994-2004)
  - MMR\_LA\_88\_MF (carpenter, 1994-2004)

### 2. Electrician premium

- 1951: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1985-2007: OI-BoLS<sup>1</sup>
- MMR\_LA\_90\_MF (labourer, 1985-1993)
  - MMR\_LA\_81\_M (building electrician, 1985-1993)
  - MMR\_LA\_90\_MF (labourer, 1994-2004)
  - MMR\_LA\_81\_MF (building electrician, 1994-2004)
  - MMR\_KA\_80\_MF (labourer, 2006-2007)
  - MMR\_LA\_81\_MF (building electrician, 2006-2007)

### 3. Mechanic premium

- 1951: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)

#### *4. Clerk premium*

- 1985-2007: OI-BoLS<sup>1</sup>
- MMR\_LA\_90\_MF (labourer, 1985-2004)
  - MMR\_PA\_142\_MF (office clerk, 1985-2004)
  - MMR\_LA\_90\_MF (labourer, 2006-2007)<sup>2</sup>
  - MMR\_PA\_142\_MF (office clerk, 1985-2004)

#### *5. Bank teller premium*

- 1951: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1991-2004: OI-BoLS<sup>1</sup>
- MMR\_LA\_90\_MF (labourer, 1991-2004)
  - MMR\_OB\_133\_MF (office clerk, 1985-2004)

#### Notes:

1. LaborSta sheet MMR\_O1\_1969-2008 extracted on 17/01/2015

### **PAKISTAN**

#### *1. Carpenter premium*

- 1870-1922: W&P, Railway Locomotive Workshop at Lahore
- 1951-1980: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 2002-2004: OI-BoLS<sup>1</sup>
- PAK\_FB\_51\_M (labourer, 2002-2004)
  - PAK\_LA\_88\_M (carpenter, 2002-2004)

#### *2. Electrician premium*

- 1951-1980: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 2002-2004: OI-BoLS<sup>1</sup>
- PAK\_FB\_51\_M (labourer, 2002-2004)
  - PAK\_LA\_81\_M (building electrician, 2002-2004)

#### *3. Mechanic premium*

- 1961-1983: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 2002-2004: OI-BoLS<sup>1, 3</sup>
- PAK\_FB\_51\_M (labourer, 2002-2004)
  - PAK\_PF\_159\_M (automobile mechanic, 2002-2004)

#### *4. Clerk premium*

- 1954-1980: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)

- 2002-2004:
  - Part II – Monthly Salaries: steno-dactylographer OI-BoLS<sup>1</sup>
  - PAK\_FB\_51\_M (labourer, 2002-2004)
  - PAK\_FB\_46\_M (office clerk, 2002-2004)

### 5. Bank teller premium

- 1951-1980: OI-BoLS<sup>4</sup>
  - Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

### Notes:

1. LaborSta sheet PK\_O1\_1983-2008 extracted on 30/08/2012
2. Note that we started our series in 1954 instead of 1953 based on principle 15 (1953 gave an outlying rate, and we worried about changes in reporting)
3. Note that we omitted the years 1953-1954 and 1956 (mechanics) due to great volatility in the nominal wage series. No such volatility was observed for the other artisan series in this period.
4. Note that the final years in the series (2002-2004) constitute a significant increase in the skill-premium (rising from 42% in 1980 to about 300% in the early 2000s). Since the gap in reporting is more than 20 years, we worried here about a change in the mode of reporting

## **PHILIPPINES**

### 1. Carpenter premium

- 1903-1928: SBPI
  - Unclassified labourer (1903-1924)
  - Laundries (1919)
  - Labourer, average (1925-1928)<sup>1</sup>
  - Carpenter (1903-1924)
  - Carpentry shops (1919)
  - Carpenter, average (1925-1928)<sup>1</sup>
- 1941-1965: YoPS
  - Unskilled labor (table 36a, 1941-1957)
  - Skilled labor (table 36a, 1941-1957)
  - Common labourers (table 8, 1959-1965)
  - Carpenters (table 8, 1959-1965)
- 1951-1983: OI-BoLS
  - Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1986-2004: OI-BoLS<sup>2, 3</sup>
  - PHL\_LA\_90\_MF (labourer, 1986-2004)
  - PHL\_LA\_88\_MF (carpenter, 1986-2004)

### 2. Electrician premium

- 1926-1928: SBPI
  - Labourer, average (1926-1928)<sup>1</sup>
  - Electrician, average (1926-1928)<sup>1</sup>

- 1959-1965: YoPS
- Common labourers (table 8)
  - Electrician (table 8)
- 1954-1983: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1986-2006: OI-BoLS<sup>2</sup>
- PHL\_LA\_90\_MF (labourer, 1986-2006)
  - PHL\_LA\_81\_MF (building electrician, 1986-2006)

### 3. *Mechanic premium*

- 1903-1928: SBPI
- Unclassified labourer (1903-1924)
  - Labourer, average (1925-1928)<sup>1</sup>
  - Mechanic (1903-1924)
  - Mechanic, average (1925-1928)<sup>1</sup>
- 1959-1965: YoPS
- Common labourers (table 8)
  - Mechanic (table 8)
- 1955-1983: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1989-2006: OI-BoLS<sup>2</sup>
- PHL\_LA\_90\_MF (labourer, 1986-2006)
  - PHL\_PF\_159\_MF (automobile mechanic, 1986-2006)

### 4. *Clerk premium*

- 1925-1928: SBPI
- Labourer, average (1925-1928)<sup>1</sup>
  - Linotypist (1925-1928)
- 1959-1965: YoPS
- Common labourers (table 8)
  - Linotypist (table 8)
- 1986-2006: OI-BoLS<sup>2</sup>
- PHL\_FB\_51\_MF (labourer, 1986-2006)
  - PHL\_FB\_46\_MF (office clerk, 1986-1995)
  - PHL\_PA\_142\_MF (office clerk, 2002-2006)

### 5. *Bank teller premium*

- 1955: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1986-2006: OI-BoLS<sup>2</sup>
- PHL\_LA\_90\_MF (labourer, 1986-2006)
  - PHL\_OA\_131\_MF (bank teller, 1986-2006)

#### Notes:

1. The format changed in this year, giving many data for laborers, carpenters, electricians and mechanics across many different sectors. Since it was not possible to take consistent matching categories, we took an average of the rates that were reported across sectors.

2. LaborSta sheet PHL\_O1\_1969-2008 extracted on 19/01/2015
3. Note that we omitted the years 1989, 1992, 1994-1995, and 2006 (carpenters) as a result of negative values.

## SINGAPORE

### *1. Carpenter premium*

- 1870-1939: ST/BBs<sup>1</sup>
- Praedial (1870-1924)
  - Trades (1870-1924)
  - Factory labourers (1938-1939)
  - Carpenters (1938-1939)
- 1953-1976: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1985-2007: OI-BoLS<sup>1, 2</sup>
- SGP\_LA\_90\_M (labourer, 1985-2007)
  - SGP\_LA\_88\_M (building electrician, 1985-2007)

### *2. Electrician premium*

- 1953-1976: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 1985-2007: OI-BoLS<sup>2</sup>
- SGP\_LA\_90\_M (labourer, 1985-2007)
  - SGP\_LA\_81\_M (carpenter, 1985-2007)

### *3. Mechanic premium*

- 1954-1976: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 1985-2007: OI-BoLS<sup>2</sup>
- SGP\_LA\_90\_M (labourer, 1985-2007)
  - SGP\_PF\_159\_M (automobile mechanic, 1985-2007)

### *4. Clerk premium*

- 1884-1938: BBs
- 1954-1976: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: steno-dactylographer
- 1985-2007: OI-BoLS<sup>2</sup>
- SGP\_FB\_51\_M (labourer, 1985-2007)
  - SGP\_FB\_46\_M (carpenter, 1985-2007)

### *5. Bank teller premium*

- 1954-1976: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller

- 1985-2007: OI-BoLS<sup>2</sup>
- SGP\_LA\_90\_M (labourer, 1985-2007)
  - SGP\_OA\_131\_M (bank teller, 1985-2007)

Notes:

1. Note that we omitted the years 1871-1875 and 1879-1881 (carpenters), due to volatility in the nominal wage series of unskilled labor as a result of changes in reporting. Additionally, we omitted the years 1915-1921, and 1986 and 1991 (carpenters) out of concerns about a WWI/post-war inflation-driven trend-break and negative values respectively.
2. LaborSta sheet SGP\_O1\_1969-2008 extracted on 17/01/2015
3. Note that we omitted the year 1958 (mechanics) due to a negative value

**SRI LANKA**

*1. Carpenter premium*

- 1925-1939: ST/BBs<sup>1</sup>
- Coolies, Colombo district (1925-1939)
  - Carpenters, Colombo district (1925-1939)
- 1956-1984: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1993-1996: OI-BoLS<sup>3, 4</sup>
- LKA\_LA\_90\_M (labourer, 1993-1996)
  - LKA\_LA\_88\_M (carpenter, 1993-1996)

*2. Electrician premium*

- 1979-1983: OI-BoLS<sup>2</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)

*3. Mechanic premium*

- 1988: OI-BoLS<sup>3, 4</sup>
- LKA\_DA\_28\_M (labourer, 1988)
  - LKA\_DA\_110\_M (labourer, 1988)

*4. Clerk premium*

- 1985-1988: OI-BoLS<sup>3</sup>
- LKA\_DA\_28\_M (labourer, 1985-1988)
  - LKA\_NB\_137\_M (clerk of works, 1985-1988)

*5. Bank teller premium*

- 1984: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 1985-1986: OI-BoLS<sup>1</sup>
- LKA\_DA\_28\_M (labourer, 1985-1986)
  - LKA\_OA\_131\_M (clerk of works, 1985-1986)

## Notes:

1. Note that we started our series in 1925 and did not use the category ‘Trades’ for Ceylon as a breakdown of this category in 1924 reveals it does not include carpenters (as it does for the category Trades in other colonies)
2. Note that we started our series for carpenters in the year 1956 and not 1954 and for electricians in the year 1979 on the basis of principle 15. We worried these earliest years being minimum rates only, and thereby not capturing the full spectrum of skilled artisanal labor.
3. LaborSta sheet LKA\_O1\_1969-2008 extracted on 23/01/2015
4. Note that we omitted the years 1997-2000 (carpenters), and 1984 (mechanics) due to a lack of within industry variation and negative value respectively

## **SOUTH KOREA**

### *1. Carpenter premium*

- 1909-1940: JCS
- Unskilled: category 30-1
  - Carpenters: category 0-1
- 1955-1980: OI-BoLS<sup>1</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 1984-2005: OI-BoLS<sup>2, 3</sup>
- KOR\_LA\_90\_M (labourer, 1984-2005)
  - KOR\_LA\_88\_M (carpenter, 1984-2005)

### *2. Electrician premium*

- 1955-1980: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrician (category 32)
- 1984-2006: OI-BoLS<sup>2, 3</sup>
- KOR\_LA\_90\_M (labourer, 1984-2006)
  - KOR\_LA\_81\_M (carpenter, 1984-2006)

### *3. Mechanic premium*

- 1987-2006: OI-BoLS<sup>1, 3, 4</sup>
- KOR\_LA\_90\_M (labourer, 1987-2006)
  - KOR\_PF\_133\_M (automobile mechanic, 1987-2006)

### *4. Clerk premium*

- 1978-1980: OI-BoLS<sup>3</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: steno-dactylographer and stock clerk
- 1984-2006: OI-BoLS<sup>1</sup>
- KOR\_FB\_51\_M (labourer, 1984-2006)
  - KOR\_FB\_46\_M (office clerk, 1984-2006)

### *5. Bank teller premium*

- 1984-2006: OI-BoLS<sup>1, 2</sup>
- KOR\_LA\_90\_M (labourer, 1984-2006)
  - KOR\_OA\_131\_M (bank teller, 1984-2006)

Notes:

1. Note that we omitted the years 1977 (carpenters) due to an unexplained trend break in the nominal wage series.
2. LaborSta sheet KOR\_O1\_1983-2008 extracted on 22/10/2014
3. Note that we omitted the years 1989, 1999, and 2006 (carpenters), the years 1978, 1992, and 1999 (electricians), the years 1984-1986, 1989-1993, 1997-1999 (mechanics), and the years 1967 and 1977 (clerks) due to negative values.
4. Note that we excluded the isolated observation for bank tellers and mechanics in 1955 as we could not assess whether significant changes in reporting had occurred in the 30 years until the next observation

**TAIWAN**

*1. Carpenter premium*

- 1951-1970: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: carpenter (category 29)
- 2002-2004: OI-BoLS<sup>1</sup>
- TWN\_LA\_90\_M (labourer, 2002-2004)
  - TWN\_LA\_88\_M (carpenter, 2002-2004)

*2. Electrician premium*

- 1951-1970: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: electrical fitter (category 32)
- 2002-2004: OI-BoLS<sup>1</sup>
- TWN\_LA\_90\_M (labourer, 2002-2004)
  - TWN\_LA\_81\_M (building electrician, 2002-2004)

*3. Mechanic premium*

- 1961-1970: OI-BoLS<sup>4</sup>
- Part I – Hourly Wages: labourer (category 33)
  - Part I – Hourly Wages: garage mechanic (category 25)
- 2003-2004: OI-BoLS<sup>1, 4</sup>
- TWN\_LA\_90\_M (labourer, 2003-2004)
  - TWN\_PF\_159\_M (automobile mechanic, 2003-2004)

*4. Clerk premium*

- 1870-1936: Yan 2007<sup>2</sup>
- 2003-2004: OI-BoLS<sup>1, 3</sup>
- TWN\_FB\_51\_M (labourer, 2002-2004)
  - TWN\_FB\_46\_M (office clerk, 2002-2004)

*5. Bank teller premium*

- 1951-1970: OI-BoLS
- Part I – Hourly Wages: labourer (category 33)
  - Part II – Monthly Salaries: bank teller
- 2002-2004: OI-BoLS<sup>1</sup>
- TWN\_LA\_90\_M (labourer, 2002-2004)
  - TWN\_OA\_131\_M (bank teller, 2002-2004)

Notes:

1. LaborSta sheet TWN\_O1\_1969-2008 extracted on 17/01/2015
2. The Yan (2007) data is based on more than 44,000 wage and salary observations from the Chinese Maritime Customs (CMC) department. We combined table 4 and appendix table 2 to derive the clerk premium for China in this period. We adjusted the average rates Yan reports for unskilled and skilled (table 4) on the basis of the ratio of ‘coolies’ and ‘postal clerks’ to the median pay in each category.
3. Note that the years 1953-1970 were not included, as the categories stock clerk and stenodactylographer did not connect well with surrounding levels and displayed mostly negative values.
4. Note that we start our series for mechanic in 1961 instead of 1958, following principle 15. The first three years of this series show significant nominal wage volatility compared to the other nominal wage series for artisans, including yielding a negative value. The nominal wage series seems to stabilize from 1961 onwards. Note that at the end tail of this series the year 2002 (mechanics) was also omitted due to a negative value.

**APPENDIX 2: TABLES**

**Table A2.1a: Average skill-premiums for carpenters in Asia (in %)**

	<b>1880-99</b>	<b>1900-19</b>	<b>1920-39</b>	<b>1940-59</b>	<b>1960-79</b>	<b>1980-99</b>	<b>2000-19</b>
Bangladesh	141	84	67	116	108	38	
Cambodia						43	43
China			63				28
Hong Kong	196	95	97	82	69	64	94
India	126	128	127		112	39	14
Indonesia	166	166		123	65		
Japan	45	48	45	38	51	31	18
Korea		81	119	115	123	22	6
Laos				151			
Malaysia	105	121	138	93	112	88	
Myanmar				133		54	39
Pakistan	145	129	125	144	149	97	24
Philippines		114	58	56	25	9	10
Singapore	119	112	120	92	66	21	48
Sri Lanka			115	49		43	
Taiwan				77	35		34

*Sources:* for a detailed description of the underlying wage series see appendix A.1

**Table A2.1b: Average skill-premiums for carpenters in Africa (in %)**

	1880-99	1900-19	1920-39	1940-59	1960-79	1980-99	2000-19
Angola				500		92	
Benin		232	138	136	106	105	
Botswana		272	86	110	104		
Burkina Faso			340	221	101	53	
Burundi					129	36	
Cameroon			179	101	77	80	
CAR		500	470	130	104	53	
Chad			398	314	173	114	
Cote d'Ivoire		423	402	168	75	36	8
DRC				85	38	59	
Eritrea						168	169
Ethiopia				365	398		
Gabon		284	178	129	97	37	
Gambia	181	168	220	192	52		
Ghana	127	146	233	151	77		
Guinea		251	159	150			
Kenya		220		139		59	
Liberia					123	100	
Madagascar			324	114	84	26	40
Malawi		401	190	201	283	75	81
Mali		408	276	135	122	134	
Mauritania		391	174	130	78		
Mauritius		80	78	101	56	69	39
Mozambique						53	
Niger		487	333	153	108	54	
Nigeria	233	248	293	166	50	10	
Rep. Congo		201	365	77	90		
Sudan				142	81	57	
Senegal	101	88	105	118	61	25	
Sierra Leone	285	232	228	136	57	12	
Tanzania			324	192	77	10	
Togo					112	104	
Uganda			149	197	139	80	
Zambia			276	177	77	24	

Sources: for a detailed description of the underlying wage series see appendix A.1

**Table A2.2a: Average skill-premiums for mechanics in Asia (in %)**

	<b>1900-19</b>	<b>1920-39</b>	<b>1940-59</b>	<b>1960-79</b>	<b>1980-99</b>	<b>2000-19</b>
Bangladesh			193	109	69	
Cambodia					43	43
China					39	49
Hong Kong			165	30		
India					53	4
Indonesia			203	100	121	16
Japan					11	3
Korea					14	8
Laos						10
Malaysia			24			
Myanmar					71	65
Pakistan			195	138		173
Philippines	160	102	34	54	11	29
Singapore			51	47	50	76
Sri Lanka					10	
Taiwan				50		25

*Sources:* for a detailed description of the underlying wage series see appendix A.1

**Table A2.2b: Average skill-premiums for mechanics in Africa (in %)**

	1900-19	1920-39	1940-59	1960-79	1980-99	2000-19
Angola			600		104	
Benin	366	170	135	137	159	
Botswana				127	156	
Burkina Faso		591	260	232	79	
Burundi				252	94	
Cameroon			150	125	158	
CAR	675		170	179	70	
Chad			338	279	233	
Cote d'Ivoire		404	212	264	67	16
DRC			125	80	270	
Eritrea					301	381
Ethiopia			468	306		
Gabon	216	116	135	152	90	
Gambia						
Ghana		186	91	74		
Guinea	423		141			
Kenya					99	
Liberia				178		
Madagascar			158	123	45	45
Malawi			270	300	278	269
Mali			124	174	94	
Mauritania		400	203	263		
Mauritius			93	62	65	18
Mozambique					96	
Niger		576	188	160	75	
Nigeria		284	148	60	35	
Rep. Congo			80	199		
Sudan			162	200	40	
Senegal		155	118	128		
Sierra Leone		454	119	89	40	
Tanzania		358	164	95		
Togo				175	172	
Uganda				313	48	
Zambia			121	103	54	

Sources: for a detailed description of the underlying wage series see appendix A.1

**Table A2.3a: Average skill-premiums for electricians in Asia (in %)**

	<b>1900-19</b>	<b>1920-39</b>	<b>1940-59</b>	<b>1960-79</b>	<b>1980-99</b>	<b>2000-19</b>
Bangladesh			99	70	44	
Cambodia					71	71
China					18	
Hong Kong		92	88	39	23	33
India				141	44	14
Indonesia			143	65		27
Japan			30	32	33	30
Korea			150	129	18	12
Laos			186			
Malaysia			36	79	54	
Myanmar			133		54	44
Pakistan			129	94	67	55
Philippines		64	52	51	38	17
Singapore			55	43	68	76
Sri Lanka				19	33	
Taiwan			70	33		50

*Sources:* for a detailed description of the underlying wage series see appendix A.1

**Table A2.3b: Average skill-premiums for electricians in Africa (in %)**

	1900-19	1920-39	1940-59	1960-79	1980-99	2000-19
Angola					178	
Benin		169	139	111	73	
Botswana				141		
Burkina Faso		553	208	93	77	125
Burundi				245	111	
Cameroon		160	173	154	126	
CAR			189	141	63	
Chad			334	335	185	
Cote d'Ivoire		387	198	104	36	8
DRC			117			
Eritrea					178	188
Ethiopia						
Gabon			150	119	34	
Gambia			105			
Ghana		183	153	89		
Guinea			160			
Kenya					130	
Liberia				196	150	
Madagascar			78	63	29	40
Malawi				356	145	32
Mali			127	169	98	
Mauritania						
Mauritius			104		64	45
Mozambique					59	
Niger		354	167	165	61	
Nigeria			107			
Rep. Congo			77	86		
Sudan			132	56	18	
Senegal			105	87	49	
Sierra Leone			91	59	9	
Tanzania						
Togo				122	104	
Uganda			245	258	80	
Zambia			126	88	30	

Sources: for a detailed description of the underlying wage series see appendix A.1

**Table A2.4a: Average skill-premiums for clerks in Asia (in %)**

	<b>1900-19</b>	<b>1920-39</b>	<b>1940-59</b>	<b>1960-79</b>	<b>1980-99</b>	<b>2000-19</b>
Bangladesh				96	29	
Cambodia					82	82
China	249	258			10	
Hong Kong	344	229			36	32
India					12	9
Indonesia					47	10
Japan						
Korea					43	86
Laos						
Malaysia	413	480	194	119	37	
Myanmar					82	58
Pakistan			244	92	31	36
Philippines		186	121	97	21	16
Singapore	558	437	215	153	58	60
Sri Lanka					49	
Taiwan	249	259				53

*Sources:* for a detailed description of the underlying wage series see appendix A.1

**Table A2.4b: Average skill-premiums for clerks in Africa (in %)**

	1900-19	1920-39	1940-59	1960-79	1980-99	2000-19
Angola					120	
Benin	393	305		188	87	
Botswana					150	
Burkina Faso		705	388	256	72	65
Burundi					145	
Cameroon			246	193	163	
CAR	468	543	278	223	88	
Chad		912		338	100	
Cote d'Ivoire	638	584	329	135	41	8
DRC						
Eritrea					128	
Ethiopia			1,102	992		
Gabon	275	249	217	161	119	
Gambia	288	222	155	89		
Ghana	243	196	78	50		
Guinea	436					
Kenya			166		167	
Liberia				281		
Madagascar	336		164	178	27	23
Malawi			308		165	118
Mali	384	352	312	218	128	
Mauritania				173		
Mauritius			135	73	72	46
Mozambique					49	
Niger	470	458	394	217	71	
Nigeria			160	107	36	
Rep. Congo		547		163		
Sudan			276		28	
Senegal				116	34	
Sierra Leone				101		
Tanzania						
Togo				174	196	
Uganda						
Zambia				124	41	

Sources: for a detailed description of the underlying wage series see appendix A.1

**Table A2.5a: Average skill-premiums for bank tellers in Asia (in %)**

	1950s	1960s	1970s	1980s	1990s	2000s
Bangladesh		265	84	47	54	
Cambodia					114	114
China					37	89
Hong Kong	326	124		40	40	59
India		916	1,012	641	237	168
Indonesia				47	43	
Japan	115					
Korea	47			66	23	41
Laos	235					
Malaysia	152	131	132	67		
Myanmar	133			61	70	59
Pakistan	245	120	99	42		
Philippines	177			96		64
Singapore	204	216	179	69	63	93
Sri Lanka				105		
Taiwan	165	206				64

*Sources:* for a detailed description of the underlying wage series see appendix A.1

**Table A2.5b: Average skill-premiums for bank tellers in Africa (in %)**

	1950s	1960s	1970s	1980s	1990s	2000s
Angola				145		
Benin		267	228	134	93	
Botswana			397	156		
Burkina Faso		245	261	56	72	67
Burundi		550	332	282		
Cameroon	291	219	313	318		
CAR	796	763	748		772	
Chad		759	464	559	269	
Cote d'Ivoire	248	110	49	35	25	
DRC	502	234	234	295		
Eritrea					164	194
Ethiopia	723	1,257	1,050			
Gabon	665	302	121	99	53	
Gambia						
Ghana	359	138	137			
Guinea						
Kenya				427		
Liberia			278			
Madagascar		232	97		54	20
Malawi						
Mali			344	296	333	
Mauritania		270				
Mauritius	669	404	294	196	92	109
Mozambique				258		
Niger	412	394	269	96		
Nigeria	368	237	200	32		
Rep. Congo		317	77			
Sudan	266				45	
Senegal		211			47	
Sierra Leone						
Tanzania						
Togo		381	298			
Uganda						
Zambia			285	200		

Sources: for a detailed description of the underlying wage series see appendix A.1