



Edited by Karin Hofmeester and Pim de Zwart

Colonialism, Institutional Change, and Shifts in Global Labour Relations

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Work Around the Globe: Historical Comparisons and Connections

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Most human beings work, and growing numbers are exposed to labour markets. These markets are increasingly globally competitive and cause both capital and labour to move around the world. In search of the cheapest labour, industries and service-based enterprises move from West to East and South, but also, for example, westwards from China's east coast. People move from areas with few employment opportunities to urban and industrial hubs, both between and within continents. However, labour relations have been shifting already for centuries, labour migrations go back far in time, and changing labour relations cannot be comprehended without history. Therefore, understanding these developments and their consequences in the world of work and labour relations requires sound historical research, based on the experiences of different groups of workers in different parts of the world at different moments in time, throughout human history.

The research and publications department of the International Institute of Social History (IISH) has taken on a leading role in research and publishing on the global history of labour relations. In the context of Global Labour History, three central research questions have been defined: (1) What labour relations have emerged in parallel with the rise and advance of market economies? (2) How can their incidence (and consequently the transition from one labour relation to another) be explained, and are these worldwide transitions interlinked? (3) What are the social, economic, political, and cultural consequences of their changing incidence, and how do they relate to forms of individual and collective agency among workers? These three questions are interconnected in time, but also in space. Recent comparative Global Labour History research demonstrates that shifts in one part of the globe have always been linked to shifts in other parts.

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2 The Industrialization of the Developing World and Its Impact on Labour Relations, 1840s to 1940s

William G. Clarence-Smith

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Abstract

The deindustrialization of the developing world is a myth. Modern manufacturing extended beyond the import substitution of consumer products to modernizing handicrafts, export processing, intermediate and light capital goods, and certain services. Developing economies were held back, partly by internal factors resulting in low productivity, and partly by aspects of imperialism. While some Westerners sought modernization, others followed “romantic anti-capitalism”, and Western labour leaders obtained protection to save jobs for their followers. Manufacturing did well in the era of free trade, and faltered after 1914. The impact on labour relations was ambivalent. Modern industry is usually linked to free wage labour, but slaves, bonded workers, family members, and part-time peasants all worked in manufacturing in the developing world.

Keywords: handicrafts, import substitution, export processing, imperialism, protection, labour

Introduction

It is argued in this chapter that the deindustrialization of the developing world in modern times is a myth. However, no attempt is made to quantify the scale and speed of industrial growth in these lands. Only a radical re-thinking of the issue will enable cliometricians to begin the arduous task of revising the statistics, from the bottom up.

Historiographical blindness to industrialization in the developing world partly reflects the influence of Dependency Theory. For “dependentistas”, the purpose of free trade was not to increase the wealth of all while securing world peace. Instead, free traders set out to destroy existing industries on the “periphery”, prevent the creation of new ones there, and keep manufacturing as a monopoly of “core” countries. The public institutions of late-developing countries therefore had to intervene in a wide variety of fields to achieve industrialization.¹

Jeffrey Williamson has recently restated the deindustrialization thesis, while pointing to causes that were economic rather than political. In the nineteenth century, terms of trade favoured raw materials, causing the Third World to turn to the production of primary goods. Producing raw materials harmed long-term economic growth, however, because techniques failed to raise the productivity of labour. As terms of trade gradually became less favourable for primary goods, Third World industrialization began on a modest scale. Williamson further proposes that prices for raw materials were particularly volatile, damaging the economies of primary producers.²

Although coming at the issue from different perspectives, these two schools of thought work in terms of a priori definitions. As Kathy Ferguson writes, with regard to feminism, “The questions we can ask about the world are enabled, and other questions disabled, by the frame that orders the questioning. When we are busy arguing about the questions that appear within a certain frame, the frame itself becomes invisible; we become enframed within it.”³

As a result of distorting ideological frames, research on the industrialization of the developing world, and the impact this had on labour relations, remains in its infancy. Two decades ago, Ian Brown rightly noted, referring to Southeast Asia, that “distressingly little has been written on the growth of modern industry”, even though the sector was “surprisingly substantial” by 1938.⁴ Since he wrote that, advances in research have been limited, not just with regard to Southeast Asia, but also across all developing economies.

For labour relations, the extent and nature of industrialization in the Global South had significant implications, though these are not what they might appear to be at first glance. A larger manufacturing sector than heretofore envisaged might seem to imply a more precocious proletarianization

1 Wallerstein, *The Modern World-System*; Jean Batou, *Cent ans de résistance au sous-développement*; Kemp, *Industrialisation in the Non-Western World*.

2 Williamson, *Trade and Poverty*.

3 Ferguson, *The Man Question*, p. 7.

4 Brown, *Economic Change in Southeast Asia*, pp. 204, 214.

of labour than that portrayed in previous literature. In reality, however, the types of industry that developed were extremely diverse, ranging from enormous state-of-the-art factories to partially modernized workshops. Moreover, the social and cultural contexts in which industrialization expanded also differed greatly. Unsurprisingly, all the forms of labour analysed in this volume were represented, whether reciprocal, tributary, or commodified.

Industrialization in developing economies: An overview

Modern manufacturing is defined as the application of inanimate energy, machinery, and scientific knowledge to produce both goods and services. Supplies of inanimate energy progressed from coal-fired steam engines, through oil-fired engines, to electric motors. From this perspective, it makes no sense to limit industrialization to the import substitution of consumer goods for the internal market, as Gregg Huff does for Malaya. Indeed, he soon finds himself obliged to consider other forms of manufacturing.⁵ It is even more perilous to take the production of finished textiles for the internal market as a proxy for industrialization, as Williamson does, following in the footsteps of many before him.⁶ Communist commentators demonstrated yet another ideological obsession, by stressing heavy capital goods, for example, at the Sixth Comintern Congress of 1928.⁷

A more satisfactory enframing of industrialization must extend to types of manufacturing other than the factory-based import substitution of consumer goods. Export-substituting plant, processing raw materials for foreign markets, was of great significance. The frame of reference should also be enlarged to consider the production of intermediate and light capital goods for internal consumption, industrialized services, and handicrafts, all of which almost imperceptibly became industrial. Although there remains a crucial question as to why most developing economies did not industrialize more deeply and more rapidly, it is wise to begin with what was actually achieved.

The balance between the impact of internal and external factors on industrialization is hard to establish. As Sidney Pollard observes, internal factors largely explain why Scandinavia overcame the challenges faced by the “third wave” of industrialization, whereas many parts of southern and

5 Huff, “Boom-or-Bust Commodities”, p. 1075 (n2).

6 Williamson, *Trade and Poverty*, pp. 60–61.

7 Tyabji, *Colonialism*, pp. 2–3.

eastern Europe did not.⁸ Internal factors could be institutional in a narrow sense, for example, in terms of governance, but could also embrace wider social and cultural factors, which would fall into Douglass North's broad definition of institutions.⁹ In this vein, historians of East Asia have debated skill sets, and views of society and the world.¹⁰

Imperialism is the external factor most commonly blamed for hampering industrialization, but its impact was equivocal. Westerners sometimes attempted to impose a package of relentless modernization on "the rest", including factories.¹¹ Vietnam was set to become a "new Japan" in the 1930s, even though the plans met with strong domestic opposition in France, and were only partially enacted before the outbreak of war.¹² At the opposite end of the spectrum, an ethos of romantic anti-capitalism sought to protect subjects from "dark Satanic mills".¹³ One example was Catholic missionary theocracies in Angola, harking back to the famous Jesuit Reductions of Paraguay.¹⁴

To the extent that imperialist protectionism harmed industrial growth in developing economies, it often originated in institutions of organized labour. Leaders flexed their growing muscles – industrial and political – to hinder the establishment of factories on the periphery, believing that they were saving jobs at home for their members. Trade unionists allied with marginal and declining industrialists, whereas many dynamic and successful entrepreneurs favoured peripheral industrialization. Jacques Marseille was a pioneer of analysing this process in France and its empire, and it could also be observed in the Portuguese case.¹⁵

In terms of periodization, Williamson wrongly asserts that the nadir of Third World industry correlated with the zenith of free trade in the long nineteenth century. The era of free trade actually involved a rapid development of factories for export processing and intermediate goods, the industrialization of some services, and a hesitant emergence of import-substituting industries, whether craft based or not. Conditions were favourable in many respects. The "colonial peace" was generally achieved quickly and cheaply, due to the technological gap between the West and the

8 Pollard, *Peaceful Conquest*, pp. 220-221, 233-234.

9 North, *Institutions*.

10 Chan, *Business Expansion*; Tanimoto, *The Role of Tradition*.

11 Warren, *Imperialism*.

12 Bernard, *Nouveaux aspects*, pp. 79-84.

13 Löwy and Sayre, *Romanticism*; Kaarsholm, *Imperialism*.

14 Clarence-Smith, *Slaves*, pp. 89-93.

15 Marseille, *Empire colonial*; Marseille, "The Phases of French Colonial imperialism"; Clarence-Smith, *The Third Portuguese Empire*.

rest.¹⁶ Existing infrastructure remained largely unscathed by fighting, and security favoured investment in expensive, risky, and lumpy fixed capital assets.¹⁷ International migration lowered labour costs and raised skills, and the “coolie system” was not a modern form of slavery.¹⁸ Non-Western diasporic entrepreneurs brought capital, commercial skills, and an intimate knowledge of markets. They were usually more active and effective in fomenting early manufacturing than firms from colonial metropolises.¹⁹

By contrast, growing protectionism, particularly from 1914, did much less than Williamson asserts to boost industrialization in developing economies. Protection negatively affected export substitution, while timid attempts at import substitution were incoherent, ineffective, and at times counterproductive. Deepak Lal elegantly argues this for the Indian case, with a wealth of statistical data.²⁰

Overall, the industrialization of developing economies consisted of loosely connected strands. Some craft workshops evolved into industrial units, while new factories emerged from the 1850s. Both sectors were oriented to the internal market, but also exported their wares. Modern factories supplied intermediate goods, including light capital equipment, to local and regional markets, simultaneously sustaining newly industrialized transport and energy services. The processing of “primary goods”, chiefly for export, was probably the most significant industrial development, yet scholars have accorded little importance to this phenomenon.²¹

The nine lives of artisans

Logically, dependentistas are wrong to point to the alleged destruction of handicrafts as deindustrialization, because households and workshops were not modern factories. Artisans worked with simple tools, employed mainly human or animal energy, and relied on useful and reliable knowledge, as in the case of Persia.²² However, crafts are important to this story,

16 Callwell, *Small Wars*.

17 Ferguson, *Empire*.

18 Northrup, *Indentured Labor*.

19 Cohen, *Global Diasporas*; Baghdiantz McCabe, Harlaftis, and Pepelasis Minoglou, *Diaspora Entrepreneurial Networks*; Dobbin, *Asian Entrepreneurial Minorities*; Clarence-Smith, “Indian and Arab Entrepreneurs”.

20 Lal, *The Hindu Equilibrium*, pp. 189-198.

21 Pomeranz, *The Pacific*.

22 Mohebbi, *Techniques*.

not only because they survived more effectively than dependentistas allege, but also because some of them gradually approximated to modern industries.

The *cause célèbre* of the imperialist “destruction” of crafts is the fate of Indian weaving, dominant in the global cotton textile markets of the eighteenth century.²³ A tweet that went viral in 2015 put the argument in dramatic terms: “The British cut off the thumbs of Bengali weavers, smashed their looms, and placed high duties on textile imports into Britain from India.”²⁴ The last accusation is partly true, even if the tariff of 1813 was introduced in a large part to finance the Napoleonic Wars, and imports from India failed to recover when British tariffs soon fell again in times of peace.²⁵ As for allegations of cutting off thumbs and breaking looms, they are unsupported by evidence, and contrary to logic. The East India Company, which governed India until 1858, benefited from exporting locally woven textiles to Britain, and feared nothing more than an uprising in India. References to cutting off weavers’ thumbs are indeed heard in Bengal into our own times, but in a metaphorical sense.²⁶

Karl Marx’s argument, in *Das Kapital*, was instead that Indian handicrafts succumbed to imports of cheap industrial goods. He thus stresses the power of machines to create unemployment. In support of his position, Marx cites Governor-General William Bentinck in 1834, to the effect that “the bones of the cotton weavers are bleaching the plains of India.”²⁷ However, Marx never went to India, and his apocalyptic portrayal has been undermined by decades of painstaking research. Historians now argue that free trade neither destroyed nor devitalized Indian artisans across the board. Instead, the fortunes of different crafts varied tremendously. Hand spinning of yarn retrogressed, whereas handloom weaving boomed, stimulated by the availability of cheap, strong, consistent, machine-made yarn. Dyeing and printing similarly benefited from imports of industrial dyes. The fate of all branches often depended on niche markets.²⁸

The situation in China was similar. As late as 1933, some two-thirds of China’s sizeable manufacturing output was estimated to come from the artisanal sector. Albert Feuerwerker acknowledges that imports,

23 Parthasarathi, *Why Europe Grew Rich*.

24 Tharoor, “Viewpoint”. Thanks to Peter Clarence-Smith for drawing my attention to this.

25 Lal, *The Hindu Equilibrium*, p. 183.

26 Dhamija, “Regional Weavers of India”, p. 142.

27 Elster, *Karl Marx*, p. 94.

28 Roy, *Traditional Industry*, pp. 20–23, 61–65; Charlesworth, *British Rule*, pp. 33–34; Haynes, *Small Town Capitalism*, pp. 5–18; Tyabji, *Colonialism*, pp. 25–26.

increasingly from Japan rather than the West, disrupted handicrafts, but he also demonstrates how some branches effectively reorganized and expanded. Thus, though spinning generally declined, some weavers blended hand-spun weft with machine-made warp, to produce a more durable cloth. Oil pressing and rice milling were among other sectors that stood up well to competition from imports.²⁹

Historians of the Middle East have proposed a revisionist account along the same lines.³⁰ Although hand spinning declined, neither wheel nor spindle vanished. Indeed, in 1900, hand-spun yarn still accounted for about a quarter of Ottoman needs. As in China, artisans mixed machine-made warp and hand-made weft to produce a popular fabric.³¹ Overall, Suraiya Faruqi opines, there was probably no absolute decline in Ottoman handicrafts, in terms of either output or employment.³²

Charles Issawi initially accepted the notion of the destruction of crafts, but by 1982 he had come to recognize that retrogression in some sectors, such as spinning, was counterbalanced by expansion in others. Examples of growth include weaving with imported machine-made yarn, and dyeing and printing with imported aniline dyes. In the same way, metals, leather, wood, pottery, and glass experienced varying fates.³³

Guilds have bedevilled the issue in the Middle East, because historians have taken the decline of these institutions as a proxy for the retrogression of handicrafts. However, local elites, obsessed with political opposition from guilds, and dreaming romantically of factories, scarcely noticed the large and growing number of non-guild crafts, which were especially prevalent in rural areas.³⁴

As for other parts of the world, Donald Quataert exaggerates when he suggests that there were lightly populated economies that “entirely de-industrialized and switched over to the agricultural or emerging service sectors of the new, Third, world”.³⁵ Kenneth Pomeranz sees the allure of this view, but rightly notes a need for careful qualification.³⁶ Southeast Asia is especially relevant in this regard, as geography opened the region to

29 Feuerwerker, *The Chinese Economy*, pp. 30-43; Feuerwerker, “Handicraft”; Myers, *The Chinese Economy*, pp. 133-134.

30 Quataert, *Ottoman Manufacturing*; Owen, *The Middle East*.

31 Quataert, *Ottoman Manufacturing*, pp. 23-24, 36-40, 148-149.

32 Faruqi, *Artisans of Empire*, pp. 186-188, 192-193, 195-196.

33 Issawi, *An Economic History*, pp. 151-153. See also Owen, *The Middle East*, pp. 93-95.

34 Quataert, *Ottoman Manufacturing*, pp. 6-14.

35 *Ibid.*, pp. 15-16.

36 Pomeranz, *The Pacific*, pp. xiv-xvii, xxxvi.

sea-borne imports more than anywhere else on the globe. And yet, weaving grew, stimulated by the availability of machine-made yarn. Dyeing, notably the reputed batiks of Java, benefited from supplies of machine-made cambric cloth and industrial dyes.³⁷ Even spinning persisted, for example, in the eastern archipelago, where both drop-spindles and wheels continued into modern times.³⁸

Some of Sub-Saharan Africa's artisans also survived and adapted, such as producers of cotton textiles in West Africa.³⁹ Indeed, the British famously failed to turn Northern Nigeria into a supplier of raw cotton for Lancashire mills after 1900, in part because dynamic Hausa spinners eagerly bought up the local crop. Moreover, to supplement local supplies, machine-made yarn and plain cloth came on the back of camels across the Sahara, boosting weaving and dyeing.⁴⁰ Even in eastern and southern Africa, where some scholars pronounced the unequivocal death of hand-made textiles, some survived.⁴¹ The artisans of southern Somalia, who spun cotton with wheels and wove it into cloth, prospered in the nineteenth century.⁴²

Latin America's handicrafts were also more resilient than has often been stated.⁴³ Natural protection, local tastes, and low incomes played a role in ensuring that artisans continued to ply their trade.⁴⁴ Survival, and expansion in places, also reflected indigenous Amerindian workmanship and patterns of consumption, stretching back to before the European conquest. The Mayan cultural zone of Mesoamerica was a good example of this phenomenon.⁴⁵

Export markets and the stimulation of handicrafts

Far from merely serving stagnant rural zones and nostalgic cultural norms, artisans exploited rapidly expanding urban markets and new

37 Matsuo, *Javanese Cotton Industry*, pp. 12-17; Kerlogue, *Batik*; Brown, *Economic Change*. See Elise van Nederveen Meerkerk's chapter in this volume.

38 Hamilton, *Gift of the Cotton Maiden*, pp. 61, 233.

39 Kriger, *Cloth in West African History*.

40 Candotti, "Cotton Growing".

41 Davison and Harries, "Cotton Weaving"; Clarence-Smith, "Textile Industry".

42 Alpers, "Futa Benaadir".

43 Halperin Donghi, "Economy and Society", pp. 326-327.

44 Bulmer-Thomas, *The Economic History*, pp. 130-132.

45 Martin, "Weaving the World".

export opportunities in the West. Forms of export processing long remained artisanal, as in the case of Western Africa's hand-pressed palm oil.⁴⁶ Purchases of hand-made exotic objects benefited from the Arts and Crafts movement, inspired by William Morris, together with burgeoning Orientalist ideals.⁴⁷

Hand-made rugs and carpets fared particularly well, in part because production was technically difficult to mechanize. Western demand sparked significant growth in artisanal production in the Middle East and India, from as early as the 1820s. Between 1889 and 1913, the value of Ottoman carpet exports doubled, and Iran also benefited.⁴⁸ In India, where carpets had largely been procured from Inner Asia, export opportunities positively transformed artisanal activity.⁴⁹ Embroidery and lace are other examples, with nineteenth-century Ottoman exports of both increasing rapidly.⁵⁰ Although Swiss machines that could produce a reasonable type of lace emerged from around the 1880s, the quality of machine-made embroidery remained unsatisfactory. Exports of hand embroidery thus thrived, coming initially from Europe, but increasingly from China and the Philippines, especially after the First World War had disrupted commercial circuits.⁵¹

Swelling numbers of tourists and pilgrims stimulated first the sales, and then the exports, of hand-crafted mementos and souvenirs, notably early in Egypt.⁵² Sindhi Lohana merchants from Hyderabad, today in Pakistan, were quick to seize the opportunity. Settling in many ports around the globe, they sold hand-crafted "curios" to travellers, and later distributed Japanese silks around the world.⁵³ Palestine's bustling workshops began by making religious items for pilgrims out of olive wood and mother-of-pearl. Bethlehemite Christian Arabs then gradually dispersed, peddling these items in devoutly Christian lands around the planet.⁵⁴

46 Hartley, *The Oil Palm*, ch. 14; Martin, *Palm Oil and Protest*.

47 Cumming and Kaplan, *The Arts and Crafts Movement*; Quataert, *Ottoman Manufacturing*, p. 134; Roy, *Traditional Industry*, pp. 133, 201-202, 204.

48 Issawi, *An Economic History*, p. 153; Quataert, *Ottoman Manufacturing*, ch. 5; Owen, *The Middle East*, p. 212.

49 Roy, *Traditional Industry*, ch. 7.

50 Quataert, *Ottoman Manufacturing*, pp. 16, 132.

51 Amoroso Leslie, *Needlework through History*.

52 Faruqi, *Artisans of Empire*, p. 187.

53 Markovits, *The Global World*.

54 Norris, "Exporting The Holy Land".

From crafts to modern industry: Institutional and technical factors

Scholars are ambivalent about the role of technical versus institutional change in the handicraft sector, for example in British India. In addition to an increasingly elaborate division of labour, workshops grew in size and moved into cities. Their owners slowly became more autonomous of merchants, more dominant over peasant entrepreneurs, and in some senses more capitalist. Caste, kinship, and ethnicity continued to flourish, however, creating complex networks of social patronage.⁵⁵

Technical change further boosted productivity in India. There were indirect contributions from modern transport and from manufactured inputs, such as machine-made yarn, aniline dyes, and sheet metal. More directly, weavers adopted flying shuttles, beam warping, and metal Hattersley domestic looms with foot treadles. The gradual introduction of electric-powered looms further blurred the boundaries between workshops and factories. As for makers of brassware in Moradabad, near Delhi, they took to metal rolling, power forges, power tools for polishing, and eventually, electroplating in nickel and silver.⁵⁶

The picture in East Asia was similarly mixed, despite Western portrayals of artisanal techniques as both “primitive” and unchanging.⁵⁷ Improved wooden foot treadles initially stimulated weaving in China, as well as cotton ginning. Iron-gear looms, imported from Japan, marked a further step.⁵⁸ Korean weavers also upgraded technologically.⁵⁹ As late as 2004, Japanese artisans in Kyoto were weaving expensive silk *obi* belts for kimonos by hand, while computers generated the patterns for the weavers.⁶⁰

West Java’s cotton-weaving industry is an instructive example of how a craft could be technically transformed, while clinging to apparently “traditional” forms of organization for institutional reasons. From the 1880s, wider looms, worked with treadles, produced mainly *sarong*, cotton clothing in the local style. After 1918, workshops – centred in Majalaya – thrived with imports of cheap and strong Japanese machine-made yarn, on which import duties were halved in 1927. The Textiel Inrichting Bandoeng (TIB), a research institute, developed a new handloom in 1922, and further refined it in 1926. A TIB loom was about five times more expensive than the existing

55 Roy, *Traditional Industry*, pp. 20–23, 44–45, 131, 233; Haynes, *Small Town Capitalism*, pp. 5–18.

56 Roy, *Traditional Industry*, pp. 44–45, 61–62, 146–148; Morris, “Indian Industry and Business”, pp. 221–222; Haynes, *Small Town Capitalism*, pp. 3–18.

57 Hommel, *China at Work*.

58 Feuerwerker, *The Chinese Economy*, pp. 38, 43.

59 Larsen, “Competition in Absentia”.

60 Personal observation.

ones, but it could produce about five times the output, and about a third of that of a power loom. Majalaya sarongs dominated Java's internal market, especially from 1933, when Japanese imports were curtailed and yarn was relieved of all duty. Electrification began in 1935, power looms were introduced four years later, and some 500 had been installed in West Java by the beginning of 1942. However, workshops, often owned by entrepreneurs of Chinese and Hadhrami Arab extraction, rarely contained more than four looms, in order to avoid Dutch licensing and taxing of larger units. This artificially made the sector appear less modern than it really was.⁶¹

Technical advances were not necessarily modern in nature. The thriving batik workshops of Java, which exported some of their output, adopted copper stamps (*tjap/cap*) from South Asia in the mid-nineteenth century. This greatly increased output and lowered production costs for cheaper batiks, while simultaneously expanding the arena of men's work.⁶² The invention of the *canting*, a type of pen for the application of melted wax onto cloth, improved more expensive types of batik. This local invention, already in use around 1800, gradually spread.⁶³

In some places, workshops converged with factories over time.⁶⁴ Joel Mokyr refers to this in a Western context as "growing up".⁶⁵ This process also fitted in with a more general "labour-intensive path to industrialization", which characterized much of Asia as well as parts of Europe.⁶⁶ Thomas Smith's pioneering work from the 1950s stresses convergence as a key to Japan's industrial success, and Erich Pauer elegantly expands on the theme.⁶⁷ Indeed, Masayuki Tanimoto's edited collection shows how some modern Japanese industries gave way to smaller units over time, as in the pearl-button factories of Kansai.⁶⁸ In parts of China as well, such as Gaoyang County in the north, there were intimate connections between handicrafts and modern industries.⁶⁹

61 Matsuo, *Javanese Cotton Industry*, pp. 18, 26-39, 47, 80; Segers, *Manufacturing Industry*, pp. 153-156; Dobbin, *Asian Entrepreneurial Minorities*, pp. 182-184; Sutter "Indonesianisasi", pp. 42-44; Palmer, *Textiles in Indonesia*, pp. 19-23, 44; Oki, "A Note on the History", p. 150; Antlöv and Svensson, "From Rural Home Weavers", pp. 113-116; Lindblad, *Bridges to New Business*, p. 32.

62 Matsuo, *Javanese Cotton Industry*, pp. 78-79, 86; Kerlogue, *Batik*, p. 21. See Elise van Nederveen Meerkerk's chapter in this volume.

63 Raffles, *History of Java*, vol. 1, pp. 168-169; Ponder, *Javanese Panorama*, pp. 139-140.

64 Amsden, *Asia's Next Giant*, pp. 161-164; Owen, *The Middle East*, pp. 211, 240.

65 Cited in Pomeranz, *The Pacific*, p. xiv.

66 Austin, and Sugihara, *Labour-Intensive Industrialization*.

67 Smith, *Native Sources of Japanese Industrialization*, pp. 44-45; Pauer, "Traditional Technology". See also Macpherson, *The Economic Development*, pp. 12-15, 19-22.

68 Tanimoto, *The Role of Tradition*.

69 Pomeranz, *The Pacific*, p. xiv; Grove, *A Chinese Economic Revolution*.

Certainly, British colonial planners in interwar India did not begin to grasp the need for a symbiotic association between artisanal and modern industry until late in the 1930s.⁷⁰ Nevertheless, Tirthankar Roy argues cogently that “‘traditional’ industry represented one root of ‘modern’ industry in India”. For example, the workshops of the brass industry of Moradabad gave rise to modern metal industries.⁷¹

Sub-Saharan Africa and Latin America displayed much less continuity between artisanal and industrial production. Madagascar, in many ways culturally Asian, provides a rare African example of textile artisans morphing into minor industrialists.⁷² Victor Bulmer-Thomas summarily dismisses any such evolution in Latin America, portraying factories merely as rivals to workshops, which suffered from shortages of capital, lack of sociopolitical influence, and the constraints of family labour.⁷³ However, such problems were overcome elsewhere, and scarce labour may have been the main reason for the poor performance of handicrafts.⁷⁴

Labour relations in the handicrafts sector

Craft production undoubtedly acted as a brake on proletarianization, especially when work took place in rural households. Workers were rarely separated from the means of production, and were thus not obliged to survive by selling their labour power, although they depended to varying degrees on craftwork to supplement their incomes. Reciprocity remained a major principle of labour allocation, mediated by a complex web of social relations of kinship, ethnicity, caste, and so forth. Tributary labour, notably slavery, also made an appearance in some cases. That said, wage labour slowly spread, notably in urban zones.

Putting-out, whereby traders supplied inputs to households, usually rural, and purchased finished products, was common in European proto-industry. Roy argues that this institution was rare in British India, although Haynes depicts the relationship between some weavers and Marwari traders in western India in this light.⁷⁵ In addition, putting-out is said to have existed

70 Tyabji, *Colonialism*, p. 210.

71 Roy, *Traditional Industry*, pp. 147-148, 231-233.

72 Fee, “Madagascar’s Textiles”.

73 Bulmer-Thomas, *The Economic History*, pp. 131-132.

74 Austin and Sugihara, *Labour-Intensive Industrialization*.

75 Roy, *Traditional Industry*; Haynes, *Small Town Capitalism*, pp. 13-14.

in the Middle East, Southeast Asia, and China.⁷⁶ In Java, the 1920s involved an upsurge in putting-out for batik production, in order to avoid a Dutch tax levied according to the number of employees.⁷⁷

Craft workers in households were generally assumed to be free family members, but in southern Somalia's cotton textile sector – located in cities rather than in the countryside – the situation was more complicated. Most Somali weavers were free, but of low caste. They spun and wove full time, and bought their food on the market. Family members assisted them, but so did slaves and free clients. The combination of diverse labour relations was especially apparent in this sector.⁷⁸

Even in the slightly more institutional setting of workshops, a bewildering variety of contracts and informal arrangements existed. In China, wage labour probably grew slowly overall, but economic shocks at times reversed this process. Large workshops employed many non-kin workers in textiles, cotton ginning, milling, and the production of salt, metals, and pottery. People classed as “peasant weavers” might have owned many looms, situated in different workshops.⁷⁹

British India's workshops were increasingly urban, and wage work gradually became more common, but share work and piece work frequently prevailed. Credit and apprenticeship tied workers to some extent, albeit never completely. The salience of caste varied greatly, being more significant in weaving than in metals.⁸⁰ Indian weavers were being drawn into trade union activity and strikes by the 1930s.⁸¹

A major and unresolved debate over artisanal labour in the modern era concerns the extent to which standards of living fell, stagnated, or rose. In the Indian case, Tirthankar Roy hesitates, accepting that “self-exploitation” was a condition for survival in some cases.⁸² Douglas Haynes is more pessimistic, seeing immiseration as the norm.⁸³ It is likely that outcomes were actually extremely diverse, and that improvements in productivity were a key to better conditions of life.

76 Quataert, *Ottoman Manufacturing*, pp. 85–86; Feuerwerker *The Chinese Economy*, pp. 33, 38; Matsuo, *Japanese Cotton Industry*, p. 81; Boomgaard, *Children of the Colonial State*, pp. 126–129.

77 Vuldy, *Pekalongan*, pp. 124–125.

78 Alpers, “Futa Benaadir”, pp. 77–98.

79 Feuerwerker, *The Chinese Economy*, p. 31.

80 Roy, *Traditional Industry*, pp. 149–152, 222–228; Haynes, *Small Town Capitalism*, p. 14.

81 Haynes, *Small Town Capitalism*, p. 15.

82 Roy, *Traditional Industry*.

83 Haynes, *Small Town Capitalism*, p. 9.

Import substitution of consumer goods under free trade, 1850s to 1914

Factories producing consumer goods for the internal market sprang up *de novo* in developing economies. As the cumbersome institutions of mercantilism were dismantled, exports of machinery were no longer subject to high duties, or even outright prohibition. Cheap second-hand machinery, which was tried and tested, thus became abundantly available.⁸⁴ The absence of state protection for industrialization also meant that only competitive factories flourished.

The most successful case of large-scale import substitution, leading over time to export substitution, was the Indian cotton-spinning industry, which Williamson inexplicably ignores. Despite a complete lack of tariff protection, modern industrial production of cotton goods began in British India in 1854, and grew rapidly from the 1870s to 1914. These cotton mills were almost entirely owned and financed by local entrepreneurs. Indian mills produced much more yarn than cloth, making India self-sufficient in yarn by the 1880s, and acting as a stimulus to handlooms. Indian yarn exports then largely replaced the British variety in the Indian Ocean and China Sea markets by 1906, and penetrated into the Ottoman Empire. By contrast, it was only in around 1910 that the woven output of Indian mills began to surpass that of local handlooms. Moreover, some imports of piece goods continued.⁸⁵ Ceylon (now Sri Lanka) was unusual in having become self-sufficient in cotton textiles by 1913.⁸⁶

Latin American import-substituting industrialization was not sustained, possibly because of excessive protection by newly independent governments. In Mexico, the creation of a modern textile industry benefited from a large internal market, numerous skilled artisans in old craft centres such as Puebla, vigorous local trade on mule back, and the natural protection afforded by Mexico's tortured geography.⁸⁷ However, manufacturing of this type was undermined by the advent of railways, which reduced the costs of imports.⁸⁸

84 Kenwood and Lougheed, *Technological Diffusion*; Macpherson, *The Economic Development*, p. 13.

85 Morris, "Indian Industry and Business", p. 204; Dobbin, *Urban Leadership*, pp. 154-156; Charlesworth, *British Rule*, pp. 34, 37-39. On Chinese imports, see Shiroyama, *China during the Great Depression*, pp. 42-50; on Ottoman imports, see Quataert, *Ottoman Manufacturing*, p. 32.

86 Huff, "Boom-or-Bust Commodities", p. 1085.

87 Halperin Donghi, "Economy and Society", pp. 327-328.

88 Haber, *Industry and Underdevelopment*.

Egypt is routinely presented as an example of manufacturing that was strangled at birth by imperialism. It is true that Muhammad 'Ali's ambitious projects, especially in the field of cotton textiles, went into steep decline after Britain imposed free trade by treaty in 1838. However, Muhammad 'Ali's industrial structure was fatally weakened by clumsy state interference, notably high rates of protection, monopolies, and forced labour. Moreover, the British occupation of Egypt, in 1882, was followed by a burst of free trade manufacturing growth, including cotton textiles, as well as soap, sugar, tobacco, and fertilizers, which most historians have ignored.⁸⁹

Import substitution also progressed in states such as the Ottoman and Qing empires, which were not formally colonized, but were subject to "informal imperialism". Despite being placed under the yoke of the Public Debt Administration from 1881, the Ottoman Empire witnessed steady growth in modern manufacturing. Textiles were at the fore, with a focus on spinning cotton and wool, and reeling silk, partly for export.⁹⁰ As for China, foreign-owned cotton mills in Shanghai provoked the emergence of successful Chinese-owned mills up-country.⁹¹

Although free trade did not prevent import-substituting industries from emerging, structural factors limited expansion. Colonial parsimony arguably hampered education, although Gregg Huff notes that male literacy in parts of Malaya had reached nearly 50 per cent by 1931.⁹² Shortages of social overhead capital more generally, and low demand from the agrarian sector, also played a part.⁹³ However, Clive Dewey argues that it simply made more economic sense to focus on export processing.⁹⁴

Import substitution of consumer goods under protection, 1914 to 1950s

Protectionist impulses were felt in the global economy from the 1880s, but effective tariff rates remain subdued, and it took the First World War to seriously hobble free trade. The depressions of the early 1920s and early

89 Issawi, *An Economic History*, pp. 236-239.

90 Quataert, *Ottoman Manufacturing*, pp. 32-40, 125-127, 148-150; Owen, *The Middle East*, pp. 211-212.

91 Liu, "Paradoxical Development", ch. 4; Shiroyama, *China during the Great Depression*, pp. 45-48.

92 Huff, "Boom-or-Bust Commodities", pp. 1086-1087.

93 Dewey, "The Government of India", pp. 215-257; Lal, *The Hindu Equilibrium*, pp. 189-190; Tomlinson, "Technical Education".

94 Dewey, "The Government of India", pp. 215-257.

1930s compounded problems, and the Second World War completed the closing of economies.⁹⁵

In this context, metropolitan opinion was divided over the development of colonial import-substituting industry. Persistent structural unemployment, emerging in the West after the First World War, made workers keen to safeguard their jobs. French manufacturers could not agree about the colonial option.⁹⁶ Only the authoritarian regime of António de Oliveira Salazar in Portugal actually banned colonial industries, in 1936. This was political theatre, however, as the prohibition was full of loopholes, and was reversed as soon as war threatened communications with the empire.⁹⁷

Nationalist movements in Africa and Asia increasingly clamoured for import-substituting manufacturing under state protection.⁹⁸ For socialists, industry would reinforce a class structure favourable to their goals.⁹⁹ After the Accra riots in the Gold Coast (Ghana) in early 1948, the Watson Commission of Enquiry reported that “at every turn, we are pressed with the cry of industrialization”.¹⁰⁰ For many nationalists, however, manufacturing was a nebulous badge of progress, rather than a well-considered economic strategy.¹⁰¹ Heavy industry loomed large in such dreams, symbolically equated with Soviet and Nazi power.¹⁰² However, there were countercurrents. Most famously, Mahatma Gandhi set his face against disruptive manufacturing in British India, while sponsoring a renewal of handicrafts.¹⁰³

White settlers were particularly successful in gaining the ear of officials to implement import substitution under tariff protection. Wherever there was a danger of “poor whites” subverting racial stratification in colonial society, demands reached a crescendo. However, this kind of industry was often inefficient, especially when employment was subject to a racial “colour bar”.¹⁰⁴

Most colonial officials hesitated to support industrialization, fearing the social and political consequences of proletarianization and urbanization

95 O'Brien, “Intercontinental Trade”; Capie, *Tariffs and Growth*.

96 Marseille, *Empire Colonial*; Marseille, “The Phases of French”.

97 Clarence-Smith, *The Third Portuguese Empire*, ch. 6.

98 Tyabji, *Colonialism*, pp. 96, 139.

99 Botwe-Asamoah, *Kwame Nkrumah's Politico-Cultural Thought*.

100 Phillips, *The Enigma of Colonialism*, p. 152.

101 Dewey, “The Government of India”, p. 234; Tomlinson, “Technical Education”, p. 328.

102 Ansden, *Asia's Next Giant*, pp. 19–20; Ray, *Industrialisation in India*.

103 Chatterjee, *Nationalist Thought*, pp. 88–90.

104 Mosley, *The Settler Economies*; Clarence-Smith, “Textile Industry”.

after the Bolshevik triumph in 1917.¹⁰⁵ They also disliked diasporic industrialist communities, such as the Indians in East Africa, or the Chinese and the Hadhrami Arabs in Indonesia. Colonial authorities thus tended to promote manufacturing only in reaction to crises. Strikes and riots reflected unemployment, inflation, and shortages of wage goods, due to shipping bottlenecks or falling export revenues. Colonial authorities then undertook short-term and uncoordinated initiatives, of dubious economic value.¹⁰⁶

The example of British India illustrates the problems with particular clarity. Officials leant towards fashionable strategic autarky, and were trapped in a dualistic vision of modern heavy industry and romantic cottage crafts. However, heavy industry required a great deal of capital, foreign exchange, expensive machinery, scarce skilled labour, entrepreneurial know-how, and geographical concentration, while doing little to boost incomes. Indeed, when overly protected, the sector pushed up the cost of living, and consequently wages in the wider economy.¹⁰⁷ A “beggar my neighbour” attitude protected Indian sugar from Javanese imports in the 1930s, hindering the modernization of Indian production, while driving modern Javanese factories to the verge of bankruptcy. Emerging industrial sectors, dependent on the crutches of state aid, were badly located, employed too much capital and skilled labour, and could not compete in regional markets, let alone international ones.¹⁰⁸ Colonial institutions charged with stimulating manufacturing were poorly supported and resourced.¹⁰⁹ This was not just a colonial problem, for the authoritarian regime in Republican Turkey provides egregious examples of badly executed, state-directed autarkic industrialization.¹¹⁰

At the same time, a raft of policies indirectly hindered the expansion of import-substituting manufacturing, reflecting colonial institutional structures. Officials in British India stuck to rigidly balanced budgets, limiting the supply of services and depressing demand. They overvalued the exchange rate to avoid inflation and to secure the worth of remittances

105 Butler, *Industrialisation*.

106 Havinden and Meredith, *Colonialism and Development*, pp. 159, 168-174; Drummond, *Imperial Economic Policy*, pp. 439-443; Phillips, *The Enigma of Colonialism*, ch. 7; Dick, *Surabaya*, pp. 274-279; Brown, *Economic Change in Southeast Asia*, pp. 211-214; Tyabji, *Colonialism*.

107 Dewey, “The Government of India”, pp. 239-241.

108 Tomlinson, *The Economy of Modern India*, ch. 3. For Java sugar, see the chapter by Ulbe Bosma in this volume.

109 Tyabji, *Colonialism*.

110 Hershlag, *Turkey*.

to the metropolis. A strong rupee may have been the main reason for India losing markets for cotton yarn exports to Japanese rivals. Measures to keep peasants on the land, by protecting them from expropriation through debt, choked off the flow of labour to towns, and caused rural stagnation, which in turn restricted overall spending power.¹¹¹ Gregg Huff sees currency overvaluation as Malaya's chief industrial constraint.¹¹² The scarcity of electricity supplies in rural areas was another structural barrier.¹¹³

China's experience was more positive in this period, paradoxically because Chinese nationalists were barely in control of their vast state after the revolution of 1911, and were thus unable to grant much effective protection to their industries. China's currency also remained competitively valued.¹¹⁴ In this environment, Chinese industrialization powered ahead, in sectors as diverse as tobacco and rubber goods. Even all-out war with Japan from 1937 did not entirely halt the process.¹¹⁵

Japan itself provides an object lesson in sensible protection, at least up to the imposition of militarist autarky in the 1930s, when living standards first began to decline. Up to the 1920s, the country's economy rested largely on a textile industry that had deep rural and pre-modern roots.¹¹⁶ As late as 1928, six out of ten of Japan's leading industries in terms of employment, including the top three, were in this sector.¹¹⁷ After regaining tariff autonomy in 1911, governments remained highly selective about import duties. Tariffs were steep on "luxuries", and gave some support to "infant industries", but were low on imports of vital inputs for manufacturing.¹¹⁸

Export processing concealed

Export-processing industrialization was probably much more important than the import-substituting variety, but statistical quirks obscure this. Tables appear to reveal a deepening concentration on exports of "raw

111 Tomlinson, *The Economy of Modern India*; Charlesworth, *British Rule*, pp. 38-39, 64-65.

112 Huff, "Boom-or-Bust Commodities", pp. 1080, 1087, 1100.

113 Tyabji, *Colonialism*, pp. 19, 30-31, 210.

114 Chan, *Business Expansion*, ch. 2; Myers, *The Chinese Economy*, Part 3; Shiroyama, *China during the Great Depression*.

115 Cochran, *Big Business in China*; Coble, *The Shanghai Capitalists*.

116 Smith, *Native Sources*.

117 Blanchard, *The Textile Industries*, p. 5.

118 Macpherson, *The Economic Development*, pp. 32-34.

materials". For example, steam-driven filatures for silk developed from 1861 in China, but export statistics did not reflect this till 1894. Even then, all exports in this branch continued to be misleadingly labelled as "raw silk".¹¹⁹

Much modern export-processing industry was simply not recorded. In British India up to 1911, official reports excluded enterprises employing fewer than fifty workers, as well as plant working for less than four months a year. Many industrial establishments in India are therefore known only from descriptive and photographic records, whether they were shelling ground-nuts, ginning and pressing cotton, or milling rice.¹²⁰ A similar problem besets reporting in the Ottoman Empire and Egypt, where cotton gins and presses, steam-powered flour mills, and modern oil mills were ignored.¹²¹

Although "low tech" industries, especially those tucked away in remote rural locations, could be hard to detect, the most casual observer could not fail to miss a range of export-processing facilities, which were both precocious and physically impressive. The technical requirements of grinding mills and boiling houses for Caribbean sugar may even have influenced the development of the Industrial Revolution in Britain.¹²² "Factories in the fields" certainly pioneered industrial advances in the processing of sugar cane,¹²³ and mechanized sugar production then spread around the tropical world.¹²⁴ Another instance of early and large-scale export processing was the dressing and smelting of mineral ores.¹²⁵ David Igler argues persuasively that the industrialization of California before 1941 has been hidden from view by historians' refusal to consider this sector as an industrial one.¹²⁶

Enframing is a major problem in this respect, as historians fail to notice that empirical material contradicts standard interpretative frameworks. Thus, Yoshiko Nagano intones the familiar mantra that the Philippines after 1898 became "dependent" on the USA as an exporter of raw materials. However, she then proceeds to demonstrate, in fascinating empirical detail, how capital was poured into the mechanical preparation of sugar, coconut oil, and Manila hemp for export to America.¹²⁷

119 Eng, *Economic Imperialism in China*, pp. 37-38.

120 Tyabji, *Colonialism*, p. 19.

121 Owen, *The Middle East*, pp. 151-152.

122 Meide, "The Sugar Factory".

123 Curry-Machado, "Rich Flames and Hired Tears".

124 Bosma, *The Sugar Plantation* (and the chapter in this volume); Knight, *Commodities and Colonialism*; Brown, *Economic Change*, pp. 205-206.

125 Dennis *A Hundred Years of Metallurgy*. Also see Rossana Barragán's chapter in this volume.

126 Igler, "The Industrial Far West".

127 Nagano, *State and Finance*, pp. 42-46.

Export processing under free trade, 1850s to 1914

Free trade was especially conducive to adding value to exports, an industrial sector that often employed more labour than any other.¹²⁸ Williamson fails to realise that profits arising from favourable terms of trade stimulated capital intensity in export processing, partly to overcome bottlenecks in production.¹²⁹ Thus, sugar factories in Java reinvested retained profits to achieve ever more mechanization, as costs of imported machinery and chemical fertilizers fell in tandem with the maritime costs of exporting sugar overseas.¹³⁰

Williamson emphasizes the negative impact of price volatility with regard to primary goods, and yet he ignores hedging against price movements through the issuing of futures contracts on specialized exchanges.¹³¹ Such exchanges multiplied in the course of the nineteenth century, allowing economic actors to know the price that they would receive in advance, while leaving speculators to carry the risks of price fluctuations. This certainty of capital returns favoured long-term investment in processing.¹³²

Clive Dewey argues persuasively that adding value to raw materials for export was British India's most promising avenue to industrialization, in terms of the allocation of scarce resources of capital and skilled labour, but he misses further advantages.¹³³ First, for poor territories with small internal markets, access to the world allowed for production on a scale appropriate to new technologies. Second, export processing could lead organically to the import substitution of consumer goods. For example, soap works for the local market were a logical extension of processing coconut oil for export in southern India.¹³⁴ Third, consumer goods produced in this way for the internal market might eventually be exported. In this way, Tan Kah-Kee progressed from milling rubber in the Malay Peninsula to producing rubber footwear for local requirements, and then to exporting this footwear.¹³⁵ "Resource-based industrialization" is therefore attracting increasing attention.¹³⁶

128 Brown, *Economic change*, p. 204.

129 Williamson, *Trade and Poverty*, ch. 3.

130 Knight, *Commodities and Colonialism*.

131 Williamson, *Trade and Poverty*, ch. 10.

132 Williams, "The Origins of Futures Markets"; Engel, "Buying Time".

133 Dewey, "The Government of India".

134 Tyabji, *Colonialism*, pp. 138, 198–200.

135 Tan, *The Memoirs of Tan Kah-kee*; Goldthorpe, *Rubber Manufacturing*, p. 65.

136 Goldthorpe, *Rubber Manufacturing*.

Export-substituting industries could simultaneously provide goods for local markets at lower prices. As Southeast Asia became the world's rice granary from the mid-nineteenth century, steam mills proliferated, both small up-country units and large factories in port towns. While most of the milled rice was exported, its price on the internal market fell.¹³⁷

The examples of Australia and New Zealand, underdeveloped and poor countries at the beginning of the nineteenth century, shows that exporting processed raw materials could be an effective avenue to development. Similar to other thinly populated temperate zones, these antipodean lands achieved high productivity and a comfortable standard of living by exporting mainly animal and mineral products. Indeed, protecting consumer manufacturing for the internal market in the interwar years may well have retarded Australia's long-term economic development.¹³⁸

Countries with a similar resource endowment in Latin America enjoyed less success, but essentially because of institutional weaknesses.¹³⁹ Victor Bulmer-Thomas mentions precocious Latin American industrial processing of animal products, sugar, and mineral ores, and yet he does so briefly, and in a disparaging tone.¹⁴⁰ Celso Furtado, a dependentista, recognizes that processing agricultural and animal goods constituted "the original nucleus of modern Argentine industry", but he sees this merely as a step on the path to "real" industrialization.¹⁴¹

Japan's modern economic trajectory is a striking example of the value of an export-processing strategy. Japan "caught up" with the West after the Meiji Restoration of 1868 by ever more effectively exporting processed tea and silk, taking over a substantial part of China's international market share. Indeed, silk still accounted for 46 per cent of Japan's total merchandise exports in the early 1920s. By contrast, governments quickly abandoned clumsy and loss-making state-directed efforts to create heavy industry in the 1880s,¹⁴² yet William Macpherson refers dismissively to "raw silk, often categorized as a primary rather than a secondary product".¹⁴³

Other countries failed to replicate Japan's success, even if their achievements have been underestimated. China established steam filatures for

¹³⁷ Brown, *Economic Change*, pp. 204-205.

¹³⁸ Cochrane, *Industrialization and Dependence*; Denoon, *Settler Capitalism*.

¹³⁹ Platt and Di Tella, *Argentina, Australia and Canada*.

¹⁴⁰ Bulmer-Thomas, *The Economic History*, pp. 131, 134.

¹⁴¹ Furtado, *Economic Development*, p. 105.

¹⁴² Macpherson, *The Economic Development*; Nakamura, *Economic Growth*.

¹⁴³ Macpherson, *The Economic Development*, p. 10.

silk from the 1860s, and they expanded from the 1880s.¹⁴⁴ From the 1860s also, an “industrial revolution overtook the tea-garden factories, as steam-powered equipment for withering, rolling, firing, and sorting black tea steadily replaced workers skilled in these tasks”.¹⁴⁵ Debin Ma attributes China’s inability to build on these developments to political and institutional weaknesses.¹⁴⁶ Silk reeling also developed into a significant modern industry in Lebanon and Northwestern Anatolia, albeit without working any long-term developmental magic on the Middle East.¹⁴⁷

The uneven distribution of export processing

A striking aspect of export processing was its unevenness. For example, sugar was generally transformed at source more than coffee, and palm oil more than rubber.¹⁴⁸ Similarly, base metal ores were processed more than gemstones. An identical commodity might even receive different degrees of treatment according to location and firms. Thus, British Malaya led the way in intensifying the milling of rubber.¹⁴⁹

Some commodities were speedily processed because they would otherwise have deteriorated, for example, the sucrose content of sugar cane quickly falling after harvesting.¹⁵⁰ With vegetable oils, rapid acidification posed a similar problem.¹⁵¹ Animal and fish products rotted, if they were not dried, salted, chilled, frozen, tinned, or otherwise preserved. Precocious export-oriented factories therefore prepared salted meat for export from southern South America from the middle of the nineteenth century.¹⁵² A more modest example concerns the fish and whale factories of coastal southern Angola.¹⁵³

In some cases, the extent of processing at source depended on the desired end products. Simple milling turned rubber into smoked and dried sheets, which could be stored for a long time in situ, to be exported at leisure to

144 Eng, *Economic Imperialism*; Feuerwerker, *The Chinese Economy*, pp. 41-42; Shiroyama, *China during the Great Depression*, pp. 53-59.

145 Gardella, *Harvesting Mountains*.

146 Ma, “Between Cottage and Factory”.

147 Owen, *The Middle East*, pp. 154-159, 211-212, 249-253.

148 Slijper, *Technologie en warenkennis*.

149 Goldthorpe, *Rubber Manufacturing*, pp. 62-64.

150 Meide, “The Sugar Factory”.

151 Hartley, *The Oil Palm*, p. 692.

152 Hanson, *Argentine Meat*; Halperin Donghi, “Economy and Society”, pp. 314-315.

153 Clarence-Smith, *Slaves*, pp. 21-23.

make tyres and other products. By contrast, more sophisticated industrial treatment was required, immediately after tapping, to make liquid latex for the manufacture, by moulding, of surgical gloves and similar goods.¹⁵⁴

In other cases, substantial transport savings were secured by processing prior to shipment.¹⁵⁵ Thus, mineral ores were treated close to mines, especially when their mineral content was low.¹⁵⁶ Diamonds, by comparison, took up little room, and relied on highly skilled and specialized communities elsewhere for cutting and polishing.¹⁵⁷ Sawing logs into planks saved much precious space on ships, compared to shipping circular tree trunks.¹⁵⁸

There were differences between colonial empires, in part because of higher rates of protection adopted by poorer metropolises with small and uncompetitive industrial sectors.¹⁵⁹ Thus, in 1894, groundnuts were imported in their shells from Senegal for oil mills in Marseilles, rather than being locally decorticated in West Africa.¹⁶⁰ Groundnuts were exported shelled from South India, but high duties on imported vegetable oils in many Western countries frustrated plans for oil milling in Madras, whether based on groundnuts, copra (coconut flesh), or other oilseeds.¹⁶¹

Britain was more relaxed than most about importing vegetable oils, so that obstacles to colonial industrialization tended to be economic in nature. Export processors were cautious about investing in expensive buildings and machinery, as interest rates were high in peripheral areas. Moreover, investment was at the mercy of vagaries in the world economy. United Plantations bravely inaugurated a state-of-the-art palm oil factory in Malaya in 1933, in the midst of the ravages of the Great Depression.¹⁶²

Hardest of all to explain is why more value was added to the same commodity in different places, notably in Asia compared to in Africa. For example, tin was exported for a long time as roughly washed mineral ore from Nigeria and the Belgian Congo, with a metal content of around 25 per cent, whereas it was smelted in Malaya to 90 per cent or higher purity.¹⁶³ By 1911, the Straits Trading Company of British Malaya smelted about a

¹⁵⁴ Polhamus, *Rubber*, pp. 203-207.

¹⁵⁵ Brown, *Economic Change*, p. 207.

¹⁵⁶ Thoburn, *Tin in the World Economy*, pp. 7-8. Also see Rossana Barragán's chapter in this volume.

¹⁵⁷ Hofmeester, "Shifting Trajectories".

¹⁵⁸ Bullock, *Timber*, p. 126.

¹⁵⁹ Clarence-Smith, *The Third Portuguese*.

¹⁶⁰ Smith, *Peanuts*, p. 67.

¹⁶¹ Tyabji, *Colonialism*, pp. 1-2, 36, 41, 65-73, 81.

¹⁶² Martin, *The UP Saga*, pp. 62-63.

¹⁶³ Yip, *The Development*; Freund, *Capital and Labour*.

third of the world's output of tin ore, drawing on local supplies, but also on shipments from Siam, Yunnan (Southwestern China), Indochina, and Indonesia.¹⁶⁴ Possible reasons for Africa's lesser degree of processing were its closer proximity to Western markets, a smaller scale of mining, insufficient energy and capital, and inadequate labour skills.

Export processing under threat, 1914 to 1940s

After 1914, many earlier advantages for export processing were curtailed. Imperial autarky meant that industries had to produce for an empire rather than for the world. For the Portuguese Empire, which was quite small, this implied radically shrinking horizons. Certainly, colonial manufactures, such as tinned fish from southern Angola, were re-exported from Lisbon, but at substantial cost.¹⁶⁵ Major industries were sacrificed on the altar of inefficient import substitution in other lands, for example, Java losing its sugar market in British India.¹⁶⁶

Pressures to save, or create, jobs in the West increased, as structural unemployment took hold after the First World War. For instance, in 1928, the Billiton Company opened a tin-smelting works in Arnhem, in the Netherlands. From 1933, an increasing proportion of Indonesia's tin ore was redirected to Arnhem, whereas it had earlier gone to smelters in the Malay Peninsula.¹⁶⁷ By this stage, Malayan smelters were exporting almost pure tin metal.¹⁶⁸ That said, the need to cut shipping costs in the Great Depression led to a modest increase in the processing of tin ore in the Belgian Congo.¹⁶⁹

Another example of increased metropolitan protectionism was the "sugar trusts", which kept the final steps of sugar refining in Britain and the USA, rather than allowing them to occur in producer territories.¹⁷⁰ However, companies argued that locating sugar refineries close to their main markets meant that they could obtain unrefined sugar from various sources, and could therefore operate all year round.¹⁷¹

¹⁶⁴ Brown, *Economic Change*, pp. 206-207

¹⁶⁵ Clarence-Smith, *The Third Portuguese*, ch. 6.

¹⁶⁶ Dewey, "The Government of India", pp. 239-241. Also see the chapter by Ulbe Bosma in this volume.

¹⁶⁷ Thoburn, *Tin in the World Economy*, p. 76; Allen and Donnithorne, *Western Enterprise*, p. 161.

¹⁶⁸ Yip, *The Development*.

¹⁶⁹ Clarence-Smith, "The Effects of the Great Depression", p. 182.

¹⁷⁰ Ward, *Poverty and Progress*, pp. 51-52.

¹⁷¹ Barnes, *The Sugar Cane*, pp. 355-356.

It is currently impossible to draw up a balance sheet for export processing after 1914, as historians have neglected the sector, but growth probably slowed rather than stopped. Descriptive evidence is often all that exists. Thus, in the 1930s, one observer commented on Saigon's large mechanized rice mills, housed in "ugly buildings, several stories high", and employing machinery made in Germany or America.¹⁷²

The industrialization of the service sector

The application of modern industrial methods to the provision of services has been even more neglected, due to a definition of industry restricted to the production of goods. In reality, transport and energy sectors were susceptible to high levels of industrialization, in contrast to finance or education. The vast body of literature on modern transport rarely considers it as a process of industrialization, and the same can be said about electricity, which had to be generated within a limited distance from consumers.¹⁷³ Thus, the industrial impact on California of a behemoth like the Southern Pacific Railroad has generally been ignored.¹⁷⁴ This is strange, because transport may well have been the single most striking application of industrial methods in developing economies. From steamships to railways, and from automotive vehicles to aircraft, the situation was radically transformed.¹⁷⁵ These technologies have been amply discussed as "tools of empire", but not as contributions to industrialization.¹⁷⁶

The industrialization of transport and energy was intimately linked to other forms of manufacturing. Rural electrification was seen as the key to developing all forms of industry in India in the interwar years.¹⁷⁷ Transport was a necessity for many forms of export processing in remote locations. Indeed, the industrialization of agricultural and mining firms often took the form of building light railways, with locomotives slowly replacing animals to pull wagons.¹⁷⁸

172 Brown, *Economic Change*, p. 204.

173 Headrick, *Power over Peoples*; Hausman, Hertner, and Wilkins, *Global Electrification*.

174 Igler, "The Industrial Far West", pp. 174-175.

175 Clarke, *Encyclopedia of Transport*.

176 Headrick, *Power over Peoples*.

177 Morris, "Indian Industry and Business", pp. 221-222; Tyabji, *Colonialism*, pp. 19, 30-31, 210.

178 Graham and Floering, *The Modern Plantation*, pp. 159-160.

Intermediate and capital goods for local markets

Historians have equally neglected the manufacture of intermediate and light capital goods. Demand for such products arose from the needs of a particularly broad range of economic actors, such as other factories, plantations, mines, construction, transport, energy, government, and the armed forces. Repair and maintenance workshops sprung up quickly, and many of them morphed into small factories producing spare parts. They initially met the needs of locomotives and steamers, and then increasingly those of motor vehicles.¹⁷⁹ India's railway workshops, employing some of the most modern industrial technology in the colony, were long unjustly neglected by researchers.¹⁸⁰

Engineering firms became increasingly significant over time. In the Javanese industrial hub of Surabaya, transport and sugar enterprises were their main markets.¹⁸¹ Similar companies, clustered in Kuala Lumpur and Ipoh, supplied rubber-milling machinery to Malaya, as well as pumps and dredges to extract tin from marshland.¹⁸² Singapore was another centre, sending railway brake fittings across much of Asia by 1941.¹⁸³ The Socfin plantation group set up a subsidiary in Northern Sumatra in the 1930s, the Medansche Machine Fabriek, which produced storage tanks for palm oil prior to shipment.¹⁸⁴ Mysore and Madras firms made soap machinery, paddy separators, centrifugal pumps, and acetone for rubber coagulation, the latter as a by-product of Mysore's iron works.¹⁸⁵ In the 1860s, Shanghai's first silk-reeling factories used engines, boilers, and reeling equipment manufactured in Hong Kong.¹⁸⁶ From 1917, the electrification of China resulted in a flourishing local production of electrical equipment.¹⁸⁷ Coffee planters invested in turning out boilers, pumps, and boxcars in the Brazilian state of São Paulo, the largest regional industrial agglomeration in Latin America by the 1940s.¹⁸⁸

Production of intermediate goods for local markets benefited from natural protection afforded by transport costs. Bulky and heavy products, especially if they were easily made from local raw materials and with local labour,

179 Dick, *Surabaya*, ch. 5.

180 Morris, "Indian Industry and Business", p. 213.

181 Dick, *Surabaya*, ch. 5.

182 Goldthorpe, *Rubber Manufacturing*, p. 63.

183 Huff, *Economic Growth of Singapore*, p. 218.

184 Clarence-Smith, "The Rivaud-Hallet Plantation".

185 Tyabji, *Colonialism*, pp. 31, 144.

186 Shiroyama, *China during the Great Depression*, p. 53.

187 Myers, *The Chinese Economy*, pp. 140-141.

188 Dean, *The Industrialization of São Paulo*, pp. 20-33, 37-38.

needed little or no tariff protection. Construction materials are typical for this sector, especially cement, but also bricks, tiles, pipes, tanks, plaster, lime, gravel, stone, and sawn timber, with the size and capital intensity of plant varying greatly. Agricultural exports required sacking, made from jute, sisal, hemp, or similar fibres, some of which also served to produce ropes and twine. Barrels, chests, and other containers were used to package exports. Tin cans were made in Indonesia from 1913 to hold kerosene, produced locally, together with petrol, aviation fuel, diesel oil, paraffin wax, asphalt, and so forth. Chemicals, such as sulphuric acid or vegetable oils for flotation, entered into the treatment of mineral ores. Railways consumed huge quantities of wooden sleepers and gravel, and India produced iron rails. Glass bottles and flasks served for locally produced beverages, such as beer and mineral water. In small territories, manufacturers developed regional export markets.¹⁸⁹

Historians of India and China, influenced by communist notions, have been at the fore in arguing that all this was insufficient, as it did not amount to the “holy grail” of producing heavy capital goods.¹⁹⁰ However, a reluctance to produce such goods may have been wise, given that economically draining “white elephants” in these sectors became the bane of many independent countries after 1945.

Labour relations in modern industries in the developing world

Modern industry, in all its sectors, was more likely to employ wage labour than handicrafts, but this was not a “default setting”. There is nothing about the definition of modern industry used in this chapter that indicates that industrial workers must be divorced from the means of subsistence, and thus obliged to sell their labour power.

Modern industry could even employ slave labour.¹⁹¹ Meat packing and tallow plants, the largest and most advanced industrial units of southern South America in the nineteenth century, contained a mixture of free and slave workers. Slaves were soon confined to Brazil, however, where slavery lasted till 1888, whereas the institution was abolished soon after independence in the Hispanic republics.¹⁹² Similarly, the fish-processing

189 Brown, *Economic Change*, ch. 14; Clarence-Smith, “The Effects of the Great Depression”, pp. 188–190; Chan, *Business Expansion and Structural Change*, ch. 5.

190 Ray, *Industrialisation in India*; Kirby, “Engineering China”.

191 Karasch, *Slave Life*; Starobin, *Industrial Slavery*.

192 Halperin Donghi, “Economy and Society”, p. 315.

plants of southern Angola relied on slave labour in reality, tolerated by the authorities until the Republican Revolution of 1910.¹⁹³ Slavery was an institution of civil society, buttressed by religion and politics, and it took major crises to shift the institutional landscape.

The suppression of slavery did not entail a simple transition to wage labour. G. Roger Knight demonstrates how population pressure and land shortage combined to produce some early proletarianization in Java, with gangs of landless men travelling across the island for casual wage employment in sugar factories. However, there were many other types of workers in sugar factories who had some access to rural resources.¹⁹⁴ Indeed, this provides a classic example of the combination of different labour relations in a single plant. Among the most proletarianized workers in Java, and forming the spearhead of worker militancy, were those employed by the increasingly industrialized transport system.¹⁹⁵

In the case of British India, local jobbers controlled an unstable, free labour force, characterized by high turnover. The salience of caste is hotly debated, although industrial workers were clearly drawn from a variety of castes. Moreover, by 1931, about four-fifths of the workers in Indian cotton textile mills were men, contrasting with predominantly women in Japan and the Middle East. The significance of jobbers in organizing the workforce in India meant that labour was not subsumed to capital according to classic models.¹⁹⁶

The processes of proletarianization may have stalled, or even gone into reverse, from 1914, as Southern Africa became a model for a particular form of social engineering. The region had a well-established export-processing sector – notably for minerals – and an expanding consumer goods industry, stimulated by extensive protectionism. Worried by the social and political threats posed by proletarianization and urbanization, political leaders tried to artificially shore up rural subsistence production and to enforce repatriation to rural labour reserves. Representing white voters, politicians were keen to ward off the “black peril”. At the same time, employers saw this as a way of lowering wages, by not having to pay for the subsistence needs of a worker’s family.¹⁹⁷

193 Clarence-Smith, *Slaves*, pp. 33, 36–37.

194 Knight, “Coolie or Worker?”; Knight, *Commodities and Colonialism*, pp. 69–87, 195–202. See Ulbe Bosma’s chapter in this volume.

195 Ingleson, *In Search of Justice*.

196 Charlesworth, *British Rule*, pp. 42–43; Chandavarkar, *The Origins of Industrial Capitalism*.

197 Marks and Rathbone, *Industrialisation*.

Conclusion

It is not possible to maintain that developing economies deindustrialized from the 1840s to 1914. Instead, there was an initial sensible emphasis on export-processing manufacturing, benefiting from a broadly free trading environment. This went together with the industrialization of key services, the factory production of intermediate and light capital goods, and a little import substitution, which benefited from not being distorted by protective tariffs. At the same time, a large number of handicrafts survived and flourished, and some evolved in a more industrial direction, serving not only the internal market, but also foreign customers.

Conversely, the argument that industrial growth in the Global South speeded up from 1914 is open to considerable doubt. As protectionism gripped the world, problematic and limited forms of import substitution of consumer goods emerged in colonial and semi-colonial lands. These were typically the fruit of uncoordinated official reactions to short-term crises. Such schemes suffered from excessive protection through tariffs and other measures, poor linkages with other industries and economic sectors, and great locational inefficiencies.

At the same time, greater barriers to export-processing manufacturing emerged from 1914, and the role played in this by organized labour in the West needs to be better understood. There has been such a strong emphasis on protectionism emanating from capitalists manipulating governments that the roots of such measures in labour movements, which were institutions of civil society, have been largely ignored. This is perhaps the topic that the enframing of research agendas has obscured the most.

In general terms, Williamson correctly pinpoints the low productivity of labour as a major explanation for relatively low levels of industrialization in developing economies, but he wrongly attributes this productivity gap to specialization in the production of raw materials for export. In reality, there were deep historical roots governing how labour skills evolved. Productivity was further influenced by policies on education, health, and the provision of other public goods, all of which need to be comprehended from an institutional perspective.

The implications of modern experiences of industrialization in the Global South for the general schema of labour relations proposed by the collaboratory are important, even though they do not necessarily suggest that more commodified labour existed than historians have thought to date. Indeed, taking manufacturing in all its astonishing diversity, this chapter reinforces the notion that labour relations did not march forward through

time in clearly delineated stages. Instead, manufacturing was characterized by complex combinations of labour relations, similar to those in other economic sectors. Wage labour might at times have progressed, but it could also regress. There is a need to study empirical experiences with great care, avoiding becoming enframèd within ideological presuppositions.

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