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LABOUR AND LAND IN GHANA, 1874-1939: A SHIFTING RATIO AND AN INSTITUTIONAL REVOLUTION¹

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ABSTRACT: This article provides a West African case-study of the relationship between changes in international commodity markets and in factor markets within land-abundant 'Third World' countries over the period. For Ghana the decisive changes in international commodity markets were of product more than of price: the Second Industrial Revolution created markets for what in Ghana were new products, rubber and then cocoa. Mechanised transport was revolutionary in the forest zone of southern Ghana, because it replaced head loading where disease prevented animal haulage. These changes prompted the adoption and rapid spread of cocoa planting, continuing through the 1920s. The paper estimates the resultant shift in factor ratios, and synthesises the available numbers on the prices of land use rights and wages, as the economy moved from land abundance to at least localised land scarcity. The consequences for factor markets were institutional rather than simply quantitative: for the first time markets in land use rights became widespread, while hired labour and farm pledging replaced slavery and debt bondage, as cocoa made it possible for farmers to offer labourers pay at or above reservation wage rates.

JEL classification codes: N37, N57, N77, J43, F54.

Keywords: cocoa, factor market, factor ratio, Ghana.

This article offers a West Africa perspective on Williamson's proposition, which is supported by evidence from a sample of Asian and Latin American countries, that the 1870-1914 era of global convergence in commodity prices was associated with a lowering of the ratio of wages to land rents in land-abundant countries in the 'Third World'. This trend was not sustained during the subsequent generation of generally lower commodity prices and international divergence.² No African countries were included in Williamson's sample, proximately because of lack of data. The aim of the paper is to reduce this gap through a case study of what is now Ghana, which as of 1870 was a good example of the land abundance and labour scarcity that characterised most of West Africa (and indeed most of Sub-Saharan African as a whole) at the time.³

It will be argued here that there was indeed a lowering of the cost of labour in relation to that of land in Ghana within the late nineteenth and early twentieth century,

¹ Earlier versions of this paper were presented at a seminar at the Graduate Institute of Economics, Osaka University, in July 2006, and at the International Economic History Congress in Helsinki, in August 2006. The map was drawn by Mina Moshkeri (LSE).

² Williamson, Land, labor, and globalization.

³ Hopkins, *Economic History of West Africa*; Iliffe, *Africans*; Austin, Resources, techniques and strategies south of the Sahara.

but that in this West African context the change was more fundamental, in the sense of being institutional rather than simply quantitative. Specifically, slavery and debt bondage were replaced by wage labour and the mortgaging or pledging of tree-crop farms, and in some parts of the country a factor market in land materialised for the first time. The transition from slave to free labour meant that labourers gained in absolute terms even while the free-market bargaining power of land-owners increased. Essential to understanding the change in relative factor scarcities, in how these were expressed in price terms, and the distributional consequences within the African population, is the fact that the quality of land varied greatly, especially between the savanna of the north and the forest zone of the south. A fundamental continuity of this period is that the commercially valuable natural resources were located in the south; while labour moved from the north to the south, whether through the internal slave trade or, under colonial rule, in response to a market for free hired labour. Finally, this is a case-study also in specifically ‘imperial’ globalization, in that the forms and extent of convergence between markets in Ghana and international markets were – in part – shaped and qualified by the European partition of Africa, which occurred during this era, and by the specific characteristics of British rule in West Africa: the near-absence of European ownership of agricultural land and rule through the chiefs. The latter were, in turn, to a large extent a reaction to indigenous African supply response and entrepreneurship (the growth of African export production), and political structures.⁴

The precise dates chosen for this study are both slightly within the 70-year span of Williamson’s thesis. In terms of market integration and price convergence, the years 1874 and 1939 are turning-points in Ghanaian history whereas 1870 and 1940 are not. The British colonisation of the interior of Ghana began in 1874, reducing the transactions costs of trade between the inhabitants and the Atlantic economy, and ultimately leading to the creation of the institutional and physical infrastructure for something approaching a national economy. Conversely, 1939 brought the introduction of statutory marketing of what by then was Ghana’s major export commodity, cocoa beans: the imposition of a government intermediary between the Ghanaian producer and the world market. Regarding intermediate dates, we will see that in Ghana the shift in relative factor scarcities, and the institutional changes related to them, continued at least through the 1920s.

As of 1874, the economies of Ghana had adapted to the major external shock of the ending of the Atlantic slave trade. The abolition of that most notorious commerce was long drawn-out. As far as Ghana was concerned it occurred entirely from outside, and mainly between 1808, when British abolition came into effect, and 1830, although the trade persisted east of the Volta River even into the 1850s.⁵ In terms of export commodities, African economies responded primarily by selling gold and palm oil to the Europeans and (in the case of the Asante kingdom) by expanding the trade in kola nuts to the predominantly Muslim societies of the savanna, especially the Sokoto Caliphate (centred commercially on the city of Kano in what is now northern Nigeria). For this paper, it is important to note that extra-subsistence

⁴ The ambivalence of colonial attitudes and policies on factor markets in Ghana (initially on the issue of European agricultural enterprise and over whether to take active steps against slavery, later the highly selective support for the proliferation of wage labour, and over whether to introduce compulsory land titling – which was not done) is analysed in Austin, *Labour, Land and Capital*, 205-14, 253-8, 270-77, 300-02, 320-21, 326-7, 339-48, 443-5, 453.

⁵ LaTorre, ‘*Wealth Surpasses Everything*’, pp. 435-7; Reynolds, *Trade and Economic Change*, pp. 38-42.

production was an integral part of household economies, especially in the forest zone,⁶ during the precolonial nineteenth century. Moreover, the commerce in goods was complemented by trade, if not generally in labour services, then in labourers: for slaves and human pawns were the means by which extra-familial labour was recruited. Land for cultivation was physically abundant and institutionally accessible, usually for no or merely token payment. The commercially-valuable natural resources – kola, palm and rubber trees, and (fortuitously) gold deposits – were concentrated in the forest zone. By no coincidence, the internal slave trade ran from suppliers in the savanna to buyers in the forest.⁷ Thus it fulfilled the basic role of a factor market, bringing mobile resources together with the most valuable immobile ones, thereby maximising returns on both.

Williamson's thesis entails a causal sequence for 1870-1914 from a massive reduction in transport costs to convergence of commodity prices and on to convergence in factor prices. The paper will consider each step. Successive sections will examine the fall in transport costs; the shift in factor ratios propelled by the adoption of cocoa growing in response to world market demand; how the change in relative factor scarcities was responded to and mediated institutionally; the results in terms of the commercial value of land and labour, and the implications for the distribution of income within the country. But first, let us consider the changing political and commercial framework.

THE CREATION OF COLONIAL 'GHANA': RE-FORMATION OF POLITICAL AND COMMERCIAL FRONTIERS AND NETWORKS

As of 1870, the territory of what is now Ghana was divided between a number of polities, ranging in degree of centralisation from kingdoms, through chiefdoms (some independent, some paying tribute to kingdoms, some fully part of kingdoms), to fundamentally independent villages that might confederate in wartime. By far the largest state, in terms of both directly-ruled territory and its penumbra of tributaries, was the kingdom of Asante (or Ashanti).⁸ While Asante domination extended north and west, its heartland comprised the northern half of the forest zone of Ghana. The formal European presence was limited to a few forts on the coast, which by 1874 were all in British hands.

The decisive moment in a long series of Anglo-Asante wars came in 1874, when the British and their coastal-African allies (Ga and Fante) defeated the Asante army. Although the British forces withdrew from the Asante capital, Kumasi, after just one day, the kingdom's military defeat was followed by two crucial political developments. First, Britain established colonial administration over the territory south of Asante, the region that was later called the Gold Coast Colony (see map). Second, a succession of Asante tributaries rebelled, and the core of the Asante state was itself politically and demographically weakened by a civil war (1883-8) which stemmed from the fiscal demands of the post-1874 regime as it sought to reconstruct after the military defeat.⁹ The British occupation of Asante itself, and of its northern hinterland, followed in 1896: they became, respectively, the colonies of Ashanti and

⁶ Austin, 'No elders were present'.

⁷ Austin, *Labour, Land and Capital*, pp. 115-17.

⁸ In this paper 'Asante' will be used for the precolonial kingdom and the people; 'Ashanti' for the colony.

⁹ On this second point see Wilks, *Asante in the Nineteenth Century*; Austin, 'No elders', pp. 22-6.

the Northern Territories. In 1919 the present boundaries of what was to become Ghana were finalised by the addition of British Mandated Togoland. This had been part of the German colony of Togo, which was conquered by British and French forces in 1914. This group of contiguous colonies was later administratively integrated, first as the Gold Coast and then as the new state of Ghana (independent in 1957).

MAP ABOUT HERE

The imposition and extension of British rule had important market-integrating effects. Tariffs and administrative barriers to trade within ‘Ghana’ were removed. The Asante kingdom had long reserved the transit trade through its territory, between the savanna and the coast, for Asantes (Ashantis). This restriction survived the 1874 treaty with Britain, but ended with colonisation.¹⁰ The colonial administration invested in railways, and later, especially after 1918, in motor roads, as will be detailed in the next section. A single currency was imposed, ending the need to convert between the gold dust currency of Asante and the other Akan-speaking states and the cowries used in the savanna economies. Internal peace, the abolition of slavery, and the partial introduction of mechanised transport all greatly facilitated the creation and expansion of a free labour market within Ghana. The latter also attracted migrant labourers from neighbouring French colonies. We will return to slavery and free labour below.

Two qualifications should be entered. One is that is that the introduction of mechanised transport was gradual and geographically uneven, as we will see shortly. The other is that British policies, and the European partition of Africa generally, also entailed some new restrictions on market integration. The cowrie-based monetary system that had united the Ghanaian savanna with neighbouring areas, notably what became northern Nigeria, was replaced by the distinction between the pound and the French franc or German mark. The new frontiers were highly permeable, however, and became sites of much illegal arbitrage.¹¹ Again, while the imposition of colonial frontiers and tariffs, including the caravan tolls imposed by the British, restrained the centuries-old export of kola nuts from the Asante forests to northern Nigeria, the Hausa kola traders found that the maritime route, involving steam ships to Lagos and then steam engines to Kano, was anyway cheaper to use than the traditional overland route.¹²

Thus in 1874 Britain displaced the kingdom of Asante as the major political presence in the area, and from 1896 to the end of the colonial period, the boundaries and, more latterly, the collective identity of what is now Ghana were constructed or emerged.¹³ Something of a national economy developed too. It was centred on the cocoa and mineral (and increasingly also timber)-producing forest zone of the south. From there the goods mostly went out by sea, whereas the supply of labour (as during the slave trade, but now voluntary and often seasonal) was supplemented by inflows from the savanna, from both sides of the border.

¹⁰ Austin, *Between Abolition and Jihad*, pp. 107-11.

¹¹ Nugent, *Smugglers*.

¹² Lovejoy, *Caravans of Kola*, pp. 116-17; Abaka, *Kola is God's Gift*, pp. 53-4, 86-7, 106.

¹³ On a key complexity of the latter, see Allman, *Quills of the Porcupine*.

FALLING TRANSPORT COSTS AND THEIR IMPLICATIONS FOR COMMODITY MARKETS

The introduction of mechanised transport was even more revolutionary in Ghana and elsewhere in Sub-Saharan Africa than it was in more northern latitudes because in the African forests, and in much of the savannas, animal haulage was not possible because of endemic sleeping sickness.¹⁴ Accordingly, Ghana experienced progressive and massive reductions in transport costs during the later nineteenth and early twentieth centuries; this observation stands above the inevitable qualifications. Even before colonisation, the introduction of steam ship services in the mid-nineteenth century had cut freight costs from the Gold Coast to other parts of the Atlantic economy, even if the downward trend was to be somewhat limited by subsequent concentration of ownership and inter-firm restrictions on competition.¹⁵ The longer-term consequences of this were to include relatively attractive producer prices for (forest) rubber and for (cultivated) cocoa, from the 1880s onwards. To the steam ship was added the steam engine, with the first railway track being opened in 1902. It made an immediate difference to transport costs. 'During the first year of operation [from the coast] to Obuasi [1903], an average of 11.34 d. per ton mile was charged'. This contrasted with rates of 30-60 d. for head loading, and 14.5 d. for cask rolling of cocoa.¹⁶ The internal combustion engine followed, with lorries being imported - especially from the 1910s.¹⁷

Kay has argued that railways made relatively little contribution to the development of the Ghanaian economy as a whole, on the grounds that the network was primarily intended to serve European mine-owners rather than African cash-crop farmers.¹⁸ Subsequent research has confirmed that the early, and the majority, of rail construction was done without African farmers in mind.¹⁹ Indeed, railways were essential to the development of large-scale, deep-level industrial mining in the interior.²⁰ Thus the first line from the coast (at Sekondi) to Kumasi, the capital of Ashanti, which was completed in 1903, passed through Obuasi, site of what became the major gold mine in Ghana (using a lease which had already been obtained from Asante chiefs in 1895, before the British colonisation, by the founder of Ashanti Goldfields Corporation).²¹ When manganese was discovered, in 1915, at Nsuta in the Gold Coast Colony, it was fortuitously close to that line.²² A second line from the coast (this time, from the capital Accra) to Kumasi opened in 1923, passing through the only other significant gold mining operation in Ashanti, at Konongo.

Yet Kay exaggerated. That the railways to Kumasi were not built to stimulate the spread of cocoa farming did not prevent them having that effect. Indeed, there

¹⁴ Hopkins, *Economic History of West Africa*, pp. 73-4.

¹⁵ Albeit, with steam ships it was now possible to enter the export trade by hiring space, instead of having to own or lease a whole ship. This permitted the entry of small traders, including Africans, into the trade. For a concise and balanced overview see Lynn, *Commerce and Economic Change*, pp. 107-16.

¹⁶ Gould, *Development of the Transportation Pattern*, p. 25.

¹⁷ The first lorry was imported in 1903 but there were fewer than 20 in service as late as 1910 (Heap, *Development of Motor Transport*, pp. 21-2).

¹⁸ Kay, *Political Economy*, 'Introduction' esp. pp. 4-5, 20-25.

¹⁹ Tsey, *Gold Coast Railways*.

²⁰ Dumett, *El Dorado*, pp. 154-9.

²¹ McCaskie, *Creation of Ashanti Goldfields Corporation*. Ayowa Afrifa-Taylor has nearly completed an LSE PhD dissertation on the business history of this company.

²² Cardinall, *The Gold Coast, 1931*, p. 80.

were cases of farmers starting to plant cocoa trees (which take several years to begin to bear) in anticipation of the railway.²³ Even well into the 1920s, access or lack of access to the railway made the difference in the more remote areas between whether or not it was profitable to grow cocoa beans, or, in low-price years, to market what was grown.²⁴ In 1922 and again in 1926 the governor put the cost of headloading at 5-6 shillings (60-72 d.) per ton mile, specifying in the later statement that the average over a journey was 'generally ... nearer' the higher figure.²⁵ A lower estimate, of 44 d., was given in the same year by the general manager of the railways.²⁶ By this decade railway charges had fallen, such that in 1922-23 they were 7.5 d per ton mile for the first 50 miles, 6 d. for the second 50, 4.5d for the third 50, and 3d. for the fourth 50.²⁷

In 1922-3 over 83 per cent of all cocoa exports were carried by rail.²⁸ Railways also helped the extension of the timber industry beyond the very limited opportunities for the evacuation of logs which were offered by the rivers.²⁹ Until the mid-1920s the railway had the fundamental advantage over lorries of being much cheaper. The cost per ton mile for the latter was estimated at 33 d. in 1922 and 30 d. in 1923, although as little as 21 d. where larger lorries could be used over long distances.³⁰ Until the mid-1920s too, the relationship between road and rail was largely complementary: the railways benefited from feeder roads, while relatively far from the coast the cheap long hauls offered by the railway made it worth carrying cocoa by lorry to the rail stations.

Still, the size of the rail network was modest. Track mileage rose from zero in 1901 to 227 in 1913 and 500 (800 kilometres) in 1929.³¹ Tsey estimates that 'probably no more than 10 per cent of the country's total land surface could be said to have come under the direct influence of the entire network.'³² The railways started at the coast and did not go further inland than the 168 miles to Kumasi, 272 miles short of the northern border. The northern savanna lay entirely outside the area directly served by rail. This geographical asymmetry in railway provision within Ghana very much reflected the distribution of commercially valuable natural resources within the territory as a whole. The colonial government invested in railways where they were most likely to pay for themselves, thereby allowing it to pay off the bonds by which they were financed on the London market.

A proposal to extend the railway north was on the agenda before the commercial and fiscal shock of the international Depression from 1929-30.³³ By then,

²³ There is an example of this among documents published by Kay himself: *Political Economy*, p. 156 (from a 1922 dispatch by the colonial governor).

²⁴ See again in Kay's own selection of documents, 120; Tsey, *Gold Coast Railways*, p. 333.

²⁵ For 1922 see Kay, *Political Economy*, 160; for 1926, National Archives of the UK: CO96/663, F. Guggisberg, Memorandum by the Governor on Transportation (p. 25), Accra, 3 March 1926.

²⁶ CO96/663, Railway Rates and Cost of Haulage per ton mile, by General Manager, [Sekondi], 4 Feb 1926.

²⁷ Kay, *Political Economy*, pp. 144, 160; Heap, Development of motor transport, p. 26.

²⁸ Cardinall, *The Gold Coast, 1931*, p. 112.

²⁹ Including picking up logs which had begun their journey by river (CO96/663, R. Nichols, Memorandum by the Chief Transport Officer, [Accra], 30 Dec. 1925). Railway receipts (£000) from exported timber reached 6.3 in 1913 and were 11.5 and 5.9 in 1937 and 1938 respectively. Timber and firewood was also carried by rail for domestic markets (Kay, *Political Economy*, pp. 386-7).

³⁰ For these 3 figures see, respectively, Kay, *Political Economy*, p. 160; Heap, Development of motor transport, p. 26; Wrangham, African road revolution, pp. 14-15.

³¹ Kay, *Political Economy*, p. 390.

³² Tsey, *Gold Coast Railways*, p. 331.

³³ Great Britain, *Report by Ormsby-Gore*.

however, the significance of the lack of a northern railway had been greatly reduced by the large-scale construction of motor roads during the 1920s, which simultaneously reduced transport costs both to and in the north, and throughout the cocoa belt. The length of motorable roads tripled from 2,241 miles (3,606 kilometres) to 6,738 miles (10,841 kilometres) in 1930-32. 13,808 cars and lorries were imported during the decade 1921-30, of which 8,921 were licensed at the end of it.³⁴ By 1930-31 'many lorries' were charging only 6 d. (£0.025) per ton mile, and the railway's share of cocoa exports had been competed down to 58 per cent.³⁵ Thus the lorry completed the process of mechanization of goods transport in Ghana, except from farm to local market, where dependence on head loading commonly continued.³⁶

It should be noted that Africans played a key part in the transport revolution, not only as labourers in the construction of railways and roads, but also in taking the initiative in demanding or constructing local roads, and as owners and operators of motor lorries.³⁷ Chiefs were among the first to import lorries into Ashanti, and one operated a fleet in Kumasi during the First World War.³⁸ They were soon emulated by smaller operators with lower overheads. The colonial annual administrative report on Ashanti for 1927-8 reported that 'A large European motor transport company ceased operating in Ashanti and many of the larger Syrian lorry owners are disposing of their fleets presumably due to the fact that they are unable to compete with the ever-increasing African owner-driver.'³⁹ It was reported that many of the latter 'actually live in' their lorries, as did some of the Syrian drivers.⁴⁰

Facilitated by these massive reductions in transport costs, the economies of the future Ghana were fundamentally transformed in response to a new pattern of commodity prices offered on Atlantic markets. In relation to Williamson's thesis, however, one qualification and one amplification are required. The qualification is about timing. To be sure, in the second half of the nineteenth century the introduction of steamship services had reduced the cost of transport before markets emerged for rubber and then cocoa, thereby contributing to the eventual profitability of rubber tapping and cocoa farming. Moreover, the railway arrived in time to improve farmers' barter terms of trade by 1914. But the widespread mechanisation of transport, even in the cocoa belt as well as further north, awaited the 1920s, and especially the proliferation of motor roads and lorries.

The elaboration is that, in the Ghanaian case, what was critical was not price convergence per se but the fact that the second industrial revolution created new markets in the industrialised economies, for rubber and milk chocolate. The Gold Coast and Asante forests participated in the worldwide response to the demand for the produce of naturally-occurring rubber trees, in the late nineteenth century.⁴¹ There was, however, a major limitation to this form of integration in the Atlantic economy. As was also very largely so with kola for West African markets, rubber production in Ghanaian forests was profitable only as long as it could be undertaken in the most labour-saving and land-extensive fashion possible, by harvesting wild trees rather

³⁴ Cardinall, *The Gold Coast, 1931*, pp. 108-9.

³⁵ Cardinall, *The Gold Coast, 1931*, respectively pp. 114, 112.

³⁶ On the incomplete decline of headloading: Wrangham, *African road revolution*, 14; CO96/663, F. Guggisberg, Memorandum by the Governor on Transportation (p. 25), Accra, 3 March 1926, and R. Nichols, Memorandum by the Chief Transport Officer, [Accra], 30 Dec. 1925.

³⁷ See Heap, *Development of motor transport*, pp. 29-31, 34-5; Wrangham, *African road revolution*.

³⁸ Brown, *Kumasi, 1896-1923*, pp. 101-2.

³⁹ Great Britain, *Annual Report on Ashanti for 1927-28* (London, 1928), p. 8.

⁴⁰ Cardinall, *The Gold Coast, 1931*, p. 114.

⁴¹ Arhin, *Economic and social significance of rubber*; Dumett, *Rubber trade*.

than by deliberate cultivation.⁴² The economic revolution came with the adoption of cocoa which, as an exotic crop, had to be planted deliberately. In this sense (and literally), Ghana's involvement in international markets was deepened. Ghana was revealed to have a comparative advantage in cocoa cultivation sufficient to enable it to become the world's largest producer in 1910-11, only twenty years after exports began.⁴³ The growth of cocoa output was sustained through the 1920s. This may seem surprising given that barter terms of trade for Ghanaian cocoa farmers were much lower in this decade than before 1914 (28.55 and 44.82 for 1920-24 and 1925-9 respectively, compared to 100 for 1910-14).⁴⁴ The continued growth of output may be attributed partly to a lag of output behind investment (we will see below that, as a tree crop, cocoa required several years between planting and first bearing, and more to reach maximum yield). Again, Ghana enjoyed a degree of 'producer surplus' making further planting worthwhile even when prices were a little lower. Finally, for producers contemplating whether to grow more cocoa or re-allocate their resources elsewhere, it was relevant that nominal cocoa prices in the 1920s were not much lower on average than before 1914. This is true even excluding the peak year of 1920.

Table 1. Cocoa prices in Ghana: selected periods (1953 = 100)

Period	Average annual price		Period	Average annual price
1900-13	17.71		1920-29	18.6
1900-16	18.06		1921-29	16.8
1917-19	15.00		1930-39	10.1

Source: Kay-Hymer index of Ghanaian cocoa prices (Kay, *Political Economy*, pp. 338-9).

The result was that the income terms of trade for Ghanaian cocoa continued to rise strongly during the 1920s as a whole. They averaged 113.51 in 1920-24 and 240.54 in 1925-9, compared to 100 for 1910-14.⁴⁵ This meant that the government enjoyed revenues sufficient for the further investments that it made in transport in the 1920s. Above all, it meant that the shift in factor ratios continued well into the inter world-war era: the reduction in uncultivated land, and the growth in the stock of agricultural fixed capital (cocoa trees), as well as the growth of the labour force, both indigenous and immigrant.

A SHIFTING FACTOR RATIO

In 1874 the economies of what became Ghana were generally characterised by a high ratio of cultivable land to labour, and a low level of fixed capital formation in agriculture. To analyse the evolution of the factor ratios in later decades, it is necessary to examine both the growth of population and the spread of export agriculture, specifically tree-crop cultivation.

⁴² Austin, *Labour, Land and Capital*, p. 48. Unlike rubber and kola trees, oil palms were extensively planted in order to supply the export trade in their produce (e.g., Johnson, *Migrant's progress*, Part I, 17), but this was confined to the southern fringe of the forest zone.

⁴³ Hill, *Migrant Cocoa-Farmers*.

⁴⁴ Martin, *Long depression*, pp. 77, 88, citing F. Teal (1984), *Growth, Comparative Advantage and the Economic Effects of Government: A Case Study of Ghana* (PhD thesis, School of Oriental and African Studies, University of London), appendix.

⁴⁵ *Ibid.*, p. 89.

Ghana combines a similar physical area to the United Kingdom with a much smaller population. The task of estimating the latter is hindered by the absence of 'national' censuses until the twentieth century, and the universally acknowledged incompleteness of the early counts: which were under-resourced, and evaded by some who feared taxation.⁴⁶ The 1901 exercise was only a count. Subsequent enumerations included partial censuses, but even in 1931 the census element accounted for only 14 per cent of the population returned.⁴⁷ The 1948 and 1960 efforts were more elaborate, but it was only the latter – 3 years after Ghanaian Independence - that could be described as the country's first 'modern census based mainly on the principles and recommendations laid down by the United Nations and other international agencies.'⁴⁸ The consensus among post-colonial commentators has been that all the official population totals before 1960 were understatements.⁴⁹ This applies even to the 1931 one, which the exacting Kuczynski (writing before the 1948 census) was prepared to accept. The 1931 census report acknowledged that the majority of the census officers thought that the figures they collected were 2 – 10 per cent too low, but argued that this was balanced by probable over-statements by some chiefs wanting to boost their prestige or influence.⁵⁰ There were further problems with the 1948 census, which were highlighted when comparison with the 1960 results implied implausibly fast growth rates for certain sections of the population.⁵¹

In compiling Table 2, the procedure was to start with the official numbers but to accept upward revisions where these have been proposed for non-arbitrary reasons. The figures for what became British Togoland for 1901 and 1911 are backward projections from the numbers in the 1921 census report, by Kay and Hymer.⁵² Having reviewed the 1901 results in detail, Kuczynski concluded that 'it is safe to say' that the African population of the Gold Coast Colony, Ashanti and the Northern Territories combined, 'exceeded 1,750,000',⁵³ to which can be added about 700 non-Africans.⁵⁴ For the three component regions, the figure of 1,043,000 for the Gold Coast Colony was an estimate by the Census Committee themselves.⁵⁵ I have applied the same percentage increase (16.4) to the numbers for Ashanti and the Northern Territories. For 1911 the table uses Kuczynski's estimate that the population of the Gold Coast Colony 'probably exceeded 1,150,000',⁵⁶ i.e. 34.7 per cent above the number returned (853,766). The figures for Ashanti and the Northern Territories are raised here by the same proportion.⁵⁷ In the latter case, the upward revision of 125,541 exceeds a recommendation by Kuczynski that 80,000 be allowed for specific kinds of undercounting in the North.⁵⁸ However, in principle - which applies also to

⁴⁶ A succinct review of the official figures, the census reports and subsequent commentaries is De Graft-Johnson, *Population of Ghana*. See also Engmann, *Population*. The most detailed discussion of the methods and results of the 1901-31 enumerations remains Kuczynski, *Demographic Survey*, pp. 389-541.

⁴⁷ Kuczynski, *Demographic Survey*, p. 404.

⁴⁸ De Graft-Johnson, *Population of Ghana*, p. 9.

⁴⁹ *Ibid.*, p. 6.

⁵⁰ Kuczynski, *Demographic Survey*, pp. 403-4, 414, 416, 417.

⁵¹ De Graft-Johnson, *Population of Ghana*, pp. 9-10; see further, Engmann, *Population*, pp. 102-3.

⁵² Kay, *Political Economy*, p. 310.

⁵³ Kuczynski, *Demographic Survey*, p. 417.

⁵⁴ *Ibid.*, 415.

⁵⁵ *Ibid.*, pp. 412-3.

⁵⁶ *Ibid.*, p. 413.

⁵⁷ Kay and Hymer state that they followed the same procedure for Ashanti, but actually they raised the figure only by 20.1% (see Kay, *Political Economy*, 310).

⁵⁸ *Demographic Survey*, p. 417, cf. pp. 398-9.

other years, especially 1901 - it seems unlikely that undercounting would have been less in the North than in Ashanti, let alone the Gold Coast Colony: for the resources available, and density of the European presence and experience in the regions concerned, diminished roughly from south to north.

The 1921 entries are based on Kuczynski's estimate that the population of the Gold Coast Colony was 'unlikely' to be less than 1.3 million: about 10.64 per cent above the total enumerated.⁵⁹ The figures for Ashanti, the Northern Territories and British Togoland are adjusted in proportion. For 1931 the table reports the official figures for lack of a better-informed 'guesstimate', although it seems likely that they were again undercounts, not least to judge from the extraordinary population growth rates implied by later censuses. For 1948 the table follows Kay and Hymer's upward revision of the official figures 'proportionately to bring the total population in line with the revealed rate of growth between 1931 and 1960'.⁶⁰

Table 2. Estimated population of Ghana by region, 1901-1948 (thousands)

'Census' year	Gold Coast Colony	Ashanti	Northern Territories	British Togoland	'GHANA' official total	GHANA adjusted total
1901	1043*	[403]	[358]	144 [†]	1694 [†]	[1948]
1911	1150*	[388]	[487]	166 [†]	1570 [†]	[2191]
1921	1300*	[448]	[587]	[208]	2298	[2543]
1931	1574	579	717	294	3164	3164
1948	2429 [†]	962 [†]	1027 [†]	458 [†]	4118	4876 [†]

Notes: Population figures are rounded to nearest thousand. An asterisk indicates a figure from or via Kuczynski. Square brackets surround author's projections; a dagger marks those of Kay and Hymer. Unmarked numbers are those enumerated. The 'official' totals for 1901 and 1911 include Kay and Hymer's for what became British Togoland (then still under German rule).

Sources: Kuczynski, *Demographic Survey*, pp. 413-21; Kay, *Political Economy*, p. 310; de Graft-Johnson, Population of Ghana, table facing p. 6.

Reviewing Table 2, it is likely but not certain that the population grew during the period of international economic convergence before the First World War. It is accepted that population growth was faster after 1918 (the period that ended with the exogenous shock of the Influenza pandemic). By 1939-40 the population had reached about 4 million, at least. Because of earlier undercounting this was probably less than double what it had been at the time of the 1911 census (when the official total was only 1.5 million). Even so, if Ghana fits the Williamson proposition about the growth in the value of land relative to labour before 1914, it is not because of demographic change: most of that came later.

Everywhere in Ghana in 1874 there was enough land for the local population concerned to feed itself: even if, for example, in some areas of the north access to the most fertile land was inhibited by river blindness, as continued to be so during the colonial period.⁶¹ In general, the issue of land availability concerned not food but money: the fact that the principal commodities, palm oil and kola nuts, could be produced only in the south, which was also where rubber trees – soon to be tapped in the brief but spectacular international boom – grew wild. Above all, cocoa beans, which began to be exported regularly in 1891, could be grown only in (large) parts of the forest zone. The whole of that zone was within the south: meaning the Gold Coast

⁵⁹ Ibid., p. 413.

⁶⁰ Kay, *Political Economy*, 310.

⁶¹ Destombes, From long-term patterns.

Colony, Ashanti, and the southern district (the Ho-Kpandu area) of British Mandated Togoland. Before cocoa, very little of the land (in any part of Ghana) was used to grow export crops.

So, in considering how the land-labour ratio changed in response to the convergence and deepening of international commodity markets, we need to ask how much of the forest zone was shifted from forest to cocoa farms. During the colonial period, for Ghana (or southern Ghana) as a whole, nothing else matters much in this context. Rubber proved unprofitable as a cultivated product under Ghanaian conditions. Kola production continued, although there is some evidence that by c.1930 it had declined in areas of expanding cocoa cultivation, and had become more concentrated in those areas where naturally-growing kola trees were most common, notably western Ashanti.⁶² Exports of palm oil and palm kernels shrunk from a combined total of 34,000 tons in 1902, to 7,600 tons in 1914, and 5,800 tons in 1938.⁶³ It may be, however, that overall output was sustained by increasing domestic demand fuelled by the purchasing power of income from cocoa production and trading. In any case, Krobo farmers tended not to plant cocoa on land already used for oil palms, partly because they believed that cocoa needed more shade than more shade than cleared palm oil plantations could provide.⁶⁴ Thus a small proportion of the soil suitable for cocoa trees remained under another tree crop.

We have no direct information for the area planted with cocoa. Fortunately, it is possible to make estimates by working backwards from the volume of exports, using contemporary figures for the yield per unit area.⁶⁵ To relate our findings on cocoa to the population figures, we will focus on population 'census' years. As there was no domestic market for cocoa, we can equate output with exports: except that in years of relatively low producer prices, some cocoa beans might be left unharvested. For that reason, as a measure of productive capacity, it is necessary to include the year of highest exports during the period to 1939, namely 1936. Given the time-specificity of the Williamson thesis, it is appropriate to take 1914 also.

The derived estimates of area under cocoa will relate only to bearing trees. There are complications here: Amelonado cocoa trees, the sole variety grown in Ghana during this period, took 4-7 years from planting to start producing beans and a few years more to reach full bearing. It was estimated that 'the average useful life of a cacao tree in the Gold Coast is about thirty years'.⁶⁶ Fortunately, none of these matter very much for the present exercise. The derived acreage can be taken as equivalent to the area under mature (full-bearing) cocoa trees. It will therefore underestimate the overall cocoa acreage, but as of 1936, not by much. Because of low cocoa prices in the early 1930s, there was relatively little immature cocoa (as is confirmed by the lower subsequent cocoa harvests). In any case young cocoa farms also produced food crops, in that the cocoa plants were inter-planted with tall food crops such as plantain, which provided shade for the cocoa.⁶⁷ An omission that is relevant is old and/or diseased cocoa trees, which continued to occupy land, denying it to food crops while producing relatively few cocoa beans. These trees either dated from the earliest years

⁶² Austin, *Labour, Land and Capital*, pp. 48-9.

⁶³ Kay, *Political Economy*, pp. 336-7. The book's Statistical Abstract was compiled by G. Kay and S. Hymer.

⁶⁴ Johnson, *Migrant's Progress*, Part II, pp. 24-5.

⁶⁵ This approach was pioneered by Szereszewski, *Structural Changes*.

⁶⁶ Cardinall, *The Gold Coast, 1931*, p. 87.

⁶⁷ Once the cocoa trees grew large enough for their leaves to form a shade canopy, food crops (and weeds) were excluded from the farm for lack of light.

of cocoa exporting or were infected. These two categories overlapped heavily, because swollen shoot virus disease emerged in the 1930s in the original cocoa-growing areas, which were in the Eastern Province of the Gold Coast.⁶⁸ We can take the stock of trees that produced the crop of 1911 as a rough approximation to the stock of 'senile' trees as of 1936.

A variety of figures for the average yield of bearing cocoa farms are available from well-informed contemporaries, albeit concentrated in the 1930s. They ranged from 7 to 10 'loads' (a load was 60 pounds: 27.2 kilograms) per acre. J. C. Muir, the head of the Ashanti Division of the Agricultural Department, gave the highest figure, in 1932-33, for Ashanti.⁶⁹ A. W. Cardinall, the census officer, presumably drew on agriculture department sources available a year or two earlier in giving 9 loads per acre as the average for the Ghanaian cocoa belt as a whole.⁷⁰ Beckett's survey of the village of Akokoaso, in Akyem Abuakwa, reported an average of 7 loads over 3 crop years in the early 1930s.⁷¹ His figure is based on the most precise measurements but the village may not have been entirely representative, in that it was a relatively old cocoa-growing area. Muir's figure may have had the opposite bias, as Ashanti included a higher proportion of the relatively new cocoa-growing areas.⁷² The following table presents the results in three forms: taking Muir's and Beckett's extreme figures, and then the mean of the two.

Table 3. Estimated area under bearing cocoa trees (square kilometres)

Year	Exports (000 tonnes)	Area: Minimum Estimate	Area: Maximum Estimate	Area: Mean Estimate
1901	1.0	92.3	129.8	203.3
1911	40.9	3,719.3	5,308.2	4,513.7
1914	52.9	4,810.5	6,865.6	5,838.0
1921	135.3	12,291.3	17,560.0	14,925.5
1931	248.0	22,529.4	32,186.9	27,358.1
1936	311.1	28,261.8	40,376.4	34,319.1
1948	217.7	19,776.9	28,254.4	24,015.6

Sources: Export volumes from Kay, *Political Economy*, pp. 336-7, converted to metric.

Note: See text for selection of years. It is assumed that all output was exported. Minimum area: assuming 10 loads (load = 60 lb = 27.2 kg) per acre. Maximum area: assuming 7 loads per acre.

For the Williamson thesis, the salient results are as follows. As of 1914, the stock of bearing cocoa trees was equivalent to mature trees occupying about 6,000 square kilometres. As the 1921 crop was to confirm, a lot more land was under immature cocoa plants. Indeed, the 1921 area in bearing would correspond fairly closely to the total cocoa area of 1914. Thus we can estimate the latter as about 15,000 square kilometres; although the young cocoa farms were available for food production. By 1936 there had been a massive further extension of cocoa cultivation. The crop of that year corresponds to a stock of mature cocoa trees occupying perhaps 34,000 square kilometres. To this, as noted above, we can add the 1911 bearing area of about 6,000 square kilometres, to represent the stock that was old and diseased a

⁶⁸ Hunter, Akotuakrom, p. 161.

⁶⁹ Public Relations and Archive Administration, Kumasi, Ghana, File entitled 'Cacao' (formerly classified D4B), Muir to Assistant Chief Commissioner of Ashanti, Kumasi, 28 Jan. 1933.

⁷⁰ Cardinall, *The Gold Coast, 1931*, p. 90.

⁷¹ Beckett, *Akokoaso*, p. 70.

⁷² Austin, *Labour, Land and Capital*, p. 238.

quarter-century later. So the overall area under cocoa appears to have been about 15,000 square kilometres in 1914; and some 40,000 in 1936 (and in 1939, when it is likely that not all the crop was marketed, because of lower prices).

Let us now turn to demography, and specifically to the population density of the South.

Table 4. Population density in the South of Colonial Ghana

Census Year	Population (000s)	Mean density (per sq km)
1901	1513	11.50
1911	1615	12.28
1921	1844	14.02
1931	2279	17.33
1948	3599	27.36

Definitions: 'South' = Colony, Ashanti, and Southern British Togoland (combined area 50,780 sq miles or 131,520 sq km).

Sources: For Colony and Ashanti, Table 2 above. For Southern British Togoland: for 1901, 1911 and 1948, Hymer, *Political Economy*, p. 310; for 1921 and 1931 the figures are those enumerated, raised in the case of the former as explained for Table 2.

The most authoritative estimate of the 'critical population density' (the maximum population supportable from a given area with given technology) for foodcrop-growing in the Ghanaian forest zone using the prevailing methods, remains Allan's of 'between 85 and 130 people per square mile' (33-50 per square kilometre), probably approaching 'the higher figure'.⁷³ Without the addition of cocoa since the late nineteenth century, the population would not have reached the critical density even by 1948 – at least in southern Ghana as a whole. But cocoa made an increasing difference.

Taking the area of the South as 131,520 square kilometres (55 per cent of the territory of Ghana as a whole), let us deduct the median estimate for the area under bearing cocoa farms (therefore not producing food crops) in 1914, namely 5,838 square kilometres. If the population had not increased since 1911, the average density in 1914 on the estimated 125,682 square kilometres of land available for food cultivation (and towns, mines etc) comes out as 12.85 per square kilometre. That would have been little more than a third of the way to critical level. This broad conclusion survives the realistic assumption that population did in fact rise between 1911 and 1914. In 1948, on the other hand, assuming that the 1936 estimate for cocoa area still applied (which was likely, because there had been little new planting), about 91,144 square kilometres were available for non-cocoa activities. The population density on this area averaged 39.49: well into the 'critical' band. Besides the issue of the availability of land for food crops, it should also be noted that not all even of the south was suitable for growing cocoa (most obviously not, the Accra plains). The government estimated the total area suitable for cocoa as 62,000 square kilometres.⁷⁴ This figure would imply that nearly two-thirds of the land which could support cocoa was already devoted to that end by 1936. Given this aggregate picture, it is not surprising that there is evidence of pressure on land in particular localities, especially old cocoa-growing areas which by now were relatively densely planted.

⁷³ Allan, *African Husbandman*, p. 228.

⁷⁴ Great Britain, *Report on Trade and Taxation*, p. 47.

Even in Ashanti, where population density was lower than in the Gold Coast Colony, there were indications of land scarcity in the older cocoa-growing areas by the end of the 1930s. They persuaded the Ashanti Confederacy Council of Chiefs to ban the creation of new farms in 1939 – despite their and their subjects’ dependence on cocoa income. Admittedly, this policy proved excessive where it not largely ineffective, and was consequently abandoned in 1946.⁷⁵ But there was some reason for its adoption. For the 1940s there is evidence from Amansie district in south Ashanti of fallows being shortened and even of a dietary change driven by pressure on land. For the first time, cassava (manioc) was widely adopted in the area, apparently because it would grow on the marginal-quality land that was increasingly what was available.⁷⁶ In the same decade in neighbouring Ashanti-Akyem district, land suitable for cocoa-farming had become scarce enough that young men were said to be growing up to find that all the land suitable for cocoa farming in their localities was already cultivated. This was driving them to work as sharecrop labourers or to migrate to the advancing frontier of cocoa cultivation, in the west of the forest zone, in search of land.⁷⁷

The economic motor of this shift in factor ratios was rather different from that generalised by Williamson. He reported that, unlike in industrial Europe, in ‘land-abundant Asia ... few of the capital-deepening and TFP-improving forces of modern economic growth were at work’.⁷⁸ In Ghana in land-abundant West Africa, however, the transformation of land use, and of labour-purchasing power, was based on a combination of the introduction (via the adoption of an exotic cultigen) of a new production function⁷⁹ and of an unprecedented scale of fixed capital formation, in the form of the establishment of tree-crop farms that would produce income for 30-50 years.⁸⁰ The other motor of change was demographic, but this was probably not entirely exogenous in economic terms. For the creation of the cocoa economy stimulated immigration, provided the revenues for investments in public health (symbolised by the modern Korle Bu hospital outside Accra, opened in 1924), and probably financed better diets for cocoa-producing households – at least until land for food crops became locally scarce.⁸¹

Thus, because of the advent of cocoa farming, the labour: land ratio was transformed in Ghana. Let us now examine the effects on the relative value of land and labour. The changes here were institutional as well as quantitative.

AN INSTITUTIONAL REVOLUTION

Underlying the lack of data on land rent and wages in the early 1870s in Ghana, as in most of Sub-Saharan Africa, is that land was rarely leased or sold, and regular wages were rarely paid. This was not because of custom or religion. I argue elsewhere, for the major case of the kingdom of Asante in the nineteenth century, that it was rather because the Nieboer-Domar hypothesis applied in its starkest form: with cultivable

⁷⁵ Austin, *Labour, Land and Capital*, pp. 326-32.

⁷⁶ Cassava had been grown in the nineteenth century, but then only by slaves. *Ibid.*, p. 66.

⁷⁷ *Ibid.*, pp. 311-12.

⁷⁸ Williamson, *Land, labor, and globalization*, p. 78.

⁷⁹ Austin, *Labour, Land and Capital*, pp. 77-9.

⁸⁰ Szereszewski, *Structural Changes*.

⁸¹ A better sense of the impact of the cocoa industry on diet and welfare may emerge from an anthropometric study of African recruits to the Gold Coast Regiment of the British army, being undertaken by A. Moradi, J. Baten and G. Austin.

land accessible to all, and in the absence of economies of scale in production, there was no price at which it was in the mutual interests of prospective labourers and prospective employers to contract with each other. Given political conditions that permitted such systematic coercion, a labour market existed nonetheless: but in slaves rather than in free labour. For closely related reasons, large loans were secured not on land but on persons – debt bondage.⁸² Again, land sales were possible: both of the use rights, and of the land itself (an important distinction in Akan land tenure). They were extremely rare, because land was not scarce.

The proof of the possibility of land sales is that in a relatively small area in the district of Akyem Abuakwa, in what became the Eastern Province of the Gold Coast Colony, land was indeed bought for oil palm cultivation in the early to mid nineteenth century.⁸³ This rare event reflected the specificity of this particular asset. While the Akyem owners cultivated little of this land, it was valuable to Krobo farmers because the latter had been confined to a small area – Krobo Mountain – since they apparently took refuge there to avoid and resist slave raids.

When cocoa started to be more widely adopted in the 1890s, the initial impact on the overall land-labour ratio of the Gold Coast Colony was negligible. It remained small even by 1914. However, farmers recognised that land suitable for cocoa was potentially very valuable. Again land in Akyem Abuakwa was sold, this time for the making of cocoa farms, from 1896-7 onwards. The buyers were again strangers, not only Krobos but also Akwapims, whose own local land supplies on the Akwapim ridge were comparatively limited (and they had already been planting cocoa there for several years), and Shais and Gas, whose existing lands were unsuited for the crop. The buyers acted in groups to organise, finance and negotiate the purchases, as the Krobo had already done during their oil-palm expansion. As Hill documented, many of these transactions were on very long-term credit. The buyers were quick to take a long view, and within a few years were buying land well ahead of their immediate needs.⁸⁴ Hill noted that in the 1890s ‘there was a scramble for land [in Akyem Abuakwa] without being a proper market in land’. But in the 1900s, in the part of the district where pressure on land became most intense, there is evidence of a tendency for the price of land to move towards equality: ‘the variation in the price paid per acre, by the different land-purchasing groups, was much less than would be expected given the farmers’ ignorance of menstruation.’⁸⁵

Hill was referring specifically to figures which she obtained prices for lands bought by six different groups of buyers in the Nankese area, during 1905-7. The areas were measured later by Ministry of Agriculture surveyors. The information on prices came from Hill’s own interviews in the late 1950s and the beginning of the 1960s. The purchases totalled 3,206 acres (1,297 hectares), at an estimated cost of £3,397. The mean was thus about £1.06 an acre (£2.62 per hectare), while the prices in individual contracts ranged from £0.30 to £1.60 an acre (£0.74-£3.95 per hectare).⁸⁶

For land sales in the interwar period, Hill found evidence in the reports of commissioners set up to investigate and compensate land owners when forest reserves were created later in the colonial era. She obtained figures for price – agreed, although often not paid in full until much later, if at all – for the sale of a total of 44,819 acres (18,138 hectares), for which the transactions occurred within the period 1921-38,

⁸² Austin, *Labour, Land and Capital*, pp. 155-70.

⁸³ Johnson, *Migrants’ progress*, Part I; Arlt, *Christianity*; Amanor, *Customary land*, pp. 140-1.

⁸⁴ Hill, *Migrant Cocoa-Farmers*.

⁸⁵ *Ibid.*, p. 49.

⁸⁶ See *ibid.* pp. 49-50.

mostly before 1930. They included sales beyond Akyem Abuakwa; indeed some were in the east of the Gold Coast Colony, in Southern British Togoland. The total cost was £24,509: an average of £0.55 an acre (£1.35 a hectare).⁸⁷

Hill's research showed that the sale of land as a factor of production, which was not unknown in Akyem Abuakwa in the decades preceding colonial rule, expanded into a relatively integrated market at the beginning of the twentieth century. Of a total of 3,344 acres originally bought during 1906-12 (all within 10 miles of the town of Suhum, overlapping with the Nankese sample), a quarter (25.1 per cent) were later re-sold (presumably soon), almost all to members of other buying groups.⁸⁸ The cocoa-land market also spread widely beyond that district. Price trends after c.1906 cannot be properly established from the fragmentary evidence currently available, in part precisely because the data for the interwar period come from sales over a much wider area, as well as being much vaguer about chronology. Hill's data do not permit calculation of the relationship between the price of cocoa and the price of land, although the number of transactions per year (the land areas involved are not known) was positively related to the producer price of the crop.⁸⁹

The same economic logic, of demand for land for cocoa planting, and often in anticipation of future needs rather than immediate ones, was replicated when cocoa cultivation spread to Ashanti, which it did shortly after the British occupation and especially following the defeat of the Kumasi rising of 1900. The institutional outcome was different, however, fundamentally because of differences in the local organisation of political power.⁹⁰ In Akyem Abuakwa the land had been sold not by the paramount chief, but by sub-chiefs. In Ashanti more effective political centralisation largely denied the opportunity to the local chiefs to free-ride by selling land which might be wanted by their own subjects in decades to come. There were cases of land being sold, in the 1920s-30s, on the southeastern periphery of Ashanti near the border with the Eastern Province of the Gold Coast Colony – to Akwapim farmers continuing the chain of purchases they had established in Akyem Abuakwa. But this was unusual, and the general refusal of Asante chiefs to sell land outright was reinforced by pressure from colonial administrators, seemingly anxious to avoid a repeat of the widespread land alienations that had occurred in Akyem Abuakwa.⁹¹

Rather, Asante chiefs were prepared to lease land, charging typically one-third of the crop (a practice which also developed in the rest of the cocoa belt,⁹² although elsewhere it often operated alongside the system of land sales). To charge more than token sums for the right to use land for farming was an innovation in Asante land tenure. The colonial government intervened, to stipulate that only 'strangers' (non-subjects of the particular land-owning chief) could be charged. Although cocoa farms in Ashanti were overwhelmingly owned by Asantes, a very high proportion of farmers sooner or later made farms on land that did not belong to their own chief, and thus were liable to pay rent. The colonial administration in Ashanti acted, in 1913, to reduce the rent to one penny per bearing cocoa tree. Subsequent falls in the producer price meant that one penny was actually not necessarily less than a third, and there followed a long process of pressure and negotiation over the rates. The latter tended to

⁸⁷ See *ibid.*, pp. 55-60.

⁸⁸ See *ibid.*, 53-4.

⁸⁹ *Ibid.*, 58-9.

⁹⁰ Benneh, Impact of cocoa cultivation; Firmin-Sellers, *Transformation of Property Rights*; Austin, *Labour, Land and Capital*, 334-6.

⁹¹ Austin, *Labour, Land and Capital*, 257-8, 266-7, 334-6.

⁹² Hay, Memorandum.

be reduced – eventually – during price troughs, but their relationship to the commodity market was strongly mediated by political power at local and regional level.⁹³

In the one case from the Adanse land sales of the 1920s-30s for which the dimensions of the land sold is documented,⁹⁴ the cost works out at £71 per square mile, or £0.27 per hectare. Although this is much lower than the mean price from the known sales from the Gold Coast Colony and Togoland in the same period (noted above), it is actually in line with the cost of very large plots in the latter sample. The Adanse sale was of over 14 square miles (3,626 hectares).⁹⁵ Hill calculated that for sales of 2,000 acres (809.4 hectares) and more, the average contracted price was £0.30 an acre (£0.74 per hectare). As implied, Hill found a strong inverse relationship between price and acreage,⁹⁶ the reasons for which – whether related to transactions cost or location – merit further investigation.

Besides the purchase of land for planting (mainly in the Gold Coast Colony and Southern British Togoland), and the renting of land (especially in Ashanti), the market in agricultural land rights also took the form of the mortgaging or pledging of cocoa farms in return for loans. It was usually pledging, meaning that the farm was taken over by the creditor; although in case of default, farms were not infrequently sold at auction.⁹⁷ The general point is that, from the 1890s to the 1920s, the world demand for cocoa beans had made rights in land as a factor of production into commodities in all the major regions of southern Ghana.

Meanwhile slavery and human pawning gave way to regular (annual or six-month contracts) wage labour and the pledging of cocoa trees. Scholarly attention has focussed on legal action, specifically the British emancipation ordinance in the Gold Coast Colony in 1874.⁹⁸ Recently Amanor has given some evidence that the loss of slaves drove Akyem chiefs into debt, which in turn made them more willing to sell land to strangers to farm cocoa.⁹⁹ The Gold Coast ordinance was followed, eventually, by the prohibition of slavery and pawning in Ashanti, in 1908. While neither act was an example of induced institutional innovation, responding to changing factor scarcities,¹⁰⁰ the transition from coerced to free labour on the ground had an important economic dimension. For too long the view of McPhee, relatively close to the events, has been neglected. In a book published in 1926 he argued that legal abolition had a negligible effect until the adoption of cocoa made it profitable for masters to become employers, and gave slaves economic alternatives, in the shape of farming for themselves or labouring for wages.¹⁰¹ I argue elsewhere that bound labour (slave, pawns, and *corvée* for the chiefs), supplementing self and free family labour, contributed much to the speed and scale of cocoa planting in early colonial Ashanti. In dialectical fashion, the (gradual and uneven) demise of these coerced labour institutions on the ground, and their replacement by wage labour and farm-pledging,

⁹³ Austin, *Labour, Land and Capital*, pp. 259-65, 270-74, 336-9.

⁹⁴ Matson, Report on Land Disputes, p. 19.

⁹⁵ Ibid.

⁹⁶ Hill, *Migrant Cocoa-Farmers*, p. 58; also p. 50.

⁹⁷ Austin, *Labour, Land and Capital*, pp. 278-9, 286-302, 381-400.

⁹⁸ Most recently Getz, *Slavery and Reform*.

⁹⁹ Amanor, Customary land, pp. 142-3.

¹⁰⁰ Dumett, Pressure Groups (see pp. 203-4 for the very vague economic rationales put forward by certain abolitionists, unrelated to the factor ratio); Austin, *Labour, Land and Capital*, pp. 236-42.

¹⁰¹ McPhee, *Economic Revolution in British West Africa*, pp. 252-3.

was made possible by the incomes from the cocoa farms that coerced workers had helped to create.¹⁰²

The colonial period, and especially the cocoa economy, saw wage labour – on regular (six month, annual or sharecrop) rather than merely daily or casual terms – proliferate in all major parts of the export economy. In mining the number of African labourers reached over 17,000 in 1914, rising to 41,000 in 1939.¹⁰³ The government Public Works Department employed a monthly average of more than 19,000 unskilled workers in 1925-6,¹⁰⁴ mostly on road building and repair. In cocoa production regular wage labour spread rapidly in Ashanti in the 1920s, as it had already done in the Gold Coast Colony. In 1945-6 a sample survey was conducted in the Ahafo and Sekyere districts of Ashanti as part of the wider Ashanti Social Survey. The anthropologist Meyer Fortes, in overall charge of the investigation, noted:

Figures from different areas [of Ashanti] show that approximately 30% of cocoa farms are worked by either caretakers or labourers. That is to say, approximately one farm in three is not worked by the farmer himself with or without the assistance of his family or labourers. Our figures suggest that hired labour is used in working at least 40% of cocoa farms in Ashanti, but I am of opinion that this is an underestimate.¹⁰⁵

The first relatively comprehensive survey for Ashanti was not until the crop year which ended with Ghanaian independence, 1956-7. This found that the ratio of hired labourers (wage and share-crop) to farm-owners was 1.89:1.¹⁰⁶ Most of these had migrated, seasonally or permanently, from the northern savanna,¹⁰⁷ both from the Northern Territories of the Gold Coast and from neighbouring French colonies. According to an official report, ‘The number of immigrant labourers crossing the ferries southwards from the Northern Territories during the year’ ending 31 March 1938 ‘was 101,891. Of these, 34,574 were British subjects and 67,317 were French subjects.’¹⁰⁸ This mass migration to the forest zone reflected the fact that cocoa would not grow in the areas where they had land rights. On the other hand, by the 1940s and 1950s, some Asante youths were employed as regular hired labourers. This would have been inconceivable without a fundamental shift in factor ratios since the previous century. Then, Asante household heads lacked capital goods capable of generating the flow of cash that would permit them to hire workers. Now, thanks to the fixed-capital formation that had occurred in the form of cocoa-tree planting, they could attract the services (albeit mostly short-term) even of youths who, as Asantes,

¹⁰² Austin, *Labour, Land and Capital*, pp. 242-9.

¹⁰³ Kay, *Political Economy*, p. 416.

¹⁰⁴ Gold Coast, *Report on the Public Works Department for 1925-26*, p. 3. Meanwhile the use of chiefs’ powers to require labour from their subjects for road-building and maintenance continued into the 1940s (Akurang-Parry, *Colonial Forced Labour Policies*; Austin, *Labour, Land and Capital*, pp. 212-13, 218-20, 242).

¹⁰⁵ Fortes Papers on the Ashanti Social Survey Papers, Cambridge University Library, 9.18, ‘Additional Notes on Land Tenure (Ashanti Cocoa Farmers), n.d. [but almost certainly 1946 and evidently by Fortes]. Quoted in Austin, *Labour, Land and Capital*, p. 319.

¹⁰⁶ Ghana, *Survey of Cocoa Producing Families in Ashanti, 1956-57* (Accra: Office of the Government Statistician, 1960) 68, cited in Austin, *Labour, Land and Capital*, pp. 319-20.

¹⁰⁷ CO96/760/16, J. R. Dickinson, *Report on Labour Conditions in the Gold Coast*, by Chief Inspector of Labour, [Accra], July 1938, p. 3.

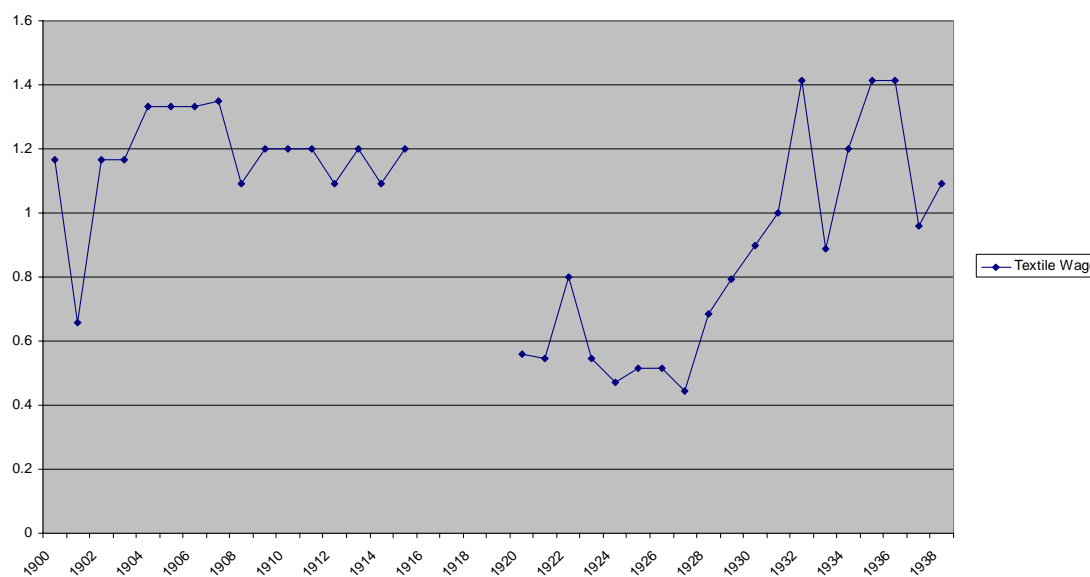
¹⁰⁸ Gold Coast, *Gold Coast Annual Report for 1937-38*, p. 58.

had claims to land within the forest zone, but who as yet lacked capital goods (a cocoa farm) of their own.¹⁰⁹

The period from 1874 to 1914, or at least to 1939, saw the ending of a market in the persons of labourers and the development of a widespread market in their regular, relatively long-term, services. This transition had been made possible by a shift in the relative value of land and labour rights, such that possession of the ‘right’ kind of land now made it possible to hire workers. If the shift in relative factor values continued, we would expect to see land values rising compared to real wages.

However, although the labour-land ratio continued to grow during the interwar period, the much lower cocoa prices of the 1930s would adversely affect the returns to both land and labour. We have already seen that land prices appear to have been much lower, on average, in the Gold Coast Colony in 1921-38 than in 1905-7, and that in nominal terms there was downward pressure on cocoa-farming rentals in Ashanti. According to the Chief Inspector of Labour, in July 1938, ‘The unskilled labourer’s wage of 1/3 [15 d. or £0.0625] is now on [the] level of 1914 and it is certain that the cost of living has increased since then. In 1920 when labour was scarce the rate rose to 2/- [£0.1] it was later reduced to 1/6 and then to 1/3.’¹¹⁰ We still lack a real wage index for this period. A crude indication is available by relating Kay and Hymer’s index of money wages for unskilled labourers to their index of the prices of imported textiles – the major imported element in consumers’ baskets.¹¹¹ In this comparison – narrower than the inspector’s – real wages were identical in 1914 and 1938. The series is presented in Figure 1.

Figure 1. Textile Wages of Unskilled Labourers in Ghana 1900-1938



Unit: the ratio of the average nominal wage rate to the index number for the price of imported clothing, leather and textiles (1953 = 100) for the year concerned.

Source: Kay, *Political Economy*, pp. 318, 332-3. Partly because the base years of the two indices are different, I converted the wage index back to their money values. Where a range of wages was given for the same year, the mid-point is taken.

¹⁰⁹ Austin, *Labour, Land and Capital*, pp. 411-12.

¹¹⁰ CO96/760/16, J. R. Dickinson, Report on Labour Conditions in the Gold Coast, by Chief Inspector of Labour, [Accra], July 1938, p. 45.

¹¹¹ Cf. Austin, *Labour, Land and Capital*, pp. 51-2.

On this admittedly limited evidence, it is likely that wages fell relative to land values in the 1920s, before rising in the 1930s. We cannot be sure, especially as the available information on land prices is for 1921-38 as a whole. But the suggestion that the bargaining power of labour rose in the 1930s is reinforced by the fact that it was during that decade that northern labourers in Ashanti began to win a different, more favourable, type of contract. Annual wage terms were increasingly replaced by a form of managerial sharecropping, under which, in most years, they got more money than annual labourers obtained, and had greater autonomy at work.¹¹² As we have seen in already in other contexts, in Ghana the watershed in the changing relationships between labour and land appears to have been not 1914 but c.1930.

The distributional implications of these changes were complex, regionally and socially. Land in Ghana was far from homogenous. The land which increased in value because of the cocoa revolution was that which lay in the forest zone; not the savanna, except for relatively small areas who were able to cash in on the cocoa boom by supplying foodstuffs to the cocoa belt. The ownership of the forest lands was monopolised in Ashanti and in most of the rest of the zone by the local Akan-speaking societies. Hence regional and ethnic inequality increased in monetary terms; but with the difference that the flow of labour from the savanna to the forest now consisted of voluntary seasonal migrants, rather than slaves.¹¹³ Within the forest zone, the distribution of the benefits of land rights in the forest zone was unequal but wide. Receipts from selling and leasing land to 'strangers' (non-subjects of the chiefdom that owned the land concerned) went to the local chiefs in the first instance; but their subjects enjoyed free access to the same stock of lands.¹¹⁴

Above all, if in quantitative terms the value of labour fell relative to land during the period, the institutional result was to enable immigrants from the savanna to work the lucrative forest lands as free labourers rather than as slaves, and to remit earnings to their distant homes. Also freed were human pawns, most of whom were Akan-speakers, indigenous to the forest zone. In gender terms the ending of pawning was highly uneven, primarily because the economic opportunities for freed slaves and pawns initially fell largely to men only.¹¹⁵ By 1939 the balance of bargaining power was moving favour of the labourers, and they – overwhelmingly male, and from the savanna - were able to change the terms of their employment to their further satisfaction.

CONCLUSION

We can discern the outlines of the causal sequence identified by Williamson in the Ghanaian experience, but with significant differences. Transport improvements, partly in the form of the colonial government's railway-building, and access to the expanding markets created by the Second Industrial Revolution in Europe and North America, enabled farmers in the forest zone of Ghana to exploit the natural resources in qualitatively new ways. Partly because of the nature of the crop, the motor of the whole process, the spread of cocoa cultivation, continued strongly for a decade and a half after 1914. A fundamental result was that farmers in the forest zone acquired the purchasing power to hire free labourers, mainly from the savanna (where cocoa would

¹¹² *Ibid.*, pp. 318-19, 412-30.

¹¹³ Austin, *Political economy of the natural environment*.

¹¹⁴ Austin, *Labour, Land and Capital*, esp. pp. 259-60, 270-1, 350-4.

¹¹⁵ *Ibid.*, pp. 232-5, 243-5.

not grow), whereas previously extra-familial labour recruitment had depended on coercion. Relatedly, it is not possible to quote land values at the beginning of the period, because land for cultivation was basically a free good (this was the ultimate reason, presumably, for the absence of a tropical African case in Williamson's sample). Inspired by cocoa, however, markets in land rights emerged: whether land was sold or leased being dependent on regional politics within southern Ghana.

The approach adopted in this article has been to estimate the progressive shift in the land-labour ratio during and after the cocoa 'take-off' in Ghana. This was done primarily by re-visiting and adjusting the problematic results from the census returns, and then relating the population figures for southern Ghana to estimates of the increasing area under mature cocoa trees, which in turn were derived from the data on output and yields. The paper then summarised and explored the available numerical evidence on the value of land use rights and on the wages paid for regular unskilled labour, as markets in these developed over the period.

In analysing the relationship between price movements in international commodity markets and shifts in relative factor prices within Ghana, the article has underlined the institutional, rather than simply quantitative, character of the changes in factor markets. Equally, the story presented here is one of African agency in entrepreneurship and supply response – adopting a new crop and production function, and motor transport - in the process of transforming land use to exploit external market opportunities. The resultant changes in the patterns of effective demand for labour and land animated the proliferation of markets in land use rights, and the emergence and spread of markets in regular labour services.

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