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The colonial roots of land inequality: geography, factor endowments, or institutions?[1]

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Land inequality is one of the crucial underpinnings of long-run persistent wealth and asset inequality. This article assesses the colonial roots of land inequality from a comparative perspective. The evolution of land inequality is analysed in a cross-colonial multivariate regression framework complemented by an in-depth comparative case study of three former British colonies: Malaysia, Sierra Leone, and Zambia. The main conclusion is that the literature tends to overemphasize the role of geography and to underestimate the role of pre-colonial institutions in shaping the colonial political economic context in which land is (re)distributed from natives to colonial settlers.

I

Land inequality is one of the crucial underpinnings of long-run persistent wealth and asset inequality. Land distribution not only matters as a fundamental component of the asset distribution in pre-modern rural economies, but in addition a high concentration of land ownership may also provide an economic fundament to regimes of pervasive social and political inequality. This article deals with the question of why land in some countries is so much more unequally distributed than in others. More specifically, this article explores the roots of land inequality in former European colonies.

The colonial history of Latin America provides a notorious example of the long-run adverse consequences of land inequality. The concentration of land in the hands of a small political elite is widely regarded as an unfavourable initial condition of economic development in Latin America, as compared to the more egalitarian distribution of land in many east Asian countries, where profound rural reforms and supportive agrarian development policies created favourable conditions for balanced and sustained long-run growth.[2] In the discussion about the 'reversal of fortune' in the American hemisphere, much is made of the contrast in social, political, and economic inequality in the northern regions of British

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[2] Chowdhury and Islam, *Newly industrialising economies*, pp. 61–3; World Bank, *East Asian miracle*, pp. 27–37; Hayami and Ruttan, *Agricultural development*; pp. 329–33; Birdsall, Ross, and Sabot, 'Education, growth and inequality', pp. 93–4; Fei and Ranis, *Growth and development*, pp. 15–18, 320–66; C. Kay, 'Asia's and Latin America's development in comparative perspective: landlords, peasants and industrialization', Institute of Social Studies working paper ser. no. 336 (The Hague, 2001), pp. 6–17.

America on the one hand and in the Spanish American Empire on the other. Latin American inequality, so it is argued, has evolved around the unequal distribution of land and has resulted in institutional arrangements designed to preserve the distributive status quo.[3]

The literature yields several hypotheses regarding the determinants of land inequality, such as geographic conditions, the structure of factor endowments, the nature of colonial institutions and the impact on the latter of either local endowments or the institutional preferences (and traditions) of the metropolitan state. The present article extends the American colonial perspective to the entire colonial world, but focuses specifically on the colonial *roots* of land inequality and only implicitly touches upon its long-run developmental consequences.[4] The main argument of the article is that the nature and determinants of land inequality are more differentiated than envisaged in the aforementioned literature. In particular it is argued that the role of pre-colonial institutions tends to be overlooked, while the impact of the geographical factor in particular tends to be somewhat overemphasized.

The starting point for this study is a new dataset of land inequality figures, which provides the opportunity to study global variation in levels of land inequality.[5] In the first stage of the analysis, the data are examined in a cross-country regression framework. Given the limitations of the available historical data for constructing explanatory variables, as well as the constraints posed by quantitative conceptions of complex institutional variables, the regression analysis is complemented by an in-depth comparative case study analysis involving three former British colonies, Malaysia, Sierra Leone, and Zambia. These case studies enable a more detailed investigation of one of the main questions raised by the regression analysis: why do land inequality levels among former British colonies in tropical areas vary so much? Although a case-study analysis has clear limitations in its own right, the idea is that the complementary nature of both approaches helps to improve our insight into the ultimate causes of land inequality in the colonial context.

II

The 'historical laboratory' of post-colonial American growth divergence offers a good opportunity for evaluating the role of land inequality as an initial condition of long-run economic development. The egalitarian distribution of land in the

[3] Engerman and Sokoloff, 'Factor endowments'; Engerman and Sokoloff, 'History lessons'; S. L. Engerman and K. L. Sokoloff, 'Colonialism, inequality and long-run paths of development', NBER working paper 11057 (2005); North, 'Institutions, economic growth and freedom'; North, Summerhill, and Weingast, 'Order, disorder and economic change'.

[4] Regarding these long run consequences, it is important to stress that this article does not argue that a comparatively egalitarian distribution of land *necessarily* corresponds to a more favourable environment for economic growth or the adoption of democratic (egalitarian) political institutions. Neither does this article argue that high levels of land inequality *necessarily* induce a long run path of pervasive economic, social, and political inequality. The article *does* presume that high levels of land inequality increase the chance that economic, social, and political inequality remains persistent in the long run. A positive statistical relationship between land inequality and income inequality has been recorded in studies by K. Deininger and P. Olinto ('Asset distribution, inequality, and growth', World Bank Policy Research working paper no. 2375 (1999)) and Frankema ('Colonial origins of inequality').

[5] The details of this dataset are discussed in appendix table A.1. See also Frankema, 'Colonial origins of inequality', pp. 24–6, 303–8.

northern regions of British North America contrast remarkably with the unequal distribution of land in Spanish America. However, there is disagreement in the literature concerning the determinants of land distribution in the American colonial context. Some studies emphasize the role of local endowments, including geographic conditions, natural resources, and production factors, in the (re)distribution of land under colonial rule. Local endowments are considered to affect land distribution directly by determining the exogenous (that is, natural) constraints of agricultural production, but also indirectly, by inducing the introduction of specific colonial land market institutions. However, other studies emphasize the role of so-called 'metropolitan institutions' to explain the evolution of land inequality in Latin America as opposed to Northern British America. The term 'metropolitan institutions' refers to institutions transplanted from the colonial mother country to its overseas domains, as opposed to 'indigenous' or 'pre-colonial' institutions.[6] This section discusses the core ideas of these two perspectives, which for convenience will be called the 'endowments perspective' and the 'metropolitan institutions perspective'.

The endowments perspective tends to stress, among other things, the impact of local geographical conditions. Areas with temperate climates are generally better suited to the production of food crops such as wheat or maize. In the pre-modern period, the available agricultural technology meant that cultivation of these types of crops are subject to constant returns to scale. Tropical areas are generally better suited to cash crops, such as sugar, tobacco, coffee, cocoa, rubber, and bananas, that are subject to economies of scale. Testing the hypothesis of Engerman and Sokoloff that 'land endowments of Latin America lent themselves to commodities featuring economies of scale and the use of slave labour', Easterly concludes that a natural environment suitable to cash-crop production is associated with high levels of income inequality in the long run.[7] In addition, it is argued that the exploitation of abundant mineral resources using indigenous labour contributed to the formation of natural-resource-based economies and ethnically and racially heterogeneous societies in Latin America. This scheme of double colonial extraction—that is, natural resources combined with non-European labour—was absent from the northern parts of British America. As a consequence of these differences in natural endowments, Latin American societies became characterized by high levels of inequality in the distribution of assets, social status, and political voice. Over time colonial institutions were shaped so as to preserve the privileges of landowning elites, resulting in a slow and unstable process of democratization, lagged educational development, and persistently high levels of inequality.[8]

Apart from geographic conditions, it is argued that the structure of factor endowments affects the pattern of economic specialization. The relative supply of land and labour determines relative factor prices. Land abundance invokes labour-

[6] For a discussion of this distinction, see Engerman and Sokoloff, 'Debating the role of institutions', pp. 123–5.

[7] See Engerman and Sokoloff, 'Factor endowments'; Engerman and Sokoloff, 'History lessons'; Engerman and Sokoloff, 'Colonialism, inequality' (see above, n. 3); Easterly, 'Inequality does cause underdevelopment', pp. 756–7.

[8] Engerman, Haber, and Sokoloff, 'Inequality, institutions and differential paths of growth'. A wide range of literature argues that Latin American long run economic and social development has been hampered by a 'resource curse'; see, for instance, Gylfason and Zoega, 'Inequality and economic growth'; Leamer, Maul, Rodriguez, and Schott, 'Natural resource abundance'; and Easterly and Levine, 'Tropics, germs, and crops'.

saving production technologies and favours crops that use land extensively. Land-scarce and labour-abundant economies tend to specialize in labour-intensive crops. Relative factor endowments may thus explain the evolution of large land holdings, yet it cannot, by itself, explain land inequality. Domar introduces a political economic argument, stating that throughout history, elites in land-abundant countries have faced the problem of recruiting sufficient labour to cultivate their soil. To prevent landless labourers from moving to the land frontier, landowning elites developed coercive labour market institutions such as serfdom, slavery, and permanent debt peonage.[9] A complementary strategy to guarantee the supply of scarce labour is to (re)distribute land among the elite and restrict indigenous farmers' or landless labourers' access to land. In labour-abundant countries, on the other hand, elites have more opportunities to extract rents from taxes and trade, without the need to intervene directly in the labour or land market. These arguments support the hypothesis that low levels of population density create incentives to redistribute land in a regressive way. Coercive labour market institutions constrain the development of free factor markets.

The endowments perspective has two major implications for our view on the ultimate causes of land inequality. First, it stresses the role of local conditions, rather than the objectives, policies, and institutional preferences of the colonial motherland. Second, the evolution of land inequality to a large extent depends on exogenous factors inducing a specific path of institutional and technological development. Pushing the endowments perspective to its limits, one could argue that, if the geographic location of British North America and Spanish America had been reversed, literature would have considered land inequality as a typical British American, rather than a typical Latin American, phenomenon.

The metropolitan institutions perspective rejects the outcome of this thought experiment. Emphasizing the differences in the Spanish and British policies for establishing and securing political order in their overseas colonies, it pays specific attention to the impact of the institutional carryovers from the metropolis. According to North, Summerhill, and Weingast, colonial land market institutions were shaped, primarily, by metropolitan objectives, preferences, and traditions, rather than by local conditions.[10] They argue that in the federal system of British America the British colonial administration guaranteed credible commitments to property rights and promoted the evolution of free markets, whereas in Spanish America a corporatist structure evolved in which the supreme authority of the Spanish Crown was based on a complex exchange of privileges in turn for services and support of the Church, the army, and the landowning elites. The degree of centralization and overseas control was greater in Spanish America than in British America and this distinction was reflected in the institutional arrangements devised to establish political order.

The decentralization of power provided settler communities with a large degree of freedom to make decisions in matters of land distribution. Among the commercial farmers (yeomen) that settled in the northern states of British America, a relatively egalitarian agrarian society evolved based on small-to-medium-sized

[9] Domar, 'Causes of slavery or serfdom'. For a broader discussion on institutional responses to initial endowments, see Demsetz, 'Dogs and tails'.

[10] North et al., 'Order, disorder and economic change'.

land holdings. The egalitarian land distribution accommodated the production of food crops and the development of agrarian commerce. Moreover, equal access to economic resources played a crucial role in the maintenance of social and political stability among and between consecutive generations of colonial immigrants. The perceived moral imperative of equity contributed to a system of equal representation, which laid the foundations for the rapid development of democracy and education in the post-independent era.[11]

In Spanish America the Crown monopolized the vast quantities of unoccupied land and restricted the land market. Land grants were allocated in reward for support of the colonial administration rather than via a free and competitive land market. The corporatist structure of colonial governance aimed to balance the interests of the Church, the army, and the landowning elites and increase the dependency of these groups on the supreme authority of the Crown. When the authority of the Spanish Crown fell away in the post-colonial era, political stability was undermined and elites started to 'compete for pork' rather than for production factors according to the rules of free market competition. Since no single group in society was strong enough to gain control, establish credible commitments to property rights, and thereby maintain public support for a long period, the political vacuum remained in place for most of the nineteenth century. The consequent state of political disorder placed a severe burden on post-independent economic development.[12]

The role of the Catholic Church in the system of colonial governance in Spanish America further underlines this argument. Lal points out, following Goody, that the Catholic Church devised special inheritance laws that promoted the enlargement of its real estate, in particular land. In return for extending Iberian settlements to new areas and supporting the local colonial administration, the Church obtained land grants from the Crown and also had the right to trade sacraments and salvation in return for land grants from church members. The concentration of land in the hands of the clergy reflected an institutional system promoting the alienation of land from the (indigenous) rural population towards private persons or institutes.[13]

Hence, the metropolitan institutions perspective tends to consider colonial land distribution a political phenomenon, rather than the outcome of potential scale economies or rural economic specialization patterns based on local endowment characteristics. The counterfactual in line with this perspective is that, had Spain colonized North America and Britain the South, the British South would have experienced a path of economic development comparable to that of the US, and the US would, at present, be a middle-income country.

Of course these two perspectives cannot be completely disentangled. Geographical characteristics and factor endowments provoke institutional responses and institutional changes, in turn, may influence factor endowments (albeit in more limited directions). It is rather a matter of the amount of emphasis one wishes to place on each of the two views. The endowments perspective does not

[11] Seavoy, *Economic history*, pp. 73–90.
[12] North, 'Institutions, economic growth and freedom'; North et al., 'Order, disorder and economic change'.
[13] Lal, *Unintended consequences*, pp. 82–6; Goody, *Family and marriage*, pp. 34–47; see also van Oss, *Church and society*, pp. 67–72.

reveal why high levels of land inequality evolved throughout the entire Latin American region. The geographic conditions of Argentina and Uruguay have much more in common with large parts of North America than they have with countries in the tropical zones of South America and the Caribbean. Moreover, in the former countries, the practice of slavery or coerced native labour remained marginal. In this respect the metropolitan institutions perspective offers a better explanation for the evolution of land inequality. The latter perspective, however, falls short when it comes to the question of why in some parts of the British Colonial Empire land was distributed on a fairly egalitarian basis, while in other parts, such as the southern states of the US and the Caribbean sugar islands of Jamaica and Barbados, land was concentrated in the hands of an export-oriented, slave-owning rural elite. Indeed, the connection between geography, scale economies, and the evolution of slave plantations does not seem to be decisively influenced by the institutional differences of the colonial motherlands.

We can gain some insight by distinguishing between various types of landed estate. The most obvious distinction is between the plantation economy in tropical Latin America and the southern states of British America and the haciendas in the Spanish American mainland. The cultivation and export of sugar, tobacco, and cotton is clearly bound to climatological conditions and location (access to the Atlantic Ocean). Moreover, the American plantation economies were inextricably connected to the institution of slavery and the opportunities of agricultural scale economies.[14] However, large parts of Latin America were simply too remote to become engaged in the export of tropical cash crops, even if natural conditions had allowed for it. The hacienda economy was not restricted by highly specific geographic conditions. Haciendas were largely engaged in the cultivation of food crops and livestock products for the domestic market, a type of production without evident scale economies. They operated on the basis of a mixture of free wage labour and various forms of coerced labour. Although slaves were working on haciendas in the coastal areas, the majority of the workforce in the hinterland consisted of native Indians and Creoles.[15] Therefore, the Caribbean sugar plantations seem to fit much better into the endowments perspective, whereas the hacienda is a typical reflection of the political inequality legitimized by specific Spanish colonial institutions.[16]

[14] Fogel, *Rise and fall*, pp. 72–80; Stinchcombe, *Sugar island slavery*, pp. 49–56; Eltis, *Rise of African slavery*, pp. 221–3.

[15] Brading, 'Bourbon Spain', pp. 426–9; Keith, *Conquest*, pp. 69–72.

[16] Easterly ('Inequality does cause underdevelopment', pp. 756–7) distinguishes between 'structural' inequality and 'market' or 'productive' inequality. According to Easterly, structural inequality results from non-market forces and reflects the use of coercive power and institutions designed to alter the distributive status quo in favour of a selected privileged group or elite. Market inequality on the other hand, refers to inequality resulting from purely economic forces, for instance, when the fruits of rapid structural change and economic growth are spread unevenly (at least temporarily). The redistribution of land from natives to colonial settlers (or the colonial appropriation of unoccupied lands) has usually been carried out by constraining free market forces. Yet colonial land inequality does not necessarily exclusively reflect structural inequality. Insofar as opportunities for scale economies give rise to concentration of land, increasing land inequality may very well be in line with the 'productive level' of inequality. Yet the two types of inequality are often difficult to disentangle. The concentration of land in colonial sugar plantations for instance may have been effectuated by market transactions and induced by scale economies, but may also have been dependent on complementary coercive labour market institutions (that is, slavery) to be economically feasible.

Nevertheless, the addition of a third perspective is indispensable for arriving at a more complete assessment of the question of why land inequality evolved the way it did in Spanish America. The historical literature shows that in the areas where the Spanish built their empire on top of indigenous civilizations (for example, the central areas of the former Aztec and Inca Empires), colonial land market institutions were modified along the lines of prevailing indigenous institutions. This is illustrated by the rapid spread of the *encomienda* system in the early days of Spanish colonization. An *encomendero* obtained legal permission from the Crown to collect tribute in money, kind, and labour from the subjects of local Indian chiefs residing in a designated territory. In return the *encomendero* was obliged to pay a decent wage and educate the Indians in the Catholic faith. To effectuate this system, the Spanish colonial authorities used the existing indigenous systems of labour tribute, especially the *repartimiento* (Aztec) and the *mita* (Inca). Since the required institutional infrastructure was already in place, the implementation costs of the *encomienda* system were relatively low.[17]

The Spanish Crown restricted the *encomienda* in three ways. First, the *encomendero* did not own the land in the territory that was allocated to him. Second, the *encomendero* had no right of jurisdiction in the affairs of the Indians residing in his territory. Third, the *encomienda* was granted for a lifetime, but it was not inheritable. With these restrictions the Crown attempted to prevent the rise of a powerful class of landlords and to protect the legal autonomy of native communities.

This system fell into disarray during the second half of the sixteenth century, as it became a serious obstruction to the political consolidation of the Spanish American Empire. As a result of the demographic disaster caused by smallpox and other European diseases, agricultural output (which was almost entirely produced by indigenous communities) plummeted and large tracts of arable land turned into unoccupied wasteland. In the meantime, an increasing number of Spanish settlers were looking for opportunities to make a living. The monopoly on Indian labour services of a confined class of *encomenderos* drove large numbers of newcomers into the class of mercenaries (*soldados*). Lining up in faction wars, they undermined the political and economic stability of colonial society and challenged royal authority. According to Keith, the *soldados* totalled between 25 and 50 per cent of the total Spanish population in Peru as early as the 1550s.[18]

In response to the growing discontent of the new settlers, the Spanish Crown dismantled the monopoly of the *encomenderos* and appointed local officials (the *Corregidores de Indios*) to redistribute Indian tribute payments among a larger group of settlers. The existing *encomienda* grants were transformed into a state pension. But even more important, the Crown started to provide land grants to ameliorate the frustration about the limited access to the key production factors, land and labour. Land grants proved to be the only way forward to appease the growing mass of poverty-stricken soldiers and adventure-seekers. Yet many *encomenderos* were willing to transform their *encomienda* into a land grant as well: the rapid decline of the Indian population literally hollowed out the value of

[17] For a synopsis of the evolution of the *encomienda* system, see Elliot, 'Spanish conquest'; idem, 'Spain and America'; Williamson, *Penguin history of Latin America*, pp. 109–13.

[18] Keith, *Conquest*, p. 51.

Table 1. *Descriptive statistics of land Ginis divided into 13 world regions*

	Min.	*Max.*	*Median*	*Mean*	*St. dev.*	*Coefficient of variation*	*Obs.*
South America	63.9	86.3	80.4	79.9	6.3	0.08	11
Central America	60.7	78.3	73.9	72.3	6.0	0.08	7
Caribbean	46.2	81.6	69.9	68.1	11.8	0.17	7
East Asia	30.7	43.8	39.5	38.4	5.5	0.14	4
South Asia	41.8	62.3	55.4	53.7	8.7	0.16	6
South-east Asia	29.1	68.0	47.3	47.9	11.7	0.24	8
North Africa and Middle East	56.3	82.0	63.8	65.1	7.3	0.11	12
South and east Africa	36.8	83.5	66.7	62.7	17.4	0.28	12
West and central Africa	31.2	68.1	45.2	45.2	9.1	0.20	14
Western offshoots	47.0	78.6	61.1	61.9	16.4	0.26	4
Western Europe	47.0	79.1	63.4	63.9	10.1	0.16	14
Eastern Europe	39.2	60.0	52.4	51.0	9.5	0.19	4
Scandinavia	42.1	63.3	47.2	49.3	7.5	0.15	8
World	29.1	86.3	60.0	59.7	15.0	0.25	111

Source: Frankema, 'Colonial origins of inequality', pp. 24–6, 303–8; for countries included, see tab. A1.

compulsory Indian labour services. Hence, alongside the decline of the Indian population and the *encomienda* system, some important indigenous institutions were dissolved as well.[19]

The broader lesson we can learn from this minuscule synopsis is that pre-colonial institutions played an important role in solving the problem of political control in the early years of the Spanish American Empire. At the same time, these pre-colonial institutions did not appear to be a barrier (and they were probably conducive) to the evolution of land inequality in Spanish America in the long run. By extending the comparative perspective in the remainder of this article, the intention is to argue that, in those areas where the indigenous population retained much of its original position (that is, the vast majority of the colonial world), the nature and relative strength of pre-colonial institutions have played a decisive role in the design of land market institutions.

III

The land distribution data used in this study are derived from the World Census of Agriculture published by the Institute International d'Agriculture (IIA) and the Food and Agriculture Organization (FAO). This census has been carried out every decade since the 1930s, with the exception of the 1940s. Except for the US (with an 1880 benchmark) all observations refer to some year in the early twentieth century or early postwar period. Table 1 presents the descriptive statistics of the Gini coefficients of land distribution of 111 countries, divided into 13 world regions. It is important to stress that these figures refer to the distribution of land *holdings*, rather than land *ownership*. A more elaborate discussion of the underlying data is provided in appendix table A1.

The figures show that the variation in land inequality levels is considerable across and within the selected regions. An impression of the extent of variation can

[19] For a detailed account of the transition from the *encomienda* to the hacienda system in Spanish Peru, see ibid. On the social, political, and economic consequences of the demographic disaster, see Bakewell, *History of Latin America*, pp. 159–81.

Table 2. *The concentration of land in the top percentile of the land distribution: countries with a share exceeding 50%*

	Year	*Land Gini*	*% share of total holdings (>1%)*	*% share of total land (<50%)*
Paraguay	1961	86.3	1.0%	84.1%
Barbados	1961	81.6	0.6%	81.2%
Peru	1961	85.4	0.8%	80.7%
Kenya	1960	76.2	0.5%	63.7%
Mauritius	1930	74.2	0.7%	61.9%
Swaziland	1971	83.5	1.0%	59.8%
Ecuador	1954	80.4	0.9%	56.7%
Chile	1927	83.7	0.7%	56.0%
Venezuela	1961	85.7	1.0%	55.2%
Iraq	1958	82.0	1.0%	55.1%
Jamaica	1961	75.7	0.6%	54.4%
Malaysia (Peninsula)	1960	68.0	0.5%	53.4%
Zambia	1971	69.9	0.6%	51.8%

Source: Frankema, 'Colonial origins of inequality', pp. 24–6, 303–8.

be obtained by considering the minimum and maximum values of 29.1 (Singapore) and 86.3 (Paraguay) respectively, in combination with a mean value of 59.7 and a median value of 60.0. The regional standard deviations range from 5.5 in east Asia to 17.4 in south and east Africa, and the coefficients of variation range from 0.08 in central and south America to 0.28 in south and east Africa.

Latin American land inequality levels are clearly among the highest in the world. The top 20 countries of the entire sample include no less than 16 Latin American countries, and the intra-regional variation in Latin America is small by comparison. The coefficient of variation in south and central America is 0.08, far below the figure for the other regions.[20] The idea that there is something specific about land inequality in Latin America is not only confirmed by a global comparison of land Ginis; it is also revealed by data on the concentration of land in the top percentile of land holders. Table 2 shows that, in many Latin American countries, high levels of land inequality are associated with the presence of a small minority (less than 1 per cent of the land holders) holding more than half of all agricultural land. This relation can also be observed in various other countries with comparatively high land Ginis, such as Malaysia and Zambia (two of the case-study countries which will be discussed in section V).

It is further worth noting that Spain and Portugal are the two European countries with the most unequal distribution of land (see appendix table A1). The levels of land inequality in the former Iberian colonial motherlands appear to be as high as in the average Latin American country. Within Europe and among the four New World countries, large differences in land inequality are apparent. In particular the Catholic countries in Europe seem to have a relatively high land Gini, whereas Scandinavian countries record considerably lower land Ginis. Among the

[20] It should be noted that the larger variation in the Caribbean is basically due to the low level of land inequality in Haiti (46.3). In Haiti the slave revolt in the late eighteenth century stripped European landowners of their possessions and resulted in a massive redistribution of land from large estates to African smallholders. Without Haiti, the regional average of the Caribbean land Gini would be 71.8, and the coefficient of variation would decline to 0.10.

four western offshoots, the US and Canada display considerably lower levels of land inequality than Australia and New Zealand.

In Asia the intra-regional variation in land inequality is high as well. The highest land Ginis are observed in Malaysia (68.0) and Sri Lanka (62.3). The four east Asian countries in the sample, on the other hand, are among the world's most egalitarian. Ranking all land Ginis from lowest to highest, South Korea ranks second, Taiwan ninth, Japan twelfth, and China twentieth. In Africa the intra-regional differences are remarkably large. East and south African countries such as Kenya, Tanzania, Zambia, Zimbabwe, Namibia, and South Africa are notorious for high levels of land inequality. In many west and central African countries, however, land inequality appears to be rather limited. Countries such as Uganda, Ghana, Sierra Leone, Togo, and Burkino Faso record land Ginis considerably below the world average of 60.0. The west and central African regional average is among the most egalitarian in the world.

This brief global overview of land inequality levels in the twentieth century raises several interesting questions. How can the large disparity in Sub-Saharan Africa be explained? Why is the land Gini in Malaysia and Sri Lanka so much higher than in South Korea? Can we draw any parallels between Latin America and other regions? And what lies behind the strikingly low intra-regional variation in this region?

IV

The purpose of the present section is to examine the endowments and metropolitan institutions perspectives on land inequality in a multivariate regression framework. The hypotheses are specified in the following OLS regression model:

$$y = \alpha + \beta_1 x_1' + \beta_2 x_2' + \varepsilon \qquad [1]$$

where y refers to the level of land inequality, α is a constant, and ε is an error term. The vectors x_1 and x_2 represent several variables related to, respectively, the impact of the endowment structure and metropolitan institutions on land inequality.

A regression model designed to explore the statistical relationship between endowments, institutions, and land inequality is likely to encounter endogeneity problems. As stated in section II, factor endowments and institutions are interconnected to a considerable degree, and it is also highly likely that specific regimes of land distribution influence the structure of factor endowments (for instance, by constraining or promoting colonial settlement) and institutional developments. Therefore, we have to take recourse to proxy variables that are selected with special attention to the potential risk of reversed causality and multi-colinearity. Here follows a discussion of the included variables.

A climate variable, the mean annual temperature, is included to test the hypothesis that tropical countries are more likely to develop a skewed land distribution than countries in temperate climate zones. This may be considered as an exogenous variable. The data are obtained from McArthur and Sachs.[21]

[21] J. W. McArthur and J. D. Sachs, 'Institutions and geography: comment on Acemoglu, Johnson and Robinson (2000)', NBER working paper no. 8114 (Cambridge, Mass., 2001), pp. 16–20.

A variable capturing the natural feasibility of food crop cultivation represents a set of *natural* constraints to the production of food crops. These constraints consist of climate characteristics (temperature and moisture regimes), soil characteristics (nutrients (but no fertilizers)), and terrain characteristics (physical support for plants) which are largely independent of human intervention.[22] The variable is specified as the average percentage share of the total arable land which is subject to no, or only moderate, constraints to the cultivation of (a) wheat, (b) maize, and (c) rice. The classification and the data have been obtained from the FAO.[23] A variable capturing the natural feasibility of tropical cash crop cultivation is constructed in a way similar to the food crop feasibility variable, comprising the following four crops: (a) sugarcane, (b) cotton, (c) bananas, and (d) oil-palms.[24]

A dummy variable for countries engaged in extensive ranching activities is included to control for the fact that farms engaged in extensive ranching activities use substantially larger land areas than crop cultivators, which increases inequality in land holdings. The dummy variable is set at one for countries with an evident historical specialization in extensive ranching activities. Specialization is defined as more than 30 per cent of the agricultural land area being devoted to ranching and a share of ranching products (wool, hides, meat, and cattle) in historical exports. On the basis of these criteria the following countries were selected: New Zealand, Australia, the US, Uruguay, Argentina, Mexico, and Honduras.[25]

A variable of population density during the colonial era, specified as the natural logarithm of the total population per square kilometre of total arable land, is included to test the hypothesis that lower population relates to higher land inequality. In order to avoid the eventuality of reverse causation, the population estimates are taken for a benchmark year in the early colonial period. For New World colonies the year 1700 or 1800 has been adopted, and for African and Asian colonies the year 1900. For non-colonies, the year 1700 has been adopted. Square kilometres of arable land have been taken from Taylor and Hudson and the historical population estimates are from McEvedy and Jones.[26]

The effects of different metropolitan institutions are captured by a dummy variable set at one for all countries which have been under British colonial rule and a dummy variable set at one for all countries which have been under Iberian colonial rule. In the event that a country has been occupied by more than one European nation (for instance, in the case of several Caribbean islands), it has been assigned to the most recently active colonial power.

A variable representing the presence of the Catholic Church is included, which is specified as the natural logarithm of the percentage share of Catholics in the total

[22] It can of course be argued that what is defined as a 'natural' constraint to crop cultivation is in fact influenced by human activities and inventions as well. The impact of global warming on changing climate systems is a notorious example. Yet the exogenous nature of this variable remains strong where it distinguishes between the comparative feasibility of crop cultivation in, for instance, the Netherlands and Canada, where the cultivation of food crops such as wheat and maize is highly feasible but tropical crops are doomed to fail, as opposed to Indonesia or Ghana, where the cultivation of a large variety of tropical cash crops is feasible.

[23] FAO, IIASA, *Global Agro-Ecological Zones* (GAEZ), version 1.0.

[24] Ideally, one would have included rubber in the cash crop variable as it turns out to play a key role in the case studies presented in section V. Unfortunately, rubber is not included in the GAEZ database.

[25] The data have been obtained from Mitchell, *International historical statistics: Africa, Asia, and Oceania*; idem, *International historical statistics: the Americas*; idem, *International historical statistics: Europe*.

[26] Taylor and Hudson, *World handbook*; McEvedy and Jones, *Atlas*.

population in a year close to 1960. For reasons stated above, this variable is expected to yield a positive effect on land inequality. These data come from Taylor and Hudson.[27]

Finally, a dummy variable is included to distinguish the presence or absence of an overarching state structure at the time of the arrival of European colonists. This dummy variable is set at one if there were one or more indigenous urban centres used as a seat for colonial administration. For instance, in North America and Argentina, urban centres did not exist at the time when the British and Spanish arrived, but in Mexico, Peru, India, and Egypt they clearly did. The underlying hypothesis is that the adoption of an indigenous administrative framework containing a certain degree of centralization (that is, governed from an urban centre) has facilitated the eventual intervention in the land market by the colonial authorities and is therefore positively related to the evolution of land inequality.

For a sound interpretation of the regression results it is important to stress that none of these variables, per se, affect the distribution of land. Rather, they represent a set of conditions that, as argued in section II, induce specific paths of institutional and technological development, resulting in specific levels of land inequality. Induced institutional and technological changes constitute a dynamic historical process, which means that the timing of the observed levels of land inequality matters a great deal for the conclusions of the regression analysis. Considering the aim of this study—namely, tracing the *colonial* roots of land inequality in a comparative framework—the ideal situation would be to include land Ginis close to the year of independence.

For former African and Asian colonies, these observations are widely available (mainly around the 1960s). For Australia, Canada, and New Zealand, there are data for the early twentieth century. However, for many Latin American countries and the US, a considerable time lag (between the year of independence and the earliest land Gini observation) exists. Consequently, for these countries we have to work with approximations and corresponding assumptions. The relevant question here is how sensitive the observed land Ginis are to post-independence institutional and technological changes and, in particular, the effect of mechanization and globalization on the scale of agricultural production since the latter part of the nineteenth century.

Latin American countries are notorious for high levels of land inequality and there is abundant qualitative evidence that changes in land distribution have been limited in the post-colonial era.[28] Time series data for Argentina, Brazil, and Chile between 1914 and 1997, shown in table 3, illustrate the relative persistence of Latin American land inequality. Yet table 3 also shows that in the US an increase in the land Gini occurred throughout the twentieth century, which coincides with the expansion in the scale of production induced by the adoption of modern agricultural production techniques and (global) market integration since the last quarter of the nineteenth century.[29] Hence, the 1880 observation (0.47) is argu-

[27] Taylor and Hudson, *World handbook*.

[28] See, for instance, Bauer, 'Rural Spanish America', pp. 156–61, 167–9; Bakewell, *History of Latin America*, pp. 461–3.

[29] Federico, *Feeding the world*, pp. 93–101; Hayami and Ruttan, *Agricultural development*, pp. 151–6; O'Rourke and Williamson, *Globalization and history*, pp. 29–53.

Table 3. *The relative persistency of land inequality in Argentina, Brazil, Chile, and the US, 1880–1995*

Argentina		*Brazil*		*Chile*		*US*	
						1880[a]	47.0
1914	80.3	1920	78.0	1927	83.7	1910	57.1
1947	80.6					1930	60.1
1960	81.4	1960	78.7	1965	86.5	1959	67.7
1988	81.4	1985	80.2	1997	84.1	1987	71.9

Source: Frankema, 'Colonial origins of inequality', pp. 24–6, 303–8.
Note: a Figure obtained from O. Galor, O. Moav, and D. Vollrath, 'Land inequality and the origin of divergence and overtaking in the growth process: theory and evidence', CEPR discussion paper no. 3817 (2003).

Table 4. *Pair-wise correlation matrix of regression variables*

	Lgini	*Temp*	*Ranch*	*Foodcr*	*Cashcr*	*Popden*	*Britcol*	*Ibercol*	*Cathlc*	*Precolst*
Land Gini (global sample)	1									
Mean temperature	–0.017	1								
Ranching (dummy)	0.187	–0.035	1							
Food crop feasibility (ln)	–0.154	0.305	–0.029	1						
Cash crop feasibility (ln)	0.256	0.524	–0.062	0.286	1					
Population density (ln)	–0.380	0.026	–0.539	0.055	–0.057	1				
British colony (dummy)	–0.039	0.211	0.190	0.037	0.109	0.081	1			
Iberian colony (dummy)	0.483	0.234	0.204	0.213	0.525	–0.414	–0.224	1		
Catholicism (ln)	0.421	–0.102	0.222	0.175	0.224	–0.396	–0.188	0.533	1	
Pre-colonial state (dummy)	–0.023	0.005	–0.279	–0.186	–0.117	0.485	–0.035	–0.199	–0.399	1

Note: ln = natural logarithm.

ably the best proxy of the colonial level of US land inequality that can be obtained. The regressions will be estimated including and excluding the US land Gini.

To control for the impact of differences in the timing of the land inequality observations, the regressions are performed with three differently composed samples of land Ginis: (a) a *global sample* including the earliest observation available for all countries; (b) a *colonial sample* including only former European colonies with the observation closest to the year of independence; and (c) a *colonial sample* including only former European colonies with an observation within the period 1950–75, the only period for which the number of observations allows a time-constant cross-country analysis. The limitations of the data warrant a careful interpretation. An analysis including crude proxy variables, concentrating on the relation between specific 'conditions' and a benchmark level of land inequality, cannot offer much more than an impression of potential channels of causality. Hence, the discussion of the results will be focused on the signs of the coefficients and the consistency of the coefficients.

Table 4 presents a pair-wise correlation matrix showing that all the variables, except for mean temperature, obtain the expected signs. The matrix further shows that the correlation between land inequality and the mean temperature as well as the British colony dummy is very low (–0.02 and –0.04 respectively). The highest correlation coefficients are found for the Iberian colony dummy (0.48), the Catholicism variable (0.42), and the population density variable (–0.38). Relatively high levels of correlation are also found between the explanatory variables of population density and the ranching dummy (–0.54), population density and the

pre-colonial state dummy (0.48), the mean temperature and the cash crop feasibility variable (0.52), and the Iberian colony dummy and the Catholicism variable (0.53).

The regression analysis has been restricted and controlled in several ways. (1) In the more confined colonial samples, the correlation between the Iberian and Catholicism variables exceeds 0.70 (which is mainly due to the comparatively larger weight of the Latin American countries) and, therefore, the Catholicism variable has been excluded. (2) All regressions have been estimated removing the mean temperature and the ranching dummy to check whether these altered the signs and significance of the other variables, as a result of the correlation with the cash crop feasibility and population density variable. This was not the case. (3) All regressions were run substituting a land Theil for the land Gini. This did not alter the results. (4) All regressions were estimated without the US observation of 1880, which did not alter the results. (5) Because a bias may occur in the population density variable towards countries observed at a later point in time (that is, 1900 rather than 1700), the regressions were also run with population density data in 1900 for all countries, which did not affect the results. (6) The cash crop and food crop variables were replaced by a simpler measure used in a recent paper by Easterly, namely, the ratio of wheat over sugar land feasibility.[30] The adoption of this alternative measure did not alter the results, but the measure itself turned out to be insignificant in all estimations.

Table 5 summarizes the main regression results. They seem to provide additional support for the hypothesis that land inequality is a function of natural conditions supporting the cultivation of specific crops, and especially food crops. The food crop variable is consistently negatively related to land inequality and mostly significant at the 1 per cent level. The cash crop variable has a consistently positive sign, but the coefficient remains close to zero and is insignificant in all estimations. The results for the population density variable are interesting. In the smaller colonial samples, population density is significantly negatively related to land inequality. This effect does not appear in the global sample. The outcome suggests that the institutional response to low population density levels differs in a colonial context as compared to a non-colonial context. Put differently, in colonies with low levels of population density, the probability that land will become unequally distributed is higher than in non-colonies (mainly European countries). In this respect it is also noteworthy that the adjusted R-squared for the smaller colonial samples is higher than for the larger global sample.

Shifting attention to the institutional variables, it appears that, in line with our expectations, the Iberian colony dummy is positive and significant at a 1 per cent level in all specifications. An Iberian colonial legacy raises the land Gini by 0.14 to 0.23 points. Despite the substantial correlation between the Iberian colony dummy and the Catholicism variable, the latter also remains positive and significant in the global sample, indicating that Catholic institutions have also affected the distribution of land, independent of Iberian institutions.

What is more puzzling, however, is the outcome of the British colony variable. Former British colonies do not seem to display lower levels of land inequality on

[30] In his paper, it is shown that the wheat–sugar variable can be used as a proper instrumental variable for present-day income inequality in regression analyses. In this respect it is interesting to observe that I find a rather weak correlation with land inequality (–0.14). See Easterly, 'Inequality does cause underdevelopment'.

Table 5. *Multivariate analysis of land inequality of a global sample and two colonial samples (dependent variable = land Gini)*

	Global sample 20th century		*Colonial sample 20th century*		*Colonial sample 1950–75*	
Mean temperature	–0.002	0.000	–0.001	0.002	0.002	0.004
	(0.002)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
Food crop feasibility (ln)	–0.176***	–0.252***	–0.202***	–0.159**	–0.197***	–0.156**
	(0.061)	(0.076)	(0.068)	(0.060)	(0.068)	(0.061)
Cash crop feasibility (ln)	0.019	0.003	0.046	0.047	0.032	0.025
	(0.064)	(0.060)	(0.065)	(0.057)	(0.061)	(0.054)
Ranching (dummy)	0.045	0.041	–0.019	–0.004	–0.024	–0.007
	(0.056)	(0.052)	(0.057)	(0.050)	(0.053)	(0.050)
Population density (ln)	–0.004	0.002	–0.019*	–0.040***	–0.032***	–0.047***
	(0.010)	(0.010)	(0.011)	(0.011)	(0.010)	(0.010)
British colony (dummy)	0.035	0.036	0.069*	0.099***	0.042	0.083**
	(0.037)	(1.043)	(0.039)	(0.035)	(0.040)	(0.37)
Iberian colony (dummy)	0.209***	0.137***	0.212***	0.225***	0.151***	0.181***
	(0.048)	(2.767)	(0.048)	(0.042)	(0.047)	(0.043)
Catholicism (ln)		0.032***				
		(0.010)				
Pre-colonial state				0.143***		0.127***
(dummy)				(0.034)		(0.035)
F-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Adj. R-squared	0.35	0.43	0.45	0.58	0.46	0.57
No.	84	84	62	62	53	53

Notes: All regressions are ordinary least squares; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The number of countries in the regression is lower than the 111 countries presented in tab. 1, due to missing observations of explanatory variables. The land Gini of the US refers to 1880 in the twentieth century sample. Regressions are estimated using EViews 6.0.

average than other former European colonies. Yet it is particularly remarkable that with the inclusion of the pre-colonial state variable the British colony variable becomes highly significant. Whereas the direct relationship between the British colony dummy and the land Gini turned out to be close to zero (–0.04), controlling for pre-colonial institutions appears to be crucial for a proper assessment of the impact of British colonial policies on colonial land markets. Moreover, the single addition of a pre-colonial state variable raises the adjusted R-squared of the regression by 0.11 to 0.13 points.

V

This section adopts a comparative case-study approach to investigate the evolution of land distribution policies in three former British colonies in the last quarter of the nineteenth and the first half of the twentieth century: British Malaya (the peninsula, hereafter Malaysia), Sierra Leone (the colony and the protectorate), and Northern Rhodesia (hereafter Zambia). This selection is motivated by a combination of similarities and differences in the initial conditions and colonial policies in these countries, which will be discussed below and are summarized in appendix table A2.

All three areas became subject to British colonial rule in virtually the same time span (from the last quarter of the nineteenth century to the late 1950s or early 1960s) and were embedded in the British Colonial Empire with the formal status

of British 'protectorate'.[31] British colonial policies were based on several key principles which applied to all its protectorates. The general objective was to open up foreign markets for British products; to provide British entrepreneurs with access to cheap sources of labour, land, and capital; and to secure the imports of raw materials demanded by British industries. All protectorates had to be governed by a system of 'indirect rule', implying that the colonial administration would seek to modernize the existing administrative networks, not by replacing or ignoring them, but by strengthening them. The British supervised and controlled this process. The delegation of authority had to keep down governance costs and retain the balance between the interests of foreign enterprises, colonial settlers, and the native population. The colonial administration had to refrain, as far as possible, from direct exploitation of economic resources. It had to concentrate on the facilitation of production and trade via infrastructural investments and securing property rights protection. Protectorates had to be administered with balanced budgets and without placing a financial burden on British taxpayers.[32] Revenues could be raised by collecting a head or hut tax, by promoting colonial exports (tariff revenues), or by introducing legal title to land in order to sell it, rent it, or impose land taxes.

The second characteristic shared by these three areas is their tropical location and the feasibility of cultivating tropical crops, such as sugar, rubber, and oil-palms in Malaysia and Sierra Leone, and tobacco and cotton in Zambia. All these crops could be produced with the use of what were at that time readily available technologies. The British were familiar with the opportunities of commercial agriculture through their vast experience and research in their imperial domain.

The third common characteristic relates to the prevalence of traditional techniques and forms of organization in agriculture before the arrival of the British. Systems of shifting cultivation were dominant and food crops constituted the bulk of rural production. The degree of commercialization of the agricultural sector was limited and the distribution of land was highly egalitarian. Formal property rights and legal title to land did not exist. The rural population was organized in relatively small communities along tribal or kinship lines and levels of urbanization were low.

Crucial differences in terms of endowments existed between Malaysia and Sierra Leone on the one hand and Zambia on the other. Coastal access from the hinterland was much more costly in the land-locked protectorate of Zambia than in both Malaysia and Sierra Leone, which disposed of good natural harbours at a short distance. Moreover, although levels of population density were generally low, the scarcity of labour in Zambia was a considerably greater problem than in Malaysia or Sierra Leone. A second difference relates to the relative development of the pre-colonial state. Only in Malaysia did some type of central rule exist at the time of the British arrival. This rule was mainly embodied in the person of the

[31] Wikipedia defines a protectorate as 'a political entity (a sovereign state or less developed native polity, such as a tribal chieftainship or a feudal princely state) that formally agrees (voluntarily or under pressure) by treaty to enter into an unequal relationship with another, stronger state, called the protector, which engages to protect it (diplomatically or, if needed, militarily) against third parties, in exchange for which the protectorate accepts specified obligations, which may vary greatly, depending on the real nature of their relationship' [WWW document] http://en.wikipedia.org/wiki/Protectorate [accessed 18 Nov. 2006].

[32] This is also referred to as the 'revenue imperative' of imperialism; see Young, *African colonial state*, pp. 38–9; see further Curtin, Feierman, Thompson, and Vansina, eds., *African history*, pp. 498–500.

Sultan and his court. In Zambia and Sierra Leone, there was no concept of an overarching governing body in the late nineteenth century.

Considering the colonies' comparative endowment structures, we might expect the development of a plantation economy in Sierra Leone and Malaysia, rather than in Zambia. Yet only in Malaysia did a real plantation economy develop, which went along with a considerable increase in land inequality. Although the natural conditions in Sierra Leone were as favourable as in Malaysia, British attempts to develop a plantation sector were frustrated at a very early stage. In this respect, Sierra Leone is an example of a larger group of west African countries where the plantation sector either remained underdeveloped, or became organized on relatively small-scale farms under the control of the indigenous population. Consequently, levels of land inequality remained comparatively low (see also table 1 and appendix table A1). In Zambia the development of a plantation economy never really got underway. Nevertheless, in contrast to Sierra Leone, land was being redistributed from natives to colonial settlers on a large scale. Land distribution programmes in Zambia were implemented for other reasons, which had little to do with the development of a profitable agricultural export sector.

Despite the overarching British colonial policy principles, the institutions designed to alienate, sell, and redistribute indigenous land resources varied considerably across these British colonies. A comparison of these three cases indicates that only by taking into consideration the pre-colonial political and institutional context is it possible to understand the great gap between the land Ginis of Malaysia and Sierra Leone around the time of independence (68.0 and 43.6, respectively), whereas the land Ginis of Malaysia and Zambia were almost identical (68.0 and 69.9, respectively), but related to an entirely different organization of land and labour markets.

Three years after independence the Gini coefficient of land inequality in Malaysia reached 68.0, which is higher than that of any other Asian country observed (see appendix table A1). Figure 1 shows that land is distributed between a large number of smallholdings (less than 10 hectares) and a limited number of large estate holdings with an average size exceeding 500 or even 1,000 hectares, the latter comprising about 39 per cent of the total agricultural land area in 1960.[33] British intervention in Malaysia had direct consequences for the pre-colonial distribution of land.[34]

Pre-colonial Malaya consisted of a patchwork of chiefdoms, parts of which were united under the Islamic rule of a sultan. Colonial trade during the nineteenth century had largely been confined to the Strait Settlements of Singapore, Penang, and Malacca in the coastal regions, which were effectively British possessions. The Chinese, however, had developed important stakes in alluvial tin mining in the hinterlands, wherein mining was organized around communities (*kongsis*) of Chinese entrepreneurs, merchants, and immigrant labourers over the course of the

[33] FAO, *Report on the 1960 world census*.

[34] The territory referred to in the text is mainly confined to the so-called Federated Malay States (FMS), including the territories of Selangor, Perak, Negeri Sembilan, and Pahang. Together these four states comprise the larger part of the Malayan Peninsula. This federation was established by the British in 1895, and became the Malay union with the inclusion of the Straits Settlements and the other 'unfederated' Malay states in 1946. In 1948 this union became the Federation of Malaya, which became Malaysia in 1963 with the inclusion of Sabah, Sarawak, and Singapore. Singapore withdrew from Malaysia in 1965.

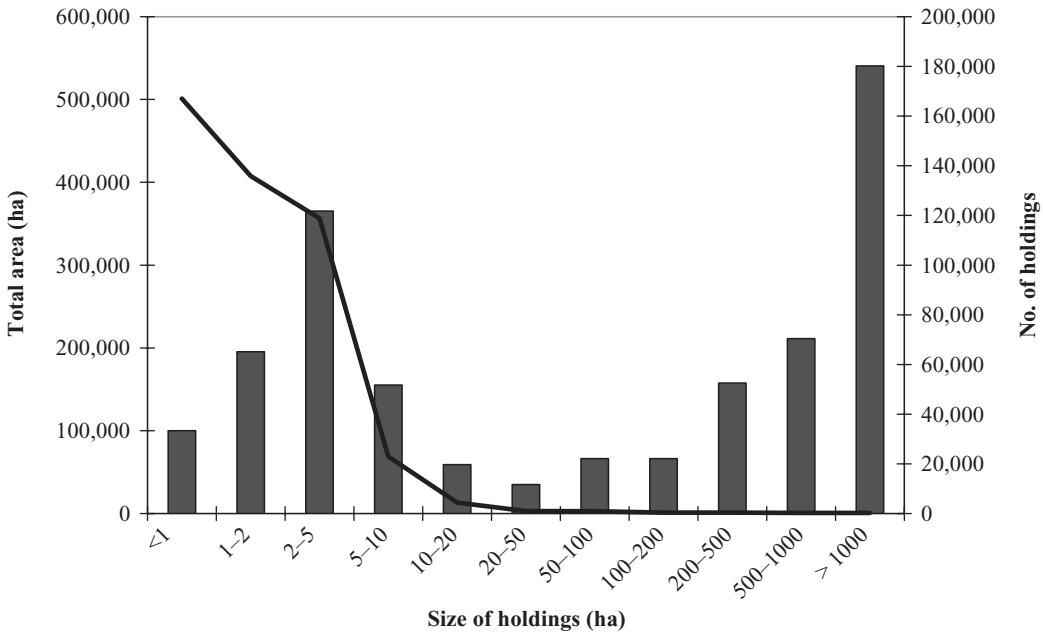

Figure 1. *The distribution of agricultural land in Malaysia (Peninsula), 1960*
Notes: Left-hand y-axis (bars) presents the total farming area of a particular holding size; right-hand y-axis (line) presents the total number of farm holdings per holding size. *Source:* FAO, *Report on the 1960 world census of agriculture*, pp. 27, 43, 56.

nineteenth century.[35] The bulk of agricultural production, however, was carried out within kinship-ordered village communities (*kampong*) where, given the low density of population, a system of shifting rice cultivation prevailed. In return for military protection the local elite (*raja*) obtained the right to collect labour tribute and a production tax from the commons (*ra'ayat*). The raja held no legal titles to land. In the case of conflicts over land or tribute, it was not uncommon for indigenous peasants to abandon their community and move to the land frontier .[36]

British colonial rule was formally established with the Treaty of Pangkor in 1874. In a classic piece of British gunboat diplomacy, Raja Abdullah received military backing in his struggle against Raja Ismael to succeed Sultan Ali. In return for British support, the sultan would seek binding advice from the British Resident-General in all state affairs, including the collection and control of taxes, yet excluding cultural and religious matters. Tax collection had to be carried out in name of the sultan but arranged according to the Resident's advice. This so-called *residential system* was replicated in the lower strata of the administration where local chiefs received 'advice' about state affairs from British district officers.[37]

One of the measures to enhance government revenue was the introduction of legal title to land. The 1897 land enactment determined that all Malay holdings of less than 100 acres had to be registered in the Mukim Register. A set of land regulations introduced in the years 1879–89 entitled holders to lease the land for

[35] Drabble, *Economic history of Malaysia*, pp. 96–7.
[36] Nonini, *British colonial rule*, pp. 17–19, 33–7; Drabble, *Economic history of Malaysia*, pp. 20–2, 63–70.
[37] Andaya and Andaya, *History*, pp. 157–63, 174–7; Ryan, *History of Malaysia*, pp. 158–62.

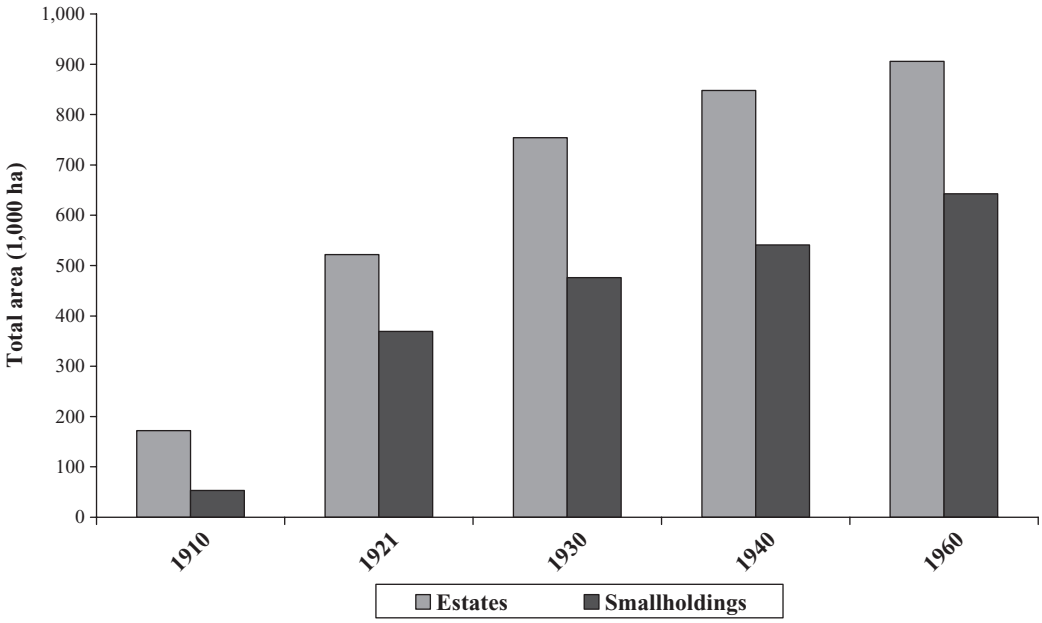

Figure 2. *The total area of rubber cultivation divided into smallholdings (<40 ha) and estates (>40 ha), Malaysia, 1910–60*
Source: Drabble, *Economic history of Malaysia*, pp. 53, 165.

a term of 999 years against an annual quit rent. Moreover, all unoccupied land (the greater part of the peninsula) was considered to be wasteland owned by the government, which could be sold to foreign investors. Access to land thus became controlled and large tracts of alienated land opened the door for the large-scale cultivation of commercial crops and the expansion of the mining activities in the tin fields.[38]

British and Chinese planters started to experiment with sugar and coffee, but switched *en masse* to rubber in the 1890s. In less than two decades, rubber became the ultimate Malayan cash crop, a status that it retained during the entire colonial era. The rubber booms of 1905, 1910, and 1912 attracted large numbers of European planter-settlers and the necessary inflows of capital and Chinese and Indian immigrant labour. On the eve of the First World War, British Malaya supplied more than half of the world's rubber market. As a share of the total agricultural area in 1960, land under rubber increased from 12 per cent in 1910 to 46 in 1921, 63 in 1930, 71 in 1940, and 79 in 1960.[39]

The Malay peasantry also started to grow rubber on their smallholdings. Smallholders were able to compete with large estates due to the low overhead costs involved in family farming. Intensive farming methods enabled them to generate higher yields per acre than the foreign estates. Most of the smallholder rubber production was sold to local land agents or large plantation owners with better access to road and rail and better knowledge of the export market. Figure 2 shows

[38] Drabble, *Economic history of Malaysia*, pp. 63–70.
[39] Ibid., pp. 53, 165.

the total area planted with rubber from 1910 to 1960. Estates and smallholdings are separated respectively into the categories over, and under, 40 hectares of land. According to this definition the share of smallholdings in total rubber acreage rose from 23 per cent in 1910 to 41 per cent in 1921 and gradually declined after that.

The chronic shortage of labour placed serious constraints on the expansion of the estate sector. The Malay peasantry refused to offer their labour in return for money wages and Indian and Chinese labour immigrants were attracted in large numbers to carry out the challenging work on the estates: in 1931 around 1.28 million Chinese and 0.6 million Indians made up 34 and 16 per cent of the total population respectively.[40] As a result of the large population increase and indigenous farmers' shift towards rubber, rice became a major import product.

During the interwar years, two major slumps in the rubber market (1920–2 and 1930–6) caused controversy over the question of whether to restrict output and exports in order to keep up rubber prices, or to maintain production levels and accept lower rubber prices. In the wake of the Great Depression, the development of new rubber acreage was prohibited in 1930 and in 1934 the International Rubber Regulation scheme (IRRA) was implemented in order to set up an international quota system.[41] These new output restrictions pressed hard on the Malay smallholders, and this is reflected in the relative, though not in an absolute, setback of smallholdings in total rubber acreage after 1921 (see figure 2).[42]

Peasant resistance to discriminative colonial policies consisted of the illegal occupation of new or allocated land (squatting) and the underreporting of yields for taxation. These protests never became violent, however. Nonini describes the Malayan resistance as 'avoidance protest', a passive rather than aggressive form of protest against colonial rule. He argues that obedience to local rulers was deeply entrenched in the social norms and customs of the aboriginal Malay, which explains the relatively smooth functioning of indirect rule in British Malaysia.[43] Yet the fact that Malay peasants and local rulers partook of the benefits of commercialization, while foreign import labourers bore most of the brunt of the plantation work, also contributed to the stability of this colonial society. Finally, the development of the Malaysian plantation economy benefited from a central administrative system (the Mukim Register) which facilitated the registration of property rights.

By taking 'sufficient' care to weigh the interests of the native peasantry against those of the European planters, indirect rule proved an efficient and effective tool for exploiting the great Malayan rubber and tin potential. Malaysia is an example of a country with highly favourable conditions for tropical cash crop cultivation leading to high levels of land inequality. It should be noted, however, that Malaysian land inequality cannot only (and perhaps even not primarily) be regarded as

[40] Ibid., p. 143.

[41] Ibid., p. 144.

[42] There is some evidence suggesting that the formulae for calculating the quotas were biased against the smallholders, under-assessing the average yield per acre and thus assigning a lower quota (Nonini, *British colonial rule*, p. 89). Nonini interprets the rubber regulations as a deliberate attempt to diminish the competitive threat that smallholders posed to the European planters. Drabble (*Economic history of Malaysia*, pp. 131–2) basically underlines this view and adds that European planters still had the opportunity to intensify cultivation (by more densely replanting trees on existing rubber acreage), contrary to the smallholders who were already making optimal use of their land resources.

[43] Nonini, *British colonial rule*, pp. 63–6.

an example of so-called 'structural' or 'pernicious' inequality. The output of the commercial agricultural sector increased dramatically under British governance and, to some extent, increasing land inequality was nothing less than the logical outcome of technological change and increasing productivity.

Although Malaysia and Sierra Leone share a tropical location and climate conducive to the cultivation of several cash crops, including rubber, the economic development paths of both British colonies diverged greatly. During the second half of the eighteenth century, Sierra Leone was one of the major centres of the transatlantic slave trade. In 1792, the Sierra Leone Company founded the city of Freetown to 'repatriate' former American slaves who had fought at the side of the British in the American War of Independence. In 1808, Freetown became the capital of the small coastal British colony of Sierra Leone. In the course of the nineteenth century, around 45,000 freed slaves found refuge in this colony. Only in 1896 did the vast hinterland, which we now refer to as Sierra Leone, become a British protectorate. British intervention marked the end of a long period of endemic tribal warfare in the hinterland.[44]

The territory was inhabited by a substantial number of ethnically heterogeneous tribes. Each tribe was subdivided under various chieftains headed by a paramount chief and sub-chiefs elected from a confined number of elite families. The major food crop was rice, which was produced, together with other traditional food crops such as millet, yam, and cassava, using a system of shifting cultivation. The area had great potential for the production of tropical cash crops, as the soil and climate are particularly suitable for growing coffee, cocoa, cotton, and palm and rubber trees (the latter producing high-quality rubber). Like Malaysia, Sierra Leone had good access to sea transportation via the natural harbour of Freetown.[45]

The British acknowledged the productive potential of the protectorate. Experiments with cash crop farming were carried out in the botanical garden in the hills near Freetown with the objective of diffusing agricultural knowledge and technology among the indigenous population. Several colonial reports and surveys mention the ample prospects for investment in the Sierra Leone hinterland.[46] T. J. Alldridge, the Travelling District Commissioner, who negotiated the treaties with the local rulers, concluded in 1900 with respect to the prospect of agricultural commercialization that 'There is now ample scope for the safe introduction of capital in the Protectorate'.[47]

In spite of the aforementioned similarities with Malaysia, a plantation economy did not develop in Sierra Leone and the enthusiasm of the native population for engaging in commercial agriculture never compared to that of the Malayan peasantry. Figure 3 shows that the distribution of land in Sierra Leone in 1970, nine years after independence, was almost completely dominated by tiny plots of subsistence farmers (the vast majority) and some smallholdings producing cash crops. Around 60 per cent of the total arable land area was devoted to rice.[48] The land Gini was 43.6. What caused the different colonial development paths of Malaysia and Sierra Leone?

[44] Fyle, *History of Sierra Leone*, pp. 34–9, 93–9.
[45] Ibid., pp. 1–6.
[46] Macmillan, ed., *Red book of west Africa*, pp. 229–46; Crooks, *Colony of Sierra Leone*, pp. 348–58.
[47] Alldridge cited in Kilson, *Political change*, p. 15.
[48] FAO, *Report on the 1970 world census*.

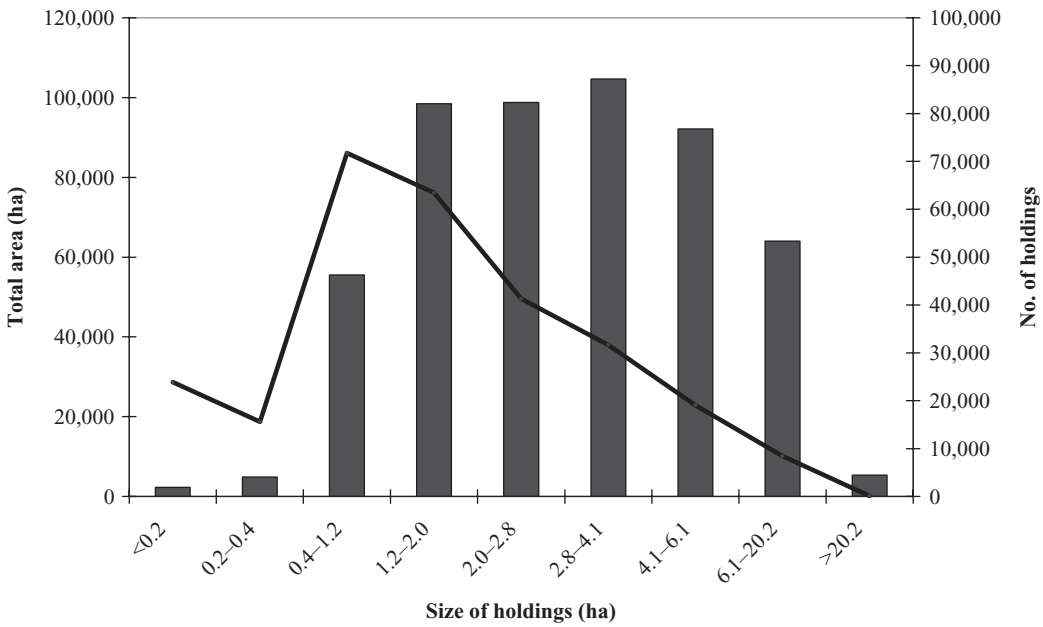

Figure 3. *The distribution of agricultural land in Sierra Leone, 1970*

Notes: Left-hand y-axis (bars) presents total area per holding size; right-hand y-axis (line) presents number of holdings per holding size. The original survey reported land area in acres, which have been translated into hectares in fig. 3.

Source: FAO, *Report on the 1970 world census of agriculture*, Census Bulletin no. 20, pp. 9–20.

The colony of Sierra Leone had a reputation for being 'the White man's grave'. The high tropical disease incidence (especially malaria) gave the coastal area of Sierra Leone one of the highest settler mortality rates in the world. Acemoglu et al. argue that a high tropical disease incidence reduces the scope of colonial settlement.[49] Is this the reason that the British did not develop a plantation economy in Sierra Leone? Some doubts can be raised about this hypothesis. First, technological progress in the fight against malaria (mainly increased production and application of quinine) made it possible in Malaysia to implement large-scale eradication programmes.[50] These were never tried in Sierra Leone on a large scale. Moreover, the health conditions on the coast were as bad as in the hinterland, which raises the question of why the British settled in the colony, but not inland. In fact, the local colonial administration did develop plans to alienate land in the protectorate, but never effectuated them.

The major reason seems to be that the indigenous tribes in Sierra Leone would not allow the British to occupy large tracts of land that they regarded as theirs. The extension of the colony invoked large operational costs, not only in terms of defence and police expenses, but also in terms of lives of British soldiers. As in other parts of British west Africa, local resistance to colonial occupation was too

[49] Acemoglu, Johnson, and Robinson, 'Colonial origins'.
[50] Norman Parmer, 'Health'.

strong to be suppressed without the use of large-scale military force.[51] In fact, only the development of superior military technology in the late nineteenth century enabled European armies to prevent native attacks on their coastal settlements.[52] Contrary to Belgian and Portuguese colonial policy, which did allow for large-scale military campaigns, British colonial policies were founded on the principle that every colony should 'pay its way'. The British government opposed the development of estates in Sierra Leone for the simple reason that local resistance against land alienation would prove too costly to suppress.

The influential position of the local elite in tax collection illustrates the relatively weak position of the British colonial administration. When the hut tax of five shillings per dwelling was introduced to cover the expenses of the administration of the Protectorate, opposition from the Mende and Temne tribes led to the Hut Tax War of 1898–9.[53] The rebellion took the lives of approximately a thousand Creoles serving as missionaries or traders and an indefinite number of European missionaries before the local British army was able to restore order. The fact that Creoles formed the larger part of the British army increased the existing distrust between the indigenous people and the 'European blacks' in the colony.[54]

Resurging waves of protest against taxation became more and more directed against local chiefs who abused their position as tax collectors for their own financial gain. The chiefs gradually extended their incomes by collecting all sorts of fees and levees, besides their official entitlement to a share of the hut tax. The British were not able to alleviate the people's resentment of these abuses, since they did not want to invest in their military capacity in order to enforce their rules. In 1937 the colonial administration proposed, as part of a wider administrative reform, to improve the accountability of tax collection by prohibiting the personal reception of any tax, labour tribute, or customary levy. In exchange for a share of the hut tax, the chiefs would now receive an official government salary. A decade later, 43 per cent of the chiefdoms still refused to comply with the tax reform.[55]

Yet the crucial difference between Sierra Leone and Malaysia was the absence of land alienation in the protectorate. After the Hut Tax War, the British withdrew their plan to implement programmes of land alienation and never even reconsidered that decision. Legal title to land did not become centrally registered and allocated by the colonial administration. Much to the dislike of the Creole population, the natives enjoyed the same rights as British subjects under British law and were permitted to buy land in the colony, but non-natives were forbidden to own

[51] The four Ashante wars in the nineteenth century are probably the best example of the enormous military efforts (and sacrifices) made by the British army to gain and retain control over the Gold Coast (the coastal area of present-day Ghana) (Wesseling, *Europe's colonial age*, pp. 127–31).

[52] Stavrianos, *Global rift*, pp. 279–82; Curtin et al., eds., *African history*, pp. 419–43.

[53] According to the 1963 census, the Mende, living in the southern and eastern provinces, comprised around one-third of the total population. The second largest tribe, the Temne, accounting for another third of the population, were living in the north-western parts of the country (Cartwright, *Politics in Sierra Leone*, p. 14).

[54] The gap in social and cultural background between Creoles and aborigines played a crucial role in the political conflicts over decolonization and post-independent governance during the twentieth century. The Creole population had a very diverse ethnic background, and basically shared the fact that they, or their ancestors, had been African slaves. Their common language was a type of African English spoken in the West Indies. Most of them were Christian and had received a western-style education. The Creoles were officially British subjects and had little in common with the native Africans in the hinterland.

[55] Cartwright, *Politics in Sierra Leone*, pp. 30–2; Kilson, *Political change*, pp. 28–32.

land in the protectorate. In particular the Creoles who made their living in the protectorate in small-scale commerce or handicraft activities were exposed to the arbitrariness of native law and custom.[56]

The case of Sierra Leone is a good example of a west African country where colonial settlement remained confined to the coastal areas. The high operational costs of settlement made the colonial office in London reluctant to expand colonial activities in the protectorate, in spite of the favourable prospects for commercial agriculture. The organizational strength of the indigenous tribes in the hinterland reveals the crucial importance of pre-colonial institutions. Whereas the British in Malaysia were able to use the existing institutional infrastructure to enhance the rural economy, in Sierra Leone the prevailing institutions effectively inhibited agricultural commercialization, in spite of the apparently favourable geographic conditions.

The question remains as to why the resistance to colonial intervention was more intense and more effective in many west African countries as compared to other parts of the colonial world, including large parts of east and south Africa.[57] Although this issue is too complex to be discussed in great detail here, we may briefly consider the possible effects of local geographic and endowment characteristics on pre-colonial institutions. The tropical disease environment in west Africa may have restricted the region's attractiveness for colonial settlement, and it certainly acted as a defensive barrier to colonial occupation. The incidence of malaria proved to be a great ally in the struggle of west African armies against colonial intruders and, as such, helped the indigenous population to preserve their institutions against foreign interference.[58]

The composition of the labour market was also notably different from that of Malaysia. The presence of a large supply of Indian and Chinese indentured labourers was crucial for the success of the Malaysian plantation economy. Can the absence of such a flexible and cheap labour force explain why the native population of Sierra Leone fiercely resisted British attempts to commercialize the agricultural sector? It is certainly true that the elites and common tribesmen perceived the benefits or disadvantages of foreign (European) intrusion into local affairs, almost by definition, on the basis of their expectations of their eventual roles and position in a colonial state. The prospect of working on European plantations did not meet with much enthusiasm (the Malayan peasantry also refused to fulfil this role).

However, in the era of the (formal) abolition of slavery, the system of indentured labour provided plantation economies across the world with vast supplies of Indian workers.[59] After the opening of the Suez Canal and following a steep decline in transportation costs in the last quarter of the nineteenth century, the initial investment required from employers decreased rapidly, as did the period of compulsory labour service required to break even. In large parts of the Caribbean and the Guyana region, Indian indentured labourers were attracted by the prospect of high wages, proper working conditions, and, in some instances, land grants at the

[56] Cartwright, *Politics in Sierra Leone*, pp. 35–6.
[57] Wesseling, *Europe's colonial age*, pp. 122–31.
[58] Ibid., pp. 52–8; Stavrianos, *Global rift*, pp. 279–82.
[59] Northrup, *Indentured labor*, pp. 29–41, 43–4.

end of their debt servicing period. In other words, there was an alternative way to solve the labour problem, but the practice was never established along the west African coast.[60]

Differences in the historical experiences of the Malay and the west African tribes may explain why *perceptions* of colonial rule differed. Almost four centuries of experience with European slave traders contributed to a more pronounced rejection of British colonial intervention than elsewhere—not just among the common tribesmen, but also among their chiefs. While Malay peasants were familiar with the system of indentured labour via the Chinese *kongsis*, and trusted that their way of life would not be threatened, people in west Africa were aware of the destructive impact of the transatlantic slave trade on their societies. If it is true that there was a greater degree of suspicion about the intentions of European colonists in west Africa than in Malaysia because of their different pre-colonial experiences, this provides support for a theory of endogenous institutional change: the direction of institutional change is determined by cumulative local knowledge and experiences which together can be considered as a process of institutional learning.[61] Obviously, this explanation for the observed differences in the attitude of local chiefs to the adoption of British 'indirect rule' requires additional research.

Turning now to Zambia, although its geographical conditions do not effectively inhibit the cultivation of sugar, cotton, or tobacco, its geographical position as a land-locked country degraded much of the colonial prospects for profitable agricultural development. Contrary to Sierra Leone, however, a considerable number of Europeans settled in Zambia and native land was redistributed on a large scale during the colonial period. Land distribution in Zambia in 1971, seven years after independence, is presented in figure 4. The distinction between a large class of smallholders and a limited number of large estate holders is immediately observable. With a Gini coefficient of 69.9, land inequality is even a little more pronounced than in Malaysia in 1960. The lion's share of the large holdings consisted of permanent pastures, meadows, or wasteland. Why was land being redistributed towards white settlers in a British protectorate that seemed to offer few prospects for successful commercialization of the agricultural sector?

The Zambian state is a product of the scramble for Africa. In the mid-nineteenth century, the territory of present-day Zambia was inhabited by various Bantu-speaking tribes, such as the Lozi of Barotseland to the west and the Ngoni warrior tribes to the east. The borders of Zambia were delineated by a series of treaties between the British South Africa Company (hereafter BSAC) headed by the empire-entrepreneur Cecil Rhodes and local chiefs from 1888 onwards. Rhodes wanted to obtain the mineral rights of Katanga[62] and connect all British territories in Africa to construct a railway from the Cape to Cairo. In a region torn apart by devastating slave raids and endemic tribal warfare, it was not very difficult to find chiefs willing to exchange large concessions for protection. The Ngoni warrior

[60] Engerman ('Servants to slaves', pp. 272–4) presents figures for the total number of Indian indentured labourers that migrated across continents from the 1840s until the First World War. To British Guyana an estimated 239,000 Indian workers migrated, to Trinidad *c.*144,000, and to Mauritius *c.*452,000. To other parts of Africa, such as Natal and Mombassa, the estimated numbers are 152,000 and 39,500 respectively. By comparison, Malaya received *c.*250,000 Indian indentured labourers.

[61] For an introduction to the theory of institutional learning, see Greif, *Institutions*, pp. 153–216.

[62] Much to the dislike of Rhodes, it eventually became a province of the Belgian Congo.

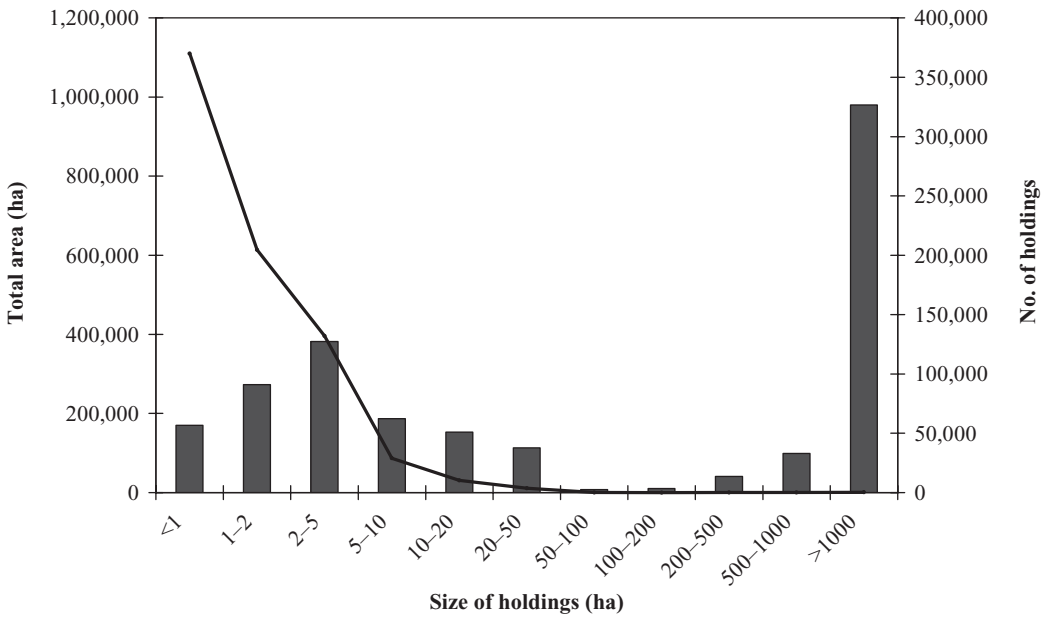

Figure 4. *The distribution of agricultural land in Zambia, 1971*

Notes: Left-hand y-axis (bars) presents total area per holding size; right-hand y-axis (line) presents number of holdings per holding size.

Source: FAO, *Report on the 1970 world census of agriculture*, Census Bulletin no. 11, pp. 13–19.

tribes in the east were brought under control after a brief, yet decisive, war in 1897–8. In 1911, the area north of the Zambezi was formally united in the British protectorate of Northern Rhodesia.[63]

The British government chartered the BSAC with a far-reaching mandate to expand its control in south-central Africa on behalf of the British authorities. The company was formally allowed to negotiate for exclusive monopoly rights on the exploitation of mineral deposits and to claim title to large tracts of unoccupied land. Parliamentary opposition to this charter was considerable, but it gave way under mounting international tension in the region. In particular when gold was discovered in Southern Rhodesia and copper in Katanga, the strategic importance of Zambia (Northern Rhodesia) and its potential future economic value became simply too great for it to be left to the Portuguese or the Germans.

The Colonial Office also opposed the settlement of colonists in Zambia out of concern over potential conflicts with the native population. Rhodes personally convinced the office, however, of the necessity of colonial settlement: it was the only way to occupy and administer such a vast area effectively. Land grants were, therefore, not only given to European farmers but also to pensioned military officers or ex-government administrators who had little or no experience in farming. Since Rhodes's company was financially responsible for the administration of Northern Rhodesia, the development of the agricultural sector was necessary to cover the losses incurred by the BSAC in this central African backwater.[64]

[63] Roberts, *History of Zambia*, pp. 155–70; Phiri, *Political history*, pp. 9–15.
[64] Roberts, *History of Zambia*, pp. 182–5; Gann, *Northern Rhodesia*, pp. 145–8.

Zambia became one of the world's major copper producers. In 1965, metals comprised 96 per cent of total exports; copper alone accounted for 91 per cent. Tobacco, the largest export crop, accounted for just 1.3 per cent of total exports.[65] The international demand for copper surged as a result of the expansion of the electrical and automobile industries during the interwar years. Due to the rapid expansion of the mining industries in Southern Rhodesia and Katanga, the demand for marketable food crops increased and this process was reinforced when the vast potential of Zambia's copper belt became apparent in the late 1920s. Maize had been the major food crop for subsistence farmers and it became the major crop for the white farmers as well. White farmers (Afrikaners and Europeans) settled close to the newly built railway in the centre of the country and in scattered highland areas where the incidence of malaria and tsetse was lower. By the 1930s, malaria had been virtually eradicated in the copper belt.[66]

Labour scarcity was the major obstruction to the development of the mining industry and the commercial agricultural sector. The hut tax served a double purpose. It raised revenue and it drove up the supply of wage labour, since wage labour was the only channel for obtaining tax payments. The BSAC did not take much notice of the principles of indirect rule. Local rulers were responsible for the collection of the hut tax, but had little, if any, influence on the allocation of the money. The outward forms of the indigenous administration were preserved, but the authority of the local chiefs was structurally undermined by the continuous pressure on young men in the local villages to leave their community to work in the mines.[67]

When the Colonial Office took over the administration of Northern Rhodesia in 1924, the colonial state budget was still in deficit.[68] The colonial administration started to designate areas as native reserves where they forced indigenous tribes to live, and transformed all land outside these reserves into Crown land. Crown land could be sold, but not to natives. Reserve land could not be sold. Large tracts of alienated land were thus sold to white settlers. For the native population, access to about two-thirds of the total surface of present-day Zambia became restricted. Around 60,000 people were forced into one of the reserves. These reserves were too small for the extensive use of land required for shifting cultivation, and soil erosion led to severe food shortages in the reserves in the 1930s. Roberts claims these shortages were unnecessary:

> . . . much of the reserve land was unsuited to cultivation and in several reserves there was soon serious overcrowding . . . Such hardship was strictly unnecessary, for much of the land next to the reserves remained quite uninhabited: it was meant for a new wave of white farmers, but they never arrived. This empty land soon reverted to bush. Game

[65] United Nations, *International trade statistics*.
[66] Gann, *Northern Rhodesia*, pp. 127–50.
[67] Hall, *Zambia*, pp. 103–5.
[68] This takeover followed from increasing opposition of white settlers to the unification of Southern and Northern Rhodesia under BSAC rule. With the Devonshire agreement the company strengthened its legal hold on mineral rights in Northern Rhodesia and got rid of the financial administrative burden. The white settlers were satisfied with the takeover since they were released from the domination of southern settlers in political affairs affecting Northern Rhodesia. The BSAC further concentrated on the exploitation of its mineral concessions. From 1953, Southern and Northern Rhodesia joined with Nyasaland in the Central African Federation (CAF) which was dissolved at the end of 1963 into the independent nations of Zimbabwe, Zambia, and Malawi (ibid.).

and tsetse fly flourished there in the absence of people, while reserve land degenerated through excess population.[69]

The anticipated consequence was a steep increase in the numbers of young men from the villages offering their labour to the mines, towns, and estates. The working conditions in the mines were brutal and wages were extremely low. Annual death rates in the range of 50 to 140 per thousand were no exception.[70] The state's financial position improved, however. In 1928–9, government revenue exceeded expenditure for the first time. Since 1922, some big mining companies had obtained large prospecting concessions from the BSAC in return for royalty payments. The largest mines that were being developed were owned by the Rhodesian branch of the Anglo American Corporation (which was the prime mining financier in southern Africa) and the Rhodesian Selection Trust, which was dominated by US capital.[71] Most of the mining profits were not reinvested in Northern Rhodesia and, since the BSAC and the mining companies had their headquarters in London, taxes on profits had to be shared between Britain and Northern Rhodesia. The copper belt grew rich, but the rest of the country remained poor.[72]

In the case of Zambia, the reallocation of land to European settlers was considered an undesirable yet necessary policy to occupy the region effectively, to consolidate British control, and to support the exploitation of mineral resources in the region. Without its mining potential and the competitive threat posed by other European powers, the region would probably never have experienced any substantial colonial settlement. The weak negotiating position of the indigenous tribes and the low feasibility of native agricultural development resulted in a political economic context where land distribution policies were devised to undermine traditional subsistence labour norms and to enforce wage labour.

The regression analysis revealed that the level of population density was significantly negatively related to land inequality in the colonial sample, but not in the global sample, suggesting that relative labour scarcity is more likely to be associated with land inequality in a colonial context. The case of Zambia provides a good example of how such a process may have taken effect: the pressing demand for chronically scarce labour induced repressive measures to manipulate the labour market *through* interventions in the land market. Compared to the case of Malaysia, the labour scarcity problem was solved in a more destructive manner, at least from the perspective of the indigenous society. It also shows that almost identical levels of land inequality in both countries in the 1960s were produced by distinctively different evolutionary models of land distribution, in terms of objectives, policies, and economic and social consequences.

VI

This article has adopted a comparative approach to explore the colonial roots of land inequality. It has been argued that the major determinants of the reversal of fortune in post-colonial America discussed in the literature—that is, geography,

[69] Roberts, *History of Zambia*, pp. 183–5.
[70] Ibid., p. 178.
[71] Ibid., pp. 185–6.
[72] Ibid., pp. 192–3.

factor endowments, and metropolitan institutions—provide an incomplete framework for the exploration of the evolution of land inequality from a global comparative perspective.

The OLS regression analysis of land inequality has raised support for the conclusion that there is a relationship between many of these factors and land inequality, such as the feasibility of cultivating food crops (negative), colonial population density (negative), Iberian institutions (positive), and Catholic institutions (positive). But it has also indicated that colonies under British rule or colonies with a large tropical cash crop potential cannot easily be distinguished by respectively lower and higher levels of land inequality, *ceteris paribus*. It appeared that the inclusion of a pre-colonial state variable raised the explanatory power of the model considerably.

When paying more attention to the role of pre-colonial institutions, we are better able to understand why in some British and tropical colonies land was being alienated and redistributed from natives to settlers and in others not. These determinants have been analyzed in depth in three case studies of former British colonies in tropical areas of Africa and Asia—namely, Malaysia, Sierra Leone, and Zambia—focusing on the question of why, in spite of overarching British colonial policy principles, the institutional arrangements regarding the land and labour markets were so diverse.

The comparison of these three cases has revealed that British colonial interventions in the pre-colonial system of land distribution occurred for varying reasons. One of the reasons is of a largely economic nature: the development of a plantation economy for the export of tropical cash crops to the world market. The feasibility of developing a plantation sector largely depended on suitable geographic conditions (climate, location) as well as the possible solutions to the problem of labour scarcity. This solution did not just depend on the availability of slaves or indentured servants, but also, as the comparison between Malaysia and Sierra Leone has demonstrated, on the perceptions and attitude of the native population towards foreign intrusion in local affairs as well as their ability to oppose colonial settlement.

In areas where the development of a plantation sector was more complicated—for instance, because of a difficult geographical location or the primacy of mineral resource extraction (competing for scarce labour resources with the agricultural sector)—the alienation and redistribution of land was intended to serve primarily political strategic objectives. The attraction of colonial settlers to control or defend the colony against internal or external political and military threats was one of the key aspects of early colonial policies in Zambia. By confining the native rural population into smaller territories, a further attempt was made to raise the supply of wage labour for the mining areas. The lack of overarching institutions that could be used to establish political control and facilitate the exploitation of copper mines in the area created incentives to implement severely repressive institutional arrangements, in order to regulate the supply of labour. The redistribution of land was an important political instrument in reaching this goal.

The success of colonial land distribution policies depended, to a large extent, on the willingness of local elites to cooperate in their implementation and maintenance. All three cases have shown that the nature of indigenous institutions played a decisive role in shaping the political economic context in which such decisions by indigenous rulers were made. The eventual outcomes were surprisingly diverse. In

Malaysia and Sierra Leone, local institutions were left largely intact, because they served the purpose of economic development in the former, and were too costly to replace in the latter. In Zambia, the weak bargaining position of various tribes, traumatized by slave raids and endemic tribal warfare, raised the willingness of local chiefs to hand over control over their lives to a much greater extent. The authority over their main asset, land, was deliberately exchanged for military protection. Hence, taking into account the role of pre-colonial institutions, and the willingness and ability to defend these institutions, furthers our understanding of the colonial roots of land inequality and long-run institutional development in general.

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APPENDIX

Table A1. *Distribution of land holdings by country, twentieth century*

	Year	*Land Gini*	*Year*	*Land Gini*
East Asia				
China	1997	43.8		
Japan	1909	40.0	1960	39.8
Korea, Republic	1970	30.7		
Taiwan	1960	39.0		
South Asia				
Bangladesh	1960	41.8		
India	1960	56.6		
Iran	1960	62.3		
Nepal	1971	54.2		
Pakistan	1961	44.7		
Sri Lanka	1961	62.3		
South-east Asia				
Indonesia	1963	52.7		
Laos	1998	38.2		
Malaysia	1960	68.0		
Myanmar	1993	46.3		
Philippines	1950	48.2		
Singapore	1973	29.1		
Thailand	1963	44.4		
Vietnam	1960	56.2		
South America				
Argentina	1914	80.3	1960	81.4
Bolivia	1960	76.8		
Brazil	1920	78.0	1960	78.7
Chile	1927	83.7	1965	86.5
Colombia	1960	80.5		
Ecuador	1954	80.4		
Guyana	1989	63.9		
Paraguay	1961	86.3		
Peru	1961	85.4		
Uruguay	1937	77.5	1960	79.1
Venezuela	1961	85.7		
Caribbean				
Barbados	1961	81.6		
Dominican Republic	1960	74.5		
Guadeloupe	1969	60.0		
Haiti	1971	46.2		
Jamaica	1961	75.7		
Puerto Rico	1930	69.9	1959	70.7
Trinidad and Tobago	1963	69.1		
Central America				
Costa Rica	1963	73.9		
El Salvador	1961	78.3		
Guatemala	1964	77.0		
Honduras	1952	70.6		
Mexico	1960	60.7		
Nicaragua	1963	75.9		
Panama	1960	69.9		
North Africa and Middle East				
Algeria	1930	59.6		
Cyprus	1985	59.8		
Egypt	1961	63.3		
Israel	1970	69.8		
Iraq	1958	82.0		
Jordan	1983	64.3		
Kuwait	1970	72.5		
Libya	1960	70.0		
Morocco	1962	57.7		
Syria	1971	64.3		
Tunisia	1961	61.6		
Turkey	1927	56.3	1960	60.8
East and south Sub-Saharan Africa				
Botswana	1969	45.9		
Ethiopia	1977	42.4		
Kenya	1960	76.2		
Lesotho	1960	38.1		
Madagascar	1961	80.4		

Table A1. *Continued*

	Year	*Land Gini*	*Year*	*Land Gini*
Mauritius	1930	74.2		
Mozambique	1999	36.8		
Réunion	1972	63.4		
South Africa	1927	62.8	1960	64.3
Swaziland	1971	83.5		
Tanzania	1960	79.0		
Zambia	1971	69.9		
West and central Africa				
Burkina Faso	1993	39.1		
Cameroon	1972	40.7		
Central African Republic	1974	33.8		
Congo, Democratic Republic	1970	53.2		
Cote d'Ivoire	1974	41.5		
Ghana	1970	53.0		
Guinea	1989	45.2		
Liberia	1971	68.1		
Mali	1960	45.1		
Niger	1980	31.2		
Senegal	1960	46.7		
Sierra Leone	1970	43.6		
Togo	1961	45.2		
Uganda	1963	48.1		
Western offshoots				
Australia	1910	73.4	1960	82.0
Canada	1931	48.7	1961	52.6
New Zealand	1910	78.6	1960	69.6
US	1880	47.0	1959	67.7
Western Europe				
Austria	1930	68.4	1960	67.1
Belgium	1930	75.9	1959	60.0
France	1930	62.9	1963	50.2
Germany	1907	70.4	1960 (FRG)	52.4
Greece	1971	47.0		
Ireland	1929	55.7	1960	57.5
Italy	1930	71.5	1960	62.0
Luxembourg	1960	63.8		
Malta	1960	50.2		
Netherlands	1930	56.8	1959	55.7
Portugal	1968	75.6		
Spain	1960	79.1		
Switzerland	1929	54.3	1969	50.4
UK	1921	62.6	1960	68.7
Scandinavia				
Denmark	1933	47.5	1959	44.2
Finland	1929	39.2	1959	33.8
Norway	1929	60.0	1959	36.2
Sweden	1919	57.3	1961	48.8
Eastern Europe				
Czechoslovakia	1921	63.3		
Estonia	1925	42.1		
Latvia	1925	50.4		
Lithuania	1930	44.0		
Poland	1960	51.1		
Romania	1930	43.3		
Slovenia	1991	56.2		
Yugoslavia	1950	43.7		

Notes: The data presented above refer to the size distribution of land holdings. A holding is defined as all agricultural land assigned to a 'holder', that is, one or two persons, rather than a group, community, state, or distinct 'management unit' (in other words, a farm). Holdings refer to the amount of land at the owners' disposal, rather than the amount of land owned. Given the complexity of land ownership definitions, the concept of land holdings is more suitable for comparative purposes. Land is exclusively measured in size (acres or hectares); there are no corrections for the quality, location, or type of land. There is also no information on the restrictiveness of the land holding. The total agricultural area includes all land that is part of a holding; that is, arable land, land under permanent crops, land under permanent meadows and pastures, wood and forest land, and a category of all other land. In the case of shifting cultivation, the total area of the holding consists of the total area under crops and the area that is prepared for cultivation (FAO, *Report on the 1960 world census*, p. 31). Regarding the data, strict selection criteria have been applied to the coverage of the land survey. The survey covers the total (national) acreage of agricultural land. For the subsistence sector the estimated distribution on the basis of a sample selection was used, and large estates had to be enumerated completely. In some countries only crop land was surveyed, which was accepted only in cases where meadows and pastures occupied a negligible share of total agricultural land area (less than 5%) or were part of communal holdings.
Sources: Institut International d'Agriculture (IIA), *International yearbook*; all issues of the decennial FAO, *Report on the world census* (1950, 1960, 1970, 1980, 1990); Taylor and Hudson, *World handbook*, pp. 267–9; K. K. Deininger and P. Olinto, 'Asset distribution, inequality, and growth', World Bank Policy Research working paper no. 2375 (1999), p. 24; O. Galor, O. Moav, and D. Vollrath, 'Land inequality and the origin of divergence and overtaking in the growth process: theory and evidence', CEPR discussion paper no. 3817 (2003), pp. 23–4. See also Frankema, 'Colonial origins of inequality', pp. 24–6, 303–8.

Table A2. *A summary of comparative initial conditions, pre-colonial institutions, and colonial policies in Malaysia, Sierra Leone, and Zambia*

	Malaysia	*Sierra Leone*	*Zambia*
Geography and endowments	Tropical location	Tropical location	Semi-tropical location
	High potential for cash crop cultivation	High potential for cash crop cultivation	High potential for cash crop cultivation
	Various natural harbours	Natural harbour in Freetown	Land-locked region with huge transport barriers
	Low population density	Low population density	Extremely low population density
	High incidence of tropical diseases (malaria)	High incidence of tropical diseases (malaria)	Mediocre incidence of tropical diseases
	Main mineral resource: tin	Main mineral resource: diamonds	Main mineral resource: copper
Indigenous economy and society	Heterogeneous tribal society	Heterogeneous tribal society	Heterogeneous tribal society
	Subsistence farming	Subsistence farming	Subsistence farming
	Shifting cultivation predominant	Shifting cultivation predominant	Shifting cultivation predominant
	Major food crop: rice	Major food crop: rice	Major food crop: maize
	Egalitarian distribution of land	Egalitarian distribution of land	Egalitarian distribution of land
	Absence of formal land property rights	Absence of formal land property rights	Absence of formal land property rights
	Chinese commercial activity in the region and unifying Islamic rule under a Sultanate	Arab commercial activity in the region and tribal warfare (Mende vs. Temne)	Region destabilized by slave raids and endemic tribal warfare
British colonial rule	1874–1957	1896–1961	1889–1964
	Principle of indirect rule	Principle of indirect rule	Administration outsourced to BSAC
	Principle of balanced budgets	Principle of balanced budgets	Continuously negative balance sheets
	Agricultural commercial objectives	Agricultural commercial objectives	Military and political strategic objectives
Land and labour market outcomes	Booming plantation economy	No plantation economy	Marginal plantation economy
	Land Gini in 1960: 0.68	Land Gini in 1970: 0.44	Land Gini in 1971: 0.70
	Indigenous peoples receptive to cash crop cultivation and commercial activities	Large-scale resistance to colonial rule obstructing the settlement of colonial planters	Weak resistance to colonial rule, coercive measures to raise labour supply to mining industry
	Large-scale import of Chinese and Indian indentured labour	Settlement of freed slaves in the coastal area; labour markets in the protectorate remained largely unaffected	Indigenous people forced to offer wage labour via implementation of monetary head taxes
	Forced registration of land	No registration of land in the protectorate	Forced introduction of land reserves for native tribes
	Introduction of legal title to land and conversion of unoccupied land into Crown land	Withdrawal of plan to convert land in the protectorate into Crown land	Introduction of legal title to land and conversion of unoccupied land into Crown land
	Large-scale redistribution of land through sales and grants	No effective British interference in the land market of the protectorate	Sale and grants of Crown land to attract European settlers, acquired land often remained wasted