THE UNIVERSITY OF HULL

ECONOMIC GROWTH IN A SLAVE PLANTATION SOCIETY: THE CASE OF JAMAICA, 1750 -1805

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ABSTRACT

This dissertation is an economic impact assessment of Jamaica's plantation economy from 1750 to 1805. In doing so, it measures and examines growth in completely new ways by employing, as indicators, output, land prices, labour flows and prices, national income, and productivity trends.

The study maintains that, rather than declining, the economy was growing, with most of that growth taking place during the decade before the Transatlantic Trade in Africans was abolished in 1807. Growth was also facilitated by the policies adopted by planters to reorganize the plantation system. The presence of enslaved labour did not render the system inefficient. In fact, the economic reality was quite the opposite. The conclusion, therefore, is that with sufficient evidence of growth and productivity, abolition was not predicated only on negative cost benefit considerations.

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ACKNOWLEDGEMENTS

Introduction

The concept of economic growth and prosperity, and all the variables that contribute to it, seems antithetical to the period of slavery. In fact, it is more commonplace to conjure images of unproductive, resistant, oppressed, and unmotivated labourers working long hours and under dehumanizing conditions. Such conditions are tantamount to the workplace described by Fredrick Taylor when he wrote of the 'scientific management' work environment. Within such a work environment there is little or no consideration for the human element as persons are treated as machines with little or no regard for the social aspects of work.[1] This is considered inimical to the bottom-line, albeit it could be argued that where monopolies exist, they operate virtually unchecked without much effect on profitability and viability. But as we know, the vagaries of monopolies are inefficiency, inertia, lack of innovation and exploitation of their stakeholders as they control very often the means of production. But these are the very factors that often contribute to the annihilation of such businesses. This was the case in plantation societies - a virtual monopoly with no consideration for the enslaved workers. Another very present factor was the high labour intensity inherent on plantations. So, if all the above succinctly describes the structure of the plantation economy it begs the following questions: Were the enslaved, working under such deprived conditions, unproductive? And if they were – what then was the catalyst behind the continuation of slavery? And if slavery was continued artificially, what sustained these closed and autonomous economies? This thesis seeks to explore and illuminate the economic value of slavery and show that slavery was indeed a lucrative activity. It also seeks to banish the view that such societies did not experience economic growth, presenting evidence to the contrary.

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[1] Fredrick Taylor, *The Principles of Scientific Management* (1967).

In discussing growth, the study examines changes in output, land ownership patterns, trends in land prices, and labour productivity. Other indicators such as slave prices and national income estimates are also valuable evidence and sources of information. Barry Higman, among others, has provided much data about trends in agricultural output and slavery in Jamaica and the other British territories between 1807 and 1834. However, knowledge regarding pre -1807 trends remains patchy and in the case of land prices and labour productivity, is almost non-existent. As such, the importance of an assessment of the aforementioned cannot be over-looked.

To date, most historians have measured growth in terms of the plantation economy: the output of sugar, London prices for exported commodities, the profitability of the plantation system to the planters and the wider British colonial economy. Added to this is the fact that so far, there is no study of growth from the perspective of the enslaved population. This is because of the tendency among historians to focus on the dominant sugar sector thereby ignoring other agricultural sectors. Therefore, we know very little about the output of slave gardens, provision grounds, and we know little either about the marketing system. A partial explanation for these omissions lies in the make-up of the island's exports during the period. Commodities from the provision grounds were sold locally and never featured in export revenues. Therefore, in light of this, there is more to be done in facilitating a broader perspective of the island's economic performance during the late eighteenth and early nineteenth centuries.

There are two conflicting, even dialectical arguments regarding the economic performance of the British West Indian slave economies. One is that the economies, with the presence of slave labour, were inefficient and declined towards the end of the eighteenth century. The other, now

closely associated with Seymour Drescher, is that the years leading up to the abolition of the Transatlantic Trade in Africans were profitable and that decline started after.[2]

The intellectual scaffold for the narrative of decline centres on the ideas of Adam Smith. In the opening section of his most celebrated work, Smith postulated the view that *'the work done by freemen comes cheaper in the end than that performed by slaves'*[3] Smith was reinforcing free labour's higher productivity relative to enslaved labour. His revision in *The Wealth of Nations* marked a watershed period in British colonial history. His pronouncements marked the first time that someone of his intellectual ilk had openly challenged or questioned the usefulness of Britain's long established plantation system. The general thrust of Smith's argument was that there was little gain for Britain under the current system. In fact, he went further by suggesting that the main beneficiaries were not the consumers of England, but the producers and merchants, who were the architects of the mercantile arrangement.[4]

Drawing on the writings of Adam Smith, Wilberforce and his European abolitionist colleagues championed the idea of free labour's superiority over enslaved labour. This formed the base of anti-slavery debates from 1780 onwards. There is no evidence that the European abolitionists used firm empirical data to support the claim that enslaved labour was less efficient compared to free labour. The data used by the European abolitionists were tested and the findings are startling. To do this, we compare the performance of Jamaica with Cuba before and after emancipation. In 1770, the slave-based society of Jamaica produced 1,363,000 metric

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[2] Seymour Drescher, *Econocide: British Slavery in the Era of Abolition* (1977).
[3] Adam Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations edited with an Introduction by Edward Cannan* (1976), p. 91.
[4] Ibid., p. 180, Bk .V., Ch.111, p. 486

hundredweight of sugar while Cuba's emerging plantation society produced 313,000. By 1850,

the free society of Jamaica produced 785,000 metric hundredweight while the slave society of

Cuba produced 6,262,000. Therefore, sugar output was considerably higher in those slave-based

societies before and after emancipation. In terms of value, it is clear that Cuba would have

earned more from its sugar output in 1850 than Jamaica. As such, the empirical data openly

challenge Adam Smith's assertion of free labour's superiority. [5]

Smith's inefficiency narrative has featured in the works of Lowell Ragatz and Eric Williams.

Lowell Ragatz, in *The Fall of the Planter Class*, argued that the British West Indian economies

started their downward spiral from the end of the Seven Years Wars in 1763. Ragatz provided

evidence to suggest that the wealth of the colonies was a delusion. He also suggested that many

plantations suffered from soil exhaustion, poor management, overproduction, and debt. [6]

Eric Williams' *Capitalism and Slavery* is the most polemical discussion of the plantation

economies since Adam Smith's *Wealth of Nations*. Published in 1944, *Capitalism and Slavery*

argues that after the Declaration of American Independence, the plantation economies of the

British West Indies declined in profitability and importance to England. Williams further stated

that abolition was driven by material considerations in England and not by British philanthropy

and humanitarianism. Williams summed up this point when he articulated that his study 'is

strictly an economic study of the role of Negro slavery and the slave trade in providing the

capital which financed the Industrial Revolution in England and of mature industrial capitalism

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[5] David Eltis, 'The Slave Economies of the Caribbean: Structure, Performance, Evolution and Significance', in Franklin W. Knight (ed.), *General History of the Caribbean, vol. 3, The plantation societies of the Caribbean* (1997), p. 112-117.
[6] Lowell Ragatz, *The Fall of the Planter Class in the British Caribbean, 1763-1833: A Study in Social and Economic History* (1963); Eric Williams, *Capitalism and Slavery* (1944).

in destroying the slave trade'. The novelty of Williams' argument lay in his juxtaposition of economic decline with abolition. For Williams, the year 1776 was symbolic, as it marked the Declaration of [American] Independence and the publication of the *Wealth of Nations*. In his estimation, the free trade ideas of Adam Smith and the Declaration of Independence were the twin pillars on which a new form of industrial capitalism was built. In this new dispensation, machines and factories dominated the landscape. It was this dominance, according to Williams, that reduced the significance of the colonies to British industrialists and capitalists. The colonies were no longer seen as prized possessions of economic benefit, and abolition was seen to be in the best interest of England.[7] The profitability of the colonies was a mirage.

The most famous critique of the decline narrative, and indeed, of *Capitalism and Slavery*, is found in Seymour Drescher's *Econocide*. Here, Drescher draws on population statistics, production, capital and trade to show that the British colonies expanded on the eve of abolition. He also claimed that the colonies were among the most vibrant areas of Britain's colonial trade. In fact, Drescher argued that the British West Indian economy 'was more important to Britain during the last decade of the eighteenth and the first decade of the nineteenth centuries than ever before or after"[8] He concluded that he 'found no decline in the value of the British slave system until well after the abolition of the slave trade'.[9] He found, based on his analysis that the trade was expanding towards the late eighteenth century. This increase in slave arrivals and the corresponding increase in the enslaved population in Jamaica is an index of capital growth. Likewise, there was a significant increase in output throughout the period. Overall, he suggested that the West India trade continued to retain its share of British overseas trade on the eve of

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[7] Eric Williams *Capitalism and Slavery*. op. cit.
[8] Seymour Drescher, *Econocide*, p. 184.
[9] Seymour Drescher, "The Decline Thesis of British Since Econocide", *Slavery and Abolition* 7, 1 (1986):3-23.

abolition. Drescher's main objection to the decline thesis was quite clear: 'If British slavery was economically expanding at the moment that its growth was decisively inhibited by political action, its economic decline was contingent upon, not determinative of, abolitionism' Hence, abolition was not a consequence of economic decline.[10] Anti-slavery is considered to be contrary to the economic interest and well being of Britain.

The kernel of this debate centred on the causes of British anti-slavery policies. On the one hand, the decline thesis of Williams proposed that inefficiency and unprofitability of slavery mandated abolition. On the other hand, is Drescher's view that the colonies were expanding economically and that the European abolitionists were the driving force behind abolition. Inherent in this view was the old Clarksonian concept of Christian and humanitarian progress. Such progress emerged in light of the economic advances in England during the period of industrialization. These advances were embodied in the works and ideas of William Wilberforce and Thomas Clarkson himself.[11]

Drescher's polemic is as extreme as Williams'. Whereas Williams saw growth up to 1775, followed by a period of 'uninterrupted decline', Drescher argued that the period after 1775 was one of uninterrupted growth. In fact, both seem unwilling to appreciate the nuances that exist in relation to the process of abolition. Williams' interpretation is highly deterministic and refuses to acknowledge even the possibility of religious and/or humanitarian concerns. Drescher, on the other hand, is faulted by his Eurocentric, or neo-Clarksonian ideas on abolition, which negates the roles played by the enslaved in effecting their own abolition. Recent work by slave resistance

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[10] Seymour Drescher, *Econocide.*
[11] Thomas Clarkson, *The History of the Rise, Progress, and Accomplishment of the Abolition of the African Slave-Trade, by the British Parliament* (1836).

scholars have highlighted that enslaved men, like their women folk, formed the core of resistance in the major uprisings of the period. Indeed, they argued that these resistance activities, which culminated in the 'Christmas Rebellion', or the Sam Sharpe Rebellion in Jamaica in 1832, was a powerful factor in Britain's decision to abolish slavery.[12] These differing perspectives are reflective of the dichotomizing discourse on slavery and abolition that has emerged. And, there is no doubt that such perspectives will continue to characterize the historiography for some time. It is arguable whether such perspectives on their own are useful or sustainable in light of the nuances involved.

An investigation into the performance of Jamaica's plantation economy will be done through the following chapters. Chapter one is an overview of the island's historical geography. It shows that agricultural units were concentrated along geographically suited areas. This meant that there was a high concentration of sugar estates along the northern plain, some sections of the southern plain, and the fertile interior valleys of the Rio Minho valley in the parish of Clarendon, the Plantain Garden River valley in the parish of St. Thomas in-the-east, the Black River in the parish of St. Elizabeth, and the Carbaritta valley in the Parish of Westmoreland.

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[12] See Michael Craton, *Testing the Chains: Resistance to Slavery in the British West Indies* (1982); "Proto-Peasant Revolts? The Late Slave Rebellions in the British West Indies, 1816-32", *Past and Present* 85, (1979): 99-125; Hilary Beckles, "The 200 Years War: Slave Resistance in The British West Indies: An Overview of the Historiography", *Jamaica Historical Review* 13 (1982): 1-10; Hilary Beckles, "Caribbean Anti-Slavery: The Self- Liberation Ethos of Enslaved Blacks", in *Caribbean Slavery in the Atlantic World,* (eds.) Verene Shepherd and Hilary Beckles (2000), p. 869-78; Mary Turner, *Slave and Missionaries: The Disintegration of Jamaican Slave Society, 1787-1834* (1998); Richard Hart, *Slaves Who Abolished Slavery, vol. 1, Blacks in Bondage* (1980).Verene Shepherd and Ahmed Reid, "Rebel Voices: Testimonies from the 1831-32 Emancipation War in Jamaica", *Jamaica Journal* 27, 2&3 (2003): 54-63; "Rebel Voices: Confessions, Testimonies and Trial Transcripts from the 1831-32 Emancipation War in Jamaica", *Jamaica Journal* 28, 2&3 (2004): 59-64.

Chapter two examines the island's output from 1750 to 1805. Output is the first indicator to be examined because it was the outcome of factor inputs and total factor productivity. Therefore, changes in output for the period under investigation are tracked and analyzed. In doing so, it employs contemporary trade statistics, most notably those from Customs 3/17 and the Naval Office Shipping List (NOSL). It also engages with the methodological problems that confronts users of both data sets. Overall, it shows that towards the end of the eighteenth century, the economy was expanding as witnessed in the phenomenal growth that took place in both the sugar and coffee sectors. The chapter concludes with an examination of the island's national income estimates. The analysis offers the first real attempt to calculate national income trends in Jamaica (or any slave-based economy) before 1800. The findings show that the island's national income was 2.5 percent of England's between 1800 and 1805. In fact, the island's national income estimates declined considerably between the abolition of the transatlantic trade in 1807 and emancipation in 1833.

How was the level of output achieved? Chapters three, four and five answer this question by looking at the relative contributions of labour, land and productivity. Chapter three highlights labour input issues. Therefore, issues relating to population trends, labour participation ratio, the types of work done by the enslaved, and the reproduction rate of the labour force are highlighted. Within this context, labour flows from Africa are discussed. Generally speaking, Africans were imported for two fundamental reasons, that is, to grow the labour force and to substitute for the demographic deficit of the enslaved population. Put differently, Africans were imported to replace those who died and to meet a growing demand for labour within and at times outside of

the colony. As such, spurts of plantation expansion during the 1790's witnessed an unparallel increase in enslaved arrivals.

Chapter four examines land, which is the second factor input. The chapter examines land inputs by analyzing the island's land market. Indeed, changes in land use is linked with plantation expansion and changes in the wider commodity market. The chapter also examines land prices in Jamaica. To date, there is no systematic study on land prices during the eighteenth and early nineteenth century. As such, there is no information on regional variations or long-term trends in prices. The general consensus within the historiography is that the average price per acre of land in Jamaica was somewhere in the region of £2 to £14.[13] Such averages were provided by contemporaries and not on any broad based investigation into land values. One such contemporary, Bryan Edwards, declared that the price of land was dependent on the location of the land. He stated that good sugar land in close proximity to the sea coast was costly. On the northern and more fertile side of the island, Edwards claims that a parcel of land ten miles from the sea, with a river running through it, and with the purchaser having to do road repairs would cost on average £10 per acre. A similar parcel without the inconveniences would cost £14.[14] While Edwards showed awareness that physical characteristic, as well as the use to which land was put, determined land prices, other factors impacted on land values during this time. The size of holdings is one factor that influenced land values. The value of land during the eighteenth

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[13] Richard Dunn, *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624-1713* (1973), p. 51- 66; Veront Satchell, *From Plots to Plantations: Land Transactions in Jamaica, 1866-1900*)1990); Richard Sheridan "The Wealth of Jamaica in the Eighteenth Century", *The Economic History Review* 18 (1965): 292-311.
[14] Bryan Edwards, *The History, Civil and Commercial, of the British West Indies* (1793) vol. 2, p. 250-55.

century was not uniform. Land prices ranged from as low as £2 per acre to as high as £150 per acre.[15]

Chapter five is a measurement of productivity which looks at changes in output as a result of changes in input. It uses data from the preceding chapters to measure the island's land and labour productivity as well as it provides new estimates on total factor productivity.

Finally, chapter six summarizes the discussion within the broad context of the debate that has divided historians since the publication of Eric Williams' *Capitalism and Slavery*. It points to the fact that there was growth in Jamaica's plantation economy from the Declaration of American Independence in 1776 to the eve of slave abolition in 1805. As such, it openly refutes the decline thesis of Adam Smith and Eric Williams for that period and for Jamaica. Indeed, the image of an unproductive labourer was a false one. The chapter highlights the need to move away from the dichotomizing discourse that exists on the process of abolition to one that embraces the nuances involved in the process.

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[15] Island Records Office, Jamaica, Deeds (Old Series), volumes 138-559.

Chapter 1

Jamaica's Historical Geography

Jamaica is the third largest island in the Caribbean behind Cuba and Hispaniola. At its maximum extent the island is 146 miles from the most easterly to the most westerly point and 51 miles from the most northerly to the most southerly point. The total area of the island is 4,411.2 square miles or 2,823,168 acres.[16] To give some perspective to Jamaica's size, a comparison is made with England, the country that colonised the island in the seventeenth century. The total size of England is 32,221,306 acres. This means that the island of Jamaica is 9 percent of the total size of England. Alternatively, the county of Yorkshire, which is the biggest English county, is 3,882,851 acres. Therefore, in terms of its size, the island of Jamaica is 73 per cent of the total size of the county of Yorkshire.[17]

The topography of Jamaica is shown in figure 1.1 below. Jamaica's topography consists of a highland interior that stretches from the May Day and Santa Cruz Mountains, known as the Central range in St. Elizabeth, to the Blue Mountains in St. Thomas. The Blue Mountain range, the island's largest and highest elevation of 2,256 metres, forms part of the boundary for the parishes of St. Andrew, Portland, and St. Thomas. The Central range is equally expansive. It forms part of the boundary for the parishes of Clarendon, St. Elizabeth, Manchester and St. Ann.

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[16] The Handbook of Jamaica, comprising historical, statistical and general information concerning the island, obtained from official and other records and compiled by the Jamaica Information Service (1963), p. 5.
[17] The Statesman's Yearbook (2005).

Supplementing these two mountain ranges are numerous peaks, hills, plateaux, and gullies that

extend the length of the entire island.[18]

Figure 1.1 indicates that most of the island is at an elevation of over 500 feet. The hilly terrain

had a significant bearing on the location and establishment of various agricultural units during

the eighteenth century. The crop that was unsuitable for this type of terrain was sugar cane. The

cultivation of sugar cane is dependent on an average temperature of around 75 degrees

Fahrenheit.[19]

Figure 1.1 Topographical Map of Jamaica
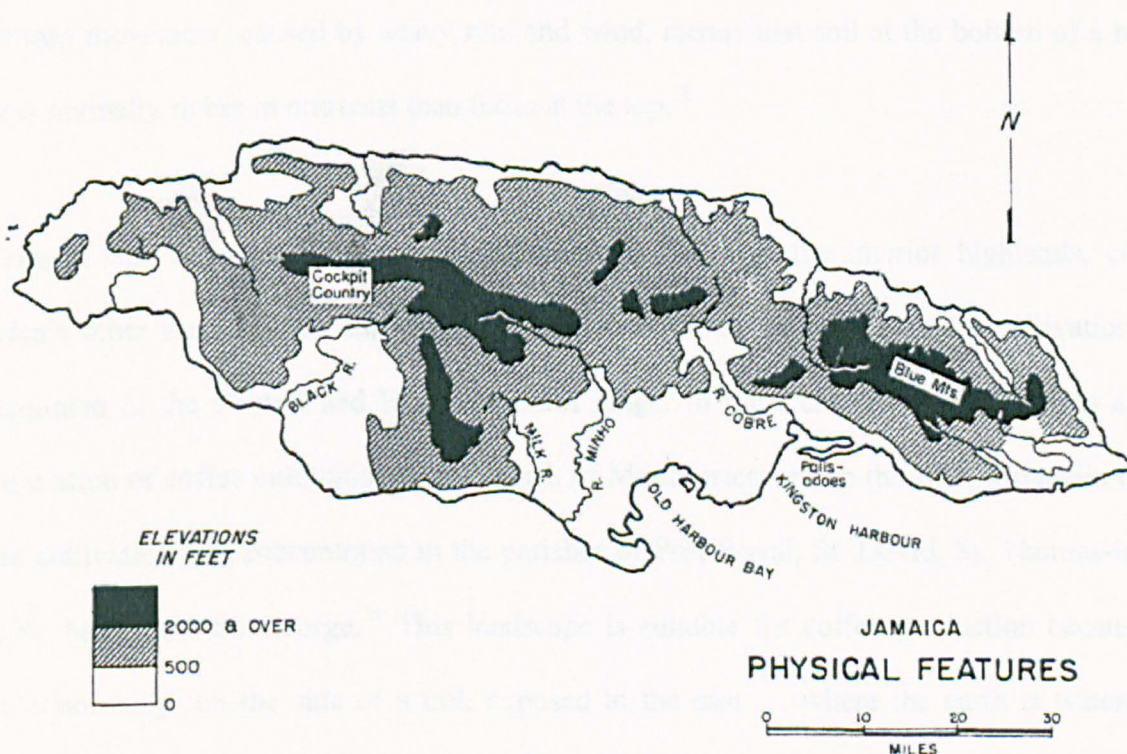
Source: The Economic Development of Jamaica: a report by a mission of the International Bank
for Reconstruction and Development. (Johns Hopkins University Press 1952), p. 6.

[18] The Handbook of Jamaica, op. cit. p. 6-7
[19] British Parliamentary Papers , Select Committee Reports and Correspondence on the Trade and Commerce of the
West Indies with minutes of Evidence, 1832, no.492.

The sugar plant must also receive a considerable amount of sunshine. Temperatures below 50 degrees Fahrenheit are usually associated with elevations like the Blue Mountain range and the Central range. This meant that those areas were unsuitable for sugar cultivation. The amount of moisture that soil on a slope retains is dependent on the texture of that soil. Soils with high clay content are able to retain moisture. The problem that presents itself is that the higher the elevation, the cooler, and more humid the temperature becomes. This cool temperature means that there is limited evaporation taking place which, in effect, leads to soil saturation. The excess water would therefore rot the root of the cane, making it impossible for it to be processed into sugar. There is also the problem of the downward movement of soil and soil particles. The downward movement, caused by heavy rain and wind, means that soil at the bottom of a hill or slope is normally richer in nutrients than those at the top.[20]

Whereas it was impossible for sugar cultivation to thrive in the interior highlands, coffee, Jamaica's other major export thrived under such conditions. Jamaica's coffee cultivation was concentrated in the Central and Blue Mountain range. In the Central range there was a high concentration of coffee cultivation in the parish of Manchester, and in the Blue Mountain range, coffee cultivation was concentrated in the parishes of Port Royal, St. David, St. Thomas-in-the-east, St. Mary, and St. George.[21] This landscape is suitable for coffee production because the plant is normally 'on the side of a hill, exposed to the east ... where the earth is watered by occasional soft rains or refreshed by dews'.[22] Therefore, sugar and coffee occupied contrasting

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[20] Roger P. Humbert, *The Growing of Sugar Cane* (1963), p. 13-47.
[21] P.J. Laborie, *The Coffee Planter of Santo. Domingo* (1798); Barry Higman, *Jamaica Surveyed: Plantation Maps and Plans of the Eighteenth and Nineteenth Centuries* (1988); "Jamaican Coffee Plantations, 1780-1860: A Cartographic Analysis", *Caribbean Geography*, 2, (1987): 73-91; *Slave Population and Economy in Jamaica*, p. 21-24.
[22] George Richardson Porter, '*The Tropical Agriculturalist* (1833), p. 60 quoted in B.W. Higman, *Slave Population and Economy in Jamaica*, p. 23.

spatial areas. Sugar cultivation was spatially located along the lowlands whereas the cultivation of coffee was confined to the interior highlands. The distribution of sugar estates along the lowlands resulted in other agricultural units, most notably livestock, being relegated to the agricultural fringes.[23]

There are two major coastal plains on the island. The first is the northern coastal plain which extends continuously from Annotto Bay in St. Mary in the east, to St. James in the west, a distance of over 100 miles. Despite its length, the northern plain is narrow and relatively flat. The coastal plain on the south is relatively wider, though discontinuous. There are some extensive wetlands on the coastal plains of Jamaica, the majority of which are located on the southern section of the island. These include the St. Thomas Morass, the West Harbour Morass in Westmoreland, the Upper and Lower Black River Morass in St. Elizabeth. The marshy nature of the southern coastal plains renders it unsuitable for the cultivation of sugar cane.[24] The southern plains are relatively dry and stony. The lack of rainfall on the southern plains made the area unsuitable for cane cultivation. What thrived on the southern plain in the absence of sugar cultivation was livestock farming. During the eighteenth century, there was a high concentration of livestock pens along the southern coast of Jamaica, with the majority being located in the parish of St. Elizabeth.

Jamaica's rainfall pattern is seasonal and it varies greatly as well. Based on rainfall distribution provided in figure 1.2 below, the eastern parishes of Portland, and St. Thomas, the average annual rainfall exceeds 200 inches. In the southern parishes of St. Elizabeth and Clarendon, the

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[23] B.W. Higman, *Jamaica Surveyed,* p. 14.
[24] Ibid, p. 7

average annual rainfall is less than 60 inches. Usually from September to November and from April to June yearly, the island encounters torrential rainfall and flooding which, according to one observer 'laid many low lying plantations under deluges of water'.[25] The debilitating effect the resulting floods had on sugar production was highlighted in a correspondence between Simon Taylor, a wealthy and influential eighteenth century planter and attorney, and Chaloner Arcedekne, absentee owner of Golden Grove Estate in St. Thomas-in-the-east.

Figure 1.2 Rainfall Distribution of Jamaica
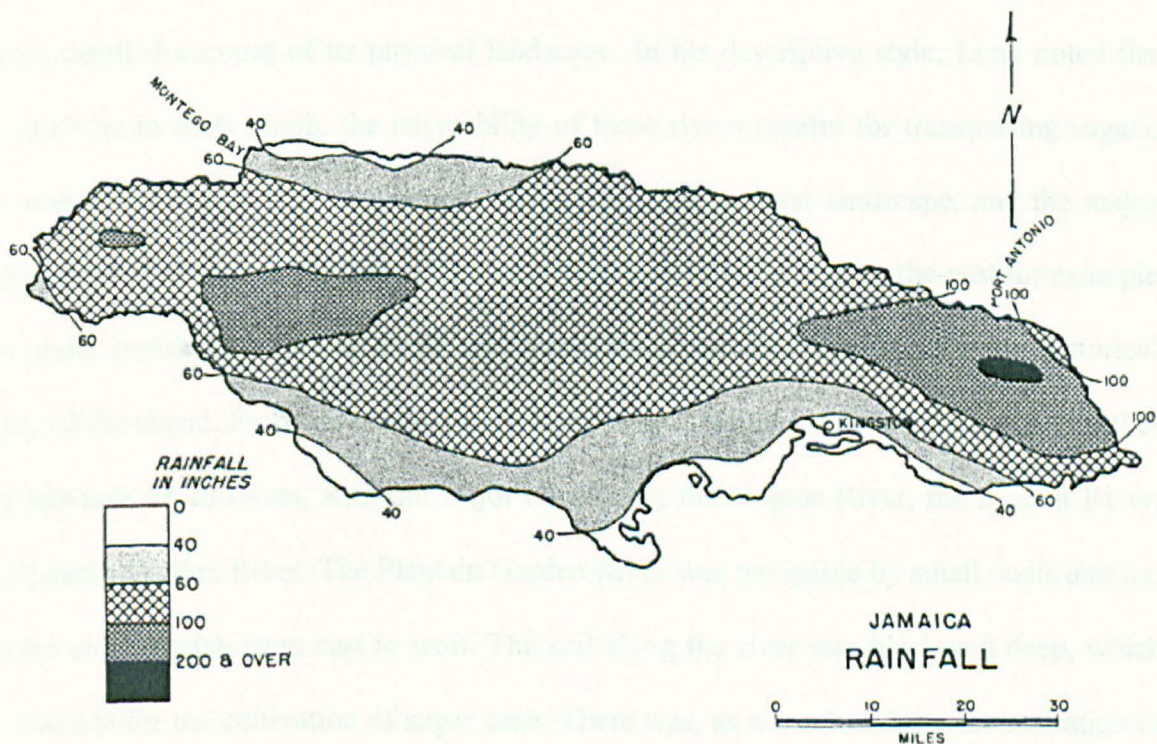
Source: The Economic Development of Jamaica: a report by mission of the International Bank for Reconstruction and Development. (Johns Hopkins University Press 1952), p.8

[25] J.B. Moreton, *West India Customs and Manners, containing strictures on the soil, cultivation, produce, trade, officers and inhabitants; with the method of establishing and conducting a Sugar Plantation. To which is added the practice of training new slaves* (1793), p. 38.

In June of 1765, Taylor informed Arcedekne that the rain and the resulting floods had 'hurt your Estate exceedingly in so much that upwards of two hundred and twenty acres which were to cut when the flood came...have made no more than fifty HHds (hogsheads)'.[26] In April of 1767, Taylor again informed Arcedekne of a parish-wide problem occasioned by the continuous rainfall the year before when most estates recorded significant losses.[27]

Many travellers, governors, evangelists, and planters toured the island during the plantation era and wrote extensively on Jamaica's varied landscape. This paragraph, and the two which follow, are based on the observations of planter-historian, Edward Long. In 1768, Long toured the island and gave a detailed account of its physical landscape. In his descriptive style, Long noted the number of rivers in each parish, the navigability of these rivers (useful for transporting sugar), the type and suitability of the soil for cultivating sugar, the general landscape, and the major shipping areas in each parish. His description of the parish of St. Thomas-in-the-east for example (and for most parishes), is quite useful and provides a valuable insight into the historical geography of the island. From his observations, Long noted that the parish of St. Thomas-in-the-east had upwards of 20 rivers, with the major ones being the Negroe River, the Morant River, and the Plantain Garden River. The Plantain Garden River was navigable by small boats and ran through the entire parish from east to west. The soil along the river was black and deep, which made it suitable for the cultivation of sugar cane. There was, as a result, a high concentration of sugar plantations along the banks of the river. The location of sugar estates along the river banks proved to be a double-edged sword. The closeness to the Plantain Garden River ensured a

[26]Betty Wood (ed.), 'The Letters of Simon Taylor of Jamaica to Chaloner Arcedekne, 1765-1775', in *Travel, Trade and Power in the Atlantic, 1765-1884 Camden Miscellany, vol.35.* (2002), Simon Taylor to Chaloner Arcedekne, 15 June, 1765. The abbreviation hhds refers to hogsheads.
[27] Ibid, Simon Taylor to Chaloner Arcedekne, 8 April, 1767.

constant supply of water which was used by eighteenth century sugar estates to operate their mills.[28] The flip side was that most estates faced imminent threat from flooding. Estates like Golden Grove paid the ultimate price in 1765 when flooding destroyed hundreds of acres planted in cane which severely reduced the expected yield for that year.

Edward Long also toured the parish of St. Elizabeth. The topography of the parish is somewhat different to that of St. Thomas-in-the-east. By Long's account, St. Elizabeth had four major rivers, namely the Black River, the YS River, Hector's River, and Broad River. The Black River, the largest of the four, runs some 34 miles from its origin to the sea, and in most parts, is 150 to 299 feet wide. The natural width and depth of the Black River made it easy for large boats and barges to travel up to 20 miles upstream. This offered considerable advantages to the sugar estates that were located close to the river. Beside the access to water, the navigability of the river facilitated the transport of sugar, rum, and other estate produce to the wharf which had the added advantage of lowering the transport cost for some estates.

St. Elizabeth's varied topography was further highlighted when Long gave a detailed description of the mountainous nature, as well as the savannah-like feature of the parish. There is, along the eastern side of the parish, the Carpenters, the Don–Figuerero, and May Day Mountains. In the centre of the parish are the Santa Cruz and Burnt Savannah Mountains. To the south are the Middle Quarter, New Savannah, and Luana Mountains. In the eastern district, the land consists

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[28] Water mills were more efficient and cheaper to operate than cattle mills, and more dependable than windmills. Despite this, water powered mills were not the dominant mill type employed by Jamaican planters. Cattle mills was the favoured mill type employed on most estates. The reason had to do with the fact that a water powered mill was very expensive to set up. For a view of the distribution of the various mill type in Jamaica during the eighteenth century, see Thomas Craskell, Maps of the Counties of Cornwall, Middlesex, and Surrey, constructed from actual surveys. PRO. CO 700/18-20.

of a savannah, which for the most part is very dry and unproductive. The sandy and stony nature of the soil along the savannah region rendered it unsuitable for the establishment of sugar estates. The absence of sugar estates in the eastern region of the parish resulted in the dominance of the area by livestock pens that bred cattle, mules, sheep, and goats.[29]

We can discern from the foregoing discussion that Jamaica's varied topography contributed to the zoning of agricultural production during the eighteenth century. Coffee cultivation remained constant during the period as it was confined to the mountainous regions of Jamaica. On the other hand, sugar cane production and livestock farming occupied the lowlands but shifted from region to region depending on the suitability of the climate and the fertility of the soil.

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[29] Edward Long, *The History of Jamaica, or General Survey of the Antient and Modern State of the Island: With reflections on its Situations, Settlements, Inhabitants, Climate, Products, Commerce, Laws, and Government*, vol. 2 (1774), p. 2-145.

Chapter 2

Output

The purpose of this chapter is to explore the trend of output growth of goods in Jamaica from 1750 through 1805. In doing so, it will answer fundamental questions relating to the total output of Jamaica, the structure of its trade, the crops contributing to trade, and the markets to which its produce was exported. The chapter will also highlight the level of diversification in the island throughout the period.

The issue of crop and product diversification has been the focus of attention of revisionist historians. They have emphasized its importance when analysing the traditional plantation economies of Jamaica, the Windward and Leeward Islands, and also the non-plantation plantation societies of Belize and the Bahamas.[30] Their work is a counter-discourse to the early writings of Richard Sheridan, Richard Dunn, and members of the 'plantation economy' school who championed the concept of sugar monoculture. Despite Jamaica's varied topography[31], monoculture was entrenched in the writings of these scholars. In Richard Sheridan's seminal work, sugar monoculture became the common feature of the British colonised territories between

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[30] B.W Higman, *Slave Population and Economy,*. p.16; "Jamaican Coffee Plantations, 1780-1860: A Cartographic Analysis", *Caribbean Geography,* op. cit.: 73-91; *Jamaica Surveyed*; 'The Internal Economy of Jamaican Pens, 1760-1890', *Social and Economic Studies* 38, (1989): 61-86; Verene Shepherd "Pens and Pen-keepers in a Plantation Society: Aspects of Jamaican Social and Economic History, 1740-1845", Ph.D. dissertation, University of Cambridge, 1988; Verene Shepherd "Livestock and Sugar: Aspects of Jamaica's Agricultural Development from the Late Seventeenth Century to the Early Nineteenth century", *Historical Journal* 34, (1991): 627-643; Verene Shepherd "Alternative Husbandry: Slaves and Free Labourers on Livestock Farms in Jamaica the Eighteenth and Nineteenth Centuries", *Slavery and Abolition* 14 (1993): 41-66; (ed.) *Slavery Without Sugar: Diversity in Caribbean Economy and Society Since the 17th Century* (2002); Kathleen Montieth "The Coffee Industry in Jamaica 1750-1850", M.Phil. thesis, University of the West Indies, Mona, 1991.
[31] See Chapter 3.

the Peace of Utrecht in 1714 and the beginning of the Seven Years War in 1756. The only difference between the colonies in Sheridan's view was the pace at which they were able to institute monoculture.[32] The 'plantation economy' school has gone a long way to legitimize the concept of sugar monoculture on Caribbean plantations. This interpretation gained momentum in the 1960's when development-economists in the Caribbean - many of whom followed the theoretical arguments of Eric Williams in *Capitalism and Slavery* - argued that contemporary Caribbean economies were monoculture export oriented economies dominated by sugar. In their view, the structural dependence of these economies on the export of sugar was a profound legacy of colonization. The over-reliance on sugar exports and the continued dependence on the British market when colonization had ended meant that alternatives to sugar were never sought. This, in their estimation, was the main cause of underdevelopment in the Caribbean.[33]

As revisionist scholars have highlighted, diversification pre-dated the development of the plantation system in Jamaica and was a common feature of Jamaica's eighteenth century economy. The findings presented in this chapter support this revisionist argument. However, the chapter goes one step further in suggesting that despite the level of diversification, sugar was the dominant staple for most of the plantation period. Therefore, despite the fact that sugar production never monopolised land use within the island, its status within the island's economy was never in question as it dominated export value. This is substantiated by Barry Higman, who agued in his analysis of Jamaican slave society and economy, that sugar and its by-products

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[32] Richard Sheridan, *Sugar and Slavery: An Economic History of the British West Indies, 1623-1775* (1974), p. 415-446.

[33] See for example, Lloyd Best "The Mechanism of Plantation Type Economies: Outlines of a Model of Pure Plantation Economy", *Social and Economic Studies*, 17 (1968): 283-326; George Beckford *Persistent Poverty: Underdevelopment in Plantation Economies of the Third World* (1972); C.Y. Thomas "A Model of Pure Plantation Economy", *Social and Economic Studies*, 17 (1968): 339-48; Michael Craton "The Historical Roots of the Plantation Model", *Slavery and Abolition* 5 (1984): 189-221; Richard Pryor 'The Plantation Economy as an Economic System', *Journal of Comparative Economics* 6 (1982): 288-317.

accounted for 76 percent of the total receipts of the properties investigated.[34] Sugar was Jamaica's most important export crop, with coffee emerging in the late 1790's as the second main export. Livestock farming was also an important feature. However, unlike sugar and coffee, livestock farming was not export oriented. Nevertheless, livestock farming performed an important function in providing meat, draught animals, and manure to the sugar estates. In this respect the contribution of livestock farming to the development of Jamaica's plantation economy was invaluable. [35]

Trade Statistics

Having established sugar's exceptional position within Jamaica's diversified economy we shall measure output growth by using colonial trade statistics, namely the English Customs Records, and the Naval Office Shipping Lists (NOSL). Both data sources are useful in that they were official government publications. However, there are methodological implications when using those records. Historians must also consider the accuracy of those records as a single source for Jamaican production. We must identify some fundamental problems with the data. We must consider alternatives; and we must assess the differences between them.

John McCusker, in his quantitative assessment of sugar and rum production in the continental mainland British colonies, made the point that Jamaica's total sugar production was not necessarily the amount of sugar the island exported, or the amount that England imported from the island. McCusker's argument is an important one in light of the fact that scholars have 'accepted the uncorrected English import figure as an approximation of Jamaica's total

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[34] B. W. Higman, *Slave Population and Economy in Jamaica*, p. 12.
[35] Verene Shepherd, "Pen and Pen-Keepers in a Plantation Society"

production.'[36] The practice which McCusker addresses is evident in the work of Noel Deerr. In *The History of Sugar,* Deerr presents English import data as evidence of Jamaica's production data.[37] This raises questions about the reliability of English Customs records.

English Customs records are a collection of import and export data to and from all English ports from 1696 to 1808. The data are broken down into 2 series and can be found in PRO Customs 3 and PRO Customs 17 (since renamed the National Archives).[38] The general layout of Customs 3 and Customs 17 is similar; they both record data on trade for London and for the outports of England during the period mentioned. As they relate to this study, the data collected from both Customs 3 and Customs 17 indicate the quantity and value of goods imported into London and the outports from the British West Indies, and in this case Jamaica.

English Customs records have a unique advantage over other data sources because they are best recorded. Their use facilitates time-series analyses of the quantity of goods imported into England from Jamaica. However, these records are limited in several ways. Firstly, they do not record the quantity of goods exported from Jamaica to regions outside England including mainland North America, British North America (Canada), and the foreign West Indies.[39] Secondly, Customs records do not record the quantity of goods produced and consumed in Jamaica. Thirdly, Customs records do not record the amount of sugar, rum, or molasses lost through leakage while crossing the Atlantic. This is an important omission since McCusker has

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[36] John J. McCusker, *Rum and the American Revolution: The Rum Trade and the Balance of Payments of the Thirteen Continental Colonies* (1989), p. 138.
[37] Noel Deerr, *The History of Sugar.* (1949), vol. 2, pp.198-99.
[38] The data recorded in PRO Customs 3 are from 1696 to 1780 and are located in volumes 1-80. Customs 17 is an overlap of Customs 3 and the series run from 1772 to 1808 and are located in volumes 1-30.
[39] John J. McCusker, *Rum and the American Revolution,* p.138. See also PRO Customs 3, vols. 1-80 and PRO Customs 17 vols. 1-30.

calculated that leakage amounted to 25 per cent of the quantity exported from the island.[40]

Fourthly, Customs records do not record the loss of exports through war or piracy.[41] Finally, one should not discount the fact that smuggling distorted the true quantity of goods imported or exported from England.[42] This was especially true during certain periods of the eighteenth century when import duties in England were high. To circumvent this, goods were smuggled into and out of the country, and naturally all smuggled goods that entered or exited the country went unrecorded. Consequently, the quantity of goods that arrived in England was not necessarily the quantity that left Jamaica.

The NOSL is an alternative data source to English Customs records. The NOSL record Jamaica's trade from 1683 to 1818.[43] The NOSL were prepared by English naval officers and sent on a quarterly basis to England. They record the commodities shipped, the weight and measurement of the commodities shipped, the ports of origin and destination, and they highlight the registration and tonnage of the vessels used.

One advantage of using the NOSL is that they provide greater coverage of the geographical distribution of exports from Jamaica. They record exports to Britain, to mainland North America, to British North America, and to the foreign West Indies. Historians have often written on the macro aspects of Jamaica's colonial trade by highlighting its trade with London, Liverpool, Bristol, and New England. But in consequence the island's trading relations with smaller ports like Holyhead, Whitehaven (England), Greenock (Scotland), and Salem, Nixington, and

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[40] Ibid., p. 139-142.
[41] Ibid., p. 138.
[42] Walter. Minchinton, *The Growth of English Overseas trade in the seventeenth and eighteenth centuries* (1969), p. 121-43.
[43] The Naval Office Shipping Lists relating to Jamaica are located in PRO C.O 142/13-29.

Shelburne (mainland North America) are ignored. Hopefully, the information presented here will be useful to historians involved in the macro as well as the micro aspects of Jamaica's eighteenth century trade. Unlike Customs 3 and Customs 17, which deal with imports into England, the export data gleaned from NOSL cover waste, leakage, and the quantities lost at sea through war or piracy.

There were, however, fundamental problems with the recording of the NOSL data. One problem surrounds what Governor Charles Knowles identified in 1752 as a 'defect...in the institutions'.[44] He was referring to the common practice of vessels arriving in Kingston with prior clearance for goods from the outports of Montego Bay or Port Antonio. It was intended that vessels arriving in Kingston and then going on to those outports should return to Kingston to secure clearance. However, this procedure was not followed by many ship captains and many vessels left Jamaica with 'fictitious' clearance, which in effect, was not a true reflection of the quantity of goods shipped from the outports.[45] This therefore raises the possibility that the quantity of goods recorded in the NOSL may have been over or underestimated. Like Customs 3 and 17, the NOSL does not account for the quantity of goods smuggled into and out of Jamaica during the eighteenth century.[46]

Another limitation of the NOSL is the lack of continuity of data. Data are missing for some years, and in other years, for which data exist, there are missing quarters.[47] One explanation might lie in the fact that some of the lists sent by naval officers failed to arrive in England. There

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[44] Governor Charles Knowles to Board of Trade, November 18, 1752, C.O. 137/25 folio 113, quoted in Frank W. Pitman, *The Development of the British West Indies, 1700-1763* (1967), p. 307.
[45] Ibid.
[46] Ibid.
[47] For the period selected, no data exists for 1750-1751, 1758-1761, 1770-81, 1789-95, 1799, 1800, and 1801.

is the further possibility that of those that arrived, some may have been mislaid. Having an incomplete data set makes it impossible to provide an annualized estimate of the quantities of goods produced and exported from Jamaica. It also self selects the years that we can use for comparative analyses. The years 1748, 1755, 1769 and 1805, provide completed years and completed quarters.

Table 2.1 Comparative Table, NOSL and Customs 3 & 17, Selected Years.

	Produce	1748	1755	1769	1805
	Sugar (cwts)				
NOSL		434,215	341,791	471,400	707,510
Customs 3		381,214	425,417	725,686	1,717,156
	Rum (gals)				
NOSL		431,370	454,078	647,213	2,621,002
Customs 3		447,551	722,893	1,370,933	3,366,858
	Ginger (lbs)				
NOSL		297,778	875,510	714,487	254,040
Customs 3		219,856	1,346,464	351,120	223,888
	Cotton (lbs)				
NOSL		533,553	890,100	422,550	1,196,200
Customs 3		352,800	1,029,300	668,180	366,855
	Pimento (lbs)				
NOSL		194,288	414,370	703,629	768,724
Customs 3		670,028	461,551	1,867,529	540,933
	Coffee (lbs)				
NOSL		120,630	35,394	66,626	22,181,594
Customs 3		36,176	65,520	102,389	21,188,160

Underlying our study therefore is a comparative assessment of the NOSL and Customs 3 and 17. One such assessment is provided in table 2.1. Based on the argument presented earlier, one would expect the NOSL estimates of goods leaving Jamaica to be higher than the estimates of

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imports recorded in Customs 3 and 17. However, this is not always the case; in some years the NOSL estimates are higher than the estimates in Customs 3 and 17, but in others they are lower. In effect, there is no identifiable trend between the two estimates. Apart from the wide variance between the estimates, it is also noticeable that there was fluctuation throughout the selected years. There was a rise in sugar and rum, but minor staples like cotton, ginger, pimento and coffee fluctuated throughout the selected years. There are several factors that might explain the variances between Customs 3 and 17, and the NOSL. One explanation lies in time differentials between England and Jamaica. We know for a fact that NOSL estimates were recorded on a quarterly basis, after which they were sent off to England. During this time, there was no set trade cycle for NOSL estimates. In most cases, the cycle ran from September to September, December to December, or from March to March. Compare this to Customs 3 and 17 where the cycle ran from Michaelmas to Michaelmas (September 29 to September 28) between 1696 and 1698 and from December 25 to December 24, from 1699 to the end of the period.[48] The time lapse in what constituted the trade year is one possible explanation for the variances highlighted earlier. Another possibility lies in data recording practices in England. There is a question mark over how soon after arrival in England were the goods recorded? There is some evidence pointing to the fact that it was not as soon as one originally thought. Some imported goods were sent straight to warehouses where they stayed for months before they were recorded, which raised the possibility that theft and decomposition might have significantly altered the true weight of the goods.[49] Another might be that imports came from places other than Jamaica though recorded as Jamaican imports. With these methodological issues in mind, this study will combine the NOSL data with English Customs data to explore the issues outlined at the

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[48] Walter Minchinton, *Introduction to Customs 3, 1696-1780*, (1974).
[49] Ibid.

beginning of the chapter. The English Customs data source will be used to examine the years for which NOSL data are missing through the calculation of an inflator.

Weights, Measures and Values

With these methodological issues in mind, it is imperative that we standardize the weights and measures used in Customs 3/17 and the NOSL. There is potential cause for confusion for the historian and the general reader if this is not done. The potential cause for confusion has to do with the fact that there were no standardized weights or measures in the recording of colonial produce. Usually, the weights and measures used by the imperial powers were adopted by their colonies. Even so, the weights and measures adopted by individual colonies were not constant and they varied through time. The weights used in the trading of sugar and its by-products, that is, rum and molasses, exemplify this point. Throughout the course of the eighteenth century, sugar was sold by weight. Rum was traded by liquid measure, while molasses was sold by both weight and liquid measure.[50] The standard weight used in the trading of sugar was the long hundredweight of 112 pounds. While this was adopted throughout the British colonies, inconsistency arose between England and her mainland colonies in the use of the long and short hundredweights for other products.[51] Like England, the colonies traded sugar using the long hundredweight, but they reverted to the use of the short hundredweight for commodities such as tobacco and salted fish, even though England continued to employ the long hundredweight for those commodities.

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[50] See Appendix C and Customs 3 and 17.
[51] The standard weight for the short hundredweight was 100 pounds.

The variations are also reflected in Customs 3 and 17, and the NOSL. The standard weight employed in Customs 3 and 17 for sugar is the long hundredweight of 112 pounds. The trading of sugar in the NOSL is more problematic. The weights used in the NOSL varied from the hogshead to the small cask, the equivalents of which are highlighted in Appendix C. It is of vital importance therefore, that the different weights and measures used in the NOSL, especially in the trading of sugar, be standardized to that used by Customs 3 and 17. To do this, I used the formula

$\left(\dfrac{Qp \times Ng}{252}\right) \times 22$ which is based on the data provided in Appendix C. Qp is the quantity of sugar

produced, and Ng is the number of gallons in each measure of production. This is divided by the standard unit measure for a ton which is 252 gallons and multiplied by 22- the hundredweight equivalent of a cargo ton. For example, if the quantity of sugar produced is 70 hogsheads (Qp), and the number of gallons to the hogsheads is 63 (Ng), then we multiply 70 by 63, which equals 4,410 gallons of sugar. To convert to tons, we now divide the total in gallons, that is, 4,410 by 252 (number of gallons in a ton) which equals to 17.5 tons. Based on the formula, 22 hundredweight make up a ton, so in order to convert to hundredweight, we simply multiply the number of tons, in this case 17.5 by 22, which equals 385. Therefore, 70 hogsheads of sugar is the equivalent of 385 hundredweight of sugar.

The formula used to standardized rum to gallon is $\left(\dfrac{Qp \times Ng}{252}\right)$ which is also based on the data

provided in Appendix C. Based on the formula given, Qp is the quantity of rum produced, and Ng is the number of gallons in each measure of production. This is divided by the standard unit

measure for a ton which is 252 gallons. Unlike that of sugar, rum and molasses are measured in gallons and as such there is no need to further convert it into hundredweight measurement, which was done with sugar.

Sugar Output

Sugar was grown in most parishes in Jamaica.[52] The settlement patterns of the island determined the port from which sugar and other staples were shipped. The major loading port could be located in the nearest parish or in most cases Kingston, a distance of over 100 hundred miles from the western end of the island. Table 2.2 reveals that in 1748, Kingston was the only port of entrance (and by extension, the only port of exit) in operation on the island. By 1755, the adjoining parish of Port Royal was being used to export sugar. However, the amount of

Table 2.2 Port Distribution of Sugar, Selected Years
(in cwts)

Ports	1748	1755	1769	1805
Kingston	440,500	340,159	312,625	314,519
Lucea				54,017
Montego Bay			94,786	245,185
Port Antonio			2,577	45,582
Port Royal		8,437		
Savanna-la-mar			77,288	74,989
Total	440,500	348,596	487,280	734,291

Source: NOSL

sugar exported from Port Royal was small. For 1769 and 1805 (and we assume for the intervening years) Port Royal was no longer a loading port for Jamaican sugar. This limited use arises from its geographical location relative to Kingston, as well as the fact that Port Royal was the major naval dockyard on the island. It is less than 10 miles from Kingston to which port the

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[52] The only parish where sugar was not cultivated was Kingston.

planters were more inclined to send their produce. With the settlement of the island's interior by whites, other loading ports were established.[53] In 1769, loading ports like Montego Bay, Savanna-la-mar, and Port Antonio were also available. By 1805 there was a dramatic change in the use of loading ports. The western section of the island - Montego Bay, Lucea, and Savanna-la-mar - together exported 51 per cent of the island's sugar. This shift in the location of the loading ports to the west of the island by 1805 indicates the spatial distribution of sugar estates on the island on the eve of slave abolition. In an 1804 survey James Robertson reported that of the 830 sugar estates on the island, 365 were located in Cornwall (the county which covers Montego Bay, Lucea and Savanna-la-mar), while Middlesex had 275 and Surrey (the county which covers Kingston) had 190.[54]

Using the NOSL data, we can focus on 1748, 1755, 1769 and 1805 to analyze the quantity of goods exported from Jamaica, the rate of growth of these exports, and their geographical distributions (see table 2.3 below). In 1805 relative to 1748, sugar exports increased by 64 percent. However, the data reveal that the rate of change between those years was uneven. In 1755 relative to 1748, the quantity of sugar exported declined from 447,753 cwt to 348,603 cwt or by 22 percent. This decline was reversed in 1769 when sugar production had grown by 39.76 percent relative to 1755. Further expansion in sugar production took place by 1805 relative to 1769, between which years sugar grew by 50.71 percent. Based on the four spot years the quantity of

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[53] Kingston and Port Royal were the only ports of entry used in Jamaica up to 1758. To settle the problems concerning clearance, customs houses were established in Order in Council on June 29, 1758, in Montego Bay, Savanna-la-mar, Montego Bay and Port Antonio. Other ports of entry-Falmouth, St. Ann, and St. Lucia (Lucea) were established immediately after the American War of Independence in 1783. Order in Council, June 29, 1758, PRO C.O 137/31 folio 27. See Frank W. Pitman, *The Development of the British West Indies,* p. 307.
[54] James Robertson, Maps of the Counties of Cornwall, Middlesex and Surrey, constructed from actual surveys, 1804.PRO C.O 700/Jamaica 25-27.

Table 2.3 Quantity of Sugar exported from Jamaica, Selected Years
(in cwts)

	1748	1755	1769	1805
British North America				
Halifax				542
Newfoundland				125
Quebec				2,197
St. Johns				50
Total				2,914
Ireland				
Belfast				2,870
Cork				5,309
Dublin			727	9,890
Total Ireland			727	18,069
North America				
Baltimore				768
Boston	5,968	1,435	3,769	
Charleston				728
Delaware			124	
Georgia			317	
Maryland			145	
New England		152		
New Jersey			599	
New London	43		623	
New Providence			34	
New York	295	1,045	1,344	466
Norfolk				620
North Carolina	18	55	103	
Pensacola			34	
Philadelphia	830	847	2,002	1,652
Rhode Island	1,703	375	2,139	
Salem	349			
Shelburne				95
South Carolina		2,093	1,478	
Virginia		137	789	
Total North America	9,206	6,139	13,500	4,329
Other				
Bermuda		15		528
Honduras			21	940
Mosquito Shore			31	
Spanish Coast	883			
Unknown	449	657	1536	
Total Other	1,332	673	1591	1,469
United Kingdom				
Bristol	97,601	47,321	78,829	72,739

Glasgow	12,988	5,582	12,870	26,652
Greenock				29,299
Holyhead		3,406		
Hull		1,218	1,150	
Lancaster	10,448	1,200	3,083	
Leith		366	947	12,767
Liverpool	61,240	49,561	70,120	114,950
London	251,938	230,885	303,609	437,868
Newcastle				5,883
Plymouth		387		
Whitehaven		1,865	792	7,351
Total United Kingdom	434,215	341,791	471,400	707,509
Total	**447,753**	**348,603**	**487,218**	**734,290**

Source: NOSL

sugar exported from Jamaica increased from 1769 to 1805 culminating in the highest sugar exports in recorded memory.[55]

Britain was the major market for Jamaican sugar during the eighteenth century. Britain was the destination according to the NOSL of 97 percent of Jamaica's sugar in 1748; 98.05 percent in 1755; 96.75 percent in 1769, and 96.35 percent in 1805. Within Britain, London was the major buyer. It received 251,938 cwt or 58.60 percent of the sugar dispatched in 1748; 230,885 cwt or 67.55 percent in 1755; 303,609 cwt or 64.40 percent in 1769 and 437,868 cwt or 61.88 percent in 1805. Beside London, Liverpool and Bristol were the other major markets. However, the table reveals a wide cross-section of ports receiving sugar from Jamaica at some point in the eighteenth century, including Newcastle, Hull, Holyhead, and Plymouth, though their involvement in the trade was intermittent.

[55] See for example the data on sugar exports provided by Richard Sheridan, *Sugar and Slavery*, p. 487-95; John J. McCusker, *Rum and the American Revolution,* p. 143-44. A breakdown of Jamaica exports is also provided by Yu Wu's "Jamaican Trade, 1688-1769", Ph.D., Johns Hopkins University, 1995.

The quantity of sugar exported from Jamaica to the continental colonies was small relative to the quantity arriving in Britain. The amounts shipped to the mainland colonies was 9,206 cwt or 2.09 percent of all export in 1748; 6,139 cwt or 1.76 percent in 1755; 13,500 cwt or 2.77 percent in 1769 and 4,329 cwt or 0.59 percent in 1805. The advent of the American Revolution from 1776 had serious implications for the trade of Jamaica to the continental colonies. Exports to the United States declined. The United States colonists restricted Jamaican trade and imported cheap sugar from the French West Indies. This was compounded because the colonists stopped supplying the island with lumber, beef, grains, among other staples.[56]

When we revert to the evidence from Customs 3 and 17 we reveal the overall trend in Jamaica's sugar exports to England between 1748 and 1805 in figure 2.1 below. Despite the variation in estimates between these English Customs records and the NOSL, nevertheless the trend highlighted confirms the growth trend in sugar production and export identified from the four spot years in the NOSL. The quantity of sugar imported into England from Jamaica increased from 381,214 cwts in 1748 to 1,717,156 cwts in 1805.

Relative to other markets, the British market was important for Jamaica's sugar. The Jamaican sugar industry depended on the availability of markets. The strictures imposed by the Navigation Acts dictated that Britain would be the primary market for Jamaican muscovado. In consequence, Britain had to absorb the relatively poor quality of sugar coming from Jamaica.[57]

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[56] Lowell. J. Ragatz, *The Fall of the Planter Class*, p. 142-203; Selwyn H. Carrington, *The British West Indies During the American Revolution* (1988); *The Sugar Industry and the Abolition of the Slave Trade, 1775-1810* (2002), p. 38-90.
[57] The poor state of Jamaica's brown sugar in the early part of the Eighteenth century prompted one contemporary to comment that 'The Jamaica sugars are in general very low and weak in quality, and not esteemed here nor abroad, which is chiefly owing to a want of care, and a slovenliness in the making of them'. Letter to John and A. Harvie, London, 4 September 1756, quoted in John McCusker, *Rum and the American Revolution*, p. 135-37.

Figure 2.1 Quantity of Sugar imported into England from Jamaica, 1748-1805
(in cwts)
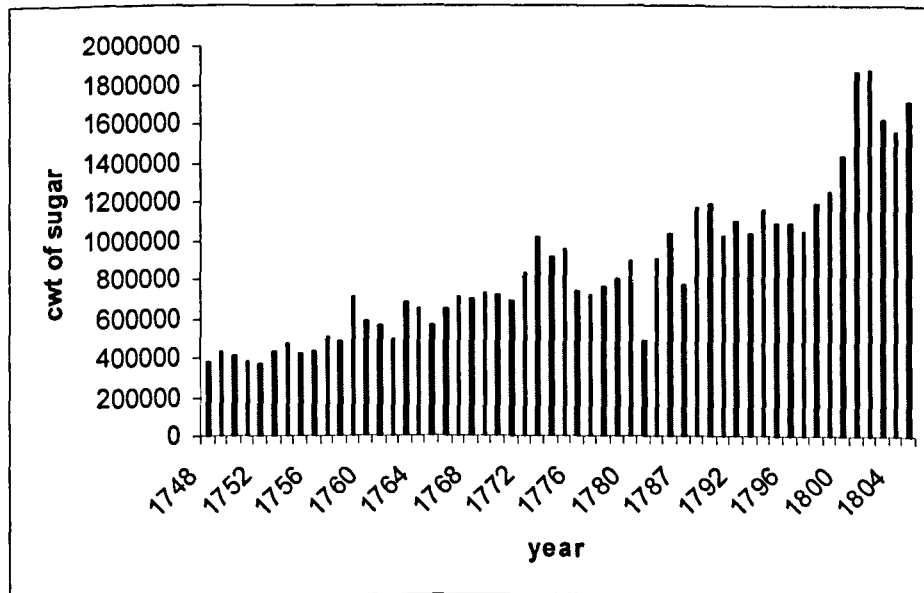
Source: PRO Customs 3, vols. 48-80; PRO Customs 17, vols. 6-27.

The emergence of St. Domingo with its relatively untouched soil had eclipsed the British West

Indies as the leading sugar producer by 1730. Not only was St. Domingo sugar of a better

quality, but its price was one-fifth less than that of sugar from the British West Indian colonies.

This arose because production costs were much lower and unit yields were higher.[58] The

resulting low price literally drove British Caribbean muscovado from the European market and

in consequence Jamaica could not effectively compete in the international market. To compound

matters, the North American colonies opted for the cheaper French sugar, much to the

consternation of their British Caribbean colleagues.

The setting up of a large sugar estate required a large amount of working capital. Under the

colonial arrangement, most of this capital originated in England. Adam Smith argued that British

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[58] Eric Williams, *Capitalism and Slavery*, p.120-122; Richard S. Dunn, *Sugar and Slaves*, p. 205.

colonies profited more from Britain in this regard than any other European colony profited from their metropole. In comparing the French island of St. Domingo with other British possessions, he argued that the capital

'which has improved the sugar colonies of France, particularly the great colony of Santo Domingo, has been raised almost entirely from the gradual improvement and cultivation of those colonies. It has been almost altogether the produce of the soil and of the industry of the colonists, or, what comes to the same thing, the price of that produce gradually accumulated by good management, and employed in raising a still greater produce. But the stock which has improved and cultivated the sugar colonies of England has, a great part of it, been sent out from England, and has by no means been altogether the produce of the soil and industry of the colonists. The prosperity of the English sugar colonies has been, in a great measure, owing to the great riches of England, of which a part has overflowed, if one may say so, upon those colonies' [59]

There is evidence to support Adam Smith's claim. An indication of the amount of capital needed to start a sugar plantation in Jamaica was provided by the planter-historian, Edward Long, who, in 1774, argued that a total of £28,039 was required to purchase a sugar plantation with an average size of 900 acres. He estimated the acquisition cost of land was £9,032; equipment was £6,319; the cost for 130 livestock was £1,978; and the acquisition of 300 enslaved amounted to £10,710. A smaller estate of 300 acres producing 100 hogsheads and 50 puncheons of rum would cost £10,017, of which land was estimated at £2,970; equipment £2,463; 60 heads of cattle at £1,014; and 100 enslaved, £3,570.[60] The opportunity was even greater as the break-even period for most estates was four to five years. Depreciation occurred with machinery, tools, and livestock, all of which had to be replaced. Recent estimates gathered from probate inventories by

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[59] Adam Smith, *An Inquiry Into The Nature And Causes of the Wealth of Nations*, Chapter V11., Pt. 11., p.101.
[60] Edward Long, *The History of Jamaica* , vol.1 p. 448-64.

the economic historian Richard Sheridan showed that the total capital invested in the British West Indies during the latter half of the eighteenth century, was £30 million.[61]

Most Jamaican planters were financially obligated to their English creditors. This obligation involved the repayment of debts, usually at high interest rates, as well as paying commission to agents in England. One example of this is evident in the operations of the House of Lascelles. It was estimated that Henry Lascelles, the principal factor, was owed at least £120,000 by planters and merchants in Jamaica and Barbados during the mid -1760's. Sugar was the means by which they repaid their debts. Planters sent their sugar to an agent in London who in turn sold it on the London market. After the sugar was sold, the agent repaid the planter's debt, paid himself and sent the remainder to the planter. But most planters operated on an overdrawn account, and therefore, the sugar that was sent to England paid the debts acquired in the previous year.[62]

Rum Output

Rum was the only manufactured produce emanating from Jamaica and it became an important export by the mid-eighteenth century. It was second to sugar in the total tonnage of goods exported. But it was a by-product from sugar. Sugar processing involved three stages. The cane juice was boiled and the syrup that surfaces was skimmed off. This thick syrup is called molasses. Once it cooled, planters had the option of exporting it as molasses or processing it into

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[61] Richard Sheridan, "The Wealth of Jamaica in the Eighteenth Century": 292-311; *Sugar and Slavery*, p. 262. Richard Sheridan's aggregate investment figure was challenged by Robert Paul Thomas who estimated that the total capital invested in the British West Indies was £37 million. See Robert Paul Thomas, "The Sugar Colonies of the Old Empire: Profit or Loss for Great Britain?", *Economic History Review*, 21 (1968): 30-45.
[62] Richard Sheridan, *Sugar and Slavery*, p. 262-305.

rum. To do this, the molasses went through a period of fermentation after which water was added to reach the desired level of proof or potency.[63]

The port distributions trading in Jamaican rum are shown in table 2.4 below. Based on the NOSL records for 1748, the island exported 441,913 gallons of rum, all of which were exported from Kingston. In 1755, Kingston accounted for 95.96 percent or 511,135 gallons of rum exported while Port Royal accounted for 21,502 gallons or 4.04 percent. By 1769, additional ports entered the trade but Kingston remained the leading port. However, by 1805, Kingston was no longer the

Table 2.4 Port Distribution of Rum, Selected Years
(in gallons)

Ports	1748	1755	1769	1805
Kingston	441,913	511,135	374,260	1,514,767
Lucea				374,934
Montego Bay			185,376	1,876,980
Port Antonio			129,883	330,330
Port Royal		21,502		
Savanna-la-mar			228,587	564,333
Total	441,913	532,637	918,106	4,661,344

Source: NOSL

leading port. The development of ports in the western section of the island, ports like Montego Bay (40 percent), replaced Kingston (32 percent) as the leading port in the rum trade. The shift in sugar production to the west of the island was reflected in the rise of these ports. In 1805,

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[63] John .J McCusker, *Rum and the American Revolution*, p. 55-62; Richard Sheridan, *Sugar and Slavery*, p. 339-340. See also Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies*, vol. 2. p. 239-268.

Montego Bay, Lucea, and Savanna-la-mar exported 2,816,247 gallons or 60 percent of the rum exported from Jamaica.

Before we examine the external markets for Jamaican rum, an important observation must be made. A large percentage of the locally produced rum was consumed in the inland. More or less everyone consumed rum in eighteenth century Jamaica. The enslaved, white males, free blacks, coloureds, and soldiers all consumed large quantities of rum throughout the period. One contemporary estimate suggests that free blacks consumed 20 gallons per person annually. Consumption was equally high, if not higher among the slave population, though one estimate of 3 gallons of rum per enslaved during the eighteenth century seem rather low.[64] Many of the enslaved participated in Jamaica's vibrant internal marketing system. The Sunday market was where they traded their grown provisions in return for money. As a result, some were able to use the proceeds from the market to purchase their freedom.[65] It is therefore not so far-fetched to suppose that many within the island's slave population would have purchased additional rum from the proceeds of the Sunday markets.

The high level of rum consumption and the vibrant market it encouraged is highlighted in the Accounts Produce for estates in Jamaica. These are lists of the goods produced on the plantations. The Denbigh sugar estate provides an example of one estate that traded in the local market. Denbigh was located in the parish of Clarendon and was owned by John Pennant, a member of the island's sugar elite. In 1753, Denbigh produced a total of 221 hogsheads of sugar

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[64] Richard Sheridan, *Sugar and Slavery*, p. 343; John J. McCusker has put the figure for local consumption at 28 per cent. See John J. McCusker, *Rum and the American Revolution*, p. 158.
[65] Sydney Mintz, 'The Origins of the Jamaican Internal Marketing System', in Sydney Mintz, *Caribbean Transformations* (1989).

and 130 puncheons of rum. Of the 221 hogsheads produced, 209 were consigned to various agents in England. The rest was kept for use on the estate. In contrast, only 3 of the 130 puncheons of rum produced were shipped to England. The rest was consumed locally.[66] Edward Long has suggested that each sugar estate consumed an average of 400 gallons of rum per year while the urban area consumed a total of 8,500 puncheons or 714,000 gallons.[67] If we apply these estimates to the whole period, then we have to revise upwards the known quantities of Jamaica produced rum. Applying these estimates may not be definitive, but they will indicate the quantity of rum consumed in Jamaica. We know for example, that there were 648 estates in 1768 and 830 in 1804. Long's estimates suggest that the local consumption of rum would have been 974,400 gallons in 1768 and 1,046,000 gallons in 1804. The domestic consumption of rum therefore constituted a large proportion of the rum production and was a viable source of revenue. In 1748 with approximately 450 estates each consuming 400 gallons of rum, and with the urban area using 714,000 gallons then local consumption would have been as shown in table 1.5. Assuming constant gallons per estate and in urban areas then the 1755, 1768 and 1805 amounts were also calculated. This is based on the fact that on average, in 1755 there were 549 estates, 648 in 1768, and 830 in 1805.

The quantity of rum exported from Jamaica increased by 20 percent from 441,913 gallons in 1748 to 532,637 gallons in 1755. Rum exports rose again, comparing 1755 with 1769, an increase of 72 percent.

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[66] Jamaica Archives, Spanish Town, Accounts Produce, 1B, 11, 1-4.
[67] Add Ms. 12413, folio. 23.

Table 2.5 Quantity of Rum exported from Jamaica, Selected Years
(in gallons)

	1748	1755	1769	1805
Canada				
Halifax				87,339
Montreal				30,240
Newfoundland				5,040
Quebec				135,240
St. Johns				11,256
Total Canada				269,115
Ireland				
Belfast				21,651
Cork				19,971
Dublin			26,460	22,428
Total Ireland			26,460	64,050
North America				
Alexandria				29,820
Awport				10,248
Baltimore				1,008
Boston	336	1,596	20,618	97,860
Camden				8,148
Charleston				80,052
Delaware			1,764	
Edenton				19,320
Georgetown				3,696
Georgia		840	5,160	
Kennebec				8,484
Maine				504
Maryland		5,124	3,528	
New Jersey			3,276	
New London		252	11,676	
New Orleans				9,828
New Providence		336	1,092	5,040
New York	1,280	23,560	12,453	909,552
Newburn				21,084
Nixington				1,680
Norfolk				177,492
North Carolina		4,452	8,826	24,612
Pensacola			6,048	
Philadelphia	4,712	23,877	54,090	60,144
Rhode Island	220	1,554	19,056	
Salem		672	3,108	
Savannah				72,492
Shelburne				9,471
South Carolina	378	12,180	64,832	
Virginia		1,932	11,340	6,300
Washington				9,156

Wilmington				32,256
Total North America	**6,926**	**76,375**	**226,867**	**1,598,247**
Other				
Bermuda				16,044
Coast of Cuba				8,400
Curacao		168		
Honduras	672		1,680	35,388
Indian Coast				5,208
Mosquito Shore	84	2,016	840	567
Porto Bello	840			
Spanish Coast				819
Unknown	2,021		15,046	42,504
Total Other	**3,617**	**2,184**	**17,566**	**108,930**
United Kingdom				
Bristol	35,662	33,012	64,273	160,566
Glasgow	2,268	3,554	26,544	124,593
Greenock				184,947
Hull		3,360	10,714	
Isle of Man		588		
Lancaster	18,816	27,300	16,374	
Leith		15,400	6,992	67,515
Liverpool	21,756	15,204	82,061	654,877
London	352,868	355,156	434,186	1,340,283
Newcastle				48,321
Plymouth		504		
Portsmouth				15,288
Whitehaven			6,069	24,612
Total United Kingdom	**431,370**	**454,078**	**647,213**	**2,621,002**
Total Exports	**441,913**	**532,637**	**918,106**	**4,661,344**
Locally Consumed	**894,000**	**933,600**	**973,600**	**1,046,000**
Total Output	**1,335,913**	**1,446,237**	**1,891,706**	**5,707,344**

Source: NOSL

By 1805 rum exports had risen to 4.7 million gallons, a rise of over 400 percent compared with 1769.

Switching attention to the alternative source, the custom record, shows that 1748 to 1805 was mostly a period of rising rum imports into England from Jamaica (see figure 2.2 below),

increasing around 450,000 gallons to 3.4 million gallons. The fall in imports during the American war and in the mid to late 1790's is clearly visible.

Figure 2.2 Quantity of Rum imported into England from Jamaica to England, 1749-1805
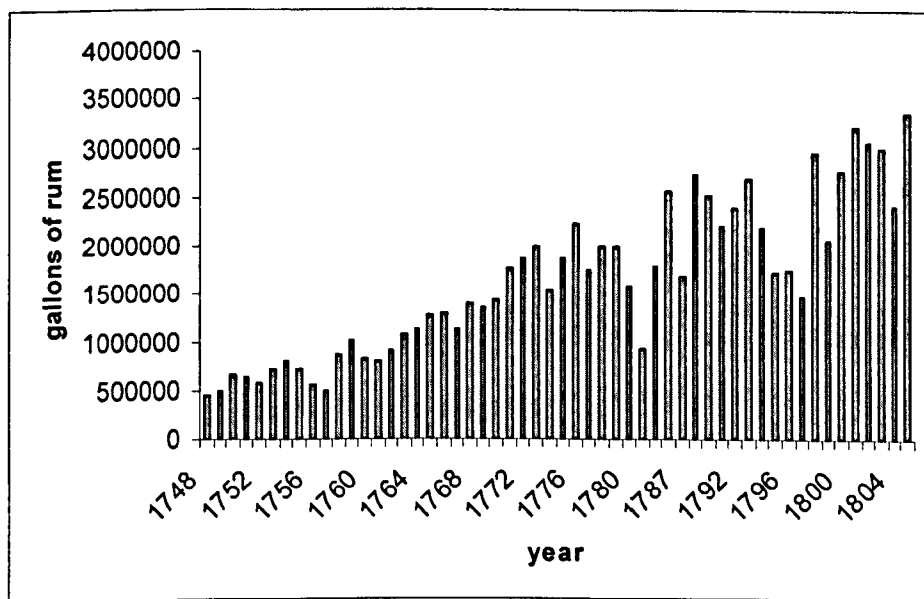
Source: PRO Customs 3, vols. 48-80; PRO Customs 17, vols. 6-27.

The increase in Jamaican rum exports owed much to the improved techniques planters used when distilling rum.[68] During the early phase of plantation settlement, rum and molasses never featured greatly in Jamaica's export trade. In this regard, planters gave their enslaved population the molasses to be used as a sweetener and it was also used to feed plantation stock. The conversion ratio for turning sugar into molasses was small hence there was no advantage to be gained in shipping molasses to the overseas market. By the mid eighteenth century the conversion rate improved.[69] The increase in the production of sugar in the eighteenth century increased the production of molasses which in turn resulted in the increase in the production of

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[68] John J. McCusker, *Rum and the American Revolution*, p. 156.
[69] The accepted ratio was 107:100.

rum. As will be seen in the section on molasses below, the rise in the production and export of rum was matched by a symmetrical decline in the production and export of molasses. The improved conversion ratio from sugar to molasses was in part influenced by improved processing techniques and the market price for rum. The average price for rum was much higher in Britain than anywhere else in the colonised territories. In December 1775, the average price for Jamaican rum in Britain was 7.75 shillings per gallon. In New England, the average price of rum in December 1775 was 1.72 shillings per gallon. In New York for the same period, the average price was 3.50 shillings per gallon.[70] The price for rum was also higher than the price for molasses. The option before planters was a straightforward one. They simply had to dispose of their molasses stock by processing it into rum.

Britain was the major market for Jamaican rum. In the selected years chosen Britain took 97.61 percent in 1748; 85.25 percent in 1755; 70.49 percent in 1769 and 56.23 percent in 1805. London was the major market for Jamaican rum taking 59.76 percent of total British imports compared to 18.63 percent for Liverpool and 7.06 percent for Bristol. In spite of the dominance of London, Liverpool and Bristol, the evidence points to an extensive rum market in Britain throughout the eighteenth century. Towns like Newcastle, Hull, Lancaster and Whitehaven all imported small amounts of rum and the opening up of Ireland to West Indian imports in 1763 accounted for 2.88 percent of Jamaica rum imported into Great Britain and Ireland. In 1805, Ireland imported 64,050 gallons or 1. 37 percent of all rum exported from Jamaica.[71] Other regions like British North America imported Jamaican rum after the American Revolution. In 1805, the region imported 269,115 gallons or 5.77 percent of the island's rum exports.

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[70] John J. McCusker, *Rum and the American Revolution*, pp. 1074, 1080-81, 1089-91.
[71] Richard Sheridan, *Sugar and Slavery*, p. 350-352.

The proportion exported to North America increased considerably over the period. In 1748, it accounted for 1.56 percent, rising to 14.34 percent in 1755; 24.71 percent in 1769 and 34.28 percent in 1805. New York was the main destination. In 1805, New York imported nearly 57 percent of the Jamaican rum entering the United States. New York, like Boston and Philadelphia was involved in the re-export trade of rum to areas along the Chesapeake, Maryland, Connecticut, New Jersey, Quebec and Newfoundland.[72] The coastal location and geographical position of these states made them ideal shipping routes from Jamaica. Table 2.5 also highlights the fact that New York, Boston, and Philadelphia were stable markets for Jamaican rum while trade with the other regions was variable.

Molasses Output

Rum was made from molasses; this would indicate some inverse relations between rum production and molasses production. As the demand for rum increased there resulted a decline in the amount of molasses available for export. Molasses was an important part of Jamaica's export trade though it never experienced the same level of growth as sugar and rum. The port distribution of molasses is highlighted in table 2.6 below. This was not unlike the sugar and rum trades with Kingston monopolising the export of the product in 1748 and 1755 respectively. By 1769 Montego Bay and the western section had replaced Kingston as the island's leading port for exported molasses, a position it maintained in 1805.

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[72] John J. McCusker, *Rum and the American Revolution*, p. 469-497; Frank W. Pitman, *The Development of the British West Indies*, p. 205.

Table 2.6 Port Distribution of Molasses, Selected Years
(in gallons)

Ports	1748	1755	1769	1805
Kingston	226,818	155,656	45,120	8,948
Lucea				2,176
Montego Bay			65,056	15,488
Port Antonio		27,594		
Port Royal			19,584	2,048
Total	**226,818**	**183,250**	**129,760**	**28,660**

Source: NOSL

The quantity of molasses exported from Jamaica is highlighted in table 2.7 below. This trade decreased by 87 percent from 1748 to 1805. The decline in the island's molasses exports seemingly was continuous.

The market price for molasses in New York, Philadelphia and Boston was low compared to sugar and rum. In 1773, the average price for a gallon of molasses in Boston was 0.84 shillings while the rate in New York was 1.07 shillings, and in Philadelphia it was 1.05 shillings.[73] The Jamaican planters had read the market correctly. Molasses was easily converted into rum and the planters were right in believing that their molasses stock would yield them higher revenue if converted into rum and sold in Britain than if they were to continue exporting it in large quantities to the continental colonies. In consequence the decline in the production and export of molasses was matched by a symmetrical increase in the production and export of rum. In addition, the North American mainland colonists turned to the French West Indies during the 1770's for cheaper and better quality molasses. In 1770, imports from the French West Indies

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[73] John J. McCusker, *Rum and the American Revolution*, p. 1130-32.

Table 2.7 Quantity of Molasses exported from Jamaica, Selected Years

(in gallons)

	1748	1755	1769	1805
Canada				
Halifax				1,536
Quebec				2,688
Total Canada				4,224
North America				
Boston	110,742	12,577	46,528	4,608
Charleston				320
Delaware			640	
Edenton				192
Maryland			768	
New Jersey			384	
New London	5,824	2,427	6,400	
New York	12,406	13,549	2,304	9,600
Newbury		8,768		
Norfolk				768
North Carolina			128	1,984
Philadelphia	6,437	32,211	24,768	
Rhode Island	63,864	105,679	26,688	
Salem	27,136	4,736	192	
South Carolina		960		
Virginia	409	1,839	9,536	
Wilmington				2,112
Total North America	226,818	182,746	118,336	19,584
Other				
Bermuda		504		1,216
Honduras				180
Unknown			192	384
Total Other		504	192	1,780
United Kingdom				
Greenock				192
Liverpool				1,600
London			11,232	64
Portsmouth				1,216
Total United Kingdom			11,232	3,072
Total	226,818	183,250	129,760	28,660

Source: NOSL

into the continental colonies accounted for 87.20 percent of the total molasses imported into the

colonies.[74] Nevertheless, the continental colonies remained the major market for Jamaican molasses. They accounted for 96.30 percent of the total quantity of molasses exported from Jamaica. It was the entire market in 1748; 99.72 percent of the market in 1755; 91.19 percent in 1769 and 68.33 percent in 1805. Within North America the main markets were in the Northeast. Boston and Rhode Island imported a combined total of 370,686 gallons or 67.70 percent of all Jamaican molasses imports in the four years combined. There were two reasons for this. Firstly, New England dominated the distributive trade in colonial produce during the eighteenth century. Secondly, as a cheaper substitute for sugar, molasses was used in a variety of ways. Apart from feeding livestock, molasses was used to make malt beer and wine. The majority of the distilleries were located in New England, and especially, in Rhode Island, which had over 16 such distilleries in the mid eighteenth century.[75] Britain was not a major importer of molasses. In 1769 Britain accounted for 8.65 percent of Jamaican exports and 10.72 percent in 1805. London was the major market. Canada accounted for 14.74 percent of the trade in 1805.

Minor Staples

The association of slavery with sugar led to the marginalization of Jamaica's non-sugar sector from the historiography on Jamaica's plantation economy. This sector comprised the livestock industry, coffee and other minor staples. It made an important contribution to the island's economic development during the eighteenth century and although exports from this sector were small, they were an important part of the island's trade. For the rest of this chapter, a selection of these minor staples will be examined.

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[74]Ibid, p.423.
[75]Ibid.

Coffee Output

Coffee was first grown in Jamaica in 1728 by Nicholas Lawes.[76] It was grown in all parishes, but there was some concentration in the mountainous regions of St. Elizabeth and Manchester in the west, and the Blue Mountains in the east. There were two subdivisions within the Blue Mountains where coffee was cultivated. The first of these was the Port Royal Mountain District which was also known as the Yallahs region. It comprised the now defunct parishes of Port Royal and St. David. Coffee was also cultivated in the mountainous parishes to the west of the Yallahs, in St. Mary and St. George (now defunct). In addition, small scale coffee cultivation was carried out in the parishes of St. Ann, St. John and Thomas-in-the-Vale. Coffee required a different topography to sugar. Sugar required an average of 80 degrees Fahrenheit, an adequate supply of water, rich soil, and flat lands, while coffee required a cool temperature, rain, deep soil and high elevation. This explains the spatial distribution of the coffee plantations relative to sugar.[77] Most coffee plantations were engaged in monoculture. Barry Higman identified 176 such properties in 1832. There were a further 30 plantations combining coffee production with livestock, pimento and jobbing gangs. [78]

The exit ports for Jamaican coffee reflect the spatial distribution of the crop during the eighteenth century. Kingston was the leading port from which coffee was exported throughout the period selected (table 2.8 below). In 1748 it was all exported from Kingston. In 1755 Kingston was joined, but only marginally, by Port Royal with the former accounting for 93.70

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[76] Frank W.Pitman, *The Development of the British West Indies*.
[77] B.W. Higman, *Slave Population and Economy in Jamaica*, p. 21-24; James Delle, *An Archaeology of Social Space: Analyzing Coffee Plantations in Jamaica's Blue Mountains* (1998), p. 67-98; Kathleen Montieth, "The Coffee Industry in Jamaica". See also Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies*, p. 288-302.
[78] B.W. Higman, *Slave Population and Economy in Jamaica*, p. 13.

percent of the exports and the latter 6.29 percent. Kingston's dominance remained throughout even when other loading ports were added. By 1805, the western ports (Montego Bay, Lucea and Savanna- la-mar) exported a combined total of 23.32 percent. The high concentration of coffee estates in the neighbouring parishes of Port Royal, St. David, St. Mary and St. George, ensured that Kingston would dominate.

Table 2.8 Port Distribution of Coffee, Selected Years
(in pounds)

Ports	1748	1755	1769	1805
Kingston	137,648	179,872	187,820	17,356,136
Lucea				158,476
Montego Bay			9,342	1,813,305
Port Antonio				564,535
Port Royal		12,076		
Savanna-la-mar			4,498	3,481,316
Total	137,648	191,948	201,660	23,373,768

Source: NOSL

The quantity of coffee exported from Jamaica, its rate of growth, and its geographical distribution are highlighted in table 2.9 below. Coffee exports grew from 137,648 pounds in 1748 to 191,948 pounds in 1755, a 39.44 percent increase. The growth in coffee exports was slower from 1755 to 1769 at only 5.05 percent. Therefore, despite this increase, the actual quantities exported between 1748 and 1769 were small. In 1774, Edward Long, the noted Jamaican planter-historian, made the observation that 'coffee was never cultivated to such height as it is at present'. The expansion in coffee production came during the 1790's.

Table 2.9 Quantity of Coffee exported from Jamaica, Selected Years

(in pounds)

	1748	1755	1769	1805
Canada				
Halifax				9,720
Newfoundland				2,314
Quebec				55,143
Total Canada				67,177
Ireland				
Belfast				15,171
Cork				31,767
Dublin				45,096
Total Ireland				92,034
North America				
Baltimore				80,125
Boston	3,460	17,806	23,926	
Charleston				54,990
Delaware			692	
Maryland		1,038	2,076	
New England		1,038		
New York		41,930	2,076	93,735
Norfolk				211,586
North Carolina	3,388			
Philadelphia	5,724	61,078	50,558	560,161
Salem			2,422	
South Carolina	4,100	9,612	19,722	
Virginia		11,738	29,756	
Total North America	16,672	144,240	131,228	1,000,597
Others				
Bermuda				23,094
Honduras				9,272
Unknown	346	6,574	3,806	
Virgin Islands		5,740		
Total Others	346	12,314	3,806	32,366
United Kingdom				
Bristol			6,574	1,178,788
Glasgow				1,058,291
Greenock				137,875
Hollyhead		4,312		
Lancaster			11,764	
Leith				220,844

Liverpool		2,654	36,870	6,049,779
London	120,630	28,428	11,418	13,354,885
Newcastle				151,967
Whitehaven				29,165
Total United Kingdom	120,630	35,394	66,626	22,181,594
Total	**137,648**	**191,948**	**201,660**	**23,373,768**

Source: NOSL

The trend in Jamaica's coffee exports is outlined in figure 2.3 below. Jamaica's coffee exports to England were small at first and only began to rise significantly during the 1780's. They grew from 803,600 pounds in 1780 to 1,814,400 pounds in 1791, a 125.78 percent increase, but thereafter the increase in coffee exports was phenomenal. From 1791 to 1799 the annual average quantity exported to England was about 7 million pounds, but from 1800 to 1805 it increased to 17 million pounds. [79]

This growth in coffee exports arose in large part due to the expansion in coffee cultivation during the 1790's. The number of coffee plantations increased from 150 in 1773 to 686 in 1799.[80] A combination of factors accounted for this growth. The first was the general disruptions caused by the Haitian Revolution. St. Domingo (as Haiti was formerly called) was the world's leading supplier of coffee. The onset of a rebellion on the island in 1791 disrupted the production and supply of its coffee. The disruption in supply led eventually to an increase in the price. Corresponding with this increase in price was the fact that Britain had reduced the duty on coffee imports in 1783. The high price arising from a competitor plus a low duty, combined to

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[79] PRO Customs 3, vols. 48-80; PRO Customs 17, vols. 6-27.

[80] Edward Long, *The History of Jamaica* vol. 1, p. 495-6; B. W. Higman, *Jamaica Surveyed,* p. 13; W.J. Gardner, *A History of Jamaica: From its Discovery by Christopher Columbus to the Year 1872* (1873), p. 321.

encourage coffee plantations in Jamaica. They filled the deficit created by the loss of French West Indian coffee.

Figure 2.3 Quantity of Coffee exported from Jamaica to England, 1748-1805
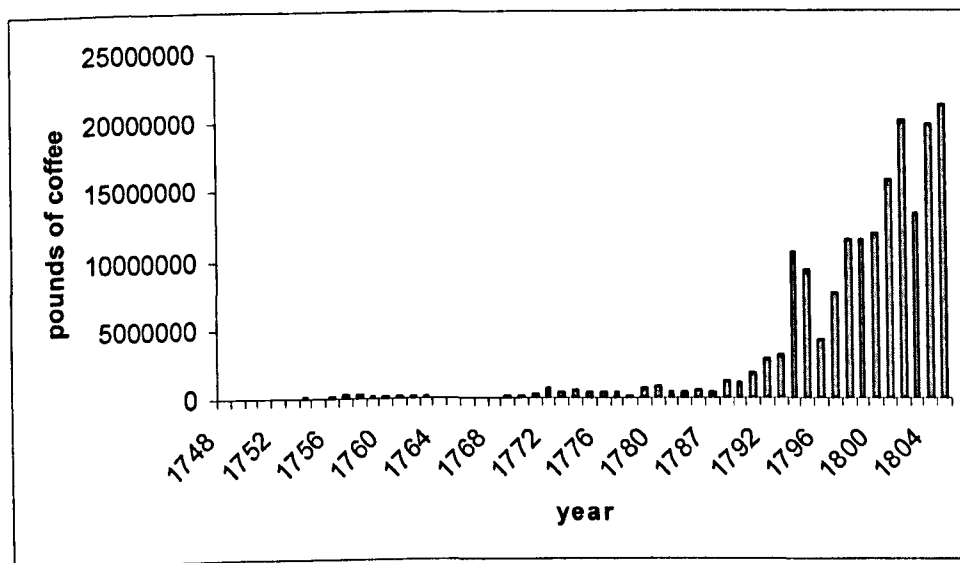
Britain was the major market for Jamaican coffee in 1748 taking 87.64 percent of the trade. North America was the main market in 1755 and 1769 but the collapse of St. Domingue and the extraordinary rise of coffee in general meant that by 1805 the United Kingdom took 95 percent of all Jamaican exports. Within the United Kingdom, London was the major market for most of the period selected except in 1769 when the market shifted to Liverpool. In 1805, London imported more than half of Jamaican coffee imports and Liverpool 27.17 percent. Between them and Bristol and Glasgow the UK market overwhelmed all others for the sale of Jamaican coffee. They accounted for nearly 98 percent of the total amount of coffee imported from Jamaica to the UK in 1805 and nearly 93 percent of Jamaican exports worldwide.

In 1755 and 1769 the North American market was the main market for Jamaican coffee. The high import duty for coffee in Britain was a disincentive. However, as soon as the duty on coffee was lowered and the price increased Britain replaced North America as the major market for Jamaican coffee. In the heyday of the North American trade Philadelphia was the overwhelming destination for Jamaican coffee. In 1755 it took 32 percent of the trade and in 1769 the trade fell absolutely and proportionately to 25 percent.

Cotton Output

Kingston was the chief port from which Jamaica's cotton was exported. For the selected years shown in table 2.10 below no other port challenged Kingston. With the exception of Savanna-la-mar, by 1805 cotton exports from the remaining ports were small. The trade through Montego Bay recorded an 86 percent decline in 1805 compared to 1769.

Table 2.10 Port Distribution of Cotton, Selected Years
(in pounds)

Ports	1748	1755	1769	1805
Kingston	549,375	901,800	375,150	1,162,600
Lucea				8,100
Montego Bay			62,400	8,700
Port Antonio				
Port Royal		300		
Savanna-la-mar			28,500	144,900
Total	549,375	902,100	466,050	1,324,300

Source: NOSL

Cotton was never exported from Port Antonio. The port lies on the leeward side of the island and was subjected to more rainfall than the rest of the island. Cotton was not suited to this type of weather.

Table 2.11 Quantity of Cotton exported from Jamaica, Selected Years
(in pounds)
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	1748	1755	1769	1805
Canada				
Quebec				300
Total Canada				300
Ireland				
Belfast				37,200
Dublin			3,600	61,500
Total Ireland			3,600	98,700
North America				
Alexandria				29,100
Boston	6,210	3,600	20,400	
New England		600		
New London			600	
New York			2,100	
North Carolina			600	
Philadelphia	1,130	600	1,800	
Rhode Island			5,700	
Salem		900	6,900	
South Carolina		300		
Total North America	7,340	6,000	38,100	29,100
Other				
Unknown	8,469	6,000	1,800	
Total Other	8,469	6,000	1,800	
United Kingdom				
Bristol	110,488	55,500	24,600	52,200
Glasgow	31,618	32,100	19,800	205,300
Greenock				13,200
Hull		300,000	1,500	
Lancaster	36,699	22,200	47,700	
Leith		900	4,800	9,000
Liverpool	210,598	372,600	175,950	740,100
London	144,539	105,300	148,200	174,000
Whitehaven		1,500		2,400
Total United Kingdom	533,553	890,100	422,550	1,196,200
Total	549,375	902,100	466,050	1,324,300

Source: NOSL

The major market for Jamaican cotton was Britain, taking over 90 percent in each of the selected years (97 percent in 1748, 99 percent in 1755, 91 percent in 1769 and 90 percent in 1805). Within Britain Liverpool was always the main market. London was also important, and at times Bristol, Glasgow, Lancaster and even Hull (see table 2.11 above).

Cotton exports fluctuated throughout the eighteenth century (see figure 2.4 below). What was true for the century was also true for the selected years. Cotton exports increased by 64 percent from 1748 to 1755, but from 1755 to1769 they declined by 48 percent, but then increase by 184 percent from 1769 to 1805.

Liverpool dominated the market because it was the port which supplied Manchester with the raw material for the Lancashire cotton industry. Eric Williams, in *Capitalism and Slavery*, points to the symbiotic relationship between Liverpool and Manchester during the Triangular Trade. Liverpool was Manchester's 'outlet to the sea'. In the absence of a port, it relied on Liverpool for its supply of raw materials. The majority of cotton used in Lancashire's textile industry came from the British West Indies, 'England depended on the West Indian islands for between two-thirds and three-quarters of its raw cotton'.[81] But, this was for a short period as the United States rapidly eclipsed the British West Indian colonies as the chief supplier of cotton to England. The United States' dominance was due in large measure to the introduction of the Whitney cotton gin in 1793. The cotton gin aided the production process through the mechanical removal of the cotton seeds. This was in stark contrast to cotton production techniques in the British West Indies where the production was carried out exclusively by enslaved labour.

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[81] Eric Williams, *Capitalism and Slavery*, p. 68-73.

Figure 2.4 Quantity of Cotton exported from Jamaica to England, 1748-1805
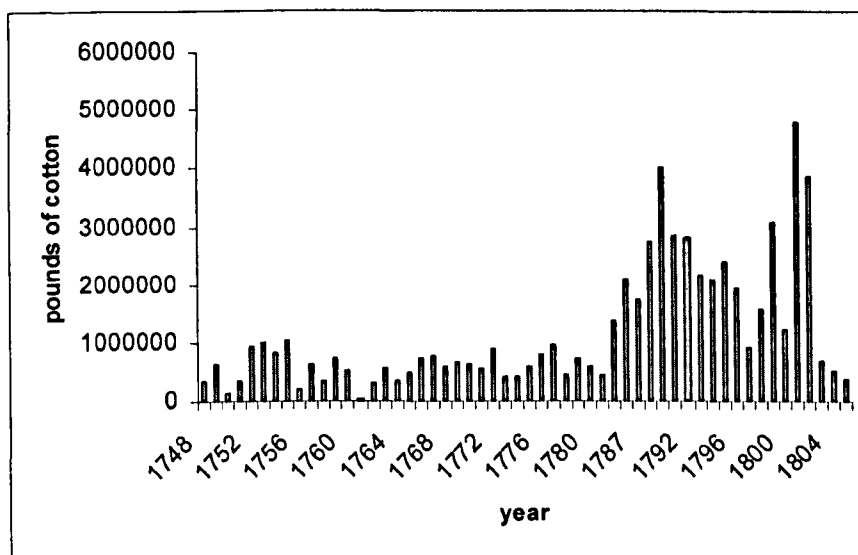
Source: PRO Customs 3, vols. 48-80; PRO Customs 17, vols. 6-27.

Pimento Output

Pimento, otherwise known as All-Spice, can be found in almost any part of Jamaica. However, it is mainly cultivated on the north side of the island, especially in the parish of St. Ann. When grown to its fullest, the pimento tree rises to a height of 30 feet and it usually takes between 3 to 7 years to mature. The berries are normally picked from the tree while green after which they are laid on terraced floors (barbecues) where they are sorted; they are then washed and dried. When the berry is fully dried, the complexion changes from green to brown: a sign that it is ready for the market.[82] Based on Higman's findings, there were only 15 specialized pimento plantations in Jamaica in 1832, employing 1,287 enslaved.[83]

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[82] Edward Long, *The History of Jamaica*, vol. 3, p.702-705; Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies*, p. 310-314.
[83] B.W. Higman, *Slave Population and Economy*, p.13.

The port distribution of Jamaica's pimento is highlighted in table 2.12 below. For the selected years shown, Kingston was the leading port for the export of Jamaican pimento most of the time. 60 percent of the island's pimento was exported through Kingston.

Table 2.12 Port Distribution of Pimento, Selected Years
(in pounds)

Ports	1748	1755	1769	1805
Kingston	214,944	499,240	262,172	418,393
Lucea				1,898
Montego Bay			439,657	372,514
Port Antonio				74,266
Port Royal				
Savanna-la-mar			19,600	31,177
Total	214,944	499,240	721,429	898,246

Source: NOSL

Montego Bay emerged in 1769 and 1805 as a major loading port for the island's pimento. In 1769, it exported 439,657 pounds or 61 percent of the total amount of pimento exported from the island. The total quantity exported had declined from 439,657 pounds in 1769 to 372,514 pounds in 1805. The large quantity of pimento exported from Montego Bay is partially explained by the fact that most of its pimento exports came from the bordering parish of St. Ann. The total quantity of pimento exported from Port Antonio was 8 percent; Savanna-la-mar exported 3 percent. Port Royal was not used as a loading port for pimento, even though it was used to load sugar and molasses in 1755, and molasses in 1769 and 1805.

The increase of Jamaica's pimento exports is highlighted in table 2.13 below. Production and

exports of pimento grew between 1748 and 1755 from 214,944 pounds in 1748 to 499,240

Table 2.13 Quantity of Pimento exported from Jamaica, Selected Years
(in pounds)

	1748	1755	1769	1805
Canada				
Halifax				380
Quebec				200
Total Canada				580
Ireland				
Cork				4,175
Dublin				13,100
Total Ireland				17,275
North America				
Boston	14,249	6,848	4,400	
Charleston				5,798
New York		243	100	77,571
Philadelphia	3,563	52,043	3,000	28,300
Rhode Island			700	
Salem		2,770	1,200	
Virginia		1,338	3,500	
Total North America	17,803	63,243	12,900	111,669
Other				
Curacao		19,490		
Unknown	2,848		4,900	
Total Other	2,848	19,490	4,900	
United Kingdom				
Bristol	84,408	27,142	64,300	20,275
Glasgow			400	47,949
Greenock				26,880
Hull			6,600	
Lancaster		1,378		
Leith			100	32,759
Liverpool	28,496	287,500	132,719	121,750
London	81,383	98,350	499,511	516,076
Whitehaven				3,036
Total United Kingdom	194,288	414,370	703,629	768,724
Total	**214,944**	**499,240**	**721,429**	**898,246**

Source: NOSL

pounds in 1755, a rise of 132 percent. By 1769 exports had increased to 721,429 pounds and increased again to 898,246 pounds in 1805. In reality, when we view customs 3 and 17, pimento exports fluctuated with an uneven rise to the 1780s and an uneven fall thereafter (figure 2.5).

Figure 2.5 Quantity of Pimento exported from Jamaica to England, 1748-1805
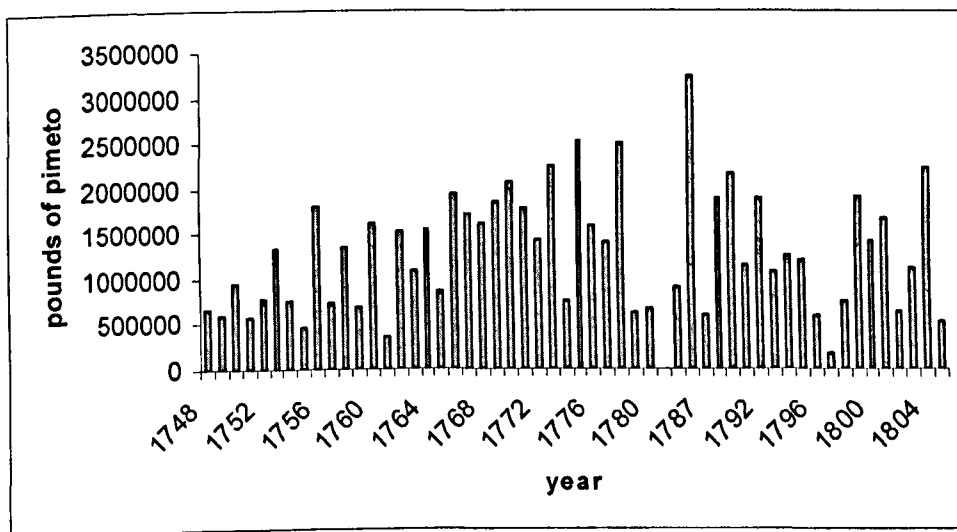
Source: PRO Customs 3, vols. 48-80; PRO Customs 17, vols. 6-27.

Britain was the major market for Jamaican pimento taking 90 percent in 1748; 83 percent in 1755; 98 percent in 1769 and 86 percent in 1805. And within Britain, London was the major market followed by Liverpool and Bristol and the Scottish ports in the early eighteenth century. Beside Britain, the continental colonies were the next major market for Jamaican pimento, especially through Philadelphia and Boston in the eighteenth century and then Philadelphia and New York for the one year for which we have details in the early nineteenth century.

Ginger Output

Ginger was cultivated during March and April and harvested the following January and February. After harvesting, the ginger was cleaned and scalded then exposed to the sun for

drying. Once it was dry, it was packaged into bags and sent to the market. Alternately, instead of scalding, the ginger could be scraped, washed, and dried resulting in the type of ginger known as white ginger. The white ginger carried a higher market value than the black ginger.[84] In 1773, there were 30 plantations averaging 146 acres growing ginger in Jamaica.[85] The planters in the eighteenth century combined ginger with other crops on the plantation.

Like most of the exports from the Island of Jamaica, Kingston dominated ginger exports (table 2.14). In the early years it was the only port exporting ginger. By 1769, other ports in the west entered the trade (Montego Bay and Savanna-la-mar) but exported trivial amounts (just 2 percent of the total trade).

Table 2.14 Port Distribution of Ginger, Selected Years
(in pounds)

	1748	1755	1769	1805
Kingston	306,378	886,169	753,748	184,367
Lucea				84,131
Montego Bay			4,200	6,780
Port Antonio				33,090
Port Royal				
Savanna-la-mar			14,639	20,503
Total	**306,378**	**886,169**	**772,587**	**328,870**

Source: NOSL

By 1805 Lucea and Port Antonio started to export sugar, both eclipsing Montego Bay and Savanna-la-mar in importance. Table 2.15 shows the destination of the ginger exports, a trade

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[84] Edward Long, *The History of Jamaica,* vol. 3, p.700-702; Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies* p. 306-308.
[85] Ibid., vol.1, p. 495-6.

overwhelmed by the United Kingdom. The really important feature of the ginger trade was its uneven nature, and this comes out when we view the annual trade through customs 3 and 17 (See figure 2.6 below).

Table 2.15 Quantity of Ginger exported from Jamaica, Selected Years (in pounds)

	1748	1755	1769	1805
Ireland				
Cork				32,637
Dublin				42,194
Total Ireland				74,831
North America				
Boston			24,100	
New York		2,500	1,600	
North Carolina			400	
Philadelphia	8,600	100	29,400	
Salem			1,100	
South Carolina		200		
Virginia		300	1,500	
Total North America	8,600	3,100	58,100	
Other				
Unknown		7,559		
Total Other		7,559		
United Kingdom				
Bristol	94,060	165,280	16,832	8,100
Glasgow		20,000		8,134
Hull			5,000	
Lancaster	759	11,000		
Leith			380	100
Liverpool	63,179	413,781	106,600	56,112
London	139,780	265,450	585,675	181,595
Total United Kingdom	297,778	875,510	714,487	254,040
Total	306,378	886,169	772,587	328,870

Source: NOSL

Figure 2.6 Quantity of Ginger exported from Jamaica to England, 1748-1805
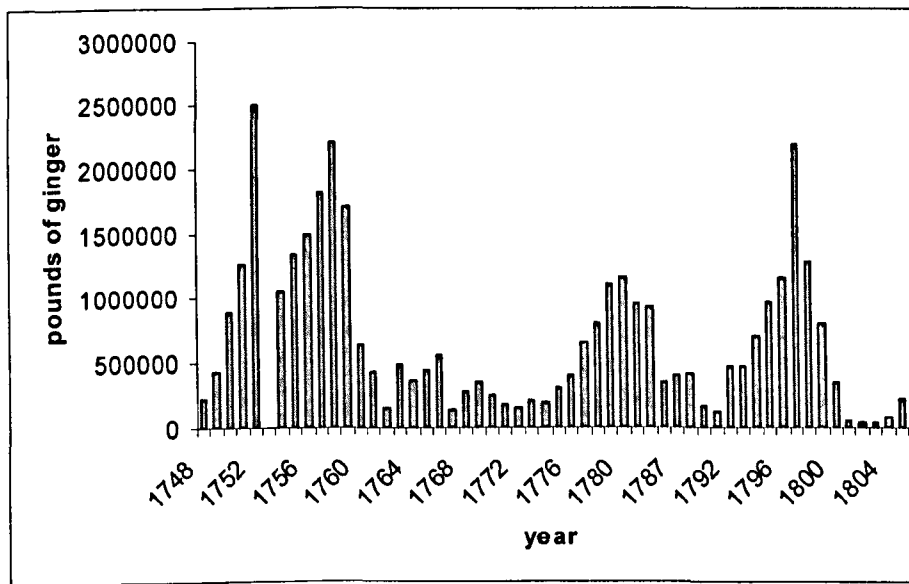
Cocoa Output

Cocoa cultivation was evident in Jamaica during the mid to late seventeenth century. [86] Of all the crops that were exported from Jamaica, cocoa was the most delicate and due care was taken during its cultivation to ensure the plant's longevity and yield. The young plant was susceptible to high winds, sun, insects, and drought. Also cultivation usually took place in wet or overcast conditions. Planters protected the plant with trees, in most cases, plantain, providing shade and wind defences. The requirements for a successful cocoa yield meant that there was no concentration of cocoa in areas without suitable vegetation cover. Therefore, cocoa was not cultivated in the dry savannah region on the southern side of the island or the elevated and rocky mountain areas. Once cultivated and matured the plant bears two crops a year. The first harvest was in December or January; the other in May or June. After the fruit was harvested, the nuts were separated from the pods where they were exposed to the sun for upwards of 30 days to be

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[86] In a survey carried out by Governor Thomas Modyford in 1670, there were 47 cocoa walks in the island which yielded 188,000 pounds. See Calendar of State Papers, Colonial Series 7, America and the West Indies, 1669-1674, nos. 270-281.

cured. When thoroughly cured, the cocoa was then packaged into bags of 100 pounds and shipped to the market. There was no specialized cocoa plantation in Jamaica during the eighteenth century. Like most minor staples, cocoa production was combined with the production of other staples.[87]

Kingston and Savanna-la-mar were the only ports used to export cocoa from Jamaica (table 2.16). If we are to believe the NOSL, there were no exports from Kingston in 1769 and trivial amounts through Savanna-la-mar. The extraordinary resurgence of Kingston in 1805 adds little weight to our skepticism about the records.

Table 2.16 Port Distribution of Cocoa, Selected Year
(in pounds)

Ports	1748	1755	1769	1805
Kingston	139,433	22,500		707,421
Savanna-la-mar			2,657	21,277
Total	139,433	22,500	2,657	728,698

Source: NOSL

Beyond repeating our skepticism over the completeness of the record we can only say that until the eighteenth century the trade was dominated by Britain, but in the early nineteenth century the Irish market and North American market added an element of competition (table 2.17)

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[87] Edward Long, *The History of Jamaica*, vol. 3, p. 695-700.

Table 2.17 Quantity of Cocoa exported from Jamaica, Selected Years
(in pounds)

	1748	1755	1769	1805
Ireland				
Belfast				40,227
Cork				16,319
Dublin				60,028
Total Ireland				116,573
North America				
Boston	6,850			
New York				43,300
Philadelphia				45,193
Total North America	6,850			88,493
United Kingdom				
Bristol		1,000		
Glasgow				34,313
Liverpool	4,800			199,877
London	127,783	21,500	2,657	289,442
Total United Kingdom	132,583	22,500	2,657	523,632
Total	139,433	22,500	2,657	728,698

Source: NOSL

National Income Estimates, 1748-1805.

A measure of Jamaica's national income provides information on the earnings from productive sources. A country's national income is the monetary value of its productive activity over a given period of time. The national income measured using the output approach therefore would take account of the aggregate earnings from all the current productive activities of that country. In any production system but especially an agricultural one, there is an element of subsistence – food produced and consumed by the workers among others – and this constitutes part of their income in the context of a market economy. This applied to Jamaica even though enslaved labour dominated production – the latter had to be fed, however imperfectly. This therefore means that in an enslaved economy the national income measure would be based on the earnings from

exports, and in the case of Jamaica, specifically sugar and its derivatives, as well as the earnings saved from subsistence output.

Although economic activity was predominantly geared towards the production of goods for export other important aspects include penkeeping, and slave re-exports. It is well known that such activities were well developed and formed an integral part of the internal workings of the economy. The penkeeping sector, for example, was widely dispersed, and as such, created a source of income for planters, merchants, and landowners. It therefore means that the earnings would have contributed positively to the country's national income. However, in my estimation of national income, it is assumed that penkeeping formed part of the proportion for local production, mainly because such sector served as an adjunct to the sugar industry. To add the estimates for penkeeping to national income would essentially be double counting, and as such were excluded.

Export earnings represent the market value of the output exported based on the prices for those items while subsistence earnings are the cost savings of the goods not exported. Food production is included in the national income equation as Jamaica's plantation economy was relatively simple since it was based on an export sector and the slave provision-ground system. Income from exports ideally should be the summation of income from the individual products exported – thus derived as the product of quantity exported and average market price. However, it is the income from sugar and its derivatives exports that was used in the following formula to derive national income and food production income.

The formula is $Y = \dfrac{X+F}{\chi + \square}$

Where Y is national/total income, X is total income from sugar and its derivatives exports, and F income from food production. The symbol χ denotes the proportion of total income earned from sugar and its derivatives exports and $\square$ the proportion of total income from food production. The proportions used are based on Gisela Eisner's estimates for Jamaica in 1832. Eisner's export proportion is 0.69 calculated as total export value divided by total income, which ranged from £ 2086.8 to £ 2986.9 respectively during that year. The difference between 1 and 0.69, 0.31, is therefore the proportion of total income contributed from food production.[88]

The proportions used by Eisner to estimate Jamaica's national income in 1832 is applied here for a number of reasons. One fundamental reason was that no crop rivaled sugar's dominance within the export sector from 1750 to 1832. The 0.69 was adopted in this paper as sugar and its derivatives export proportion of total income because sugar was the dominant export during the period under review. Another important observation was the fact that Jamaica was a mono-sector economy during this time. There were no other rival industries which challenged the status-quo or which demanded raw materials for production. Therefore, within this economic set-up, the majority of what was produced was undertaken for exports, and domestic consumption was limited to what was used for feeding the enslaved population and other residents. To exclude local production income therefore would have been to grossly underestimate the country's national income over the review period. A constant proportion is used by Eisner because with competing producers and increased production, even where sugar and its derivatives export

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[88] Gisela Eisner, *Jamaica, 1830-1930: A Study in Economic Growth*, (1961), p. 25-42.

amounts increased, the proportions would have remained stable, *ceteris paribus*. As such, the estimates used by Eisner for 1832 were seen as relevant, and were therefore applied to the earlier period.

In calculating national income estimates, data from Customs 3/17, rather than the NOSL was used. This was most pragmatic, as the relative prices of all goods exported were unavailable for the period under review. The prices collected and used relate to five-year periods. This price series was available, most compatible and comparable with the data provided by the Customs records; hence the quantities used in my estimation n of national income were from that source. It is difficult to carry out such an exercise with data from the NOSL. From the NOSL data, there are only four years available for investigation. With this limited number of years, a comparable price structure was hard to find, and with this in mind, the decision was taken to use the data provided by Customs 3/17 in my estimation of national income.

Having chosen Customs 3/17 as the basis for my estimation, another methodological issue comes to the surface that needs elaboration. Clearly, not all of Jamaica's exports went to England. The NOSL provided data on quantities shipped to all locations, while Customs records were for exports to England only. Therefore, it was imperative to adjust Customs data. To do this, an inflator had to be estimated to adjust customs data upwards, to take account of shipments to areas outside of Britain. Hence a measure of Jamaica's total exports within the period could be derived. This inflator was applied only to sugar and its derivatives because of the price constraint identified above. Also, sugar and its derivatives comprised approximately 72-81 per cent of the

island's exports, and, as such, will give a good indication of income earnings during the period. Such earnings were estimated to be precisely 76 per cent of total receipts. [89]

i. The inflator is assumed to be 1 - (average of export percentages)
to Britain

ii. Sugar inflator = 1- $\frac{(0.97+0.98+0.97+0.96)}{4}$ = 0.03

iii. Sugar derivatives inflator = 1- $\frac{(0.97+0.85+0.70+0.56)}{4}$ = 0.23

Only four periods are used, as the inflator is based on the amounts sent to Britain vis-à-vis the rest of the world. This is so as the NOSL tables, which provide information on exports to the rest of the world, only had data for four years. So in order to ascertain the inflator information had to be garnered form the NOSL records since they provide data on Britain and the other trading partners. The inflators were then applied to each product type (sugar and its derivatives) separately, and then totalled to give a single quantity, which is shown in table 2.18 below.

The next important step was to convert the volume measurements into value equivalents (table 2.18). This required relative prices for the two outputs over the period. Farm gate prices or even Kingston prices would have been ideal. So far, the data on farm gate prices during the period is minimal. The same was true for Kingston prices. Both data series could not facilitate the sort of analysis needed for this exercise.[90] In the absence of these price series, the prices of sugar and sugar derivatives should be used as they accounted for roughly 76 percent of the island's exports,[91] although this percentage reduced somewhat toward the end of the eighteenth century

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[89] Barry Higman arrived at a similar percentage. See *Slave Population and Economy, 1807-1834*, p. 12.
[90] Add. Mss 12402-12431, Edward Long Papers
[91] Eltis, David, Frank Lewis, and David Richardson, "Slave Prices, the African Slave Trade, and Productivity in the

and the beginning of the nineteenth century. However, this was similarly problematic, so the rational thing to do was to use sugar prices which were most readily accessible.

These sugar prices were quoted in shillings per cwt but converted to pounds to facilitate the calculation of national income. This was done by first converting the shillings per cwt to shillings per ton since 22 cwt makes a ton. This figure, 22, was multiplied by the shilling per cwt to derive the shillings per ton. This made the conversion of the shillings per ton to a pound per ton measure easier, as shillings can be converted to pounds. Therefore, the shillings per ton, as derived, were divided by 20, as 20 shillings make a pound. The prices used in table 2.18 therefore, are an average sugar price across the five year period. This was necessary as the quantities were expressed in tons, hence prices had to be based on tonnage and also a running prices series was not readily available for sugar's derivatives. It therefore means that the prices used were somewhat underestimated.

The nominal values are the quantities as seen in column 2 of table 2.18 multiplied by current prices and the real values are calculated using the following formula:

The price index is $\dfrac{\text{Prices in a given year}}{\text{Prices in the base year}}$

Real values $= \dfrac{\text{Nominal values}}{\text{Price Index}} \times 100$

The base year is 1748, since the study is measuring national income from around this period to the early 1800s. Real values allow for more meaningful comparisons as they exclude fluctuations

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Caribbean, 1674-1807." *Economic History Review*, 58, 4 (2005):673-700.

in values caused by changing prices and hence shows variation in income based on changes in real output.

Table 2.18 Estimated export values for Sugar and its Derivatives

Year	Annualized values for Sugar and Sugar Derivatives (In tons after inflator)	Current Sugar Prices (In £s per ton)	Annualized Nominal values of exports (In £s)	Price Index	Annualized Real Values of exports (in £s)
1748	20,119	38.5	774,582	100	774,582
1750-54	22,783	36.45	830,448	94.68	877,110
1755-59	27,462	42.98	1,180,317	111.65	1,057,158
1760-64	32,576	39.6	1,290,010	102.85	1,254,263
1765-69	36,749	40.52	1,489,069	105.25	1,414,792
1770-74	47,610	39.78	1,893,926	103.37	1,832,181
1775-79	46,975	49.89	2,343,582	129.60	1,808,319
1780-84	25,503	54.01	1,377,417	140.28	981,905
1785-89	34,832	50.88	1,772,252	132	1,342,615
1790-94	63,337	60.84	3,853,423	158	2,438,875
1795-99	63,001	70.51	4,442,200	183.14	2,425,576
1800-04	92,772	47.66	4,421,514	123.80	3,571,498
1805	97,217	53.97	5,246,801	140.20	3,742,369

Having established in table 2.18 the real value of Jamaican exports between 1748 and 1805, we now apply Eisner's proportions as outlined earlier to arrive at an estimate of the island's national income over the same period. Table 2.19 below shows these estimates, which are broken down into the real export values and income from food production. The table shows that national income rose steadily over the period, except for the period 1779 to 1784 where a reduction in income levels was recorded. This is attributable to a large fall in real exports between 1779 and 1784. This is not surprising as the American War of Independence was ongoing during this period. Another factor for the decline in output was the series of devastating hurricanes which the island experienced in the early 1780's. The trends however, seek to highlight the direct

positive correlation between the export changes and income changes and also indicate the sensitivity of the economy to shocks. Subsequent to this however, there was a large growth in the national income, which was in response to the growth in real export growth.

Table 2.19 Estimated real values of exports, local food production, and national income in Jamaica, 1748-1805

Year	Annualized Real export values (£ s)	Annualized Food production income (£s)	Annualized Total national income (£s)
1748	774,582	348,000	1,122,582
1750-4	877,110	394,064	1,271,174
1755-9	1,057,158	474,955	1,532,113
1760-4	1,254,263	563,509	1,817,772
1765-9	1,414,792	635,631	2,050,423
1770-4	1,832,181	823,154	2,655,335
1775-9	1,808,319	812,433	2,620,752
1780-4	981,905	441,146	1,423,051
1785-9	1,342,615	603,204	1,945,819
1790-4	2,438,875	1,095,726	3,534,601
1795-9	2,425,576	1,089,750	3,515,326
1800-4	3,571,498	1,604,586	5,176,084
1805	3,742,369	1,681,354	5,423,723

The years leading up to 1805 were also very lucrative as national income levels increased steadily; this can be extrapolated from table 2.18. It is notable that in the year 1805 national income was more than £5 million in that year, if one looks at the national income levels for the previous periods then it is seen that this was a record for the national income levels. This speaks to the colossal income growth that was occurring over the period and also that economic growth was at a peak at the turn of the century. Similarly, if we calculate the national income from 1800 to 1805 it would be approximately £22 million, an amount already higher than the ten-year period preceding. Give and take the small proportion of national income that was transferred to Britain as distributions costs, there is still concrete evidence that the island was earning high

levels of revenue and that there was real growth in income as the figure quadrupled over the period under review. This is so as even where distribution costs were increasing it would be a relatively fixed proportion of income as income did not remain constant. It is evident that growth was occurring in the economy.

If one compares these results with those of Britain around 1800, then the magnitude of what was taking place on the island will be understood. In a study published in 1985, Nicholas Crafts assumed an average annual national income for England and Wales in 1801-1803 of £198.6 million. Patrick Colquhoun, a contemporary writer estimated that national income around 1801-1803 averaged £222 million. If one compares those estimates with Jamaica's it can be seen that Jamaica's national income was about 2.5 percent, based on Crafts estimate, and 2.3 percent, based on Colquhoun, of England's, this is significant because at that time Jamaica was only a small colony, approximately 9 per cent the size of England. It therefore suggests that Jamaica was making a great contribution to the economic prosperity of England.[92]

It should also be noted that food production income rose over the years from £1,971,985 in 1750 to £5,448,793 in 1799. This is included in total income calculation because it represents the economy's cost savings, retained from local production for consumption. This increase in food production income is attributable mainly to the increase in enslaved arrivals in Jamaica, which in and of itself speaks to the production growth that was taking place. In any economy, growth in output generally substantiates the need for more factor inputs, and in labour intensive economies such as slave societies, that input would be labour. At the beginning of the nineteenth century

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[92] For estimates on England's national income, see N. F.R Crafts *British Economic Growth during the Industrial Revolution* (1985), p. 13; David Richardson, "Slavery and Bristol's Golden Age", *Slavery and Abolition*, 26 (2005): 35-54. For the estimate on the relative size of Jamaica see chapter 1.

when the production of sugar peaked, and as the economy diversified into non-traditional output, more labourers were needed, hence, the growth in enslaved arrivals and the increase in subsistence output. This economic vibrancy is reminiscent of the economic growth in some modern societies driven in no small part by the existence of cheap labour.

Having adopted Eisner's method for calculating national income, it is imperative that we compare the data in table 2.19 with that of Eisner's estimates for 1832. Based on Eisner's computation, Jamaica's national income during the 1830's averaged £5,041,900.[93] This was far less than what was earned at the beginning of the nineteenth century and is consistent with the happenings of the 1830s. This was a period during which slavery was nearing its end; the flow of African labourers into the island had stopped, and foreign competition had forced the price of sugar to unprecedented lows, all of which caused great reduction in economic earnings for the island[94].

Another indicator of positive economic activity is the per capita income measure. Per capita income was estimated as national income (table 2.18) divided by the enslaved population for the respective years (Chapter 3). Also, the enslaved made up approximately 90 percent of the total population; it therefore means that a per capita estimation based on the enslaved population would have been a close proxy to the actual figures. Around 1801-1803, Patrick Colquhoun estimated that England and Wales's per capita income was £24.4. This represents the income each person earns on average. This must be interpreted on the premise that England and Wales at the time was an economic powerhouse. In this same period Jamaica's per capita income was approximately £18. This is not significantly smaller than the former amount and when compared

93 Gisela Eisner, *Jamaica, 1830-1930*, p. 25-42.
94 Seymour Drescher, *Econocide*.

with previous periods indicate to the levels of growth occurring in Jamaica's economy as from around 1748 up to 1795 per capita income was basically flat varying from £10 in 1748, £12 in 1762, £13 in 1778 to £12 in 1795. This shows that Jamaica was prospering and although per capita figures must be interpreted with caution, because of the disparities in variables among countries, it is still a good measure of the economic prosperity of a country.

Conclusion

The crop-by-crop discussion of Jamaica's output has highlighted some fundamental issues relating to the island's plantation economy during the eighteenth century. Foremost among these is the fact that the island's plantation economy was not a sugar monoculture economy. Rather, it was a diversified economy in which the sugar sector dominated. It accounted for between 72 and 81 per cent of the total tonnage of the island's export and 76 per cent of the total receipts.

Secondly, the minor staples made a real contribution to the structure of the island's export trade. The most dominant minor staple was coffee. Coffee production and exports expanded rapidly during the 1790's. In 1805, coffee was the second most important export behind sugar accounting for 25 per cent of the total receipts for that year.

The major market for Jamaican exports for the selected years was Britain. Over 90 per cent of the total tonnage of the island's produce was exported to Britain. In Britain, the major markets were London, Liverpool and Bristol. Jamaica's colonial trade to other ports was intermittent and the quantity of goods exported was small. Apart from Britain, the North American colonies provided a stable market for most of the island's produce. However, by 1805, the quantity of

goods exported to North America declined which shows the effect of the American War of Independence on trading relations. With the relations between the United States and Britain at an all time low, trade with British North America (Canada) was promoted. Ireland too became an important market for Jamaican sugar and rum, and by 1805, both markets became the alternative to the market lost on the American mainland.

The evidence points to a vibrant economy during the latter part of the eighteenth century. The increase in the production and export of sugar, rum, and coffee are evidence of unparalleled growth during the latter part of the eighteenth century. The rate of increase in the production of these goods was fastest between 1790 and 1805. The growth in production was aided by the downturn in competition from French sugar and coffee arriving from the St. Domingo Revolution. This view of expansion during the late eighteenth century was articulated by Sir William Young who argued that 'Jamaica is yet a growing and improving colony, and that, its cultivation appearing progressive, and especially of coffee, a further increase of produce may yet be expected'.[95]

Overall, for the period between 1750 and 1805, an increase in Jamaican output resulted in a steady rise in national income as indicated in the 326 percent increase in the island's national income over the same period. The growth in income is a good indicator of the relative performance and state of Jamaica's plantation economy throughout the late eighteenth century. In fact, the national income estimates show a steady rise in earnings over the period which peaked in 1805, two years before the Transatlantic Trade in Africans was abolished. Additionally, the per capita income rise was steady and substantiates the claim that the economy

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[95] William Young, *The West-India Common Place Book*, (1807), p. 16.

was buoyant at that time. This is especially significant in an economy where labour was free as it highlights the income that each person could have earned. Another important but subtle indicator of economic activity was the growth in slave arrivals and subsistence income, as *ceteris paribus*, these activities had to be directly correlated with economic growth. It is foolhardy to think that planters would have been purchasing more enslaved labourers without a concordant improvement in output and income. In fact, the arrival of enslaved Africans would have been dependent on the growth in output. Therefore, on the eve of the abolition of the Transatlantic Trade in Africans, it is fair to say that Jamaica's plantation economy was stronger than it had ever been.

Chapter 3

Labour

This chapter seeks to examine the changing trends in the supply of African labour to Jamaica and the impact it had on the growth of the island's plantation economy and population during the eighteenth century. In doing so, the temporal and regional distribution of the trade from 1702 to 1807 will be investigated. Further, the chapter will highlight the work patterns on sugar estates during the eighteenth century.

The plantation colonies in the Americas were integral to the Atlantic economy. As such, the colonised regions produced tropical staples for consumption in Europe; this was the basis of their organization. In order to facilitate such fundamental change, a large labour force was needed. Initially, white indentured labourers from England supplied the labour that was used on the plantations.[96] However, this supply dried up circa 1640 when white indentured labour was gradually replaced by labour from Africa. The genesis of this model was Barbados. Here, the slave mode of production was instituted to great effect. It propelled the colony into a period of unparalleled growth, so much so that by the close of the seventeenth century Barbados produced more sugar than the other British colonies combined.[97]

The Barbados model was rapidly followed by other British islands, including Jamaica, first colonised by England in 1655. Jamaica's sugar plantation system started circa 1660 when the

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[96] Hilary Beckles, *White Servitude and Black Slavery in Barbados, 1627-1715*, (1989)
[97] In 1770, Barbados produced 12,594 tons of sugar compared to Jamaica's 4,708 tons. See Noel Deerr, *The History of Sugar*, vol. 1. 193-198

colonial government offered settlers incentives that were designed to encourage settlement on the island. One such incentive was a twenty year freeze on import and export duties.[98] The other was the granting of 30 acres patent to families.[99] These incentives laid the foundations for the sugar plantation economy. In a survey of the island carried out in 1670[100], Governor Thomas Modyford estimated that 209,020 acres of land were patented. He also highlighted the 9 fold increase in the number of sugar estates from 6 in 1660, to 57 in 1670, producing 1, 710 cwt of sugar. There were 47 cocoa walks yielding 188,000 pounds; 49 indigo works producing close to 49,000 pounds. He noted the large savannas, as well as the huge increase in animal stock from 60 to 6,000 within the space of six years. At the beginning of the eighteenth century, Jamaica's plantation economy had developed remarkably from when the island was captured from Spain in 1655.

The adaptation of the slave mode of production led to a rapid change in the demography of the island. By way of the importation of Africans, Blacks became the majority (though not dominant) social group and this demographic structure remained until the end of slavery. The transformation is seen in the population estimates for Jamaica in table 3.1 below. It should be noted that annualized population estimates are not available, and the data presented are for selected years. In 1660, the ratio of whites to blacks was 3:1, this changed dramatically to 1:12 by 1703. With repeated attempts by the Jamaica Assembly to bolster the white population in the

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[98] Calendar of State Papers, Colonial Series 5, America and the West Indies, 1661-1668, no.839
[99] Calendar of State Papers, Colonial Series 7, America and the West Indies, 1669-1674, nos. 276-81; Jamaica Archives, 1B/11/1 Index to Patents
[100] Calendar of State Papers, Colonial Series 7, America and West Indies, 1669-1674, nos. 270-271.

face of internal and external threats throughout the eighteenth century, the ratio declined to about

1.8 in 1787.[101]

Table 3.1 Population of Jamaica, 1660-1805

Year	Whites	Other (Free)	Blacks	Total Population
1660	4,500		1,400	5,900
1664	6,700		2,500	8,200
1703	3,500		45,000	48,500
1715	2,000		60,000	62,000
1730	7,648	865	74,525	83,038
1734	7,644		86,546	94,190
1740	10,080		99,239	109,319
1745	3,777		112,428	116,205
1750	12,000	2,119	127,881	142,000
1762	15,000	4,000	146,805	165,805
1768	17,949	3,500	166,914	188,363
1778	18,420		205,261	223,681
1787	25,000		210,894	235,894
1789			250,000	
1795			291,000	
1800			300,939	
1805			308,542	

Source: John McCusker, *Rum and the American Revolution*, p. 609-612;
Stanley Engerman and B.W. Higman, *The Demographic Structure of the Caribbean, p.46;* Orlando Patterson, *The Sociology of Slavery*, p. 95-96

Blacks' dominance of the population was a reflection of the success of the plantation system. [102]

By 1740, Jamaica replaced Barbados as the leading producer of sugar in the British West Indies.

African labour was the foundation on which Jamaica's eighteenth century economy was built. In

this context, the chapter from here on will examine (a) the work culture of Jamaica's enslaved

population and the effect it had on reproduction and mortality and (b) the importation of Africans

in Jamaica - the aim of which was to substitute for the demographic deficit of the enslaved

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[101] To correct the perceived imbalance, the Jamaica Assembly instituted a series of Deficiency Laws which penalised slave holders who failed to have the accepted ratio of whites to blacks. See Edward Long, *The History of Jamaica*, vol. 1. p. 376.
[102] It is estimated that the slave population grew at an annual rate of 2.3 per cent. See Stanley L. Engerman and B.W. Higman, "The Demographic Structure of the Caribbean Plantation societies in the Eighteenth and Nineteenth Centuries" in Franklin W. Knight (ed.) *General History of the Caribbean Vol. 3 The Plantation societies of the Caribbean* (1997), p. 46.

population, and by extension to grow the enslaved population. All of which, of course, was to sustain the profitability of the plantation economy.

Work Culture of Enslaved Africans

The Jamaican plantation economy was the most diversified of all the British Caribbean colonies.[103] Of the crops produced, sugar was the dominant and most important with coffee emerging in the late 1790's as the second most important export crop. Livestock farming was also an important feature of the plantation economy. Livestock farming was not export oriented like sugar and coffee, but its importance in providing meat, draught animals, and manure to the sugar estates make its contribution to the development of the plantation economy invaluable.[104]

The majority of Jamaica's enslaved population worked on sugar estates, which was a reflection of the importance of sugar to the local economy and its overall dominance in the export sector. Using the 1768 poll tax returns, Richard Sheridan showed that 59.4 per cent of enslaved Africans were located on sugar estates with the remaining 40.6 per cent located on ginger, coffee, pimento, and other plantations and establishments'.[105] Barry Higman has presented a widely accepted estimate of the labour participation ratio for the island. He showed that in 1832, 49.5 per cent of the enslaved population worked on sugar estates; 14.4 per cent on coffee plantations; 12.8 per cent on livestock pens; 6.4 per cent on minor staples plantations; 6.4 per cent made up the jobbing gangs; and 8 per cent were located in the urban areas.[106]

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[103] Verene Shepherd (ed.), *Slavery Without Sugar: Diversity in Caribbean Economy and Society Since the 17th Century* (2002).
[104] Shepherd, Verene. "Pen and Pen-Keepers in a Plantation Society; B.W. Higman, *Slave Population and Economy in Jamaica*..
[105] Richard Sheridan, "The Wealth of Jamaica in the Eighteenth Century"
[106] B.W. Higman, *Slave Population and Economy in Jamaica, 1807-1834*, p. 16.

How and where the enslaved population worked depended on the requirements of particular crops. Each of the cultivated crops had a different season for planting and harvesting, and the intensity of labour during these seasons varied as well. Sugar planting was the most exacting. Coffee was similar to sugar in terms of its regimentation, but the intensity was different. The planting and harvesting of sugar cane was a laborious process. During the planting season, the enslaved were usually involved in digging cane holes, clearing the trash, supplying the cattle pens with grass and clearing the roadway. During the 'off season', that is, the period between the planting and harvesting of the sugar cane, they would clear the road(s) leading to the estate, cut an assortment of woods and transported it to the estate, and cleared weeds and trash from the cane fields. In the harvesting season, the task was usually to cut the ripe cane by hand. They then removed the outer leaves, after which the canes would be placed in a bundle, loaded onto a cart, and then transported from the field to the mill. The harvesting season was also marked for the estate's factory-like operation where the enslaved population worked in 12 hour shifts to ensure quick harvesting and high yield.

The work patterns of the enslaved were also determined by planters. There were certain criteria that sugar planters followed when deciding on the composition and organization of their labour force. The first was gender; enslaved Africans were then separated by age, colour, and health.[107] An understanding of this is important because it facilitated greater insight into the division of labour on most sugar plantations and how it impacted on the work culture of the enslaved. Studies have shown that a sub-managerial system existed on most of Jamaica's sugar plantations. Heading this chain of command were drivers, foremen, and the head boiler-men. Next in line were skilled artisans – craft workers, coopers, boilers and wheelwrights, usually male creoles

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[107] Ibid, p.1.

who moved through different labour ranks over the years. Those in supervisory positions enjoyed the benefits of rank. Their clothes, food, and living circumstances were noticeably different from others, and they lived longer lives as a result.[108] Field workers were not a part of the managerial chain.

The supervisory positions and skilled labour on most estates was men's work. It is widely known that apart from their domestic role, the majority of female labourers were located in the cane fields.[109] In an essay on slave women on the Mesopotamia estate in Jamaica, Richard Dunn noted that '...*every one of them laboured in the cane fields, that most of them did this work for many years, and that collectively they performed much of the hardest sugar labour*'[110] Dunn strengthened his argument by presenting a breakdown of Mesopotamia's enslaved population from 1736 to 1831. In 1801, for example, there were 352 enslaved on Mesopotamia. A further breakdown revealed a total of 199 prime workers, of which 113 were males and 79 females. Of this number, 92 were prime field workers, of which 61 were women and 31 were men. For the period 1751-1831, Dunn noted that 182 or 84 per cent of the women on the estate worked as field labourers compared to 177 or 55 per cent of the men. Therefore, men's dominance of the Atlantic crossing and the enslaved labour force was not translated into field work, which, by all accounts, was the most arduous task on the sugar plantation.[111]

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[108] Richard Dunn, "Sugar Production and Women in Jamaica", in Ira Berlin and Philip D. Morgan (eds.), *Cultivation and Culture* (1993).

[109] Lucille Mathurin Mair, *The Rebel Woman in the British West Indies during Slavery* (1975); Hilary Beckles, *Centering Woman: Gender Discourses in Caribbean Slave Society* (1999); Barbara Bush, *Slave Women in Caribbean Society, 1650-1832* (1989).

[110] Richard Dunn, "Sugar Production and Women in Jamaica", p. 50.

[111] Ibid., p. 54-62.

Once the selection criteria were satisfied, the enslaved were organized into gangs or by task work. This allowed planters to better manage the labour force by deciding on their suitability for certain jobs. The gangs ranged from the first to the third, with the first (comprised mostly of women) being the best labourers on the estate. This gang did mostly field work – clearing the field, holing, cutting, and transporting the cane to the mill at harvest time. It was the most regimented gang on the plantation, and the enslaved worked most times from sunrise to sunset. Bryan Edwards, writing in 1793, has provided a detailed description of the daily tasks performed by the first gang. According to Edwards,

> 'The first gang is summoned to the labours of the field either by a bell or
>
> a conch shell, just before sunrise. They bring with them, besides their hoes
>
> or bills, provisions for breakfast; and are attended by a White person, and a
>
> Black superintendent called a driver. The list being called over, and the names
>
> of all the absentees noted, they proceed with their work until eight or nine o'
>
> clock, when they sit down in the shade to breakfast, which is prepared in the
>
> mean time by a number of women, whose sole employment it is to act as cooks
>
> for the rest...By this time most of the absentees make their appearance, and are
>
> punished for their sluggishness by a few stripes of the driver's whip...At
>
> breakfast they are seldom indulged with more than half or three quarters of an
>
> hour; and, having resumed their work, continue in the field until noon,
>
> when the bells calls them from labour... They are now allowed two hours of
>
> rest and refreshment...At two o'clock they are again summoned to the field,
>
> where, having been refreshed both by rest and food, they now manifest some
>
> signs of vigorous and animated application...At sunset, or very soon after,

they are released for that night...and if the day has been wet, or their labour

harder than usual, they are sometimes indulged with an allowance of rum...

They are employed daily about ten hours....In the crop season, however, the

system is different; for at that time, such of the negroes as are employed in

the mill and boiling houses, often work very late, frequently all night; but

they are divided into watches, which relieve each other...' [112]

The use of the task system – the amount of work to be accomplished by an enslaved or a group of enslaved during a given day – was another feature of the work patterns on most estates. Its employment was dependent on the size of the estate and the economic activity that the holding was involved in. On large estates, its use was infrequent, because the demands of sugar planting were more in line with the gang system. On small size holdings – pens, urban areas, etc – task-work was conducted on a regular basis. Therefore, most non-sugar holdings combined labour with the economic activity they were undertaking whereas sugar estates were usually monoculture properties that employed the gang system.[113]

Against this background, it was found that the work demands placed on the labouring population shaped their demographic experiences during the eighteenth century. Such demands affected both mortality and fertility rates across the island. The constraints and intensity of the gang system for example, meant that prime field workers, most of whom were women, worked upwards of 60 hours a week, which was doubled during periods of harvesting. A telling effect of this on the demographic experiences of the enslaved population was shown on Mesopotamia.

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[112] Bryan Edwards, *The History, Civil and Commercial,* vol. 2, p. 129-32.
[113] B.W. Higman, *Slave Society and Economy in Jamaica,* p.13.

Dunn highlighted the low and seasonal nature of the estate's fertility rate, from which 'the impact of the sugar labour system upon mothers can be inferred'.[114] He noted that of the 407 births recorded, 126 or 31 percent were from October to December, while of the 89 infant deaths recorded, 32 or 38 percent were from January to March, which was the harvesting period. Therefore, the likelihood of an infant surviving birth during crop time was relatively low.

The organization and types of work performed affected the mortality rate of Jamaica's labouring population. The life expectancy of field workers on the Mesopotamia estate, both male and female, was shorter compared to non-field labourers. Using the estimates provided, it was found that of the 177 male field workers recorded between 1751 and 1831, the average life span was 42 years compared to 45 years for those in supervisory positions. The difference between female field workers and domestics was much greater. The life expectancy of field workers was 45 years, compared to 55 years for domestics. It must also be noted that for entire period, Mesopotamia's mortality rate was higher than its fertility rate.

The parish distribution of Jamaica's enslaved population towards the end of the eighteenth century highlights the mortality rate on the island's sugar plantations. In Hanover for example, the total number of enslaved returned for the triennial period beginning September 28, 1796 to September 28, 1799, was 17,936. The total number of births recorded among the enslaved population over the same period, was 1,432 at an average of 477 per year. Similar to the trend on Mesopotamia estate, the mortality rate was somewhat higher, with 1,478 deaths at an average of 492 per year.[115] The trend on the majority of slave holdings in the parish was one of natural

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[114] Richard Dunn, "Sugar Production and Women in Jamaica" , p. 69.
[115] British Parliamentary Papers, 1803/5 p. 25G.

decrease. On the Welcome estate in the same parish, the number of enslaved in possession was 162. Welcome had a higher than usual mortality rate when compared to the other estates. The number of births recorded for the period was 12 at an average of 4 per year. The total number of deaths recorded over the same period was 28 at an average of 9 per year. Therefore, twice as many enslaved died on the Welcome estate during the triennial period than were born.[116]

This highlights more than anything else the fact that Jamaica's labouring population was not reproducing. In the broader context of eighteenth century slave societies, the ability of the enslaved populations in mainland North America, Bermuda, and later Barbados to reproduce in contrast to the demographic failure of Jamaica's enslaved population is one of the anomalies of the slavery period.[117] When one compares the distribution of imported labour into the North American mainland with the importation of Africans in Jamaica, we see that the latter imported 835,846 Africans between 1702 and 1807.[118] Some were re-exported to the mainland and the foreign West Indies. By the time the Transatlantic Trade in Africans was abolished in 1807, the estimated enslaved population of Jamaica was 319,351.[119] In contrast, the total number of Africans imported into mainland North America through to Emancipation in 1865 was 453,000. However, by 1800, it is estimated that the black population in North America was 1,002,000.[120] Therefore, the annual increase (excess of births over deaths) in the black population in North America was far greater than the increase in the enslaved population as a result of newly arrived Africans, which was the trend in Jamaica. If the demographic experience in North America had

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[116] Parlimentary Papers. Ibid
[117] Robert Fogel and Stanley Engerman, *Time on the Cross: The Economics of Negro Slavery*, (1974), p. 22-25; Robert Fogel, *Without Consent or Contract*, (1989), p. 123-27; B.W. Higman, *Slave Populations of the British Caribbean, 1807-1834*, p. 72-100, 303-378.
[118] TSTD.
[119] Orlando Patterson, *Sociology of Slavery*, p. 96.
[120] Robert Fogel and Stanley Engerman, *Time on the Cross*, p. 28-9.

been similar to that of the British West Indian colonies, the North American black population would have been 186,000 in 1800.[121] The question worth considering therefore is why did Jamaica's enslaved population experience this unprecedented, if not unusual demographic deficit relative to other enslaved populations in the Americas, especially mainland North America?

Several explanations have been advanced to answer this question. Robert Fogel and Stanley Engerman, in their path-breaking study on the economics of American slavery argued that the natural increase among the black population of North America could be attributed to the material conditions under which the enslaved in North America lived relative to the material condition of the enslaved in the British Caribbean colonies. In dispelling what they claimed to be some of the myths about the slavery period, they argued that the daily diet of North American enslaved labourers '*was not only adequate, it actually exceeded modern (1964) recommended daily levels of chief nutrients. On average, slaves exceeded the daily recommended levels of proteins by 110 per cent, calcium by 20 per cent, and iron by 230 per cent*'.[122] Coupled with this high diet intake, they also argue that the housing and medical treatment offered to the North American enslaved population were contributory factors. They found that the housing offered to the enslaved in the Southern United States was far superior to the housing offered in large cities like New York towards the close of the nineteenth century.[123] The best housing in the enslaved regions was four bedroom cottages with an average of 5.2 enslaved per cottage. The nuclear family was also considered an important institution during the enslavement period. Enslaved marriages and child rearing were encouraged.[124]

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[121] Ibid.
[122] Ibid, p. 115
[123] Ibid, 115-117
[124] Ibid, pp. 126-144.

The high mortality rate was attributed to the harsh conditions of slavery, and more specifically, of plantation labour. The colonies that experienced a natural increase, like the Bahamas[125] and mainland North America, had relatively fewer sugar plantations compared to the British Caribbean colonies.[126] In 1850, the major crop cultivated in the Southern United States was cotton, which accounted for 73 percent of all crops, followed by tobacco 14 percent, sugar 6 per cent, rice 5 percent, and hemp 2 percent.[127] In the enslaved colonies of the British Caribbean, sugar, and later coffee were the dominant crops during the eighteenth and nineteenth century. As shown earlier, the labour demand on the sugar plantations was exacting. The daily regimentation and the arduous tasks of digging and planting canes contributed to the high mortality rates. Edward Long supported this argument by claiming that '...*[the] Negroes [who] breed the best, [are those] whose labour is least, or easiest. Thus the domestic Negroes have more children, in proportion, than those on penns; and the latter, than those who are employed on sugar plantations*'[128]

Barry Higman has provided the statistical evidence to support Edward Long's observation. In his study of Jamaica's enslaved population, Higman argued that there was a positive correlation between crop type and natural increase. He points to the high natural decrease of enslaved labourers on sugar plantations, and especially those who worked as jobbers. When sugar production was combined with the production of minor staples, the decrease was significant.

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[125] The Bahamas was never developed into a sugar dominated economy during the Eighteenth century. Instead, it utilized it varied resources, most notably cotton. See, Gail Saunders, "Slavery and Cotton Culture in the Bahamas", in Verene Shepherd (ed.), *Slavery without Sugar: Diversity in Caribbean Economy and Society since the 17th Century* (2002).

[126] Commercial sugar planting started in the 1790's in North America and it was located mostly in the Louisiana area. In the older settlement colonies, commercial sugar planting was combined with settlement which in the case of Barbados started circa 1640.

[127] Robert Fogel and S.L Engerman, *Time on the Cross*, p. 41.

[128] Edward Long, *History of Jamaica*, vol.2, p. 437.

Conversely, the enslaved population sustained rates of natural increase when employed on non-sugar plantations. For example, when pimento was combined with livestock farming the rate of natural increase was higher than on sugar plantations. Higman concluded that *'those contemporary observers who believed that [livestock] pens and minor staples were more conducive to [natural] increase than sugar were certainly correct'*.[129]

The second explanation is the impact of diseases and poor diet on the reproductive cycles of the enslaved population. Studies have shown that the labouring population in the Caribbean was generally malnourished.[130] A combination of factors such as hurricanes, drought, and wars affected the distribution and availability of food, and by extension, the diet of the enslaved. Dietary deficiency has also been linked to the prevalence of diseases such as beriberi on Jamaican sugar estates.[131] Writing on the Worthy Park estate in Jamaica, Michael Craton noted that 'it is clear that the level of health on slave plantations was low'.[132] Beside the physical demands of labour, most labourers were affected by the unhygienic conditions on most estates. Craton was careful to point out that the conditions noted on Worthy Park – poor diet, overwork, and low hygiene - were common throughout the island, most notably on livestock pens, coffee plantations, and holdings located in close proximity to the swampy lowlands of the island.[133]

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[129] Barry Higman, *Slave Population and Economy in Jamaica*, p. 99-138. Similar views are shared by Robert Fogel, *Without Consent*, p. 120. Fogel made the point that the mortality rate on Jamaica's sugar plantations was 50 percent higher than the mortality rate on coffee plantations during the eighteenth century.

[130] Verene Shepherd and Hilary Beckles (eds.), *Caribbean Slavery in the Atlantic World*, See Section 12 "A Deadly Business: Mortality, Health and the Crisis of Social Reproduction", p.784-820.

[131] Ibid.

[132] Michael Craton, "Death Disease and Medicine on the Jamaican Slave Plantations: the example of Worthy Park", in Verene Shepherd and Hilary Beckles (eds.), *Caribbean Slavery in the Atlantic World*, p. 805.

[133] Ibid.

The third explanation is the preference among Jamaican planters for male agricultural labourers. Jamaica's import data show that 68 per cent of all slave arrivals were male.[134] This is not unlike the overall estimate for the trade to the Americas where the number of women imported was less than 40 per cent.[135] The planters' preference for enslaved males has led to claims that they were indifferent to the demographic failures of their enslaved population. The planters' priority was to maximize profits, and the fact that they could tap into the trade for enslaved peoples for renewable surplus of cheap labour removed the responsibility or the inclination to encourage or adopt antenatal policies among their enslaved population. This view was supported in large measure by Edward Long, who observed that *'The women do not breed here as in Africa; for in short, it has never been the planter's care to proportion the number of females to males: upon some estates there are five men to one woman'*[136]

Despite pointing the finger of blame for the failure to reproduce on the structure and recruitment policy within the transatlantic trade, Long did not waste much time in blaming the lifestyle of enslaved women. He opined that

'The women here are, in general, common prostitutes; and many of them take specifics to cause abortion, in order that they may continue their trade without loss of time, or hindrance of business; and besides, their admitting such promiscuous embraces must necessarily hinder, or destroy, conception. We may add to this venereal disease; which, together with the medicines

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[134] TSTD.
[135] Ibid.
[136] Edward Long, *The History of Jamaica*, vol.2, p. 435-6. See also Orlando Patterson, *The Sociology of Slavery*, p. 94-114.

taken, either repel, or carry of the virus taken, frequently kills the

feotus, and sterilizes both men and women[137]

Long's characterization of enslaved women is stark, but it conforms to a general view. Eighteenth century pro-slavery writers blamed the lifestyle of enslaved women for the failure of the enslaved population to reproduce.[138] The 'sexual habits' of enslaved women were more nuanced than Edward Long suggested. The power relations on the sugar plantations were such that white male planters had unfettered access to the bodies of enslaved women. [139]

Poor health and nutrition, as well as the demands of plantation labour, contributed to the inability of Jamaica's enslaved population to reproduce. This resulted in a combination of high mortality and low fertility rates throughout the island. We saw on the Mesopotamia and Welcome estates that the mortality rates were higher than fertility rates. We saw also the direct correlation between high infant deaths and the sugar production cycle on Mesopotamia. With Jamaica's slave population declining, it was imperative that planters imported a steady supply of African labourers to fill the gap. As stated, such importations were necessary to offset the deficit and to promote growth within the enslaved population. It was also intended to meet the growing demand for slave labour which accrued as a result of the expansion of the island's plantation economy.

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[137] Edward Long, *The History of Jamaica*, vol.2, p. 436.
[138] See for example Douglas Hall's *In Miserable Slavery: Thomas Thistlewood in Jamaica, 1750-86* (1999). For contemporary writings on the issue see A.C. Carmichael, *Domestic Manners and Social Conditions of the White, Coloured and Negro Population in the West Indies*, 2 vols, (1969); Cynric Williams, *A Tour Through the Island of Jamaica: from the western to the eastern end, in the year 1823* (1826).
[139] Hilary Beckles, *Centering Woman*, chapter 2 "Property Rights in Pleasure: Marketing Black Women's Sexuality". See also Douglas Hall's *In Miserable Slavery*; Cyrus Francis Perkins *Busha's Mistress or Catherine The Fugitive: A Stirring Romance of the Days of Slavery in Jamaica* edited with an Introduction by Paul E. Lovejoy, Verene A. Shepherd and David V. Trotman, (2003).

Number of Africans Imported

The major difficulty in the historiography of the trade in enslaved people is statistical in nature. This is evident in the varying estimates provided by scholars over the years to fundamental questions relating to the trade. There is no consensus, for example, on how many Africans were transported to the Americas during the course of the Transatlantic Trade in Africans. Also, there has been no agreement to date on the number of Africans who died after capture and before embarkation. These are important questions to which we may never know the answer. Nevertheless, our understanding of the trade has been greatly advanced since the 1960's; this is attributable to the collaborative work undertaken by scholars from Europe, Africa, North America, the Caribbean, and Brazil.[140]

Phillip Curtin's seminal work was the first attempt to provide an estimate of the Atlantic trade. Curtin argued that 9.56 million Africans were shipped to the Americas. Of this total, 3.64 million were taken to Brazil, 1.66 million to the British West Indies, and 1.60 million to the French West Indies.[141] Within the British West Indies, Curtin estimated that Jamaica imported just under a half or 747,500 during the course of the trade.[142]

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[140] See for example Philip D. Curtin, *The Atlantic Slave Trade: A Census* (1969). Roger Anstey, 'The Volume and Profitability of the British Slave Trade', in S.L. Engerman and Eugene D Genovese (eds.) *Race and Slavery in the Western Hemisphere: Quantitative Studies* (1974). Joseph Inikori, "Measuring the Atlantic Slave Trade: An Assessment of Curtin and Anstey", *Journal of African History*, 17, 2, (1976): 197-223; "Measuring the Atlantic Slave Trade: A Rejoinder", *Journal of African History*, 17, .4, (1976): 607-27; *The Chaining of a Continent: Export Demand for Captives and the History of Africa South of the Sahara, 1450-1870* (1992); Colin A. Palmer, *Slaves of the White God: Blacks in Mexico, 1570-1650* (1976); Robert Stein, "Measuring the French Slave Trade, 1713-1792/93", *Journal of Africa History*, 19, 4: 515-21; David Eltis, "The Export of Slaves from Africa, 1821-43", *Journal of Economic History*, 37, (1977): 409-33; "The Direction and Fluctuation of the Transatlantic Slave Trade, 1821-43: a Revision of the 1845 Parliamentary Papers", *The Uncommon Market: Essays in the Economic History of the Atlantic Slave Trade* , Henry A. Gemery and Jan S. Hogendorn (eds.), (1979).
[141] Philip Curtin, *The Atlantic Slave Trade*, p. 87.
[142] Ibid. p. 71

But, Joseph Inikori believes Curtin's estimate of 9.56 million Africans is too conservative. Inikori further states that Curtin's work is not solidly grounded in primary data but rather on a collection of secondary data sources that are themselves questionable. He maintains that it is incorrect for Curtin to assume that the size of the slave population in one colony could be applied to another colony. According to Inikori, colonies had different demographic experiences that were based on the relative date of colonization. Therefore, the rate of natural increase or decrease in Barbados' enslaved population should not be assumed to be the same as that of St. Vincent since the former colony was first settled circa 1640 while the latter colony was ceded to Britain in 1763. In effect, Inikori contends that Curtin's estimates are 'unwarranted and misleading'.[143] In addition, Inikori revises upwards Curtin's estimates by claiming that a total of 15.4 million Africans crossed the Atlantic during the trade.[144]

The publication of the Transatlantic Slave Trade Database (hereafter TSTD) [145] is the result of the collaborative work mentioned earlier by scholars over the past four decades. The TSTD consists of 27,233 slave voyages that cover the trade from the sixteenth century to the nineteenth century. David Eltis, one its authors, argued that 'Curtin was not off the mark' because the findings of the TSTD are that 11.03 million Africans embarked for the Americas while 9.56 million disembarked. Some 4.88 million or 44.2 per cent of these Africans came from West Central Africa with the Bight of Benin accounting for 2.03 million or 18.4 per cent; the Bight of Biafra supplying 1.51 million or 13.7 per cent and the Gold Coast 1.03 per cent or 9.4 per of the

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[143] Joseph Inikori, 'Measuring the Atlantic Slave Trade'.
[144] Joseph Inikori, *The Chaining of a Continent.*
[145] David Eltis, Stephen Behrendt, David Richardson and Herbert S. Klein (eds.) *The Trans-Atlantic Slave Trade: A Database on CD-ROM* (1999).

overall trade.[146] In the Americas, Brazil was the largest importer of African labour with approximately 40 per cent of total imports, while Jamaica accounted for 11.2 per cent of total imports.[147]

The TSTD is far more comprehensive than Curtin's study. It is arranged in 5, 25, and 100 years bands that cover ports of embarkation and disembarkation throughout the course of the trade. You can actually produce breakdowns by years or any time period you wish. This coverage allows for a much wider geographical and temporal analyses of the transatlantic trade. Information can be gleaned on the volume and demographic structure of the trade by region.[148] And in turn it allows the study of the demographic, economic, and cultural changes that occurred on either side of the Atlantic World.[149] It also allows the area of crew mortality and slave ship rebellion to be explored.[150]

In addition to the estimates provided by Curtin and the TSTD on the trade to Jamaica, a contemporary reporter, Stephen Fuller has provided estimates that have been widely used. Fuller was an agent for Jamaica who submitted a report in 1788 to the Jamaica Assembly on the state of the island's trade. His estimates cover the annual arrivals and re-exports of Africans from 1702 to 1775. For those years Fuller recorded the arrival of 497,726 Africans and the re-exportation of

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[146] David Eltis, "The Volume and Structure of the Transatlantic Slave Trade: A Reassessment", *William and Mary Quarterly*, 58 (2001): 17-46.

[147] Ibid.

[148] A clear insight into the regional distribution of the trade is provided by David Eltis and David Richardson, 'West Africa and the Transatlantic Slave Trade: New Evidence on Long Run Trends', in *Slavery and Abolition*, 18 (1997): 16-35; See also David Eltis, *The Rise of African Slavery in the Americas* (2000), p. 85-113.

[149] See Douglas Chambers' essay on "My own nation': Igbo Exiles in the Disapora", *Slavery and Abolition*, 18 (1997): 72-97; Philip Morgan "The Cultural Implications of the Atlantic Slave Trade: African Regional Origins, American Destinations and New World Developments", *Slavery and Abolition*, 18 (1997): 122-145.

[150] Stephen Behrendt, 'Crew Mortality in the Transatlantic Slave Trade in the Eighteenth Century ", *Slavery and Abolition*, 18 (1997): 49-71; David Richardson, "Shipboard Revolts, African Authority and the Atlantic Slave Trade", *William and Mary Quarterly*, 58 (2001): 69-92.

136,717.[151] The strength of his estimates lay in uncovering the re-export trade of enslaved Africans from Jamaica. He provides the only annualized estimate of Jamaica's re-export trade from 1702-1775.

Figure 3.1 Estimates of the number of Africans imported into Jamaica, 1702-1775
(Fuller and TSTD)
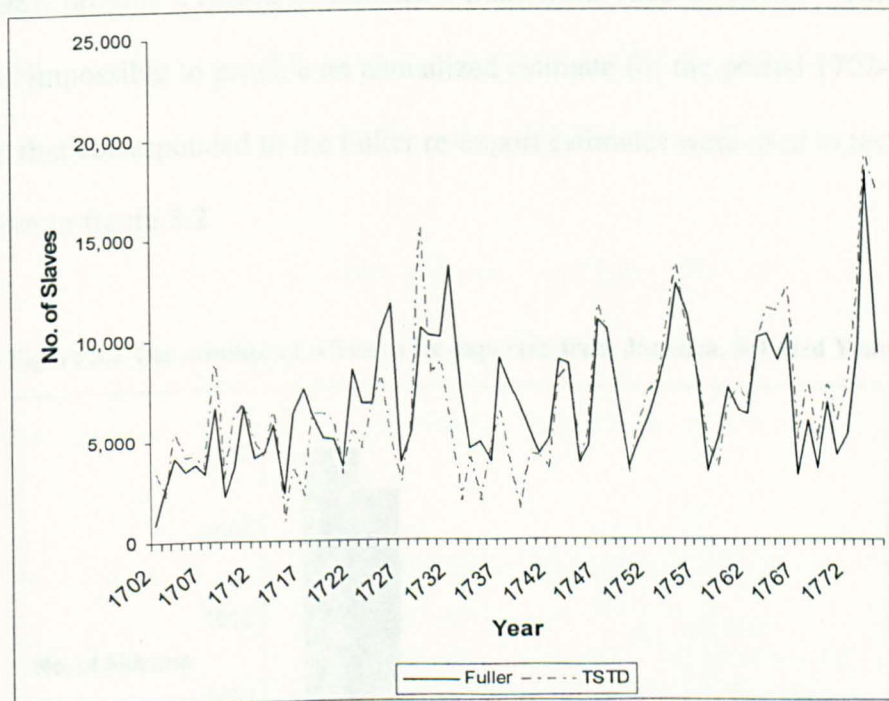
Source: Appendix B

Fuller's import estimates, and the TSTD estimates on Jamaica, have been examined to see if there are any temporal variations between them for the years they have in common that is, from 1702 to 1775. The findings are presented in figure 3.1. It shows that from 1717 to 1746 Fuller's estimates are higher that the TSTD's estimates. However, from 1762-1767, the TSTD's estimates are higher. The variances between Fuller's estimates and the TSTD's are explained by

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[151] Stephen Fuller's report to the Jamaica Assembly can be found in Sheila Lambert (ed.) House of Commons Sessional Papers, vol. 69, p. 222-3. Alternately, see C.O. 137/38, Appendix to the Memorial of Stephen Fuller (Agent for Jamaica) to the Board of Trade, 1788. A breakdown of Stephen Fuller's estimates and the estimates provided by the TSTD are presented in Appendix B.

the documentation available. Fuller's estimates are based solely on Jamaican customs records while the TSTD employed a wider range of source material in their investigation of the island's trade. Overall, there seems to be a remarkable congruence between the two series, and as such, confidence is retained in both.

The NOSL provide a record of Jamaica's trade from 1683 to 1818.[152] This incomplete data set makes it impossible to provide an annualized estimate for the period 1702-1807, but a selection of years that corresponded to the Fuller re-export estimates were used to test the data. The results are shown in figure 3.2.

Figure 3.2 The number of Africans Re-exported from Jamaica, Selected Years
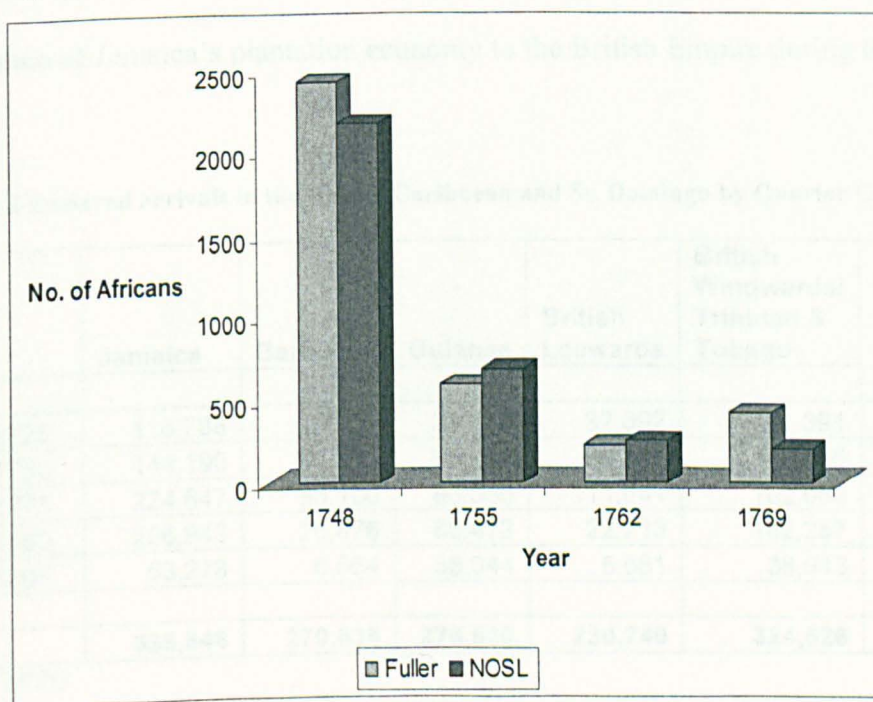
Source: For Stephen Fuller's Re-export estimates, see Appendix 1.
For the NOSL estimates, see C.O 142/13-24.

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[152] The Naval Office Shipping Lists consulted are located in C.O 142/13 – 24.

The data on Jamaica's re-export trade was tested for its reliability. In addition, the returns filed in the Naval Office Shipping Lists (NOSL) were used to cross check Fuller's re-export estimates.

We might conclude that the variation in the re-export estimates provided by Fuller and the NOSL is small. Throughout the course of this chapter, the estimates derived from the two sources, supplemented by re-export data from the NOSL, and other government publications, have been used to examine the geographical and temporal distribution on the trade to Jamaica during the eighteenth century.

Jamaica imported a total of 835,846 Africans between 1702 and 1807. The pace of Jamaica's slave trading activity during these years is shown in table 3.2 below. The table highlights the importance of Jamaica's plantation economy to the British Empire during the eighteenth century.

Table 3.2 Enslaved arrivals in the British Caribbean and St. Domingo by Quarter Century, 1701-1807

Year	Jamaica	Barbados	Guianas	British Leewards	British Windwards/ Trinidad & Tobago	St. Domingo
1701-1725	116,788	79,121	21,082	32,092	391	45,209
1726-1750	144,190	64,874	50,796	59,313	250	119,553
1751-1775	224,647	93,100	86,536	111,041	102,685	223,886
1776-1800	286,943	26,876	60,472	22,713	182,257	303,567
1801-1807	63,278	6,664	58,044	5,581	38,943	0
Total	835,846	270,635	276,930	230,740	324,526	692,215

Source: TSTD

Jamaica's slave trading activity was much greater during the second half of the nineteenth century than it was for the first half. From 1701 to 1750, Jamaica imported 260,978 Africans or 31.22 per cent of the eventual imports. For the second half of the century, Jamaica imported

574,868 Africans or 68.78 per cent of the total amount imported from 1702 to 1807. Relative to the other British colonies, Jamaica commanded a higher share of the Africans arriving in the region. With the exception of Jamaica, the British Windwards, and St. Domingo, new arrivals into the other colonies declined during and after the American War. This is explained by the

Figure 3.3 The number of Africans imported into Jamaica, 1702-1807
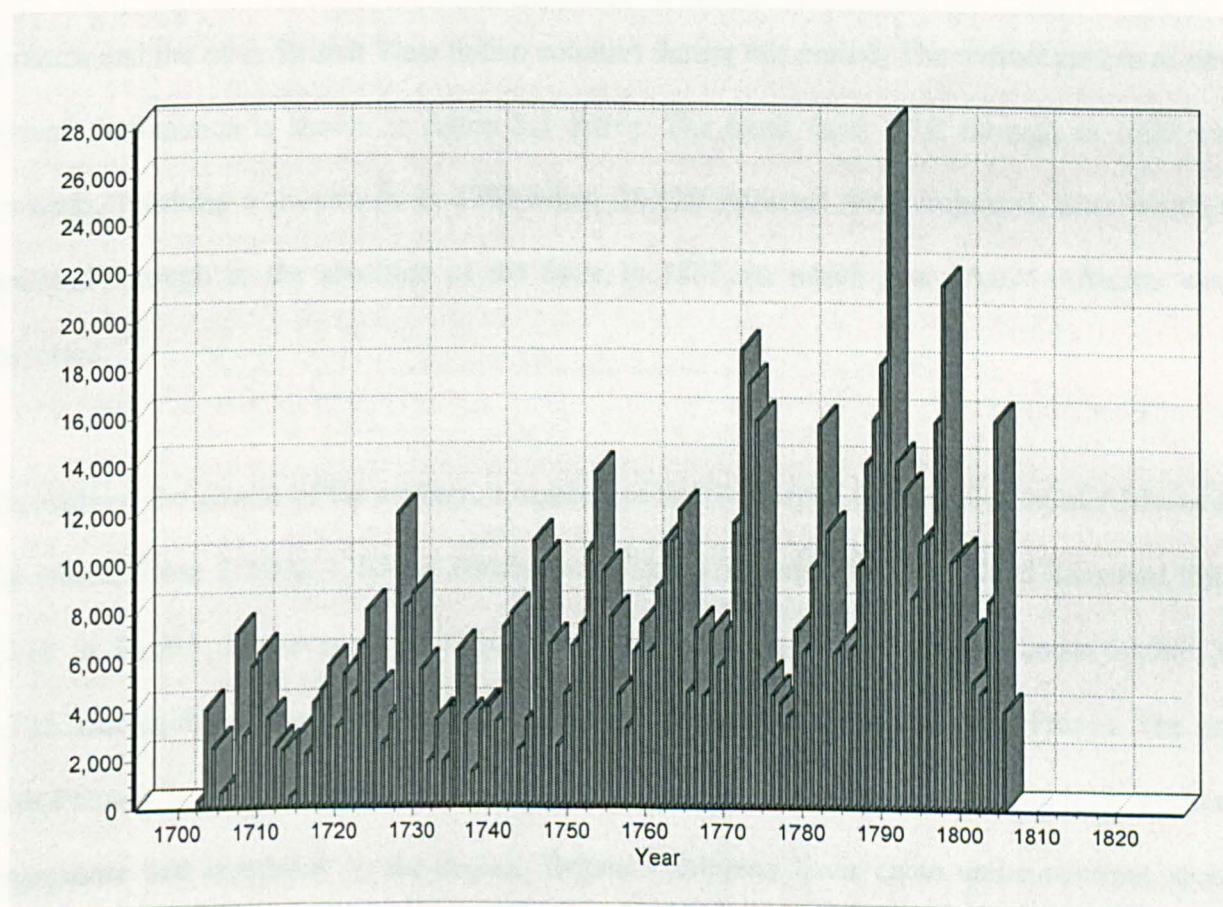
Source: TSTD

geographical advantage of Jamaica, as well as the unparalleled expansion in sugar plantations which took place after 1750, and especially after the end of the American War of Independence in 1783. Similar expansion was noticeable in the newly acquired colonies of Dominica and Grenada that comprised the British Windwards. The Leeward colonies comprised mainly the old

settlement colonies of Antigua, Montserrat, Nevis and St. Kitts. The decline in labour imports into the Leewards and the Guianas is an indicator of the shift in focus from these colonies to Jamaica and the newly acquired territories towards the end of the eighteenth century. The insignificance of St. Domingo as a plantation colony at the beginning of the eighteenth century is quite noticeable. However, that was reversed from 1726 to 1791, when the colony became the largest producer of muscovado sugar and coffee, and as a result, imported more Africans than Jamaica and the other British West Indian colonies during this period. The overall pattern of new arrivals in Jamaica is shown in figure 3.3 above. The trend from 1702 through to 1800 was upwards, reaching a maximum in 1793 when 28,119 Africans were imported, after which it declined through to the abolition of the trade in 1807, in which year 16,024 Africans were imported.[153]

Throughout the course of the century, a number of factors shaped the distribution of Africans to the island. From 1750 to 1755 the number of Africans imported into the island increased from 3,218 to 13,685. However, from 1756 to 1763, imports declined from just under 10,000, to 6,735. During these years, Britain was at war with her long time colonial rival, France. The war with France disrupted the trade routes and the flow of African labour by bringing high levels of uncertainty and instability to the region. Britain's shipping lanes came under constant attack from the French, who, through open warfare and privateering, seized slave carrying vessels and vessels transporting sugar across the Atlantic. There are recorded cases where slave carrying vessels were seized before they arrived at their intended port of disembarkation. Such was the fate of the Indian Prince, a British registered vessel that left Bonny, in the Bight of Biafra in 1756, with 350 Africans and a crew of 27 bound for Kingston, Jamaica. The ship's journey was

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[153] See Appendix B.

short lived - its fate determined by the outbreak of war. On its way to Kingston, it was seized by the French.[154] Similar disruptions to the flow of Africans to the island were evident with the outbreak of the American War of Independence in 1776. During the course of the war, slave arrivals declined from 16, 241 in 1776 to 3,739 in 1781 or by 77 per cent. [155]

In 1763, Britain defeated France, and more territories were added to Britain's colonial Empire.[156] The addition of these islands along with the period of relative peace from 1763 to 1775 heralded an era of prosperity in the British West Indies. This prosperity was visible in Jamaica where the average number of new sugar estates brought into cultivation increased from 8 for the period 1739 to 1768, to 32 between 1768 and 1775. To facilitate this expansion the number of Africans arriving in Jamaica increased from 6,735 in 1763 to 17,445 in 1775.

The addition of the Ceded islands raised the prospect of financial gain by planters to a new level. The islands were recently acquired and, in the minds of many, suitable plantation colonies could replace the old settlement colonies. In the drive to establish a plantation economy, planters turned to creditors in London in a bid to secure financial backing for the costly venture of setting up a plantation and to secure the adequate numbers of labourers needed. The demand for credit to facilitate colonial expansion led many banks to become involved in the practice of redrawing bills of exchange as a means of expanding credit. As a result, they found themselves unable to fulfil their financial obligations. When the credit crisis started in 1772, it was estimated that Grenada planters owed British creditors over £2,000,000 compared to the £3,000,000 owed by planters in Jamaica. This placed the colonies, and especially the Ceded ones, in a vulnerable

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[154] TSTD.
[155] Ibid.
[156] The islands ceded to England were Dominica, St. Vincent, Tobago and Grenada.

position. Governor Leyborne, in a letter to the Colonial Office in 1773 stated that '*the distressed situation of this Island, owing to the failure of credit, the low price of coffee, and the scarcity of money is beyond conception*'.[157] A large number of planters migrated from some of these islands to Jamaica in a bid to resettle and start anew. As a result, a large number of Africans intended for these colonies were re-routed to the island of Jamaica.[158] This is noticeable in the 57 per cent increase in newly arrived Africans between 1772 and 1773.[159]

The fight for emancipation by enslaved Africans in St. Domingo (now Haiti) affected the flow of Africans to the island. St. Domingo was not just another plantation colony. Its development during the course of the eighteenth century was unmatched by any other colony in the circum-Caribbean area. St. Domingo was to France what Jamaica was to England during the eighteenth century; a prized 'jewel' in the colonial empire. On the eve of the slave uprising in 1791, the enslaved population was 455,000. There were 792 sugar plantations, 2,810 coffee plantations, 705 cotton properties, and 3,097 plantations growing indigo. In terms of its levels of output, St. Domingo produced 716,152 hundredweight of sugar; 48,967,700 pounds of coffee and 4,404,500 pounds of cotton.[160] The outbreak of hostilities on the island spread fear amongst the white populations across the region. Whites were fearful that the enslaved population would somehow adopt the revolutionary tendencies of their enslaved counterparts in St. Domingo and rise up in rebellion against them. But the dramatic turn of events in the colony brought about an end to the pre -1791 growth levels that was so characteristic of the island. Many planters fled St. Domingo to Jamaica as a result of the slave uprising. They took with them their skills, especially in making

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[157] Quoted in Richard Sheridan, *Sugar and Slavery*, p. 466
[158] Ibid, p. 466.
[159] See Appendix B.
[160] Lowell Joseph Ragatz, *The Fall of the Planter Class*, p. 204.

coffee, to an island where coffee planting was conducted on a minor scale. The destruction of St. Domingo created a deficit in the world market for sugar and coffee. In order to meet the shortfall that existed in the European market there was an unprecedented level of expansion within Jamaica's plantation economy, which was facilitated by an increase in the island's labour force. The major expansion that took place in the 1790's was in the coffee sector. Between 1795 and 1805, coffee exports from Jamaica increased from 2 million pounds to 24 million pounds.[161] There was also expansion within the island's sugar sector. Between 1792 and 1804, the number of sugar estates brought into cultivation increased from 767 to 830.[162] This resulted in a corresponding increase in sugar output during the same period.[163] The level of expansion required a proportionate increase in the labour force. Based on the temporal flows highlighted, Jamaica imported 157,814 Africans or 19 per cent of total number of Africans imported during the eighteenth century during the decennial period 1791/1800.

Jamaica's Re-export Trade

Having highlighted the temporal flows of African labour to Jamaica, we now need to decompose it to find out what proportion of labourers was re-exported to the foreign West Indies and the continental colonies. Once this is done, we will be able to determine the number of labourers needed to sustain the plantation system, as well as we can gauge the level of demand for enslaved labour at various intervals. In order to fully understand the temporal shifts, it is important that we extend the scope of the analysis and re-examine Jamaica's re-export trade from 1702 to 1807.

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[161] Kathleen Montieth, 'The Coffee Industry in Jamaica'.
[162] See Chapter 4
[163] Ibid.

Jamaica's re-export trade started in earnest in 1713 when England was granted an Asiento under the Treaty of Utrecht to supply enslaved Africans to the Spanish colonies. The Asiento was a sub-contractual system where the Spanish Crown, due to its inability to break the Portuguese monopoly on the African trade, granted exclusive licenses to other countries to supply their American colonies with labour.[164] Under the terms of the Asiento agreement, Britain's South Sea Company was given monopoly rights to supply 4,800 enslaved Africans per annum to the Spanish controlled colonies. Jamaica, because of its geographical proximity to the Spanish mainland, was chosen to be the depot where the South Sea Company traders could filter and refresh their cargo before going on to the Spanish colonies.[165]

The scale of Jamaica's re-export trade during the early part of the eighteenth century was not welcomed by everyone. Most planters argued that the re-export market deprived them of labour at a critical period in the development of the island's plantation economy. Planters accused the South Sea Company of sending the able-bodied labourers to the Spanish Coast while retaining the old and infirm ones on the island. The general practice of the South Sea Company was to use the island to refresh and filter their cargo. It was also common for South Sea factors to purchase enslaved labourers in the island to meet any shortfall that might have risen when the filtering process was complete. Many planters felt that the actions of the Company retarded the growth of the island.[166] Planters argued that the removal of some of the best labourers from the island increased the price of those remaining. The general mood on the island regarding the re-export trade was summed up by Governor Lawes when he opined that

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[164] Elizabeth Donnan, *Documents Illustrative of the History of the Slave Trade to America*, vol. 2 (1931), p. xii-lv; Frank Pitman, *The Development of the British West Indies.*; Philip Curtin, *The Atlantic Slave Trade.*

[165]Ibid, p. 151-153.

[166] Frank W. Pitman, *The Development of the British West Indies*; Elizabeth Donnan, *Documents Illustrative of the History of the Slave Trade to America*, vol. 2.

The Asiento carries all the able, stout, and Young Negroes, or such ...to the Spaniards and Sell none to the planters but old, Sickly, and decripid or what we call Refuse, if a Choice Negro is Sold to a planter, he must give as much or more than the Spaniards, & that in ready Money...But this Asiento ...deprives the planters of the Best, and only Sells them the worst of Negroes[167]

Jamaican planters moved quickly to stem the flow of re-exports from the island. In 1716, the Jamaica Assembly imposed a duty of 20 shillings per head on all enslaved re-exported in addition to the import tax of 10 shillings per enslaved that was already in existence.[168] The imposition of a new tax on re-exported labourers was seen as a provocative move by the factors in charge of the South Sea Company who moved quickly to oppose it. They gained supporters amongst independent traders and together they successfully lobbied the British Government which ordered Governor Lawes to withhold his assent to such contentious legislation. In 1731, the Jamaica legislature defied the instructions of the Board of Trade and increased the objectionable import duty from 10 shillings to 15 shillings and the re-export duty to 30 shillings per labourer.[169] Similar to the 1716 legislation, the factors and independent traders objected to the imposition of the tax, only this time the Jamaica Assembly ignored the dictates of the British Government and continued with the tax.

When placed in a broader context, the contentious relationship between the Jamaican planters and the South Sea Company over the quality of labourers to be retained, and the shift in the decline in the number of enslaved re-exported highlight weaknesses within the domestic

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[167] Quoted in Frank W. Pitman, *The Development of the British West Indies,* p. 80.
[168] Ibid.
[169] Ibid, p. 84.

economy relative to the overseas economy. Jamaican planters had to compete with the overseas market, and especially the Spanish market, which paid for re-exported labourers in specie (bullion) whereas Jamaican planters relied on credit in order to meet their labour requirements.[170]

The general trend in re-exported Africans is shown in figure 3.4. It highlights the re-export of enslaved Africans from Jamaica showing the original numbers and a 9 year moving average between 1702 and 1807.

Figure 3.4 The number of Africans Re-exported from Jamaica, 1702-1807
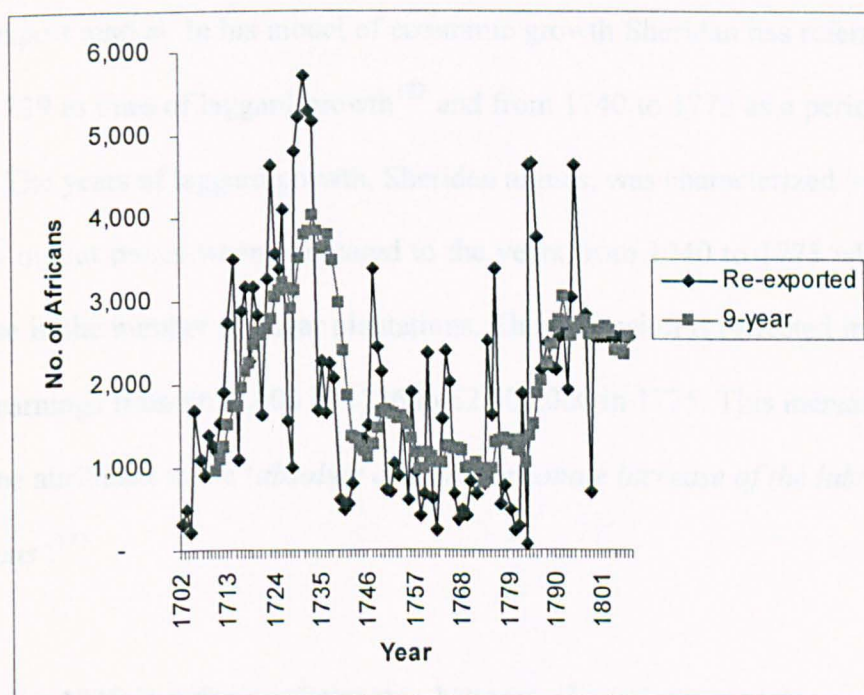
Source: Appendix B

Jamaican planters' inability to compete with the overseas market is reflected in the increase in the number of Africans re-exported from Jamaica between 1702 and 1735, but this upward trend was short-lived. A decline set in from 1737 to 1744. This is partly explained by Britain's War with Spain. There was a slight recovery by 1750, but what happened after was a levelling off

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[170] Donnan, Elizabeth, *Documents Illustrative of the History of the Slave Trade to America.*

followed by a resumption of decline between 1756 and 1763 (The Seven Years War). What follows from then on to 1782 was fluctuation in the number of enslaved re-exported, after which re-exports increased to 1793. However, from 1793 to 1805, the number of enslaved re-exported declined.

Therefore, between 1702 and 1735 enslavers opted for the financial security that the Spanish market offered.[171] Richard Sheridan's classification of the period is quite useful in understanding the state of Jamaica's plantation economy and the difficulties that planters faced in the competing re-export market. In his model of economic growth Sheridan has referred to the years from 1714 to 1739 as ones of laggard growth[172] and from 1740 to 1775 as a period of expansion and growth.[173] The years of laggard growth, Sheridan argues, was characterized by relatively low output and low output prices when compared to the years from 1740 to 1775 when there was a marked increase in the number of sugar plantations. The expansion is reflected in the increase in annual export earnings from £625,000 in 1736 to £2,400,000 in 1775. This increase, according to Sheridan, can be attributed to the 'absolute and proportionate increase of the labour force on the sugar plantations'.[174]

What we see after 1735 is a direct relationship between plantation expansion and local demand for enslaved labour which is expressed in slave re-exports. In effect, the pattern of Jamaica's re-export trade is a credible yardstick with which to measure the level of demand for enslaved labour at various intervals, which in turn gives a good account of the state of Jamaica's

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[171] CO 142/13-24.
[172] Richard Sheridan, *Sugar and Slavery*, p. 216-222.
[173] Ibid, p. 222-233.
[174] Ibid, p. 217.

plantation economy during the eighteenth century. The decline in the number of enslaved Africans re-exported after 1735 is reflected in the reversal of the island's productivity trend during these years. Such productivity gains were reflected in the overall expansion of the plantation system by the mid eighteenth century which resulted in an increase in labour and an increase in the quantity of goods produced and exported from Jamaica.[175]

Using the regional distribution patterns provided by the NOSL in table 3.3, one can observe and understand in greater detail the decline in the Spanish market for re-exported Africans as well

Table 3.3 Regional Distribution of Re-exported Africans from Jamaica, Selected Years

Regional Distribution	1748	1755	1762	1769	1784	1787
Dutch W.I.	382	162		57	189	186
French W.I.				65	2,830	447
Mainland Colonies	60	38	16	55	203	325
Spanish W.I.	2,233	487	220	4	513	432
Unknown	1		20	23	80	133
Total	2,676	687	256	204	3,815	1,523

Source: NOSL

as the markets to which Jamaican labourers were being re-exported. From 1748 onwards, the number of enslaved Africans re-exported to the foreign West Indies was lower than the number re-exported from 1702 to 1735. In 1748, the total number of enslaved re-exported from Jamaica was 2,676, of which 2,233 or 83.44 per cent went to the Spanish controlled territories. Within the Spanish colonies, the Spanish Coast was the main market for re-exported labourers. In 1748, the

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[175] This view was put forward by David Eltis, Frank Lewis, and David Richardson in "Slave prices, the African slave trade, and productivity in the Caribbean, " *The Economic History Review*, vol. 58, 4 (2005):673-700

Spanish Coast imported 1,877 enslaved labourers or 84 per cent of the enslaved Africans imported into the region. The dominance by the Spanish colonies in 1748 is due to the high levels of demand for enslaved labour that still existed in the region. However, the pattern in re-exported Africans changed, because from 1755 to 1769, there was an absolute decline in the number of re-exported Africans from the island, which was also evident in the Spanish market.

With the decline in the Spanish market for enslaved Africans from Jamaica, the French West Indies became the major market for re-exported Africans in 1784. Based on the NOSL, the French West Indies started importing enslaved labourers in 1769, 65 enslaved labourers were dispatched that year. However, by 1784, the number had increased to 2,830 or 74.18 percent of the total re-export trade that year. By 1787, the number of enslaved exported to the French West Indies declined to 447.

The markets which imported enslaved labourers from Jamaica are highlighted in table 3.4 below. This provides useful information for researchers examining the multifaceted aspects of Jamaica's colonial trade. The regions highlighted earlier were further deconstructed and a classification of slave re-exports by ports is presented.

It is discernible that there was an increase in re-exports after the American War in 1783, which lasted to 1793 followed by a slight decline to 1807. Selwyn Carrington has characterized the post-1783 increase as an indicator of decline within the British colonial economies. He argued that

> *For most of the period up to 1775-1776, the planters retained a majority*
>
> *of the slaves imported into the islands. After the American War, even if more*

slaves were imported into the islands than in the pre-1775 period, a larger

number was also re-exported [176]

Table 3.4 Port Distribution of Re-exported Africans, Selected Years

Port	1748	1755	1762	1769	1784	1787	Total
Curacao	382	162		40	189	186	959
Turks Island				17			17
Aux Cayes					746	17	763
Cape Francois					225		225
Cape Tibeirman					306		306
Hispaniola				65	543	298	906
Jacmel					220		220
Jeremie Bay					81		81
Port Au Prince					246		246
St. Domingue					235	112	347
St. Martin					228	20	248
Boston				6			6
Georgia				16			16
Maryland				20			20
Mississippi	25				97	15	137
New Orleans					131	310	441
North Carolina		32		13			45
South Carolina	35						35
Rhode Island			16				16
Virginia		6					6
Carthagena		480			11	158	649
Cuba						38	38
Havana			220		410		630
Honduras		1		4			5
Mosquito Shore		6					6
Porto Bello	356				7	33	396
Porto Rico					85		85
Santo Domingo						203	203
Spanish Coast	1,877						1,877
Unknown	1		20	23	80	133	257
Total	2,676	687	256	204	3,840	1,523	9,186

Source: NOSL

[176] Selwyn Carrington, "Econocide'- Myth or Reality? The Question of West Indian Decline, 1783-1806", *Boletin de Estudios Latinoamericanos del Caribe* 36 (1984): 13-48

When viewed over the long run, the period of the highest re-exports was not after 1776 as Carrington has opined. Rather, it was between 1702 and 1735 or the period of the Asiento, when just over 50 percent of labourers were re-exported. During the years 1702 to 1750, the island imported 260,978 Africans and re-exported 108,055 or 41 percent. The total number of Africans imported between 1783 and 1807 was 302,047, of which 66,088 or 18 percent were re-exported. Therefore, the absolute increase in re-exports post-1776 was as a result of the overall increase in the trade in enslaved peoples to Jamaica. This should not be interpreted as decreasing demand for labour. Rather, the opposite was true as more labourers were imported relative to the proportion re-exported. This was done to satisfy the growing demand for enslaved labour during the period of plantation expansion on the island. The trend in slave prices over the same period offers an interesting insight into labour demand on the island. After the American War of Independence, it is noted that in real terms, slave prices were 56 percent higher than sugar prices.[177] Therefore, the high price for enslaved labour which was matched by an increase in the arrival of Africans, suggests that there was a high demand for such labour in the island.

Retained Slaves and Population Growth

The low slave re-exports during the late eighteenth century highlights the change in replacement demand for African labour. It also points to the fact that relatively more Africans were retained to work on sugar estates, coffee plantations, and livestock pens during the latter half of the eighteenth century. In fact, if one were to divide the century in halves, the proportion of enslaved Africans retained between 1702 and 1750 was 49.46 percent, and this account for the post 1735 decline in re-exports (See table 3.5 below). Between 1751 and 1807, the proportion retained was

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[177] David Eltis, Frank Lewis, and David Richardson, 'Slave Prices, The African slave Trade, and Productivity in the Caribbean, 1674-1807', *The Economic History Review*, 58,4, (2005), 763-700.

81.64 percent. This shows that there was a greater demand for African labour from 1750 onwards than there was for the preceding years. Overall, the island retained 76.14 percent of the Africans imported between 1702 and 1807.

Table 3.5 The number of enslaved Africans retained in Jamaica, 1702-1807

Years	No. Imported	No. Re-exported	No. Retained	%age Retained
1702-1710	41,230	8,436	32,794	79.54
1711-1720	47,577	24,941	22,636	47.58
1721-1730	64,710	33,155	31,555	48.76
1731-1740	42,489	26,978	15,511	36.51
1741-1750	64,972	14,545	50,427	77.61
1751-1760	78,035	11,146	66,889	85.72
1761-1770	84,696	9,889	74,807	88.32
1771-1780	96,037	11,984	84,053	87.52
1781-1790	95,008	24,272	70,736	74.45
1791-1800	157,814	26,177	131,637	83.41
1801-1807	63,278	7,880	55,398	87.55
Total	835,846	199,403	636,443	76.14

Source:

Imports from 1702-1807: Transatlantic Slave Trade Database (TSTD).

Re-export totals for 1702 -1775: Sheila Lambert (ed.) House of Commons Sessional Papers, Vol. 69, pp. 222-3.Stephen Fuller's report to the Jamaica Assembly. Alternately, see C.O. 137/38, Appendix to the Memorial of Stephen Fuller (Agent for Jamaica) to the Board of Trade, 1788.

Re-export totals for 1776 -1788: Sheila Lambert (ed.) House of Commons Sessional Papers, Vol. 67, p.239. An Account of the number of Africans imported into, and re-exported from the island of Jamaica. Report submitted Thomas Irving, Inspector General of Imports and Exports, London, 12th May, 1789.

Re-export totals for 1789-1798: British Parliamentary Papers, 1803/4, Vol. X, p. 39G. A Report by David Innes, Naval Officer for Kingston Jamaica, 14th November, 1799

Re-export totals for 1799-1807: Philip Curtin, *The Atlantic Slave Trade: A Census*, p. 26.

The trend in the number of enslaved retained during the eighteenth century is shown in figure 3.5 below. It support the claims made by Sheridan and others that economic growth in Jamaica was due to the proportional increase in labourers during the latter half of the century, and it highlights

the importance of retained slaves in facilitating population growth. The increase in Jamaica's enslaved population during the eighteenth century was possible because of the increase in net imports over the same period. Demographically, Jamaica's enslaved population was one of net natural decrease. This has led to the belief that growth in the number of retained labourers was the major factor influencing the overall growth of the island's labouring population. In other words, the only way of sustaining the labour force, and by extension the plantation economy,

Figure 3.5 The growth of retained slaves in Jamaica, 1702-1807
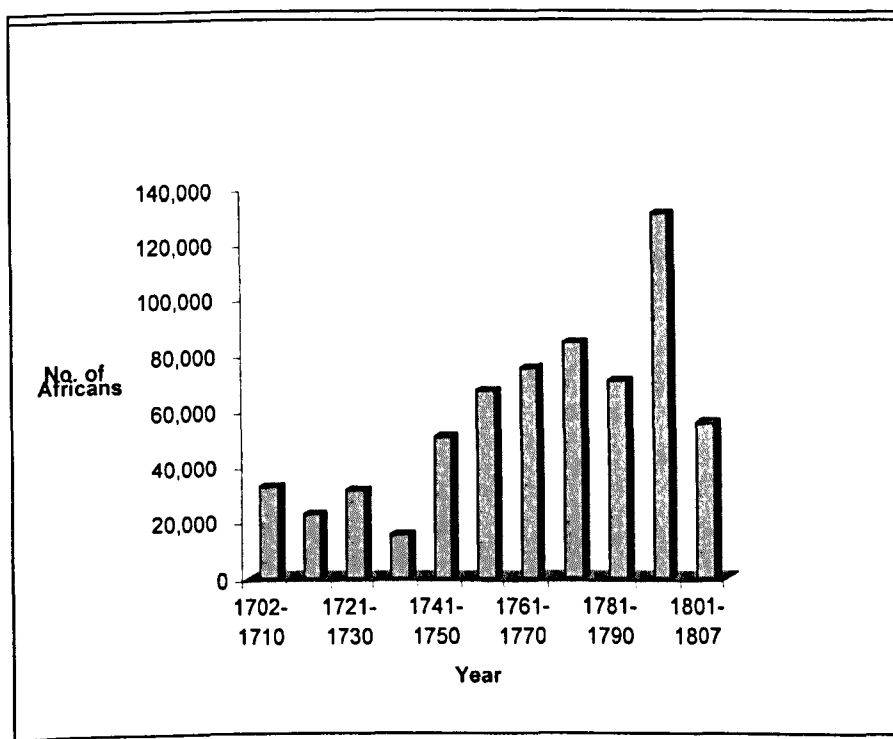
Source Appendix B

was through the continuous importation of Africans.[178] The importance of retained labourers to the growth of the enslaved population is shown in table 3.6. It shows the total enslaved population at selected dates from 1703 to 1807. This is the best we can do in the absence of annual estimates of the population during the eighteenth century. The table highlights the change in the enslaved population which is the population of the current year minus the population of the previous year. Retained labourers are the total disembarked minus those re-exported for the corresponding period. An analysis of table 3.6 indicates that in 1715, Jamaica's enslaved population was 60,000. The net import from 1703 to 1715 was 42,271, which was approximately 70 percent of the population. However, what is interesting is the change in population and the number of enslaved retained for the corresponding period. The data indicate that from 1703 to 1715 the enslaved population increased by 15,000 but the net imports for the corresponding period was 42,271 or 2.82 times the actual change in the population. In other words, Jamaica imported 42,300 Africans between 1703 and 1715 to facilitate a population change of 15,000 over the same period. This trend continued for much of the period under investigation with each period showing that the net import was higher than the actual change in population with the exception of 1734 and 1789 which showed a lower net import relative to the change in population. Overall, the table strengthens the argument that the growth of the island's slave population was dependent upon the importation of Africans.

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[178] Robert Fogel and Stanley Engerman, *Time on the Cross*; Robert Fogel, *Without Consent or Contract*, p. 123-27; B.W. Higman, *Slave Populations of the British Caribbean*, pp. 72-100, 303-378; Orlando Patterson, *Sociology of Slavery*.

Table 3.6 Jamaica's enslaved imports and the change in population, 1703-1807

Year	Population	Change in Population	No. of enslaved Retained	Ratio of enslaved retained to change in Population
1703	45,000			
1715	60,000	15,000	42,271	2.82
1730	74,525	14,525	41,442	2.85
1734	86,546	12,021	2,605	0.22
1740	99,239	12,693	12,736	1.00
1745	112,428	13,189	22,626	1.72
1762	146,805	34,377	107,334	3.12
1768	166,914	20,109	50,164	2.49
1778	205,261	38,347	88,056	2.30
1787	217,584	12,323	54,122	4.39
1789	250,000	32,416	11,823	0.36
1795	291,000	41,000	86,894	2.12
1800	300,939	9,939	56,790	5.71
1807	319,351	18,412	45,478	2.47

Source: TSD
John McCusker, *Rum and the American Revolution*, p. 609-612
Orlando Patterson, *The Sociology of Slavery*, p. 95-96

Slave Prices and the demand for labour

The rising demand for labour was the main factor sustaining the trade in enslaved peoples during the eighteenth century. The high mortality and low fertility rates across the island meant that more labourers were needed to satisfy the chronic demand that existed. One way of measuring

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the demand for African labour in Jamaica is to examine the price(s) that planters paid to secure the labour which was pivotal to the running and survival of the plantation system. If high prices were matched by an increase in newly arrived labourers, then one can assume that the demand for African labour was high, and that planters were willing to pay higher prices for their labour. Their ability to do so through time may also suggest changes in output per enslaved which are important in understanding the growth of the Jamaican economy in the period in question.

The publication of the TSTD has led to a body of data for the prices of almost 230,000 enslaved Africans transported to the Americas between 1673 and 1807. Using these estimates which focus on adult males as the reference group, David Eltis has highlighted the trends in slave prices in the Caribbean. He argued that there was an increase in the nominal and real prices of slaves from the mid to late eighteenth century (see table 3.7 below). It was also found that in real terms, slave prices rose when adjusted for trends in prices of sugar, the principal market crop generated by enslaved Africans. This trend was especially evident after the War of American Independence when the rise in slave prices was 56 per cent higher than that for sugar. This long run rise in money and real prices was punctuated by occasional short run variations in the pace of increase in slave prices. It is also noticeable that there was an increase in enslaved arrivals for the corresponding period. Therefore, the discernible trends in slave prices and newly arrived Africans during the late eighteenth century and early nineteenth century are consistent with a demand-driven explanation of the state of Jamaica's plantation economy on the eve of the abolition of the Transatlantic Trade in Africans. The high prices for new arrivals never affected the inflow of labourers towards the end of the eighteenth century.

Table 3.7 Slave and Sugar Prices in the Caribbean, 1750-1807

Year	Slave price current Sterling	Slave price 1700/01	Sugar price current	sugar price 1700/01	Slave price/ Sugar price
	£	£	s. per cwt	s. per cwt	per cent
1750-1754	30.90	35.88	33.14	38.35	93.25
1755-1759	30.93	34.09	39.08	42.47	79.15
1760-1764	32.33	34.94	36.00	38.83	89.79
1765-1769	39.22	41.76	36.84	39.19	106.46
1770-1774	43.01	43.45	36.18	36.69	118.89
1775-1779	43.07	43.28	45.36	44.79	94.96
1780-1784	44.44	40.17	49.10	45.70	90.51
1785-1789	60.23	55.57	46.26	42.86	130.19
1790-1794	58.88	52.65	55.31	48.62	106.45
1795-1799	61.18	43.86	64.10	48.07	95.40
1800-1804	62.59	41.09	43.33	28.12	144.46
1805-1807	73.17	46.11	49.07	30.92	149.12
1780-1807	**59.15**	**46.61**	**51.35**	**41.42**	**112.53**
1780-1807	**56.76**	**47.47**	**49.35**	**42.44**	**111.85**

Source: David Eltis, Frank D. Lewis, and David Richardson, "Slave Prices, the African slave trade, and productivity in the Caribbean, 1674-1807".

The short run shifts in slave prices was a reflection of the variations in demand for labour that arose from plantation expansion. The destruction of the plantation system in St. Domingue during the 1790's led to deficits in the international commodity market for sugar and coffee. The migration of planters from the French colony to Jamaica, coupled with the high price for sugar, led to expansion within the island's plantation sector, the aim of which was to meet the existing shortfall. To facilitate this expansion, planters needed a large supply of African labour to work on the sugar and coffee plantations. As such, the high demand for labour was one factor influencing its price. Underneath this however, was a more persistent replacement demand for African labour which was caused by the failure of the enslaved population to reproduce. The effect of this chronic demand on slave prices is evident throughout the period in the rise in nominal prices from 1750 to 1807.

It is worth pointing out that the real price of African labourers was rising between 1750 and 1794 suggesting that the productivity of enslaved labour was also increasing. The fact that real prices were rising suggests increased productivity underpinned the increased demand for enslaved Africans. Therefore, the increased demand for African labourers was due in part to their productivity. This is logical since if labour was getting less efficient, then increased amounts would not be sought. There are several factors which explain productivity change in Jamaica during the period. Jamaican planters had certain preferences for slaves who they felt had the necessary qualities needed for work on their estates. Therefore, the age, gender and ethnic makeup of African labourers were part and parcel of the labour quality issues confronting Jamaican plantations during the eighteenth century.[179]

Discussions among Jamaican planters showed that they had certain perceptions about the relative quality of their labour supply from the different regions of Africa. Gold Coast Africans were perceived to be far superior labourers to other Africans. A brief look at the origins of Jamaica labourers show that Jamaica relied on a wide spread of source areas to meet its labour needs during the Eighteenth century. The Island imported Africans from the Senegambia region down to West-Central Africa, a coastal distance of over 5,000 miles. In spite of this extensive supply source, discernible patterns emerge. The West Central African region supplied the greatest number of enslaved Africans to the Americas, 44.2 percent of African imports came from West Central Africa. However, in Jamaica's case, the majority came from the Gold Coast. Throughout the early part of the eighteenth century, the shipment of Gold Coast Africans to Jamaica rose sharply compared to the other regions but declined somewhat after 1776. This decline is a reflection of a 9 percent decline in slave exports from the region in general between 1751-1775

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[179] For further discussion of productivity change in Jamaica, see Chapter 5.

and 1776-1800. In fact, one can observe the dramatic decline in slave exports from the Gold Coast region from 1776 onwards, which was a reflection of abolition in 1807. During the course of the trade, 40 percent of all Gold Coast Africans shipped to the Americas went to Jamaica.[180] Planter's preference for Gold Coast Africans is summed up by the planter-historian, Bryan Edwards, who opined that

> *'the circumstances which distinguish the Coromantin, or Gold Coast*
> *negroes, from all others, are firmness both of body and mind...they*
> *sometimes take to labour with great promptitude and alacrity,*
> *and have constitutions well adapted for it; for many of them have*
> *undoubtedly been slaves in Africa'*[181]

A contrary view is that the Coromantin's propensity for violence and revolt diminished their overall value to the plantation system.[182] In light of this, and especially the slave revolt of 1760, Edward Long pointed to the introduction of a bill by the island's legislature, the purpose of which was to discourage the importation of Gold Coast Africans by

> *...laying an additional higher duty upon all Fantin, Akim and Ashantee*
> *Negroes, and all others commonly called Coromantins, that should*
> *after a certain time, be imported and sold in the island...Such a bill,*
> *if passed into law, would doubtless have struck at the very root of the evil;*
> *for, by laying a duty equal to a prohibition, no more Coromantins would*
> *have been brought to infest this country; but, instead of their savage race,*
> *the island would have been supplied with Blacks of a more docile,*
> *tractable disposition...Whether the conceit of some few planters, in*
> *regard to the superior strength of the Coromantins, and greater*

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[180] TSTD.
[181] Bryan Edwards, *The History, Civil and Commercial of the British Colonies in the West Indies,* vol. 2 p. 267.
[182] For a discussion on this topic, See Monica Schuler's "Akan Slave Rebellions in the British Caribbean", in Hilary Beckles and Verene Shepherd (eds.), *Caribbean Slave Society and Economy,* p. 373-386; Orlando Patterson, *The Sociology of Slavery,* p. 113-144.

hardiness to support field labour, ought to outweigh the public

tranquility and safety...the ruin of others, the desolation of estates...

must be left to the serious consideration of a dispassionate legislature '[183]

The proposed bill was defeated in the Assembly, but the perception regarding the quality of Gold

Coast Africans held by some planters was not lost on Edward Long. What was important in his

judgement – and this is the theme throughout his writings- was the advancement of the island

through settlement. As far as he was concerned, the island was threatened by Gold Coast

Africans. He clearly misunderstood that agency among enslaved Africans was not confined to

any single ethnic group. The findings of the TSTD, as well as other scholarly essays, support this

point. Resistance to enslavement was common among all ethnic groups and this lasted the entire

period of Jamaica's plantation society.[184]

Bryan Edwards countered Long's assessment of Gold Coast Africans by claiming that

'Whatever may be alleged concerning their ferociousness and

implacability in their present notions of right and wrong, I am

persuaded that they possess qualities, which are capable of, and

well deserve cultivation and management '[185]

In 1726/50 the Bight of Biafra emerged as a major supplier of African labour to the island. This

continued until the trade was abolished in 1807. In 1751/1775 the data suggests that 32.4 percent

of arrivals in Jamaica came from the Bight of Biafra and 31.5 per cent from the Gold Coast. By

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[183] Edward Long, *The History of Jamaica*, vol. 2 p. 470-471.
[184] A typology of Caribbean slave resistance is provided by Michael Craton, *Testing the Chains: Resistance to Slavery in the British West Indies*; Hilary Beckles, "The 200 Years War'; Hilary Beckles, "The Self-Liberation Ethos of Enslaved Blacks".
[185] Bryan Edwards, *The History, Civil and Commercial of the British Colonies in the West Indies*, vol. 2, p. 276.

1801, approximately 50 percent of Jamaica's enslaved Africans came from the Biafran region.[186]

Bryan Edwards was less than kind in his assessment of the qualities of the Igbos from the Bight of Biafra. Unlike the Coromantins from the Gold Coast, Edwards felt that the Igbos were not good labourers and their value was further diminished by their propensity for suicide.[187] As a planter, Edwards would have had experiences dealing with both groups of Africans. He was writing at the time when the shift occurred from Gold Coast Africans to Africans from the Bight of Biafra. Therefore, his conclusion on the relative quality of the two groups of African labourers is instructive. Their perceived benefit to Jamaica's emerging plantation economy lies at the heart of the discussion.

The structure of the Transatlantic Trade in Africans was heavily skewed. More males were traded than females. Throughout the course of the trade there was a preference among planters for males. Table 3.8 below shows the ratios of men and children shipped from the slave exporting regions of Africa. Males made up 57.5 to 69.8 percent of enslaved Africans embarked

Table 3.8 Percentage Distributions of Africans in the Transatlantic Trade, 1702-1807

	Bight of Biafra	Bight of Benin	Gold Coast	Sene-Gambia	Sierra Leone	West Central Africa	Windward-Coast
Males	57.5	65.6	64.8	69.8	66.7	67.4	68.5
Children	18.6	17.2	16.5	13.2	31.6	24.1	27.9
Total	76.1	82.8	81.3	83	98.3	91.5	96.4

Source: TSTD

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[186] TSTD.
[187] Bryan Edwards, *The History, Civil and Commercial of the British Colonies in the West Indies*, vol.2, p. 276.

from Africa, while children accounted for between 13.2 to 31.6 percent. So, men and children together accounted for over 80 per cent of the Africans shipped to the Americas. In regions like West Central Africa men and children accounted for 91.5 of the trade.

The imbalance between males and females is evident in most of the regions involved in the trade. Marginally, the only region which seemed to have had a relatively high ratio of females to males was the Bight of Biafra, but even here 75 percent of enslaved exports were men and children. Jamaica imported more females towards the end of the eighteenth century and this trend continued until the abolition of the trade in 1807. The debates in Jamaica's House of Assembly towards the end of the eighteenth century suggest that the importation of females at this time was a strategic move by planters to encourage and promote reproduction within the enslaved population. The thinking at the time was that having more females while simultaneously ameliorating the conditions of the enslaved population would facilitate natural growth within the island's enslaved population.[188]

One reason given for the disparity in sex ratios in the transatlantic trade is the parallel trans-Saharan trade to North Africa and the Middle East. The male dominance of the transatlantic crossing contrasted sharply with the trans-Saharan trade which had a higher ratio of females to males. This arose from the high demand for women as domestic labourers in North Africa and the Middle East. This demand led to a price differential between male and female slaves. Females commanded a higher price than males in the interior. In this context, trans-Atlantic

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[188] British Parliamentary Papers, 1803/4 vol. 10, p. 93-194.

traders opted for enslaved males who were cheaper than females of the same age and condition.[189]

Coupled with the high ratio of men and children was the insistence by planters for young labourers. Importing the old and the infirm was not a viable economic alternative. Moreover, at the beginning of the nineteenth century, there was a significant increase in the number of young children under the age of 15 who were shipped to the Americas to work on the sugar plantations.[190] Evidence that planters insisted on the recruitment of young labourers is provided by the Jamaica Assembly. In 1797, it debated and later passed legislation instituting a tax of £10 per labourer imported over the age of 25 years.[191] In a later report on the progress of the bill, it was noted that there were 'beneficial effects from an Act passed in the sessions of 1797. Such a proportion of young slaves would have formed the cargoes imported, as never was experienced at any time before the operation of the Act'.[192]

The extent to which labour quality issues affected productivity is worth considering. It is clear from the discussion so far, that the ethnic preferences of planters were only partially satisfied as such differentials were not as great as planters would seem to suggest. This is evident in the replacement from 1776 onwards of Gold Coast Africans with Africans from the Bight of Biafra,

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[189] Paul E. Lovejoy, *Transformations in Slavery: A History of Slavery In Africa* (2000); Paul Lovejoy and David Richardson, "Competing markets for male and female slaves: slave prices in the interior of West Africa, 1780-1850", *International Journal of African Historical Studies*, 28 (1995): 261-93; Joseph Inikori, "Export Versus Domestic Demand: The Determinants of Sex Ratios in the Transatlantic Slave Trade", *Research in Economic History*, 14 (1992): 37-58

[190] Ugo Nwokeji, 'African Perception of Gender and the Slave Traffic', *William and Mary Quarterly*, 58 (2001): 58-64.

[191] British Parliamentary Papers 1803/4, vol. x, folio.149.

[192] Ibid. folio 159.

a significant portion of whom were women. In fact, the ethnic differentials within the trade were largely determined by supply-side factors.

Conclusion

The preceding discussion on Jamaica's enslaved labour force focused on some fundamental issues in relation to the island's slave population and economy. The high participation ratio of the labour population on sugar estates, the types of work done by the enslaved and its organization, and the low reproduction rate of the population meant that the replacement demand for African labour was high throughout the eighteenth century. Therefore, Africans were imported for 2 important reasons. Firstly, it was to facilitate growth within the labour force and to substitute for the demographic failures of the population. Secondly, they were imported to meet the growing demand for labour that existed within the island, as well as the Spanish colonised territories and mainland North America.

An analysis of the temporal flows of African labour highlights some important trends. It is evident that there was an increase in new arrivals throughout the eighteenth century, but the rise was much sharper from the mid to late eighteenth century and especially after the end of the American War of Independence in 1783. This rise peaked during the decennial period 1790/1800. This upward trend is indicative of a rise in the local demand for enslaved labour, which was caused by the overall expansion in the export-related sectors of the economy, especially in sugar and coffee production.

In effect, the rise in the local demand for enslaved labour corresponded with a rise in the nominal and real prices for labour during the same period. While this increase is partially explained by changes in the international commodity markets (the destruction of St. Domingue), what lies underneath was the fact that throughout the period, there was a chronic replacement demand for labourers in the island. As such, the fact that arrivals increased while real prices were going up, strengthens the argument being made. The real price refers to the price adjusted for the inflation rate prevailing. So, by assessing the real price, one is better able to make judgements as to why that price may be increasing or decreasing, since the price is not changing because of inflationary pressures, but factors independent of it. To say that productivity caused price changes would be reasonable in this case, as Jamaican planters could have been demanding more enslaved Africans because they were productive. Also, the basic rule of demand and supply would dictate that as the demand for an item increases relative to the supply, then the price would have to increase. In other words, planters were willing to pay more for a labourer they deemed productive. This is logical as the planter was virtually guaranteed a higher return on investment from a more productive labourer.

The issue as to whether labour productivity trends were influenced by ethnic differentials is an important one. It is clear that planters had their preferences as to what ethnicity comprised a good labour force. Were these preferences satisfied? From the evidence presented, it seems only partially. On the eve of abolition, the ethnic make up of Jamaica's enslaved population consisted of a large number of Coromantins from the Gold Coast and Igbos from the Bight of Biafra. This brings us to where we started earlier, which is why Jamaica's enslaved population failed to reproduce itself? If ethnic differentials and the perceived labour quality issues were not as great

as suggested by planters, then it seemed as if labour productivity trends were shaped less by shifts in labour quality and more by plantation-related practices like the exploitation of the labour force to meet the demands of an expanding sugar economy at the close of the eighteenth century.

Chapter 4

Land

This chapter examines the development of Jamaica's land market from 1750 to 1810 by presenting an analysis of land transactions during the period. Jamaica's plantation economy underwent unprecedented levels of growth, and there were also structural changes in the distribution of land in the rural and urban areas of the island. The chapter provides a systematic analysis of Jamaica's land market including the patterns of land distributions. It will also provide a time-series analysis on land prices during these years.

Land tenure, by definition, refers to the manner in which land is held and distributed. An examination of land tenure arrangements in Jamaica during the eighteenth century should therefore focus on the pattern of land ownership, the influence of gender on landownership and its distribution, and the price at which land was sold. The documents that this chapter uses to examine these changes are deeds, newspapers, maps and wills. By deeds we mean documents delineating land transfer that become effective once those document are signed, sealed and delivered. Wills, by contrast, are documents that express the wish of a testator (the person making up the will) about how to dispose of his/her assets at death. Newspapers, as a data source, provide contemporary accounts of past events.

Veront Satchell used the deeds in his quantitative survey of rural land transactions in Jamaica from 1866 to1900. His study looked at the challenges faced by the emerging peasantry at a time

when Jamaica's plantation economy was on the decline. By using deeds, Satchell observed the rate of land transfers and the extent to which large companies like the United Fruit Company were buying abandoned sugar estates; this to the detriment of the peasant class who found it difficult to own property in Jamaica.[193] Having established the use of deeds for land transference as a useful measurement of trends and changes in land patterns, this study has adopted the same method. While Satchell's work focussed on the period between 1866 and 1900, this study examines Jamaica from 1750 to1805. Work by Barry Higman, among others, has provided much data about trends in agricultural output and slavery in Jamaica and in the other British West Indian islands between 1807 and 1834, but knowledge of pre-1807 trends remains patchy, and in the case of landownership and land prices it is almost non-existent.[194]

Land Distribution

An analysis of the Jamaican deeds for the selected years 1750, 1760, 1770, 1780, 1790, 1795, 1800, 1805 and 1810 reveals a total of 2,953 land transactions involving the sale of 556,892 acres. This amounted to roughly 20 percent of the total area of the island.[195] If one were to make a projection for the 58 years from 1750 to 1807 based on the data provided in table 4.1 below then a rather interesting picture of Jamaica's land market during the height of the plantation period emerges. We have 58 years in which the average number of transactions for 9 of those years was 328 transactions. In that sample there was the sale and resale of land totaling 556,892 acres. Thus 2,953 sales of 556,892 acres suggest an average sale of 189 acres. Therefore, the average number of transactions for the 9 sampled years (328) multiplied by 58 equals 19,024,

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[193] Veront Satchell, *From Plots to Plantation.*
[194] B.W. Higman, *Slave Population and Economy in Jamaica.*
[195] Old Series Liber, vols. 138-142, 183-186, 235-240, 300-305,376-384,427-431, 469-485,535-547.

which is the number of projected transactions for the period. Multiplying the average land sales per transaction of 189 acres by the number of projected transactions (19,024) then approximately 3,595,536 acres of land were sold in Jamaica. When compared with the total acreage of Jamaica 2,724,262, then it means that 1.3 times the total size of the island was sold. If one were to assume that land transactions largely involved cultivable land, and that not all the land of Jamaica was cultivable, then the ratio would rise. Overall, this indicates that there was a vibrant land market in Jamaica during the years of plantation growth.

Land sales are a useful indicator of trends in Jamaica's land market. A decennial breakdown of the sale and resale of land for the selected years is highlighted in table 4.1. Based on the time-series distribution provided, land sales fluctuated during the selected years. The fluctuation

Table 4.1 Inter-censal change for the numbers of acres sold,
1750-1810

Year	No. of Transactions	Total Acres	5 year intervals (percentage change)	10 year intervals (percentage change)
1750	396	82,151		
1760	89	24,329		-70
1770	164	49,314		103
1780	341	89,510		82
1790	426	76,173		-15
1795	326	73,803	-3	
1800	668	111,108	51	46
1805	312	38,208	-66	
1810	231	12,296	-68	-89
Total	2,953	556,892		

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235-240, 300-305, 376-384, 427-431, 469-485, 535-547

is evident in the fact that the number of acres sold declined by 70 percent from 82,151 acres in 1750, to 24,329 acres in 1760. For the decennial period between 1760 and 1770, there was a 103 percent increase in the number of acres sold in Jamaica. This trend continued for the rest of the period which witnessed a peak in land sales in 1800 when a total of 111,108 acres were sold. This approximates to 20 percent of the total acres sold for the selected years. From 1800 to 1810, the number of acres sold declined from 111,108 acres to 12,296 acres, a decline of 89 percent.

To have a better understanding of the trends in land distribution in Jamaica, it is important that one conducts an annual parish-by-parish analysis of land sales. Such analysis is useful in the context of the island's topography and the extent to which regional factors influenced the sale and the price for which land was sold during the course of these years. The findings from this analysis are presented in tables 4.2 and 4.3 below. Table 4.2 provides the reader with a parish-by- parish breakdown of the number of transactions that took place, and the total acreages sold as a percentage of the parish in which the transaction was conducted. Table 4.3 on the other hand, highlights the annual distribution of the acreages sold in each parish for the selected years.

Table 4.2 The number of acres sold as a percentage of parish size in Jamaica, 1750 – 1810

Parish	Parish Size(acres)	No. of Trans.	Acres Sold	Mean	Parish Percent
Kingston	3,100	744	2,632	4	85
Port Royal	30,608	80	18,174	227	59
St. Catherine	93,058	182	22,617	124	24
St. Andrew	79,375	215	33,153	154	42
St. David	49,208	31	9,432	304	19
St. Thomas East	156,613	102	35,633	349	23
Portland	94,059	44	18,855	429	20
St. George	101,960	89	36,720	413	36
St. Mary	115,975	92	34,029	370	29
St. Ann	295,285	177	55,891	316	19
St. James	145,768	196	36,817	188	25
Hanover	106,381	88	20,165	229	19
Westmoreland	197,486	157	38,672	246	20
St. Elizabeth	372,126	208	64,770	311	17
Clarendon	309,913	135	46,533	345	15
Vere	166,841	81	18,214	245	11
St. John	81,919	69	14,958	217	18
Dorothy	37,191	37	8,986	243	24
St. Thomas Vale	75,092	53	12,941	244	17
Trelawny	212,304	168	27,702	165	13
Total	**2,724,262**	**2,953**	**556,892**	**189**	**20**

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235-240, 300-305,376-384,427-431, 469-485,535-547.

Table 4.3 The Annual Distribution of acres sold in each parish, 1750-1810

	1750	1760	1770	1780	1790	1795	1800	1805	1810	Total
Kingston	181	3	3	2,015	10	90	58	60	213	2,633
Port Royal	0	0	2,344	801	8,131	1,687	2,230	2970	11	18,174
St. Catherine	5,412	242	3,725	921	1,436	4,784	1,900	3628	567	22,617
St. Andrew	6,862	2,592	1,716	3,218	2,777	3,715	9,261	2641	372	33,153
St. David	1,185	350	0	1,107	230	4,200	1,458	732	170	9,432
St. Thomas E	9,336	1,841	3,978	3,965	3,074	7,107	3,746	584	2002	35,633
Portland	1,400	0	407	11,977	107	1,708	2,310	445	500	18,855
St. George	440	300	9,138	6,700	3,913	3,565	9,006	3036	623	36,720
St. Mary	8,980	8,080	2,381	5,749	4,781	1,890	1,155	883	130	34,029
St. Ann	1,188	731	5,571	14,429	10,475	9,962	11,044	1567	924	55,891
St. James	8,742	2,162	5,920	6,275	4,516	2,424	4,750	1918	110	36,816
Hanover	4,588	96	754	6,262	1,476	2,496	3,206	814	474	20,165
Westmoreland	8,936	3,451	287	3,986	11,736	449	6,507	2149	1173	38,672
St. Elizabeth	5,172	630	3,790	6,935	9,644	9,463	17,552	9505	2079	64,770
Clarendon	8,004	1,666	7,305	6,277	4,630	4,727	12,192	779	954	46,533
Vere	2,227	644	591	1,841	1,682	3,426	6,522	1003	279	18,214
St. John	3,796	302	985	380	2,911	1,163	3,826	898	698	14,958
St. Dorothy	3,634	965	50	700	1,972	390	1,168	50	57	8,986
St. Thomas V	2,069	275	367	1,387	872	2,437	1,881	2785	868	12,941
Trelawny				4,585	1,799	8,123	11,340	1762	93	27,702
Total	82,151	24,329	49,314	89,510	76,173	73,803	111,108	38,208	12,296	556,892

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235-240, 300-305,376-384,427-431, 469-485,535-547.

It is discernible in both tables that there was fluctuation in land sales in most parishes. However, what is also noticeable is the increase in acreages in the sugar planting parishes relative to the other parishes during the decennial period 1790 to 1800. The newly created parish of Trelawny had the largest increase in acreage of 9,541.[196] Similar expansion occurred in St. Andrew with 6,484 acres, Clarendon with 7, 561 acres, Vere with 4,839 acres and St. Elizabeth with 7,907 acres.

These patterns can be related to trends in the geography of plantation output for the island over the same period. The industrial nature of the plantation system required fundamental changes in land tenure arrangements in the island. To facilitate this change, large acreages of land were needed in the shift from small scale to large scale farming that was geared towards export. An increase in the amount of land entering the market would have had an impact on the expansion and distribution of sugar estates during the eighteenth century.

The Seven Years War (1756-63) had a profound impact on Jamaica's plantation economy. The war brought uncertainty to Jamaica's land market. The general instability and anxiety that accompanied the war is visible in the trade statistics for the island. During the course of the war, the quantity of goods produced and exported, as well as the number of Africans imported declined. This was just a natural market reaction to the higher transport costs and risks of war. It is difficult to gauge the total acreage being offered for sale during this decennial period of the war, but what is clear from analysing the deeds is that land sales declined by 70 percent during these years. In 1763, Britain defeated France, and at the Treaty of Paris, more territories were added to Britain's colonial empire. The addition of the ceded territories coupled with the

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[196] The parish of Trelawny was created in 1780 from the parishes of St. James and St. Ann.

following thirteen years of prolonged period of peace heralded an era of prosperity in the British West Indies after 1763. Richard Pares refers to this period as the 'silver age' of sugar.[197] The post-war stability is further reflected in the 101 percent increase in the number of acreages sold for the decennial period 1760 to 1770 (table 4.1) From the analysis conducted the majority of the sales were large holdings over 600 acres. Therefore, of the 164 transactions recorded in 1770, 62 percent were sales over 600 acres. The assumption that these acreages were used for productive purposes can be made when one examines the personnel involved in these transactions and the location of the holdings sold. The listing of the professions of the parties involved in the transactions was a common feature of the deeds. Thus it was easy to identify the social groups involved in the transactions.

For the selected years, planters were the most dominant (and most active) social group in Jamaica's land market. In 1770, planters were involved in 65 percent of the transactions over 600 acres. During the same period, there was a noticeable increase in the number of sugar plantations being put to productive usage. Table 4.4 below highlights the number of sugar estates in Jamaica for the selected years. The table established that the number of estates more or less doubled from 419 in 1739 to 830 in 1804. Between 1751 and 1804, the total number of sugar estates increased by 98 percent. This suggests that at the turn of the century, an increased amount of land space had been converted into estates. This is compatible with the growth in output and enslaved arrivals at this time. The general increase in the number of estates was necessary as the market for sugar grew and as output was diversified. Entrenched in these figures is the evidence that over the period the county of Cornwall had the majority of estates, 34 percent in 1739, and approximately 44 percent form 1768 up to 1804. This undoubtedly was so because of the

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[197] Richard Pares, *A West India Fortune* (1950).

appropriateness of the land for the cultivation of the dominant crops. Surrey had the least number

of estates - peaking in 1804 around the same time that coffee production began to rise.

Table 4.4 The Distribution of Sugar Estates in Jamaica, 1739-1804

County	1739	1751	1768	1772	1792	1804
Surrey	78		144	178	168	190
Middlesex	198		239	253	258	275
Cornwall	143		265	344	341	365
Total	419	450	648	775	767	830

Source: Add Mss 12431, f.123; Edward Long, *History of Jamaica*, vol. 1,
p.412 *and* vol. 2, pp.45- 224;Votes of the House of Assembly, 1792, pp.78-118;
CO 700/Jamaica 25-27, James Robertson, Maps of the Counties of Cornwall,
Middlesex and Surrey, constructed from actual surveys, 1804.

The relation between expansion in land use and the number of sugar plantations is visible

throughout the rest of the period. It has been established that the period between 1790 and 1804

was a period of growth in the Jamaican economy. Based on the annual distribution of land sales,

the number of acres sold increased from 82,496 acres in 1790 to 111,108 acres in 1800. An

analysis was done of the total sales in 1800 to determine the size of holdings sold. The data

revealed that of the 668 land transactions, 404 or 60 percent of the transactions involved the

transfer of land totalling 2,253 acres at an average of 6 acres. At the other end of the scale 58 or

9 percent of the transactions involved the sale of land totalling 59,875 acres at an average of

1,130 acres. This suggests that most of the land sold in 1800 was sold in large parcels. But the

data also suggest that most of these transactions were conducted to complement existing estates

or livestock farms as urban sales, in the Kingston and Montego Bay area was driven by local and

external trade, settlement, and a maturing plantation economy. When one examines the amount

of land in use in 1804 it is readily seen that the lands were in use as they were yielding relatively

high output per acre. When output of 1,072,256 cwt is juxtaposed with the 809,453 acres under

cultivation, the nature and amount of production taking place in Jamaica at that time should be understood.

There was a marked division within the social grouping of buyers and sellers. Free blacks, women, coloureds, and tradesmen made up the majority of those buying and selling small lots in 1800, while the transfer of large holdings of 600 acres and more were dominated by planters and merchants. This trend changed between 1800 and 1805. In 1805, 300 of the 312 sales were small to medium sized holdings totalling 24,396 acres. Overall, the trend towards the close of the eighteenth century points to an increase in the number of people buying and selling land as well as an increase in the number of acres sold. This is hardly surprising as there was a major growth in output by this time hence the use of cultivable land would have been fully maximized in order to achieve this, especially if we remember that approximately 30 percent of the acres sold was used for cultivation. This is also linked to the fact that output had diversified in many areas other than sugar by this time. It meant therefore that there were no large lots available for resale at the turn of the eighteenth century. In other words, there were not many willing sellers of land. Additionally, it must not be forgotten that the din relating to abolition had reached unprecedented decibels by this time and that planters would have been apprehensive at most about investing in large lots of land suitable for plantations. Therefore, the lots sold were mainly small lots, hence the large reduction in acres sold, the transactions for which were undertaken by the free blacks, coloureds and women, persons who were interested in land useful for purposes other than agriculture and production.

Two separate but related incidents accounted for the decline in land sales from 1800 to 1810. The first surrounds the independence of Haiti in 1804 and the effect this had on the wider circum-Caribbean. Haiti's Independence was viewed with suspicion by the Caribbean plantocracy who felt that the events on the island would influence the enslaved populations of the respective territories. The fear of the revolutionary ideas in Haiti spreading to the British West Indies was one that had a profound impact on Jamaica.[198] The question of Haiti's independence and its impact on the British West Indies was taken up by the abolitionists who exploited the events in Haiti to further their cause. In their quest to achieve full abolition of the Transatlantic Trade in Africans, abolitionists reminded colonists that Haiti would always be a threat to the territories if abolition was not achieved. The ghoulish imagery of Haitian massacres had a profound impact on the psyche of planters. Coupled with this was the fact that the debates surrounding the abolition of the trade, and its eventual cessation, influenced the planters' thinking.[199]

Types of Holdings Sold

The general pattern during the eighteenth century was to sell sugar estates, livestock pens, and coffee and pimento plantations as whole properties. There was some amount of subdivision within the types of sugar estates and livestock farms sold, but it is noticeable that the subdivision was greater with livestock farms compared to sugar estates. One other type of holding sold was the 'larger run'. Larger runs are holdings that had been sold that were no longer connected with the original larger holding. Therefore, parts of a larger run usually refer to the subdivided parts of

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[198] David Geggus, "Jamaica and the Saint Domingue Slave Revolt, 1791-1793", *The Americas*, 38 (1981): 219-233.
[199] David Geggus, "Haiti and the Abolitionists: Opinion, Propaganda and International Politics in Britain and France, 1804-1838", in David Richardson (ed.), *Abolition and its aftermath: the historical context, 1790-1916* (1985).

larger holdings other than sugar estates. Unclassified land is the category given to land conveyances where the type of holding was not identifiable in the deeds.

The types of holdings sold in Jamaica over the selected period are shown in table 4.5 below. It is discernible from the frequency distribution that a total of 51 sugar estates totalling 40,304 acres or 7 percent of the total acres were sold during the selected years. Based on the evidence presented, 51 sugar estates were sold intact with just 1 being subdivided and sold. The same was true for the sale of coffee plantations. All of the 5 coffee plantations identified were sold intact. The sale of livestock pens differed to that of sugar and coffee. There is evidence of subdivision within the livestock industry. Most of these land sales involved previously unused land as well as used land. Most of this land was used for the expansion of the island's plantation sector. The data reveal that a total of 197 lots bordering sugar estates, totalling 61,184 acres at an average of 310 acres, were purchased by planters and merchants. Most of this land was used as additional cane fields or grazing land to provide draught animals, meat, and manure for the estates.

Table 4.5 Frequency Distribution of the types of holdings sold

TYPEHOLD	Frequency	Per cent	Total acres	Mean
Sugar Plantation	51	1.7	40,304	790
Part of Sugar Plantation	1	0.0	5	5
Livestock Pen	33	1.1	10,456	317
Part of Pen	12	0.4	1,069	89
Coffee Plantation	5	0.2	2,473	495
Part of a Larger Run	64	2.2	8,319	130
Pimento Plantation	2	0.1	75	38
Unclassified	2,785	94.3	494,581	178
Total	2,953	100.0	557,280	189

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300-305,376-384,427-431, 469-485,535-547.

Of the livestock pens sold, a total of 33 totalling 10,456 acres were sold intact while 12 were subdivided and sold. The level of subdivision in the livestock industry is quite understandable. Most of these properties were small holdings compared to sugar estates or coffee plantations and as such they changed ownership at a much faster rate. Unclassified land accounted for the majority of the land sold. During the selected years, a total of 494,581 acres or 94 percent of the total acres sold were unclassified land. This category is due to a number of factors with the deeds. The first has to do with the level of consistency in its recording. It is clear from the handwriting in the document that it was the job of three or more clerical officers in the records office in Spanish Town to record the transactions. A general pattern was identified. The name of the parties involved, and the date of the transaction was noted. What followed involved the particulars of the transaction, which is the size of holding, its location, boundary, the price paid, and the signature of the parties involved. Even though this seemed to be the general trend, on numerous occasions, the type of holding transferred was not recorded. The same was true for the

Table: 4.6 Types of Holdings sold in each parish, 1750-1810

Parish	Type of Holding	Number	Acres	Mean
Kingston	Pen	2	98	49
	Part of Pen	2	0.22	0.11
	Unclassified	740	2,534	3
Port Royal	Coffee Plantation	1	773	733
	Part of Larger Run	3	614	204
	Unclassified	76	16,786	221
St. Catherine	Sugar Plantation	1	180	180
	Pen	10	1,883	188
	Part of Pen	1	2	2
	Part of Larger Run	4	1,012	253
	Unclassified	166	19,540	118
St. Andrew	Sugar Plantation	4	2,359	590
	Pen	5	1,116	223
	Part of Pen	3	178	59
	Coffee Plantation	2	917	459
	Part of Larger Run	5	403	801
	Unclassified	195	28,150	144

	Pimento Plantation	1	30	30
St. David	Sugar Plantation	2	3,142	1,571
	Pen	1	593	593
	Part of Pen	1	30	30
	Unclassified	27	5,667	210
St. Thomas E	Sugar Plantation	3	3,172	1,057
	Part of Pen	1	30	30
	Part of Larger Run	7	1,286	184
	Unclassified	91	31,145	324
Portland	Sugar Plantation	1	360	360
	Part of Larger Run	2	300	150
	Unclassified	41	18,195	444
St. George	Sugar Plantation	1	857	857
	Part of Larger Run	8	670	84
	Unclassified	80	35,193	440
St. Mary	Sugar Plantation	5	6,325	1,265
	Pen	1	837	837
	Part of Larger Run	8	1074	134
	Unclassified	78	25,793	331
St. Ann	Sugar Plantation	4	2,534	634
	Pen	3	2,620	673
	Part of Larger Run	8	764	96
	Unclassified	161	49,928	310
	Pimento Plantation	1	45	45
St. James	Pen	1	63	63
	Part of Pen	1	41	41
	Part of Larger Run	2	155	78
	Unclassified	192	36,558	190
Hanover	Sugar Plantation	9	3,375	375
	Part of Sugar Plant	1	5	5
	Pen	1	282	282
	Part of Larger Run	1	10	10
	Unclassified	76	16,493	217
Westmoreland	Sugar Plantation	3	4,980	1,660
	Part of Pen	1	65	65
	Part of Larger Run	5	772	154
	Unclassified	148	32,855	222
St. Elizabeth	Sugar Plantation	2	2,920	1,460
	Pen	5	2,028	406
	Part of Larger Run	3	167	56
	Unclassified	198	59,655	301
Clarendon	Sugar Plantation	5	4,098	820
	Pen	2	700	350
	Part of Pen	1	13.00	13
	Unclassified	127	41,722	329
Vere	Sugar Plantation	3	2,372	791
	Part of Pen	1	710	710
	Unclassified	77	15,132	197

St. John	Sugar Plantation	2	950	572
	Coffee Plantation	1	165	165
	Part of Larger Run	4	483	121
	Unclassified	62	13,360	215
St. Dorothy	Pen	2	236	118
	Part of Larger Run	1	1	1
	Unclassified	34	8749	257
St. Thomas V	Sugar Plantation	1	417	417
	Part of Larger Run	2	488	244
	Unclassified	50	12,036	241
Trelawny	Sugar Plantation	5	2,263	453
	Coffee Plantation	1	618	618
	Part of Larger Run	1	120	120
	Unclassified	161	24,701	153

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300-305,376-384,427-431, 469-485,535-547.

location of the holding, its size, and boundary. Therefore, in these instances where the types of holding were not recorded, it was decided that they should be placed in the unclassified category. Therefore, this category does in no way suggest that the land were previously unused land.

A parish-by-parish distribution of the types of holdings sold over the period is shown in table 4.6 above. The table highlights some important trends regarding the settlement patterns of the island. The table points to the fact that 99 percent of the land conveyed in Kingston was composed of small unclassified lots. Land sales in Kingston reflect the fact that it was the smallest and most densely populated parish in Jamaica. The port function of Kingston during the course of the eighteenth century led to the development of the parish as the chief trading district on the island. There were a large number of merchants, skilled tradesmen, sailors, coppersmiths, and jobbing slaves who worked and settled within this urban context. What the table also highlights is the level of agricultural diversification in the different parishes. In parishes like St. Andrew, sugar cultivation was undertaken with that of coffee, pimento, and livestock farming. An interesting trend which emerged that is confirmed by the Accounts Produce for estates is that most of

Jamaica's livestock pens were located on the southern side of the island with high concentrations in the parishes of Clarendon and St. Elizabeth.[200]

Influence of Gender in Jamaica's land market.

Land transactions in Jamaica transcended class and gender barriers. Land transfers involved planters, merchants, professionals, tradesmen, freed blacks, and women. The extent to which gender affected Jamaica's land market and the role it played in the distribution of land will be examined below. The perception of eighteenth century Jamaican women as peripheral figures within the framework of the plantation complex has contributed to their exclusion from the historiography. White women for example were given the stereotypical role as leisured consumers; enslaved black women were seen as producers and wenches, while coloured women were perceived as servants of the planter elite. The marginality of women within the plantation complex extended to political representation where their representation in the island's Assembly was non-existent. It is within this context of patriarchal dominance that the distribution of land in Jamaica will be undertaken. [201]

Jamaican land law was an extension of English land law which stipulated that women could not own realty except through their husbands. Under Law 63 of The Married Women's Property Law in 1663[202] when a woman was married, her dowry went to her husband. If a woman predeceased her husband he became the sole heir of her possessions, regardless of him

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[200] Jamaica Archives, Accounts Produce, 1B/11/1-26.
[201] Hilary Beckles, *Centering Woman*
[202] The Law remained in force throughout Jamaica's plantation period and was eventually repealed in 1870.

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remarrying. [203] If the husband predeceased his wife the normal disposition was a third to his wife, the same to his children, and a third to whomever else he chose. There is clear evidence that patriarchy dominated familial relations in Jamaica. Emerging from this was the prevalence of a unilineal system whereby children inherited property from their father. In such societies where the ideology was so pervasive, the transference of realty resulted in the passing of land from fathers to sons, and disposables from fathers to daughters.[204]

The principal method by which property was transferred in Jamaica was through the principle known as primogeniture. Primogeniture is the practice whereby property passes intact through a single male heir, usually the eldest son. For the planting elites of Jamaica, the practice of primogeniture had its benefits. Entrance into the aristocracy was based on the ownership of property, or more specifically, land. Through established customs, it became difficult for 'outsiders' to rise through the ranks and own the requisite acreage to become a part of the aristocracy. Primogeniture was therefore a mechanism used by planters to consolidate their holdings which had the effect of monopolizing land into fewer hands. The other mechanism used by the planters with great effect was entailing. The principle of entailing was simply the transference of realty in trust from one generation to the next.

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[203] The most famous example of this practice involved the marriage of Thomas Grosvenor and Mary Davies in 1677. Mary Davies was the heiress to thousands of acres in Westminster, England. Her Westminster possessions were transferred to her husband Thomas, who consolidated the holdings which has remained with the Grosvenors to this day. See Francis Sheppard, "The Grosvenor Estate, 1677-1977", *History Today*, 27 (1977): 726-33.
[204] Anne Laurence , *Women in England, 1500-1760: a social history* (1994), p. 227-235; Basil Edwin Lawrence, *The History of the Laws affecting the property of married women in England* (1884); Amy Louise Erickson, *Women and property in early modern England* (1995).

A close examination of Jamaican wills highlight the prevalence of such customs amongst the island's leading planter families.[205] There are 312 wills that cover both the seventeenth century and eighteenth century. Of that number, 17 percent were made in the seventeenth century, with the remaining 83 percent covering the eighteenth century. The data are somewhat skewed towards large landholding families and merchants. Nevertheless, the wills provide useful insight into the practices of these families. They reveal a high degree of inter marriage and the prevalence of the practices of primogeniture[206] and entailing.[207] Of the 312 wills, 206 or 66 percent involved the passing of realty. From this figure, realty was passed to a male heir 76 times or 37 percent. But this was only in cases where there was a male in the family. There was a high percentage of transfer among other family members, but this must be viewed in the context that there was no male heir in the family. So, of the 76 times when there was a male heir, there was only one case where land was not transferred to that male. This may have arisen from a family dispute.[208] The practice of primogeniture was evident in the transference of property by Roger Elleston. Elleston was a Jamaica planter who owned the Hope Estate in St. Andrew parish. The Hope Estate was located along the fertile Liguanea plains. The land was favourable to cane cultivation and as a result Hope was a monoculture estate by the beginning of the eighteenth century.[209] On June 17, 1691, Roger Elleston bequeathed the Hope Estate and all adjoining property to his eldest son, Richard. His other son Charles received £1,000 at the age of twenty

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[205] Add Ms. Abstract of Wills proved in Jamaica, 1625-1792.
[206] Add Ms. Abstract of Wills proved in Jamaica. See folios 15, 18, 19, 20, 24, 25, 36, 45, 60, 86, 107, 128, 132, 140, 141, 154, 165, 166, 170, 200.
[207] Add Ms. Abstract of Wills proved in Jamaica. See folios 1, 11, 12, 14, 56, 63, 76.
[208] Add Ms. Abstract of Wills proved in Jamaica, p. 123. On September 9, 1695, John Cossley bequeathed all his estate, real and personal, in England and in Jamaica, to his wife Mary and her heirs. To his son John Cossley, he bequeathed 1d. for "being unditufull and disobedient and barr of all claims whatsoever as fully and effectually as if he had never been my Sonne".
[209] William Claypole, Land Settlement and Agricultural Development in the Liguanea Plain, 1655 to 1700, M.A. Thesis, University of the West Indies, Mona, 1970.

three, and Ann, his daughter, the same at age twenty or marriage.[210] The use of primogeniture as a tool to consolidate holdings becomes clearer when one tracks the ownership of the Hope Estate throughout the eighteenth century and nineteenth century. In 1754, Hope was a burgeoning estate that was owned by Thomas Elleston, the grandson of Roger Elleston.[211] By 1813, ownership of the Hope Estate remained in the hands of the Elleston family. Thomas Hope Elleston owned Hope and the nearby Papine Estate.[212]

Entailing was a common practice among Jamaica's land owning class. An example of this practice is evident in the will of Richard Beckford. In 1678, Richard Beckford, then Lord Mayor of London, made his wife Frances, his beneficiary. Beckford's will and testament gave Frances Beckford the rights and privileges to his property in Greenwich, England and his plantations in Port Royal and St. Catherine, in Jamaica. However, at Frances' death, all of Richard Beckford's property went to his son George. George Beckford therefore became sole owner of his father's holdings when his mother Frances died, who during her lifetime, was never owner, but tenant-in-common. By not bequeathing his holdings to his wife Frances, Richard Beckford was engaged in a common practice among landholders at the time. Most testators made provisions for their wives to enjoy the privileges to which they had been accustomed. These privileges lasted until death or if the wife decided to remarry.[213] A similar scenario emerged in the will of George Barclay. Barclay was a merchant who at the time of making his will resided in London. The document does not reveal much about Barclay or his children. Neither does it reveal the full

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[210] Add. Ms. Abstract of Wills proved in Jamaica, p. 86.
[211] PRO. CO 137/28, p. 170-74, Board of Trade Correspondence.
[212] Jamaica Archives, Spanish Town, Almanack, 1813.
[213] In the will of Robert Symes, dated May 13, 1783, it was stipulated that his wife Jane receive an annual income of £500 for the rest of her life as well as the use of his house in Esher, England, while remaining his widow. Add Mss. 341181 Abstract of Jamaica Wills, 1625-1792, folio 76.

extent of Barclay's holdings in Jamaica. However, on April 15, 1755, Barclay bequeathed his Jamaican holdings to his children. The will stated quite clearly that Barclay's children were only tenants-in-common. They were given the rights and privileges to his holdings, but as is the case with entailing, they could not dispose of such property. In effect, the children were obligated to transfer the holdings to their heirs.[214] In effect primogeniture and entail removed women from the succession of realty.

Women's involvement in Jamaica's land market followed a similar trend to the argument outlined above. The gender disparity in the distribution of land for the selected years is highlighted in tables 4.7a and 4.7b below.

Table: 4.7a Size of Holdings sold by Gender, 1750-1810

Size of Holdings	Conveyors		Total
	Female	Male	
<acre	163	849	1,012
1-10 acres	26	225	251
11-50 acres	27	345	372
51-300acres	59	798	857
301-600 acres	13	222	235
601-1000 acres	5	131	136
>1000 acres	1	89	90
Total	294	2,659	2,953

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300-305,376-384,427-431, 469-485,535-547

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[214] Ibid, folio 63.

Table 4.7b Size of Holdings purchased by Gender, 1750-1810

	Conveyees		
Size of Holdings	Female	Male	Total
<acre	141	871	1,012
1-10 acres	25	226	251
11-50 acres	23	349	372
51-300acres	21	836	857
301-600 acres	3	232	235
601-1000 acres	0	136	136
>1000 acres	0	90	90
Total	213	2,740	2,953

Source: Deeds, Old Series Liber, Island Records Office, Jamaica,
vols. 138-142, 183-186, 235- 240, 300-305,376-384,427-431,
469-485,535-547

Women disposed of holdings of all sizes in Jamaica during the eighteenth century. Based on table 4.7a, the size of holdings disposed of ranged from less than 1 acre to over 1000 acres. This, however, does not give a clear picture of landholding in Jamaica, because on close examination of the table, women comprised just 11 percent of those conveying land for the selected period. The trend that emerges from this is that 55 percent of these women were involved in the sale of land less than one acre; 9 percent in the sale of land between 1 and 10 acres and 8 percent in land sales between 11 and 50 acres. Therefore, roughly 73 percent of women were involved in the sale of land ranging from less than 1 acre to 50 acres. In relation to the purchasing of land, there was a high percent of women buying land less than one acre. But one should note also the fact that while women conveyed large acreages over 600 acres, at no point did they purchase land over 600 acres. What this suggests is that on balance women were more active as sellers than buyers of land in the eighteenth century.

Land Price

The determination of land price in Jamaica was based on the size of the holdings sold. Based on the conveyances for the selected years, small holdings were sold for higher prices than larger holdings. A clear pattern of how the size of holdings influenced the price per acre of land is shown in figure 4.3 below. Figure 4.3 shows that the price per acre gradient slopes downward from left to right revealing that the smaller the size of the holding, the higher its price. Therefore, holdings between 1 and 10 acres were being sold at an average price

Figure 4.1 Average price per acre of land based on size of holdings sold, 1750-1810
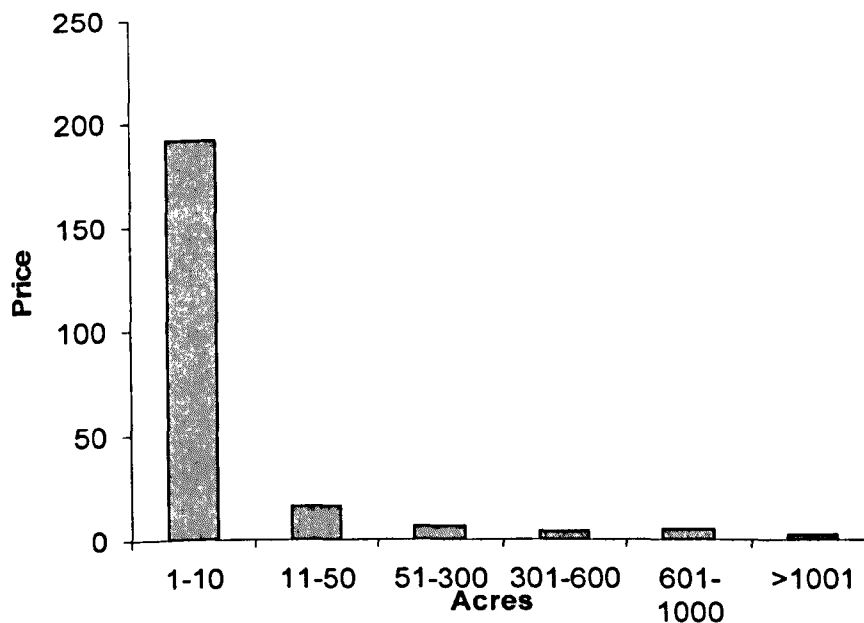
Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300-305,376-384,427-431, 469-485,535-547.

of £191 per acre while holdings between 11 and 50 acres were being sold at an average price of £16 per acre. As the gradient shifts right, the average price per acre decreases while the number

of acres increases. As such, the average price per acre for land in Jamaica greater than 1001 acres was 0.98 shillings.

The price differential between size of holdings transferred is due to the quality of land concerned and the intensity to which the various holdings are used. Smaller lots carried less wasteland and as a result were more intensively used by planters. The reverse was true for larger lots which usually had more wasteland and as such were not as intensively used by planters in the same way smaller lots were used. This suggests that the application of these small lots to agriculture provided a greater yield per acre than the yield per acre gained from larger lots. The fact that smaller lots carried a higher economic rent reflects to some degree the competing use for land among agricultural units. This was true for urban areas also where land was used for commercial and residential purposes, which resulted in high demand for these lots, and ultimately higher prices.

Competition for spatial concentration among agricultural units is determined by economic rent or yield per acre. The issue of competition between agricultural units in the eighteenth century economy of Jamaica was first raised by Edward Long. According to Long, livestock pens were relegated to the agricultural fringes in preference for the larger and more capital intensive sugar estates. In essence, the more fertile and cultivable land was given over to sugar production or sugar related issues. So, it was common practice for planters to purchase land to be used as adjuncts. In most cases, these lands were small acreages that were used as cane fields or as livestock pens. In the case of the latter, the estate would be able to raise its livestock, which would provide it with meat and manure. This trend is confirmed by other evidence. In 1832,

Andrew Colville, a Jamaican planter, told a Parliamentary Select Committee investigating the state of trade and commerce in the British West Indies that it was customary for smaller holdings to fetch a higher price than larger holdings throughout the island. When questioned as to the price offered for small holdings, Colville cited an example where one acre of land was sold for £100, and it was sold to a planter who wanted the land for pasturage. In Colville's estimation, the price was justified in light of the fact that the land facilitated the expansion of the planter's estate, and that the benefits to be accrued from its use were significant.[215] The higher yield per acre of land gained by sugar estates meant that land devoted to cane cultivation offered a high economic return and was more an attractive alternative to other forms of agricultural activity. The economic rent that sugar cultivation enjoyed led to the exclusion of livestock pens and other crop types from the fertile plains of Jamaica. As a result of this, a high percentage of pens were located along the savannah-like regions in St. Elizabeth, or at elevations above 2000 ft, and specialized pen zones emerged in the parishes of St. Ann and St. Elizabeth, with high concentrations in Hanover, Vere and St. Catherine[216].

It must also be noted that agriculture land was not the only land that carried a high price tag. As seen in table 4.8 below, the average price per acre of land was higher in the urban areas than it was in the rural agricultural districts. Overall, the parties involved in the buying and selling of small lots in the both the rural and urban areas were planters and merchants, with freed blacks buying even smaller lots for housing.

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[215] British Parliamentary Papers, Select Committee Reports and Correspondence on the Trade and Commerce of the West Indies with Minutes of Evidence and Appendices, 1806-1849, p.185-87.
[216] Edward Long, *History of Jamaica*, vol. 1, p. 380; B.W. Higman, *Slave Population and Economy in Jamaica*, p. 25-26, Verene Shepherd, "Pen and Pen-Keepers in a Plantation Society".

The pattern of land sales in the different parishes of Jamaica confirms the trends which have emerged in figure 4.3. This is not surprising because the general principle involving the sale of land remains constant, this allows for an understanding of the extent to which land prices varied in Jamaica during the height of the plantation period. These trends are highlighted in table 4.8 and 4.9 below. Table 4.8 presents data regarding the parish distribution of the average price per acre of land based on the size of holdings sold. In table 4.9, data is provided on the annual distribution of average price per acre based on size of holdings sold.

Table 4.8 Mean prices per acre equivalent by parish and size of holdings, 1750-1810

Parish	Kingston	Port Royal	St. Catherine	St. Andrew
Total Parcels	744	80	182	215
Mean Price per acre	£6,646.76	£9,914.46	£4,909.37	£132.75
No. parcels less than one acre	720	41	86	16
Mean Price per acre	£6,861.04	£19,107.52	£10,371.45	£993.93
No. of parcels between 1 and 10 acres	12	1	12	25
Mean Price per acre	£389.46	£9,480.76	£55.88	£397.17
No. of parcels between 11 and 50 acres	8	6	16	54
Mean Price per acre	£68.59	£15.57	£40.20	£35.38
No. of parcels between 51 and 300 acres	3	16	45	90
Mean Price per acre	£5.31	£8.19	£3.86	£8.03
No. of parcels between 301 and 600 acres		7	12	17
Mean Price per acre		£2.28	£5.15	£1.56
No. of parcels between 601 and 1,000 acres		7	9	11
Mean Price per acre		£3.93	£1.24	£4.47
No. of parcels greater than 1,000 acres	1	2	2	2
Mean Price per acre	£0.00	£0.05	£0.58	£0.00

Parish	St. David	St. Thomas East	Portland	St. George
Total Parcels	31	102	44	89
Mean Price per acre	£6.73	£132.19	£463.36	£9.23
No. parcels less than one acre		7	9	
Mean Price per acre		£1,838.31	£2,222.80	
No. of parcels between 1 and 10 acres		4	1	12
Mean Price per acre		£17.08	£293.12	£27.83
No. of parcels between 11 and 50 acres	8	22	5	13
Mean Price per acre	£13.63	£9.72	£1.88	£7.47
No. of parcels between 51 and 300 acres	15	39	18	43
Mean Price per acre	£5.38	£6.36	£3.53	£5.74
No. of parcels between 301 and 600 acres	4	12	8	11
Mean Price per acre	£1.90	£2.22	£2.05	£4.74
No. of parcels between 601 and 1,000 acres	3	11	2	3
Mean Price per acre	£1.80	£3.73	£0.00	£27.47
No. of parcels greater than 1,000 acres	1	7	1	7
Mean Price per acre	£6.09	£2.45	£0.00	£1.33

Parish	St. Mary	St. Ann	St. James	Hanover
Total Parcels	92	177	196	88
Mean Price per acre	£691.95	£30.18	£1,548.63	£686.64
No. parcels less than one acre	3	8	34	9
Mean Price per acre	£20,724.64	£527.60	£8,833.37	£6,073.32
No. of parcels between 1 and 10 acres	6	9	21	14
Mean Price per acre	£138.06	£30.06	£92.09	£360.19
No. of parcels between 11 and 50 acres	21	28	31	17
Mean Price per acre	£6.30	£12.53	£18.44	£26.74
No. of parcels between 51 and 300 acres	39	84	83	25
Mean Price per acre	£11.54	£3.70	£7.22	£6.60
No. of parcels between 301 and 600 acres	6	27	14	13
Mean Price per acre	£5.68	£5.02	£4.95	£5.31
No. of parcels between 601 and 1,000 acres	9	10	11	8
Mean Price per acre	£3.63	£2.72	£1.62	£3.93
No. of parcels greater than 1,000 acres	8	11	2	2
Mean Price per acre	£0.96	£2.41	£2.62	£0.73

Parish	Westmoreland	St. Elizabeth	Clarendon	Vere
Total Parcels	157	208	135	81
Mean Price per acre	£517.73	£174.76	£10.19	£8.42
No. parcels less than one acre	13	13	1	
Mean Price per acre	£5,851.57	£2,569.37	£0.00	
No. of parcels between 1 and 10 acres	27	14	8	14
Mean Price per acre	£165.86	£148.33	£91.94	£23.30
No. of parcels between 11 and 50 acres	40	34	23	22
Mean Price per acre	£9.35	£6.48	£6.33	£7.04
No. of parcels between 51 and 300 acres	46	97	65	27
Mean Price per acre	£5.58	£4.20	£5.17	£5.47
No. of parcels between 301 and 600 acres	18	22	14	10
Mean Price per acre	£3.84	£3.51	£3.84	£1.87
No. of parcels between 601 and 1,000 acres	6	13	15	4
Mean Price per acre	£0.75	£2.00	£4.63	£1.44
No. of parcels greater than 1,000 acres	7	15	9	4
Mean Price per acre	£4.49	£2.45	£3.90	£7.08

| Parish	St. John	St. Dorothy	St. Thomas Vale	Trelawny
Total Parcels	69	37	53	168
Mean Price per acre	£10.44	£23.58	£6.25	£2,058.93
No. parcels less than one acre		1		51
Mean Price per acre		£485.44		£6,641.67
No. of parcels between 1 and 10 acres	1	4	1	19
Mean Price per acre	£0.00	£7.38	£6.00	£300.10
No. of parcels between 11 and 50 acres	15	10	10	32
Mean Price per acre	£8.82	£25.67	£3.90	£28.56
No. of parcels between 51 and 300 acres	43	13	28	36
Mean Price per acre	£13.34	£4.93	£8.48	£6.64
No. of parcels between 301 and 600 acres	5	6	11	18
Mean Price per acre	£1.08	£4.34	£3.71	£5.35
No. of parcels between 601 and 1,000 acres	3	2	2	7
Mean Price per acre	£2.12	£5.29	£0.98	£26.02
No. of parcels greater than 1,000 acres	2	1	1	5
Mean Price per acre	£1.36	£0.03	£5.83	£8.22

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300– 305,376-384,427-431, 469-485,535-547.

Table 4.9 Mean prices per acre equivalent by year and size of holdings, 1750-1810

Acres	1750	1760	1770	1780	1790
	£	£	£	£	£
< acre	4839.56	10,365.02	3,198.43	5982.28	3,036.87
1-10 acres	25.61	75.15	66.79	398.96	64.23
11-50 acres	6.33	16.26	6.36	14.56	10.71
51-300 acres	5.92	3.21	7.40	4.83	5.33
301-600 acres	2.42	2.11	1.07	2.17	2.27
601-1000 acres	2.91	0.44	2.21	2.82	5.01
>1000 acres	3.13	1.06	0.90	0.73	0.26
	1795	1800	1805	1810	
	£	£	£	£	
< acre	7,595.79	9,033.85	7,677.24	12,763.65	
1-10 acres	250.43	183.89	531.88	81.83	
11-50 acres	14.80	22.93	27.02	21.13	
51-300 acres	4.87	9.31	7.09	7.20	
301-600 acres	4.44	7.16	5.62	9.12	
601-1000 acres	5.09	6.33	10.80		
>1000 acres	3.9	5.76	2.63	0.55	

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300– 305,376-384,427-431, 469-485,535-547.

A clear trend emerges in relation to the average price per acre of land sold and the size of the holdings. The trend is that the average price per acre of land was highest in parishes with holdings less than one acre. In the parish of Kingston, for example, 97 percent of the total transactions involved the sale of lots less than one acre. Therefore, the average price per acre of land less than one acre was being sold for £6,861.04. We are able to observe, that as the acreages increased to between 1 to 10 acres, there was a sharp decline in the average price per acre of land to £389.46, and it continued its downward trend the higher the acreages being sold.

The average price per acre of land was also high in the parishes of Port Royal, St. Catherine, St. Mary, St. James, Hanover and Westmoreland. A high percentage of the land transactions in these parishes were for conveyances that were less than one acre. But while the size of holdings

relative to the number of transfers is a crucial determinant, it is evident that regional factors also played a role in determining the price per acre of land in these parishes. With the exception of Spanish Town, the island's capital, all the other parishes mentioned earlier had major ports that were crucial to the development of Jamaica's plantation economy during the eighteenth century. Many of these ports offered planters an alternative to the port of Kingston where they could import African labour and plantation supplies and ship their produce to the British or mainland market. In the context of eighteenth century Jamaica, these port towns were major urban and commercial centres.

In spite of the high levels of consolidation among the plantocracy, thousands of patented acres were granted to potential settlers by the Crown as an incentive to settle on the island. The location of these holdings was usually in the remote areas that were deemed by the colonial authorities to be in need of settlement. In addition, the location also served to counter the threat posed by the runaway slave communities in the hinterland.[217] The situation in the urban commercial areas was different. The density of the commercial areas created a higher than usual demand for land. An analysis of the transactions undertaken in the parish of Kingston supports this point. Kingston was the most densely populated parish in Jamaica and unlike most parishes, it had no rural area. The parish's rapid urban development was due in part to its unrivalled dominance as the leading port in the British West Indies, and indeed in the eighteenth century Atlantic economy. Colonial trade statistics show that it was the leading port in terms of the frequency and tonnage of goods imported and exported from the British West Indies, a trading

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[217] Edward Long, *The History of Jamaica,* vol. 1, p. 326-40; Frank W. Pitman, *The Development of the British West Indies,* p.108-126.

activity that increased during the eighteenth century.[218] In consequence, the pool of merchants, freed blacks and other professionals who were in a position to buy land grew larger. Edward Brathwaite, in his analysis of urban Jamaica, highlighted the accumulation of wealth by the island's merchant elites who later invested their new found wealth in large sugar estates. What this points to is the fact that more wealthy merchants and professionals emerged as a result of Jamaica's colonial trade towards the end of the eighteenth century than there were at the beginning.[219]

The situation was the same in Montego Bay (St. James) and Falmouth (Trelawny). A significant feature of the eighteenth century was the development and contribution of these out-ports in the island's colonial trade. From as early as 1758, Montego Bay was the second loading port behind Kingston in the export of sugar and rum, and by 1805, Montego Bay, along with Falmouth, Lucea and Savanna-la-mar combined, it exported over 50 percent of the sugar and rum produced in the island.[220] The merchant class in these towns was not as large or as wealthy as the one in Kingston, but the features and the rate of capital formation among its class was similar. In Montego Bay and Kingston, over 50 percent of the transactions involved merchants. Coupled with this is the fact that in Kingston, 88 percent of the land transactions were located beside a street, with 43 percent in close proximity to the wharf along Harbour, Port Royal and King Streets. It is worth mentioning too that freed blacks were active in the buying and selling of land in these urban areas. However, their holdings were located in the tenement areas along Hanover, Charles and Queen Street.

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[218] Chapter Two presents an outline of the importance of Jamaican ports.
[219] Edward Brathwaite *The Development of Creole Society in Jamaica*, p. 117.
[220] See Chapter Two.

One way of determining the location of a particular holding, and to see whether or not the holding was in the rural area, is to analyze its boundary. Of the 2,953 transactions analyzed, some 2,899 transactions contained information on the boundaries of the holdings transferred. From the analysis, the assumption is made that holdings contiguous to sugar estates, rivers, livestock pens, and mountain land that had no road network were somehow located in the hinterland areas of the island. This possibility is raised when one considers the development and

Table 4.10 Location of holdings transferred, 1750-1810

BOUNDARY	Sugar Plantation	Part of Sugar Plantation	Pen	Part of Pen	Coffee Plantation	Part of a Larger Run	Unclassified	Pimento Plantation
Not Available	5	0	3	0	0	2	37	0
King's Road	2	0	2	1	0	3	167	0
Road	0	0	7	0	0	6	149	0
Sea Shore	5	0	0	0	0	2	75	0
River	8	0	2	1	1	7	172	0
Swamp	0	0	0	0	0	0	8	0
Mountain Land	1	0	0	0	2	1	53	0
Estate	10	1	0	1	0	3	181	1
Pen	1	0	4	2	0	0	85	0
Coffee Plantation	0	0	0	0	0	0	1	0
Woodland	0	0	0	0	0	2	21	0
Street	0	0	0	2	0	0	771	0
Sundry	16	0	15	5	2	38	966	1
Unsurveyed Land	3	0	0	0	0	0	99	0
Total	51	1	33	12	5	64	2,785	2

Source: Deeds, Old Series Liber, Island Records Office, Jamaica, vols. 138-142, 183-186, 235- 240, 300– 305,376-384,427-431, 469-485,535-547.

settlement pattern of the island during the eighteenth century. The evidence presented by Edward Long suggests that the settlement of the island was a slow and problematic process. In Long's estimation, peopling the island was the most important task facing the country. [221]

Nevertheless, such a task was difficult in light of the general lack of infrastructure throughout the country, though there were several legislative attempts to improve it. By extension this would have facilitated the transport of sugar to the local wharves and onto the overseas market.[222] However, despite the improvement in infrastructure most of the lots sold were located in the rural parts of the island. Table 4.10 above highlights the low number of holdings that bordered a King's Road or secondary road, which suggests that most holdings were located in the hinterland areas of the island.

The location of the holdings sold was also a factor that influenced the price of land in eighteenth century Jamaica. The greater the distance from the commercial centre, the lower was the price per acre of land. This becomes clear when examining the price per acre of land in parishes that had both rural and urban centres. In the parish of St. James for example, the average price per acre of land in the distant area of Rio Bueno ranged from £2.62 to £92.09 while in Montego Bay the average price per acre was £8,833.37. When one examines the situation in relation to Kingston, the trend is the same. As stated earlier, Kingston had no rural area, but an analysis of land prices in parishes contiguous to Kingston, as well as those somewhat farther away, shows that the average price per acre of land in these parishes was lower than the average price per acre in Kingston. Table 4.8 shows that the average price per acre of land was lower in the surrounding

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[221] Edward Long, *The History of Jamaica*, vol. 2.
[222] PRO CO 139/17-31 Acts of Jamaica, 1662-1832.

parishes of St. Catherine, St. Andrew, St. David, Portland, St. Thomas East and St. George. Therefore, the further one moves away from the commercial centre of Kingston, the lower the price per acre of land.

Further insight into how regional factors influenced land price and land use patterns is seen in the application of the location rent theory that was first articulated by the classical German economist, von Thunen. In 1826, he outlined this location-rent theory in *The Isolated State,* a work that was based on observations he carried out on his estate at Tellow, near the city of Rostock, Germany. He suggested that one should

Imagine a very large town, at the centre of a fertile plain which is crossed by no navigable river or canal. Throughout the plain soil is capable of cultivation and of the same fertility. Far from the town, the plain turns into an uncultivated wilderness which cuts off all communication between this State and the outside world.

There are no other towns or plain. The central town must therefore supply the rural areas with all manufactured products, and in return it will obtain all its provisions from the surrounding countryside. The problem we want to solve is this: What pattern of cultivation will take shape in these conditions?; and how will the farming system of the different districts be affected by their distance from the Town? We assume throughout that farming is conducted absolutely rationally.

It is on the whole obvious that near the Town will be grown those products which are heavy and bulky in relation to their value and hence so expensive to transport that the remoter districts are unable to transport them. Here too we shall find the highly perishable

products, which must be used very quickly. With increasing

distance from the Town, the land will progressively be given up

to products cheap to transport in relation to their vale.

For this reason alone, fairly sharply differentiated concentric rings

or belts will form around the Town, each with its own particular

staple product.[223]

Von Thunen's hypothesis is therefore based on the premise that the use to which land is allocated

depends upon competition by the various units for a particular plot of land. Therefore, the unit

that yields the highest net return will be located closer to the town and competing units will be

relegated to fringe areas of a lesser quality. The boundaries of the concentric rings or belts that

are formed around Von Thunen's 'Town' would be defined by the principle of economic rent.

This is the return which can be realised from a plot of land over and above that which could be

realised from a plot of the same size at the margin of cultivation. This return, it must be noted, is

an unearned payment that planters were willing to pay because yield per acre was usually higher

than yield per acre on alternative land. This concept of economic rent was first espoused by the

classical economist, David Ricardo. Writing in response to the situation in Great Britain during

the Napoleonic Wars when corn prices rose dramatically, Ricardo argued that the variations in

economic rent were caused by soil quality and population density. He suggested that an increase

in population and the resulting rise in demand would force authorities to expand agricultural

output to facilitate such change. But the supply of land was more or less fixed therefore land of a

lesser quality had to be brought into cultivation. So, the yield per acre that resulted from the

alternative land, because of the relatively poor quality, would be less than the land already under

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[223]Von Thunen , Johann Heinrich *The Isolated State* edited with an Introduction by Peter Hall (1966), p. 7-8.

cultivation. Assuming that the cost of production and market prices are constant the difference in yield is what is termed as economic rent.[224]

Von Thunen's concept of economic rent is different in some respect to that put forward by David Ricardo. Whereas Ricardo's concept of economic rent rested on the quality or fertility of the soil, there is a strong assumption in Von Thunen's model that all land has identical productivity. With such land homogeneity, it is the distance, or rather, the cost to the planter in money, and time, in overcoming this distance that will yield economic rent, which in turn influences location.[225]

It is important to point out that Jamaica did not produce land homogeneity so clearly articulated by Von Thunen. However, what was apparent throughout the eighteenth century was the relationship that existed between profit maximization and distance. Most of the goods produced in Jamaica were exported to an overseas market.[226] The fact of not having a localized market meant that transport cost, leakage/waste, and transporting in bulk were important considerations of the planters. The spatial location of Jamaica's sugar estates supports this argument. While Britain and the mainland colonies were the intended markets for Jamaica's produce, the port towns were the areas to which plantation produce had first to be transported. Therefore, the closer the sugar estates were to these towns, the more money the planters saved on freight cost, and on leakage/wastage, and this would result in higher economic rent relative to estates that were further from these towns. This least cost principle was central to the thinking of Jamaican planters during the eighteenth century and nineteenth century and many applied it when setting up their sugar estates. William Beckford, the well known Jamaican planter, in writing on the

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[224] William J. Barber, *A History of Economic Thought* (1991).
[225] Ibid.
[226] See Chapter Two.

importance of minimizing distance suggested to his peers the necessity of having contiguous cane fields. This, he argued, would reduce the time between the harvesting and processing of the cane which in turn would lower the rate of spoilage.[227] The location of most estates along transport arteries supports the argument that land price in Jamaica was also determined by the relative location of plantations to commercial centres.

Land market and growth

It is clear, based on the evidence so far that Jamaica had an active land market between 1750 and 1805. How that market facilitated growth in the island's economy is partially explained by the expansion in sugar estates during the same time. But growth is also discernible if one were to examine the general levels of activity through time by comparing annual land transactions with those of annual export data.

To do this, the data presented on land sales for the selected years are matched against sugar exports during those same years in table 4.11 below. The link between the local land market and the product market is obvious for the years shown. With the exception of 1760 and 1805, there seems to be a clear pattern between land sales and sugar exports. Incremental increases in land sales were matched by corresponding increases in sugar exports. It is also observable that between 1790 and 1795, land sales declined by 18 percent, while the island's sugar exports declined from 53,887 tons to 49,386 tons.

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[227] William Beckford, *A Descriptive Account of the Island of Jamaica* (1790), p. 47.

**Table 4.11 Relationship between land use
and sugar exports**

Year	Total Acres Sold	Sugar Exports in tons
1750	82,151.41	18,625
1760	24,329.02	26,638
1770	49,314.35	32,676
1780	89,509.51	40,351
1790	76,171.85	53,887
1795	73,803.23	49,386
1800	111,107.68	65,209
1805	38,208.43	78,053

Further evidence of the link between the island's land market and expansion is visible when one compares the levels of transactions in some sugar parishes against those in non-sugar parishes.[228] We saw earlier that the majority of sugar estates were located in the sugar producing parishes of St. James, Hanover, Westmoreland, Trelawny and St. Elizabeth (the County of Cornwall), while there was an equally high concentration in the parishes of Clarendon and Vere (the County of Middlesex). The number of transactions and acres sold in the sugar parishes were far greater during the selected years than that of the non-sugar parishes. By the late eighteenth century, there was a symmetrical relationship in land sales between the sugar producing parishes and the non sugar producing ones. The parishes of Portland and St. Mary, which are located in the eastern section of the island, witnessed a slowing down in the land market compared to the sugar producing parishes of St. James, St. Elizabeth, and Trelawny in the West. Clearly, the geographical shift in plantation output from the east to the west is an important contributor. Not only were the majority of estates located there, but the majority of the island's sugar exports (51

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[228] Kingston was the only parish where sugar was not produced. Therefore, the term sugar producing parish as opposed to non-sugar parish is used here to refer to those parishes that had a greater concentration of sugar estates due to topography.

percent) came from that region as well. [229] Therefore, the overall expansion in land use in the late eighteenth century is reflected in the expansion in the island's product during the same time. It some years, the island's sugar exports mirrored the trend in land sales during the period.

Acres under Cultivation

Identifying a crop-specific estimate for the number of acres under cultivation during the eighteenth century is difficult, to say the least. One major difficulty that confronts those who investigate Jamaica's eighteenth century plantation economy is the lack of systematic data on land use. Despite the many studies of the island's sugar sector, no systematic data are available on the total number of acres devoted to the planting of sugar cane. What we have are spot data on the number of acres devoted to the planting of some minor staples during this period. According to Edward Long, in 1751, 15,400 acres of land was devoted to cotton cultivation; 6,000 acres to pimento; 4,400 acres to ginger and 108,000 to livestock farming.[230] He does not provide the reader with an estimate of the total acreage under sugar cultivation. This is an important omission because Long twice provided estimates of the number of sugar plantations in 1751 and 1768, yet no mention was made of the total acreage in cane cultivation.[231] Long was not the only contemporary examining the plantation economy who side-stepped this issue. In a survey of the island in 1763, Thomas Craskell highlighted the location and the type of mills used on the various sugar estates as well as the location of livestock pens, ginger, cotton, coffee and pimento plantations during the period, but, like Long, Craskell did not provide an estimate of the total

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[229] See Chapter Two.
[230] Edward Long, *The History of Jamaica*, vol. 1. p. 495.
[231] Ibid, vol.1, p. 412, vol. 2, p. 45-224.

acres under sugar cultivation.[232] The first estimate identified was the one that was sent to the Board of Trade in 1774. In responding to queries on the state of the Island in 1774, the Jamaican authorities informed the Board of Trade that 1,859,114.50 of the island's 3,500,000 acres were under cultivation.[233] However, there is a question mark over this 1774 estimate, related to the methodology of estimation. The 3,500,000 acres reported exceeded the actual size of the island. It is not clear whether the estimates provided were based on a systematic investigation of the island's land use patterns at the time, since 10 years earlier Thomas Craskell had conducted an island-wide survey but no estimates were ever presented. A systematic inquiry was conducted in 1804 in an effort to bring order to a system that they knew little about. The survey conducted by James Robertson in 1804, was similar in some respects to the island-wide survey carried out by Thomas Craskell in 1763. The difference, however, was that Robertson's terms of reference were much wider because detailed analysis of the size of each parish was required, including the number of acres under cultivation in each parish and the number of uncultivated acres, as well as the spatial location of the different crop types. The published findings are highlighted in table 4.12 below. This shows that on the eve of abolition, 30 percent of the island was under some form of cultivation. The county of Cornwall accounted for the highest level of cultivation with 41 percent followed by Middlesex with 39 percent and Surrey with 20 percent. This trend confirms the observation made in Chapter Two that agricultural production was moving westward on the eve of abolition in 1805. One drawback to James Robertson's report, as well as that of 1774, is that the findings were not crop-specific. What we have are parish distributions which are useful in some respect, but the reader is no more informed as to the regional distribution of each crop or the total acres in cultivation for each crop.

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[232] Thomas Craskell, Maps of the Counties of Cornwall, Middlesex, and Surrey, constructed from actual surveys. CO 700/Jamaica 18-20.
[233] CO 137/71

Table 4.12 Total acres under cultivation in Jamaica, 1804

County	No of Acres	Acres Cultivated	Acres Uncultivated	Uncultivated Acres/ Fit for sugar	Uncultivable Acres/ Morass
Surrey					
St. Andrew	79,375	39,619	39,756	35,506	3,259
St. George	101,960	23,300	78,660	73,760	4,900
Portland	94,059	13,750	80,309	76,109	5,200
St. Thomas E	156,613	55,700	100,913	94,443	6,470
St. David	49,208	12,670	36,538	32,616	3,922
Port Royal	30,608	11,450	19,158	17,438	1,720
Kingston	3,100	2,300	800	764	36
Surrey Total	**514,923**	**158,789**	**356,134**	**330,636**	**25,507**
Middlesex					
St. Catherine	93,058	31,350	61,708	39,148	22,560
St. Thomas V	75,092	27,185	47,907	43,587	4,320
St. Mary	115,975	58,080	57,895	55,155	2,740
St. Ann	295,285	63,160	232,125	199,345	32,780
Clarendon	309,913	59,330	250,583	237,133	13,450
Vere	166,841	49,022	117,819	108,184	9,635
St. Johns	81,919	14,890	67,029	60,529	6,500
St. Dorothy	37,191	12,375	24,816	21,316	3,500
Middlesex Total	**1,175,274**	**315,392**	**859,882**	**764,397**	**95,485**
Cornwall					
St. Elizabeth	372,126	59,595	312,531	270,771	41,760
Trelawny	212,304	80,256	132,048	103,328	28,720
St. James	145,768	63,282	82,486	57,906	24,580
Hanover	106,381	75,033	31,348	22,378	8,970
Westmoreland	197,486	57,106	140,380	125,730	14,650
Cornwall Total	**1,034,065**	**335,272**	**698,793**	**580,113**	**118,680**
Total	**2,724,262**	**809,453**	**1,914,809**	**1,675,146**	**239,672**

Source: CO 700/Jamaica 25-27, James Robertson, Maps of the Counties of Cornwall, Middlesex and Surrey, constructed from actual surveys, 1804

The best documentation of Jamaica's eighteenth century plantation economy is the agricultural census taken in St. Andrew parish in 1754 at the request of Governor Charles Knowles. The census provides an estate breakdown of the level of agricultural inputs as well as the level of

production on each estate. It provides information on the name of the plantation, the name of the owner(s), a crop-specific total of acres under cultivation, the number of whites and enslaved on each plantation, and it lists the output of each plantation. However, the census is limited to St. Andrew parish because the island-wide effort to have a parish-by-parish enumeration of the agricultural sector failed.

In a letter to the Board of Trade and Plantations outlining the state of the Island in 1754, the newly appointed Governor, Charles Knowles, outlined the difficulties he experienced in trying to survey the chaotic state of landholding in Jamaica. He expressed the view that many of the proprietors possessed more land than granted by their original patent. But that was not the only problem he encountered. Of major concern was the situation surrounding the small settlers, many of whom, after having obtained a patent for a parcel of land, were forced from the land by wealthy landowners who claimed they had a prior patent. The claim of the wealthy landowners effectively dismissed the settlers from the land. To determine the true nature of the land question, Governor Knowles proposed that an island-wide survey of landholdings be conducted. Except for Mr. Edmund Hyde[234], the Custos of St. Andrew, the Custodes and the landed gentry from the other parishes viewed the Governor's request with suspicion. Most felt his true intention was not so much to measure landholdings as he publicly expressed, but rather to strip those landholders of their land where it was not put to productive use. Cognizant of the law, many proprietors would have been aware on receiving their patents that it clearly stated that the land was not to be left idle but to be cultivated and put to productive use. Whether or not that was Governor Knowles' intention, is open to speculation. What is clear though is that his request came at a

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[234] Edmund Hyde was Custos of St. Andrew in 1754. The returns for that year listed Mr. Hyde as owning 418 acres. His property was somewhat diversified as he devoted 2 acres to coffee, 12 acres to ginger, and 4 acres to ginger production. See P.R.O. CO 137/28 folio, 160-181, Board of Trade Correspondence.

time when there was strong inter-parish rivalry between Kingston and St. Catherine as to where the seat of Government should be held, and where the local records should be kept. Spurred by the burgeoning Transatlantic Trade in Africans and its multiplier effect, the merchants of Kingston felt, with some justification, that Spanish Town (in St. Catherine), the island's capital, had outlived its time, and that Kingston should be accorded the status of capital.[235] There was a lot of tension and mistrust in the island and many planters felt that Knowles had aligned himself with the pro-Kingston lobby. The eventual outcome was that Governor Knowles' bold initiative to survey landholdings across the island failed, as many planters, either by design or ignorance, linked the two unrelated issues. In the end, the only parish that complied was St. Andrew.

Contained within the St. Andrew census of 1754, are the names of the plantations, the total acres, the quality of land on each property, the total acres under cultivation, the number of enslaved on each property, the number of whites on each property, the number of cattle on each property, and the total output per plantation according to crop type. There is no discernible pattern to the organization of the data collected by Mr. Hyde. Properties were not ranked alphabetically, by total size, or productivity, but were presented in a rather ad hoc manner. For the benefit of this study and future investigations into Jamaica's plantation economy, a detailed breakdown of the 1754 census, showing land use patterns, is provided in Appendices A1-A3.

From the survey carried out by Mr. Hyde, there were 157 holdings in St. Andrew, comprising a total of 69,149 acres. Of the 157 holdings, 23 were listed as sugar estates comprising 22,301 acres, or 32 percent of the total area surveyed. The total area devoted to the planting of sugar was 3443 acres, or 5 percent of the acres surveyed at an average of 143.45 acres. So, only 3443 acres

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[235] CO 137/28 folio, 180-1, Board of Trade Correspondence.

was actually planted in sugar, whereas 22,301 acres was defined as sugar estates. That means a lot of land was required to service the sugar sector. Sugar was the dominant crop, producing 1916 hogsheads. Apart from sugar, the census shows that 27 percent of lands surveyed were in woodland, 19 percent were devoted to livestock farming, and no form of land use was identified for 36 percent of the holdings surveyed.[236]

In the absence of proper documentation on Jamaica's land use patterns, it is within the context of the 1754 census that estimation for the total acres under sugar cultivation for the island will be conducted. This exercise, though not definitive, is an important first step in trying to understand pre-1807 trends in land use patterns. Hopefully, it will encourage future investigation into an area of Jamaica's plantation economy that has not been given due consideration by scholars.

There are certain features of St. Andrew that were typical of the rest of the island. The first of these was the varied topography. The extent of topographical variation is seen in the level of agricultural diversification that existed within the parish's economy. From the distribution provided, sugar, coffee, cotton, ginger, cotton and livestock faming occupied contrasting spatial areas of the parish. Further diversification is seen when one examines agricultural land use among the enumerated sugar estates. The Golden Spring estate was one holding that had its boundary in the highlands areas of the parish. The topographical variation allowed it to combine sugar production with the cultivation of coffee and ginger. Owners of similar type estates took full advantage of the possibilities the land offered. Of the 24 estates surveyed by Edmund Hyde, only 6 or 25 percent were monoculture estates. The Hope and Pembroke Hall estates were located along the fertile plains just south of the Liguanea Mountains. The land type for these

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[236] See Appendices A1-A3 for a breakdown of landholdings in St. Andrew in 1754.

estates was much more favourable to cane cultivation which explains why they were monoculture estates. It explains also why Hope Estate was able to devote 56 percent of its land to cane cultivation. While sugar remained the dominant staple in St. Andrew, 3 percent, or 1,278 acres of land was devoted to the production of coffee, cotton, and ginger. [237]

The rainfall distribution for St. Andrew was similar to the rest of the island. It lies on the south east of the island and its annual rainfall ranges from 60 to 100 inches. This falls within the estimate for most of the island except for the two distinct mountain ranges in the centre and east of the island where the annual rainfall exceeds 100 inches in the Central range and over 200 inches in the Blue Mountain range, and the savannah-like regions to the south-west where the annual rainfall is between 40 to 60 inches.

Therefore, St. Andrew was a typical sugar producing parish whose topography and rainfall pattern was similar to the rest of the island. In light of this, the 1754 census data were used to estimate the total area under cultivation for some crops for the whole island. The results from this exercise are shown in table 4.13 below. Generally speaking, the findings suggest that as much as 78 percent of the land on the island was plantation land of some sort. It also suggests that as little as 5 percent, or 110,146 acres of land might have been devoted to the planting of sugar cane. This limited use of land in sugar cultivation is supported elsewhere. [238] The likelihood is that almost half of Jamaica was either in woodland or left idle because no form of agricultural activity was undertaken.

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[237] Appendices A1-A3.
[238] Barry Higman, *Jamaica Surveyed; Montpelier, Jamaica: A Plantation Community in Slavery and Freedom, 1739-1912* op. cit.

The extent of coffee, ginger, and cotton was also limited especially before the coffee boom of the 1790s. These staples played a relatively small role in the island's export trade. Livestock farming was an important feature of the eighteenth century plantation economy. 19 per cent of the land in St. Andrew was devoted to livestock farming in 1754. If this was common to the island as a whole then perhaps a little over 420,000 acres was devoted to livestock during the period under

		Plantation	Sugar	Coffee	Ginger	Cotton	Provision	Pens	Wood	Unacct'd	Total
St. Andrew	79,375	69,149	3,443	804	398	76	7,342	13,150	18,969	24,967	69,149
		87%	5%	1%	1%	0%	11%	19%	27%	36%	
Kingston	3,100										
Port Royal	30,608	26,629	1,331	266	160	29	2,929	5,060	7,243	9,613	26,632
St. Catherine	93,058	80,960	4,048	810	486	89	8,906	15,382	22,021	29,227	80,969
St. David	49,208	42,811	2,141	428	257	47	4,709	8,134	11,645	15,455	42,815
St. Thomas E	156,613	136,253	6,813	1,363	818	150	14,988	25,888	37,061	49,187	136,267
Portland	94,059	81,831	4,092	818	491	90	9,001	15,548	22,258	29,541	81,840
St. George	101,960	88,705	4,435	887	532	98	9,758	16,854	24,128	32,023	88,714
St. Mary	115,975	100,898	5,045	1,009	605	111	11,099	19,171	27,444	36,424	100,908
St. Ann	295,285	256,898	12,845	2,569	1,541	283	28,259	48,811	69,876	92,740	256,924
St. James	145,768	126,818	6,341	1,268	761	139	13,950	24,095	34,495	45,781	126,831
Hanover	106,381	92,551	4,628	926	555	102	10,181	17,585	25,174	33,411	92,561
Westmoreland	197,486	171,813	8,591	1,718	1,031	189	18,899	32,644	46,733	62,024	171,830
St. Elizabeth	372,126	323,750	16,187	3,237	1,942	356	35,612	61,512	88,060	116,874	323,782
Clarendon	309,913	269,624	13,481	2,696	1,618	297	29,659	51,229	73,338	97,334	269,651
Vere	166,841	145,152	7,258	1,452	871	160	15,967	27,579	39,481	52,400	145,166
St. John	81,919	71,270	3,563	713	428	78	7,840	13,541	19,385	25,728	71,277
Dorothy	37,191	32,356	1,618	324	194	36	3,559	6,148	8,801	11,681	32,359
St. Thomas V	75,092	65,330	3,267	653	392	72	7,186	12,413	17,770	23,584	65,337
Trelawny	212,304	184,704	9,235	1,847	1,108	203	20,317	35,094	50,240	66,678	184,723
Total	2,724,262	2,370,108	118,505	23,701	14,221	2,607	260,712	450,321	644,669	855,609	2,370,108

Table 4.13 Total acres under cultivation in Jamaica, 1754

consideration. Land was granted to the enslaved population for them to plant their own provisions. This amounted to 11 percent of the land in St. Andrew which translates to a little under 235,000 acres as a whole.

Conclusion

This systematic analysis of land use in Jamaica has provided answers to some hitherto unanswered questions. A time-series estimate of the average price per acre of land as well as an estimate of the average price per acre of land in the different parishes is presented for the first time. The evidence shows that land price in Jamaica varied, however, the price per acre based on the size of holdings identified increased during the expansion years between 1790 and 1800. Also, not only was land price determined by size of holdings, but also its location relative to the urban commercial centres of Kingston and Montego Bay.

There was also a relationship between gender and land distribution. Jamaica's plantation economy operated a patriarchal system, which meant that women's role in politics and plantation management was limited. Men dominated the buying and selling of land and women disposed of more land than they bought hence their involvement in land sales was concentrated in the market for small lots while men dominated the market in large lots, especially over 600 acres.

The evidence suggests that exogenous factors had an impact on the distribution of land throughout the eighteenth century. This is evident in the reaction of the island's land

market to the Seven Years War, the American War of Independence, the Haitian Revolution and the debates surrounding the abolition of the trans-Atlantic trade. In this context, we observed an increase in land use towards the close of the eighteenth century as planters expanded their operations in order to take advantage of the loss of St. Domingue and the resulting sugar deficit that existed on the world market.

Chapter 5

Productivity

This chapter will examine the level of productivity within Jamaica's plantation economy from 1750 to 1805. In doing so, it will employ data presented in the previous chapters to test labour and land productivity during the late eighteenth and early nineteenth century.[239]

The common measurement of productivity for the plantation period was the quantity of sugar produced per enslaved on a given estate. However, productivity can be measured on the basis of output per unit of factor input in a slave society, the units of input being the standard factors of production – land, labour, and capital. The measurement of productivity on an individual factor basis results in the calculation of partial factor productivity while total factor productivity measures on an aggregate basis, output relative to factor inputs.

Interpretations of Productivity

Historical interpretations of the slave systems in the Americas have suggested that slavery was antithetical to productivity. The thrust of the argument, which first surfaced in the nineteenth century but was later developed by Lowell Ragatz and Eric Williams,

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[239] J.R. Ward, "The Profitability of Sugar Planting in the British West Indies, 1650-1834", *Economic History Review*, 31 (1978): 197-213

highlighted the inefficiency of the Caribbean plantation system as the reason for the abolition of slavery.[240]

Under the mercantile system, the British West Indian colonies, and more specifically Jamaica, were seen as important outposts that sustained the economic interest of England. But this view was challenged by Adam Smith, the leading proponent of laissez-faire ideology at that time. In the *Wealth of Nations*, Smith posited the counter-claim that colonies were a strain on the consumers of England, and a drain on British resources. In an indictment on the system practiced by England, he argued that

> *It cannot be very difficult to determine who have been the contrivers of this whole mercantile system; not the consumers, we may believe, whose interest has been entirely neglected; but the producers, whose interest has been so carefully attended to; and among this latter class our merchants and manufacturers have been by far the principal architects...the effects of the monopoly of the colony trade, it has been shewn, are, to the great body of people, mere loss instead of profit* [241]

Smith believed that England gained relatively little from its colonial arrangement. He also highlighted the colonies' ineffectiveness when he questioned the efficiency of the free labour system as practiced in Britain, and enslaved labour as practiced in the

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[240]L.J. Ragatz, *The Fall of the Planter Class*; Eric Williams, *Capitalism and Slavery*.
[241]Adam Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations edited with an Introduction by Edward Cannan* op. cit., p. 180, Bk. V., Ch. 3, p. 486.

colonies. In his opening chapters on labour, he argued that societal advancement depended on a cheap and effective labour force. He made the point by stating that

> *It appears, accordingly, from the experience of all ages and nations, I believe, that the work done by freemen comes cheaper in the end than that performed by slaves...the liberal reward of labour, as it encourages the propagation, so it increases the industry of the common people. The wages of labour are the encouragement of industry, which, like every other human quality, improves in proportion to the encouragement it receives* [242]

The fundamental difference between free labour and enslaved labour, he opined, had to do with tenants who were free people and who

> *...are capable of acquiring property, and having a certain proportion of the produce of the land, they have a plain interest that the whole produce should be as great as possible, in order that their own proportion may be so. A slave, on the contrary, who can acquire nothing but his maintenance, consults his own ease by making the land produce as little as possible over and above that maintenance* [243]

Adam Smith's argument on colonial inefficiency initiated a protracted debate in England. His ideas were refuted by the political thinker Edward Burke, who argued that the colonies made important contributions to England's economic growth. In terms of trade,

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[242] Ibid., p. 90-1.
[243] Ibid., p. 413.

Burke stated that the colonies accounted for one-twelfth of total exports from England in 1700 and one-third in 1775. This, he argued, is

> *...the relative proportion of the importance of the colonies at these two*
>
> *periods; and all reasoning concerning our mode of treating them must have*
>
> *this proportion as its basis, or it a reasoning weak, rotten, and sophistical*[244]

The most influential discussion on the sugar plantation economy since Adam Smith's *Wealth of Nations* has been Eric Williams' *Capitalism and Slavery*. Influenced in part by the work of his good friend and mentor, Lowell J. Rgataz, Williams continued with the theme of colonial inefficiency and economic decline. But for Williams, decline occurred after the Declaration of American Independence in 1776 and not after the Treaty of Paris in 1763 as argued by Ragatz. British Caribbean planters were also accused of failing to institute new technology pertinent to the cultivation and manufacture of agricultural produce during the period. The argument posited by Lowell Ragatz was that the failure occurred because the British West Indian planter class' 'ingrained hostility to the introduction of innovation, [and their] antiquated methods of production were stubbornly clung to and science was ignored in cultivation and preparation of crops'.[245]

Taking his cue from Smith, Williams opined that 'far from accentuating the value of the [British West Indian] sugar islands, American Independence marked the beginning of

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244 Edmund Burke, "On Conciliation with the Colonies", 22 March, 1775, in *Speeches and Letters on American Affairs*, ed. Ernest Rhys (London, 1945), pp. 84-86, quoted in Richard Sheridan, *Sugar and Slavery*, \p. 6.
245 L.J. Ragatz, *The Fall of the Planter Class*, p. 12.

their uninterrupted decline'.[246] The American War of Independence altered the economic fortunes of the British Caribbean territories. Faced with stiff competition from the French colonies, most British West Indian territories were unable to produce low cost sugar of a high quality capable of matching the cheaper sugar coming from St. Domingue. As a result, the mainland colonists imported cheap sugar from the French colonies. This change effectively reshaped the ideological relationship between the mainland colonies, the British West Indian colonies, and England. No longer bound by the mercantile system, the Americans sought foreign markets while simultaneously restricting the British West Indian colonies access to its market. Williams further argued that 'uninterrupted decline' led to diminishing revenues and the overproduction of sugar in 1806. Therefore, it was the perception of decline, and the emergence of a 'new industrial order', rather than humanitarian zeal, which led England to abolish the Transatlantic Trade in Africans in 1807.

Like Adam Smith before him, Williams' interpretation of colonial inefficiency and decline has had mixed reviews. It seems clear that Williams accepted Smith's interpretation *in toto* without questioning some of his assumptions. For example, Smith's argument on the inefficiency of enslaved labour was the reinforcement of a long held view in England of the superiority of free labour. Adam Smith, according to Seymour Drescher

> *neither explicitly nor implicitly asked whether well-managed slaves on sugar*
>
> *plantations, fed by an efficient slave trade and operated by gang labour, were,*

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[246] Eric Williams, *Capitalism and Slavery*, p. 120.

in the present and foreseeable future, cheaper than labourers who had to be

attracted, transported, and retained by contract [247]

This incompatibility argument concerning slavery and efficiency was reinforced by Eugene Genovese who claimed that low labour productivity resulted in the disbandment of the slave system in the Southern United States. Among the reasons cited were little or no incentives, malnutrition, technological deficiency and the absence of specialization and division of labour. The labour intensive nature of the plantation system meant that the use of capital equipment was minimal and almost total reliance was placed on labour. Financial resources were used to meet recurring expenses leaving a negligible amount for capital investment. Also, the working arrangements and the high demands placed on the enslaved made it difficult for any form of specialization to be instituted. Although specialization and division of labour resulted in repetition and was routine they invariably created economies of scale. However, achieving economies of scale was based entirely on specialization and the division of labour, though these factors formed an integral part of acquiring such benefits.[248] In effect, Genovese claimed that 'large-scale production gave the planter an advantage over his weaker competitors within the South, but the plantation was by no means more efficient than the family farm operating in the capitalist economy of the Free states'.[249]

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[247] Seymour Drescher, *The Mighty Experiment: Free Labour versus Slavery in British Emancipation* (2002), p. 31.
[248] Eugene Genovese, *The Political Economy of Slavery*, p. 43-69.
[249] Ibid. p. 51.

This incompatibility thesis has been flatly rejected by Douglas Hall, William Green, and R.K. Aufhauser.[250] They contended that productivity was attainable once new forms of technology, centralization, and division of labour were adopted. However, Aufhauser was careful to point out that division of labour and technological change alone would not directly result in productivity. In addition, political, legal and social forces were important ingredients in facilitating productivity. Accordingly, Aufhauser maintained that some planters rejected new forms of technology and in other instances where they were utilized the productivity gains were not attained. Hence, in some cases, the plough and vacuum pan were not used because they would not provide a competitive edge. Such decisions were considered prudent as it was noted that free market entrepreneurs would have made similar decisions. Aufhauser further stated that 'in many cases the most advanced techniques available were employed with slave labour'.[251]

Models of Productivity

Despite these different interpretations and arguments about the plantation system, none of these scholars sought to calculate productivity on the estates. The first known measurement was done by J.R Ward in 1978.[252] Ward employed a partial factor productivity measure across sampled estates with output (based on aggregate sugar exports) in the numerator divided by the enslaved population. He concluded that labour productivity improved as the average sugar production per enslaved in Jamaica increased

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[250] Douglas Hall, "Slaves and Slavery in the British West Indies", *Social and Economic Studies,* 11 (1962): 305-18; William A. Green, "The Planter Class and British West Indian Sugar Production, Before and After Emancipation", *Economic History Review,* 26 (1973):451-73; R.K. Aufhauser, "Slavery and Technological Change," *Journal of Economic History,* 34 (1974):36-50
[251] R.K. Aufhauser, "Slavery and Technological Change".
[252] J.R. Ward, "The Profitability of Sugar Planting in the British West Indies, 1650-1834" *Economic History Review,* 31 (1978): 197-213.

from 1,176 pounds in 1792/8 to 1,344 pounds in 1799/1819. The level of productivity in the Leeward Islands and the Ceded Islands was within a similar range. Interestingly, Ward also found that the level of productivity in Jamaica declined after 1820.[253] His estimates of productivity therefore remind us of the growth patterns in Jamaica's plantation economy towards the end of the eighteenth century. The limitations of Ward's aggregate measure of productivity are that for one it was a measure based on sugar output only, and focused solely on labour productivity with no attempt made to measure the productivity of land. This made it difficult to determine the real contribution of labour to output growth as the focus on one input only limits the scope of the analysis. Also, without the calculations over a number of periods it is difficult to assess productivity trends, that is, to determine whether there was a consistent pattern of productivity or an intermittent achievement.

Alternatively, Eltis have measured productivity using estimates of output and input prices, where output prices were real sugar prices and input prices were slave prices calculated using a present value formula.[254] With this information they found it was easier to deduce shifts in labour demand and create production functions, from which computations of expected output and productivity could be derived. This measure is all-inclusive as it accounts for almost all the different costs components from slave acquisition to maintenance and production. However, one drawback to this measure of productivity is that such value measurements are highly inclusive, as opposed to volume

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[253] Ibid.
[254] David Eltis, Frank D. Lewis, and David Richardson, "Slave Prices, the African slave trade, and productivity in the Caribbean, 1674-1807".

calculations and the large number of variables included makes it possible for double counting to occur especially where costs cannot be differentiated.

Another approach to measuring productivity is to calculate the ratio of output to input across localities. This measure is pertinent to sugar estates because assessments of each factor input relative to specific output for each estate can be done. The 1754 census data for St. Andrew is useful in this regard as estimates of labour and land productivity can be ascertained making it easy to rank estates from the most productive to the least productive. It also allows for cross-sectional and trend analyses. Moreover, it is possible to use different units of measurement as in the circumstances of these sugar estates it is possible to convert from one unit to another.

Jamaica's plantation society was the best documented of the British West Indian colonies and its economy was subjected to detailed studies by scholars from all parts of the world. In spite of this, there is a lack of consolidated data on Jamaican sugar estates – as evidenced in Ward's work. Most plantation records never survived and those that have are located in widely scattered repositories in Europe, North America and the Caribbean. Moreover, even where plantation records exist, information relating to some factor inputs is not available. In some cases, data are only available on the enslaved population and the amount of sugar produced.[255] Though the census allows for a calculation of productivity it is inadequate for this study as it provides only a lower bound estimate of labour productivity because of the focus on sugar production only. Despite its limited range

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[255] Add Mss 12,435 Papers on the Statistics of Jamaica, Presented by C.E. Long.

however, it is useful in that it provides an understanding of how the enslaved multi-tasked in different ways, localities and times.

The St. Andrew census facilitates a cross-sectional analysis of the 23 enumerated sugar estates in the parish.[256] These have been ranked in terms of slave productivity from highest to lowest (See table 5.1 below). As is evident, Hall's Delight was the most labour productive sugar estate producing 1.33 sugar hogsheads per enslaved while the estate owned by John Williams was the least efficient, producing only 0.12 hogsheads per enslaved. The Hall's Delight estate was a 508 acre property with an enslaved population of 30, producing 40 hogsheads of sugar. Only 100 acres or 20 percent were devoted to the planting of sugar cane; 120 acres or 24 percent were allocated to provision grounds; 10 acres or 2 percent were devoted to livestock farming, and 278 acres or 55 percent were woodland.[257] John Williams' estate, on the other hand was a holding of 1500 acres with an enslaved population of 130. It produced only 15 hogsheads of sugar during the period of enumeration. The land distribution on John William's estate was 60 acres or 4 percent planted in sugar cane; 30 acres or 2 percent in coffee; 10 acres or 1 percent in ginger; 20 acres or 1 percent in cotton; 130 acres or 9 percent in slave provision; 1,000 acres or 67 percent in livestock farming and 250 acres or 17 percent in woodland.[258] The variations in the production of sugar per enslaved shows that the enslaved population size had no bearing on labour productivity in St. Andrew in 1754.

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[256] David Ryden, "An Analysis of the Plantation economy in Jamaica's St. Andrew Parish, 1753", *Slavery and Abolition*, 21, 1 (2000): 32-55.
[257] Appendices A1-A3.
[258] Ibid.

This is highlighted when one examines estates with large enslaved populations like Temple Hall (214), and Cherry Garden (165), both produced low amounts of sugar, 52 and 59 sugar hogsheads respectively, in contrast to Hall's Delight, whose population of 30 produced 40 hogsheads of sugar. This result is somewhat different from the observation made by Higman on the productivity of Jamaican sugar estates in 1832. He suggested that the enslaved population size had a bearing on the level of slave productivity in that '[sugar] production per enslaved was at a maximum in the 201-250 group'.[259] Many planters held the view that efficiency was somehow linked to the size of their enslaved population and as such, saw an estate of 200 enslaved as an optimum sized unit. This could be rebutted based on the St. Andrew Census (See table 5.1) which showed that the most productive estates had less than the maximum number of enslaved as prescribed by Higman.

Table 5.1 shows that the most productive sugar estates used fewer enslaved per acre of sugar cultivated. The overall average in St. Andrew was 1 enslaved per acre of sugar cultivated. Estates such as Hall's Delight and Tunbridge employed a lower ratio of enslaved than those estates, but were more efficient than those that had large numbers. John Williams' estate, which was the least efficient, had the highest ratio of enslaved per acre of sugar cultivated in the parish. This shows that more field hands did not necessarily result in higher labour efficiency.[260]

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[259] B.W. Higman, *Slave Population and Economy*, p. 221.

[260] The trend line in figure 5.1 slopes downwards from left to right which suggest that as more field hands are added to the productive process, the number of hogsheads produced per enslaved diminishes.

Table 5.1 Productivity on St. Andrew's Sugar Estates, 1754

Name of Property	Name of Owner	total acres	sugar acres	provision acres	no of slaves	hhds	hhds per enslaved	slaves per sugar acre	provision acres per enslaved	hhds per sugar acre
Hall's Delight	Barjeau	508	100	120	30	40	1.33	0.30	4.00	0.40
Tunbridge/Waterhouse	Gibbon	2434	310	0	229	230	1.00	0.74	0.00	0.74
Maggotty Hall	Grant	300	150	20	74	70	0.95	0.49	0.27	0.47
NG	Marvely	735	111	0	96	81	0.84	0.86	0.00	0.73
Swallowfield	Temple	1030	200	250	178	131	0.74	0.89	1.40	0.66
NG	Clarke	948	230	70	210	153	0.73	0.91	0.33	0.67
Spring Plantation	Day	600	120	200	123	89	0.72	1.03	1.63	0.74
Pembroke Hall	Herbert	519	129	0	136	98	0.72	1.05	0.00	0.76
Constant Spring	Archbould	1250	200	100	163	106	0.65	0.82	0.61	0.53
Molynes	Knights	368	84	50	75	45	0.60	0.89	0.67	0.54
Hope Estate	Elleston	530	300	0	215	128	0.60	0.72	0.00	0.43
NG	Creane	363	125	150	94	53	0.56	0.75	1.60	0.42
Barbican	Gregory	1600	135	100	100	56	0.56	0.74	1.00	0.41
Golden Spring	Fuertado	963	200	41	135	75	0.56	0.68	0.30	0.38
NG	Pinnock	2872	242	0	280	140	0.50	1.16	0.00	0.58
White Hall	Johnston	308	80	60	97	45	0.46	1.21	0.62	0.56
Blackheath	Gartwaith	654	104	0	71	28	0.39	0.68	0.00	0.27
NG	Caveliers	500	85	50	99	36	0.36	0.20	0.51	0.07
Cherry Garden	Gartwaith	1112	133	0	165	59	0.36	1.24	0.00	0.44
Prospect	Huddleston	350	50	50	74	24	0.32	1.48	0.68	0.48
Townwell/Temple Hall	Laws	2000	190	200	214	52	0.24	1.13	0.93	0.27
Shortwood	Phillips	600	100	10	119	15	0.13	1.19	0.08	0.15
NG	Williams	1500	60	130	130	15	0.12	2.17	1.00	0.25

Source: PRO CO 137/28 ff.170-174
NG=Name of Estate not given.

Figure 5.1 Relation between hogsheads per enslaved
and enslaved per sugar acres
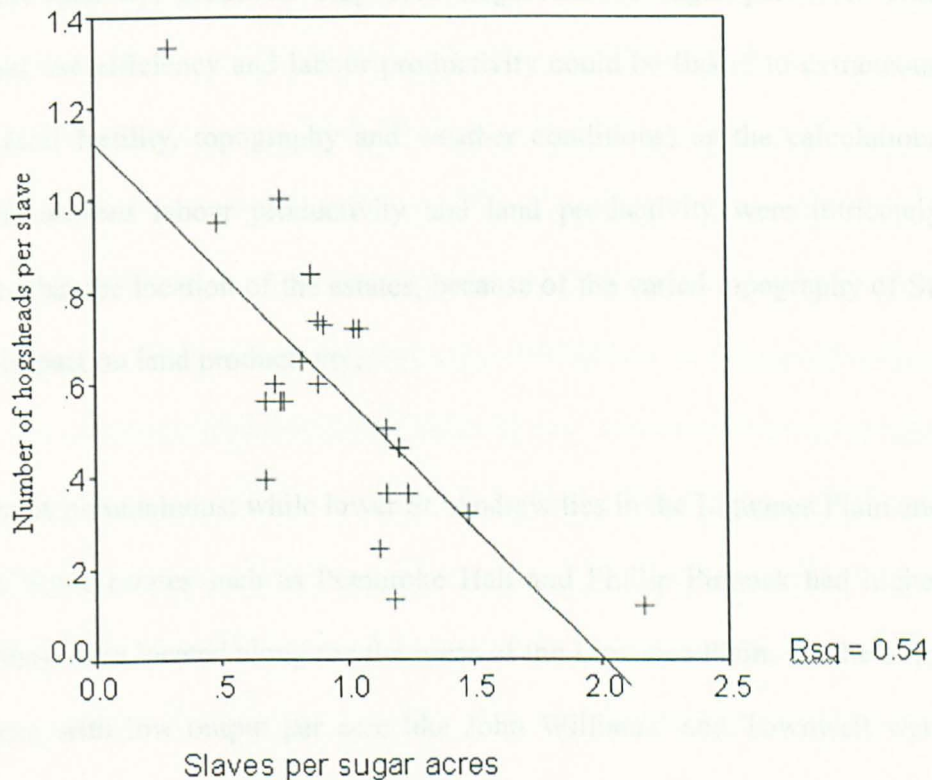
Land efficiency in St. Andrew was also examined and the results are as shown in Table 5.1. It reveals some interesting facts about land use patterns in the parish, and these can be seen in greater detail in Appendices A1-A3. The land use patterns in St. Andrew were similar to land use throughout Jamaica, in that relatively small acres were devoted to sugar cane cultivation (5 percent). Also the hogshead per acre did not exceed 0.76, thus on no estate did an acre of land yield more than one hogshead. In relation to the number of hogsheads produced per sugar acre, the three estates with the lowest level of labour productivity (Townwell, John Williams, and Shortwood) were the estates with the lowest level of land use efficiency. In Shortwood's case for example, there was production of

0.15 hogsheads per sugar acre, which was one-fifth the production of the most land efficient estate, Pembroke Hall. It is then observed that Hall's Delight, the estate with the highest labour productivity, produced only 0.40 hogsheads of sugar per acre. This divergence in land use efficiency and labour productivity could be linked to extraneous factors such as (soil fertility, topography and weather conditions) as the calculations show that *ceteris paribus* labour productivity and land productivity were intricately linked and proves that the location of the estates, because of the varied topography of St. Andrew, had an impact on land productivity.

Upper St. Andrew is mountainous; while lower St. Andrew lies in the Liguanea Plain and is relatively flat. Some estates such as Pembroke Hall and Phillip Pinnock had higher output per acre, they were located along the flat areas of the Liguanea Plain. On the other hand, some estates with low output per acre like John Williams' and Townwell were located in the Upper St. Andrew district where topography, soil and weather conditions would have had an adverse effect on yields. It is also important to note that the estates with the highest sugar yields per acre achieved these results with less than one enslaved per acre, this is an indication again of the productivity of labour and behooves us to recognize the relationship between land and labour productivity.

New Approach to Measuring Plantation Productivity

This chapter adopts a different approach as it will use the time-series data presented in the previous chapters on land, labour, and output to measure the level of productivity in Jamaica's plantation economy. This series helps to establish a trend so that productivity can be assessed over a period of time. The method to be used is similar to the one

employed by J.R. Ward because it uses aggregated estimates. However, it differs from Ward in its focus. Whereas Ward's investigation centred on the productivity of the British West Indian enslaved population this study will use total output data. Also, using the new estimates of land use, capital, output, and labour, will allow me to assess partial factor productivity values - labour productivity, land productivity, and also total factor productivity, which is the calculation of productivity based on all the factor inputs, during the eighteenth century. These will be measured as the ratio of output to input with the residual showing the level of productivity. Information is available for labour and output, however, some data relating to land and capital (other factors of production) are missing. These will be improvised to assess the trends mentioned here. These productivity values allow for the isolation of the productivity contribution of each factor input as well as the shows the contribution of the combined factor inputs.

Labour Productivity

The productivity of labour was calculated by holding constant the other two factor inputs, namely land and capital. Changes in labour amounts are measured against changes in output, to show the marginal output per enslaved hence the use of the formula

$\dfrac{\text{Change in output}}{\text{Change in labour}}$ to calculate for the marginal physical product of labour. This shows the change in total output caused by a change in labour, that is, the amount by which total output changes with a one-unit change in input. The formula was applied over the period 1748 to 1805, and the information for output and labour were garnered from table 5.2 below. The calculations show that the marginal productivity from 1748 to 1805 was 53.06 tons of output per enslaved. The tons per enslaved when dissected were 0.19

between 1748 and 1762, 0.86 between 1762 and 1768, and 0.75 between 1768 and 1778. All these were below 1, which means that although output had increased, each enslaved was making a minimal contribution to output. It is noted however, that some growth in tons per enslaved took place over this period, although it reduced by 13 percent up to 1778. Suffice to say, it was only after 1778 that the marginal returns exceeded 1, being 1.38 tons per enslaved up to 1789. This means that total output was increasing by more than the total increase in labour, and hence larger productive gains were being realized. From 1789 to 1795 it grew to 9.22 tons per enslaved, 11.67 tons from 1795 to 1800, and 56.73 from 1800-1805. This shows that a meteoric rise in marginal output took place after the year 1795.

The large increase in the enslaved population from 1768 to 1795 was not repeated in the years after 1795 and this deceleration in numbers could have contributed significantly to the large upward movement in marginal returns especially since, based on the 1754 data, it is seen that the enslaved were more productive in smaller numbers. It can be assumed therefore that those acquired before 1795 were not very productive, as output showed small improvements within that period. They became very efficient after more land was put to productive use, which reduced the number of enslaved per acre. This seems the case as labour productivity skyrocketed around 1795. Table 5.2 further substantiates that, for in that year there was a 251 percent growth in output relative to a 16 percent growth in labour.

Table 5.2 Rates of growth in Output, Land and Labour over the period 1748- 1805.

Years	Total output amounts (in tons)	Enslaved Population (labour)	Estimated acres under cultivation (land)	Annual Percentage (%) growth in output	Annual Percentage (%) growth in labour	Annual Percentage growth in Land
1748	35,825	112,428	24,645	-	-	-
1762	42,392	146,805	32,017	18	15	30
1768	59,816	166,914	46,811	41	13	46
1778	88,823	205,261	73,699	48	22	57
1789	150,594	250,000	98,447	70	22	34
1795	529,012	291,000	118,691	251	16	21
1800	645,036	300,939	152,023	22	3	28
1805	1,076,407	308,542	163,494	67	3	8

The table above further complements the calculation of the marginal physical product of labour by presenting growth rates in the factor inputs and output. These growth rates were calculated within each period with no rate calculated for the year 1748, as there was no previous period available to make a comparison. It is observed that there was no constant output growth rate over the period and that the lowest rate was from 1748 to 1762, while the highest rate from 1762 to 1795. Short run fluctuations were also evident in the growth rates for the factor inputs. In the long run, however, there was growth for all the variables - inputs and output, and no negative changes were evident indicating that the absolute amounts increased over the period under consideration.

When one assesses output growth relative to labour growth over the period it is discernible that the percentage output growth outpaced the percentage growth in labour approximately 10 times. Viewed another way, from 1748 up to 1805, output values grew approximately 30 times while labour numbers increased only 3 times. When this is broken down it is seen that in each year the percentage output growth was always larger than the percentage growth in labour, the divergence being largest from the year 1795

onwards. This suggests that although the marginal productivity of labour, in the earlier periods from 1748 up to 1778, was low, the percentage growth in the number of enslaved was not more than the percentage growth in output. This is noteworthy as it indicates that while the enslaved population was efficient in earlier periods and specifically up to 1778, each enslaved was making only a small contribution to output. All this changed after 1778, when enslaved labourers became very efficient.

Land Productivity

Table 5.2 shows a somewhat different picture for land however, as apart from the fluctuations in land growth over the period, when the percentage output growth is juxtaposed with the percentage land growth, land grew 7 times as compared to the output growth of 30 which indicates that overall land was less productive than labour. Additionally in the years 1762, 1768, and 1778, land growth outstripped output growth while, from 1789 (with the exception of 1800) output growth was higher than land growth, which meant that at the turn of the century, land was more efficiently used. If we attempt to calculate the marginal productivity of land by dividing changes in output by changes in land then the following is discerned. Firstly, between 1748 and 1762 each additional acre yielded 0.89 tons of output, 1.18 tons between 1762 and 1768, 1.07 tons from 1768 to 1778, and 2.5 tons from 1778 to 1789. These values maintain that each acre was to a certain extent efficiently used. At the same time in some instances, the total acres under cultivation was not very efficiently used as in 1762, 1768 and 1778 the growth in land was more than the growth in output. From 1789 to 1795 and thereafter, the tons per acre was 18.70, 3.48, and 37.60, coinciding with the periods within which output

growth outpaced land growth. This means that the productivity of land and labour, on a total and per unit basis, patented each other. What is significant in the latter periods also is that *ceteris paribus,* as output increased and was diversified, land became more productive. This suggests that the acres under cultivation were not suitable for any one crop and land use was maximized as multiple crops were introduced and farming techniques improved. It is also possible that this diversification had a positive effect on labour productivity, because of the high degrees of multitasking that would take place as a result. When this trend is compared with that of labour the differences are obvious, as at no time did labour growth outstrip output growth. Overall, it is seen that labour was a more productive input than land. This is consistent with the results from the 1754 census.

Measuring Total Factor Productivity

Here, the aim is to use the data presented to estimate total factor productivity. The model used depicts a proportionate relationship between land, labour and capital - the main factor inputs and the output achieved.

Table 5.3 Land, Labour, Capital and Output amounts and Indices, 1748-1805

Year	Land acres under cultivation	Land Index	Labour	Labour Index	Capital Stock (£)	Capital Index	Total Output (tons)	Total Output Index
1748	24,645	100.00	112,428	100.00	227,199	100.00	35,825	100.00
1762	32,017	129.91	146,805	130.57	295,160	129.91	42,392	118.33
1768	46,811	189.94	166,914	148.46	431,545	189.94	59,816	166.96
1778	73,699	299.04	205,261	182.57	679,422	299.04	88,823	247.93
1789	98,447	399.46	250,000	222.36	907,571	399.46	150,594	420.36
1795	118,691	481.6	291,000	258.83	1,094,199	481.6	529,012	1,476.65
1800	152,023	616.85	300,939	267.67	1,401,483	616.85	645,036	1,800.51
1805	163,494	633.39	308,542	274.43	1,507,233	633.39	1,076,407	3,004.62

The acres under cultivation in table 5.3 were approximated to be 30 percent of the acres sold over the period under review. This percentage is based on the ratio of acres

cultivated to total acres extrapolated from the information available in 1804. Labour numbers were taken from table 3.1 and were the figures for the enslaved population since they were the ones involved in production. Capital stock is estimated on the basis of Edward Long's cost of setting up an estate. Long ascertained the total cost of doing so to be £28,039 for a 900 acre estate. This cost when subdivided included the cost of land at £9,032, of equipment at £6,319, 130 livestock amounting to £1,978, and 300 enslaved costing £10,710.[261] On the whole, equipment and livestock represented only 30 per cent of Long's total capital cost. The balance or the remaining 70 per cent of the capital cost was for land and labour, which are not included in the capital stock figure as land and labour amounts are already known. If they were included this would amount to double counting. Therefore, equipment and livestock were considered here to be the only capital items. The capital cost would be £8,297 (the cost of equipment and livestock) for a 900-acre estate and hence the capital cost per acre £9.218. Since this calculation can be done then the capital cost can be calculated for any number of acres and hence for the estates in the respective years by multiplying £9.218 by the number of acres. Total output is a sum of all the different product outputs including local consumption of rum.

Each factor input and the output were then converted to an index. This was done to facilitate the conversion of each production variable to a common denominator facilitating comparability, as it would be difficult, even meaningless, to compare the acreage, slave population numbers, capital values in pounds and output prices. These indices were found as the ratio of current year amounts to base year amounts. The base year chosen was 1748. The table showed similar values for the capital stock index and the

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[261] Edward Long, *The History of Jamaica*, vol. 1 pp. 448-64.

land under cultivation index. This is so as the relationship between capital investment and land under cultivation was fixed because of the way capital stock was assumed to match the growth in land cultivation.

The factor shares were computed in order to derive the weighted sum of the factor inputs, (table 5.4). Each factor share was calculated in a two stage process. Firstly, each factor input's cost was improvised from Long's estimate of the cost of setting up a 900 acre estate.

Table 5.4 Factor shares, weighted sum of factor inputs and Total Factor Productivity

Year	Land share	Labour share	Capital share	Weighted sum of factor inputs index	Total Output Index	Total Factor Productivity Index
1748	0.06	0.89	0.05	100.00	100.00	100.00
1762	0.05	0.89	0.06	130.49	118.33	90.68
1768	0.08	0.86	0.06	154.26	166.96	108.23
1778	0.08	0.84	0.08	201.20	247.93	123.22
1789	0.09	0.82	0.09	254.23	420.36	165.34
1795	0.09	0.82	0.09	298.82	1476.65	494.16
1800	0.11	0.78	0.11	344.48	1800.51	522.67
1805	0.13	0.77	0.10	357	3004.62	841.63

This requires the computation of land cost, labour cost and capital cost. The land cost in the respective years is the product of the cost per acre (calculated as £9032 /900 acres) and the amount of land under cultivation. Labour cost for each year is the product of the cost per enslaved (calculated as £10,710/300) and the number of enslaved. Capital cost is the value of the capital stock as seen in table 5.3. Total production cost therefore is the sum of the costs of land, labour and capital. The factor shares were then computed for each factor as the factor input costs divided by the total production cost in each year. The weighted sum of inputs is the sum of the product of factor inputs' index and the factor

shares found in tables 5.3 and 5.4 respectively. Therefore, the weighted sum becomes an index. This is then used to calculate the total factor productivity, which is the output index divided by the weighted sum of the factor inputs index. Total factor productivity is calculated this way, as productivity is a measure of the change in output relative to the change in input. The total factor productivity values seen in table 5.4 therefore provides the basis for a trend analysis of productivity and the assessment of productivity on a marginal basis, which means that the returns to scale patterns are readily discernible.

Table 5.4 shows the large productivity values that were achieved over the period under review, with the exception of 1762 when the total factor index fell below 100, which means that no productive gains were achieved in this year. In all other years however, the total factor index was above 100, which means that there was a positive residual or an excess of output over inputs. Over the review period it was between 1748 and 1762 that there was a decline in total factor productivity. Thereafter, positive returns to scale were noticed, although from 1768 to 1789 growth was a minimal 14 percent, which was the smallest percentage growth for the entire period under review. This is logical however, as during this time the American War of Independence (1776-1783) was ongoing and this had an impact on production and output within the colony. It is also discernible, that between 1789 and 1795, the index grew by approximately 200 percent and from then on, there was a total growth of approximately 70 percent. This is broken down into 6 percent between 1795 and 1800 and 61 percent thereafter up to 1805. The means that the year 1795 was a watershed year and when this is taken into perspective this trend is hardly

surprising as all the individual variables and indices (table 5.3 and 5.4) had increased after 1789.

Using a per capita output measure we can do a further assessment of productivity. Per capita output is calculated as the ratio of output to the enslaved population. The figures revealed that per capita output was 0.32 tons in 1748, 0.36 tons in 1768, 1.82 tons in 1795, and 3.49 tons in 1805. These numbers highlight a general trend, the trend that speaks to the fact that there was a major increase over the period in per capita output with the bulk of the increase occurring after 1795. Again, this is consistent with the total productivity figures, the marginal physical product, and the growth rates previously shown.

Relationship among Productivity values

If one examines further the factor shares in table 5.4, it is evident that labour was the dominant factor input and as such, most of the productive gains would have emanated from this input. Therefore, if the productivity of labour is juxtaposed with the total factor productivity the contribution that labour made to the productive efficiencies will be again be exposed. Also, labour productivity, when it is compared with the total factor productivity implicitly gives an indication of how productive/unproductive the other factor inputs were and explicitly shows the productivity of labour.

As is apparent, the labour productivity values and the total factor productivity values both increased over the review period, except in one period. This was in 1762 when the total

factor productivity index reduced, whereas labour productivity was positive, although marginally so. In all the other intervals there were similar results for labour and total factor productivities as well as for total factor productivity and land productivity. The latter comparison must be viewed cautiously however, especially as it relates to the growth in land relative to output in the earlier periods. What is indisputable however is that the productivity results lead us to conclude that the large increase in output from 1795 onwards was predominantly due to the efficiency of the factor inputs. The evidence however, suggests that labour was more productive than land as its values were higher and more consistent. This highlights the indispensable role of labour in plantation societies, and indicates that land and capital, although important, were not as crucial as the labour component in the production process. Tied to this is the fact that plantation societies were labour intensive, hence a high reliance was placed on that factor input. One only has to look at the factor shares in table 5.4 to understand the vast differential in the factor input's composition and confirm that point. All in all, it can be inferred that Jamaica's plantation economy was indeed productive and in fact this had reached unprecedented proportions by the eve of abolition in 1805.

Factors Explaining Productivity Change

Productivity is achieved where a number of conditions exist, but generally greater efficiency in the use of inputs will result in productive gains. Thus the institution of new and improved work methods or changes in policies often leads to productivity. One important variable in the productivity equation relates to improvements in the quality of the labour force. It is indisputable that there is a strong relationship between healthy

individuals and productivity. There is also a cyclical trend in that; *ceteris paribus* healthy people are productive and productive people are healthy. Closely tied to this, is the labour quality issue outlined in chapter 3. Jamaican planters had certain preferences for imported Africans who they felt had the qualities they needed for work on their plantations although it is clear from the discussions in previous chapters that these preferences were only partially satisfied. In fact ethnic differences between imported Africans were not as great as planter preferences would seem to suggest, and where they existed, seem to have been related to African supply factors.

Of far greater significance were the changes in planter policy toward the end of the eighteenth century. These changes offer evidence of a pragmatic shift from favouring one ethnic group over another. Influenced to a degree by the natural decrease in the enslaved population and the debates in Parliament on the future of the transatlantic trade, Jamaican planters placed new emphasis on purchasing more female labourers which they saw as a means of sustaining the labour force by natural, rather than artificial means.[262]

The first step towards achieving this was the passage of the Consolidated Slave Act of 1781, around the same time that labour productivity started to improve immensely. The Act heralded a new era of important ameliorative changes, most of which were implemented on the majority of Jamaica's sugar estates. Some of the recommendations made included improvement to the quality and quantity of food given, improvement in the allotment of clothing, a reduction in punishment, especially to women, encouraging the spread of religion, encouraging the natural reproductive process among the enslaved

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[262] See Chapter Three.

population, and improving fairness at slave trials. Further measures over the years included the reduction of the working hours for pregnant mothers, and a financial reward to women who became pregnant. Throughout the period of chattel slavery, pre and post natal care for enslaved women were discouraged by the plantocracy. It was felt, rightly or wrongly, that it was cheaper to import Africans that were suitable for plantation labour, rather than breed them, the returns from which under the circumstances, would take somewhere between 7 and 10 years to be achieved.[263] But, of course, such thinking was influenced by the relative cheapness of African labour compared to the substantial profits made from the plantation system. One could argue, therefore with some measure of success, that these new initiatives were implemented to put to rest the ongoing arguments by abolitionists that chattel slavery retarded growth among the enslaved population, that it was a brutal institution, and that it should be abolished. However, one counter argument could be that as labour costs increased towards the last quarter of the century,[264] Jamaican planters responded pragmatically by improving the living and working conditions of the labour population, especially for women. This was done with a view of keeping the plantation system intact and at the same time would have created vast improvements in output and productivity.

What was more obvious, however, was the need for planters to foster growth among the Creole slave population. The replacement demand for enslaved labour was due in large measure to the inability of the island's enslaved population to reproduce. In 1787, for

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[263] J. Harry Bennett, *Bondsmen and Bishops: Slavery and Apprenticeship on the Codrington plantations of Barbados, 1710-1838* (1958).
[264] Eltis, David, Frank Lewis, and David Richardson, "Slave Prices, the African Slave Trade, and Productivity in the Caribbean, 1674-1807."

example, Jamaica's net imports were 4.39 times greater than the actual change in population, and this increased to 5.71 in 1800.[265] Imported Africans bore the brunt of this demographic disaster. They were most at risk to the general problems associated with seasoning.[266] In sum, natural growth was facilitated by the birth of locally born labourers, or creoles. Planters placed a higher premium on the locally bred labourers because they believed that creoles were a better investment; they were risk averse to seasoning, more tractable, had the accumulated experience of plantation labour, and most important of all, had come to accept their servitude, which made them less prone to rebel, compared to newly arrived Africans.[267] The distinction was evident in the fact that creoles commanded higher prices than imported Africans.[268] This was another strategy undertaken in response to the changing fortunes of chattel slavery, and which could have contributed simultaneously to the large productivity values.

Another important factor explaining productivity change during the last quarter of the eighteenth century could have been the granting of incentives to the enslaved population. These ranged from allowing the enslaved population to raise their own livestock, to the granting of provision acres. The latter, it seemed, had become a part of the new shift in management focus. Planters encouraged the use of provision acres for the simple reason that it reduced their operating cost. With labour cost increasing throughout the period, along with the relative loss of supplies from the mainland market in 1776, giving the

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[265] See Chapter Three.
[266] The period of seasoning was fundamental to the running of the plantation system. During this period, enslaved Africans were expected to adapt to their new environment. Here, they learned a new language, the strict regimentation and the demands of the plantation system. As a result, the mortality rate during this period of acclimatization was very high.
[267] Monica Schuler, "Akan Slave Rebellion in the British Caribbean", *Savacou*, 1, (1970): 8-31.
[268] David Eltis, Frank Lewis, and David Richardson, 'Slave Prices, the African Slave Trade, and Productivity in the Caribbean."

enslaved enough land so that they could feed themselves was a viable economic alternative. The usefulness of this strategy was evident in the 1754 census returns for St. Andrew parish. The data indicated that the estates with the highest labour productivity were those with the highest provision acres per enslaved. In the St. Andrew census, it was seen that Hall's Delight and Spring plantations - two of the most productive sugar estates - gave each enslaved 4 and 1.63 provision acres respectively for the cultivation of provision grounds.

For most enslaved Jamaicans, the provision ground and the trappings that came with it, constituted an alternative lifestyle to the one imposed on them by the system of chattel slavery. The provision ground was also a supplementary source of food for most plantations. Even more so, the cultivation of these grounds, and the marketing of the surplus in the urban areas of Kingston and Montego Bay gave the enslaved some level of independence. This marketing system has become the 'Subaltern Economy' where the main actors were enslaved men and women who operated and controlled their own money economy.[269] In effect, their involvement in this economy not only provided them with independence, but more importantly, it provided them with an opportunity to improve their standard of living and that of their family. Therefore, it is no surprise that the 1754 census showed that on estates where the enslaved population grew provision grounds the level of labour productivity was high relative to those estates where no such

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[269] Ira Berlin, *The Slaves' Economy: Independent Production by Slaves in the Americas* (1991); Woodville Marshall, "Provision Ground and Plantation Labour in Four Windward Islands: Competition for Resources during Slavery", *Slavery and Abolition*, vol. 12, 1 (1991): 48-67; S.W. Mintz, "The Jamaica Internal Marketing Pattern", *Social and Economic Studies*, vol. 4, 1 (1955): 95-103; Verene Shepherd, "Questioning Creole: Domestic Producers in Jamaica's Plantation Economy", *Caribbean Quarterly*, vol. 4, 1&2 (1998): 93-107

incentive was present. This relationship between labour productivity and provision grounds was tested with the 1754 data and the results are highlighted in figure 5.2 below. The upward sloping trend indicated by the diagram means that an increase in provision acres lead to an increase in the number of hogsheads produced per enslaved.

Figure 5.2 Relation between hogsheads per enslaved and provision acres
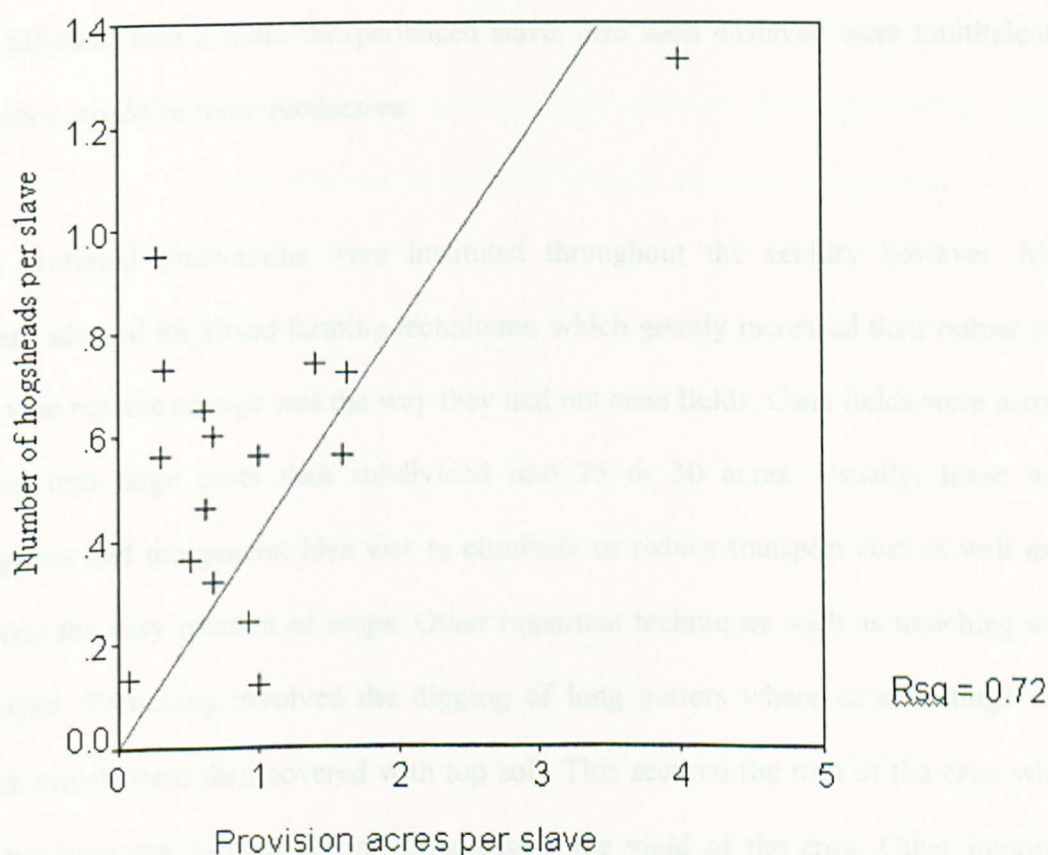
Productivity change can also be explained by the field innovations undertaken by planters during this period. Broadly defined, field innovations incorporate the technological and human resource changes made on the sugar estates. One noted innovation was the use of jobbing (hired) labourers. Jobbers were used to complement the existing labour force, especially during the demanding planting and harvesting season. Both seasons were

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labour intensive, but it was during the planting season that planters felt the need to use hired hands. The planting of the sugar cane, as noted earlier, was an arduous task, and one which carried severe demographic consequences for the enslaved population. With some justification, planters felt that it was viable to use jobbers, which had the intended effect of saving on labour, rather than having to meet the cost of replacing labour over time. This could have contributed to productivity as those with expertise would have been more efficient than a more inexperienced slave; also such enslaved were multitalented and hence would be more productive.

More profound innovations were instituted throughout the century however. Most planters adopted improved farming techniques, which greatly increased their output over time. One notable change was the way they laid out cane fields. Cane fields were usually divided into large plots then subdivided into 25 or 30 acres. Usually, these were contiguous and the general idea was to eliminate or reduce transport cost as well as to facilitate the easy rotation of crops. Other important techniques such as trenching were employed. Trenching involved the digging of long gutters where cane cuttings were placed, which were then covered with top soil. This secured the root of the cane which over the long run had the effect of increasing the yield of the crop. Other important planting techniques included the sequencing of cane fields. This was an important aspect of soil conservation in which not all the cultivable sugar acres were planted at once. With this system of subdivision, half the crops were planted and harvested from one section

while the other half was left in fallow. When harvesting was complete the planters cultivated the previously unused section. [270]

Ratooning, another field innovation saved the planter in terms of time, labour, and capital. After each harvest, some canes were left in the dearth while others were completely removed. The ones left in the dearth, or ratoons, obviated the need for planters to replant sugar cane. Depending on the size of his ratoon field, planters with this type of cane field had the advantage of an early start over others who had to replant. Therefore, ratoons matured earlier, and most importantly, were harvested earlier.

Another important factor explaining productivity change was the shift in the variety of cane used. In the 1790's, planters shifted from the 'creole' cane to the Otaheite. The former variety was widely used in the island and the British Caribbean, and at the time, was credited for its softness, which made it relatively easy to process. However, one major drawback was the length of time it took to mature, usually 12 to 20 months. When compared to the 'creole' variety, the Otaheite was taller and thicker and it matured within 10 months of planting. The length and girth of the Otaheite cane ensured that it carried as much as 25 per cent more juice than the 'creole' cane, and by extension, a higher yield in sugar.[271] As a result, this variety facilitated expansion in the island's sugar sector by raising both production and productivity levels towards the late eighteenth and nineteenth century. [272]

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[270] Richard Sheridan, *Sugar and Slavery*, pp. 98-118; Richard S. Dunn, *Sugar and Slaves*, pp. 189-201.
[271] Edward Long, *The History of Jamaica*, vol. 2.
[272] See Chapter Two.

Scholars have often highlighted the brutality and the level of exploitation that accompanied chattel slavery in the British West Indies. While exploitation was common as a general mode of production, the argument is posited that medium size estates with low slave-to-acreage ratios such as Hall's Delight and Maggotty Hall had higher levels of productivity than estates with higher slave-to-acreage ratios because they 'seem to have approached an optimum in the exploitation of labour'.[273] It is the suggestion therefore, that owners on some medium sized estates worked their enslaved harder than owners on larger estates with relatively more labourers. This might have been true to an extent for while there may have been an incentive and opportunity on medium sized estates to exploit slave labour, the very nature of chattel slavery suggests that optimum exploitation of labour transcended the size of holdings and was a common feature of Jamaica's plantation society in every context during the eighteenth century. This therefore cannot be discounted in any argument concerning production, output and productivity in plantation societies. Thus this would have contributed hugely to the large growth rates in output and productivity evidenced over the period investigated.

Conclusion

It is clear from the discussion that productivity existed and showed positive changes over the period. These changes were contrary to the views of Smith, Williams and Genovese who argued that slavery was an inefficient system that restricted and impeded technological progress. This line of argument is not justified by the calculations above, as the shift in management orientation and outlook towards the end of the eighteenth

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[273] B.W. Higman, *Slave Population and Economy*, p. 221.

century led to innovations and the use of new technology, which resulted in colossal increases in output and a rise in productivity levels.

Chapter 6

Conclusion

The Implications for Eric Williams' Thesis

The major finding of the study is an antithesis to the widespread belief that Jamaica's plantation economy declined during the late eighteenth century. The argument posited by Eric Williams has been the mantra for years as scholars sought to provide economic justification for the fallout of the plantation system.[274] The basic proposition is that slavery in the late eighteenth century was no longer a viable activity, and as with any other business venture if costs outweigh revenue over the long run then the sensible option is to shut down or in the case of slavery and the Transatlantic Trade in Africans, abolish it.

This study is diametrically opposed to this view, as the investigations undertaken revealed that between 1750 and 1805, there was evidence of economic growth in Jamaica. The indicators used were land acquisition and sales, labour numbers (enslaved arrivals and re-exports), output amounts and values as well as productivity levels. There is evidence that with the increased number of land transactions and the large enslaved population, output levels grew exponentially and at the same time productivity was improved. This has particular relevance to the argument about economic growth, as it

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[274] Eric Williams. *Capitalism and Slavery*; Lowell J, Ragatz , *The Fall of the Planter Class.*.

highlights that output was not increasing artificially but was really growing because of the efficient use of factor inputs and especially labour.

The assessment of output shows that the increase in the number of sugar estates between 1750 and 1805 was facilitated by the high demand for British West Indian sugar. The results further showed that sugar and its by-products were the major outputs accounting for approximately 76 percent of total export in the early years. This remained relatively stable even though output diversified and the absolute amount of output for all crops was increasing. This consistent pattern over the period explains the high reliance placed on sugar and its by-products. Furthermore, the major markets for all crops were located in England and North America, with Ireland and British North America (Canada) filling the deficit created through the loss of the mainland North American market after 1783.

Contemporary trade statistics reveal that the island's sugar export sector expanded throughout the latter part of the eighteenth century. In fact, the export amounts of sugar and its by- products in 1805 was approximately 2 times what it was in 1770, ranging from 47, 610 tons to 97, 217 tons in the two periods. This increase in export was steepest after the Declaration of American Independence, which in no small way highlights the productive capacity of the island during the years leading up to the abolition of the Transatlantic Trade in Africans.

The years leading up to 1805 were also of significance, as the steady increase in national income is seen. Throughout the period, the island's income from exports increased

steadily and in 1805 was more than £5 million. When compared with the previous years, it becomes clear that at no point did national income supersede the 1805 total. What does this say about the state of the island's plantation economy two years before the trade was abolished? This speaks to a phenomenal income growth as well as the concurrent economic growth at the beginning of the nineteenth century. The island was experiencing unprecedented levels of both output and income from exports during those years.

The estimation of the island's national income over the review period is also useful in other ways. The island's income earnings were compared with contemporary estimates of England's income levels over the same period - the early part of the nineteenth century. With this comparison, we are able to see the magnitude and the levels of growth the island was experiencing. At the beginning of the nineteenth century, the data revealed that Jamaica's national income was precisely 3 percent of England's. When compared with Eisner's 1832 estimates, it is evident that the island's income from exports had slowed significantly after 1807. This is consistent with the general decline in the island's plantation economy after abolition. This means therefore that the slowing down of the island's productive capacity started after 1807, and not before.

This pattern is similar to the one evident in the productivity levels and in fact all the variables seemed to behave consistently. Partial and total factor productivity figures both increased over the period under review. But the values provide proof that labour was an indispensable factor input and that the huge growth levels seen in output and income

were not attributed solely to land productivity, increased land under cultivation or improved farming techniques but importantly the efficiency of labour.

Therefore, with increased revenues and rising productivity levels, it cannot be assumed that, over the review period, slavery was inefficient and uneconomical. The high and growing productivity levels would have created economies of scale which would have culminated into lower average costs. This translated into a system that was very lucrative and so one would expect the impact on the economy to be positive as the society was totally reliant on slavery for its subsistence. In other words, a mono-sector/closed society that was totally dependent on the Transatlantic Trade in Africans and the plantation system would have shown growth if that single sector was growing.

The trends highlighted by the land transactions recorded also gives credence to the underpinnings of this dissertation. From 1750 to 1805, it was projected that 3.5 million acres of land was sold. This is symbolic as Jamaica has approximately 2.7 million acres of land. Such a colossal sales record signifies the active land market that existed and indirectly shows the importance of land as a form of investment at that time. The data further showed a large fluctuation in land transactions up to 1795, and then there was growth in sales of 65 percent between 1795 and 1800, which created a large growth in output for that same period.

Further evidence show that as land sales increased in the late eighteenth century the number of sugar plantations put to productive use increased also. This relationship is

most visible from 1768 to 1772 and again from 1792 to 1804. The incremental change in the number of acres sold during the first period was over 65,000 acres, resulting in an average of 32 sugar estates brought into cultivation. The change was higher from 1792 to 1804, but the expansion in sugar estates-though at a lower average than in the first period-continued to 1806.

There is evidence of a close link between the levels of activity in the land market and economic growth. That link was made by doing a comparative time-series analysis of land transactions with those of annual sugar exports. With the exception of 1760 and 1805, the data shows that increases or decreases in land sales were matched by similar changes in sugar exports. Therefore, land in use also had a large impact on the larger product market throughout the period.

Additionally, the large number of land transactions speaks to the buoyancy of the country's real estate market and is a major indicator of economic prosperity. Suffice to say, a vibrant real estate market signals the availability of capital and confidence in that economy. The obvious extrapolations from the trends visible in the land market within the period therefore, are that funds were available to acquire land. Also, the 'anxiety' to invest in land (as shown by the amount of transactions) was as a direct result of the need to engage in some productive or investment activity. Although planters and merchants were the dominant social groups engaging in land transactions, free blacks, women, and coloureds were also involved in the buying and selling of land over the period especially toward the close of the eighteenth century. In 1770, for example, planters and merchants

bought over 75 percent of land, with most of the transactions executed for the larger lots of land- those over 600 acres. Although this could have been so because such lots were cheaper, it could not have been the sole or major reason for the purchases. This is so as such large lots were not suitable for residential purposes as with Jamaica's land topography and soil structure, large lots can only be found in certain locations and with specific boundaries (rivers, swamps, hills, mountains). This largely limits the uses of such large land spaces to production. With the acres under cultivation increasing however, the large lots would be purchased for the cultivation of different crops hence the concentration on sugar and its by products, minor staples, coffee and other products.

With that in mind then, it is evident that land was not acquired on a 'bought for resale' basis, because if that were the case, then the large lots would have been subdivided at some point - reducing the amount of large lots available. Also, prices would have increased dramatically, to match this constant demand for land in satisfying this speculative motive. Basically what can be deduced from this is that most of the land transactions related to land that was suitable for production with the main players in the market were not merely speculators, but entrepreneurs.

Increases in land use and output were matched by increases in enslaved arrivals during this time. When one analyzed the situation regarding enslaved arrivals the conclusion reached is similar to that deduced when assessing land transactions. Between 1705 and 1745 the enslaved population grew by 67,428. When compared with a positive change of 206,923 between 1745 and 1807, the disparity is not only astronomical but speaks

volume. Further investigations revealed that re-exports was larger in the earlier period mentioned than in the later years. All this dictate that the demand for enslaved labour was highest between 1745 and 1807. This period of labour demand coincides with the period of the bullish land market, the expansion of sugar plantations, and growth in output.

As it relates to labour demand, the trend shows a real long run rise in prices punctuated only by short run variations in the pace of increase. As noted earlier, the short run fluctuations in slave prices reflected the intensity of demand for labour to satisfy plantation expansion, which, as stated earlier, was linked to the international commodity markets. With the onset of the St. Domingue Revolution in 1791, a deficit in the international market for sugar and coffee was created which Jamaica sought to fill. It is therefore no coincidence that during this period of plantation expansion, the island had its highest net imports of 131,637 enslaved Africans, which was approximately 20 percent of imports during the eighteenth century.

The large number of retained labourers also signals to a certain extent the availability of working capital. The planters had to keep working capital (whether in the form or cash or near cash) in order to meet recurring expenses. This would have to grow exponentially as the number of enslaved increased as more funds would be needed to maintain the enslaved population. But what is noticeable is that labourers were required to produce food for their consumption. This would have resulted in cost savings for the estate as less would be spent on imported food for domestic consumption, resulting in a higher working capital and hence would have contributed positively to the island's earnings.

Also of significance is the fact that as food production for consumption increased, exports also increased. This shows that the enslaved were not always involved in producing for export, but possibly had become so efficient that they could manage to increase both areas concurrently without one impinging on the other, as the output and productivity levels were not negatively affected by the subsistence farming.

In relation to the long run price increase this continued with the increase in enslaved arrivals and the short run price fluctuations. This means that labour was able to fetch a premium price and the rational explanation for this is the rising productivity of enslaved labour. Firstly, it highlights a pattern of increased demand, which is practical under the circumstances since if labour was getting less efficient, then increased numbers would not be sought but alternatives to labour would have been used. Secondly, to say that productivity led to increased demand and caused price changes would be reasonable in this case, as the Jamaican planters were demanding more and more labourers. The evidence shows that planters were demanding more enslaved Africans to satisfy higher demand for output, and the planters were also willing to pay more because the enslaved were productive.

This rise in labour productivity was attained not only because of the nature of work but also because of the various measures implemented by planters. In a system with no human or labour relations laws or practices, labour productivity was improved by extending working hours (especially during harvesting), higher levels of supervision and coercion, distribution of provision acres, changes in the enslaved demography, and not to

be forgotten, the punitive tactics employed by the planters. Labour productivity was also increased through improved production methods or crop rotation and which had a positive effect on land productivity.

This, when compared with Eric Williams' contention that slavery started on the basis of economic considerations and that these same considerations led to its demise is therefore not sustainable. The years leading up to the abolition of the Transatlantic Trade in Africans were some of the most profitable during the colonial period. Jamaica's plantation economy was a demand-driven economy. In such an economy, the high market prices for labour were matched by an increase in newly arrived labourers, which meant that the demand for African labour was high, and that planters were willing to pay higher prices to secure this valuable input. However, with the high price and high demand for African labour on the eve of abolition, demand-side factors could not fully account for abolition. Put differently, the Transatlantic Trade in Africans was not abolished because of inefficiency or decline within the plantation system. The social instability caused by enslaved uprisings is now widely acknowledged in the historiography as a contributing factor. From the perspective of most scholars of slave resistance, the enslaved played a fundamental role in bringing about an end to this oppressive and repressive system. Within this context, the spates of protests and rebellions during the early eighteenth century are seen as events that forced the British government to call a halt to the system.[275] This combined with the humanitarian struggle of Wilberforce, Clarkson, and

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[275] See Michael Craton, *Testing the Chains*; Michael Craton, "Proto-Peasant Revolts? The Late Slave Rebellions in the British West Indies"; Hilary Beckles, "The 200 Years War"; Hilary Beckles, " "Caribbean Anti-Slavery"; Mary Turner, *Slave and Missionaries;*; Richard Hart, *Slaves Who Abolished Slavery.*

others, were also powerful factors in the abolition of the trade in 1807 and of slavery itself in 1833. The factors that have been posited therefore are not mutually exclusive but must be viewed inclusively. Consequently, the evidence of growth during the late eighteenth and early nineteenth century meant that it is not accurate to attribute abolition on any one factor, and more significantly that the abolition of the Transatlantic Trade in Africans was not hinged totally on declining economic fortunes.

Overall, Jamaica's plantation economy recorded growth in output, national income, labour flows, land use, and productivity levels. The evidence presented does not support the argument that the island failed to recover its productive capacity after 1776 and neither does it concur with the view that the Jamaican planter was resistant to change. In fact, slavery did not retard innovation and technical progress as the rationalization of the labour force, managerial innovations, and changes in technology, were common features of the economy in 1805. This reflected the dynamic nature of the plantation system as planters adopted measures to ensure its survival and profitability.

Plantations in St. Andrew Parish,1754
Land Use-Ranked by Total Size

Owner	Plantation Name	Total Acres	Sugar Acres	Coffee Acres	Ginger Acres	Cotton Acres	Provision Acres	Pen Acres	Woodland Acres	Acres Accounted	Acres Unaccounted
Pinnock, Phillip	NG	2,872	242							242	2,630
Peet, William	Peets Estate	2,700					300	500	1,900	2,700	
Gibbon, James	Tunbridge/Waterhouse	2,434	310							310	2,124
Long, Charles	Norbrook	2,222		5			100	500		605	1,617
Laws & Home	Townwell/Temple Hall	2,000	190				200	500	1,100	1,990	10
Gregory, Arthur	Barbican	1,600	135				100	865	500	1,600	
Williams, John	NG	1,500	60	30	10	20	130	1,000	250	1,500	
Countess of Home	Snowhill	1,373									1,373
Bennets Estate		1,361									1,361
Pinnock, Thomas	NG	1,331									1,331
Innis, John		1,273									1,273
Archbould, Henry	Constant Spring	1,250	200				100	150	800	1,250	
Hughes, Walter		1,200									1,200
Rams Estate		1,150									1,150
Garthwait, Edward	Cherry Garden	1,112	133							133	979
Huskie, Daniel	NG	1,100		6	5		30	100	959	1,100	
James, Ramage	Mullet Hall	1,100		60	12		200	250	578	1,100	
Temple Laws, James	Swallowfield	1,030	200				250	280	300	1,030	
Silvera, Abraham	Silvera's Estate	1,030		180	30		350	240	230	1,030	
Mcraughs Estate		1,000						1,000		1,000	
Fuertado, Isaac	Golden Spring	963	200				41	120	602	963	
Augier, Susanna	NG	950		40	10		100		800	950	
Clarke, Maynard	NG	948	230	10			70	50	385	745	203
Dallas, Robert	NG	900		50	30		50	430	340	900	
Yeamans Estate		805									805
McQueen, Daniel	NG	800									800

Owner	Plantation Name	Total Acres	Sugar Acres	Coffee Acres	Ginger Acres	Cotton Acres	Provision Acres	Pen Acres	Woodland Acres	Acres Accounted	Acres Unaccounted
Marvely, John	NG	735	111							111	624
East, Edward	NG	724									724
Garthwait, Edward	Blackheath	654	104							104	550
Curtin, John	NG	600		10	2		50	8	530	600	
Elletson, Roger	Merry mans Hill	600					200	100	300	600	
Philips, Robert	Short Wood	600	100				10	240	250	600	
Day ..	Spring Plantation	600	120				200	30	250	600	
Greenlee, Robert	NG	600					50	450	100	600	
Eccles, Rev George	NG	600									600
Townsend, James	NG	556			40		150	200	116	506	50
Powell, Thomas	NG	551									551
Elletson, T. H.	Hope Estate	530	300					230		530	
Herbert, Jas.	Pembroke Hall	519	129							129	390
Barjeau, John	Hall's Delight	508	100				120	10	278	508	
Wallen, Thomas	NG	504									504
Burnetts Estate		502									502
Blechynden, T	..Hill	500		60	40		70	57	273	500	
Cavaliers	NC	500	85				50	250	115	500	
Seagraves, Samuel	NG	500									500
Winchester, William	NG	500									500
Burnside, Thomas	NG	480					20	80	380	480	
Baily, Zacariah	NG	463					50	163	250	463	
Peete, George	NG	450		30			70		350	450	
Adams, Samuel	Old Spring	446		8			100	42	150	300	146
Ashbourne, Robert	NG	431			20		60	100	251	431	
Hyde, Edmund	NG	418		2	12	4	30			48	370
Reynolds, William	NG	413		3	4		100	100	206	413	
Manning, Edward	NG	413		20			80	163	150	413	
Gaultier, Joseph	NG	400							400	400	
Spencer, John	NG	400		4			156	100	140	400	

Owner	Plantation Name	Total Acres	Sugar Acres	Coffee Acres	Ginger Acres	Cotton Acres	Provision Acres	Pen Acres	Woodland Acres	Acres Accounted	Acres Unaccounted
Reynolds, Thomas	NG	381		2	12		50	200	117	381	
Collins, Charity	NG	381					50	331		381	
Bennetts, George		360					30	230		260	100
Timberlake Est		350		20	16		100	50	154	340	10
Huddleston	Prospect	350	50				50	100	150	350	
Kelley, Luke	NG	344		4	6		60	150	124	344	
Stanton, Robert	NG	329		7	7		60	109	146	329	
Fernandes, Daniel	NM	328		30	20		20	20	238	328	
Stevenson, Barabry	NM	326		1	3		30	92	200	326	
Goulbourn, William	NM	320					200	70	50	320	
Johnston, Andrew	White Hall	308	80				60	27	141	308	
Hall, Cossley	NM	300							300	300	
Battersby, In	NM	300					30		270	300	
Alexander, N.	NM	300		5			30		265	300	
Bravo, Moses	Mount Moses	300		15	4		81		200	300	
Grants Estate	Maggotty Hall	300	150				20	4	126	300	
Young, James	NM	300					50	150	100	300	
Cruger, Henry	NM	300		15	5		100	100	80	300	
Lee, Benjamin	NM	300					100	200		300	
Stokes, Henry	NM	266			2			10	254	266	
Mount Canan	Caleb Foyster	257	5				20		232	257	
Foster, William	Cork Hill	250		2			40	8	200	250	
Phillips, Ryves	NM	250					50		200	250	
Biggs, Samuel	NM	245					100	50	95	245	
Truxtum, Richard	NM	230									230
Wray, John	NM	222		6	3		40	10	163	222	
Gooding, George	NM	218					150	40	28	218	
Blair, John	NM	213					100	113		213	
Bacchus, Mary	NM	200					40	60	100	200	
Hall, John	NM	200					50	100	50	200	

Owner	Plantation Name	Total Acres	Sugar Acres	Coffee Acres	Ginger Acres	Cotton Acres	Provision Acres	Pen Acres	Woodland Acres	Acres Accounted	Acres Unaccounted
Dsilva, Jacob	NM	194					100	50	44	194	
Boons Estate	NM	187					47		140	187	
Truxhun, Mary	NM	175						175		175	
Orgill, John	NM	170		6	4		141	19		170	
Hemsley, Joseph	NM	150		10			40		100	150	
Hemsley, Joshua	NM	150		10			40		100	150	
Surjeon, John	NM	150		8	8		50		84	150	
Lang, Malkham	NM	150						150		150	
Battersby, Benjamin	NM	150					100	50		150	
Timerlake, Hurst	NM	138						18	120	138	
Ord, James	NM	130					100		30	130	
Haliburton, Gavin	NM	130				30		100		130	
Joyce, John	NM	122			10		122			132	-10
Phipps, Paul	NM	120		4	2		80	20	14	120	
Payne, William	NM	100					40		60	100	
Green, Richard	NM	100					100			100	
Campbell, Daniel		98		3	5		30		60	98	
Grant, Daniel	NM	95						95		95	
Brissault, John	NM	90		10	6		74			90	
Wallen, Mathew	Mount Pleasant	85						85		85	
Mays, Revd.		84						84		84	
Bravo, Jacob	NM	81						81		81	
Menzies, Alexander	NM	81				16	15	50		81	
Cook, Roger	NM	80						80		80	
Reader, Richard	NM	78			3	6	20		18	47	31
Fittle, Edward	NM	75					40	35		75	
Raitt, Andrew	NM	60		10	10			20	20	60	
Dow's Estate		60						60		60	
Faulkner, John	NM	50						50		50	
Ducummon, John	NM	50					50			50	

Owner	Plantation Name	Total Acres	Sugar Acres	Coffee Acres	Ginger Acres	Cotton Acres	Provision Acres	Pen Acres	Woodland Acres	Acres Accounted	Acres Unaccounted
Dunston, John	NM	41						41		41	
Patridge, Samuel	NM	40					10	30		40	
Horobin, Samuel	NM	40					20	20		40	
Gouldbourne, Henry	NM	38					38			38	
Reese, Daniel	NM	33						33		33	
Barclay, James	NM	30						30		30	
Galvin, Edward	NM	25						25		25	
Dunston, Henry	NM	22						22		22	
Harris, Jos.	NM	21					21			21	
Musquito, Abraham	NM	20						20		20	
Mrs Dove	NM	20						20		20	
Seaward	NM	18						18		18	
Wade, Jacob Estate		15						15		15	
Lifely, Edm	NM	12						12		12	
Wilson, Robert	NM	12						12		12	
Mackay, George	NM	11					11			11	
Starton, Thomas	NM	8						8		8	
Lewis, John	NM	6						6		6	
Hopkins, John	NM	6						6		6	
Greig, William	NM	6						6		6	
Israel, Benjamin	NM	3					3			3	
Heymans Estate	Brandon Hill			30	20		100	150		300	-300
Townsend, Thomas	NM										
Total		**69,149**	**3,443**	**804**	**398**	**76**	**7,342**	**13,150**	**18,969**	**44,182**	**24,967**

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Plantations in St. Andrew Parish,1754

Where 100 Per Cent of the Land is Accounted for (actually 95%)

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%
Joyce, John	NM	122					10	8			122	100					132	108
Peet, William	Peets Estate	2,700									300	11	500	19	1,900	70	2,700	100
Gregory, Arthur	Barbican	1,600	135	8							100	6	865	54	500	31	1,600	100
Williams, John	NM	1,500	60	4	30	2	10	1	20	1	130	9	1,000	67	250	17	1,500	100
Archbould, Henry	Constant Spring	1,250	200	16							100	8	150	12	800	64	1,250	100
Huskie, Daniel	NM	1,100			6	1	5				30	3	100	9	959	87	1,100	100
James, Ramage	Mullet Hall	1,100			60	5	12	1			200	18	250	23	578	53	1,100	100
Temple Laws, James	Swallowfield	1,030	200	19							250	24	280	27	300	29	1,030	100
Silvera, Abraham	Silvera's Estate	1,030			180	17	30	3			350	34	240	23	230	22	1,030	100
Mcraughs Estate		1,000											1,000	100			1,000	100
Fuertado, Isaac	Golden Spring	963	200	21							41	4	120	12	602	63	963	100
Augier, Susanna	NM	950			40	4	10	1			100	11			800	84	950	100
Dallas, Robert	NM	900			50	6	30	3			50	6	430	48	340	38	900	100
French, Thomas	NM	640					10	2			40	6	80	13	510	80	640	100
Curtin, John	NM	600			10	2	2				50	8	8	1	530	88	600	100
Elletson, Roger	Merry mans Hill	600									200	33	100	17	300	50	600	100
Philips, Robert	Short Wood	600	100	17							10	2	240	40	250	42	600	100
Day	Spring Plantation	600	120	20							200	33	30	5	250	42	600	100
Greenlee, Robert	NM	600									50	8	450	75	100	17	600	100
Elletson, T. H.	Hope Estate	530	300	57									230	43			530	100
Barjeau, John	Hall's Delight	508	100	20							120	24	10	2	278	55	508	100
Blechynden, T.	Hill	500			60	12	40	8			70	14	57	11	273	55	500	100
Cavaliers	NC	500	85	17							50	10	250	50	115	23	500	100
Burnside, Thomas	NM	480									20	4	80	17	380	79	480	100
Baily, Zacariah	NM	463									50	11	163	35	250	54	463	100
Peete, George	NM	450			30	7					70	16			350	78	450	100

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%
Ashbourne, Robert	NM	431					20	5			60	14	100	23	251	58	431	100
Reynolds, William	NM	413			3	1	4	1			100	24	100	24	206	50	413	100
Manning, Edward	NM	413			20	5					80	19	163	39	150	36	413	100
Gaultier, Joseph	NM	400													400	100	400	100
Perrin, William	Retrieve	368			80	22	20	5			100	27	18	5	150	41	368	100
Knights, John	Molynes	368	84	23							50	14	234	64			368	100
Creane, Capt. James	NM	363	125	34							150	41	55	15	33	9	363	100
Huddleston	Prospect	350	50	14							50	14	100	29	150	43	350	100
Kelley, Luke	NM	344			4	1	6	2			60	17	150	44	124	36	344	100
Stanton, Robert	NM	329			7	2	7	2			60	18	109	33	146	44	329	100
Fernandes, Daniel	NM	328			30	9	20	6			20	6	20	6	238	73	328	100
Stevenson, Barabry	NM	326			1		3	1			30	9	92	28	200	61	326	100
Goulbourn, William	NM	320									200	63	70	22	50	16	320	100
Johnston, Andrew	White Hall	308	80	26							60	19	27	9	141	46	308	100
Hall, Cossley	NM	300													300	100	300	100
Battersby, In	NM	300									30	10			270	90	300	100
Alexander, N.	NM	300			5	2					30	10			265	88	300	100
Bravo, Moses	Mount Moses	300			15	5	4	1			81	27			200	67	300	100
Grants Estate	Maggotty Hall	300	150	50							20	7	4	1	126	42	300	100
Young, James	NM	300									50	17	150	50	100	33	300	100
Cruger, Henry	NM	300			15	5	5	2			100	33	100	33	80	27	300	100
Lee, Benjamin	NM	300									100	33	200	67			300	100
Stokes, Henry	NM	266					2	1					10	4	254	95	266	100
Mount Canan	Caleb Foyster	257	5	2							20	8			232	90	257	100
Foster, William	Cork Hill	250			2	1					40	16	8	3	200	80	250	100
Phillips, Ryves	NM	250									50	20			200	80	250	100
Biggs, Samuel	NM	245									100	41	50	20	95	39	245	100
Wray, John	NM	222			6	3	3	1			40	18	10	5	163	73	222	100
Gooding, George	NM	218									150	69	40	18	28	13	218	100
Blair, John	NM	213									100	47	113	53			213	100

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%
Bacchus, Mary	NM	200									40	20	60	30	100	50	200	100
Hall, John	NM	200									50	25	100	50	50	25	200	100
Dsilva, Jacob	NM	194									100	52	50	26	44	23	194	100
Boons Estate	NM	187									47	25			140	75	187	100
Truxhun, Mary	NM	175											175	100			175	100
Orgill, John	NM	170			6	4	4	2			141	83	19	11			170	100
Hemsley, Joshua	NM	150			10	7					40	27			100	67	150	100
Surjeon, John	NM	150			8	5	8	5			50	33			84	56	150	100
Lang, Malkham	NM	150											150	100			150	100
Battersby, Benjamin	NM	150									100	67	50	33			150	100
Timerlake, Hurst	NM	138											18	13	120	87	138	100
Ord, James	NM	130									100	77			30	23	130	100
Haliburton, Gavin	NM	130							30	23			100	77			130	100
Phipps, Paul	NM	120			4	3	2	2			80	67	20	17	14	12	120	100
Payne, William	NM	100									40	40			60	60	100	100
Green, Richard	NM	100									100	100					100	100
Campbell, Daniel		98			3	3	5	5			30	31			60	61	98	100
Grant, Daniel	NM	95											95	100			95	100
Brissault, John	NM	90			10	11	6	7			74	82					90	100
Wallen, Mathew	Mount Pleasant	85											85	100			85	100
Mays, Revd.		84											84	100			84	100
Bravo, Jacob	NM	81											81	100			81	100
Menzies, Alexander	NM	81							16	20	15	19	50	62			81	100
Cook, Roger	NM	80											80	100			80	100
Fittle, Edward	NM	75									40	53	35	47			75	100
Raitt, Andrew	NM	60			10	17	10	17					20	33	20	33	60	100
Dow's Estate		60											60	100			60	100
Faulkner, John	NM	50											50	100			50	100
Ducummon, John	NM	50									50	100					50	100
Stone, George Est		48									48	100					48	100

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%
Redmans, William	NM	47									47	100					47	100
Launce, James	NM	46											46	100			46	100
Dunston, John	NM	41											41	100			41	100
Patridge, Samuel	NM	40									10	25	30	75			40	100
Horobin, Samuel	NM	40									20	50	20	50			40	100
Compton, Thomas	NM	40									40	100					40	100
Collins, George	NM	39											39	100			39	100
Willy, William	NM	39									39	100					39	100
Dunston, Henry	NM	22											22	100			22	100
Harris, Jos.	NM	21									21	100					21	100
Musquito, Abraham	NM	20											20	100			20	100
Mrs Dove	NM	20											20	100			20	100
Seaward	NM	18											18	100			18	100
Wade, Jacob Estate		15											15	100			15	100
Lifely, Edm	NM	12											12	100			12	100
Wilson, Robert	NM	12											12	100			12	100
Mackay, George	NM	11									11	100					11	100
Starton, Thomas	NM	8											8	100			8	100
Lewis, John	NM	6											6	100			6	100
Hopkins, John	NM	6											6	100			6	100
Greig, William	NM	6											6	100			6	100
Israel, Benjamin	NM	3									3	100					3	100
Laws & Home	Townwell	2,000	190	10							200	10	500	25	1,100	55	1,990	100
Timberlake Est		350			20	6	16	5			100	29	50	14	154	44	340	97
Total		**40,352**	**2,184**	**5**	**749**	**2**	**323**	**1**	**66**		**6,742**	**17**	**11,978**	**30**	**18,300**	**45**	**40,342**	

APPENDIX A3
Plantations in St. Andrew Parish, 1754
Land Use - Ranked by Total Size including percentage Distribution

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%	Unaccounted Acres	%
Pinnock, Phillip	NM	2,872	242	8													242	8	2,630	92
Peet, William	Peets Estate	2,700									300	11	500	19	1,900	70	2,700	100		
Gibbon, James	Tunbridge/Waterhouse	2,434	310	13													310	13	2,124	87
Long, Charles	Norbrook	2,222			5	0					100	5	500	23			605	27	1,617	73
Laws & Home	Townwell/Temple Hall	2,000	190	10							200	10	500	25	1,100	55	1,990	100	10	1
Gregory, Arthur	Barbican	1,600	135	8							100	6	865	54	500	31	1,600	100		
Williams, John	NM	1,500	60	4	30	2	10	1	20	1	130	9	1,000	67	250	17	1,500	100		
Countess of Home	Snowhill	1,373																	1,373	100
Bennets Estate		1,361																	1,361	100
Pinnock, Thomas	NM	1,331																	1,331	100
Innis, John		1,273																	1,273	100
Archbould, Henry	Constant Spring	1,250	200	16							100	8	150	12	800	64	1,250	100		
Hughes, Walter		1,200																	1,200	100
Rams Estate		1,150																	1,150	100
Garthwait, Edward	Cherry Garden	1,112	133	12													133	12	979	88
Huskie, Daniel	NM	1,100			6	1	5	0			30	3	100	9	959	87	1,100	100		
James, Ramage	Mullet Hall	1,100			60	5	12	1			200	18	250	23	578	53	1,100	100		
Temple Laws, James	Swallowfield	1,030	200	19							250	24	280	27	300	29	1,030	100		

Owner	Plantation	Total Acres	Sugar Acres	Sugar %	Coffee Acres	Coffee %	Ginger Acres	Ginger %	Cotton Acres	Cotton %	Provision Acres	Provision %	Pen Acres	Pen %	Wood Acres	Wood %	Accounted Acres	Accounted %	Unaccounted Acres	Unaccounted %
Silvera, Abraham	Silvera's Estate	1,030			180	17	30	3			350	34	240	23	230	22	1,030	100		
Mcraughs Estate		1,000											1,000	100			1,000	100		
Fuertado, Isaac	Golden Spring	963	200	21							41	4	120	12	602	63	963	100		
Augier, Susanna	NM	950			40	4	10	1			100	11			800	84	950	100		
Clarke, Maynard	NM	948	230	24	10	1					70	7	50	5	385	41	745	79	203	21
Dallas, Robert	NM	900			50	6	30	3			50	6	430	48	340	38	900	100		
Yeamans Estate		805																	805	100
McQueen, Daniel	NM	800																	800	100
Marvely, John	NM	735	111	15													111	15	624	85
East, Edward	NM	724																	724	100
Garthwait, Edward	Blackheath	654	104	16													104	16	550	84
French, Thomas	NM	640					10	2			40	6	80	13	510	80	640	100		
Ripley, John	NM	635																	635	100
Scott, John	NM	604																	604	100
Curtin, John	NM	600			10	2	2	0			50	8	8	1	530	88	600	100		
Elletson, Roger	Merry mans Hill	600									200	33	100	17	300	50	600	100		
Philips, Robert	Short Wood	600	100	17							10	2	240	40	250	42	600	100		
Day ..	Spring Plantation	600	120	20							200	33	30	5	250	42	600	100		
Greenlee, Robert	NM	600									50	8	450	75	100	17	600	100		
Eccles, Rev George	NM	600																	600	100

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%	Unaccounted Acres	%
Townsend, James	NM	556					40	7			150	27	200	36	116	21	506	91	50	9
Powell, Thomas	NM	551																	551	100
Elletson, Thomas Hope	Hope Estate	530	300	57									230	43			530	100		
Herbert, Jas.	Pembroke Hall	519	129	25													129	25	390	75
Barjeau, John	Hall's Delight	508	100	20							120	24	10	2	278	55	508	100		
Wallen, Thomas	NM	504																	504	100
Burnetts Estate		502																	502	100
Blechynden, Theophilus	..Hill	500			60	12	40	8			70	14	57	11	273	55	500	100		
Cavaliers	NC	500	85	17							50	10	250	50	115	23	500	100		
Seagraves, Samuel	NM	500																	500	100
Winchester, William	NM	500																	500	100
Burnside, Thomas	NM	480									20	4	80	17	380	79	480	100		
Baily, Zacariah	NM	463									50	11	163	35	250	54	463	100		
Peete, George	NM	450			30	7					70	16			350	78	450	100		
Adams, Samuel	Old Spring	446			8	2					100	22	42	9	150	34	300	67	146	33
Ashbourne, Robert	NM	431					20	5			60	14	100	23	251	58	431	100		
Hyde, Edmund	NM	418			2	0	12	3	4	1	30	7					48	11	370	89
Reynolds, William	NM	413			3	1	4	1			100	24	100	24	206	50	413	100		
Manning, Edward	NM	413			20	5					80	19	163	39	150	36	413	100		
Gaultier, Joseph	NM	400													400	100	400	100		

Owner	Plantation	Total Acres	Sugar Acres	Sugar %	Coffee Acres	Coffee %	Ginger Acres	Ginger %	Cotton Acres	Cotton %	Provision Acres	Provision %	Pen Acres	Pen %	Wood Acres	Wood %	Accounted Acres	Accounted %	Unaccounted Acres	Unaccounted %
Spencer, John	NM	400			4	1					156	39	100	25	140	35	400	100		
Mrs Poyntz	NM	400									50	13	250	63	100	25	400	100		
Hibbert, George	NM	400																	400	100
Cammock, Thomas	NM	400																	400	100
Reynolds, Thomas	NM	381			2	1	12	3			50	13	200	52	117	31	381	100		
Collins, Charity	NM	381									50	13	331	87			381	100		
Perrin, William	Retrieve	368			80	22	20	5			100	27	18	5	150	41	368	100		
Knights, John	Molynes	368	84	23							50	14	234	64			368	100		
Creane, Capt. James	NM	363	125	34							150	41	55	15	33	9	363	100		
Bennetts, George		360									30	8	230	64			260	72	100	28
Timberlake Est		350			20	6	16	5			100	29	50	14	154	44	340	97	10	3
Huddleston & Barton	Prospect	350	50	14							50	14	100	29	150	43	350	100		
Kelley, Luke	NM	344			4	1	6	2			60	17	150	44	124	36	344	100		
Stanton, Robert	NM	329			7	2	7	2			60	18	109	33	146	44	329	100		
Fernandes, Daniel	NM	328			30	9	20	6			20	6	20	6	238	73	328	100		
Stevenson, Barabry	NM	326			1	0	3	1			30	9	92	28	200	61	326	100		
Goulbourn, William	NM	320									200	63	70	22	50	16	320	100		
Johnston, Andrew	White Hall	308	80	26							60	19	27	9	141	46	308	100		
Hall, Cossley	NM	300													300	100	300	100		
Battersby, In (a minor)	NM	300									30	10			270	90	300	100		

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%	Unaccounted Acres	%
Alexander, Nathaniel	NM	300			5	2					30	10			265	88	300	100		
Bravo, Moses	Mount Moses	300			15	5	4	1			81	27			200	67	300	100		
Grants Estate	Maggotty Hall	300	150	50							20	7	4	1	126	42	300	100		
Young, James	NM	300									50	17	150	50	100	33	300	100		
Cruger, Henry	NM	300			15	5	5	2			100	33	100	33	80	27	300	100		
Lee, Benjamin	NM	300									100	33	200	67			300	100		
Stokes, Henry	NM	266					2	1					10	4	254	95	266	100		
Mount Canan	Caleb Foyster	257	5	2							20	8			232	90	257	100		
Foster, William	Cork Hill	250			2	1					40	16	8	3	200	80	250	100		
Phillips, Ryves	NM	250									50	20			200	80	250	100		
Biggs, Samuel	NM	245									100	41	50	20	95	39	245	100		
Truxtum, Richard	NM	230																	230	100
Wray, John	NM	222			6	3	3	1			40	18	10	5	163	73	222	100		
Gooding, George	NM	218									150	69	40	18	28	13	218	100		
Blair, John	NM	213									100	47	113	53			213	100		
Bacchus, Mary	NM	200									40	20	60	30	100	50	200	100		
Hall, John	NM	200									50	25	100	50	50	25	200	100		
Dsilva, Jacob	NM	194									100	52	50	26	44	23	194	100		
Boons Estate	NM	187									47	25			140	75	187	100		
Truxhun, Mary	NM	175											175	100			175	100		

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%	Unaccounted Acres	%
Orgill, John	NM	170			6	4	4	2			141	83	19	11			170	100		
Greogory, Thomas	NM	160			3	2	4	3			43	27	20	13	90	56	160	100		
Venhorn, John	Montgomerys pen	160											160	100			160	100		
Furnell, Peter	NM	153			5	3	3	2			45	29	20	13	80	52	153	100		
Hemsley, Joseph	NM	150			10	7					40	27			100	67	150	100		
Hemsley, Joshua	NM	150			10	7					40	27			100	67	150	100		
Surjeon, John	NM	150			8	5	8	5			50	33			84	56	150	100		
Lang, Malkham	NM	150											150	100			150	100		
Battersby, Benjamin	NM	150									100	67	50	33			150	100		
Timerlake, Hurst	NM	138											18	13	120	87	138	100		
Ord, James	NM	130									100	77			30	23	130	100		
Haliburton, Gavin	NM	130							30	23			100	77			130	100		
Joyce, John	NM	122					10	8			122	100					132	108	-10	-8
Phipps, Paul	NM	120			4	3	2	2			80	67	20	17	14	12	120	100		
Payne, William	NM	100									40	40			60	60	100	100		
Green, Richard	NM	100									100	100					100	100		
Campbell, Daniel		98			3	3	5	5			30	31			60	61	98	100		
Grant, Daniel	NM	95											95	100			95	100		
Brissault, John	NM	90			10	11	6	7			74	82					90	100		
Wallen, Mathew	Mount Pleasant	85											85	100			85	100		

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%	Unaccounted Acres	%
Mays, Revd. Mr Estate		84											84	100			84	100		
Bravo, Jacob	NM	81											81	100			81	100		
Menzies, Alexander	NM	81							16	20	15	19	50	62			81	100		
Cook, Roger	NM	80											80	100			80	100		
Reader, Richard	NM	78					3	4	6	8	20	26			18	23	47	60	31	40
Fittle, Edward	NM	75									40	53	35	47			75	100		
Raitt, Andrew	NM	60			10	17	10	17					20	33	20	33	60	100		
Dow's Estate		60											60	100			60	100		
Faulkner, John	NM	50											50	100			50	100		
Ducummon, John	NM	50									50	100					50	100		
Stone, George Est		48									48	100					48	100		
Redmans, William	NM	47									47	100					47	100		
Launce, James	NM	46											46	100			46	100		
Dunston, John	NM	41											41	100			41	100		
Patridge, Samuel	NM	40									10	25	30	75			40	100		
Horobin, Samuel	NM	40									20	50	20	50			40	100		
Compton, Thomas	NM	40									40	100					40	100		
Collins, George	NM	39											39	100			39	100		
Willy, William	NM	39									39	100					39	100		
Gouldbourne, Henry	NM	38									38	100					38	100		

Owner	Plantation	Total Acres	Sugar Acres	%	Coffee Acres	%	Ginger Acres	%	Cotton Acres	%	Provision Acres	%	Pen Acres	%	Wood Acres	%	Accounted Acres	%	Unaccounted Acres	%
Reese, Daniel	NM	33											33	100			33	100		
Barclay, James	NM	30											30	100			30	100		
Galvin, Edward	NM	25											25	100			25	100		
Dunston, Henry	NM	22											22	100			22	100		
Harris, Jos.	NM	21									21	100					21	100		
Musquito, Abraham	NM	20											20	100			20	100		
Mrs Dove	NM	20											20	100			20	100		
Seaward	NM	18											18	100			18	100		
Wade, Jacob Estate		15											15	100			15	100		
Lifely, Edm	NM	12											12	100			12	100		
Wilson, Robert	NM	12											12	100			12	100		
Mackay, George	NM	11									11	100					11	100		
Starton, Thomas	NM	8											8	100			8	100		
Lewis, John	NM	6											6	100			6	100		
Hopkins, John	NM	6											6	100			6	100		
Greig, William	NM	6											6	100			6	100		
Israel, Benjamin	NM	3									3	100					3	100		
Heymans Estate	Brandon Hill				30		20				100		150				300		-300	
Townsend, Thomas	NM																			
TOTALS		69,149	3,443	5	804	1	398	1	76	0	7,342	11	13,150	19	18,969	27	44,182	64	24,967	

APPENDIX B

The Number of Africans Imported and Re-exported from Jamaica, between 22 September, 1702 and December 31, 1807

Year	Ships No of	(Fuller) Enslaved Imported	Re-exported	(TSTD) Enslaved Embarked	Disembarked
1702	5	843	327	4,224	3,415
1703	14	2,740	481	2,744	2,238
1704	16	4,120	221	6,473	5,415
1705	16	3,503	1,669	5,277	4,113
1706	14	3,804	1,086	5,133	4,190
1707	15	3,358	897	4,441	3,598
1708	23	6,627	1,379	10,696	8,909
1709	10	2,234	1,275	3,838	3,107
1710	15	3,662	1,191	7,475	6,245
1711	26	6,724	1,532	8,363	6,791
1712	15	4,128	1,903	6,010	4,947
1713	19	4,378	2,712	5,044	4,139
1714	24	5,789	3,507	7,825	6,432
1715	10	2,372	1,089	1,186	968
1716	24	6,361	2,872	4,254	3,577
1717	29	7,551	3,153	2,678	2,223
1718	27	6,253	2,247	7,590	6,285
1719	25	5,120	3,161	7,647	6,307
1720	23	5,064	2,815	7,080	5,908
1721	17	3,715	1,637	4,008	3,299
1722	41	8,469	3,263	6,371	5,481
1723	30	6,824	4,647	5,350	4,529
1724	25	6,852	3,569	7,929	6,626
1725	41	10,297	3,388	9,780	8,046
1726	50	11,703	4,112	5,807	4,738
1727	17	3,876	1,555	3,483	2,872
1728	20	5,350	986	6,627	5,407
1729	40	10,499	4,820	18,965	15,462
1730	43	10,104	5,222	10,000	8,250
1731	45	10,079	5,708	10,667	8,773
1732	57	13,552	5,288	7,098	5,668
1733	37	7,413	5,176	2,334	1,912

		(Fuller)		(TSTD)	
	Ships	Enslaved		Enslaved	
Year	No of	Imported	Re-exported	Embarked	Disembarked
1734	20	4,570	1,666	4,905	4,090
1735	20	4,851	2,260	2,374	1,934
1736	15	3,913	1,647	5,477	4,468
1737	35	8,995	2,240	7,718	6,404
1738	32	7,695	2,070	4,395	3,585
1739	29	6,787	598	1,758	1,434
1740	27	5,362	495	5,140	4,221
1741	19	4,255	562	5,067	4,129
1742	22	5,067	792	4,182	3,481
1743	38	8,926	1,368	9,711	7,989
1744	38	8,755	1,331	10,246	8,593
1745	18	3,843	1,344	4,695	3,831
1746	16	4,703	1,502	6,436	5,259
1747	33	10,898	3,378	14,070	11,662
1748	39	10,430	2,426	11,912	10,083
1749	25	6,858	2,128	7,920	6,727
1750	16	3,587	721	3,749	3,218
1751	21	4,840	713	6,790	5,644
1752	27	6,117	1,038	8,653	7,321
1753	39	7,661	902	9,194	7,785
1754	47	9,551	1,592	12,660	10,668
1755	64	12,723	598	16,523	13,685
1756	46	11,166	1,902	11,712	9,992
1757	32	7,935	943	9,208	8,085
1758	11	3,405	411	5,474	4,653
1759	18	5,212	681	4,179	3,601
1760	23	7,573	2,368	7,642	6,601
1761	29	6,480	642	9,125	7,792
1762	24	6,279	232	7,868	6,735
1763	33	10,079	1,582	11,248	9,793
1764	41	10,213	2,369	13,402	11,454
1765	41	8,951	2,006	13,162	11,320
1766	43	10,208	672	14,599	12,554
1767	19	3,248	375	5,663	4,851
1768	27	5,950	485	8,861	7,681
1769	19	3,575	420	5,689	4,792
1770	25	6,824	836	9,060	7,724

Year	Ships No of	(Fuller) Enslaved Imported	(Fuller) Enslaved Re-exported	(TSTD) Enslaved Embarked	(TSTD) Enslaved Disembarked
1771	17	4,183	671	7,016	5,820
1772	22	5,278	923	9,317	7,551
1773	49	9,676	800	14,161	11,884
1774	79	18,448	2,511	22,759	19,216
1775	39	9,292	1,629	20,599	17,445
1776				19,072	16,241
1777				6,277	5,273
1778				5,480	4,614
1779				5,025	4,254
1780				4,340	3,739
1781				9,065	7,562
1782				7,254	6,491
1783				11,508	9,855
1784				18,350	15,809
1785				13,002	11,335
1786				7,349	6,389
1787				7,868	6,874
1788				7,788	6,588
1789				11,458	9,895
1790				16,960	14,210
1791				18,409	16,039
1792				20,528	18,272
1793				30,975	28,119
1794				15,167	14,224
1795				14,042	13,020
1796				8,914	8,659
1797				12,012	10,913
1798				12,672	11,118
1799				18,686	15,896

	Ships	(Fuller) Enslaved		(TSTD) Enslaved	
Year	No of	Imported	Re-exported	Embarked	Disembarked
1800				25,302	21,554
1801				11,776	10,136
1802				12,273	10,339
1803				8,395	7,093
1804				6,739	5,622
1805				5,864	4,925
1806				10,908	9,139
1807				19,158	16,024

Source: TSTD

Sheila Lambert (ed.) House of Commons Sessional Papers, Vol. 69, pp. 222-3.Stephen Fuller's

report to the Jamaica Assembly. Alternately, see C.O. 137/38, Appendix to the Memorial of

Stephen Fuller (Agent for Jamaica) to the Board of Trade, 1788.

Appendix C

Weights and Measurement

Commodities from the NOSL were recorded in many different units. These units are converted for convenience into a single unit. The conversions for the commodities in the NOSL are:

Sugar

1 hogshead	63 gallons[276]
1 tierce	42 gallons[277]
1 barrel	31 gallons[278]
1 firkin	8 gallons[279]
1 keg	4.5 gallons[280]
1 puncheon	84 gallons[281]
1 cask	38 gallons
1 small cask	13 gallons
1 hundredweight	112 pounds[282]
1 ton (tun)	252 gallons[283]

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[276] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America* (1972) p. 171-2; John J. McCusker, *Rum and the American Revolution*, p. 784, 812.

[277] Ibid., p.795.

[278] Ibid.

[279] Ibid.

[280] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America.*

[281] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America;* John J. McCusker, *Rum and the American Revolution.*

[282] Ibid.

22 hundredweight	1 cargo ton[284]

Rum

1 cask	110 gallons[285]
1 hogshead	63 gallons[286]
1 puncheon	84 gallons[287]
1 barrel	31.5 gallons[288]
1 tierce	42 gallons[289]
1 gallon	7.75 pounds[290]
1 keg	15 gallons[291]
1 small cask	12.9 gallons
252 gallons	1 cargo ton[292]

Molasses

1 hogshead	63 gallons[293]
1 puncheon	84 gallons[294]

[283] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America;* John McCusker, "The Tonnage of Ships Engaged in British Colonial Trade During the Eighteenth century", *Research in Economic History,* 6 (1981):73-105.

[284] John McCusker, "The Tonnage of Ships Engaged in British Colonial Trade"

[285] John McCusker, *Rum and the American Revolution,* p. 818.

[286] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America,* pp. 171-2; John J. McCusker, *Rum and the American Revolution,* p. 784, 812.

[287] Ibid.

[288] Ibid.

[289] Ibid.

[290] John McCusker, *Rum and the American Revolution,* p. 816.

[291] Ibid,, p. 870.

[292] John McCusker, "The Tonnage of Ships in British Colonial Trade"

[293] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America,* pp. 171-2; John J. McCusker, *Rum and the American Revolution,* p. 784, 812.

1 tierce	42 gallons[295]
1 barrel	31.2 gallons[296]
1 cask	64 gallons[297]
1 gallon	7 pounds[298]
252 gallons	1 cargo ton[299]

Pimento

1 bag	100 pounds[300]
1 hogshead	400 pounds[301]
1 barrel	200 pounds[302]
1 tierce	263 pounds[303]
1 cask	379.5 pounds
1 puncheon	821.5 pounds[304]
1 butt	1,232 pounds[305]
22 hundredweight	1 cargo ton[306]

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[294] Ibid.
[295] Ibid.
[296] Ibid.
[297] John J. McCusker, *Rum and the American Revolution*, p. 829.
[298] John J. McCusker, "Weights and Measures in the Colonial Sugar Trade: The Gallon and the Pound and Their International Equivalents", *William and Mary Quarterly*, 30, (1973): 599-624.
[299] John J. McCusker, "The Tonnage of Ships Engaged in British Colonial Trade".
[300] Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies*, vol. 1, p. 303
[301] Richard Bean, "Food Imports into the British West Indies", in V. Rubin and A Tuden (eds.), *Comparative Perspectives on Slavery in New World Plantation Societies* (1977), p. 589.
[302] Ibid.
[303] Ibid.
[304] Ibid.
[305] Ibid.
[306] John J. McCusker, "The Tonnage of Ships Engaged in British Colonial Trade".

Ginger

1 bag	70 pounds[307]
1 cask	379.50 pounds
1 barrel	308.10 pounds[308]
1 hogshead	616 pounds[309]
1 butt	1,232.30 pounds[310]
1 tierce	401.80 pounds[311]
22 hundredweight	1 cargo ton[312]

Cotton

1 bag	300 pounds[313]
7 hundredweight	1 cargo ton[314]

Logwood

1 tun/ton	2,240 pounds[315]
20 hundredweight	1 cargo ton[316]

Cocoa

1 bag	100 pounds[317]

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[307] Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies.*
[308] Richard Bean, "Food Imports into the British West Indies", p. 589.
[309] Ibid
[310] Ibid.
[311] Ibid.
[312] John J. McCusker, "The Tonnage of Ships Engaged in British Colonial Trade"
[313] Edward Long, *The History of Jamaica,* vol. 3, p. 693.
[314] John J. McCusker, "The Tonnage of Ships Engaged in British Colonial Trade".
[315] Ibid.
[316] Ibid, p. 92.
[317] Richard Bean, "Food Imports into the British West Indies", p. 589.

1 seroon	250 pounds[318]
1 cask	379.50 pounds[319]
1 barrel	200 pounds[320]
22 hundredweight	1 cargo ton[321]

Coffee

1 bag	100 pounds[322]
1 cask	346 pounds
1 barrel	308 pounds[323]
1 tierce	410 pounds[324]
1 hogshead	616 pounds[325]
1 hundredweight	112 pounds[326]
22 hundredweight	1 cargo ton

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[318] Ibid.
[319] Ibid.
[320] Ibid.
[321] John J. McCusker, "The Tonnage of Ships Engaged in British Colonial Trade".
[322] Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies*, vol. 1, p. 303.
[323] James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America*, p. 206.
[324] Ibid.
[325] Ibid.
[326] Ibid.

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