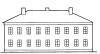
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# The persistence of wealth: Economic inequality in a Caribbean slave colony in the very long run<sup>\*</sup>

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**Abstract:** It has been proposed that slave societies were the most unequal societies in recorded human history. What little evidence there is shows an ambiguous picture. We contribute with a study on the wealth distribution in a Caribbean society, based on individual-level data for the full population, combining tax and census records into the largest comparable historical dataset from the Global South. Our results show a distribution of wealth shockingly close to perfect inequality. Our results also show a remarkable degree of persistence: even after slavery was abolished, the freedmen never managed to accumulate physical wealth to any measurable degree.

**JEL:** D31, J47, N36

Keywords: Inequality, wealth, slavery, Caribbean, emancipation, long-term

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#### 1. Introduction

There is a large scholarly literature on the role that the legacy of colonial institutions plays for the distribution of resources in modern societies, as well as for the level of economic development attained (Acemoglu, Johnson, and Robinson 2001; 2002; 2005; Acemoglu and Robinson 2012). Much previous research in this field have focused upon settler colonies, especially in the Americas and in Africa. Yet, another type of colonial society was the slavebased plantation society found for example in Brazil, the Caribbean and in what would become Southern United States. Influential scholars such as Stanley Engerman and Kenneth Sokoloff or Thomas Piketty have argued that this latter type of society constituted the most unequal societal type in human history (Engerman and Sokoloff 2012, 16–21; Sokoloff and Engerman 2000; Piketty 2020, chap. 6).

The existing empirical evidence on the economic inequality in slave societies include research on Brazil in 1870 (where around 15 per cent of the population was enslaved), the Cape Colony, in current-day South Africa, in the early eighteenth century (where more than half the population was enslaved) and Jamaica in the late eighteenth century, where more than 90 per cent of the population was enslaved (Bértola et al. 2010; Fourie and von Fintel 2010; Fourie and Von Fintel 2011; Burnard, Panza, and Williamson 2019). The Jamaican case is the only case representative of the most extreme slave economies in the Caribbean, where the vast majority of the population was enslaved. The evidence from the limited number of previous studies is, as will be shown in this paper, mixed. Different results are both the outcome of different methodologies, with many older studies suffering from methodological shortcomings, and of real socio-economic differences between different slave societies. A society where only a small share of the population was enslaved would have the potential to exhibit a much more even distribution of resources than a society where the overwhelming majority of the population was enslaved. For this reason, the Caribbean slave economies are of critical importance for testing the proposition of extremely high levels of inequality in slave societies, as they represent the most extreme manifestation of slavery in the late pre-industrial era.

In this paper, we study the historical distribution of wealth, a topic that has been in focus in much previous research on other parts of the world (Bourguignon and Morrisson 2002; Piketty, Postel-Vinay, and Rosenthal 2006; Milanovic, Lindert, and Williamson 2011; Piketty 2011; Miller 2011; Dow and Reed 2013; Piketty 2014; Williamson 2015; Lindert and

Williamson 2016; Milanovic 2018). We study wealth inequality in one Caribbean slave colony; the island of St. Croix, in what was then the Danish West Indies (today the US Virgin Islands, USVI). While geographically small, this colony was in socio-economic terms very similar to other slave plantation colonies in the region, with an economy based almost solely upon slavery-based plantation agriculture of cane sugar. Extraordinarily rich primary sources from the colony in the form of tax registers and censuses allow us to reconstruct the wealth distribution of the whole population – both free and enslaved - in detail over a very long period of time, from the mid-eighteenth century to the early-twentieth century. The period spans across slavery, slave trade abolition and emancipation, allowing us to examine whether such institutional changes had any impact upon the distribution of wealth. We can thereby contribute to a growing literature on the historical legacy of slavery. It has in previous research been argued that historical slavery is an important driver of current-day levels of inequality (Soares, Assunção, and Goulart 2012; see however Nunn 2007 for a different interpretation). How slavery was abolished might also have had important consequences for the distribution of resources in these societies. Slave-owners were in some cases compensated for the loss of capital when slavery was abolished (Draper 2010; C. Hall et al. 2014). Even when they were not, however, the families of former slaveowners seem to have recovered from the wealth shock within a few decades (Ager, Boustan, and Eriksson 2021; Dupont and Rosenbloom 2022). The possibilities that freedmen following emancipation would have to earn an income, or to accumulate wealth in other means, would also have long-term consequences for the racial wealth gap in postslavery societies (Shapiro and Kenty-Drane 2005; Miller 2011). Several scholars have thus documented a convergence in wealth-holdings between the black and the white population in the United States during the first half-century following emancipation, after which the process of convergence slowed substantially (Higgs 1982; Margo 2016; Derenoncourt et al. 2023).

The panel dataset constructed from the primary sources is made up of more than 1.4 million observations and is, to our knowledge, the largest dataset for any part of the world outside of Europe from this historical period of time. The dataset includes information on the ownership of key assets in a plantation colony (including agricultural land, real estate and other buildings and enslaved persons) combined with the prices these assets captured on the market. The results show stunningly high levels of inequality, with an estimated Gini coefficient for wealth distribution among the whole population of the island hovering

around 0.96-0.99: almost as perfectly unequal a society as there can be. Whereas it should come as no surprise that the distribution of wealth in slave societies was unequal, just how unequal the distribution could be is revelatory in comparison with previous research in the field. Virtually all measurable wealth on the island was held by a small elite. The case thus lends strong support to the proposition that slave economies exhibited extremely high levels of inequality. The results also show a remarkable persistence of inequality over time. Whereas emancipation from slavery in, e.g., the United States, meant that at least some freedmen could start accumulating wealth, thus reducing the racial wealth gap in the decades after emancipation, there is no evidence of any similar decrease in inequality in the case of St. Croix. The concentration of wealth remained as high in the seven decades following emancipation as it had in the decades preceding this institutional break.

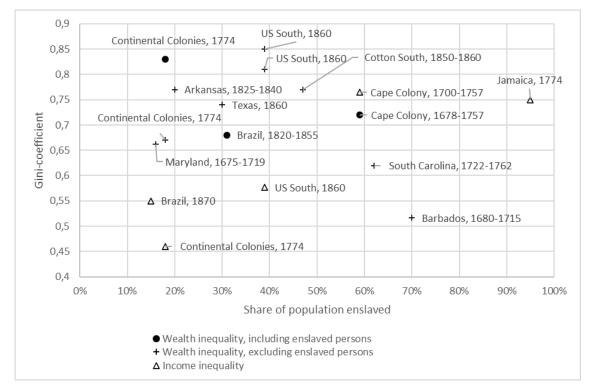
#### 2. Previous research

Many scholars have studied the distribution of both wealth and income in various slave societies empirically. Much of this research has focused upon the United States but comparisons between the Northern and Southern states in the United States do not lead to a unified picture on the topic. Some studies suggest that there were comparatively large differences between the U.S. North and the U.S. South in terms of the level of economic inequality (Jones 1980, fig. 19; Lindert and Williamson 2016, tbl. 2.4 & 5.6-5.7; see also Lowe and Campbell 1976; Wright 1978; Bolton 1984). Other studies do, however, suggest that the differences in terms of inequality between Southern and Northern United States might have been small (Soltow 1975, tbl. 4.3; see also Main 1977, table 3; Bentley 1977, table 68). Studies from other parts of the world, outside of the United States, give a similarly contradictory picture of inequality in slave societies. Some studies - from the Cape Colony (Fourie and von Fintel 2010; Fourie and Von Fintel 2011), Jamaica (Burnard, Panza, and Williamson 2019) and Brazil (Frank 2005; Johnson and Frank 2006) - arrive at estimates suggesting comparatively high levels of inequality in the societies studied. Other studies - from Barbados (Smith 2007) or Brazil (Bértola et al. 2010) - do on the other hand suggest that the levels of inequality in these societies were quite modest.

On the whole, previous research suggests that there were large differences among slave societies, with a range of Gini-estimates for income inequality of 0.46-0.79, and for wealth inequality of 0.44-0.87 (see Figure 1; a detailed summary of this research is provided in

appendix table A1). At least the lower estimates within these ranges would not seem to be very high in a global comparison. A recent review of literature in the field has shown that quantitative estimates from various countries in Latin America and Africa exhibit large differences in the Gini-coefficients estimated, with estimates from several non-slave societies exhibiting higher levels of inequality than some of the estimates from slave societies discussed here (Galli, Theodoridis, and Rönnbäck 2023).

FIGURE 1. Economic inequality in various slave societies, relative to the share of the population enslaved, 17th to 19th centuries



Sources: see Appendix table A1.

Note: for studies in Appendix table A1 showing a range of estimates, in Figure 1 we report the average as a point estimate.

One striking feature observable when comparing previous research is, furthermore, that there is no clear-cut association between the estimated levels of inequality and the share of the population enslaved (see Figure 1 above). The level of inequality could seemingly be as high in a society where less than 20 per cent of the population was enslaved as in a society where more than 70 per cent of the population was enslaved. The data in the figure might even suggest that there was a negative relationship between the level of wealth inequality, and the share of the population enslaved, with low levels of wealth inequality supposedly to

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be found for example in seventeenth century Barbados or South Carolina, two of the societies with the highest share of the population enslaved of all those studied in previous research. This is, however, largely a consequence of different methodologies employed for how to estimate wealth inequality. Several of the older studies on this topic, including those on Barbados and South Carolina, have most crucially simply limited their analysis to the distribution of wealth among the free population (or, in some case, even further to just the tax-paying members of the free population), ignoring the enslaved population (Wright 1970; Soltow 1975; Lowe and Campbell 1976; Main 1977; Bentley 1977; Niemi 1977; Bolton 1982; Smith 2007). Recent research has, in contrast, generally aimed to account for all people, including enslaved persons, among potential wealth-holders when studying wealth inequality (Frank 2005; Johnson and Frank 2006; Fourie and von Fintel 2010), or as income-earners when studying income inequality (Bértola et al. 2010; Fourie and Von Fintel 2011; Lindert and Williamson 2016; Burnard, Panza, and Williamson 2019). To exclude enslaved individuals from the analysis wealth distribution can have huge implications in a society where the enslaved made up a substantial share of the population. Alice Hanson Jones is the only scholar who reports wealth inequality estimates both including and excluding the enslaved population in her calculations. Excluding enslaved persons from the analysis led in her case (the Continental Colonies in 1774) to a Gini coefficient of 0.67, but including them as potential wealth-holders (but with zero wealth in practice), led to an estimated Gini-coefficient of 0.83 (Jones 1980, tables 9.4-9.5).

#### 3. Contribution of the paper

To shed further light on the Engerman-Sokoloff thesis, it is of critical importance to know more about the distribution of wealth and income for the whole population in the most extreme slave societies – those found in the Caribbean – and to study how inequality developed in these societies over the very long run. The present study is the first attempt to contribute with empirical data on the long-run development of wealth inequality in one such society in the Caribbean. We focus upon the case of the Danish West Indies (current-day US Virgin Islands), and in particular upon the main island of St. Croix, for a period of 150 years from the 1760s until the early twentieth century.

The case of the Danish West Indies is in socio-economic terms typical of Caribbean slave societies. The economy almost entirely focused upon the production of cash crops, particularly sugar from sugar cane, on large-scale plantations. Many of the planters on the islands were not necessarily of Danish origin, but were of French, Dutch, British and – increasingly – of American background. The vast majority of the working population, during the eighteenth and early nineteenth century around 90 per cent of the population, was made up of enslaved individuals of African descent. Similarly to several other Caribbean colonies, most importantly the British ones, the Danish Caribbean colonies also experienced a peaceful process of emancipation from slavery (Sveistrup 1942; N. Hall 1994; Dookhan 1994; Olsen 2017). The decision to emancipate enslaved individuals on the Danish West Indies was literally taken overnight by the governor of the island, following a – generally peaceful – protest by the enslaved on July 3rd, 1848.

#### 4. Empirical strategy

To study wealth inequality in a population, sources that capture the whole, or a representative sample, of the population are required. Many scholars studying historical wealth inequality have either employed tax records (Smith 2007; Fourie and von Fintel 2010; Piketty 2014) or census records (Soltow 1975; Galli and Rönnbäck 2020). The current study is primarily based on tax records from the Danish West Indies. The data in these records is reported by geographical location (rural plantations and urban plots). A strength of these particular records is that they – for most of the period under study – not only report the taxes paid by the owner (named in the records), but also the number of other people residing on the location in question. In that way, the tax records double as a non-nominative census. The records thereby combine the attractive characteristics of tax and census records: reporting data for several key forms of taxable wealth and doing so for the whole population in the society.

The records were created annually and are available over a very long period of time: from 1758 (after the administration of the islands had been handed over from a chartered company, the Danish West India-Guinea Company, to the Danish Crown) until 1915 (just before the Danish islands were sold to the United States). Most of the records have survived intact, with only a few gaps in the annual series. Due to time-completeness tradeoffs, we work with benchmark years at specific intervals: every fourth year in the main, and every second year for the period around key institutional breaks (i.e., the abolition of the slave trade and emancipation).

The records report data on four of the most important types of assets in a plantation economy: landholdings, mills, urban real estate and enslaved persons. Previous research has

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shown that these four categories of wealth constituted the overwhelming majority of wealth held by households in plantation economies; in the US South, for example, these assets combined accounted for around 90 per cent of total physical wealth (Jones 1980, table 4.3). All these assets furthermore are impossible (land, mills, buildings), or at least very hard (enslaved persons), to hide from the tax inspectors, so we can assume that tax avoidance was a negligible issue in the case under study.

Enslaved persons were, naturally, only taxed during the period when slavery was legal. Taxation came in the form of a head tax on enslaved persons, and the enslaved were divided into several categories (based on gender, age and occupation) with different tax levels for each category. Throughout the period under study, taxes were charged on the size of landholdings, while a tax on urban dwellings was introduced in 1804, just after the slave trade had been abolished. Such tax was proportional to the size of the dwelling, so that the registers contain detailed information about the size of urban dwelling or landholdings. In the 1860s, the authorities also began recording information on the existence of various types of mills (animal-/water-/wind-/steam-mills) for each individual plantation.

The data from the tax records has been complemented with data from two additional sources, censuses and maps. Firstly, the tax records only report information on all persons living on a location until the abolition of slavery in 1848. After this, we have complemented the data from tax records with data on the whole population from nominative censuses undertaken semi-regularly on the island. The censuses were geographically organized in the same way as the tax records, allowing us to link the information in the two sources. Secondly, the tax records only start to record the existence of different types of mills in the 1860s. For the period prior to this, we have introduced information from three highly detailed maps of the plantations on the island, showing the exact location of mills on individual plantations throughout the island at three points in time (1754, 1766 and 1794). Information has been interpolated for years in between these maps, assuming that a plantation continued to have the same type of mill until evidence suggests otherwise. Data on the size of urban houses from before 1804 (when the authorities started to report the exact size of urban houses, following the new tax on urban housing imposed by this time) has been extrapolated backwards.

The data on the assets owned by the individual households is then combined with data on the value of these assets gathered from other primary sources. The price of enslaved

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persons has been gathered from previous research undertaken by Lasse Bendtsen (Bendtsen 2016). Information on the value of the real estate and buildings has been gathered for this project from primary sources of auction- and bailiff-protocols (auctionsog foged-protokoller) from the island. In these protocols, transactions of houses or plantations were recorded by the public bailiff, including the name of the seller and the buyer of the real estate. The data allows us to calculate the average value of real estate per acreage on the island over time, which is then used to calculate the value of individual plantations and urban houses at different points in time.

As we here are dealing with a slave society, we have a challenge in that enslaved persons are not recorded as having separate households, but are only reported as the property of the master-class. If we want to compare the distribution of wealth in a slave society to that in a non-slave society, the enslaved people must be included in the analysis, as already Alice Hanson Jones noted (Jones 1980, 315-16). As the records do not distinguish how slave households were constituted, we cannot in any simple way classify the enslaved persons as belonging to a certain number of households different than the masters'. The strategy opted for in this paper is to instead attempt to estimate inequality between all individuals. All members of the population – both free and enslaved – were thus included as part of the population on the island that potentially could have held wealth. In line with previous research in the field, we assume that the material wealth actually held by enslaved persons was so limited that it can be approximated to zero. We estimate both an upper- and a lower-bound estimate of inequality, employing different assumptions about the ownership of wealth within wealth-holding households. As will be shown in the paper, the upper- and lower-bound estimates are quite close, as the overwhelming majority of the population belonged to households that held no wealth.

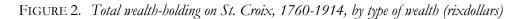
The panel dataset constructed from the sources described above is made up of 1,422,309 observations for 59 benchmark years, i.e., on average around 24,000 observations for each benchmark year. This is, to the best of our knowledge, the largest panel dataset of individual-level data covering this period of time for any place outside of Europe.

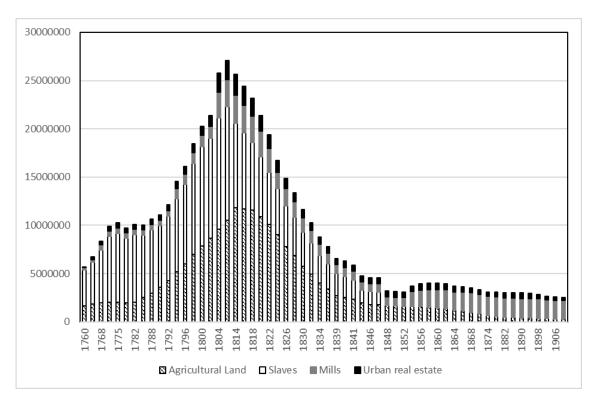
	Unit	Obs	Mean	Skewness	Min	Max
Plantation Acreage	Acres	1,422,309	2.16	16.19	0	1,163
Mill: Steam	Ν	1,422,309	0.001	28.88	0	1
Mill: Wind	Ν	1,422,309	0.007	17.93	0	5
Mill: Horse	Ν	1,422,309	0.003	20.85	0	2
Urban Real Estate	Sq. foot	1,422,309	12.67	15.59	0	5,884
Total enslaved persons	Ν	1,422,309	0.54	21.62	0	526
Wealth Agricultural Land	Rdr	1,422,309	150.05	33.03	0	226,433
Wealth Mills	Rdr	1,422,309	61.03	18.93	0	48,928
Wealth Urban Real Estate	Rdr	1,422,309	31.42	25.25	0	28,031
Wealth Enslaved persons	Rdr	1,422,309	145.93	24.65	0	171,986
Wealth Total	Rdr	1,422,309	402.69	24.89	0	388,732

 TABLE 1
 Descriptive statistics of individual-level panel dataset

Sources: Danish West Indies Economic and Demographic Panel (henceforth DWI Panel)

#### 5. Results



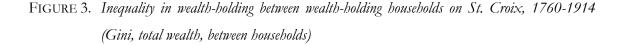


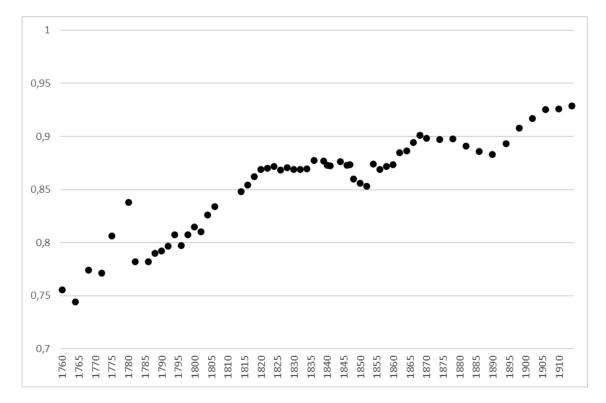
Source: DWI Panel.

Figure 2 reports data on the total accumulated wealth on the island of St. Croix over time by type of wealth. In the early years of our study, more than half of all accumulated wealth had been invested in enslaved persons. The total wealth held in the form of enslaved persons increased until the early 19th century, both due to an increase in the number of enslaved persons on the island, but most importantly due to rising prices for enslaved persons. The price of enslaved persons peaked in 1806 in our sample, and then seem to have decreased consistently until slavery was abolished in the 1840s. It is beyond the scope of the present paper to analyze the drivers of these prices changes, but it does not seem far-fetched to assume that they to a large extent were driven by the boom and bust in the price of the key cash crop, sugar (Deerr 1949, 531). This also meant that the estimated wealth accumulated in enslaved persons decreased during the nineteenth century. Wealth held in land did to some extent challenge these trends, in that it continued to increase until 1820. Around the turn of the century, more wealth was invested in agricultural land than on enslaved persons on the island, and by the early 1820s, more than 70 per cent of all accumulated wealth was invested in land according to our estimates. The total amount of wealth invested in mills increased in parallel with the wealth in land. In this case, this was a combined effect of an increase in the price of mills, and the construction of increasingly expensive types of mills (windmills gradually replacing horse mills during the eighteenth century, and steam-mills replacing both older types of mills during the nineteenth century). Urban real estate seems to exhibit a rather similar pattern as the other types of wealth, peaking in the 1810s, after which it decreased in value in total terms, despite an increasing number of urban houses constructed over time.

The total wealth accumulated was far from equally distributed across the population. Figure 3 shows the estimated Gini-coefficients for the distribution of wealth between the wealth-holding households only.

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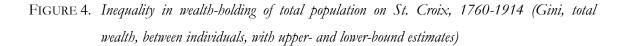


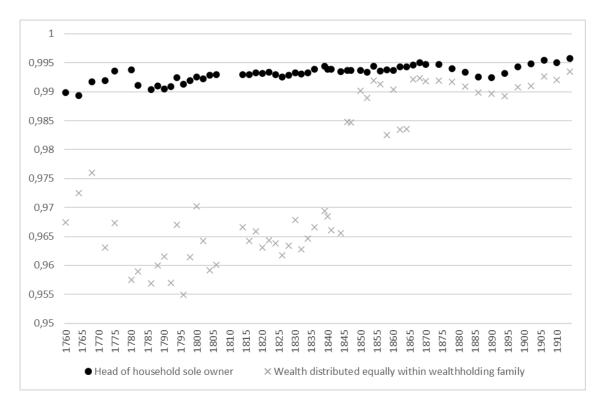


Source: DWI Panel.

The minimum estimate is a Gini-coefficient of 0.74, for 1764. Assets were during the following decades concentrated to an increasingly smaller section of the wealth-holding class. By the 1820s, the estimated between-household Gini-coefficient had increased to around 0.87, after which the levels of inequality seem to stabilize somewhat for a time. More surprising is perhaps what the distribution of wealth looked like around and following emancipation of enslaved persons, in 1848. Emancipation meant that enslaved persons no longer were assets owned by others. In the years around emancipation, inequality decreased somewhat, down to 0.85 in the early 1850s. In the following decades, however, the ownership of assets (by this time thus only assets other than enslaved persons) became even more concentrated to a small wealth-holding elite, so that the Gini coefficient at the end of the period under study had reached the level of 0.93.

The estimates in Figure 3 effectively exclude both enslaved persons and other members of the population who held zero wealth from the analysis. Figure 4 therefore reports data on the inter-individual distribution of wealth for the total population, including all members of the population – property-holders as well as the propertyless, free as well as the unfree.





Source: DWI Panel.

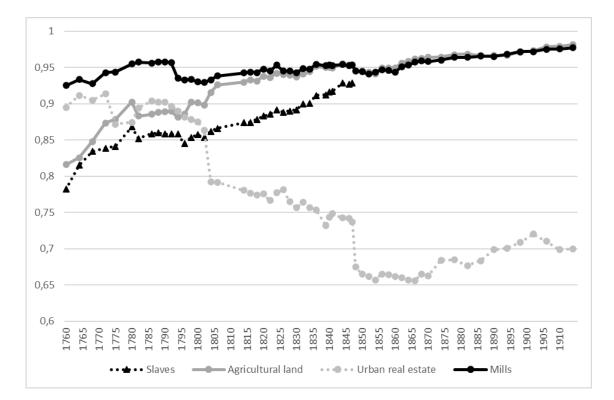
In our upper-bound estimate, shown by the black dots in Figure 4, all wealth is assumed to belong to the head of household only. Other persons living in the same household (including family members) are thus assumed to own zero wealth. In our lower-bound estimate, shown by the grey crosses in Figure 4, we instead assumed that the wealth of wealth-holding families was distributed evenly among all family members that could theoretically have access to this wealth (i.e. excluding enslaved persons). This measure is more volatile as the number of family members living in a household could change between the years more than the wealth owned by the household. The difference between the upper- and lower-bound estimates is guite small; at most a difference of 0.04. The difference between the upper- and lower-bound estimates is significantly smaller from the 1850s onwards. Our interpretation is that this is due to a slight measurement error in the early records: these estimates are based on the census-like information available in the tax

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records. Once we rely upon the data from the nominal censuses, from the 1850s onwards, the estimated inequality increases. This seems to suggest an increase in the number of propertyless individuals, when combining the data from the tax records with information from the actual censuses, so the census-like information in the early tax records might be less accurate and consequently underestimate the true level of inequality somewhat. Nevertheless, both the lower- and upper-bound estimates indicate extremely high levels of inequality; fluctuating around 0.99 for our upper-bound estimate, and in the range of 0.96-0.99 for our lower-bound estimate. The upper-bound estimates potentially suggest a minor increase in inequality over time, in line with the results suggested in Figure 3. The inequality among the whole population on the island was, however, already from the outset at such extreme levels, that any such increase hardly is discernible in Figure 4.

How can we explain that such extreme levels of inequality persisted – and became even more extreme – over such a long period of time? The development over time seems attributable to a couple of different patterns, which can be understood by analyzing the distribution of wealth by asset, as reported in Figure 5. The figure shows the inequality between the wealth-holding families only, to more clearly distinguish the patterns of wealth-holding within this class of people.

FIGURE 5. Inequality between wealth-holding households on St. Croix, 1760-1914, by type of wealth (Gini, between wealth-holding households only)



Source: DWI Panel.

The ownership of enslaved persons was highly concentrated into a quite limited number of hands. There is a small class of slave-rentiers, who owned just a handful of enslaved persons and no or few other assets. Some of them seem to have hired out their enslaved persons to others, whereas other exploited the enslaved persons' labour for example as domestics in the urban economy on the island. The ownership of enslaved persons experienced a quite rapid concentration during the first two decades under study. From the late 1790s, the concentration in ownership continued to increase; the pace was not as rapid as during the first two decades under study, but the trend towards increasing concentration on the other hand remained steady over several decades. Many of the small slave-rentiers, owning just a few enslaved persons, gradually disappear over time. Just prior to the emancipation from slavery, the inequality in wealth invested in enslaved persons reached an all-time high, with a (between wealth-holding households) Gini coefficient of 0.93.

The ownership of agricultural lands also experienced a drastic concentration during the first decades under study, increasing by around 0.10 Gini points. The pattern was similar to that for ownership of enslaved persons: after an initial drastic concentration, the trend

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towards further concentration continued for several decades, but at a somewhat slower pace. Emancipation of enslaved persons does seem to have temporarily halted this trend: for a few years following abolition, the concentration of agricultural land, as measured by the (between wealth-holding households) Gini-coefficient, decreased somewhat. Some large planters might thus have parceled and sold off parts of their plantations to new owners, following the emancipation of enslaved persons. This decrease was, however, very limited and short-lived. Already by the early 1850s, inequality in landholdings started to increase again, and continued to do so until the end of the period under study. By this time, the level of inequality in landholdings had reached a Gini-coefficient of 0.98.

The asset that was most concentrated in a few hands were the mills on the sugar plantations. The number of mills were limited, and not even every plantation had a mill of their own. The most costly types of mills - windmills until the early nineteenth century, and later steam mills – were furthermore concentrated to the larger plantations. With the exception of two shorter periods, the Gini-coefficient for the ownership of this asset increased slowly over time, reaching a level of 0.98 by the end of the period under study. One exception to the rising trend is a significant drop in the estimated Gini-coefficient between 1792 and 1794. As was noted above, information on mills before the 1860s are based on information from three different maps. Data from 1794 onwards is linked to a new and revised map of mills on the plantations published that year, showing a number of new mills not present in the previous map from 1766. It is likely that several of these new mills had been constructed some time before 1794, so the decrease ought in reality to have been more gradual than the sharp break suggested in Figure 5. A potential second exception to the rising trend is a small decrease in inequality around the time of emancipation from slavery. This mirrors the similar pattern for agricultural land discussed above. This trend was, also, quickly reversed and the concentration in the ownership of mills started to increase again already from the early 1850s.

The ownership of urban real estate exhibits a very different trend than what we found for all three other types of assets. In the two urban centers on the island – Christiansted and Frederiksted – we find a number of different owners of both small and large houses. Some of them are, judging from the records, families owning the house that they also live in. There are, however, also a considerable number of landlords: owners of one or more houses that are let out to other residents. At the outset of our study, the ownership of urban real estate was quite heavily concentrated into a limited number of hands, with an estimated Gini-coefficient of 0.91. In stark contrast to the other types of assets studied, the concentration of ownership of urban real estate decreased steadily over many decades, reaching an all-time low of 0.65 in the 1850s and 1860s. There are two very distinct breaks in this time-series. One of them is in 1802-1804. This is attributable to the change in the underlying data: the records only start to report actual sizes of urban houses continuously from 1804, so estimates from before this time might be less reliable. The other drastic break occurred around the time of emancipation: the estimated Gini-coefficient for urban housing dropped quite substantially between the years 1847 and 1848. This seems to be attributable to a number of new houses in both urban settings owned by new owners. Many of these new houses were quite small, but they nonetheless contribute to a decrease in the level of inequality in the ownership of this type of asset. As the total wealth in urban real estate was small compared to the total wealth in both agricultural lands and mills, this trend did not counteract the concentration of other assets, shown in Figure 3. The decreasing concentration of ownership of urban real estate was, furthermore, quite soon reversed: by the 1870s, the estimated Gini-coefficient for this asset started to increase for the first time, and then continued to do so until the end of the period under study.

#### 6. Discussion

The estimates presented above clearly show that wealth inequality was extremely high on the island of St. Croix. If we only look at the distribution of wealth between taxpaying households (i.e. households that held a wealth above zero), and compare these figures to previous studies employing such a research design, wealth on St. Croix was throughout the period under study here clearly more unequally distributed than wealth had been distributed on for example Barbados (Smith 2007) or in South Carolina (Bentley 1977). As the concentration of wealth among taxpaying (wealth-holding) households furthermore increased substantially over time on St. Croix – from a low of 0.74 in the middle of the eighteenth century to a high of 0.87 just prior to emancipation, St. Croix turned into the most unequal slave society ever studied. The Gini-coefficient of wealth-holding just within the wealth-holding class came to clearly exceed those estimated in most parts of the United States at various points in time (Wright 1970; Lowe and Campbell 1976; Main 1977; Niemi 1977; Jones 1980; Bolton 1982; 1984). The only other slave society with roughly as high a concentration of ownership within the wealth-holding class was the U.S. South on the eve of the Civil War (Soltow 1975).

But once we study the distribution of wealth among the whole population on the island - i.e. also include all zero wealth-holders (including most importantly all the enslaved persons prior to emancipation) - the estimates of inequality between wealth-holdings household pale in comparison. Throughout the period, the estimated Gini coefficients of between individuals-inequality of the total population are stunningly high, hovering around 0.99 for our upper bound of estimates (assuming that the head of household effectively was the sole owner of all resources of a household), and in the range of 0.96 to 0.99 for our lower bound of estimates (assuming an equal distribution of wealth between family members within each wealth-holding household). This is substantially higher than the estimates of wealth inequality of the total population from all previous research of the field, including the research on the United States, Brazil and the Cape Colony (Jones 1980; Frank 2005; Johnson and Frank 2006; Fourie and von Fintel 2010). The fact that we estimate between individual-inequality, whereas previous research has studied between householdinequality (including households of the enslaved), might contribute to these differences. Our lower bound-estimate, distributing wealth equally among the members of each wealthholding household, ought however to be quite comparable to these previous studies of inequality between households.

The estimates we arrive at, with Gini coefficients as high as 0.99, is almost as perfect inequality as it is possible to arrive at. Virtually all of the wealth in the colony was thus owned by a very tiny planter elite, made up of a few handfuls of individuals. The estimates here would thus seem to lend clear support for the proposition by Sokoloff and Engerman (Sokoloff and Engerman 2000; Engerman and Sokoloff 2012), and other scholars (e.g. Piketty 2020, chap. 6), that the Caribbean slave societies indeed were extremely unequal societies economically. That these societies were unequal should certainly not come as a surprise to anyone. Just how close a society such as St. Croix could be to perfect inequality is, however, revelatory. As far as we are aware, there is no other society in recorded human history that is shown to have had a distribution of wealth as unequal as the one we estimate here.

The figures also suggest a very depressing development over the long run, in the form of the high persistence of these extreme levels of inequality. One aspect of this was undoubtedly the nature of the cane-sugar economy. Producing sugar from sugar-cane was a highly capital-intensive industry, with large economies of scale (Deerr 1949; Menard 2006). The ones primarily able to gain from a booming sugar economy (during the eighteenth century), as well as survive during a bust in the sugar economy (during the nineteenth century) would presumably have been the large-scale planters. This would, all else equal, create incentives towards long-term trends of increasing concentration of wealth.

Institutional changes such as the abolition of the slave trade and emancipation from slavery seem to have had very limited effects on the poorer segments of the population over the long run under study here. In the United States, emancipation from slavery meant that at least some freedmen could start to earn an income, and to accumulate wealth of their own. Researchers have also been able to show that the racial wealth gap in the United States consequently closed to some extent over the half-century following emancipation, as many of the African-American members of society were able to accumulate some wealth, and were able to do so at a pace that for a time approximate an economic catch up with the white population (Higgs 1982; Margo 2016; Derenoncourt et al. 2023). How slavery was abolished in the United States - through a highly destructive civil war, with no compensation paid out to the former slave-owners - would furthermore contribute to a reduction in wealth inequality (Fochesato and Bowles 2017). On St. Croix, emancipation does seem to have opened a window of opportunity for a period of time. Trends towards increasing concentration of ownership of agricultural land and mills were reversed in the years immediately following emancipation. The concentration in the ownership of urban real estate also decreased, and decreased quite drastically, in the years following emancipation. Between 1848 and 1860 urban real estate ownership demonstrated a higher growth rate than in the pre-emancipation years. It does not seem far-fetched to assume that many of the new urban owners of small pieces of real estate might have been formerly enslaved persons who, with their new legal freedom, seized the opportunity to move away from the plantations where they had been enslaved, and moved to the urban centers on the island. The evidence thus points to a shifting trend, towards increasing equality, following emancipation. But this trend towards equality was short-lived: increased concentration of rural assets resumed already in the early 1850s, just a handful of years after emancipation, and the concentration of urban real estate followed suit from the 1870s. The window of opportunity towards increasing equality that opened with emancipation was soon firmly shut again.

One key reason as to why the window of opportunity shut so quickly was in part the support to the former slave-owners from the Danish government for their "loss of property" in the aftermath of emancipation. After the sudden emancipation in 1848,

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former slave-owners required "compensation" for their loss of property. Following a few years of political deliberations, in 1853 it was eventually decided that former slave-owners were to receive financial support (the Danish government refused to call it erstatning, i.e. compensation) of 50 Danish west Indian rixdollars per enslaved person emancipated (N. T. Jensen and Olsen 2017, 302-4). Many slave-owners were dissatisfied with the level of the support. The price of adult male enslaved persons was certainly higher in the 1840s – around 100 rixdollars - so the support was only equivalent to half the market-price for a male enslaved person had been a few years earlier. But the market-price of adult female enslaved persons – around 30-35 rixdollars in the 1840s – was actually lower than the compensation sum paid out (dataset underlying Bendtsen 2016). The support from the Danish government would thus ensure that most former slave-owners experienced comparatively small net losses from emancipation (and some might even have made net gains). The losses the former slave-owners on the Danish West Indies experienced as a consequence of emancipation were thus by no means near those that U.S. slave-owners experienced after the end of the Civil War (Fochesato and Bowles 2017). The direct impact of emancipation upon wealth of the elites was consequently, but unsurprisingly, marginal in the case under study here. The compensation paid to the former slave-owners might, furthermore, have enabled them to acquire even more of the agricultural land on the island, contributing to the continued concentration of ownership of this asset.

Another key reason behind the high persistence of wealth inequality was the limited opportunities that the formerly enslaved people were given during the aftermath of emancipation. Legally, they were free from slavery in 1848. The land frontier on the island had, however, closed long before emancipation, so there was no unused, cultivable land available to settle upon for the freedmen (Theodoridis, Rönnbäck, and Galli 2024). The colonial authorities would, furthermore, soon impose new and highly coercive labour legislation that severely curtailed the economic opportunities of all the freedmen on the islands. The legislation proscribed long contract periods, with annual contracts as a minimum but allowing for contracts up to three years in length, and stipulated the level of wages to be paid to the workers. Many workers came to view the legislation as highly exploitative, and discontent with the working conditions imposed eventually led to an uprising, called the Fireburn, in 1878 (Marsh 1981; Dookhan 1994, 224–31; Tyson 1995; P. H. Jensen 1998, chap. 4). As if this was not enough, the government also received immigrants from several neighbouring islands (P. H. Jensen 1998, chap. 5), and began

importing indentured (so-called "coolie") labourers, to work for an even lower cost than what the freedmen could be hired for (Roopnarine 2016). The formerly enslaved thus received little but their freedom from the process of emancipations, and with the imposition of the new labour laws they hardly received even that. This would, unsurprisingly, also come to have a lasting impact upon the social development of the Virgin Islands in the twentieth century (Boyer 2010; Krigger 2017).

#### 7. Conclusion

In this article, we studied the distribution of wealth on the Caribbean island of St. Croix, in the Danish West Indies (current-day US Virgin Islands). This is a critical case for studying the proposition that slave-societies in the Americas exhibited extreme levels of socioeconomic inequality.

The results show that St. Croix indeed exhibits extreme levels of inequality. The estimated Gini-coefficient, when including the full population on the island (including enslaved persons and other members of the population owning zero wealth), was a remarkable 0.96-0.99. There is no other society studied in previous research which comes close to these levels of inequality. While the case might be extreme in relation to much previous research on other countries or colonies, we believe it is reasonable to assume that it might have been quite typical for the Caribbean economies based exclusively on slavery. Our case thereby lends strong support to the proposition that slavery indeed was associated with very high levels of economic inequality.

Our results also show a remarkable level of persistence in inequality. While emancipation from slavery in the United States meant that som freedmen were able to start accumulating wealth, and over the following decades to some extent were able to close the racial wealth gap created under slavery, there is no such trends at all in the case of St. Croix. Emancipation at best opened up a window of opportunity towards increasing equality very briefly, but this window was very soon closed again. For decades after the end of slavery, wealth inequality remained as high as, or potentially even higher than, it had been prior to emancipation.

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### Appendix

 TABLE A1
 Estimated economic inequality in slave societies, seventeenth to nineteenth centuries

Colony/region/	Type of	Enslaved	Share of	Estimated	Source for Gini-			
country, period	economic	persons	population	Gini-	estimates			
	inequality	included?	enslaved	coefficient				
	studied		(year)					
Panel A. Wealth inequality								
Cape Colony,	Wealth	Yes	59 %	0.64-0.80	(Fourie and von Fintel			
1678-1757	(taxable)		(1731)		2010, fig. 2a)			
Barbados, 1680-	Wealth	No	70 %	0.44-0.57	(Smith 2007, table 3)			
1715	(taxable)		(1684)					
Brazil, 1820-	Wealth	Yes	31 %	0.68	(Frank 2005, 252)			
1855	(probated)		(1819)					
Rio de Janeiro,	Wealth	Yes		0.87	(Johnson and Frank			
1820s-1850s	(probated)				2006, table 5)			
Maryland, 1675-	Wealth	No	16 %	0.60-0.74	(Main 1977, table 3)			
1719	(probated)		(1704)					
South Carolina,	Wealth	No	62 %	0.54-0.67	(Bentley 1977, table			
1722-1762	(probated)		(1750)		68)			
Arkansas (U.S.),	Wealth	No	20 %	0.76-0.79	(Bolton 1982, fig. 2;			
1825-1840	(taxable)		(1840)		1984, table 3)			
Texas (U.S.),	Wealth (self-	No	30 %	0.74	(Lowe and Campbell			
1860	reported in		(1860)		1976)			
	census)							
Continental	Wealth	No	18 %	0.67	(Jones 1980, table 9.4)			
Colonies	(probated)		(1790)					
(current-day	Wealth	Yes		0.83	(Jones 1980, table 9.5)			
U.S.) South, 1774	(probated)							
"Cotton South"	Wealth	No	47 %	0.67-0.73	(Wright 1970, table 9;			
(U.S.), 1850-	(agricultural)		(1860)		1978, table 2.3)			
1860								
U.S. South, 1860	Wealth	No	39 %	0.81	(Niemi 1977)			
	(slaves)		(1860)					
U.S. South, 1860	Wealth (self-	No	39 %	0.85	(Soltow 1975, table			
	reported in		(1860)		4.3)			
	census)				,			
Panel B. Income in	Panel B. Income inequality							
Cape Colony,	Income	Yes	59 %	0.74-0.79	(Fourie and Von			
1700-1757			(1731)		Fintel 2011, table 6)			
Jamaica, 1774	Income	Yes	95 %	0.75	(Burnard, Panza, and			
,	-		(1774)		Williamson 2019)			
Brazil, 1870	Income	Yes	15 %	0.55	(Bértola et al. 2010)			
,			(1872)		(			

Nueva España, ~1790	Income	Not reported		0.64	(Milanovic 2008, table 2)
Continental Colonies (current-day U.S.) South, 1774	Income	Yes	18 % (1790)	0.46	(Lindert and Williamson 2016, table 2.4)
U.S. South, 1850- 1860	Income	Yes	39 % (1860)	0.58	(Lindert and Williamson 2016, tables 5.6-5.7)

Sources for slave population data: Cape Colony: (Guelke 1988, tbl. II); Brazil: (Bergad 2007, tbl. 4.3); Barbados: (Dunn 1972, tbl. 4); Jamaica: (Burnard, Panza, and Williamson 2019, tbl. 8); Maryland: (Menard 1980, tbl. II); South Carolina: (Menard 2000, tbl. I); Arkansas: (Moneyhon 2023); other U.S. 1790 1860 figures from the and Population Censuses: https://www.census.gov/library/publications/1864/dec/1860a.html and https://www.census.gov/library/publications/1793/dec/number-of-persons.html [accessed 2023-06-20]. "Cotton South" equivalent assumed be to Lower South. to

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