

# The Persistent Effects of Compensation for Abolition

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## Abstract

This paper investigates the long-term economic consequences of compensation payments made to slave owners during the abolition of slavery in the 19th-century Caribbean. These payments, calculated based on slave prices influenced by local market conditions and distances to exporting slave markets, disproportionately benefited plantation economies that relied on extractive practices. While intended to facilitate the transition to free labor, compensation entrenched plantation systems, preserved elite dominance, and hindered structural economic transformation. Using historical data on compensation, slave populations, and institutions, I exploit the variation in compensation per slave amounts determined by distance to slave markets. I find that higher compensation per slave payments causes significantly lower GDP per capita in 2019 for 28 Caribbean territories. Mediation analysis reveals that approximately one-third of this negative effect operates through institutional persistence, as compensation perpetuated extractive institutions and conflict between elites and much of the population. The results also carry broader implications for modern debates on reparations and institutional reform, underscoring the enduring economic consequences of historical policies. **JEL Codes:** N16, N46, O11, N56, P16, F54.

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# I. Introduction

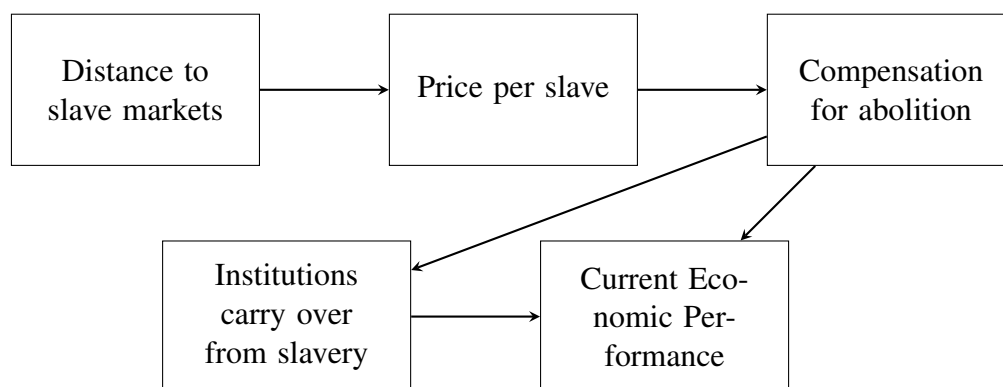
Economic history is replete with examples of institutions and policies that cast long shadows over modern economies. Few historical processes exemplify this better than the abolition of slavery in the 19th century. Across the West Indies, abolition was accompanied by the payment of financial compensation to slave owners, ostensibly to ease the transition to free labor. However, while compensation facilitated the continuity of plantation production, it also entrenched extractive institutions that would shape the economic and social trajectories of these territories. This paper investigates the long-term economic effects of abolition compensation, finding that it has had a persistent and negative impact on contemporary economic performance in the Caribbean.

Existing literature has established that slavery, as an extractive institution, is associated with poor long-run development outcomes (Engerman and Sokoloff, 2002; Nunn, 2007; Acemoglu et. al., 2012; Althoff and Reichardt, 2024). However, less attention has been paid to the mechanisms through which the transition out of slavery perpetuated inequality and economic stagnation. Compensation—intended to reimburse slave owners for the “loss” of enslaved labor—not only preserved the power and wealth of plantation elites but also reinforced the plantation economy, leaving freed slaves with limited opportunities for mobility. By incentivizing the continuation of plantation systems, compensation delayed structural transformation and exacerbated institutional conflicts between elites and the broader population.

The Caribbean has historically received less scholarly attention in the economic history literature due to significant data limitations. Many territories lack consistent historical records, and economic studies often focus on broader regional trends or individual case studies, overlooking the nuanced dynamics within and across Caribbean nations. This gap is critical to address, given the region’s stark inequalities in income and institutional quality, which persist to this day. Understanding the historical origins of these disparities, particularly the role of transitional policies like abolition compensation, is essential to explaining why some territories have fared better than others in terms of economic development.

To quantify these effects, this paper utilizes a novel empirical strategy. Specifically, I exploit the formula for compensation for an instrumental variables approach. The formula granted compensation per slave based on the price per slave in the period before abolition. I use minimum distance to slave markets as an instrument for compensation because distance increases the cost of acquiring enslaved labor. Using historical data on compensation, slave populations, and colonial institutions, I estimate the causal relationship between abolition-era compensation and current levels of economic development, as measured by GDP per capita in 2019. The findings indicate a significant negative relationship: higher compensation per slave payments are associated with lower contemporary income levels. Mediation analysis further reveals that a third of this effect operates through the persistence of weak and extractive institutions.<sup>1</sup> The argument is outlined in Figure (I). My estimates are robust to different years, control variables, samples, instruments, and measurements.

Figure I: Schematic Summary



*Notes:* The figure depicts the argument of this paper. Minimum distance to slave markets is the instrument which determines the amount of compensation. The intuition behind this connection is that compensation per slave amounts were based on the price paid per slave in the period preceding abolition, which was greater the further one had to travel to purchase slaves. Compensation then causally effects current economic performance, with part of this impact working through its effect on institutional development.

This study contributes to several strands of economic literature. First, it advances our understanding of the persistence of colonial institutions, building on foundational works by Acemoglu et. al. (2001) and Engerman and Sokoloff (1997) and more recently by Nunn (2008), Dell (2010), Iyer (2010), and Bruhn and Gallego (2012).<sup>2</sup> Second, it highlights the importance

<sup>1</sup>I define institutions according to the definition of North (1990, p. 3), “Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction.”

<sup>2</sup>See Nunn (2020) and Abad and Maurer (2021) for an overview of this literature.

of transitional policies—such as compensation—in shaping long-run development trajectories, a topic often overshadowed by broader discussions of slavery and colonialism. Lastly, it provides new insights into the economic history of the Caribbean, emphasizing the role of institutional conflict and elite continuity in the region’s development. The Plantation Economy School of the Caribbean argues that the region is still characterized by plantation production and has undergone little structural change since its days as slave colonies (Beckford, 1999; Best and Polanyi-Levitt, 2009). The influence of slavery declared by the Plantation School is echoed in this paper.

The results have broader implications for contemporary debates on reparations, institutional reform, and the economic legacy of slavery. By shedding light on how historical compensation schemes undermined long-term development, this paper underscores the importance of addressing structural inequalities rooted in colonial-era policies. The lessons of the past offer valuable guidance for fostering inclusive growth in societies still grappling with the legacies of slavery and colonialism.

The following section provides historical background of the transition out of slavery in the region. Then, I examine the relationship between compensation and current development with an OLS estimation. Section (V.) addresses the issue of causality by using distance to slave markets as an instrument for compensation. I then analyze analyze potential channels by which compensation affects contemporary economic performance. I perform various robustness checks on the results in Section (VII.) and Appendix (C). Finally, I conclude with considerations of the novelty and drawbacks of the study in Section (VIII.).

## **II. The Great Experiment**

Slavery ended after a long process of abolitionist movements by humanitarians, economists, and slaves. Humanitarians viewed it as a disgusting treatment of fellow humans and slaves added pressure through revolts, escapes, and a successful revolution in Haiti. However, the

economic reasoning was the most persuasive. Profits from the plantation were past its peak (Ward, 1998, p. 124). Some argued that that free labor would produce sugar and other export crops done by slaves more efficiently and others disagreed, declaring compensation to slave-owners as a necessary corollary to abolition in order to maintain the colonial outposts (Beauvois, 2016, ch. 3). The plantation lived on, and the same institutions which it was built upon continued to survive.

In 1834, the British set the tone by emancipating slaves with compensation to slave-owners. Other colonizers with stakes in the Caribbean (France, the Netherlands, Denmark, Sweden, and Spain) all followed suit in the coming years.<sup>3</sup> In total, this analysis comprises 28 territories of the six colonizers mentioned.<sup>4</sup> The movement out of slavery favored slave-owners by granting compensation and an apprenticeship period. I briefly describe the compensation process in Appendix (D.1). The most comprehensive overview is done by Beauvois (2016). The author argues compensation had three dimensions: legal, economic, and political. The legal dimension relates to slaves as property defined by law, so slave owners felt they had the right to some form of compensation. Economically, compensation helped the plantation continue under free labor, even when it was not profitable with slavery. Lastly, the process was political because compensation ensured colonial cooperation. It helped each empire maintain solid relations with the upper classes within the Caribbean and elsewhere.

The experience of the transition from slavery was heterogeneous across the colonies. Population densities played an important role for the economic adjustment of the region following abolition. In general, sugar production declined dramatically as slaves left the plantations and formed their own subsistence communities, especially in larger territories (Engerman, 1984, p. 142). Owners used various methods to keep the freed slaves on the plantation. One of such was apprenticeship, which meant that slaves were contractually tied to their masters after abolition.

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<sup>3</sup>The USA also gave compensation to slave-owners in Washington D.C. so that the district did not join the confederacy prior to the civil war (Beauvois, 2016, p. 2).

<sup>4</sup>Cuba, Haiti, and the Dominican Republic are not part of the main results. Cuban slave owners did not receive compensation, and Haiti/Dominican Republic ended slavery through revolutions. However, I do consider the case of Haiti in Appendix (C.3), as the island was forced to pay slave-owners.

Therefore, slaves were not completely free until apprenticeship ended (Bolland, 1981, p. 592); (Green, 1991, ch. The Apprenticeship).

Another strategy by owners was the rent-wage system. Slaves had been living on grounds near the plantation throughout slavery. Once slavery ended, owners charged rent on these living grounds. This incentivized slaves to work the plantation to avoid losing their homes. Moreover, some owners only accepted rent payment in the form of direct deduction from plantation wages. Therefore, the only way freed slaves could pay rents was through working the plantation (Bolland, 1981, p. 595). Owners also privatized the fertile lands and prevented ex-slaves who left the plantation from gaining access (Bolland, 1981, p. 598). Finally, owners manipulated laborers by paying their wages in advance. This kept workers in permanent debt to the employers which forced them into labor contracts (Bolland, 1981, p. 606).

The political and economic power of the slave-owners was aided by compensation. Low population density created disruptions to the plantation, but owners combated them by making it illegal to leave and also by importing contract labor. Suriname, Guyana, French Guiana, and Trinidad all relied on contract labor from India throughout the mid to late 19th century. Other relatively lower population density areas, like Grenada, Jamaica, Belize, St. Lucia, and Puerto Rico were not as successful in attracting labor, but still pushed the plantation on slaves through the above mentioned legal measures with varying degrees of success. These great lengths to sustain the plantation were made possible by compensation. In high population density areas with relatively lower compensation, like Barbados, Guadeloupe, and Martinique, owners did not have to force the plantation, as ex-slaves had no other choice. While still not an environment conducive for development, the level of conflict between slaves and slave-owners was not at the same level as in the low population density (high compensation) areas.

## II.A. Country Backgrounds

Table (I) gives an overview of the the slave territories analyzed in this study averaged by their colonizer. The full breakdown of the colonies is found in Appendix (D.2).<sup>5</sup> Column 1 has the name of each colonizer with the date of abolition in parentheses.<sup>6</sup> The varied levels of current economic conditions are in third column. On the surface, the average GDP per capita of the region looks strong at \$26,556.67. However, this masks the extreme inequality of the territories.

Table I: Territory Statistics

Colony	GDP pc (2019)	Slave population 1830	Compensation (1873)	Compensation PPP (2019)	Slave pct	Apprenticeship
<i>Britain (1834)</i>	22481	663127	216.45	4194.46	81%	1834–1838
<i>The Netherlands (1863)</i>	28546.26	61932	138.05	4109.89	73%	-
<i>France (1848)</i>	25690.80	202890	135.5	3360.55	80%	None
<i>Danish West Indies (1848)</i>	40021.78	26879	73.07	2150.89	65%	1848–1849
<i>Puerto Rico (1873)</i>	37453.79	34240	221.48	7808.4	11%	1873–1876
<i>Swedish West Indies (1847)</i>	52000	1387	131.89	2939.19	35%	None
Total	26556.67	990455	191.13	4086.07	65%	-

*Notes:* There are a total of 28 territories in this study with 15 coming from British colonies, 7 from Dutch, and 3 from French. GDP pc (2019) are current levels of GDP per capita for 2019 in \$. Slave population and slave percentage both are from around 1830. Some territories reported different years, but they are all in between 1825 and 1835. The compensation measures are the per slave financial amounts, first in 1873 dollars and second in 2019 dollars using PPP adjustments (Described in Section (III.) and Appendix (B.1)). Lastly, apprenticeship period refers to the years following abolition where slaves remained tied to their slave owners.

Slave populations in 1830 are found in column 4. In total, there were roughly 1 million slaves across the 28 colonies in 1830, with over half coming from the British West Indies. Most of the colonies were specialized in sugar production which required large sources of slave labor. Exceptions are Anguilla, St. Barths, Bonaire, the Bahamas, Bermuda, and Belize. The soil was not suitable for sugar production in these colonies. In the first five, slaves did various domestic labor and worked in relatively small plantations (Higman, 1995). Due to the nature of the work, slaves were treated relatively better in these five territories (Bellhorn, 1992). The story is different for Belize, where slave labor specialized in the harvesting of timber and mahogany.

<sup>5</sup>The 28 territories of this study all had the same abolition process, as they used mass compensation. Other territories near the region, such as Mexico, Guatemala, Colombia, and Venezuela are not part of the study because they did not follow the same process.

<sup>6</sup>The Swedish West Indies are present day St. Barthelemy, a French territory. The Danish West Indies are the present day U.S. Virgin Islands. Spain ended slavery in Puerto Rico prior to its ban in other territories, such as Cuba.

These industries required tolling manual labor, so slaves were mistreated at the same level, or even higher in some instances, than the sugar plantation economies (Craig, 1969). Also, the mahogany and timber industries were extremely volatile. It turns out that the period preceding abolition was a boom, which inflated the prices of slaves and therefore compensation (Bolland, 1981, p. 602).

Columns 4 and 5 are the amount of compensation in U.S. dollars using 1873 and 2019 as base years, respectively. The construction of these variables are covered in Section III. and more deeply in Appendix (B.1). On average, colonizers granted slave owners between \$2,000 and \$8,000, adjusted to 2019 PPP levels.<sup>7</sup> Multiplying the total slave population by the average amount of compensation per slave yields an estimate of \$4 billion in 2019 levels. This is a rough estimate as slave-owners did not receive full compensation for all their slaves. Also, although it is PPP adjusted, the number does not reflect the increase in the quantity and quality of goods needed to maintain an equal relative living standard as that in the 19th century. Most likely, the number is much higher.

Slave percentage of the population is found in Column 6. There is no relationship between slave percentage and compensation. Compensation was based on the price paid per slave in the preceding period of abolition for each colonizer, not the demographic makeup. Finally, in the last column we have the apprenticeship period for each colonizer (Beauvois, 2016, p. 223). Apprenticeship was established in all British colonies although some, like Antigua and Bermuda, refused to implement it as they were optimistic about their slave and slave-owner relationship (Engerman, 1982, p. 193). The Dutch only enforced apprenticeship in their colony of Suriname, which was growing their plantation production at the time of abolition. France and Sweden did not establish apprenticeship.

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<sup>7</sup>Part of Puerto Rico's compensation was through land grants, which explains their high compensation amounts.



### III. Data

First, the West Indian territories of 1834 do not perfectly correspond with the territories today. For example, Guyana, Antigua and Barbuda, Trinidad and Tobago, and St. Kitts and Nevis were split in 1834, but are one territory today. In the cases where territories have joined together, we compute a weight for the share of population in 1834 of the once separated territory to find the weighted average of each variable where it is necessary. This way we could link the past with the present without losing information about the differences between once separated islands.

Since my variable of interest is compensation, I convert each amount into a common currency. The currency used throughout the paper is U.S. dollars. However, another complication arises due to monetary environment of mid 19th century. First, the classical gold standard was not established until 1873. In the period I analyze (1834-1873), most countries were still tied to gold, but some were tied to silver or both. Therefore, exchange rates were not fixed. Second, there were multiple discoveries of gold during this era, which devalued gold and created inflation. So, I must take into account the increase in prices and depreciation of currencies. The main compensation measure is compensation in 1873 \$ ( $comp_{i1873}$ ) constructed using Equation (1)

$$comp_{i1873} = currency_{ia} * \frac{\overline{CPI}_{i1873}}{CPI_{ia}} * xr_{i1873} \quad (1)$$

I take each compensation per slave measure at abolition in their colonizers currency ( $currency_{ia}$ ) and adjust it to 1873 levels using the average increase in prices from each respective abolition ( $CPI_{ia}$ ) year to 1873 ( $CPI_{i1873}$ ).<sup>8</sup> Then, I convert each adjusted currency into U.S. dollars using the 1873 exchange rate ( $xr_{i1873}$ ). A more detailed explanation of the construction of the compensation variable is found in Appendix (B.1).

Summary statistics are found in Table (II) and data sources are in Appendix (A.2) The

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<sup>8</sup> Average increase in prices is the average CPI of USA, UK, France, Sweden, Denmark, Spain, and the Netherlands.

Table II: Summary Statistics

variable	mean	SD	N	min	max
ln gdp pc (2019)	10.046	0.547	28	8.833	11.287
ln comp (1873 \$)	5.028	-0.487	28	3.926	6.121
independent	0.464	0.508	28	0	1
ln slavepct (1830)	-0.518	0.527	28	-2.207	-0.123
ln resource	5.153	2.173	20	2.026	9.315
distance	0.301	0.394	28	0	1.242
institutions index	0	1.934	25	-4.331	2.158

Notes: Ln gdp pc (2019) is the natural log of current per capita GDP in 2019. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Independent indicates if a territory is independent today. Ln slave pct gives the slave percentage of the population in roughly 1830. Ln Resource average per capita value of exports of metals, oil, and gold. Distance is the instrument and is the minimum distance to a slave market in 1000 kilometers. Institutions index is a PCA comprised of the average of rule-of-law, control of corruption, government effectiveness, and regulatory quality from 1996-2019.

French, Dutch, and Spanish only compensated owners of employed slaves. To keep the measurements relative, I use average compensation for employed slaves for the British West Indies. Two caveats are for Bermuda and Anguilla, as only compensation for all slaves are available from House of Commons (1838). However, slave employment status and population for Bermuda was most similar to the Bahamas. Bahamian slave-owners received 1.2 times more compensation for an employed slave compared to the amount for the average of all slaves. I use this same ratio to compute compensation for employed slaves in Bermuda. Anguilla was a district of St. Kitts at the time, so they received the same compensation.

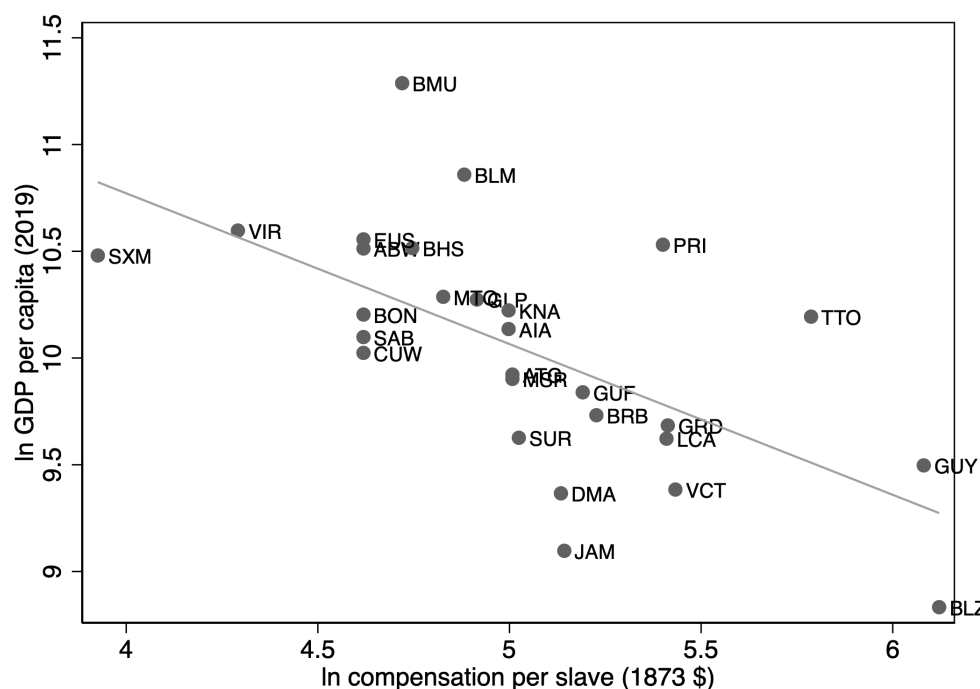
The measure of current economic conditions are the PPP adjusted current GDP per capita of 2019. Most of the data are from the Penn World Tables (Feenstra et. al. (2015)), but other sources were also used where this data was missing. All the territories were slave economies with low levels of income in the 19th century, so income per capita today is a good measure of long-run development. *Independent*, indicates if a country is independent today or not. Roughly, 46% of the countries in the study are independent. *Slave pct*, is the percentage of slaves in the population for 1830.

*Resource* is a variable that captures the presence of valuable natural resources within a territory. It is the per capita value of exports in metals, gold, and oil on average for 1990-2019. Export data is taken from the Atlas of Economic Complexity (Atlas, 2022) and current populations are from the United Nations (UN, 2024a). Natural resources are an important

export product for the region. Bauxite is extracted and exported in Jamaica, oil in Trinidad and St. Vincent, and gold in the Guyanas (Guyana, French Guiana, and Suriname). *Distance*, is the distance to closest slave market in 1000 kilometers. I further discuss this variable in Section (V.). *Institutions index* is a Principle Component Analysis (PCA) index of 4 institutional variables: rule-of-law, regulatory quality, control of corruption, and government effectiveness. The PCA is constructed by creating an index from the average of each variable from 1996-2019.

## IV. OLS Estimation

Figure II: Relationship between GDP per capita in 2019 and Compensation per slave (1873 \$)



*Notes:* The figure shows the relationship between the natural log of current GDP per capita in 2019 and the natural log of compensation per slave in 1873 USD for the 28 territories in this study. The abbreviations are the three digit territory codes and can be found in Table (I) in Appendix (D.2)

Figure (II) shows a negative relationship between compensation and current incomes. However, the exact formula and amount of compensation varied by colonizer, so colonizer fixed effects must be taken into account. Table (III) reports OLS regressions of log per capita GDP

on the amount of compensation. The regressions are for the equation:

$$\ln gdp pc_{i2019} = \beta_0 + \beta_1 \ln comp_{i1873} + \mathbf{C}'_i \delta + \mathbf{X}'_i \gamma + \epsilon_i \quad (2)$$

$gdp pc_{i2019}$  is GDP per capita in country  $i$  for 2019,  $comp_{i1873}$  is the compensation measure from Equation (1), and  $\mathbf{C}'_i$  is colonizer fixed effects.  $\mathbf{X}'_i$  is a vector of covariates that include an independence indicator, slave percentage of the population in 1830, and a measure for the value of resources.  $\epsilon_i$  is the error term. For colonizer fixed effects, the British are used as the base and the rest indicate if its a French, Dutch, or U.S. colony.<sup>9</sup>  $\beta_1$  is the coefficient of interest and is used to determine the association between incomes and compensation. All regressions have the same independent variable, compensation in 1873 USD, with the exception of column 2. In this column, I regress GDP per capita on a set of dummy variables for three quantiles of compensation distribution. The purpose is to test if the relationship between incomes and compensation is linear. The base group is the set of territories in the lowest quantiles.

Column 1 shows there is a strong negative relationship between the compensation measure and current incomes. Figure (1) is a diagram of this regression. The dummy variables for compensation quantiles are shown in Column 2. The dummies are in the expected order and magnitude, which implies the linear specification is appropriate. Comparing the lower and upper third distribution of  $comp_{1873}$  yields an average value of \$98.29 and \$275.89, respectively. Using coefficient from Column 1 suggests that there should be a 107% income difference between these sets of countries. In reality there is a 164% difference in incomes, which suggests that compensation explains a significant portion of income differences if we interpret the estimates as causal.

In Columns 3-6, I add colonizer fixed effects and various controls. La Porta et. al. (1999) argues for the importance of colonial identity for development. None of the colonizer dummy variables are significant, which contrasts the previous studies. However, these results are in

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<sup>9</sup>Puerto Rico and the U.S. Virgin Islands are coded as U.S. colonies. St. Barthelemy is coded as a French colony. If we changed the identity to the original colonizers, the results would be unchanged.

Table III: OLS, Relationship between Compensation and Income

	Dependent variable is ln gdp pc in 2019					
	(1)	(2)	(3)	(4)	(5)	(6)
ln comp (1873 \$)	-0.706*** (0.171)		-0.734*** (0.215)	-0.540** (0.226)	-0.688*** (0.220)	-0.571** (0.251)
Dummy for comp in 2nd quantile		-0.522** (0.210)				
Dummy for comp in 3rd quantile		-0.754*** (0.210)				
French colonizer			0.248 (0.250)	-0.0788 (0.289)	-0.0153 (0.269)	0.708 (0.487)
Dutch colonizer			-0.129 (0.247)	-0.313 (0.251)	-0.448* (0.241)	-0.281 (0.326)
USA colonizer			0.418 (0.335)	0.112 (0.352)	-0.178 (0.353)	- -
independent				-0.488* (0.248)	-0.310 (0.244)	-0.280 (0.277)
ln slave pct (1830)					-0.374** (0.174)	-0.0910 (0.246)
ln resource						0.0610 (0.0540)
Observations	28	28	28	28	28	20
R-squared	0.396	0.355	0.480	0.558	0.637	0.650

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. OLS estimates of Equation (2) are reported. The dependent variable is the natural log of current per capita GDP in 2019. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Dummies for quantiles of compensation are used for estimation in Column (2), where the 1st quantile is the base. Colonizer fixed effects are reported and the base colonizer is Britain. Independent indicates if a territory is independent today. Ln slave pct gives the slave percentage of the population in roughly 1830. Ln Resource average per capita value of exports of metals, oil, and gold.

line with Acemoglu et. al. (2001). A dummy variable indicating current independence is used in Columns 4-6. Areas which are still territories of larger, wealthier nations such as the USA, France, UK, or the Netherlands, might enjoy various resources that would otherwise be more difficult to obtain. Therefore, independence is a relevant control for current development. Nonetheless, this variable is insignificant and does not change the significance of compensation.

The natural log of slave percentage of the population in 1830 is added as a covariate for Columns 5-6. Nunn (2007) and Engerman and Sokoloff (2002) have argued that the intensity of slavery has a major effect on long-run institutional and economic development as it is an extractive institution. The estimates show some effect on current incomes. The final specification is found in Column 6, where I add the value of natural resources along with the other controls, as is done in Nunn (2008). In theory, resources like valuable metals, oils, and gold will have a positive impact on development as territories could take advantage of their own resources through trade and consumption. This variable is only available for 20 territories, but it is insignificant while the compensation measure maintains its significance.

In all specifications, compensation is significantly negatively associated with current GDP per capita's. Although compensation for abolition happened almost 200 years prior to the measure of incomes, there might be reasons to not interpret the OLS estimation as causal. The first issue is selection bias as compensation tended to favor the newer territories because they were in the middle of growing plantation production leading up to abolition. It is plausible that the older territories had a longer time to develop and were richer. However, they could not be much richer as they were still predominantly slave territories and older colonies suffered from greater soil exhaustion (Green, 1991, ch. Plantation Economy, p. 5). Even so, it is true that in the older territories the relationship between slaves and owners were relatively better, which might suggest improved development.

Secondly, our estimation most likely suffers from omitted variable bias because there are limited data availability for the Caribbean region. However, we are dealing with a region who

share a common history, geography, and culture. Therefore, there is less of a need to control for these factors. Nonetheless, these two concerns could be solved with an instrumental variables approach. Importantly, the instrument must account for variation in compensation without having a direct effect on current economic conditions.

## V. Instrumental Variables

The instrument, *distance*, is the distance in 1000 kilometers to the nearest exporting slave markets. Distance played a key role in the price paid for new slaves as the travel acted as an additional input cost (Bolland, 1981, p. 602). Therefore, according to the formula for compensation, the areas furthest from markets would receive more compensation. I use the Intra-America Slave trade database (Slave Voyages, 2024) to find territories that were exporting slaves between the slave trade ban (1807) and full abolition (1873).<sup>10</sup> The data is not perfect as not all territories are included and many of these trades were done illegally, so there might not be evidence of them. However, it does provide enough information which we can use to check with other evidence of the Caribbean slave trade. The first-stage IV estimation is specified using Equation (3). *Distance* might not be the only determinant of compensation amounts, but it is proper instrument because it is a source of exogenous variation. The predicted values of Equation (3) are then used for the second-stage estimation with Equation (2).

$$\ln comp_{i1873} = \alpha_0 + \alpha_1 distance_i + \mathbf{C}'_i \eta + \mathbf{X}'_i \phi + \theta_i \quad (3)$$

Table (IV) shows the export cut off point that I use to determine slave markets. There are a total of 4,854 slaves traded between 1807 and 1873 from eighteen territories documented in the Intra-American Slave Trade Database. 76% of this trade was facilitated by one of the six territories. The next highest exporting market was Cuba (299), however it is not a minimum

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<sup>10</sup>These are the dates of the earliest slave trade ban by the British and the latest abolition in this study in Puerto Rico.

Table IV: Exports Cut-off

Territory	Slave exports	Share
St. Barthelemy	1,122	23%
Danish West Indies	668	14%
Jamaica	605	12%
Barbados	555	11%
The Bahamas	384	8%
Guadeloupe	363	7%
Cuba	299	6%
Place Unspecified	218	5%
Curacao	150	3%
...	490	10%
Total (18)	4854	

*Notes:* The export cut-off line is indicated by the black line through the center of the table. Data is from the Intra-America Slave trade database (Slave Voyages, 2024). Cuba is not counted as a slave market because it is not a minimum distance to any of the territories. The three dots below Curacao is the summation of slave exports from the remaining nine territories found in the database.

distance to any of the territories in this study, so it is not included. Guadeloupe, which has the fewest exports of the slave markets, has over double the amount of exports than Curacao. Williams (1942) states that slaves were traded from areas which had an oversupply of slaves to growing islands. The territories mentioned above had an oversupply of slaves, either from a stagnating plantation economy or high population growth. However, Bermuda is a territory not in the Intra-American Slave Trade Database that also fit this characterization. Bermuda banned the importation of new slaves in 1676 (Jarvis, 2002, p. 590), so they were not purchasing new slaves preceding abolition. Also, given its distance to the rest of the Caribbean islands, treating it as a slave importing island would bias the results. Therefore, I include it as a slave market.

The seven slave markets are: New Providence in The Bahamas, Barbados, Bermuda, St. Thomas in the Danish West Indies, Guadeloupe, Kingston in Jamaica, and St. Barthelemy.<sup>11</sup> A detailed explanation of the construction of the instrument is in Appendix (B.2). Exporting slave markets were chosen due to a variety of factors such as a large slave population, stagnant plantation system, or revenues from selling slaves and not because of its proximity to other territories nor vice-a-versa. In other words, slave markets were not decided because plantations were growing in nearby territories nor were heavy slave importing territories picked because

<sup>11</sup>I use cities when this information is available from the Trans-American Slave Trade Database. When the city is not included I use the center of each territory.



they were close to these markets. Therefore, the distance is quasi-random and not related to the level of development nor the reliance on slavery. I treat the seven slave markets as their own importers and this raises a concern because the choice of a slave market might be related to its own development. However, slave markets were chosen for a variety of factors and it is unclear what its relationship to development was. Nonetheless, I address this concern in Section (VII.).

The IV results are shown in Table (V).<sup>12</sup> Each column is a regression on the same sample, but with more controls added. Panel B and C in Table (V) test the validity of the instrument. The first-stage estimates are shown in the former and confirm the relevance criteria for minimum distance to slave markets as an instrument for compensation. With exception of the first column, all specifications show that *distance* and compensation are significantly related to each other at the 1% level. Also, the *F-stat* in these specifications are all over 10, which suggests the instrument is strong (Stock and Yogo, 2005). Panel C confirms that the instrument is exogenous to income. The estimates shown are from adding *distance* as an independent variable to Equation (2). In each regression, *distance* has no association with income levels.<sup>13</sup>

Panel A of Table (V) shows the second stage results.  $\ln comp_{1873}$  is significant in all specifications. In comparison to the OLS results, the IV estimation yields larger coefficients. Roughly, a 1% increase in compensation leads to a 1% decrease in 2019 income levels. Also, in Column 4 I find negative significance for  $\ln slave\ pct_{1830}$ . This finding is in line with arguments advanced by Nunn (2007) and Engerman and Sokoloff (2002). Column 5 has fewer observations because it includes the variable for valuable resources, which is again insignificant.

## VI. Mechanisms

In this section, I consider potential channels by which compensation harms current economic conditions. The mechanisms considered are the continuation of the plantation, an envi-

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<sup>12</sup>Results from the Wu-Hausman test are insignificant, which might suggest the IV approach is unnecessary. However, given the potential for biases mentioned above, I think the IV is more appropriate than OLS.

<sup>13</sup>Nunn (2008) uses distance to importing slave markets as an instrument for Africa, and also finds no relation with income levels.

Table V: IV, Relationship between Compensation and Income

	(1)	(2)	(3)	(4)	(5)
<i>Panel A: 2nd Stage, Dependent variable is ln gdp pc in 2019</i>					
ln comp (1873 \$)	-1.258** (0.566)	-0.973*** (0.291)	-0.846*** (0.318)	-1.115*** (0.334)	-0.736*** (0.249)
independent			-0.341 (0.256)	-0.0744 (0.271)	-0.205 (0.236)
ln slave pct (1830)				-0.480*** (0.176)	-0.114 (0.202)
ln resource					0.0621 (0.0443)
Colonizer fixed effects		X	X	X	X
R-squared	0.154	0.452	0.521	0.572	0.638
<i>Panel B: 1st Stage, Dependent variable is ln comp (1873 \$)</i>					
distance	0.427* (0.214)	0.708*** (0.143)	0.632*** (0.146)	0.594*** (0.151)	1.039*** (0.181)
independent			0.290* (0.166)	0.331* (0.176)	-0.0305 (0.182)
ln slave pct (1830)				-0.106 (0.134)	0.403** (0.183)
ln resource					0.0473 (0.0346)
Colonizer fixed effects		X	X	X	X
Adj. R-squared	0.085	0.621	0.652	0.646	0.794
F-stat	3.504	20.755	16.539	13.162	27.812
<i>Panel C: Exogeneity of Instrument, Dependent variable is ln gdp pc in 2019</i>					
distance	-0.267 (0.223)	-0.322 (0.304)	-0.338 (0.285)	-0.413 (0.259)	-0.540 (0.561)
Observations	28	28	28	28	20

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. IV estimates of Equation (2) are reported in Panel A. First stage estimates from Equation (3) are in Panel B. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Colonizer fixed effects are used and the base colonizer is Britain. Independent indicates if a territory is independent today. ln slave pct gives the slave percentage of the population in roughly 1830. ln Resource average per capita value of exports of metals, oil, and gold. The instrument used is the minimum distance to slave markets in 1000 kilometers. In Panel C, I add distance to slave markets into Equation (2) and estimate using OLS. For conciseness, I only show the estimates for minimum distance.

ronment of conflict, and the brutal treatment of slaves. All three mechanisms harm institutional development.

## **VI.A. The Plantation Continues**

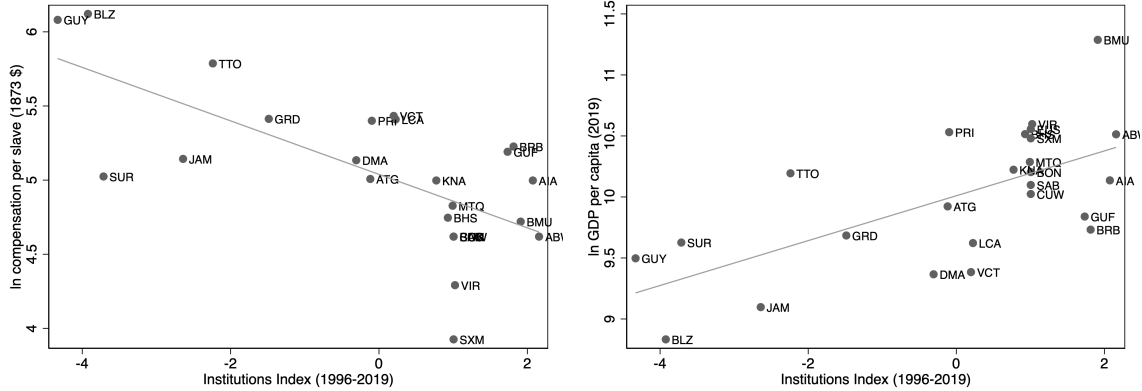
Historians and colonial documents put forth that the purpose of compensation was to help the plantation survive. Compensation helped plantation owners pay wages, import equipment and contract laborers, and pay of their debts. In doing so, freed slaves were stuck in the same place as they were during slavery but now could reject the plantation. In the end, for most colonies sugar production declined dramatically despite the attempts to make it more productive. The issue was they expected the slaves to be ‘grateful’ for their freedom and they assumed they would submit while still experiencing callous treatment. To counteract, plantation owners relied on the importation of indentured servants from India and China.

Yet providing relief to the colonists was not the only goal of aid payments. More broadly speaking, such payments were intended to make it possible to restore credit and pay the future freedmen. The injection of new capital was presented as one of the solutions that would revive or “regenerate” a colonial economy that was considered moribund. (Beauvois, 2016, p. 35)

Next, I analyze institutions as a potential channel in which compensation affects current incomes. Compensation hindered institutional development for two reasons. First, slavery ended but the extractive institution of the plantation did not, and the purpose of the West Indian territories continued to be exporting cheap staple crops to the metropole. Internal dynamic of these territories were never given a chance to exist and largely do not exist today. Second, the two dominant classes were at complete odds. On one hand, owners had political and economical power. They did everything they could to maintain the plantation and never lessened their racial prejudices against the freed slaves. The freed slaves tried to reject the plantation for obvious reasons. To make matters worse, the compensation formula favored territories where slaves

were treated more brutally, which will be discussed in Section (VI.C.). Therefore, compensation perpetuated the conflict between the freed slaves and owners. Also, there is a direct link from contemporary economic and political power to the plantation and the transition out of slavery as will be discussed in Section (VI.B.).

Figure III: Institutions Relationship with Compensation (left) and Income (right)



*Notes:* The left panel of the figure shows the relationship between institutions index and the natural log of compensation per slave in 1873 USD. The right panel of the figure shows the relationship between institutions index and the natural log of current GDP per capita in 2019. Only 25 observations are available for the institutions index. Institutions index is a PCA comprised of the average of rule-of-law, control of corruption, government effectiveness, and regulatory quality from 1996-2019. The abbreviations are the three digit territory codes and can be found in Table (I) in Appendix (D.2).

Figure (III), depicts the relationships between compensation and institutions in the left panel and current incomes and institutions in the right panel. Institutions index is created by a PCA with four institutional variables as described in Section (III.). There is a clear negative relationship between compensation per slave and institutions index. Likewise, institutions index and current incomes have a positive correlation. Acemoglu et. al. (2001) argue that institutions have an important causal effect on incomes.

Next, I observe the relationship between compensation, institutions, and current incomes in Table (VI). Panel A are basic OLS regressions of institutions on compensation. In all specifications,  $\ln comp_{1873}$  has a significantly negative relationship with institutions index. In column 2 the independent variables of interest are the dummies for compensation quantiles. The quantiles are the expected magnitudes and signs, which suggests a linear relationship between compensation and institutions. The difference between being in the first and third quantile of compensation is 2.10 units of the institutions index. Notice that countries which are indepen-

Table VI: Relationship between Compensation and Institutions

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: OLS, Dependent variable is average institutions index from 1996-2019</i>						
ln comp (1873 \$)	-2.540*** (0.576)		-3.240*** (0.720)	-2.437*** (0.690)	-2.826*** (0.723)	-3.023*** (0.719)
Dummy for comp in 2nd quantile		-1.859** (0.890)				
Dummy for comp in 3rd quantile		-2.105** (0.792)				
independent				-2.320** (0.844)	-1.747* (0.912)	-2.261** (0.946)
ln slave pct (1830)					-0.889 (0.617)	-1.139 (0.717)
ln resource						-0.0854 (0.154)
Colonizer fixed effects			X	X	X	X
R-squared	0.458	0.271	0.556	0.682	0.715	0.801
Observations	25	25	25	25	25	18
<i>Panel B: Mediation Analysis, Dependent variable is ln gdp pc in 2019</i>						
	Indirect	Direct	Total			
comp (1873 \$) quantile= 3 vs 1	-0.260** (0.129)	-0.542** (0.225)	-0.802*** (0.243)			
colonizer fixed effects	X	X	X			

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. Panel A reports OLS estimates using Equation (2), except institutions index is used as the dependent variable. Institutions index is a PCA comprised of the average of rule-of-law, control of corruption, government effectiveness, and regulatory quality from 1996-2019. Dummies for quantiles of compensation are used for estimation in Column (2), where the 1st quantile is the base. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Colonizer fixed effects are used and the base colonizer is Britain. Independent indicates if a territory is independent today. ln slave pct gives the slave percentage of the population in roughly 1830. ln Resource average per capita value of exports of metals, oil, and gold. Panel B reports coefficients from mediation analysis estimation. The dependent variable is the natural log of GDP per capita in 2019. In this analysis, I test the effect on incomes using the third quantile of compensation as the treatment and the first quantile as the control.

dent have significantly weaker institutions. Also, though the coefficient for colonizer fixed effects are not shown, the Dutch colonies have significantly worse institutions today compared to the British.

In Panel B of Table (VI), I implement a mediation analysis to test whether the effect of compensation does work through institutions. Mediation analysis estimates equations for the mediator variable, in this case institutions index, and the outcome, which is current incomes. It then decomposes the causal effects of the treatment vs. control into indirect, direct, and total effects (Nguyen et. al. , 2022). The control group are those in the first quantile of compensation, and the treatment are those in the third quantile. I use the STATA command *mediate* to perform the analysis. As found in Panel A, compensation has a significant correlation with institutions. Likewise, both compensation and institutions have a significant correlation with

current incomes, but with different signs, as expected. The decomposition of compensation's effect is found in Panel B. The total effect of a territory being in the third quantile of compensation vs the first, is a drop in current GDP per capita by 123%. 32.4% of this effect, or 39.9% of the drop in incomes is due to compensation's effect on institutions, while the rest is working beyond the effect of institutions. The estimates are comparable to those derived from Table (III) and (V).

## **VI.B. An Environment of Conflict**

Abolition changed the social structure of the Caribbean by transitioning slave labor into free labor. However, the economic structure of the plantation and the same two classes of people, ex-slaves and ex-slave owners, were maintained. They were clearly separated by race but one group had the majority of the population and no power, and the other group was the minority with concentrated power and wealth. The interests of the two groups did not align as the ex-slaves did what they could to reject the plantation while the ex-slave owners used their power to force the plantation as documented in Section (II.). The incompatibility created an environment of conflict that continues to shape the West Indian territories. Compensation, in continuing the institution of the plantation to persist, fostered this conflicting social structure. Acemoglu et. al. (2005) declares that those with political power establish economic institutions that serves their own interests, even if it is not maximizing aggregate growth. Slave-owners clearly held power in the Caribbean territories and compensation helped maintain and enhance this power.

Today, the group of people with the most economic and political influence in the Caribbean are foreigners from the USA and across Europe. However, there still remains a sizable class of elites, mostly ethnic minorities,<sup>14</sup> who remain within the region. The genesis of their power and control is directly linked with the transition to free labor and they benefited from the compensation process. They were slave owners, facilitators of trade, political officials, insurers, etc. In many cases, these elites married within their small groups, and their last names have

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<sup>14</sup>Jewish, Syrian, and European ancestry

remained the same (Reid, 1977, 1980; Numa, 2018).

Carvalho and Dippel (2020) provides an interesting analysis on the evolution of political elites in the British Caribbean following abolition. The territories were self-governing during slavery and immediately following emancipation. Plantation owners, and other white elites such as lawyers, merchants, etc., were the political leaders. However, emancipation changed the demographics of the voters, as freed black slaves were now considered citizens. Black voters preferred to vote for the ‘mixed’ candidates, who were descendants of slave-owners and their slave mistresses. Unfortunately, the ‘mixed’ politicians were no different than their white counterparts. Both prevented expansion of education, health resources, labor and wage policies, etc. that would alleviate the social misery of the freed slaves. Across the middle of the 19th century, riots and strikes were common in the Caribbean. In response to the civil unrest, the white and mixed elites gave up their self-governing powers and officially established themselves as crown colonies of Britain.<sup>15</sup>

It became easier for the elites to maintain political and economic control when they were less visible. Clearly, skin color played a prominent role in class distinctions for these territories. Reid (1977, 1980) uses stock exchange reports for 1969-1973 to observe the top corporations in Jamaica. They find that the concentration of economic power is dispersed through 27 families who are ethnic minorities. The origin of power for these families is from the slave plantation and the transition out of slavery in the region. Their power and control has survived past abolition and the independence movement in Jamaica and they continue to exert political influence. Reid (1977) finds that 70% of corporate chairmen come from one of these families, and that there is not one top corporation controlled by a black Jamaican although they made up 90% of the population in 1976.

The direct link from the plantation to current economic and political control is not just found in the British Caribbean. Numa (2018), finds the same for the French islands of Martinique and Guadeloupe. He shows that two European families, who are descendants of large slave-owners,

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<sup>15</sup>The only exception is Barbados. As we argue, the conflict between ex-slaves and owners were not as large in this territory.

remain in firm control of all stages of production: from imports to final consumption. The burden of the anti-competitive nature of such monopolistic control ultimately falls on the citizens of these territories through higher prices and limited domestic investment. Compensation was essential for the preservation of power, as it helped them to diversify their investments into profitable multinational corporations following abolition (Constant, 1998; Kováts-Beaudoux, 2002; Vogt, 2005). Present-day Caribbean continues to be haunted by its past.

## **VI.C. Brutal Areas Favored**

Compensation favored areas where slaves were treated most brutally, and it can be proved with colonial data. Specifically, birth rates minus death rates per 100 slaves, which I call population growth.<sup>16</sup>

Areas with lower population growth needed to replace their declining population through purchasing slaves. It is also likely that areas in which the plantation was growing had lower population growth because they were working their slaves harder and had less care about investing more money to replace them. They also happen to be the colonies which were furthest from slave markets, which adds to their price paid. John Mayers, colonial agent for Barbados argued that slave owners were being penalized for their ‘kindness’. He claimed that compensation to Barbados was limited because slaves were well treated and reproduced their population without importation (Butler, 1995, p. 29). OLS regressions estimate the relationship between compensation and population growth in Table (VII). Although, there are only 23 territories with available data, I find a strong negative relationship between slave population growth and compensation, so the hypothesis that compensation favored the most brutal areas holds.

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<sup>16</sup>Typically called the natural increase of the population, but there is nothing natural about slavery. I include Belize and Bermuda although the data is not available. For the former I use a conservative estimate of -.2% based on the slave population and import data, also slave labor in Belize was subject to a cruel mahogany production. Slaves were known to be treated well in Bermuda so I use 1.2% as a conservative estimate. This estimate is comparable to the Bahamas. (Bellhorn, 1992, p. 12).



Table VII: OLS, Relationship between Compensation and Population Growth

	(1)	(2)	(3)	(4)	(5)
Dependent variable is ln comp (1873 \$)					
slave pop growth	-0.309*** (0.0586)	-0.270*** (0.0767)	-0.230** (0.0988)	-0.335*** (0.103)	-0.412*** (0.118)
independent			0.152 (0.229)	0.122 (0.210)	-0.124 (0.260)
ln slave pct (1830)				-0.424** (0.196)	-0.540** (0.225)
ln resource					0.0209 (0.0432)
Colonizer fixed effects		X	X	X	X
Observations	23	23	23	23	19
R-squared	0.570	0.651	0.659	0.733	0.769

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. OLS estimates of Equation (2) are reported, except slave population growth (1830) is the independent variable of interest (replacing comp) and the natural log of compensation in 1873 \$ (ln comp (1873 \$)) is the dependent variable. Slave pop growth is birth rates minus death rates for the slave population in the period preceding abolition for each respective territory. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Colonizer fixed effects are used and the base colonizer is Britain. Independent indicates if a territory is independent today. Ln slave pct gives the slave percentage of the population in roughly 1830. Ln Resource average per capita value of exports of metals, oil, and gold.

## VII. Robustness

I test the relationship between compensation and current incomes using alternative specifications of the base IV estimation in Table (VIII). Columns 1-5 use the same regression as Column 4 in Table (V), but with different samples. Columns 1 and 2 are for different years, 1990 and 2000, respectfully. The further back in time, the more observations are lost, but the significance still holds. The results are similar across the years, however, it is interesting that the divergence in incomes caused by compensation is getting worse over time. The coefficients in 2019, 2000, and 1990 are -1.115, -0.968, and -0.917, respectively.<sup>17</sup>

Unfortunately, income data on these Caribbean territories are sparse prior to 1990. It would be interesting to see how compensation affected the region during the middle of the 20th century. However, accounts on these economies prior to widespread independence movements in the late 1950s and early 1960s indicate that the territories were poor. It was not until civilian air travel became affordable and enhanced global financialization granted opportunities for mass tourism and tax havens that we see a divergence of incomes. Based on these accounts, I

<sup>17</sup>However, with OLS regressions the coefficients are about the same.

Table VIII: IV, Compensation and Income with Alternative Specifications

	(1) 1990	(2) 2000	(3) area > 50 km <sup>2</sup>	(4) No Mkts	(5) cook's d < 4/N	(6) Alt. control	(7) Alt. control
<i>Panel A: 2nd Stage, Dependent variable is ln gdp pc</i>							
ln comp (1873 \$)	-0.917*** (0.275)	-0.968*** (0.266)	-0.933*** (0.299)	-0.963*** (0.314)	-1.089*** (0.323)	-0.949*** (0.328)	-1.654*** (0.620)
independent	-0.570** (0.268)	-0.306 (0.233)	-0.134 (0.261)	0.021 (0.255)	0.0668 (0.259)		
ln slave pct (1830)	-0.625** (0.251)	-0.698*** (0.216)	-0.467** (0.196)	-0.170 (0.196)	-0.422** (0.176)		
self-governance						-0.100 (0.299)	0.204 (0.409)
hurricane belt							-0.496 (0.306)
R-squared	0.768	0.764	0.608	0.543	0.529	0.461	0.286
<i>Panel B: 1st Stage, Dependent variable is ln comp (1873 \$)</i>							
distance	0.594*** (0.164)	0.594*** (0.164)	0.747*** (0.178)	0.690*** (0.182)	0.587*** (0.165)	0.634*** (0.139)	0.535** (0.195)
independent	0.331* (0.176)	0.331* (0.176)	0.366** (0.167)	0.221 (0.181)	0.262 (0.191)		
ln slave pct (1830)	-0.106 (0.134)	-0.106 (0.134)	-0.173 (0.143)	0.136 (0.181)	-0.131 (0.138)		
self-governance						0.440** (0.158)	0.439** (0.159)
hurricane belt							-0.110 (0.150)
Adj R-squared	0.798	0.690	0.648	0.773	0.651	0.707	0.701
F-stat	44.691	24.874	17.520	14.398	12.727	20.746	7.522
colonizer fixed effects	X	X	X	X	X	X	X
Observations	18	22	24	21	27	28	28

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. IV estimates using different specifications of Equation (2) are reported in Panel A. The first and second column use the years 1990 and 2000 for the dependent variable of incomes. The third column restricts the sample to territories who are larger than 50 km<sup>2</sup>. In Column 4 I drop all observations that are considered slave markets, given the potential correlation with slave market choice to development. Column 5, drops all observations with a cook's distance score greater than 4/N. The only territory dropped is Bermuda. Columns 6 and 7 use a different set of controls: self-governance indicates if a country has their own elected government today, and the hurricane belt. Hurricane belt is a hypothetical area depicting a high potential for direct hurricane hits, shown in Figure (A.4). First stage estimates are in Panel B. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Colonizer fixed effects are used and the base colonizer is Britain. Independent indicates if a territory is independent today. Ln slave pct gives the slave percentage of the population in roughly 1830. The instrument used is the minimum distance to slave markets in 1000 km.

suspect that the effect of compensation was latent until the mid to late 20th century. This does not mean that compensation does not have a causal effect. Rather, as argued by the Plantation Economy School (Beckford, 1999; Best and Polanyi-Levitt, 2009), the region lacks internal development. Economic decision making is done by individuals outside these territories. Hence, international companies dominate the mass tourist and tax haven industries. The argument is that low compensation territories, because of relatively better institutions, were chosen as centers for tax breaks and tourist which have enhanced their contemporary incomes. It is not the case that rich islands of the regions are intrinsically more beautiful or more suitable for finance, rather it is their institutions which have created these opportunities for them.

Columns 3-5 eliminate certain observations which might cause some bias. Column 3 limits the sample to areas of at least 50 km squared, to avoid potential biases from tiny territories. Since I count each slave market as its own importer in the base specification, I address the potential concern of slave markets being related to their own development in Column 4. In Column 4, I drop all observations which are slave markets and the results remain negatively significant. Also, due to the limited sample size of this study, I check for small-sample robustness in Column 5. This is done by dropping all observations with a Cooks distance score greater than  $4/N$ .<sup>18</sup> The coefficient of compensation is significant in all columns. Also, the IV results in Table (VIII) are significant under OLS, too.

A new set of controls are introduced in columns 6 and 7. *Self – governance* indicates if a country has independent political institutions and follows the country list from UN (2024c). *Hurricane belt*, is a dummy variable that states if the territory is within the hypothetical hurricane belt. Territories falling within this area, have a high likelihood of direct hits from strong hurricanes which can potentially harm development. Appendix (A.1) shows this hypothetical area. Basically, St. Lucia and all territories south of it are outside the hurricane belt. In both specifications of the additional controls, compensation still significantly affects current incomes. Also, I check the results using different measurements of compensation in Appendix (C.1), for a different instrument strategy with slave density as the instrument in Appendix (C.2), and with including Haiti to the analysis in Appendix (C.3). In each case, negative significance is maintained.

## VIII. Conclusion

Compensation for abolition has a persistent negative effect on current incomes. Areas which were compensated more had greater demand for slaves during the period leading up to abolition. They were more reliant on the system of slavery that allowed them to view their property

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<sup>18</sup> $N$  refers to total observations, and is 28 in this case. This is the suggested cutoff level (Bollen and Jackman, 1990). Bermuda is the only territory which fails, so it is dropped.

as subhuman. Therefore, upon abolition these territories had less compatibility between the two classes of the economy: the owners wanted to continue to expand production but freed slaves rejected the plantation. Compensation allowed the legacy of slavery to continue by keeping and even expanding the resources of the planter class so the plantation could survive. Also, the wealthiest families in the Caribbean today have their origins of fortune in the transition from slavery and benefited from the compensation process (Numa, 2018; Reid, 1977, 1980). These families were beneficiaries of the plantation system and continue to exert influence in the region.

Still, in low compensation colonies, power and wealth were maintained in the planter class. However, these areas did not have the same degree of antagonism as the high compensation territories. For some islands, like the Bahamas, Bermuda, and St. Barthelemy, slaves did a variety of jobs and were not confined to the plantation. Thus, slaves were treated relatively better than the rest of the West Indies. Since they were not reliant on the plantation, the environment of these territories were not disrupted from abolition. In the old sugar colonies like those of Barbados, St. Kitts, Guadeloupe, and Martinique, plantation production was prominent but slaves were not mistreated to the same level as some of the other areas. Although plantation production was not suitable for long-run growth, the compatibility allowed better institutions to develop which could foster development in the future. In some colonies, like Trinidad and Tobago, Guyana, and Suriname the class relationship was altered by the immigration from East Indian indentured labor. Although slaves and owners were at odds, the new source of labor helped the plantation thrive. However, conflict still existed that has affected institutional development and current incomes.

There are a few drawbacks to the current study. One is the limited observations, which prevent the use of additional control variables. However, since we are dealing with a similar set of countries, there is less need for a wide set of controls. Another drawback is the data. I rely on 19th century colonial office slave data from various sources, and of course the validity of such reports could be questioned. Also, I have attempted to provide justification for conservative

estimates in places where countries are missing data. However, the colonial reports during the compensation were well kept and gathered by government entities. Another point of potential concern is that I have decompressed history. There are no results for the early and mid 20th century. To my knowledge, there is no data on the economic performance of most of these territories in the years between slavery and today. I attempted to provide estimates for different years (1990 and 2000), but there is still a huge gap in the data.

A key takeaway from this article is that the transition out of slavery has a persistent effect. I use distance to slave markets as an instrument for compensation to deliver causal estimations. Distance affected the input price of selling slaves in home markets. According to the formula for compensation, this higher price meant more compensation. These results carry critical implications for modern policy debates on reparations, institutional reform, and development strategies. Targeted reparations programs that invest in education, infrastructure, and local entrepreneurship could help mitigate the inequalities rooted in colonial policies. For example, providing financial support for historically marginalized communities could address disparities in access to resources and opportunities. Additionally, policymakers should incorporate historical contexts into contemporary institutional reforms to ensure that economic policies address systemic issues, rather than just their symptoms.

By bridging historical analysis with present-day policy challenges, this study contributes to a deeper understanding of the enduring impact of slavery and colonialism on economic development. Addressing these legacies is essential for fostering inclusive growth and creating equitable opportunities for all, particularly in regions like the Caribbean, where the echoes of the past still resonate strongly today. While true that areas which Europeans settled established better institutions, extractive areas such as plantation economies were *still* European constructed societies as argued by Acemoglu et. al. (2001). The only difference was the purpose for the two types of colonies.

## A Appendix: Data Sources and Hurricane Belt

### A.1 Hurricane Belt

Figure A.4: Atlantic Hurricane Belt



*Notes:* The figure shows the hurricane belt across the Caribbean and Atlantic Oceans. With the exception of Bermuda, every territory north of St. Lucia is considered within the Hurricane Belt. Figure is from <https://www.thetimes.co.uk/travel/advice/when-is-hurricane-season-in-the-caribbean-0h8xfm6qd>

### A.2 Data Sources

Table A.9: Data Sources

Variable	Description	Source
GDP per capita (PPP)	Current GDP per capita purchasing power parity basis. Used for years 2019, 2000, and 1990	Most territories are Penn World Tables (Feenstra et. al., 2015). Puerto Rico, US Virgin Islands, and Curacao are from World Development Indicators (World Bank, 2024). Saba, St. Eustatius, and Bonaire are from Statistics Netherlands (2024b). French Antilles are from INSEE (2024).
Compensation amount	Amount colonizers paid slave owners per slave in their respective currencies	British West Indies (Higman, 1995), Dutch West Indies (Fatah-Black et. al., 2023) , French Antilles (Ernatus, 2009), Danish West Indies (Virgin Island History, n.d.), Swedish West Indies ((Beauvois, 2016)), Puerto Rico (Beauvois, 2016).
1873 Exchange rates	1 currency to USD in 1873	Exchange rates for Spanish peseta and British pound are from Officer (2024). Exchange rates for Swedish Krona, Danish kroner, Dutch guilder and French Franc are from Edvinsson et. al. (2010).
Historical CPI	CPI for abolition year, 1873, and 2019. Used to construct measures for inflation adjusted compensation.	USA CPI (Officer and Williamson, 2024), Spanish CPI (Prados-de-la-Escosura, 2024), UK CPI (Clark, 2024), French CPI prior to 2011 (Piketty and Zucman, 2014), French CPI after 2010 (World Bank, 2024), Swedish CPI (Statistics Sweden, 2024), Dutch CPI prior to 1914 (Smits et. al., 2000), Dutch CPI after 1913 (Statistics Netherlands, 2024a), Danish CPI prior to 1914 (Grytten, 2003), Danish CPI after 1913 (StatBank Denmark, 2024) .
2019 PPP Conversions	PPP conversions for 2019	ICP (2021)
Slave percentage	Slave population divided by total population in roughly 1830	British West Indies (Higman, 1995) and the rest are from Engerman and Higman (2003)
1830 slave population	Total population in slavery in 1830. Divide by slave pct to get total population.	British West Indies (Higman, 1995) and the rest are from Engerman and Higman (2003)
Land area	Land area of territory in kilometers squared	CIA (2024).
Colonial dummies	0 if British colony, 1 if French, 2 if Dutch, 3 if USA.	UN (2024b)
Independent dummy	0 if still a colony, 1 if independent in 2019	(US State Dpt , 2024)
Hurricane belt dummy	1 if within the hypothetical hurricane belt, Figure (A.4), and 0 if not	<a href="https://www.thetimes.co.uk/travel/advice/when-is-hurricane-season-in-the-caribbean-0h8xfm6qd">https://www.thetimes.co.uk/travel/advice/when-is-hurricane-season-in-the-caribbean-0h8xfm6qd</a>
Self-governing dummy	1 if there is some form of self-governance 0 if not	UN (2024b)
Resource	Per capita export value of gold, oil, and metals on average from 1990-2019	Exports: Atlas (2022), Current Population: UN (2024a)
Institutions index	Standardized PCA index of four institutional variables, which are all averages from 1996-2019: Rule-of-law, government effectiveness, control of corruption, and regulatory quality.	Kaufmann and Kraay (2023)
Slave population growth	Birth rates minus death rates for the years preceding abolition in each territory	British West indies (Higman, 1995), Dutch West Indies (Lamur, 1981), French Guiana (Lamur, 1996).

## B Appendix: Variable Construction

### B.1 Compensation Measures

Each compensation measure is calculated using Table (B.1). The second column shows compensation per slave in the colonizers currency. Next are exchange rates to US dollars, one is for 1873 and the exchange rate for the abolition year is in parentheses. Column 4 are the CPIs for each colonizer at the abolition, and I treat 1873 as the base year. Column 5 and 6 have the CPI (base year still 1873) and PPP for each colonizer in 2019. The notes in the final column outline any adjustments that need to be made when converting the compensations to 2019 PPP.

The main measure of compensation used in this study,  $comp_{1873i}$ , is constructed by multiplying three variables. Compensation in each respective currency, exchange rate in 1873, and ratio of the average 1873 CPI (100) to average abolition year CPI. USA CPI is not shown in the table but it is included in average CPI.  $comp_{xri}$  is constructed by multiplying compensation by 1873 exchange rates.  $comp_{PPP_i}$  takes the ratio of 2019 CPI (100) to abolition year CPI for each colonizer and divides it by the PPP in 2019. This number is multiplied by compensation, which has been adjusted according to the notes in Table (B.1).  $comp_{1850i}$  is constructed using the History Currency Database (Edvinsson, 2016). Finally,  $comp_{1873newi}$  is the same measurement at  $comp_{1873i}$ , but I used total average slave compensation for the British West Indies, instead of average employed slave compensation.

### B.2 Distance measure

The distance instrument measures the distance in 1000 km to the nearest slave market. The seven slave markets are: New Providence in The Bahamas, Barbados, Bermuda, St. Thomas in the Danish West Indies, Guadeloupe, Kingston in Jamaica, and St. Barthelemy. With the exception of Bermuda, these territories represent the highest proportion of slave exports according to the Intra-Americas Slave Trade Database (Slave Voyages, 2024). Bermuda did not



Table B.1: Compensation Construction

Territory	Comp per slave	Exchange rate 1873 (abolition)	Avg CPI abolition (1873=100)	CPI abolition (2019=100)	PPP 2019	notes
Anguilla	19.8 pounds					
Antigua and Barbuda	20 pounds					
The Bahamas	15.4 pounds					
Barbados	24.9 pounds					
Belize	60.9 pounds					
Bermuda	15 pounds					
Dominica	22.7 pounds					
Grenada	30 pounds	1 pound=5.546 USD (4.64 USD)	74.17	1.03	0.67	
Guyana	58.5 pounds					
Jamaica	22.9 pounds					
Montserrat	20 pounds					
St. Kitts and Nevis	19.8 pounds					
St. Lucia	29.9 pounds					
St. Vincent and the Gren.	30.6 pounds					
Trinidad and Tobago	43.6 pounds					
Aruba	200 guilders					
Bonaire	200 guilders					
Curacao	200 guilders					
Saba	200 guilders	1 guilder=0.460 USD (0.599 USD)	90.77	3.92	0.767	In 2002, the Netherlands adopted the euro at a rate of 1 euro=2.204 guilders
St. Eustatius	200 guilders					
Sint Maarten	100 guilders					
Suriname	300 guilders					
French Guiana	619.1 francs					
Guadeloupe	469.6 francs	1 franc=0.217 USD (0.191 USD)	74.67	0.03	0.706	In 1960, the new franc was introduced at a conversion of 1 new franc=100 old francs. In 2002, France adopted the euro at 1 euro=6.560 new francs
Martinique	430.2 francs					
Danish West Indies	180 Danish Kroner	1 kroner=0.303 USD (0.275 USD)	74.67	1.28	6.538	Owners were paid in West Indian Daleres. 1 West Indian Dalere=3.6 kroner
Puerto Rico	1130 peseta	1 peseta=0.196 USD	100	0.144	0.604	In 2002, Spain adopted the euro at 1 euro=166.386 pesetas
Swedish West Indies	358.27 krona	1 krona=0.306 USD (0.266 USD)	83.12	1.42	8.584	

Notes: The table shows the construction of the compensation measures used. For example to get the base compensation ( $comp_{1873}$ ) you take Column 2 (comp per slave), which shows the amount of compensation in each respective currency, multiply by 100 over Column 4 (CPI at abolition), and then multiply by the Column 3 (1873 exchange rate for US dollars).

import slaves and since it is far from the nearest market, I include it is a slave market. I use the built-in STATA command *geodist* to calculate distances between two decimal coordinates of latitude and longitude. *geodist* measures the length of the shortest path between two points of a model of earth using Vincenty (1975) formula. This formula uses an iterative method and is more accurate than the great-circle distance formula.

Figure (B.1) geographically illustrates the construction of the distance measure. The seven slave markets are the filled in shapes, while the importing territories are the hollow shapes. For most the importing territories, I use the centroid of its area, the exception are for Guyana, Suriname, and French Guiana. The coordinates for these are near the sea, as this is where the populations are concentrated. For Guyana it is Georgetown, Suriname it is Paramaribo, and French Guiana it is Cayenne. Each shape corresponds to trading partners. For example, Kingston in Jamaica is slave market that is marked by a filled in triangle. Belize imported slaves from this market so it is marked by a hollow triangle. Furthermore, I treat slave market territories as their own importers. So, the centroid of Jamaica imports slaves from Kingston (where the filled-in triangle is). Due to its distance to other territories, Bermuda (plus symbol) and New Providence, Bahamas (cross symbol) are treated as their own markets.

Figure B.1: Slave Markets



Notes: Each shape represents one of the 28 territories in this study. The filled-in shapes are the slave markets, and its corresponding hollow shapes are where these respective markets sent their slaves. Kingston, Jamaica (filled-in triangle) sent slaves to Belize (hollow triangle). St. Thomas, The Danish West Indies (filled-in upside down triangle) sent slaves to Puerto Rico, Aruba, Curacao, and Bonaire (hollow upside down triangles). Saint Barthelemew (filled-in square) sent slaves to Sint Maarten, Saba, St. Kitt's and Nevis, St. Eustatius, and Anguilla (hollow squares). Guadeloupe (filled-in diamond) sent slaves to Martinique, Montserrat, Antigua and Barbuda, and Dominica (hollow diamonds). Barbados (filled-in circle) sent slaves to St. Vincent and the Grenadines, Trinidad and Tobago, Paramaribo in Suriname, St. Lucia, Georgetown in Guyana, Cayenne in French Guiana, and Grenada (hollow circles). Each slave market is also treated as its own importer. Thus New Providence, Bahamas (cross symbol) and Bermuda (plus symbol) only traded within their own territory.

## C Appendix: Robustness

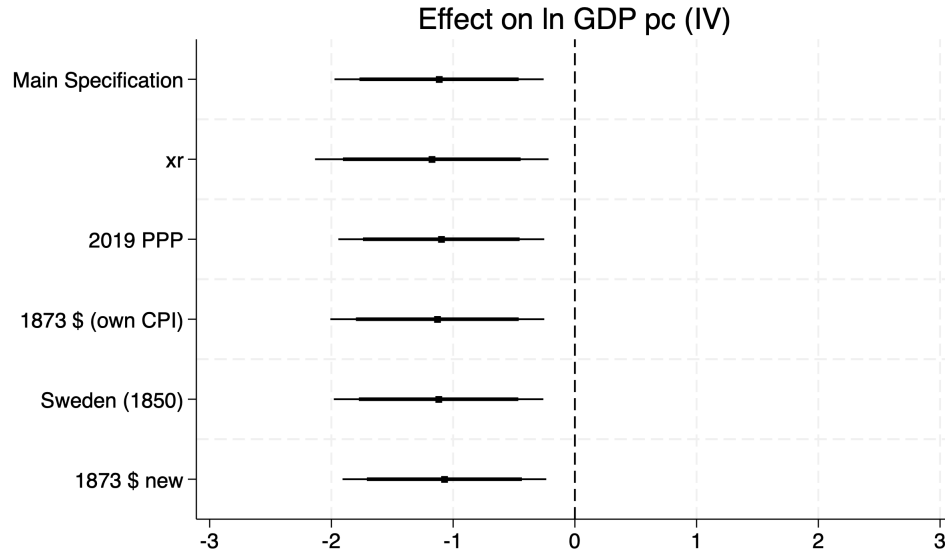
### C.1 Alternative Compensation Measures

Figure (C.1), uses different measurements of compensation as the dependent variable and estimates the same regression as Column 4 in Table (V).  $xr$  is the exchange rate to USD for each currency at the time of their abolition. 2019 *PPP* is a measure of compensation based on the average price growth from abolition to today and adjusted using 2019 PPP conversions. 1873 \$ (*own CPI*) is similar to the measure used throughout the paper but instead of average CPI, I use CPI for each respective colonizer and convert to USD using 1873 exchange rates. *Sweden* (1850) uses the historical currency database Edvinsson (2016) to convert abolition year compensation amounts to the value of the USD in Sweden in 1850. Finally, 1873 \$ *new* uses average total slave compensation for the British West Indies instead of average employed slave compensation. A more detailed explanation of the measurements are in Appendix (B.1). The dot corresponds to the point estimate, the thick line is the 95% confidence interval, and the thin line is the 99% confidence interval. For all measurements of compensation, the coefficient is negatively significant and of similar magnitudes.

### C.2 Alternative Instrument

I carry out the estimation with an alternative instrument, slave population density. Recall, that areas which were growing their plantation production, had a higher demand for new slaves, and paid a higher price for purchase. Therefore, these territories received greater compensation. The previous instrument, *distance*, is related to the supply and cost of bringing slaves to the market. However, there is also the demand side which had the same effect of pushing prices for slaves up. Territories which could grow their plantation production had the space to do so. During the debates over abolition, “owners in the more densely populated islands immediately protested” (Butler, 1995, p. 28). It was known that compensation would favor the newer, less dense areas. In fact, dense areas favored a compensation formula based on the

Figure C.1: IV, Compensation and Income with Different Compensation Measures



Notes: IV estimates with different compensation per slave measurements. The top coefficient, *Main Specification*, is the estimate from the original compensation measure  $\ln comp_{1873}$ . For *xr*, compensation is simply in US \$ at each abolition year using the respective exchange rates. *2019 PPP*, compensation is the PPP adjusted 2019 values using current CPI. *1873 \$ (own CPI)*, compensation is similar to my main measure, but rather than taking the average 'world' CPI, I take the CPI for each colonizer. Therefore, each territory has a unique price index dependent on their colonizer. *Sweden (1850)*, compensation is measured as the \$ value in Sweden in 1850. I used the Historical Currency Converter for this calculation (Edvinsson, 2016). Lastly, *1873 \$ new* is the same as our main measure, except I used the average per slave compensation for British colonies, rather than the average per employed slave value as used throughout the paper. The dot corresponds to the point estimate, the thick line is the 95% confidence interval, and the thin line is the 99% confidence interval. Colonizer fixed effects, independent dummy, and  $\ln slave_{pc}$  are used as control variables. The instrument used is the minimum distance to slave markets in 1000 km.

number of slaves, while the sparse areas advocated a scheme based on market slave prices prior to abolition (Engerman, 1984, p. 137). Logically, less dense areas might have a harder time keeping slaves on the plantation after abolition, so higher compensation made sense. However, total population density might be related to past development as argued by Acemoglu et. al. (2002). The reason is that people can share ideas, products, labor, etc. that will speed up the development process. This might not be true of the Caribbean during this time since the territories were solely slave economies. High population densities does not mean there bustling towns and city-centers. Rather, it means that there were more plantations per area, which is not a symbol of development.

To address the concern for the exogeneity of total population densities, I use the log of slave population density ( $\ln slave_{density}$ ) as an instrument for compensation. The hypothesis is that if a territory had more slaves per area, they had less room to grow the plantation and

Table C.1: IV-alternative instrument, Relationship between Compensation and Income

	(1)	(2)	(3)	(4)	(5)
<i>Panel A: 2nd Stage, Dependent variable is ln gdp pc in 2019</i>					
ln comp (1873 \$)	-0.817** (0.364)	-0.774** (0.302)	-0.543 (0.340)	-0.876** (0.362)	-0.662* (0.355)
independent			-0.487* (0.257)	-0.206 (0.274)	-0.239 (0.260)
ln slave pct (1830)				-0.421** (0.171)	-0.104 (0.203)
ln resource					0.0616 (0.0438)
Colonizer fixed effects		X	X	X	X
R-squared	0.387	0.479	0.558	0.625	0.646
<i>Panel B: 1st Stage, Dependent variable is ln comp (1873 \$)</i>					
ln slave density	-0.101** (0.0385)	-0.112*** (0.0277)	-0.0975*** (0.0286)	-0.0907*** (0.0312)	-0.116** (0.0460)
independent			0.273 (0.181)	0.312 (0.196)	0.158 (0.257)
ln slave pct (1830)				-0.0878 (0.149)	0.144 (0.248)
ln resource					-0.0121 (0.0495)
Colonizer fixed effects		X	X	X	X
Adj. R-squared	0.177	0.579	0.601	0.589	0.564
F-stat	6.815	16.401	11.623	8.432	6.326
<i>Panel C: Exogeneity of Instrument, Dependent variable is ln gdp pc in 2019</i>					
ln slave density	0.0141 (0.0431)	0.00759 (0.0500)	0.000360 (0.0473)	0.0239 (0.0449)	0.0157 (0.0641)
Observations	28	28	28	28	20

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. IV estimates of Equation (2) are reported in Panel A. First stage estimates from Equation (3) are in Panel B. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Colonizer fixed effects are used and the base colonizer is Britain. Independent indicates if a territory is independent today. Ln slave pct gives the slave percentage of the population in roughly 1830. Ln Resource average per capita value of exports of metals, oil, and gold. The instrument used is the log of slave population divided by territorial area. In Panel C, I add slave density into Equation (2) and estimate using OLS. For conciseness, I only show the estimates for slave density.

demanded fewer imported slaves. Thus, they received relatively smaller amounts of compensation. Table (C.1) show the results of the this new instrumental variable strategy. Panel B has the first-stage coefficients. Slave densities are significantly related to compensation, however the relationship is weaker than the main instrument of distance to slave markets. Only two of the F-stats are above the threshold of 10 for strong instruments. Panel C confirms that the instrument is unrelated to current incomes. A potential area of concern is that a higher slave density means a greater proportion of slaves, which has been documented to be negatively related with development. However, there is no significant relationship between slave percentage of the population and slave density. Panel A of Table (C.1) shows the second-stage estimations. In this alternative strategy, compensation has a negative effect on current incomes for three of the five regressions. In general, the magnitudes of the estimates are in between the OLS and main IV estimates.

### **C.3 Appendix: The Case of Haiti**

Haiti also suffered from compensation to slave-owners. However, their process was unique. After a successful revolution in 1804, Haiti became the first Black republic. The consequences of their freedom was severe. In 1825 France surrounded the country with warships and gave the Haitians a choice: pay 150 million francs to slave-owners for their property loss or we invade. The Haitian leaders chose the former but the newly independent territory was in no condition to raise the funds France demanded. They did not have a proper tax structure and were severely weakened from the independence war. After defaulting on multiple payments, France lowered the reparation price to 90 million francs. Haiti still struggled to pay and was compelled to take out loans, the debt now became known as ‘double-debt’. The full amount plus interest was not paid off until 1947 and totaled 112 million francs (Porter et. al. , 2022a).

Economists, mostly from the Paris School of Economics, have estimated this effect on the Haitian economy. Not only did the compensation put them in debt, but it could have been invested into the economy. If this was the case, and we assume that the compensation amount

grew with the pace of the Haitian economy, then the opportunity cost of compensation would be \$21 billion in 2020 (Porter et. al. , 2022b). This is a conservative estimate, as Haitian growth was endogenous to the compensation process and was therefore reduced due to the need to pay off debt. Thomas Piketty places the estimate at \$42 billion in 2020 based off using a growth rate halfway between Haiti and Latin America.

Haiti's slave population prior to the revolution was about 500,000. Combining this with the conservative estimate of \$21 billion and converting it to 1873 levels yields a compensation per slave payment of \$2,398 in 1873, which is over 10 times the next highest compensation amount. I add Haiti to the observations with this amount and estimate Equation (2). Although the process was different, there was one key similarity. To pay off the debt, Haitian leaders enslaved their own population. Compensation for Haiti led to the continuation of the plantation and an environment of conflict, just like the other territories. The results are shown in Table (C.2), and are significant in all specifications. This should be no surprise as Haiti is the poorest country in the western hemisphere today and they had the highest amount of compensation per slave to slave-owners.



Table C.2: OLS, Relationship between Compensation and Income with Haiti

	Dependent variable is ln gdp pc in 2019				
	(1)	(2)	(3)	(4)	(5)
ln comp (1873 \$)	-0.856*** (0.118)	-0.933*** (0.134)	-0.758*** (0.158)	-0.832*** (0.146)	-0.843*** (0.183)
French colonizer		0.113 (0.225)	-0.213 (0.275)	-0.0890 (0.255)	0.312 (0.430)
Dutch colonizer		-0.269 (0.218)	-0.457* (0.230)	-0.548** (0.212)	-0.539* (0.290)
USA colonizer		0.331 (0.329)	0.0284 (0.352)	-0.256 (0.340)	- -
independent			-0.474* (0.252)	-0.284 (0.241)	-0.256 (0.289)
ln slavepct (1830)				-0.411** (0.168)	-0.187 (0.248)
ln resource					0.0731 (0.0558)
Observations	29	29	29	29	21
R-squared	0.662	0.707	0.746	0.800	0.811

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are in parentheses. OLS estimates of Equation (2) are reported with Haiti included. The dependent variable is the natural log of current per capita GDP in 2019. The compensation measure, ln comp (1873 \$), is the amount of compensation per slave in 1873 US dollars using CPI adjustment according to Equation (1). Dummies for quantiles of compensation are used for estimation in Column (2), where the 1st quantile is the base. Colonizer fixed effects are reported and the base colonizer is Britain. Independent indicates if a territory is independent today. Ln slave pct gives the slave percentage of the population in roughly 1830. Ln resource average per capita value of exports of metals, oil, and gold.

## D Appendix: Background

### D.1 Compensation Process

The British government agreed to compensate slave-owners a total of £20 million<sup>19</sup>, or 40% of government expenditure in 1834. According to Draper (2010, p. 208), the equivalent of the same share of spending is £200 billion today. The £20 million was divided among the colonies based on the average prices they paid per slaves in previous years.<sup>20</sup> They each got roughly 45% of the average price paid per slave from 1823-1830 times the total of slaves in the colony. It was then up to the colonies to distribute their amount received to their slave owners (Draper, 2010, p. 104). In general, they followed a similar strategy where compensation to owners was highest for employed male slaves and lowest for slaves who no longer could work. Ward (1998, p. 130), argues that owners used compensation to solidify their position in the West Indies and pay off debts:

“In general planters took the slave compensation money as an opportunity to wipe the slate clean of debt and consolidate their position, rather than to make their escape from the West Indies.”

France is the only country where slavery was abolished twice. The second and final attempt occurred in 1848 through the Decree of Abolition. The decree set forth the rules of compensation, which granted 126 million francs to slave owners spread across seven colonies to be paid out over 20 years (French Republic, 1849, p. 405-406).<sup>21</sup> Three of these territories were in the Caribbean region and are essentially still French colonies today: Guadeloupe, French Guiana, and Martinique. Unlike the British, the French did not categorize compensation claims by slave's occupation and they did not compensate unemployed slaves. Similarly to Britain, France based the compensation award at roughly 40% the slave market value from the period 1838-1848 (Blériot, 2000). The amount per slave received by slave owners in French

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<sup>19</sup>Compensation was paid out from 1835-1843

<sup>20</sup>This also includes their colonies in Mauritius and the Cape of Good Hope.

<sup>21</sup>Reunion, Guadeloupe, French Guiana, Martinique, Senegal, Sainte-Marie, Nosy Be.

Guiana was 619.1 francs, 469.6 francs in Guadeloupe, and 430.2 francs in Martinique, respectively (Ernatus, 2009). The French colonies did not have a period of forced labor after abolition (Beauvois, 2016, p. 223).

The Netherlands abolished slavery in 1863 in the Dutch Antilles: Aruba, Bonaire, Curacao, Saba, Sint Eustatius, Sint Maarten, and Suriname. The formula for compensation was based on the market value of goods each colony produced on average and did not differentiate between slave occupation nor age (Fatah-Black et. al., 2023, p. 167)<sup>22</sup>. Although this formula is different than the other islands, compensation still favored areas in which the plantation was growing. Slave owners in Suriname were rewarded 300 guilders per slave, 100 guilders in Sint Maarten, and 200 guilders for Curacao, Bonaire, Aruba, Saba, and St. Eustatius (Fatah-Black et. al., 2023). Today, Suriname is the only independent former Dutch colony in the Caribbean.

Denmark abolished slavery in 1848 in the Danish West Indies, which is now the US Virgin Islands.<sup>23</sup> Danish slave owners received 50 Danish West Indian dollars per slave as compensation for their freed property (Virgin Island History, n.d.), equivalent to 180 Danish Kroner. The government of Denmark originally proposed a 12 year apprenticeship period, but this was abandoned after only a year as ex-slaves refused to work under this system (Beauvois, 2016, p. 174). Puerto Rican<sup>24</sup> slave owners were the biggest winners when Spain abolished slavery on the island in 1873.<sup>25</sup> The value of compensation was equal to the market price of slaves, where in other territories owners got less than 50% of the market value. However, compensation came in a mix of land grants and money. The system was designed to alleviate pressure on the colonial treasury and amounted to the value of 35 million pesetas in total (Knight, 2003). On top of money and land, owners also benefitted from a three year apprenticeship period (Beauvois (2016): 221). The estimated slave population of Puerto Rico in 1873 puts the per

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<sup>22</sup>The Dutch did pay slave owners 60 guilders per slave if the slave was promised manumission prior to abolition (Fatah-Black et. al., 2023, p. 167)

<sup>23</sup>The islands of St. John, St. Thomas, and St. Croix. USA bought the US Virgin Islands from Denmark in 1917.

<sup>24</sup>USA bought Puerto Rico from Spain in 1898

<sup>25</sup>It was not until 1886 that slavery was abolished in Cuba but slave owners did not receive financial compensation.

slave payment at 1130 pesetas (Beauvois, 2016). Sweden, in its West Indian colony of St. Barthelemy,<sup>26</sup> abolished slavery in 1847. The government rewarded slave owners with a total of 250,000 french francs (Knight, 2003) which is roughly 358.27 Swedish krona per slave according to the slave population estimated in 1847 (Beauvois, 2016).

## D.2 Country Backgrounds

Table D.1: Territory Statistics

Colony	Code	GDP pc (2019)	Slave population (1830)	Compensation per slave (1873 \$)	Compensation per slave (PPP 2019 \$)	Slave pct (1830)	Apprenticeship period
<i>Britain (1834)</i>							
Anguilla	AIA	22481	663127	216.45	4194.46	81%	1834–1838
Antigua and Barbuda	ATG	25229.43	2260	148.06	2869.15	79%	-
The Bahamas	BHS	20383.22	28635	149.55	2898.13	80%	-
Barbados	BRB	36856.81	9995	115.15	2231.56	56%	-
Belize	BLZ	16848.96	83150	186.19	3608.17	80%	-
Bermuda	BMU	6855.59	1895	455.38	8824.81	45%	-
Dominica	DMA	79814.77	4277	112.16	2173.60	39%	-
Grenada	GRD	11685.98	14165	169.74	3289.38	73%	-
Guyana	GUY	16061.98	23645	224.33	4347.2	84%	-
Jamaica	JAM	13320.57	83545	437.44	8477.03	88%	-
Montserrat	MSR	8928.11	311070	171.24	3318.36	84%	-
St. Kitts and Nevis	KNA	19974.50	6400	149.55	2898.13	85%	-
St. Lucia	LCA	27529.55	26365	148.06	2869.15	82%	-
St. Vincent and the Grenadines	VCT	15094.65	13275	223.58	4332.71	73%	-
Trinidad and Tobago	TTO	11894.91	22250	228.81	4434.14	82%	-
<i>The Netherlands (1863)</i>							
Aruba	ABW	28546.26	61932	138.05	4109.89	73%	-
Bonaire	BON	36799.81	393	101.39	3018.52	14%	-
Curacao	CUW	27000	547	101.39	3018.52	37%	-
Saba	SAB	22561.62	5894	101.39	3018.52	39%	-
St. Eustatius	EUS	24300	700	101.39	3018.52	70%	-
Sint Maarten	SXM	38400	1614	101.39	3018.52	71%	-
Suriname	SUR	35603.58	4000	50.7	1509.23	67%	-
<i>France (1848)</i>							
French Guiana	GUF	15158.82	48784	152.09	4527.78	87%	1863–1873
Guadeloupe	GLP	25690.80	202890	135.5	3360.55	80%	None
Martinique	MTQ	18759.6	19102	179.67	4456.15	84%	-
<i>Danish West Indies (1848)</i>							
	VIR	28970.4	97339	136.29	3380.08	81%	-
<i>Puerto Rico (1873)</i>							
	PRI	29342.4	86449	124.85	3096.49	79%	-
<i>Swedish West Indies (1847)</i>							
	BLM	52000	1387	131.89	2939.19	35%	None
Total		26556.67	990455	191.13	4086.07	65%	-

Notes: The table reports an overview of the 28 territories in this study, separated by colonizer and abolition year. GDP pc (2019) are current levels of GDP per capita for 2019 in \$. Slave population and slave percentage both are from around 1830. Some territories reported different years, but they are all in between 1825 and 1835. The compensation measures are the per slave financial amounts, first in 1873 dollars and second in 2019 dollars using PPP adjustments (Described in Section (III.) and Appendix (B.1)). Lastly, apprenticeship period refers to the years following abolition where slaves remained tied to their slave owners.

<sup>26</sup>Purchased by France in 1878.

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