

Gouda, Moamen; Rigterink, Anouk S.

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## Historical Slavery Predicts Contemporary Violent Crime

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# Historical Slavery Predicts Contemporary Violent Crime

*Moamen Gouda, Anouk S. Rigterink*

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Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email [office@cesifo.de](mailto:office@cesifo.de)

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# Historical Slavery Predicts Contemporary Violent Crime

## Abstract

This study investigates the long-term relationship between slavery and violent crime in the USA. Although qualitative evidence suggests that slavery perpetuated violence, there has been no large-N study supporting this claim. Using county-level data, we find that the percentage of slaves in the population in 1860 is linked with violent crime in 2000. This result is specific to violent crime, robust to instrumenting for slavery and varying the approach to missing crime data, and not driven by biased crime reporting. Investigating the theoretical mechanisms driving these results, we find that historical slavery affects inequality (like Bertocchi and Dimico, 2014), white Americans' political attitudes towards race (like Acharya et al., 2016b) and black American's political attitudes – in opposite directions. Results suggest that inequality and black American's political attitudes mediate the observed effect on violent crime in general, but that white American's political attitudes mediate the effect on interracial violence.

JEL-Codes: J150, J710, K420, N310, D700.

Keywords: slavery, crime, inequality, political attitude, violence, US South.

*Moamen Gouda*  
*Graduate School of International and Area*  
*Studies (GSIAS), Hankuk University of Foreign*  
*Studies (HUFs), Seoul / South Korea*  
*moamengouda@hufs.ac.kr*

*Anouk S. Rigterink*  
*School of Government and International*  
*Affairs, Durham University / United Kingdom*  
*anouk.rigterink@durham.ac.uk*

## 1. Introduction

A considerable body of literature investigates the prevalence of violence in the Southern USA, a phenomenon that prompted Hackney (1969) and Wasserman (1977) to coin the phrase “Southern violence”. Since the 18th century, it has been evident that violence is more prevalent in this region than in other parts of the United States (Ayers, 1991; Nisbett, 1993). Clarke (1998, p.275) states that “Violence was as much a part of the Southern landscape and culture as azalea festivals and bourbon whiskey”. Southern violence continues up to modern times. In 2019, the South was the region with the highest violent crime rate (Federal Bureau of Investigations, 2019). According to the latest U.S. Peace Index that measures the level of peacefulness, or “absence of violence” at the state level, the South was the least peaceful region in the United States, having nine of the ten nationally most violent states (Institute of Economics and Peace, 2012). Recently, Forbes reported that seven out of the ten most dangerous cities in the US are in the South (Bloom, 2022).

Several qualitative studies hypothesize that the institution of slavery was an important factor behind Southern violence (Nash et al., 2003; Cardyn, 2002). However, no large-N study has supported this claim so far. Quantitative research has investigated the lasting effect of slavery on various socio-economic and political outcomes. Recent findings indicate that slavery has a persistent and long-term effect on (racial) economic inequality (Bertocchi and Dimico, 2012, 2014; O’Connell, 2012, 2020), economic development (Acemoglu et al., 2002; Nunn, 2008), racial inequality in health and education (Bertocchi and Dimico, 2012; Gabriel et al., 2021; Kramer et al., 2017; Phelan and Link, 2015; Reece and O’Connell, 2016), black-white disparities in arrest rates (Ward, 2022) and political attitudes (Acharya et al., 2016b).

Other studies investigate other countries, or crime-adjacent outcomes. Buonanno and Vargas (2017) use the proportion of enslaved in Colombian municipalities as an instrument for

economic inequality, and find a strong association between inequality and both violent and property crime rates. Gottlieb and Flynn (2021) find that a criminal charge in US counties with historical slavery in 1860 increases the probability of pre-trial detention, the likelihood of incarceration sentence, as well as the length of incarceration sentences. Buttrick and Mazon (2022) show that the occurrence of slavery in Southern US counties in 1860 is linked with contemporary gun ownership.

This study contributes to the literature by empirically investigating the long-term relationship between slavery and violent crime in the USA. Results show that US counties with a greater fraction of enslaved in the population in 1860 report a greater number of violent crimes (per 100,000 inhabitants) in 2000. Results hold when comparing across Northern and Southern US counties, within a full sample of states (using state-fixed effects), and within states that practiced slavery in 1860. Additional analyses raise confidence that results are causal: the association between slavery and crime is specific to violent crime, is robust to instrumenting for historical slavery, and is plausibly distinct from the association between racial composition of the population and crime. Robustness checks indicate that results are not driven by missing crime data or bias in crime reporting.

We find evidence that two distinct mechanisms drive the relationship between historical slavery and contemporary violent crime. First, we find that a history of slavery is associated with greater interracial inequality (Bertocchi and Dimico, 2012, 2014; O’Connell, 2012, 2020, also find this effect), and greater disagreement along racial lines on whether to actively address this issue, with white Americans less willing to do so and black Americans demanding greater action. This, in particular the latter, can increase value expectations and thereby relative deprivation among black Americans – which in turn may increase violent crime (Blau and Blau, 1982; Gurr, 1970). Indeed, controlled direct effect estimates suggest

that inequality and black American's political attitudes strongly mediate the effect of historical slavery on present-day violent crime.

Second, as historical slavery widens the difference between white and black Americans' political attitudes vis-a-vis race, this could amplify racial polarization, and even lead to interracial violence (Roithmayr, 2010). It seems plausible that white Americans' views are politically dominant and/or best known among individuals of both races (Acharya et al., 2016b, 2018). This is consistent with our results: white respondents' political attitudes vis-a-vis race mediate the effect of historical slavery on interracial violent crime, particularly murder. By investigating the mechanisms connecting historical slavery and modern-day violent crime, we further contribute to the literature in three ways. First, whereas existing literature has primarily focused on the historical persistence of white Americans' political attitudes, we also study those of black Americans. Second, we provide tentative evidence that relative deprivation beyond what is measured through interracial inequality can contribute to persistent violent crime. Third, we provide tentative evidence that polarization of political attitudes along racial lines may also be a contributing factor.

This study is divided into five sections. The next section provides a theoretical background on the relation between the legacy of slavery and violence and presents our hypotheses. Section 3 presents the estimation strategy and data. Section 4 presents results on the empirical relationship between slavery and present-day violent crime. Section 5 concludes.

## **2. Literature, theoretical background and hypotheses**

The present study empirically investigates the long-term effect of slavery on violent crime. Our main hypothesis is that 19th century slavery had a significant and long-lasting effect on violence. We propose two possible theoretical mechanisms connecting historical slavery and contemporary violent crime: inequality and political attitudes.

## **2.1. Inequality**

Theory suggests that production processes inherent to slavery concentrated wealth and human capital, leading to inequality along racial lines (Engerman and Sokoloff, 1997). Such inequality, or relative deprivation, has in turn been associated with violent crime (Blau and Blau, 1982).

Considerable literature theorizes that certain factor endowments – including prevalence of slavery – in the 18th and 19th centuries increased inequality (Engerman and Sokoloff, 1997; 2005; 2002; Sokoloff and Engerman, 2000). Factor endowments are mainly soil, climate, and the size of the labor supply – consisting primarily of slaves (Engerman and Sokoloff, 2002, p.17). The differences in availability of these three factors led to the use of different production processes in different colonies, leading to divergent degrees of concentration of wealth, human capital, and political power. Engerman and Sokoloff (2002) state that “the greater efficiency of very large plantations, and the overwhelming fraction of the populations that came to be black and slave, made the distributions of wealth and human capital extremely unequal” (p.221).

Empirical literature shows that slavery indeed has a long-lasting impact on income inequality. Soares et al. (2012) find a strong association between slavery and contemporary economic inequality in a cross-section of countries. Examining the long-term effect of slavery on inequality in Brazil, Fujiwara et al. (2022) exploit the colonial boundaries between the Portuguese and Spanish empires within Brazil. They find that the number of slaves in 1872 is discontinuously bigger on the Portuguese side of the border, and that this led to higher modern income inequality, explaining approximately 20% of average income inequality in the country.



Using a sample of US counties, scattered across 42 states including 15 slave states, Bertocchi and Dimico (2014) find that a larger percentage of enslaved in the population in 1860 is associated with a significant and persistent increase in current racial inequality. They demonstrate that an essential transmission channel from slavery to racial inequality is human capital accumulation, i.e., through the unequal educational attainment of black and white Americans.

Other theoretical work connects inequality to violent crime. The longstanding ‘relative deprivation thesis’ (Blau and Blau, 1982) holds that correlating dimensions of social differences (e.g., race and income) foster conflict and violence. Where collective violence cannot realistically alter the unequal distribution of resources (e.g. overthrow the current regime), Blau and Blau (1982) theorize that such conflict manifests through diffuse aggression, including violent crime.

Cross-county empirical work mostly finds a correlation between inequality and violent crime. Messner and Rosenfeld (1997, p.1394) state, “A finding that has emerged with remarkable consistency is that high rates of homicide tend to accompany high levels of inequality in the distribution of income”. Using data for 39 countries covering the period 1965–1994, Fajnzylber et al. (2002) find that a small permanent decrease in inequality – such as reducing inequality from the level found in Spain to that in Canada – would reduce homicides by 20%. Consensus is not complete however, as Neumayer (2005) disputes these findings.

A correlation between inequality and violent crime is also found in the US. Using data on 91 American cities in 15 states, Stolzenberg et al. (2006) examine the relationship between both interracial and intra-racial economic inequality and violent crime rates, including black-on-white, white-on-black, white-on- white, and black-on-black offenses. They show that although total inequality and intra-racial inequality had no significant correlation with offence

rates, interracial inequality had a significant impact on the overall violent crime rate and the black-on-black crime rate.

Combining Engerman and Sokoloff (1997)'s thesis and the relative deprivation thesis (Blau and Blau, 1982), we hypothesize that historical slavery contributes to prevalence of violent crime in the US through persistent inequality.

## **2.2. Political attitudes**

Political attitudes may also mediate the relationship between historical slavery and modern-day violent crime. Theory suggests political attitudes can persist over time through institutions and intergenerational transfer (Uttermark, 2020; Gingerich and Vogler, 2021; Acharya et al., 2016b). Political attitudes may affect violent crime directly, or indirectly through support for different crime policies (predominantly among white Americans) (Pearson-Merkowitz and Dyck, 2017; Green et al., 2006) or relative deprivation among black Americans (Gurr, 1970).

Considerable empirical literature shows that political attitudes can persist over long periods (Cirone and Pepinsky, 2022; Guiso et al., 2016; Voigtländer and Voth, 2012). Bazzi et al. (2020) combine US Census data spanning 150 years with survey and electoral outcomes to study how the westward shift of the frontier line resulted in the creation of a culture of “rugged individualism”, which influences contemporary political attitudes. Tracing the consequences of the Black Death (1347-1351) in German-speaking Central Europe, Gingerich and Vogler (2021) show that regions hit hardest by the pandemic were significantly more likely to implement equitable land ownership and, inclusive political institutions and to have considerably lower vote shares for The Nazi (National Socialist) Party in the Weimar Republic's 1930 and July 1932 elections.

Historical slavery in particular has been shown to affect present-day political attitudes. Acharya et al. (2016b) show that white Americans residing in counties that had high population share of historical slavery in 1860 are currently on average more conservative and express colder sentiments toward black Americans. In other words, the bigger the share of slaves per capita in their county in 1860, the more likely that a contemporary white Southerner will identify as a Republican, contend with affirmative action, and show racial resentment towards black Americans. Nunn and Wantchekon (2011) find that African societies that were targeted more heavily by the historical Atlantic slave trade exhibit higher levels of mistrust today than those that were not as heavily targeted. Uttermark (2020) find evidence that historical slavery is negatively correlated with social capital, proxied by interpersonal trust, in two countries – the United States and Brazil.

Theoretically, political attitudes may persist through institutions (Gingerich and Vogler, 2021; Acharya et al., 2016b) and intergenerational transfer (Acharya et al., 2016b; Uttermark, 2020). Acharya et al. (2016b) argue that the abolition of slavery was in fact a ‘cataclysmic’ event to white inhabitants of the US South – both politically threatening, as black enfranchisement eroded their exclusive political power, and economically threatening, as it eroded the sustainability of the Southern plantation economy (Bois, 1999; Foner, 2014). These significant economic and political changes gave Southern white elites an incentive to endorse racially hostile sentiments and anti-black policies. Such attitudes, according to Acharya et al. (2016b), persist over time both through institutions such as Jim Crow, and intergenerational transfer within white families. Uttermark (2020) examines two explanations connecting slavery and social capital. The inequality hypothesis postulates that dependence on plantation slavery is a main determinant of economic inequality; the attitudinal hypothesis posits that the abolition of slavery has a long term effect on mass political attitudes,

transmitted over generations. Results show that the attitudinal hypothesis – not economic inequality – is linked with the decline of social capital.

Extant literature has mostly focused on how historical slavery affects white, rather than black Americans' political attitudes. This study aims to fill this gap. If historical slavery resulted in persistent racially hostile sentiment and policy among the white population (as per Acharya et al., 2016b), this can be construed as a threat to the black population. External threats, by theory of group evolution (e.g., Bauer et al., 2014), can strengthen favourable sentiments towards one's own group<sup>1</sup>. Such sentiments can persist over time through intergenerational transfer. Therefore, we theorize that historical slavery can affect black American's political attitudes, by increasing support for policies that benefit the black population, such as affirmative action. Since historical slavery can theoretically affect black and white Americans' political attitudes in opposite directions, it follows that it can increase polarization along racial lines.

Political attitudes can in turn affect violent crime. They may do so directly, if racially hostile or polarized attitudes lead to racially motivated violence. In addition, political attitudes – mainly among white Americans as they form the majority of the population in 95% of US counties – can affect crime policy. Green et al. (2006) show that white American's racial attitudes – including perceived personal deficiencies of black Americans and denial of institutional racism – predicts support for punitive versus preventative crime policy. Pearson-Merkowitz and Dyck (2017) show that partisanship leads individuals to selectively take up information regarding crime, and that this affects attitudes towards gun control policies.

Like inequality, political attitudes – among black Americans specifically – may also be related to violent crime through relative deprivation. Gurr (1970) highlights how a sense of relative deprivation may follow from deprivation relative to another group, but also from

deprivation relative to individuals' value expectations— what they feel they are entitled to. If historical slavery raises black American's support for policies that benefit the black population but does not raise the probability that such policies are enacted (given white Americans' political attitudes), historical slavery may give rise to relative deprivation beyond that which follows from interracial inequalities.

In sum, we hypothesize that historical slavery may contribute to violent crime through political attitudes, by affecting (a) racially hostile attitudes and polarization; (b) support for different crime policies – primarily among white Americans; (c) relative deprivation among black Americans.

### **3. Data and estimation**

#### **3.1. Data**

Descriptive statistics for all data used can be found in Appendix Table A.1.

##### **3.1.1. Historical data**

We capture history of slavery by the number of enslaved individuals as a percentage of the total county population in 1860, taken from the US Decennial Census. We normalize this percentage to make results more easily interpretable. The 1860 census was the last census taken before slavery was abolished. This census provides data for the largest number of counties. Appendix Figure A.1 maps historical slavery.

We provide results for the full sample of counties, and for counties in 'slave states' and confederate states only. Slave states are those states with a non-zero number of enslaved individuals in 1860. These includes all confederate states, border states that stayed in the union but where slavery was still practiced in 1860<sup>2</sup> and counties in unincorporated states that practiced slavery but did not exist in 1860<sup>3</sup>.

The 1860 census also provides data on the share of ‘free coloureds’ in the population, the population density in 1860 (total population over county area in 1860) and the share of enslaved individuals on large ( $\geq 10$  enslaved) and small ( $<10$  enslaved) holdings. The latter is proposed by Nunn (2008) as an indicator of inequality, albeit of inequality between slaveholders.

Merging historical and modern data presents a challenge, as county boundaries have changed substantially over time. We follow the method devised by Hornbeck (2010) to project all post-1860 data onto 1860 boundaries. This method weights data by the share of the area of a historical county that is made up of a modern county<sup>4</sup> Since Hornbeck (2010) only provides spatial data for counties up to census year 2000, we cannot use data beyond this year.

### **3.1.2. Crime data**

County-level data on crime is taken from The Uniform Crime Reports (UCR), published by the US Federal Bureau of Investigation. We employ two UCR datasets: Offenses Known and Clearances by Arrest, and the Supplementary Homicide Reports. The former provides data on all violent crime – defined as homicide (and non-negligent manslaughter), forcible rape, rape, robbery and aggravated assault – and data on non-violent crime – we consider larceny, theft, theft of motor vehicles and burglary. Supplementary homicide reports provide data on homicides only, but include information on the race of the victim and perpetrator, if known. Data are linked to counties using Law Enforcement Agency identifiers Crosswalk 2000. We express all crime as the log of the number of crimes plus one per 100,000 county inhabitants (from the Decennial Census). We log crime, as unlogged crime per 100,000 inhabitants contains extreme outliers: counties with non-zero crime and small numbers of inhabitants.

UCR data, being voluntarily reported by law enforcement agencies on a monthly basis, is notoriously incomplete. There are three nested ways in which crime data might be missing.

First, there may be no crime reports for some of the modern-day counties that make up an 1860 county. Second, most counties have multiple crime-reporting agencies, some of which may fail to report. Third, even if an agency reports, it might not do so for all 12 months of the year.

We weigh crime data to reflect missingness and show that results are not an artefact of this weighting or of missingness. If data for some share of an 1860 county is missing, we divide crime numbers by the share of the 1860 county area for which data is non-missing. If an agency has missing months, we interpolate the average number of crimes reported by that agency across months that it reports. We have no credible way to interpolate crime numbers for agencies that never report, as we do not know the size of the population or area that they cover. We check that results are not an artifact of weighting or missingness by providing results using unweighted data (which assumes zero crime for non-reporting agencies), and by restricting the sample to counties without missing reports (considering each way in which data can be missing in turn). Restricting the sample to counties without any missing data decreases our sample size from 1776 to 338. Appendix Figure A.2 maps weighted violent crime in 2000, projected onto 1860 county boundaries.

Reported crime might not reflect actual violent crime. Of particular concern for our study is overreporting of crime by black perpetrators relative to white perpetrators. Differential overreporting could occur if agencies report behaviour by a black person as violent crime, but do not report the same behaviour by a white person as such. We capture potential overreporting by calculating the share of reported murders (the only crime type for which we have perpetrator data by race) with a reported black perpetrator over the black population share. On average, counties report five times as many murders with a black perpetrator as we might expect if perpetrators were randomly distributed across the population. This measure

errs on the side of overestimating overreporting (as perpetrators might be non-randomly distributes across the population), which makes for a stricter test of whether results are driven by overreporting.

### **3.1.3. Data on inequality and political opinion**

We use data on inequality and political opinion to capture two possible mechanisms connecting historical slavery and contemporary violent crime.

From the Decennial Census, we take measures of interracial inequality in poverty and education – at high school and bachelor level. We divide the percentage of black population in a county below the poverty line (or, who finished high school or holds a bachelor’s degree), by the white population for which this holds. Black individuals are 2.6 times more likely to be in poverty compared to white individuals, and 30% and 47% less likely to hold a high school diploma or bachelor’s degree respectively (see Table A.1).

We use measures of political attitudes proposed by Acharya et al. (2016b), constructed using data from the Cooperative Congressional Election Study (CCES). Like Acharya et al. (2016b), we pool data from the 2006, 2008, 2009, 2010 and 2011 wave. We calculate separate indicators for the white and black population. Our data is not identical to that used by Acharya et al. (2016b), as these authors focus on the ‘Black Belt’ only, and we map modern data onto 1860 county boundaries and Acharya et al. (2016b) do the reverse. Data may be missing if the CCES did not cover a county, or if a county has 0% black population share. Support for affirmative action is measured by the percentage of a county’s surveyed population that (strongly) support programs giving advantages to racial minorities and to women in employment and college admissions in order to mitigate discrimination (Acharya et al., 2018, p. 61). Racial resentment is county-level average agreement with “The Irish, Italian Jews and many other minorities overcame prejudice and worked their way up. Blacks



should do the same.” (Acharya et al., 2018, p. 59), measured on a five-point scale, and for the 2010 wave averaged with disagreement with “Generations of slavery and discrimination have created conditions that make it difficult for Blacks to work their way out of the lower class” (Acharya et al., 2018, p. 59)<sup>5</sup>. Differences between answers of black and white respondents are substantial (see Table A.1): across counties, an average of 24% of white respondents agree with affirmative action versus 81% of black respondents, and white respondents score 4 on the racial resentment scale whereas black respondents score 2.6.

#### **3.1.4. Other data**

We construct an indicator for the ‘Great Migration’, capturing 4.5 million black Americans moving within and across states between 1910 and 1970, following Derenoncourt (2022). By county, we calculate the change in the number of black county inhabitants between 1910 and 1970, as a percentage of the total population in 1910, using data from the Decennial Census. We divide counties into quintiles: quintiles 1 and 2 experienced black out-migration, quintiles 4 and 5 experienced in-migration, and the black population share in quintile 3 was approximately unchanged.

We are grateful to Bertocchi and Dimico (2014), who shared their data on malaria, cotton and tobacco suitability, three variables they devise as instruments for the share of enslaved in the population in 1860. Slavery was more prevalent in areas affected by malaria – as enslaved Africans had a natural immunity to malaria that non-enslaved alternative workers did not – and in areas where labour-intensive cash crops cotton and tobacco were produced. Bertocchi and Dimico (2014) argue that these variables are valid instruments for slavery, as malaria, and cotton and tobacco production no longer occurs in modern US.

### 3.2. Estimation

We estimate:

$$\text{crime}_{is} = \beta_1 \text{slavery}_{is} + \gamma_s + \epsilon_{is} \quad (1)$$

where  $i$  indicates a county and  $s$  indicates a state. *crime* is the logged number of crimes per 100,000 county inhabitants, and *slavery* is the normalized share of enslaved in the population in 1860.  $\gamma_s$  denotes state-fixed effects. Standard errors are clustered at the state level.

We also use Instrumental Variable estimation (IV), using malaria, cotton and tobacco suitability as instruments for *slavery*.

We employ the controlled direct effect approach (Acharya et al., 2016a) to investigate mediators of the relationship between historical slavery and modern-day violent crime. The controlled direct effect is the effect of the main explanatory variable (in this case, history of slavery) on the main outcome (violent crime) after subtracting variation in the main outcome accounted for by mediators (inequality and political attitudes), expressed as a percentage of the baseline effect (not taking into account mediators). Standard errors of the direct effect are bootstrapped. See Acharya et al. (2016a) for details.

## 4. Results

### 4.1. Main results

Historical slavery is associated with higher levels of modern-day violent crime. Table 1 column 1 shows that US counties with a greater fraction of slaves in the population in 1860 reported a greater number of violent crimes per 100,000 inhabitants in 2000. This association is statistically significant at the 5% level. Results suggest that an increase of one standard deviation in the fraction of slaves in 1860 is associated with 11.4% more violent crime in 2000. This result holds when omitting fixed effects (Table 1 column 2) and is not driven by

the inclusion of states who did not allow slavery in 1860 – as it holds when excluding non-slave states (Table 1, column 3) and non-confederate states (Table A.2 column 1). This result is also robust to controlling for population density in 1860 (Table 1 column 3), a frequently used control and proxy for income.

Table 1: Main results

|                               | Log violent crime per 100k population 2000 |                     |                     |                     |                     |                     |                     |
|-------------------------------|--------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                               | (1)                                        | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 |
| Fraction slaves (1860)        | 0.108**<br>(0.049)                         | 0.233***<br>(0.077) | 0.110**<br>(0.050)  | 0.109**<br>(0.049)  |                     |                     |                     |
| Population density (1860)     |                                            |                     |                     | 0.001***<br>(0.000) |                     |                     |                     |
| Fraction free coloured (1860) |                                            |                     |                     |                     | 0.060*<br>(0.031)   | 0.056**<br>(0.024)  | 0.066<br>(0.067)    |
| Constant                      | 6.685***<br>(0.000)                        | 6.685***<br>(0.092) | 6.910***<br>(0.000) | 6.671***<br>(0.004) | 6.685***<br>(0.000) | 6.910***<br>(0.000) | 6.372***<br>(0.000) |
| Sample                        | All                                        | All                 | Slave st.           | All                 | All                 | Slave st.           | Non-slave st.       |
| State FEs                     | Yes                                        | No                  | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 |
| Effect size                   | 0.114                                      | 0.262               | 0.116               | 0.115               | 0.062               | 0.057               | 0.069               |
| Observations                  | 1776                                       | 1776                | 1034                | 1776                | 1776                | 1034                | 742                 |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Note: effect size indicates the estimated percentage increase in violent crime upon a one standard deviation increase in the fraction of slaves in the population in 1860.

## 4.2. Causal identification

This section addresses concerns about interpreting the main results as causal, particularly the concern that historical slavery is correlated to the racial composition of counties' population. We find evidence that a history of slavery affects violent crime independently of its effect on population composition. The main results also hold when instrumenting for slavery.

One challenge to interpreting the main results as causal is that historical slavery is strongly correlated to the modern-day fraction of black county inhabitants – and to any historical or modern-day racially determined disadvantage that may in turn be associated with higher levels of crime. The correlation coefficient between the fraction of slaves in the population in 1860 and the fraction of black population in 2000 is very high: 0.80 (p=0.0000), and Table A.5

column 3 shows that slavery explains fully 42.4% of within-state variation in black population share. Table A.3 column 1 shows that counties with a greater black population share report significantly higher levels of violent crime.

We address this challenge in several ways. First, we investigate the association between the 1860 fraction of “free coloureds” – who raise the black population share but do not (or no longer) suffer slavery – and modern-day violent crime. Second, we investigate the association between slavery and non-violent crime. Third, we leverage the “great migration” of black Americans between 1910 and 1970, which increased the black population share in areas without a history of slavery.

Table 2: Violent crime types

|                        | Log violent crime per 100k population 2000 |                     |                     |                     |                     |
|------------------------|--------------------------------------------|---------------------|---------------------|---------------------|---------------------|
|                        | (1)<br>All                                 | (2)<br>Murder       | (3)<br>Rape         | (4)<br>Robbery      | (5)<br>Assault      |
| Fraction slaves (1860) | 0.108**<br>(0.049)                         | 0.160***<br>(0.037) | 0.140***<br>(0.026) | 0.276***<br>(0.055) | 0.103**<br>(0.048)  |
| Constant               | 6.685***<br>(0.000)                        | 1.689***<br>(0.000) | 3.022***<br>(0.000) | 3.316***<br>(0.000) | 6.610***<br>(0.000) |
| Sample                 | All                                        | All                 | All                 | All                 | All                 |
| State FEs              | Yes                                        | Yes                 | Yes                 | Yes                 | Yes                 |
| Effect size            | 0.114                                      | 0.173               | 0.150               | 0.318               | 0.108               |
| Observations           | 1776                                       | 1776                | 1776                | 1776                | 1776                |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

The fraction of free coloureds in the 1860 population is more weakly associated with modern-day violent crime than the fraction of enslaved, as we might expect if slavery affects violent crime independently of its effect on the black population share. The fraction of free coloureds in the population in 1860 is associated with violent crime in 2000 in the full sample (Table 1 column 5). However, the association is only significant at the 10% level and the estimated effect size is lower compared to that of slavery: 6.2% for the fraction of free coloureds, compared to 11.4% for the fraction of enslaved. In Table 1 columns 6 and 7, we distinguish between slave states and non-slave states<sup>6</sup>, as “free coloureds” in slave states still lived in an

institutional environment that allowed slavery. Indeed, the share of free coloureds in the 1860 population is significantly associated with 2000 crime levels in (former) slave states, but not in non-slave states.

Historical slavery is only weakly associated with non-violent crime, while black population share correlates to both violent and non-violent crime. This suggests that slavery is related to violent crime specifically, through a mechanism distinct from the black population share. Table 2 shows that historical slavery is strongly correlated to all violent crime types: all associations are significant at the 5% level or stricter, and implied effect sizes range from 10.8% for assault to 31.8% for robbery. By contrast, slavery is only weakly associated with non-violent modern-day crime (Table 3): only its association with larceny is significant (and then only at the 10% level), and estimated effect sizes are much lower – between 1.9% and 5.7%. This pattern does not hold for the association between the black population share and crime: the black population share in 2000 is strongly correlated to all types of violent and non-violent crime (Tables A.3 and A.4).

Table 3: Non-violent crime types

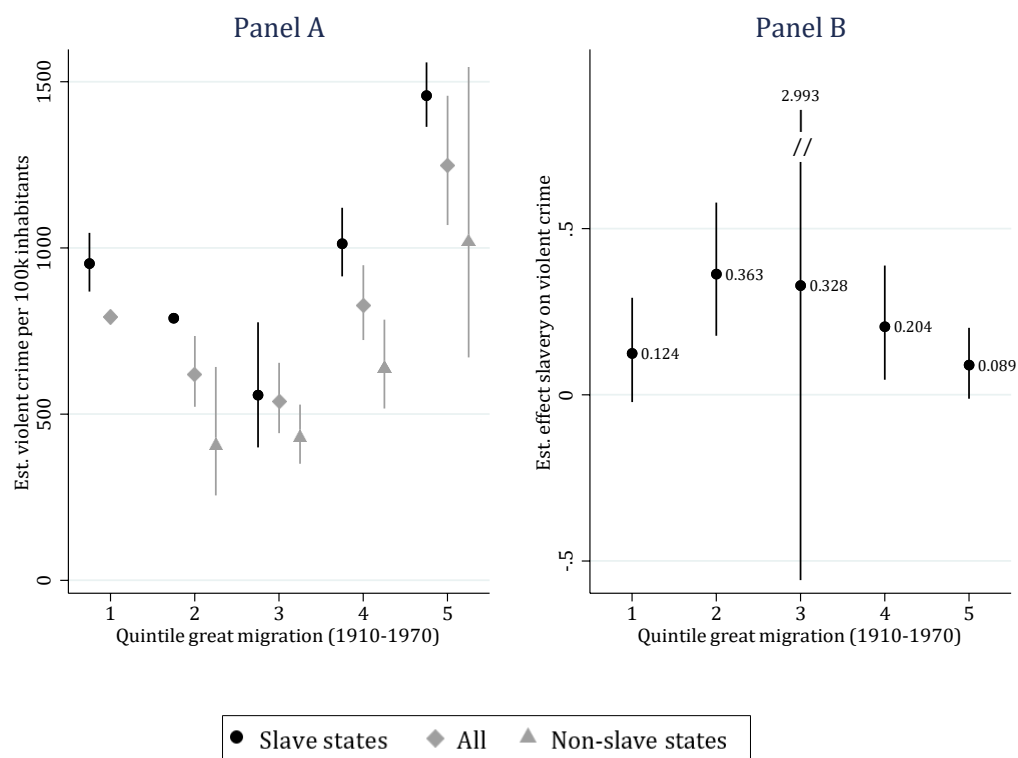
|                        | Log non-violent crime per 100k population 2000 |                     |                     |                     |
|------------------------|------------------------------------------------|---------------------|---------------------|---------------------|
|                        | (1)<br>All                                     | (2)<br>Larceny      | (3)<br>Motor        | (4)<br>Burglary     |
| Fraction slaves (1860) | 0.054*<br>(0.029)                              | 0.055*<br>(0.029)   | 0.019<br>(0.033)    | 0.058<br>(0.053)    |
| Constant               | 7.556***<br>(0.000)                            | 7.169***<br>(0.000) | 4.838***<br>(0.000) | 6.095***<br>(0.000) |
| Sample                 | All                                            | All                 | All                 | All                 |
| State FEs              | Yes                                            | Yes                 | Yes                 | Yes                 |
| Effect size            | 0.055                                          | 0.057               | 0.019               | 0.060               |
| Observations           | 1776                                           | 1776                | 1776                | 1776                |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Finally, we leverage the ‘Great Migration’ of black Americans between 1910 and 1970, which meaningfully altered the racial composition of counties’ population. This increased the black population share in areas where slavery was not allowed in 1860, and areas where slavery

was allowed in 1860 but less prevalent (Table A.5 columns 4 and 5). On average, counties in former non-slave states increased their black population share by 8.9% and most counties in former slave states either gained or lost a substantial share of their black population (Figure A.3). The great migration weakened the association between slavery and the black population share considerably. In 1910, the fraction of enslaved in the 1860 population explained 79.5% of within-state variation in black population share, but this number dropped to 53.8% in 1970 (Table A.5 columns 1 and 2).

Figure 1: Great migration, slavery and violent crime



Note: Graph shows 95% confidence intervals.

Comparing counties with similar great migration levels, counties in former slave states reported higher levels of violent crime in 2000 than counties in former non-slave states. Figure 1 panel A<sup>7</sup> shows that greater increases in black population share during the great migration are associated with higher levels of violent crime in 2000<sup>8</sup>. This is consistent with the conclusion drawn by Derenoncourt (2022), who highlights that greater in-migration is

associated with greater racial segregation and underinvestment in public goods in newly predominantly black areas, which is in turn associated with higher crime levels. Comparing counties in former slave states and non-slave states in the same great migration quintile, the former report higher levels of violent crime in 2000 than the latter. The difference is statistically significant for quintile two and four. A history of slavery appears to influence violent crime over and above that of the great migration.

Furthermore, within former slave states, higher shares of enslaved in the population are more strongly associated with violent crime in counties which saw the smallest change to their racial composition. Figure 1 panel B compares the estimated effect of historical slavery in counties in former slave states with greater and lesser levels of migration. The estimated effect of slavery is largest for those counties whose racial composition changed least: the effect in counties in the middle three great migration quintiles ranges from 20.4% to 36.3%<sup>9</sup>, whereas the effect in the highest migration quintiles is between 8.9% and 12.4% and not statistically significant. This provides suggestive evidence that the effect of slavery on crime persisted longer in counties which remained predominantly inhabited by descendants of those who lived in an institutional environment allowing slavery in 1860.

In sum, although we cannot fully exclude the possibility that part of the effect of historical slavery on modern-day crime is due to population composition, evidence obtained when using data on “free coloureds”, non-violent crime and the great migration suggests that slavery affects violent crime at least partially independently of its effect on county population composition.

To further address concerns about endogeneity, we instrument for the fraction of slaves in the 1860 population using suitability to malaria, cotton and tobacco cultivation (Bertocchi and Dimico, 2014, following). Malaria, cotton and tobacco suitability are strongly predictive of

the fraction of enslaved in the 1860 population: the  $F$ -statistic for the first stage is 100.7 for malaria suitability (107.1 when using all instruments). The instruments pass the Cragg-Donald test for weak identification ( $F = 316.4$  and  $F = 75.7$  respectively) and when using all instruments overidentifying restrictions are not rejected using the Sargan test ( $p=0.894$ ).

Instrumental variable (IV) regression shows that the 1860 fraction of enslaved in the population is strongly associated with higher levels of reported violent crime in 2000 (Table 4). This holds regardless of the combination of instruments used, and for a full sample of states or slave states only. Estimated effect size are substantially larger than for the main results: between 59.1 and 89.4%. This could be an artifact of measurement error. Alternatively, it could mean that the main results are biased downwards, and that there exists some intervening variable positively correlated to 1860 slavery but negatively to modern-day violent crime (or vice versa). Regardless, IV estimation provides no evidence that the main results are spurious.

Table 4: Instrumental variable estimation

|                        | Log violent crime per 100k population 2000 |                     |                     |                     |
|------------------------|--------------------------------------------|---------------------|---------------------|---------------------|
|                        | (1)                                        | (2)                 | (3)                 | (4)                 |
| Fraction slaves (1860) | 0.464**<br>(0.214)                         | 0.588***<br>(0.204) | 0.523**<br>(0.210)  | 0.639***<br>(0.153) |
| Constant               | 6.679***<br>(0.001)                        | 6.634***<br>(0.009) | 6.910***<br>(0.000) | 6.848***<br>(0.013) |
| Sample                 | All                                        | All                 | Slave st.           | Slave st.           |
| Instrument             | malaria                                    | all                 | malaria             | all                 |
| State FEs              | Yes                                        | Yes                 | Yes                 | Yes                 |
| Effect size            | 0.591                                      | 0.801               | 0.687               | 0.894               |
| Observations           | 1762                                       | 1644                | 1034                | 949                 |

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , clustered standard errors (state level) in parentheses

Note: 'all' instruments include malaria suitability, suitability for cotton cultivation and suitability for tobacco cultivation.



### 4.3. Robustness

Main results are robust to alternative ways of dealing with missing crime data, and hold for violent crime in census years 1990 and 1980. We find no evidence that main results are an artefact of biased crime reporting.

Table 5: Missing crime data

|                        | no reweighting      |                     | Only if all counties report |                     | Only if all agencies report |                     | Only complete observations |                     |
|------------------------|---------------------|---------------------|-----------------------------|---------------------|-----------------------------|---------------------|----------------------------|---------------------|
|                        | (1)                 | (2)                 | (3)                         | (4)                 | (5)                         | (6)                 | (7)                        | (8)                 |
| Fraction slaves (1860) | 0.116**<br>(0.048)  | 0.118**<br>(0.049)  | 0.123**<br>(0.053)          | 0.125**<br>(0.055)  | 0.120**<br>(0.054)          | 0.122*<br>(0.057)   | 0.119***<br>(0.038)        | 0.121**<br>(0.040)  |
| Constant               | 6.619***<br>(0.000) | 6.821***<br>(0.000) | 6.653***<br>(0.001)         | 6.891***<br>(0.001) | 6.557***<br>(0.004)         | 6.792***<br>(0.006) | 6.661***<br>(0.002)        | 6.866***<br>(0.002) |
| Sample                 | All                 | Slave st.           | All                         | Slave st.           | All                         | Slave st.           | All                        | Slave st.           |
| State FEs              | Yes                 | Yes                 | Yes                         | Yes                 | Yes                         | Yes                 | Yes                        | Yes                 |
| Effect size            | 0.123               | 0.125               | 0.131                       | 0.134               | 0.128                       | 0.130               | 0.127                      | 0.129               |
| Observations           | 1776                | 1034                | 1720                        | 983                 | 497                         | 281                 | 338                        | 189                 |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Note: dependent variable is unweighted Log violent crime per 100k population in 2000 for all columns.

We find no evidence that reweighting of crime data or missing data drive the main results.

Table 5, columns 1 and 2, give results obtained when not reweighting data. These results resemble the main results closely. Columns 3 and 4 drop an 1860 county if not all modern-day counties that constitute it report. This leads to only a minor loss of observations, and results remain substantively unchanged. Columns 5 and 6 drop counties unless all agencies in the county report for at least some months, and columns 7 and 8 drop counties unless all constituent agencies report for all months. Dropping the latter two categories of counties leads to a radical drop in the number of observations: 72% and 81% of the sample is dropped respectively. Nevertheless, main results hold, and the estimated effect size remains remarkably stable. Figure A.4 shows results obtained when dropping counties if the share of missing agencies or agency-months exceeds various thresholds. Again, estimated effect sizes are mostly stable, and results remain statistically significant for most thresholds.

The fraction of slaves in the population in 1860 is associated with higher reported levels of violent crime in other census years, notably 1990 and 1980 (Table A.7). The estimated effect sizes are somewhat smaller than those presented as main results: 9.1% and 7.8% respectively. Results for 1970 do not show a significant association between a history of slavery and violent crime, and the estimated effect size only amounts to 2.0%. This may be due to the smaller sample size for 1970 (a 30% drop in the number of observations compared to 2000), caused by a larger share of missing crime data. Alternatively, we might speculate that the association between historical slavery and violent crime has strengthened over time, possibly due to increased racial tensions in the US.

Main results may not reflect an association between slavery and *actual* violent crime, if counties with a higher historical share of slaves in the population systematically *overreport* violent crime. Differential overreporting could occur if agencies report behaviour by a black person as violent crime, but do not report the same behaviour by a white person as such. Such discriminatory reporting would lead to overreporting of crime in areas with a history of slavery, as this is correlated to a higher black population share. Overreporting would be exacerbated if the tendency to discriminate itself is correlated to historical slavery.

Using data on the reported race of perpetrators of murder<sup>10</sup>, we do not find evidence that differential overreporting drives the main results. Our measure of overreporting (described in section 3.1.2) is *not* positively correlated to historical slavery. In fact, counties with a greater fraction of slaves in the 1860 population report *fewer* murders with a black perpetrator relative to their black population share (Table 6 column 6). Given that our measure errs on the side of overestimating overreporting, this raises our confidence that main results are not driven by biased reporting.

#### 4.4. Heterogeneous effects by race of reported perpetrator and victim

We explore possible heterogeneous effects of slavery using UCR Supplementary Homicide reports. We find evidence that historical slavery is associated with more reported murders by a black perpetrator and more interracial murders, but not with reported murders by a white perpetrator.

Column 1 of Table 6 verifies that the main results hold for the subsample of countries with agencies that report supplementary homicide data, and when excluding the 0.7% reported homicides for which the race of either the victim or the perpetrator is unknown. Homicide is the only violent crime for which UCR provides a breakdown by perpetrator and victim race.

Historical slavery is associated with an increase in reports of murder by a black perpetrator and interracial murder, but not with reported murder by a white perpetrator. A standard deviation increase in the fraction of slaves in the population is associated with a 38.7% increase in reported murder with a black perpetrator. The same does not hold for murder with a white perpetrator: if anything, historical slavery is negatively related to this variable. Historical slavery is related to increased reports of interracial murder, be that murder with a black perpetrator and a white victim (4.9% of all reported murders) or with a white perpetrator and a black victim (2.3% of reported murders). Results indicate an estimated increase of 16.2% and 12.9% respectively.

Table 6: Slavery and murder, by race of reported perpetrator and victim

|                        | Log murder per 100k population 2000 |                     |                     |                       |                       |                       |
|------------------------|-------------------------------------|---------------------|---------------------|-----------------------|-----------------------|-----------------------|
|                        | (1)<br>race known                   | (2)<br>black perp.  | (3)<br>white perp.  | (4)<br>black-on-white | (5)<br>white-on-black | (6)<br>over-reporting |
| Fraction slaves (1860) | 0.131***<br>(0.045)                 | 0.327***<br>(0.053) | -0.089*<br>(0.046)  | 0.150***<br>(0.048)   | 0.121**<br>(0.047)    | -1.775**<br>(0.860)   |
| Constant               | 1.886***<br>(0.006)                 | 1.012***<br>(0.007) | 1.328***<br>(0.006) | 0.523***<br>(0.006)   | 0.401***<br>(0.006)   | 5.336***<br>(0.120)   |
| Sample                 | All                                 | All                 | All                 | All                   | All                   | All                   |
| State FEs              | Yes                                 | Yes                 | Yes                 | Yes                   | Yes                   | Yes                   |
| Effect size            | 0.140                               | 0.387               | -0.085              | 0.162                 | 0.129                 | 0.390                 |
| Observations           | 1175                                | 1175                | 1175                | 1175                  | 1175                  | 1129                  |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

#### 4.5. Mediators

We find evidence that relative deprivation mediates the relationship between historical slavery and modern-day violent crime in general, but that political attitudes vis-a-vis race mediate its relationship to interracial violence, captured by murder. We replicate prior studies' results indicating that historical slavery affects inequality (Bertocchi and Dimico, 2014) and white Americans' political attitudes, in particular by decreasing support for affirmative action (Acharya et al., 2016a). Adding to prior studies, we find evidence that historical slavery *also* affects black Americans' political attitudes, but in the opposite direction - increasing support for affirmative action. This widens the gap between white and black Americans' attitudes. Using the controlled direct effect approach (Acharya et al., 2016a), we find evidence that both inequality and political attitudes mediate the relationship between slavery and crime. By Acharya et al.'s (2016) metric, political attitudes of Black Americans – possibly capturing relative deprivation – explain the greatest share of the main effect (an estimated 95.5% versus 43.4% for inequality), and white Americans' political attitudes are the only mediator that can explain some share of the estimated effect of historical slavery on interracial murder.

Like Bertocchi and Dimico (2014), we find that historical slavery is related to modern-day inequality along racial lines. In counties with a higher fraction of slaves in the 1860 population, a relatively smaller share of the black population obtained a high school or bachelor's degree (columns 2 and 3 of Table 7), and a relatively greater share of the black population lived below the poverty line in 2000 (column 4). Effect sizes are substantial, ranging between 0.14 and 0.28 standard deviations. We find some tentative evidence that the effect of slavery on violent crime is larger for counties with greater historical inequality. The share of slaves in the 1860 population living on holdings more than 10 slaves is more robustly associated with modern-day violent crime than the share of slaves on smaller

holdings (column 1). Only the former is statistically significantly associated with violent crime, albeit at the 10% level. However, the difference in effect sizes is modest and not statistically significant. Results hold when estimating on a sample of counties in former slave states only (Table A.8) and when logging measures of inequality (Table A.9).

Table 7: Slavery and inequality

|                                     | (1)<br>Log viol. crime | (2)<br>High school   | (3)<br>Bachelor     | (4)<br>Poverty      |
|-------------------------------------|------------------------|----------------------|---------------------|---------------------|
| Fraction slaves holdings <10 (1860) | 0.064<br>(0.050)       |                      |                     |                     |
| Fraction slaves holdings ≥10 (1860) | 0.073*<br>(0.038)      |                      |                     |                     |
| Fraction slaves (1860)              |                        | -0.049***<br>(0.014) | -0.173*<br>(0.094)  | 0.456***<br>(0.037) |
| Constant                            | 6.685***<br>(0.000)    | 0.700***<br>(0.001)  | 0.524***<br>(0.004) | 2.658***<br>(0.001) |
| Sample                              | All                    | All                  | All                 | All                 |
| State FEs                           | Yes                    | Yes                  | Yes                 | Yes                 |
| Effect size                         |                        | -0.156               | -0.140              | 0.288               |
| Effect size holdings <10            | 0.066                  |                      |                     |                     |
| Effect size holding ≥ 10            | 0.075                  |                      |                     |                     |
| Observations                        | 1776                   | 2000                 | 2000                | 1979                |

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , clustered standard errors (state level) in parentheses

Note: effect size indicates the standard deviation estimated increase in the outcome variable upon a one standard deviation increase in the fraction of slaves in the 1860 population, except in column 1, where effect size indicates the estimated percentage increase in violent crime.

Following Acharya et al. (2016b), we conclude that slavery in 1860 is associated with white Americans' political attitudes vis-a-vis race. In counties with a greater share of slaves in the 1860 population, white Americans expressed less support for affirmative action and more racial resentment (Table 8 columns 1 and 3). In our analysis, unlike in that of Acharya et al. (2016b), only the former result is statistically significant.

This is likely due to different ways of matching historical and modern data: Acharya et al. (2016b) take the modern-day county as the unit of analysis, whereas we follow Hornbeck (2010) and our unit of analysis is the 1860 county (see section 3.1.1).

Extending Acharya et al. (2016b)’s results, we find evidence that historical slavery *also* affects black Americans’ political attitudes, but in the opposite direction. Black respondents living in counties with a high share of slaves in the 1860 population expressed *greater* support for affirmative action and less racial resentment (Table 8 columns 2 and 4). Only the results in column 2 are statistically significant, and then only at the 10% level. This is likely due to a smaller sample size: CCES did not cover black respondents in all US counties. Results for the subsample of counties in slave states produce similar effect sizes but no statistically significant results (Table A.10).

Taking these results at face value, historical slavery appears to be associated with an increase in an already substantial gap in political attitudes between black and white Americans. In counties in former non-slave states, 27.6% of white respondents support affirmative action whereas 80.0% of black respondents do. A standard deviation increase in the share of slaves in the 1860 population increases that gap by an estimated 0.35 standard deviations or approximately 6 percentage-points.

Table 8: Slavery and political attitudes vis-a-vis race

|                        | Support affirmative action |                     | Racial resentment   |                     |
|------------------------|----------------------------|---------------------|---------------------|---------------------|
|                        | (1)<br>white               | (2)<br>black        | (3)<br>white        | (4)<br>black        |
| Fraction slaves (1860) | -0.023**<br>(0.011)        | 0.043*<br>(0.024)   | 0.024<br>(0.030)    | -0.039<br>(0.060)   |
| Constant               | 0.240***<br>(0.001)        | 0.798***<br>(0.006) | 3.981***<br>(0.004) | 2.634***<br>(0.014) |
| Sample                 | All                        | All                 | All                 | All                 |
| State FEs              | Yes                        | Yes                 | Yes                 | Yes                 |
| Effect size            | -0.145                     | 0.160               | 0.040               | -0.046              |
| Observations           | 1861                       | 755                 | 1665                | 513                 |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Note: effect size indicates the standard deviation estimated increase in the outcome variable upon a one standard deviation increase in the fraction of slaves in the 1860 population.

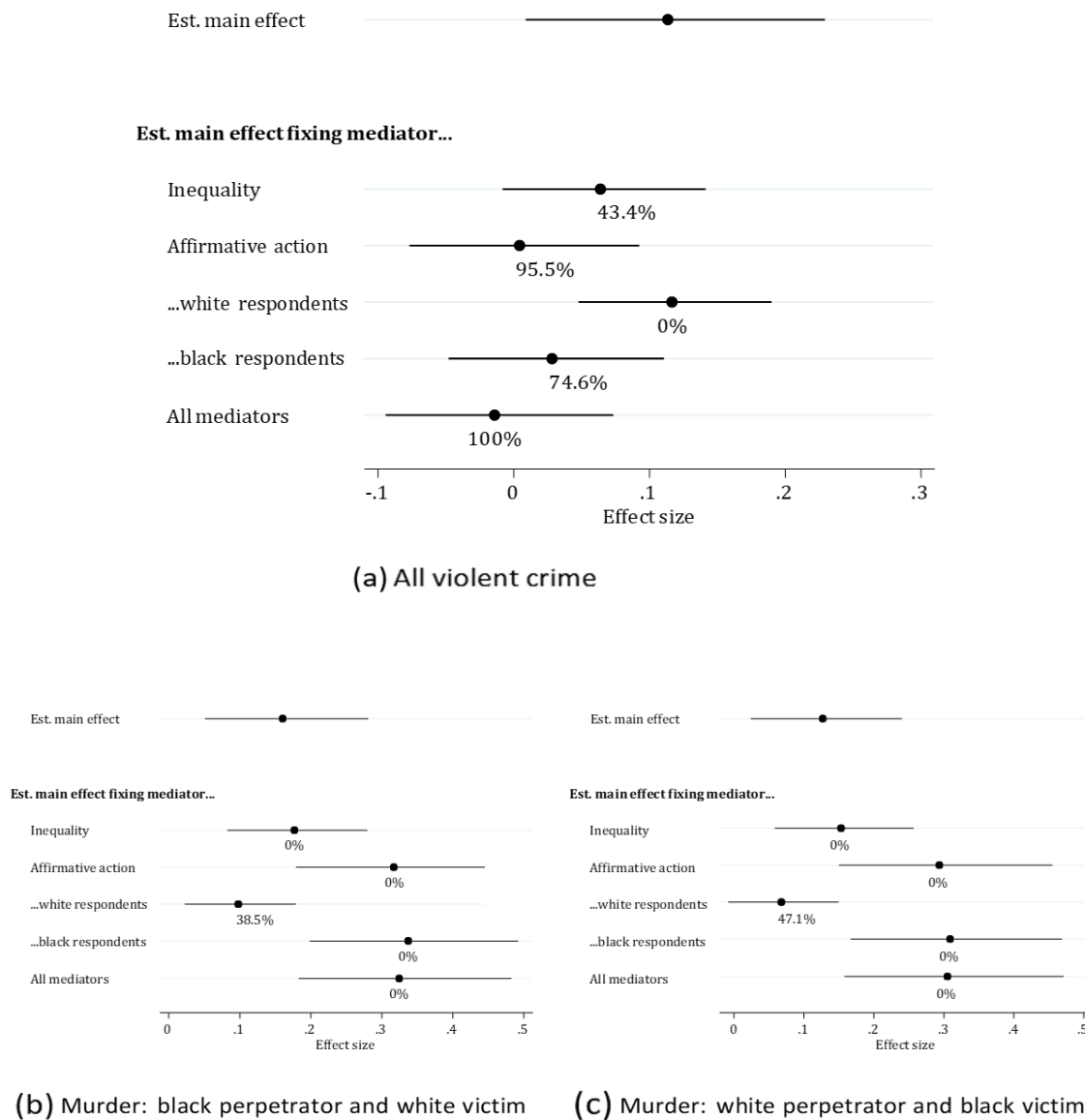
We employ the controlled direct effect approach by Acharya et al. (2016a) to investigate mediators further. Following these authors, Figure 2 displays the estimated main effect of

historical slavery on contemporary violent crime, and the estimated direct effect when fixing either inequality, political attitudes or both. The smaller the estimated direct effect when fixing a mediator, the greater the share of the main effect that this mediator explains, conditional on no confounding mediators existing. The latter condition is impossible to conclusively prove, but section 2 suggests that we condition on the most important proposed mediators in the literature, so results are still informative if not conclusive. We use a single proxy measure for inequality and political attitudes respectively, selecting the dependent variable for which the estimated effect of historical slavery is largest. Hence, we measure inequality using relatively poverty and political attitudes using support for affirmative action.

Figure 2 panel (a) presents evidence that both inequality and black Americans' political attitudes – which possibly capture (further) relative deprivation – mediate the effect of historical slavery on violent crime in 2000. Inequality appears to explain a smaller share of the main effect compared to political attitudes: an estimated 43.4%, compared to 95.5% for political attitudes. According to this metric, inequality and black Americans' political attitudes – possibly capturing both deprivation vis-a-vis white Americans and relative to expectations – fully explain the estimated main effect. We find no evidence that white Americans' political attitudes mediate the effect of historical slavery on contemporary violent crime: the estimated direct effect when fixing white Americans' political attitudes is similar to (even slightly larger than) the estimated main effect.

Panels (b) and (c) of Figure 2 investigate mediators of the effect of historical slavery on interracial murder. Mediators of this effect are different compared to overall violent crime: only political attitudes of white respondents mediate are estimated to mediate the main effect, explaining an estimated 38.5% of murder with a black perpetrator and a white victim, and 47.1% of murder with a white perpetrator and a black victim.

Figure 2: Estimates of the controlled direct effect fixing various mediators



Note: Figure shows estimated effect sizes and estimated effect size when fixing a mediator. 'Affirmative action' fixes attitudes regarding affirmative action of both white and black respondents. Percentages indicate the estimated percentage of the main effect that is explained by a particular mediator, bounded at 0% or 100%. Figure displays bootstrapped 95% confidence intervals.

We interpret the results in Figure 2 as evidence that two distinct mechanisms drive the relationship between historical slavery and modern-day violent crime. First, historical slavery may lead to greater racial inequality, and greater disagreement along racial lines on whether to actively address this, with white Americans less willing to do so and black Americans demanding greater action. This, in particular, can increase value expectations and



thereby relative deprivation among black Americans – which in turn may lead to more violent crime (Blau and Blau, 1982; Gurr, 1970). This is consistent with evidence suggesting that support for affirmative action among black respondents most strongly mediates the relationship between historical slavery and contemporary violent crime in general. Second, historical slavery widens the gap between white and black Americans’ political attitudes vis-a-vis race, which could increase racial tensions and *in extremis* escalate to interracial violence. It seems plausible that white Americans’ views are politically dominant and/or best known among individuals of both races (Acharya et al., 2016b, 2018). This is consistent with evidence that white respondents’ political attitudes vis-a-vis race mediate the effect of historical slavery on interracial murder. Given that white respondents’ political attitudes do not mediate the effect of historical slavery on violent crime in general, we do not find any evidence that such attitudes affect violent crime through support for different crime policies.

## **5. Conclusion**

In this study, we have demonstrated that an historical institution that was officially abolished almost 160 years ago still has a substantial effect on contemporary outcomes. Specifically, we show that historical US slavery is associated with contemporary violent crime. This relationship holds when comparing across Northern and Southern US counties, within a full sample of states (using state-fixed effects), within states that practiced slavery in 1860 and within confederate states. We also show that our findings are robust to instrumenting for historical slavery and that the association observed is plausibly distinct from the association between racial composition of the population and crime, lending credibility that our estimates are causal. Further robustness checks show that results are not driven by missing crime data or bias in crime reporting.

Regarding the channels of transmission, we find evidence that two distinct mechanisms drive the relationship between slavery and modern-day violent crime: relative deprivation and, for interracial violence, political attitudes. We find that historical slavery is associated with greater interracial inequality, and greater black-white disparities on whether to actively address this. Interracial inequality and conflicting political attitudes can create unmet value expectations and thereby increase relative deprivation among black Americans – which in turn may increase violent crime. Indeed, our estimates show that inequality and black American's political attitudes strongly mediate the effect of historical slavery on contemporary violent crime. Furthermore, as historical slavery widens the gap between black and white Americans' political attitudes vis-a-vis race, this could amplify racial polarization, and even lead to interracial violence. This is consistent with some of our results: white respondents' political attitudes vis-a-vis race mediate the effect of historical slavery on interracial murder.

From all factors identified by Nisbett and Cohen (1996) as main reasons behind the prevalence of violence in the South, a legacy of slavery has been the only factor that has not been empirically tested thus far. Although slavery was essentially a violent institution that has been theorized by many scholars to have persistent effects, there has been almost no empirical attention given to how the institution of slavery may be consequential for contemporary violent crime. This study fills this gap in the literature and provides evidence in support of the hypothesis put forward by many qualitative studies that the institution of slavery has been a key factor behind the Southern violence (Cash, 1941; Franklin, 1956; Gastil, 1971; Wyatt-Brown, 1986). This study also extends the argument that the abolishment of slavery did not mark the end of slavery's adverse effects. Instead, slavery and its consequences – both intentional and unintentional – continue to play a significant role in

several contemporary phenomena. The present study shows this for violent crime, complementing existing studies on black-white disparities in health, education, arrest rates, as well as political attitudes (Acharya et al., 2018; Bertocchi and Dimico, 2012, 2014; Gottlieb and Flynn, 2021; Valencia Caicedo, 2019).

Our research has substantial implications for our understanding regarding the determinants of contemporary violent crime. Much work within social sciences, in criminology and sociology specifically, focuses on contemporary determinants of violent crime, such as economic growth, inequality, past crime rates, access to firearms and so on, in trying to understand patterns of contemporary violence. However, this style of research perhaps fail to notice historical explanations for the prevalence of current-day violent crime in the US.

Our work follows and extends an increasing number of empirical studies uncovering a surprisingly wide range of social, economic and political outcomes with deep historical roots. From trust, gender attitudes, arrest rates, investments in human capital, political attitudes, ethnic and within-country variation in wealth to racial prejudice, the long shadows of the past seem to over many corners of intellectual inquiry pursued by social scientists (Alesina, Giuliano, and Nunn, Alesina et al.; Guiso et al., 2016; Nunn and Wantchekon, 2011; Valencia Caicedo, 2019). Our findings suggest that historical institutions like slavery played a significant role shaping violent crime in the US, even if they no longer exist. Consequently, empirical social sciences could gain from exploring further potential relationships between historical forces and present day outcomes.

**Notes:**

1. It may also strengthen antagonism towards out-groups, in this case antagonism among black Americans towards white Americans. However, surveys measure this very infrequently, and we have insufficient data at the county level to investigate this. Acharya et al. (2016b) use data from the American National Election Survey (ANES) “feeling thermometer”, but only have 51 observations at the county level.
2. Delaware, Kentucky, Maryland and Missouri were considered ‘border states’ in the Civil War and New Jersey had not ratified the Thirteenth Amendment in 1860.
3. Counties in what is now Utah, West Virginia and Colorado.
4. E.g., if 60% of a historical county is now in modern county A (which has 100 homicides), and 40% is now in county B (which has 50 homicides), the historical county is classified as having  $0.6 \times 100 + 0.4 \times 50 = 80$  homicides.
5. This question was only asked in the 2010 wave.
6. Slave states on average had double the share of “free coloureds” in the population compared to non-slave states, 1.3% and 0.6% respectively.
7. Regression results used to generate Figure 1 are in Appendix Table A.6.
8. It was not possible to estimate the coefficient on quintile one for counties in non-slave states, as there are very few counties in this category, see A.3.
9. This effect is significantly different from zero at the 5% level in quintiles two and four only, not in quintile three, likely because few counties in former slave states fall in quintile three (see Figure A.3).
10. Unfortunately, there are no UCR data on the race of perpetrators of other violent crimes.

**Data availability statement:** The datasets analyzed during the current study will be deposited in the Harvard Dataverse upon publication of the study.

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## Appendix

### A.1 Descriptive statistics

Figure A.1: Map of historical slavery

#### Historical slavery in 1860 US counties

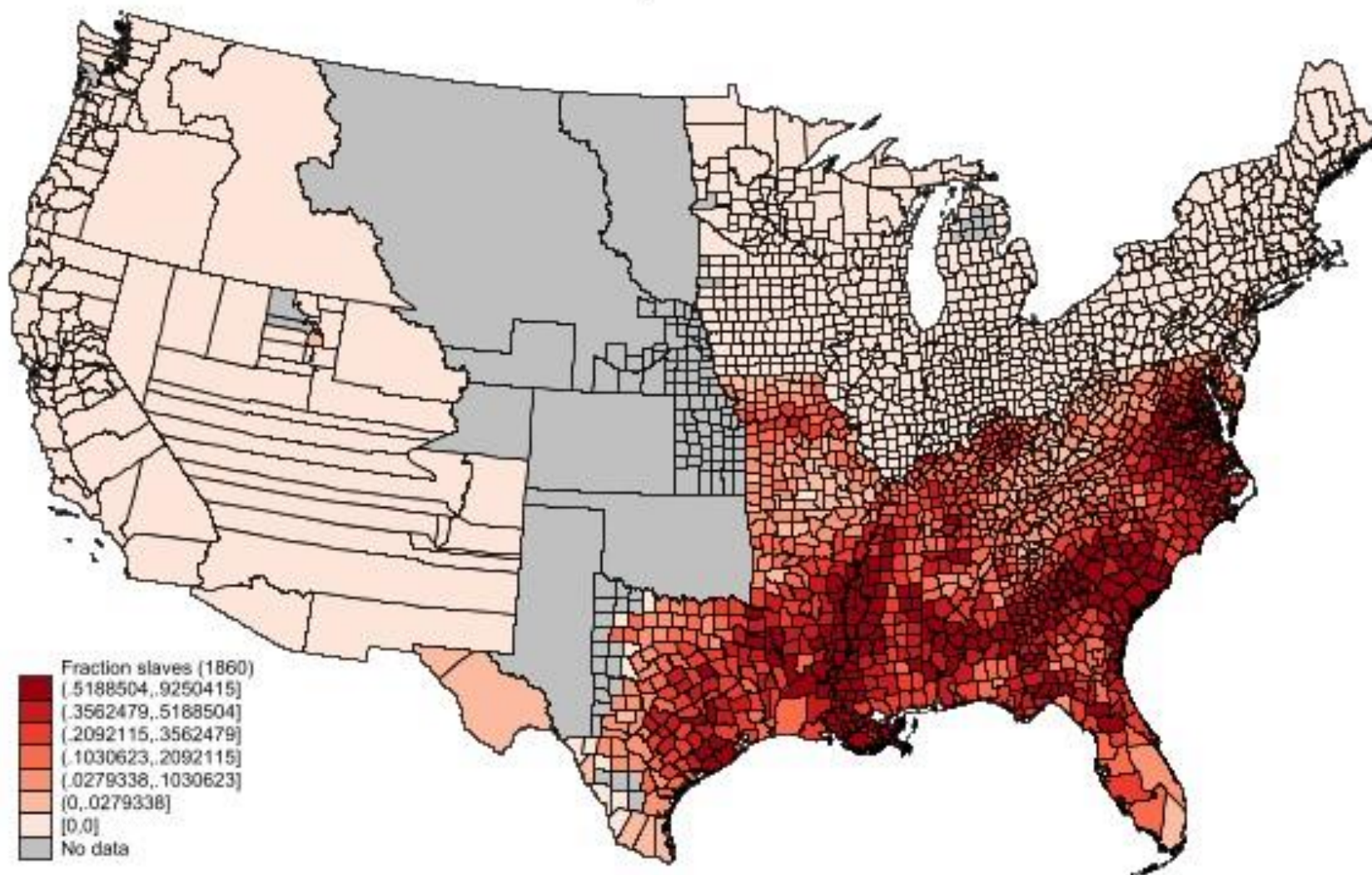


Figure A.2: Map of violent crime in 2000

## Violent crime 2000, mapped to 1860 US counties

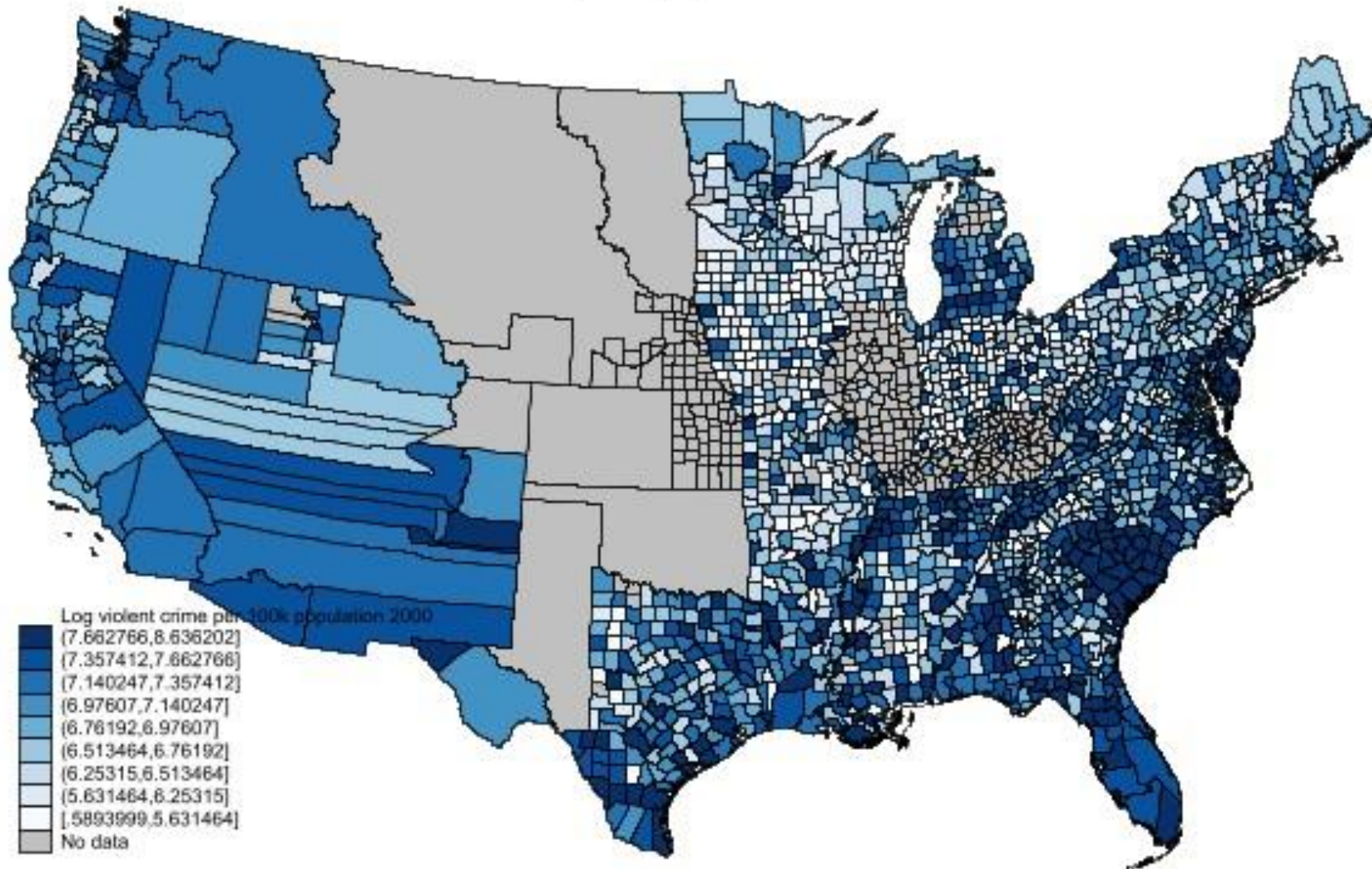


Table A.1: Summary statistics

| count                                              |      | mean     | sd       | min    | max       |
|----------------------------------------------------|------|----------|----------|--------|-----------|
| Fraction slaves (1860)                             | 1776 | 0.166    | 0.223    | 0.000  | 0.925     |
| Fraction slaves holdings <10 (1860)                | 1776 | 0.044    | 0.049    | 0.000  | 0.205     |
| Fraction slaves holdings ≥10 (1860)                | 1776 | 0.123    | 0.188    | 0.000  | 0.923     |
| Fraction free coloured (1860)                      | 1776 | 0.011    | 0.027    | 0.000  | 0.262     |
| Population density (1860)                          | 1776 | 10.348   | 50.338   | 0.000  | 1502.770  |
| County in slave state                              | 1776 | 0.582    | 0.493    | 0.000  | 1.000     |
| County in confederate state                        | 1776 | 0.483    | 0.500    | 0.000  | 1.000     |
| Violent crime per 100k population 2000             | 1776 | 1115.303 | 794.029  | 1.803  | 5631.897  |
| Violent crime per 100k population 1990             | 1954 | 884.028  | 1314.628 | 0.225  | 34962.891 |
| Violent crime per 100k population 1980             | 1959 | 507.507  | 938.733  | 1.574  | 31364.998 |
| Violent crime per 100k population 1970             | 1415 | 101.014  | 512.857  | 0.028  | 17186.088 |
| Non-violent crime per 100k population 2000         | 1776 | 2483.970 | 1519.636 | 2.930  | 13900.100 |
| Murder per 100k population 2000                    | 1776 | 7.560    | 7.934    | 0.111  | 160.488   |
| Murder with known perpetrator 2000                 | 1175 | 9.533    | 11.363   | 0.282  | 191.209   |
| Murder with white perpetrator 2000                 | 1175 | 5.512    | 6.069    | 0.071  | 96.293    |
| Murder with black perpetrator 2000                 | 1175 | 4.983    | 6.899    | 0.113  | 102.594   |
| Murder with white perp. and black victim 2000      | 1175 | 2.518    | 3.020    | 0.059  | 48.146    |
| Murder with black perp. and white victim 2000      | 1175 | 2.781    | 3.293    | 0.043  | 48.146    |
| Murder overreporting                               | 1129 | 5.089    | 24.034   | 0.000  | 475.315   |
| Rape per 100k population 2000                      | 1776 | 27.089   | 19.140   | 0.019  | 188.029   |
| Robbery per 100k population 2000                   | 1776 | 55.028   | 90.615   | 1.100  | 2120.372  |
| Assault per 100k population 2000                   | 1776 | 1036.323 | 732.043  | 0.451  | 5348.740  |
| Burglary per 100k population 2000                  | 1776 | 579.432  | 368.219  | 0.676  | 2444.376  |
| Larceny and theft per 100k population 2000         | 1776 | 1726.350 | 1084.407 | 2.254  | 9153.942  |
| Motor vehicle theft per 100k population 2000       | 1776 | 185.321  | 188.100  | 0.451  | 2331.629  |
| Malaria suitability                                | 1762 | 0.133    | 0.083    | 0.001  | 0.458     |
| Cotton suitability                                 | 1644 | 0.026    | 0.023    | -0.000 | 0.089     |
| Tobacco suitability                                | 1644 | 0.045    | 0.008    | 0.000  | 0.077     |
| Inequality: high school education                  | 2000 | 0.702    | 0.316    | 0.000  | 4.741     |
| Inequality: bachelor education                     | 2000 | 0.530    | 1.235    | 0.000  | 42.774    |
| Inequality: poverty                                | 1979 | 2.644    | 1.583    | 0.000  | 13.289    |
| Support for affirmative action (white respondents) | 1861 | 0.242    | 0.161    | 0.000  | 1.000     |
| Support for affirmative action (black respondents) | 755  | 0.809    | 0.266    | 0.000  | 1.000     |
| Racial resentment (white respondents)              | 1665 | 3.977    | 0.589    | 1.000  | 5.000     |
| Racial resentment (black respondents)              | 513  | 2.625    | 0.838    | 0.997  | 5.000     |

Note: all variables capturing violent crime are logged when used as dependent variable. Fraction of enslaved in the population is normalized when used as an independent variable. The number of murders with a known perpetrator is higher than the number of murders, as the former is taken from the Supplementary Homicide Reports, which has fewer missing data, compared to the Offenses Known and Clearances by Arrest, which is the source of the data for 'Murder per 100k population 2000'.

## A.2 Distinguishing states as confederate or non-confederate

Table A.2: Distinguishing states as confederate or non-confederate

|                               | Log violent crime per 100k population 2000 |                     |                     |
|-------------------------------|--------------------------------------------|---------------------|---------------------|
|                               | (1)                                        | (2)                 | (3)                 |
| Fraction slaves (1860)        | 0.111*<br>(0.053)                          |                     |                     |
| Fraction free coloured (1860) |                                            | 0.048*<br>(0.026)   | 0.079<br>(0.075)    |
| Constant                      | 6.951***<br>(0.000)                        | 6.951***<br>(0.000) | 6.436***<br>(0.000) |
| Sample                        | Confed.                                    | Confed.             | Non-confed.         |
| State FEs                     | Yes                                        | Yes                 | Yes                 |
| Effect size                   | 0.117                                      | 0.050               | 0.082               |
| Observations                  | 858                                        | 858                 | 918                 |

p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

## A.3 Further results on violent crime types

Table A.3: Violent crime types

|                       | Log violent crime per 100k population 2000 |                     |                     |                     |                     |
|-----------------------|--------------------------------------------|---------------------|---------------------|---------------------|---------------------|
|                       | (1)<br>All                                 | (2)<br>Murder       | (3)<br>Rape         | (4)<br>Robbery      | (5)<br>Assault      |
| Fraction black (2000) | 0.216***<br>(0.052)                        | 0.288***<br>(0.027) | 0.192***<br>(0.032) | 0.571***<br>(0.083) | 0.191***<br>(0.050) |
| Constant              | 6.684***<br>(0.000)                        | 1.701***<br>(0.000) | 3.025***<br>(0.000) | 3.315***<br>(0.000) | 6.610***<br>(0.000) |
| Sample                | All                                        | All                 | All                 | All                 | All                 |
| State FEs             | Yes                                        | Yes                 | Yes                 | Yes                 | Yes                 |
| Effect size           | 0.241                                      | 0.334               | 0.212               | 0.769               | 0.211               |
| Observations          | 1795                                       | 1795                | 1795                | 1795                | 1795                |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Table A.4: Non-violent crime types

| Log non-violent crime per 100k population 2000 |                     |                     |                     |                     |
|------------------------------------------------|---------------------|---------------------|---------------------|---------------------|
|                                                | (1)<br>All          | (2)<br>Larceny      | (3)<br>Motor        | (4)<br>Burglary     |
| Fraction black (2000)                          | 0.131***<br>(0.045) | 0.101**<br>(0.049)  | 0.210***<br>(0.066) | 0.161***<br>(0.046) |
| Constant                                       | 7.553***<br>(0.000) | 7.164***<br>(0.000) | 4.834***<br>(0.000) | 6.096***<br>(0.000) |
| Sample                                         | All                 | All                 | All                 | All                 |
| State FEs                                      | Yes                 | Yes                 | Yes                 | Yes                 |
| Effect size                                    | 0.140               | 0.106               | 0.233               | 0.175               |
| Observations                                   | 1795                | 1795                | 1795                | 1795                |

\*p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

#### A.4 Further results on the great migration

Table A.5: Correlates of great migration

| Fraction black                | Great migration (1910-1970) |                     |                     |                      |                      |                     |                     |
|-------------------------------|-----------------------------|---------------------|---------------------|----------------------|----------------------|---------------------|---------------------|
|                               | (1)<br>1910                 | (2)<br>1970         | (3)<br>2000         | (4)                  | (5)                  | (6)                 | (7)                 |
| Fraction slaves (1860)        | 0.204***<br>(0.008)         | 0.134***<br>(0.010) | 0.116***<br>(0.011) | -0.123***<br>(0.039) | -0.125***<br>(0.040) |                     |                     |
| Fraction free coloured (1860) |                             |                     |                     |                      |                      | 0.014<br>(0.024)    | 0.009<br>(0.010)    |
| Constant                      | 0.163***<br>(0.000)         | 0.118***<br>(0.000) | 0.112***<br>(0.000) | 0.060***<br>(0.000)  | 0.041***<br>(0.001)  | 0.038***<br>(0.000) | 0.089***<br>(0.000) |
| Sample                        | All                         | All                 | All                 | All                  | Slave st.            | Slave st.           | Non-slave st.       |
| State FEs                     | Yes                         | Yes                 | Yes                 | Yes                  | Yes                  | Yes                 | Yes                 |
| Observations                  | 1881                        | 1887                | 2000                | 1880                 | 1074                 | 1074                | 806                 |
| R <sup>2</sup>                | 0.928                       | 0.803               | 0.720               | 0.289                | 0.088                | 0.061               | 0.362               |
| Within R <sup>2</sup>         | 0.795                       | 0.538               | 0.424               | 0.010                | 0.028                | 0.000               | 0.000               |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

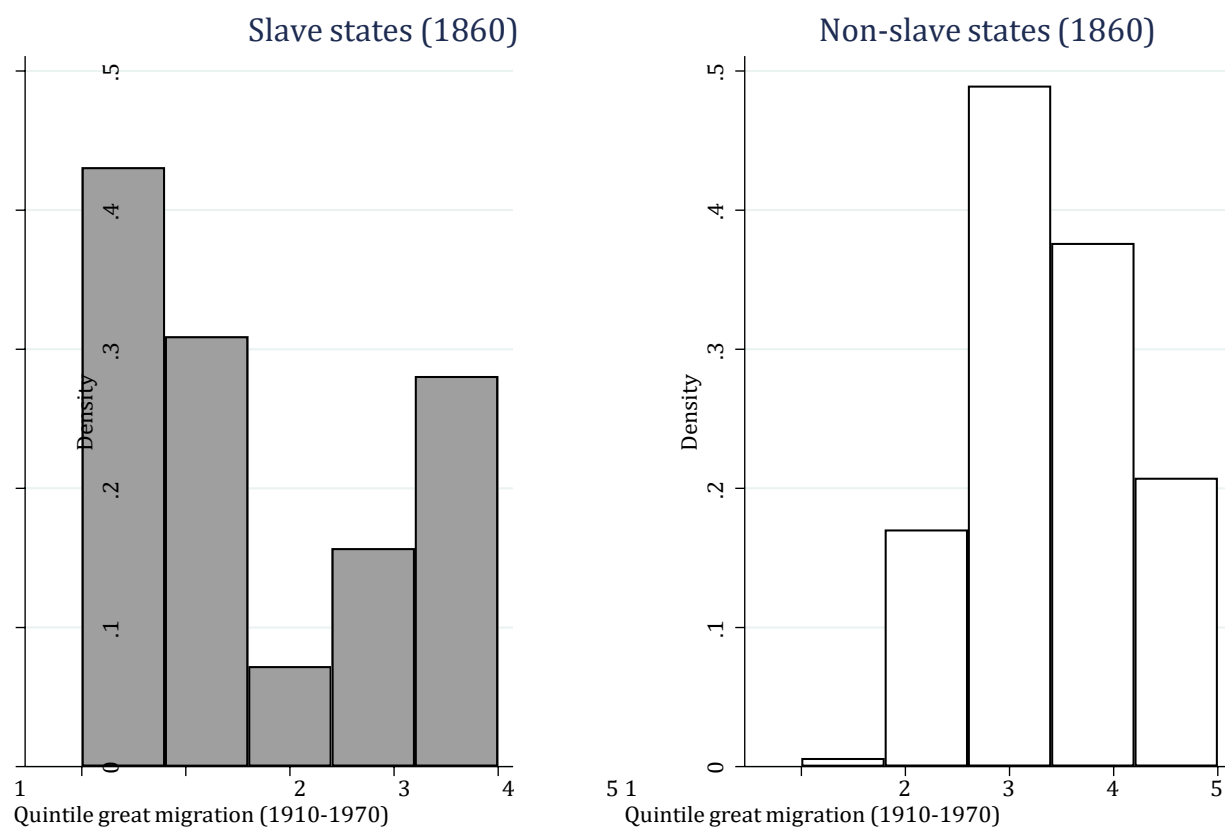


Table A.6: Slavery, great migration and violent crime

| Log violent crime per 100k population 2000          |                     |                     |                     |                      |
|-----------------------------------------------------|---------------------|---------------------|---------------------|----------------------|
|                                                     | (1)                 | (2)                 | (3)                 | (4)                  |
| Quantile great migration=2                          | 0.006<br>(0.121)    | -0.246**<br>(0.118) | -0.190*<br>(0.106)  | 0                    |
| Quantile great migration=3                          | -0.185<br>(0.571)   | -0.386**<br>(0.142) | -0.537**<br>(0.205) | 0.061<br>(0.267)     |
| Quantile great migration=4                          | 0.213**<br>(0.074)  | 0.044<br>(0.093)    | 0.061<br>(0.063)    | 0.453<br>(0.275)     |
| Quantile great migration=5                          | 0.502***<br>(0.087) | 0.455***<br>(0.091) | 0.425***<br>(0.058) | 0.922**<br>(0.378)   |
| Quantile great migration=2 × Fraction slaves (1860) | 0.193*<br>(0.109)   |                     |                     |                      |
| Quantile great migration=3 × Fraction slaves (1860) | 0.167<br>(0.574)    |                     |                     |                      |
| Quantile great migration=4 × Fraction slaves (1860) | 0.069<br>(0.111)    |                     |                     |                      |
| Quantile great migration=5 × Fraction slaves (1860) | -0.032<br>(0.074)   |                     |                     |                      |
| Fraction slaves (1860)                              | 0.117<br>(0.071)    |                     |                     |                      |
| Constant                                            | 6.787***<br>(0.078) | 6.675***<br>(0.060) | 6.860***<br>(0.047) | 6.004***<br>(0.235)  |
| Sample                                              | Slave st.<br>Yes    | All<br>Yes          | Slave st.<br>Yes    | Non-slave st.<br>Yes |
| State FEs                                           |                     |                     | 972                 | 701                  |
| Observations                                        | 955                 | 1674                |                     |                      |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Figure A.3: Great migration in slave and non-slave states

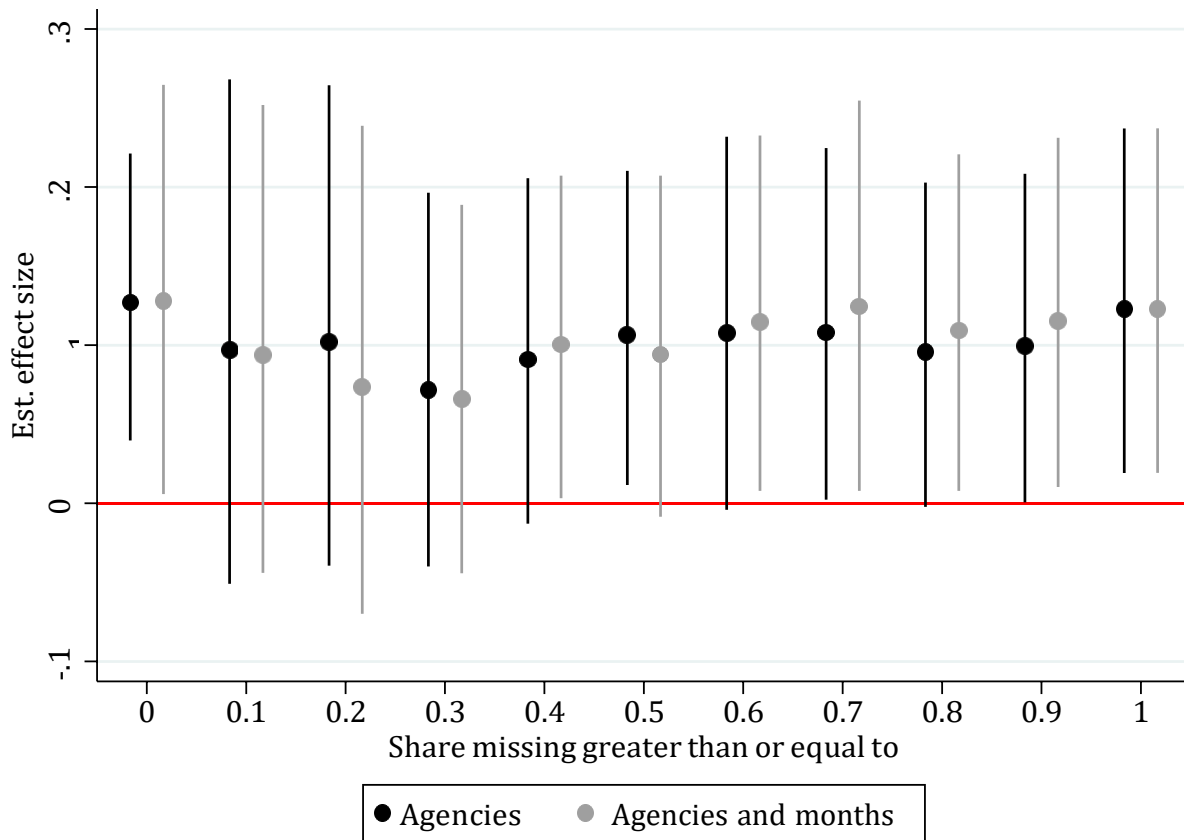


Note: counties in quintiles 1 and 2 experienced a decrease in black population share between 1910 and 1970, counties in quintiles 4 and 5 increased black population share, and black population share in quintile 3 was approximately unchanged.



## A.5 Further robustness checks

Figure A.4: Estimated effect size as a function of excluding counties with missing crime data



Note: 'est. effect size' indicates the estimated effect of the 1860 fraction of slaves in the population on log violent crime per 100k inhabitants in 2000. 'agencies' indicates estimates obtained when observations are excluded if a particular share of agencies in a county are missing. 'Agencies and months' indicates estimates obtained when observations are excluded if a particular share of agencies does not report for all 12 months of 2000.

Table A.7: Slavery and violent crime in other census years

|                        | Ln. violent crime per 100k population |                      |                      |                      |                     |                      |
|------------------------|---------------------------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
|                        | (1)<br>1990                           | (2)<br>1990          | (3)<br>1980          | (4)<br>1980          | (5)<br>1970         | (6)<br>1970          |
| Fraction slaves (1860) | 2.309***<br>(0.701)                   | 2.347***<br>(0.724)  | 2.174***<br>(0.774)  | 2.210**<br>(0.799)   | 1.093<br>(0.878)    | 1.111<br>(0.909)     |
| Constant               | 16.731***<br>(0.032)                  | 18.369***<br>(0.039) | 14.901***<br>(0.027) | 16.687***<br>(0.033) | 8.236***<br>(0.118) | 10.691***<br>(0.059) |
| Sample                 | All                                   | Slave st.            | All                  | Slave st.            | All                 | Slave st.            |
| State FEs              | Yes                                   | Yes                  | Yes                  | Yes                  | Yes                 | Yes                  |
| Effect size            | 9.064                                 | 9.455                | 7.791                | 8.112                | 1.984               | 2.039                |
| Observations           | 1954                                  | 1116                 | 1959                 | 1123                 | 1415                | 712                  |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

## A.6 Further mediator analysis

Table A.8: Slavery and inequality in slave states

|                                     | (1)<br>Log viol. crime | (2)<br>High school   | (3)<br>Bachelor     | (4)<br>Poverty      |
|-------------------------------------|------------------------|----------------------|---------------------|---------------------|
| Fraction slaves holdings <10 (1860) | 0.054<br>(0.044)       |                      |                     |                     |
| Fraction slaves holdings ≥10 (1860) | 0.079*(0.042)          |                      |                     |                     |
| Fraction slaves (1860)              |                        | -0.050***<br>(0.015) | -0.176*<br>(0.097)  | 0.464***<br>(0.038) |
| Constant                            | 6.910***<br>(0.000)    | 0.736***<br>(0.001)  | 0.515***<br>(0.005) | 2.557***<br>(0.002) |
| Sample                              | Slave st.              | Slave st.            | Slave st.           | Slave st.           |
| State FEs                           | Yes                    | Yes                  | Yes                 | Yes                 |
| Effect size                         |                        | -0.159               | -0.142              | 0.293               |
| Effect size holdings <10            | 0.056                  |                      |                     |                     |
| Effect size holding                 | 10                     | 0.083                |                     |                     |
| Observations                        | 1034                   | 1153                 | 1153                | 1144                |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Note: effect size indicates the standard deviation estimated increase in the outcome variable upon a one standard deviation increase in the fraction of slaves in the 1860 population, except in column 1, where effect size indicates the estimated percentage increase in violent crime.

Table A.9: Slavery and logged inequality

|                        | (1)<br>Log High school | (2)<br>Log Bachelor | (3)<br>Log Poverty  |
|------------------------|------------------------|---------------------|---------------------|
| Fraction slaves (1860) | -0.018***<br>(0.006)   | -0.038**<br>(0.019) | 0.160***<br>(0.018) |
| Constant               | 0.515***<br>(0.000)    | 0.359***<br>(0.001) | 1.199***<br>(0.001) |
| Sample                 | All                    | All                 | All                 |
| State FEs              | Yes                    | Yes                 | Yes                 |
| Effect size            | -0.104                 | -0.129              | 0.339               |
| Observations           | 2000                   | 2000                | 1979                |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Note: effect size indicates the standard deviation estimated increase in the outcome variable upon a one standard deviation increase in the fraction of slaves in the 1860 population.

Table A.10: Slavery and racial attitudes in slave states

|                        | Support affirmative action |                     | Racial resentment   |                     |
|------------------------|----------------------------|---------------------|---------------------|---------------------|
|                        | (1)<br>white               | (2)<br>black        | (3)<br>white        | (4)<br>black        |
| Fraction slaves (1860) | -0.024**<br>(0.011)        | 0.043<br>(0.025)    | 0.024<br>(0.031)    | -0.039<br>(0.062)   |
| Constant               | 0.212***<br>(0.001)        | 0.801***<br>(0.008) | 4.114***<br>(0.004) | 2.665***<br>(0.019) |
| Sample                 | Slave st.                  | Slave st.           | Slave st.           | Slave st.           |
| State FEs              | Yes                        | Yes                 | Yes                 | Yes                 |
| Effect size            | -0.147                     | 0.163               | 0.041               | -0.047              |
| Observations           | 1038                       | 467                 | 878                 | 318                 |

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01, clustered standard errors (state level) in parentheses

Note: effect size indicates the standard deviation estimated increase in the outcome variable upon a one standard deviation increase in the fraction of slaves in the 1860 population.