

**Inter-generational transmission of wealth shocks:
Evidence from the US Civil War***

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August 2016

In preparation for the Economic History Association Annual Meetings

Abstract: Slave emancipation and falling land values in the US South after the Civil War generated a large wealth loss for white southerners. Households that faced greater exposure to this wealth shock because of their initial asset allocation and/or residence in an affected county held less wealth in 1870. Sons of affected fathers had lower occupation-based earnings at age 30 and to a lesser extent at age 50, both within and outside of agriculture. Our estimates imply an elasticity between fathers' wealth and sons' income of 0.15 (at age 30) and 0.04 (at age 50).

* We acknowledge helpful suggestions from seminar participants at UCSD and the NBER Cohort Studies program meeting. We also had valuable discussions with Eli Berman, Dora Costa, Joe Ferrie and David Lagakos.

Introduction

The Civil War (1861-1865) resulted in a large loss of wealth for households in the US South. Following emancipation, slaveholders lost the portion of their wealth portfolios that had been held in slaves. Land wealth also declined in value, particularly in cotton-growing areas that were dependent on slave agriculture. During the 1860s, household wealth in the US South fell by 62 percent at the median and 73 percent at the 90th percentile. Civil War losses were larger than the 35 percent decline in median household net worth during the recent housing market crash.¹

This paper studies the inter-generational effect of this unprecedented wealth shock to southern households. We follow sons who lived in a southern household in 1860 to adulthood, observing sons twice, first around age 30 and then around age 50. We ask whether the loss in fathers' wealth after the war affected their sons' occupation-based earnings measured in 1880 and 1900. We focus on two sources of variation in fathers' post-war wealth: differences in pre-war wealth portfolios (particularly the allocation between slaves and land), and the location of households in counties that experienced smaller/larger declines in land values during the war decade.

We find that fathers who faced greater exposure to the Civil War shock held less wealth in 1870. Real estate wealth and personal property owned in 1860 positively predicts household wealth in 1870, but slave wealth does not. Moreover, pre-Civil war real estate wealth is less persistent in counties that faced large declines in land values during the 1860s. During the Civil War decade, personal wealth (which includes slave wealth) is less persistent in the South than in the North or than in the South before the Civil War (1850-60). We also document that the severity of the wartime wealth shock was passed on to the next generation. Sons of fathers that

¹ Gottschalck, Vornovyskyy, and Smith (2011) and Pfeffer, Danzinger and Schoeni (2013) measure losses of household wealth in the Great Recession.

retained their pre-war wealth were better able to ascend the occupational ladder by 1880, both within and outside agriculture. By 1900, some income convergence between sons had taken place but the effect of fathers' wealth was still present.

Using the variation arising from wartime losses in wealth, we estimate an elasticity of sons' occupation-based income with respect to fathers' wealth between 0.12 and 0.15 at age 30; our elasticity estimate falls to 0.04 by the time that sons reach age 50. These estimates are lower than the elasticity of fathers' and sons' wealth or income in the contemporary US (0.37 for wealth in Charles and Hurst, 2003; 0.3 for income in Chetty, et al., 2014) or the historical UK (0.4-0.5; Cummins and Clark, 2014).² Our estimate is consistent with previous work documenting high rates of occupational mobility in the nineteenth century US, suggesting that there was a substantial amount of inter-generational mobility even in the more agricultural and class-based US South (Ferrie, 2005; Ferrie and Long, 2007, 2013; Bleakley and Ferrie, 2016).³

The emancipation of slaves, together with falling land prices, was a shock faced by whole areas, resulting in long-term agricultural productivity losses in regions that were more dependent on slave agriculture. As a result, we see the loss in southern household wealth after the Civil War as more analogous to the disruption of job loss during major recessions or trade shocks (Davis and Von Wachter, 2011; Autor et al., 2014), rather than to the windfall received by an individual

² Clark and Cummins measure sons' wealth at death from British probate records, while US estimates (including our study) are based on sons' outcomes in early- to mid-adulthood. Chetty, et al. report income elasticities based on fathers' and sons' percentile rank in the income distribution.

³ Our estimates are closest to Kearn and Pope (1986), who find an elasticity of sons' wealth with respect to father's wealth of 0.15 over a twenty year period for a sample of Mormons in Utah in the late nineteenth century, and Bleakley and Ferrie (2016), who find no effect of fathers' wealth acquired in the 1832 Georgia land lottery on sons' outcomes forty years later. Elasticities of sons' outcomes with respect to fathers' income appear to be somewhat higher in this period. Olivetti and Paserman (2015) report a father-son elasticity of occupation-based income around 0.3 for the late nineteenth century and Feigenbaum (2015) finds a father-son income elasticity of 0.25 for Iowans in the early twentieth century.

household who wins the state lottery (Imbens, Rubin and Sacerdote, 2001). The Great Recession has renewed interest in understanding the slow recovery from aggregate shocks (Yagan, 2016; Charles, Hurst, Notowidigdo, 2016). A major advantage of using historical data to address this question is that we are able to follow members of affected households over long periods of time. Using newly available complete-count Census data, we create large panel samples linking fathers and sons. Furthermore, the Civil War era (1850-70) was the only period in which the Census asked systematic questions on wealth for all US households, including a special supplement on slaveholdings.

Our paper also contributes to a growing literature on the effect of parental wealth on children's life trajectories, including a series of recent working papers using Scandinavian register data (Adermon, Lindahl and Waldenstrom, 2015; Boserup, Kopczuk and Kreiner, 2014; Black et al., 2015; Fagereng, Mogstad and Ronning, 2015; Pfeffer and Killewald, 2015).⁴ Closest to our approach in the modern data is work by Lovenheim and co-authors, which exploits variation in housing prices across metropolitan areas to examine the effect of household wealth on fertility and children's educational attainment (Lovenheim 2011; Lovenheim and Reynolds, 2013; Lovenheim and Mumford, 2013).⁵

In historical terms, we provide new evidence on whether and how southern planters were able to retain their economic position despite the turmoil of the Civil War. Acemoglu and Robinson (2008) theorize that, when elites lose official power, they invest in alternate

⁴ Black et al. (2015) estimate a wealth elasticity of 0.28 in Sweden today. Father's wealth has a similar effect on the wealth of both adoptive and biological kids, suggesting that wealth transmission is primarily a social process.

⁵ Bowles and Gintis (2002) and Black and Devereaux (2011) review the broader literature on the effect of family resources (often: income) on children. Key references include Mayer (1997), Duflo (2000) and Oreopoulos, Page and Stevens (2008) on family income and Black, Devereaux and Salvanes (2005) and Hilger (2015) on parental education.

mechanisms to maintain control – for example, owners of large slave plantation simply morph into large landholders of tenant farms. Wiener (1978, 256) calls southern planters “among the most stable and persistent social groups in nineteenth-century America”; he documents that half of the planters in a sample of Alabama counties remained in the wealthiest strata of households both in the 1850s (before the war) and by 1870 (after the war). The Civil War was indeed a wealth shock to top households, and this shock did persist over time, as sons of affected fathers faced slower occupational mobility into early adulthood.⁶ Yet, sons were able to rebound by around age 50, particularly if they remained in agriculture.

Historical background

The North’s victory in the Civil War ended slavery in the United States. In the Emancipation Proclamation of 1863, President Lincoln declared slaves living in Confederate states to be free. In 1865, at the war’s end, slavery was abolished nationwide in the thirteenth amendment to the constitution.

The expropriation of slave wealth and falling land values reduced wealth holdings in the South between 1860 and 1870. Table 1 presents wealth levels at different points in the wealth distribution for white men by region before and after the Civil War. In 1860, wealth levels were higher in the South than the North at every point in the wealth distribution. During the 1860s, wealth levels fell by 60 to 70 percent in the South, with larger declines at higher percentiles. By 1870, the southern wealth advantage relative to the North had become a wealth penalty.

⁶ In related work, Dupont and Rosenbloom (2016) link large wealth holders in 1870 Census back to the 1860 Census and find more wealth turnover in the South than in the North, presumably because of disruptions to the slave system.

The emancipation of slaves was a large negative shock to southern slaveholders, many of whom operated large cotton plantations. Before the war, cotton was most efficiently harvested on large farms using a “gang system” of agriculture (Fogel and Engerman, 1974, 1977; Metzger, 1975; Toman, 2005). The West South Central Census region, which had soil particularly well-suited for growing cotton, had the highest GDP per capita of any region in the US (\$184 in 1860 dollars, compared to the \$128 national average).⁷ In 1860, 27 percent of southern households owned at least one slave and 2.3 percent of southern households owned more than 25 slaves.

Unlike British slaveholders or slaveholders in northern states, southern slaveholders were not compensated for the loss of their slave wealth after the Civil War.⁸ The trajectory of slave prices suggests that uncompensated emancipation was unanticipated before hostilities began. Slave prices more than doubled between 1840 and 1860, peaking in 1860 and then declining by 30 percent after the outbreak of conflict in 1861 (Engerman, 2000, p. 344; Calomiris and Pritchett, 2016). The cost of compensating southern slaveholders would have been very high; the estimated value of all slave wealth was \$2.7 billion in 1860, more than 50 percent of annual GDP (Goldin, 1973). Despite the high costs of compensation, Goldin argues that the North likely chose war over a negotiated settlement because they underestimated the financial and human cost of combat.⁹

Southern landowners, even those that did not own any slaves, also faced war-related declines in wealth. Despite proposals for land redistribution, large landholdings were not divided

⁷ The West South Central region includes Arkansas, Louisiana, Oklahoma, and Texas.

⁸ The Slavery Abolition Act of 1833 in the UK raised 20 million pounds to compensate slaveholders in the British Empire. In northern states, gradual emancipation plans freed children born into slavery after 25-30 years, far past the age where slave children had compensated their masters for the cost of their upbringing (Goldin, 1973; Fogel and Engerman, 1974).

⁹ Moderate abolitionists put forward the idea of compensated emancipation many times, only to be rejected by slaveholders (Fladeland, 1976). Southerners may have been playing a war of attrition game, holding out for a more attractive deal.

after the Civil War (Oubre, 1978; Miller, 2015).¹⁰ Yet the value of agricultural land in some parts of the South fell with the ending of slavery. Southern plantations were reorganized, relying more heavily on small farms operated by tenants and share-croppers (Reid, 1973; Higgs, 1977).¹¹ These small farms did not reap economies of scale. As a result, agricultural output per capita fell nearly 40 percent in the South from 1860 to 1870 (Engerman, 1966; Engerman, 2000, p. 356-361).¹²

The effect of the Civil War on land values varied substantially across the South, depending on the share of land planted in cotton and other factors. Figure 1 maps changes in land values at the county level over the war decade (1860-70). The average county experienced an 18 percent decline in land values. Prices in cotton-intensive Mississippi declined the most (91 percent), while prices actually rose in many Border States. Some states, such as Georgia and Texas, exhibit a sizeable amount of price variation across counties.

Data

Our dataset consists of father-son pairs that are matched across three Census waves: 1860 (father observed before the War), 1870 (father observed after the War) and 1880 (son around age 30). For a subset of pairs, we have a second observation for sons in 1900 (around age 50). We collect information on geographic location and household wealth by asset category (land, slaves, other personal wealth) before the Civil War. We measure the household-specific shock to wealth

¹⁰ A bill to give 40 acres of land to each black household head was passed in House and Senate but vetoed by President Johnson. Wiener (1978, 242) blames “the Radicals’... inability to destroy the system of large landholdings and replace it with one of small freeholds” for the persistence of the planter class.

¹¹ In the five major cotton states, the percent of land in plantation-sized farms (500+ acres) fell from one-third to just 11 percent from 1860-70 (Ransom and Sutch, 1977, p. 71).

¹² Ransom and Sutch (1975) instead argue that southern output declined as former slaves cut back on work hours and effort.

during the war decade by observing household wealth in 1870. In 1880 and 1900, we collect a series of adult outcomes for sons.

We start with a sample of 48,262 white male household heads in the 1860 Census, 35 percent of whom lived in the South. Men in our sample must have had at least one son between the ages of 0-17 in the household. We assemble these cases from three sources: (1) a representative sample of slaveholders from the 1860 Slave PUMS;¹³ (2) an oversample of the 2,500 richest slaveholders in 1860, first compiled by Ager (2013); and (3) a representative sample of the population from the 1860 IPUMS. The IPUMS sample does not contain information on slave ownership. To identify slaveholders in this data, we look up any matched southern household with more than \$600 in reported wealth in the digitized slave schedules archived on Ancestry.com.

We attempt to match all households in our 1860 sample forward to the 1870 and 1880 Censuses, linking household heads to 1870 and sons to 1880. We can link 6,668 households to both the 1870 and 1880 Census, resulting in a sample of 9,949 sons of household heads in 1880. Matches are conducted by first name, last name, age and state of birth. Our double-match rate of 13.8 percent is consistent with the double match rates for the early twentieth century in Abramitzky, Boustan and Eriksson (2014). We can follow 58.2 percent of our southern-born sample of sons forward to 1900 to measure occupation at the end of their career (circa age 50).

Our measures of pre-war household wealth are drawn from Census questions on the value of real estate and personal wealth, and from the supplementary slave schedules, which contain tallies of total slaveholdings. Personal wealth includes agricultural implements, shop inventory,

¹³ The 1860 Slave PUMS is a 1-in-20 sample of slaves enumerated on the Census slave schedules. The dataset contains information about the complete slave and wealth holdings of each slave's owner.

etc. We impute slave wealth at the household level by multiplying the number of slaves in the household by the average slave price at the county level. The county-level slave price is, in turn, calculated using the share of slaves in the county by age and sex to compute a weighted average of the age-sex specific slave prices from Fogel and Engerman (1976).¹⁴ The average slave price in 1860 was \$800, or \$23,500 in 2014 dollars. Finally, we estimate non-slave personal wealth as the difference between reported personal wealth and our imputed measure of slave wealth; we truncate our measure of non-slave personal wealth at zero, so that no observations have negative values of non-slave personal wealth.¹⁵

Table 2 presents characteristics of household heads in our matched sample in 1860 and 1870 by region. Southern observations are weighted to adjust for the oversample of slaveholders. 69 percent of both southern and northern fathers own some land or other real estate. 26 percent of southern fathers owned at least one slave in 1860, with the mean number of slaves conditional on slave ownership being 10 and the maximum number of slaves over 650.

Southern fathers in our sample had higher mean wealth – but lower median wealth – than northern fathers in 1860.¹⁶ In 2014 dollars, the mean southern household in our sample had \$91,000 in real estate wealth, \$73,000 in non-slave personal wealth and \$43,000 in slave wealth,

¹⁴ For observations derived from the 1860 Slave PUMS, we have household-level counts of slaves by age and sex. The correlation between estimated slave wealth using household demographics versus county-level age-sex counts is about 0.95. We report results using slave wealth estimates derived from household counts (when available) in Table 12.

¹⁵ Our measure of non-slave personal wealth is subject to some measurement error. First, the value of personal property reported on the Census is itself badly measured. For example, 16 percent of slaveholders report a value of personal property that is less than the value of a *single* slave (despite the fact that this subsample has 6.5 slaves, on average). Second, we may mis-measure slave wealth if, for example, some slaves have particularly high or low values but are assigned a mean value (e.g., slaves with skills, slaves with disabilities).

¹⁶ In contrast, median wealth was higher in the South than in the North in the full population. Our sample differs from the full population because household heads must have a young child at home. This restriction omits single men, including young immigrant men who were more numerous in the North, and older men who have had more time to accumulate wealth.

while the mean northern household had only \$80,000 in real estate wealth and \$34,000 in total personal wealth. By 1870, after the Civil War, slave wealth had entirely disappeared and other forms of southern wealth also suffered. Real estate wealth increased around 15 percent in the North between 1860 and 1870, while the real estate wealth of southerners fell by close to 50 percent at the mean in our sample. Personal wealth was even more volatile, doubling in the North and falling by 70 percent in the South.

The last Census to ask about household wealth was 1870. Occupation is thus the best economic outcome for sons observed in 1880 and 1900. We use three sources to generate an occupation-based income measure that is appropriate for this period: (1) we match non-agricultural occupations to annual earnings from the 1901 Cost of Living survey (Preston and Haines, 1991); (2) for farm laborers, we use information on wages by state from the Young Report (1871) for 1880 or Holmes (1912) for 1900; and (3) for farmers, we calculate farm income from county-level measures of farm revenues and expenditures from the 1880 (or 1900) Census of Agriculture. All of these measures, which are taken from different years, are then adjusted to 2014 dollars.

Table 3 reports summary statistics for sons in adulthood in 1880 and 1900. The average son had \$10,000 of occupation-based earnings early in their career at the mean age of 28 (in 2014 dollars) and increased their earnings to \$17,000 by 1900. Around 65 percent of sons in our sample worked in agriculture in both years. Only 27 percent remained in their childhood county by 1880, falling to 19 percent by 1900. Literacy rates were high in this population, reported as 98 percent literacy in 1880 and as 88 percent literacy in 1900. The difference in reporting is likely due to the wording of the literacy question in the Census, which asked about respondents who

“could not read/write” in 1880, but instead asked about respondents who “could read/write” in 1900.

Household heads in our analysis must be successfully linked between 1860 and 1870 and have at least one son that can be matched between 1860 and 1880. We are more likely to find a unique match for men with an uncommon name; men who were numerate and were thus able to report an accurate age on the Census form; and men with many sons, any of whom could contribute to a successful link to 1880. These men may have a higher socio-economic status than the general population. Appendix Table 1 compares southern men in our matched sample to the population of white men in the South in 1860 who had a son between the ages of 3 and 15. We focus on the observations in our matched sample that were drawn from the 1860 IPUMS sample, for which we have a full array of baseline characteristics.

As expected, men in the matched sample have 0.13 more children living at home in 1860 (7 percent). Beyond this, the largest difference between the matched sample and the population pertains to rural status. Men in the matched sample are 5 percentage points (10 percent) more likely to be farmers; correspondingly, they are 4 percentage points less likely to live in an urban area. Men in the matched sample are also 2 percentage points (20 percent) less likely to have no reported wealth in 1860. Households with no reported wealth may truly have been impoverished (zero wealth) or may have had missing wealth information on their Census form. Enumerators who neglected to fill in the wealth field may have been careless in transcribing other parts of the Census form, thereby preventing household linkages.¹⁷ Conditional on having positive reported

¹⁷ The Census wealth data suffers from well-known measurement error, which can include missing information (Steckel, 1994). For example, in our sample, 6 percent of fathers have no reported wealth in 1860 (around age 40) and 14 percent have no reported wealth in 1870 (around age 50). It is unlikely that there would be such a rapid rise in the penniless, especially given the

wealth, there is no difference between the matched sample and the population in either the level or logarithm of real estate or personal wealth. Thus, the most important distinguishing feature of the matched sample relative to the population appears to be the high rate of farm households. We address selection into the linked sample as a robustness exercise by re-weighting the data to match the farm and urban status of the full population.

Estimating equations

With our linked dataset in hand, we are able to ask a series of questions: Was exposure to the Civil War wealth shock associated with lower household wealth in 1870? Was this wealth shock transmitted to the next generation? What is the implied elasticity between fathers' wealth and sons' adult outcomes?

We start by estimating the relationship between total household wealth before and after the Civil War:

$$\ln(\text{wealth in 1870})_i = \alpha + \beta \ln(\text{wealth in 1860})_i + \varepsilon_i \quad (1)$$

If the rich accumulate wealth at a faster rate than the poor, β will be equal or greater than one. If, instead, there is some convergence in wealth between the rich and the poor, β will be less than one. We compare the persistence rate (β) in the South during the war decade (1860-70) to the North in this period and to the South before the war (1850-60).

To better understand the role of the Civil War in the process of wealth accumulation, we subdivide pre-war wealth into three components: real estate wealth, slave wealth, and non-slave

positive relationship between wealth and age. It is more reasonable to suspect that compliance with the Census or enumerator effort declined in the South after the Civil War.

personal wealth. We examine the effect of each type of wealth in 1860 on household wealth in 1870, estimating:

$$y_{is} = \alpha_s + \beta_1 \ln(\text{real estate, 1860})_{is} + \beta_2 \ln(\text{non-slave personal, 1860})_{is} + \beta_3 \ln(\text{slave wealth, 1860})_{is} + [=1 \text{ if wealth holder, by type}]_{is} \cdot \Gamma + \varepsilon_{is} \quad (2)$$

where y_{is} is either the logarithm of fathers' wealth in 1870 or the logarithm of sons' occupation-based income in 1880 or 1900. We control for state fixed effects (α_s) based on a household i 's state of residence in 1860 and a quadratic in fathers' age; we also add a quadratic in sons' age when the dependent variable pertains to the son. We include a vector of dummies for being a landowner, a slaveholder or an owner of personal property to address the steepness of the logarithmic function at zero.¹⁸ We assess robustness of the results to different treatment of men with zero/missing wealth below.

The coefficient in the log-log specification (β_1 through β_3) cannot be directly compared, as each reflects the effect of doubling a different component of the average wealth portfolio. To facilitate this comparison, we report the implied effect of a \$10,000 change in wealth by category at the mean. If the emancipation of slaves reduced wealth persistence in the South, we expect \$10,000 of slave wealth to have a weaker effect on post-war wealth than a similar amount of either real estate or personal property. Likewise, if the Civil War wealth shock is transmitted to the next generation, we expect \$10,000 of pre-war real estate or personal property to have a stronger effect on sons' outcomes than \$10,000 of slave wealth. In contrast, if slaveholders were able to retain their pre-war advantages and pass these on to their children, perhaps because social

¹⁸ For the sake of estimating logarithmic functions, we replace zero wealth with one dollar of wealth in these specifications.

networks remained intact or because slave wealth was correlated with productive and heritable personal traits, we would expect slave wealth to have a positive effect on sons' earnings.

A secondary effect of the Civil War was to reduce the productivity of agriculture in areas that had been heavily dependent on slave labor. Real estate wealth may have been less persistent in counties that experienced large declines in land values. We measure changes in self-reported land values in county c from the Census of Agriculture ($\Delta \text{land values}_c$) and interact the change in land values with the right-hand side 1860 wealth variables in equation (2), which we denote here as the vector X_{ics} .

$$y_{ics} = \alpha_s + X_{ics} \cdot \mathbf{B} + \gamma(\Delta \text{land values})_c + [X_{ics} \cdot \Delta \text{land values}_c] \cdot \Phi + \varepsilon_{ics} \quad (3)$$

The vector of coefficients \mathbf{B} predicts the effect of each component of 1860 wealth in a county with no changes in land values (1860-70), whereas the vector Φ indicates how the effect of each component would vary with changes in the county's land values. We expect that real estate wealth will be more persistent – both in terms of fathers' post-war wealth and sons' adult earnings – in counties that experienced price gains during the war decade (or, $\varphi_1 > 0$). Slave wealth was expropriated throughout the South, so we predict the interaction between slave wealth and county characteristics to be zero (or, $\varphi_3 = 0$). We do not have a strong prediction about the interaction with non-slave personal wealth (φ_2).

As a byproduct of our analysis, we are able to estimate the elasticity of sons' occupation-based earnings with respect to father's wealth, relying on the variation in father's wealth stemming from the Civil War shock to wealth levels. In particular, we use equations 2 and 3 to predict father's 1870 wealth on the basis of his 1860 portfolio (slaves versus other assets) and his

residence in counties subjected to wartime price declines. We then regress sons' earnings in 1880 or 1900 on father's predicted 1870 wealth:

$$\ln(\text{occupation-based income})_{is} = \alpha_s + \beta \ln(\text{predicted father wealth in 1870})_{is} + \varepsilon_{is} \quad (4)$$

while also controlling for a quadratic in fathers' age and sons' age. The coefficient β indicates the elasticity of sons' earnings with respect to father's wealth and can thus be compared (with appropriate caution) to other elasticity estimates for the nineteenth and early twentieth centuries.

Results

Wealth persistence before and after the Civil War

The Civil War was a sudden and total shock to wealth held in the form of slaves. Slaves represented 12 percent of wealth holdings for the average household and 44 percent of wealth conditional on having one slave. We expect that wealth held in slaves would be less persistent during the war decade than wealth held in other forms. Table 4 reports estimates of equation 2, which separately considers the persistence of each component of wealth, for southern household heads during the war decade. Our estimates imply that, relative to the mean, an additional \$10,000 of 1860 real estate wealth would increase household wealth in 1870 by nearly \$2,000; an additional \$10,000 of non-slave personal wealth would increase household wealth by \$1,350; but an additional \$10,000 of slave wealth would *lower* household wealth by \$330, although the negative effect of slave wealth is not statistically different from zero.

Results are broadly similar in subsamples of households that had some land or some slaves (columns 2 and 3). Slave wealth does not have a positive effect on post-war wealth, even within a subsample of slaveholders. This relationship also holds when measuring a father's rank

in the initial wealth distribution (column 4). Advancing 10 points in the 1860 distribution of real estate wealth or non-slave personal wealth is associated with a 2 to 3 percentile increase in household wealth in the 1870 distribution, while an increase in the slave wealth distribution has no effect on post-war wealth; the coefficient on slave wealth is an order of magnitude smaller and not statistically significant.

The lack of persistence of slave wealth could be a general feature of slaveholdings, which may have been more volatile than other assets. We assess the distinctiveness of the South in the Civil War decade in Table 5 by comparing persistence by wealth category to two benchmarks, northern households in the war decade (1860-70) and southern households in the previous decade (1850-60). The first panel of Table 5 focuses on the South before and after the Civil War. For comparability with the 1850 Census, which only measures real estate wealth and slaveholdings, we exclude the measure of non-slave personal wealth. Furthermore, to improve confidence in our 1850-60 matches, we focus on men who are unique by name within a five-year age band.¹⁹ As before, slave wealth is not persistent in the Civil War decade. In contrast, from 1850-60, doubling slave wealth in 1850 is associated with a 13 to 25 percent increase in household wealth by 1860, although this relationship is only statistically significant in the subsamples. The real estate coefficients are also somewhat lower after the Civil War (0.34 versus

¹⁹ Currently, our matched sample for 1850-60 differs from our main matched sample in two important ways. First, we do not restrict the 1850-60 sample to household heads with a son at home who himself can be matched forward to a later Census. Second, we rely on the 1850 Slave PUMS to create the link between the 1850 population schedule and slave supplement, rather than doing the matches ourselves. We worry that both of these differences introduce measurement error, particularly for the measure of slave wealth. Perhaps as a result, the estimates are attenuated in the full sample. We are working on a more comparable linked sample for 1850-60.

0.50 in the full sample) but the reversal is far more striking for slave wealth, lending credence to the idea that the lack of slave wealth persistence after the war is due to emancipation.²⁰

The second panel of Table 5 compares the North and the South in the war decade (1860-70). Because northerners could not hold slave wealth in 1860, the two relevant measures of wealth are real estate wealth and all personal wealth. In both regions, personal wealth can include financial assets and consumer durables like furniture and jewelry, property which can be expected to persist over time. However, in the South, personal wealth also included slave wealth, which lost its value during the 1860s. Thus, we expect the coefficient on personal wealth to be smaller in the South than in the North. Indeed, we find that a given amount of personal wealth in 1860 was associated with two to three times more household wealth in 1870 in the North than in the South, whereas 1860 real estate wealth had a similar effect on 1870 household wealth in both regions.

The emancipation of slaves indirectly affected the value of land by replacing productive slave agriculture with less productive forms of tenancy and wage labor. Some regions of the South were more heavily dependent on slave-based agriculture than others. We would thus expect real estate wealth to be more persistent in counties that retained or gained land value over the 1860s, relative to counties that lost value. Table 6 reports estimates of equation 3, which includes interactions between components of wealth in 1860 and the change in land values from 1860 to 1870 at the county level. In a county with steady land values, doubling 1860 real estate wealth was associated with a 31 log point increase in household wealth in 1870. Yet in counties with rapidly rising or falling land values (50 percent increase or decrease), doubling real estate

²⁰ Our coefficients imply that \$10,000 of 1850 real estate wealth in the South would lead to around \$11,000 of 1860 household wealth. In a national sample, Steckel (1990) similarly finds that \$10,000 of real estate wealth in 1850 would grow into \$15,000 of real estate wealth by 1860.

wealth in 1860 was associated with a significantly larger (44 log point) or smaller (18 log point) increase in household wealth in 1870.

Changes in land values after the Civil War in part reflect the ability of a local area to recover from the war's aftermath, which could be related to factors that contribute to wealth persistence (such as: strong social networks). The second column of Table 6 reports interactions with *predicted* (rather than actual) changes in land values. The predictions are based on baseline characteristics of the county in 1860, including having a higher share of land planted in cotton or tobacco; a greater slave share of the population; average farm size; being further south or east, geographically; and absence of a railroad or an urban area in the county (see Appendix Table 2). As before, we find that the association between 1860 real estate and 1870 household wealth is stronger in counties that experienced larger (predicted) increases in land values. Yet, slave wealth is not persistent in any county type, regardless of the predicted change in land values.

Inter-generational transmission of the Civil War shock: Sons in 1880 and 1900

Did fathers subject to larger wealth shocks pass on this disadvantage to their sons? We address this question in two ways: (i), by comparing the transmission of 1860 slave and non-slave wealth, and, (ii), by comparing sons who grew up in counties with larger or smaller changes in land values during the war decade. In both cases, we find that wealth that survived the war (that is: real estate wealth, particularly in counties with rising land values) translated into higher occupation-based earnings for sons, while wealth that dissipated during the war did not.

The last columns in Table 6 compare sons who grew up in counties with different changes in land values during the 1860s. Doubling fathers' 1860 real estate increases sons' earnings in 1880 by 5 to 7 percent in counties with stable land values, and by substantially more

(up to 12 percent) in counties with a 50 percent increase in land values. Slave wealth does not have a large or statistically significant effect on sons' earnings in any county type. By 1900, the difference between the sons in counties with large/small changes in land values had dissipated, perhaps as the cotton areas of the South started to rebound.

Table 7 relates components of fathers' pre-war wealth to sons' occupation-based income. Real estate wealth has a consistently positive effect on sons' earnings in both 1880 and 1900 for the full sample and for the children of landholders and slaveholders (columns 2 and 3). Slave wealth does not have a significant effect on sons' outcomes in any subsample. The coefficient on slave wealth is even smaller for the children of slaveholders, suggesting that, conditional on being raised in a slave-owning household, having access to additional slave wealth before the war had *no* effect on sons in the post-bellum period. A similar pattern holds when measuring fathers' place in the initial wealth distribution (column 4).

Thus far, we have traced out the effect of pre-war wealth on the post-war economic circumstances of fathers and sons respectively. Comparing these coefficients allows us to back out an elasticity of sons' earnings with respect to fathers' wealth. For example, an increment of 1860 real estate wealth that increases fathers' wealth in 1870 by 10 percent would increase sons' earnings in 1880 by around 2 percent, suggesting an elasticity of 0.2 (compare coefficients of 0.276 for fathers in Table 4 and 0.048 for sons in Table 7). Table 8 conducts this exercise more formally by predicting fathers' wealth in 1870, and then estimating sons' earnings with respect to fathers' predicted wealth. We predict fathers wealth in three ways: first, by using the components of 1860 wealth alone (as in Table 4), then by adding the interactions with actual changes in land prices (Table 6, column 1) and finally adding the interactions with predicted changes in land

prices (Table 6, column 2). The implied elasticities of sons' earnings with respect to fathers' wealth range from 0.12-0.15 in 1880 (circa age 30), and fall to 0.04 in 1900 (circa age 50).

Our elasticity measures for sons in 1880 at age 30 are consistent with existing elasticity estimates for the nineteenth and early twentieth centuries, most of which have been conducted in the North and West (Kearl and Pope, 1986; Feigenbaum, 2015). Although the US South was thought to be a more rigid, caste-based society, social mobility in the South appears to be of a similar magnitude to inter-generational mobility in other parts of the country, at least amongst the white population. Our 1900 estimate is closest in spirit to Bleakley and Ferrie (2016), who find no effect of wealth allocated at random in the 1832 Georgia land lottery on sons' wealth in 1870, forty years later. We likewise find a small (although statistically detectable) effect of fathers' wealth on sons' outcomes after four decades.

On average, real estate wealth predicts post-war outcomes for both fathers and sons, while slave wealth does not. Figure 2 contains quantile regressions of the effect of 1860 wealth components on fathers' wealth in 1870 and sons' occupation-based income in 1880 at different points in the distribution.²¹ Real estate wealth had a positive effect on post-war outcomes for fathers and sons at all points of the distribution. The persistence of pre-war real estate wealth increased up to the 75th percentile and then started trending downward (but remained positive). Slave wealth was associated with lower post-war outcomes throughout the distribution, but the negative effect of slave wealth was smaller for wealthier fathers.

²¹ These regressions follow equation 2 but do not include state fixed effects. The regression coefficient at the mean is reported in the figure as a solid line with dashed confidence intervals.

Mechanisms and robustness

Sons of wealthy fathers earned more in the post-war South than did sons of poorer fathers. Table 9 gives some insight into how the sons of wealthy fathers got ahead in this era, and why the effect of fathers' wealth attenuated as sons aged. In 1880, doubling fathers' wealth was associated with a 10-12 percent increase in sons' earnings, both within and outside of agriculture. By our measure, sons can increase their earnings in agriculture by moving up the agricultural ladder (from farm labor to farmer) or by residing in a county with higher farm revenues. Both channels matter: agricultural sons with wealthy fathers were more likely to be a farmer by 1880 and, conditional on being a farmer, were also more likely to live in a county with high farm income (coeff. on fathers' wealth = 0.093, st. err. = 0.032).²² Outside of agriculture, sons could advance by moving from laborer positions into skilled blue collar or white collar work. By 1900, fathers' wealth continued to influence sons' earnings outside of agriculture, while the effect of wealth within agriculture dissipated completely (although we acknowledge that we are unable to measure potential differences in farm sizes or farm values within counties). Having a wealthy father appears to have accelerated sons' climb up the agricultural ladder, helping them move into farmer positions at earlier ages, but does not influence their final attainment in the agricultural sector. Fathers' wealth also has no effect on sons' sectoral choice by 1900.

The remainder of Table 9 evaluates other advantages of sons of wealthy fathers. Sons of wealthy fathers had greater geographic and social stability, in that they were more likely to stay in their birth county and to remain in their father's household in their twenties and thirties, rather than heading their own household. Sons of wealthy fathers also had higher reported levels of human capital. Literacy is more accurately measured in 1900, when the Census asked

²² We cannot distinguish between farm owners and farm tenants in 1880. We plan to separately classify farm owners and tenants using the homeownership variable in 1900.

respondents if they could read (rather than asking if they could *not* read). In this year, doubling fathers' wealth is associated with a 3.5 point increase in the likelihood of being literate. There is a detectable, albeit smaller, effect on literacy in 1880. Higher literacy may have facilitated the movement out of agriculture and into better non-agricultural occupations.

The advantages associated with wealth might be transmitted to sons at various points in the lifecycle. Recent work emphasizes the critical window of early childhood as a period of investments in health and human capital (Heckman, 2006). Yet, in our historical context, later-in-life transfers of land or capital may have been more important for adult outcome. We investigate the value of having access to wealth in early childhood by splitting the sample by age in 1860. Some younger children in the sample spent their early years in a household that was already facing a large wealth shock, whereas older children would have had access to household wealth in these critical years, even if their fathers' wealth was later lost during the war.

Table 10 reports estimates from regressions that allow the effect of each component of fathers' 1860 wealth to vary with sons' age on the eve of the Civil War. We divide sons into four age categories: 0-4 years old in 1860, 5-9 years old, 10-14 years old and 15-17 years old. Real estate wealth was relatively persistent through the war decade, and so sons in all age categories can be expected to have had access to household real estate wealth during early childhood. However, slave wealth was completely expropriated by 1865. If early childhood is a critical period for access to resources, we expect that the older sons (say, 10 and older by 1860) would have benefited from household slave wealth, while younger sons would not. Contrary to this hypothesis, we find no difference in the effect of fathers' wealth on sons' occupation-based earnings in 1880 or 1900 by sons' age. Coefficients on real estate wealth range from 0.04 to 0.05 for all age groups in 1880, while coefficients on slave wealth are, if anything, larger for younger

age categories (rather than smaller). We note that children who were zero to four years old in 1860 were in their early twenties in 1880, and thus our measure of occupational income may be poorly measured for this group. Column 2 reproduces this specification in 1900, when all sons were at least 40 years old. We again find no relationship between sons' age and the effect of real estate or slave wealth on sons' outcomes. These patterns are inconsistent with early childhood being a decisive investment period in this era.

A possible explanation for the relatively low elasticity between fathers' wealth and sons' outcomes in the nineteenth century is that, in this period, fertility was positively correlated with wealth, leading wealthy fathers to divide their estate between more progeny. Theoretically, this explanation is unlikely because wealth can accumulate at a much faster rate than can family size, which is constrained by fecundity (for example, wealth increased four-fold between the 50th and 75th percentiles of the southern wealth distribution in 1860).

Table 11 presents some evidence that pre-war wealth was indeed associated with larger families by 1870, but the magnitudes are not large enough to substantially alter the inter-generational estimates. In particular, we estimate the effect of 1860 wealth components on the number of children born in two time periods: during the Civil War (1861-65) and after the war (1866-1870). In each case, we control for the number of children born between 1845 and 1860; the specification otherwise follows equation 2. Increasing real estate wealth four-fold (around one standard deviation) is associated with 0.16 of an extra child born after the war. This additional increase in fertility is small relative to the average household size of 3.7 children (a 5 percent increase). Interestingly, non-persistent 1860 slave wealth has no effect on fertility after the war, but a five-fold increase in slave wealth (one standard deviation) is associated with 0.25

of an extra child during the war. This pattern is consistent with Wanamaker (2014), which documents a direct trade-off between slave children and own fertility.

Table 12 considers the robustness to a series of empirical decisions, focusing on the effect of 1860 wealth on fathers' wealth in 1870 (as in Table 4). We adopted a logarithmic specification to address the skewness of the initial wealth distribution, yet this specification is sensitive to the treatment of men with zero wealth. Results are similar if we instead use an inverse hyperbolic sine transformation, which has similar properties to the log function but is defined at zero (column 1), or if we drop men who had zero wealth or who were in the top 1 percent of the wealth distribution (column 2). Column 3 refines the imputed value of slave wealth for households with available data on the age-gender composition of slaveholdings, replacing the average slave value at the county level with slave values in the household. Again, results are similar.

Conclusion

Still needs to be written

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TABLE 1: WEALTH DISTRIBUTIONS BY REGION BEFORE AND AFTER THE CIVIL WAR

%ile	South		North	
	1860	1870	1860	1870
50 th	\$25,888	9,911	20,580	18,700
75 th	102,900	36,540	73,500	67,320
90 th	365,883	97,240	174,930	164,560
<i>90/50</i>	<i>14.1</i>	<i>9.8</i>	<i>8.5</i>	<i>8.8</i>

Notes: Calculations for white male household heads in the 1% IPUMS samples. Reported in \$2014.

TABLE 2: CHARACTERISTICS OF HOUSEHOLD HEADS IN OUR SAMPLE, 1860-70

	North	South
Real estate wealth 1860	\$80,016 (213,472)	\$91,213 (348,418)
Non-slave wealth 1860	\$34,037 (234,620)	\$73,805 (323,942)
=1 if landholder	0.697 (0.459)	0.692 (0.462)
=1 if non-slave wealth	0.891 (0.312)	0.808 (0.394)
Real estate wealth 1870	\$91,983 (211,158)	\$50,669 (143,128)
Personal wealth 1870	\$60,792 (501,072)	\$21,482 (107,274)
Age [of head]	41.44 (9.72)	40.92 (10.01)
=1 if slaveholder		0.260 (0.438)
Slave wealth 1860		\$43,435 (214,901)
Number of slaves		2.47 (9.67)
Slave wealth 1860 (>0)		\$167,353 (396,512)
Number slaves (>0)		9.50 (17.12)
<i>N(total)/N(slaveholders)</i>	5,097	4,422/2,487

Notes: Means with standard deviation in parentheses. Dollar values reported in \$2014. Southern sample weighted to reflect the distribution of slaveholders in the population. Slave wealth imputed from number of slaves multiplied by average slave value at the county level. Non-slave wealth is reported personal wealth in the North and reported personal wealth minus imputed slave wealth in the South.

**TABLE 3: CHARACTERISTICS OF SOUTHERN SONS IN OUR SAMPLE,
1880 AND 1900**

	1880	1900
Occupation-based income	\$10,323 (9,481)	\$16,553 (8,357)
In agricultural occupation	0.638 (0.481)	0.655 (0.475)
In birth county	0.274 (0.446)	0.192 (0.394)
Household head	0.582 (0.493)	0.915 (0.279)
Literate	0.983 (0.128)	0.884 (0.320)
<i>N(total)/N(with occ)</i>	<i>4,442/4,158</i>	<i>2,333/2,258</i>

Notes: Means with standard deviation in parentheses. Dollar values reported in \$2014. Sample weighted to reflect the distribution of sons of slaveholders in the population. Men are classified as literate if they answer "no" to the question "cannot read/write" in 1880 or if they answer "yes" to the question "can read/write" in 1900.

Table 4: EFFECT OF 1860 WEALTH COMPONENTS ON 1870 WEALTH IN SOUTH

<i>Sample:</i>	ln(wealth70)			%-ile rank
	Full sample	Landholder	Slaveholder	Full sample
ln(real estate 1860) (<i>or %-ile</i>)	0.247*** (0.062)	0.279*** (0.066)	0.188*** (0.063)	0.257*** (0.040)
<i>Effect of \$10,000</i>	<i>\$1,954</i>	<i>\$2,207</i>	<i>\$1,487</i>	
ln(slave 1860) (<i>or %-ile</i>)	-0.020 (0.049)	-0.037 (0.051)	0.027 (0.047)	0.024 (0.050)
<i>Effect of \$10,000</i>	<i>-\$332</i>	<i>-\$615</i>	<i>\$449</i>	
ln(non-slave 1860) (<i>or %-ile</i>)	0.138*** (0.045)	0.123** (0.054)	0.098* (0.059)	0.195*** (0.040)
<i>Effect of \$10,000</i>	<i>\$1,349</i>	<i>\$1,202</i>	<i>\$958</i>	
<i>N</i>	<i>4,422</i>	<i>3,436</i>	<i>2,487</i>	<i>4,422</i>

Notes: Coefficients from estimates of equation 2. In columns 1-3, the dependent variable is ln(wealth 1870) and the main right-hand side variables are ln(wealth components in 1860). Column 4 instead uses percentile ranks of 1870 wealth and 1860 wealth components. Regressions also include dummy variables for having any land wealth, slave wealth or non-slave personal wealth in 1860, a quadratic in the age of the household head, and state fixed effects. Column 2 (3) contains only households with some real estate wealth in 1860 (some slave wealth in 1860). We also report the implied effect of a \$10,000 increase in each wealth component in 1860 relative to the mean.

TABLE 5: WEALTH PERSISTENCE IN THE CIVIL WAR SOUTH, RELATIVE TO BENCHMARKS

A) COMPARE SOUTH: BEFORE AND AFTER THE CIVIL WAR

<i>Sample:</i>	1860-70 Dep. var. = ln(wealth70)			1850-60 Dep. Var. = ln(wealth60)		
	Full	Land	Slaves	Full	Land	Slaves
	ln(real estate, $t-10$)	0.384*** (0.062)	0.414*** (0.063)	0.275*** (0.064)	0.503*** (0.083)	0.537*** (0.088)
ln(slave, $t-10$)	-0.034 (0.054)	-0.020 (0.058)	0.051 (0.052)	0.131 (0.105)	0.202** (0.091)	0.251** (0.104)
<i>N</i>	3,535	2,823	2,079	1,627	990	539

B) COMPARE REGIONS: SOUTH AND NORTH DURING WAR DECADE

<i>Sample:</i>	South Dep. var. = ln(wealth70)			North Dep. var. = ln(wealth70)		
	Full	Land	Personal	Full	Land	Personal
	ln(real estate 60)	0.218*** (0.063)	0.251*** (0.069)	0.207*** (0.063)	0.202*** (0.063)	0.172** (0.068)
ln(personal wealth 60)	0.151*** (0.044)	0.129** (0.053)	0.152*** (0.045)	0.315*** (0.050)	0.373*** (0.059)	0.300*** (0.051)
<i>N</i>	4,422	3,436	4,245	5,097	3,555	4,540

Notes: Coefficients from estimates of equation 2. Regressions also include dummy variables for having any land wealth, slave wealth or non-slave personal wealth, a quadratic in the age of the household head, and state fixed effects. Columns 1 and 4 contain the full sample; columns 2 and 5 only include households with some real estate wealth in the base period; and columns 3 and 6 only include households with some slave wealth in the base period. Panel A includes men in the matched sample who are unique by first and last name within a five year age band, while Panel B includes men in the full matched sample.

TABLE 6: EFFECT OF 1860 WEALTH COMPONENTS AND CHANGES IN LAND VALUES (1860-70) ON FATHERS AND SONS

	ln(wealth 1870)		ln(income 1880)		ln(income 1900)	
	Actual	Predicted	Actual	Predicted	Actual	Predicted
ln(real estate 60)	0.307*** (0.068)	0.281*** (0.075)	0.051** (0.023)	0.066*** (0.024)	0.022 (0.017)	0.028 (0.020)
ln(slave 60)	0.032 (0.058)	0.041 (0.061)	0.003 (0.018)	0.002 (0.019)	0.008 (0.015)	0.012 (0.017)
ln(non-slave 60)	0.137** (0.053)	0.229*** (0.056)	0.020 (0.019)	0.010 (0.019)	0.006 (0.014)	0.011 (0.018)
ln(real 60) · Δ land value	0.266** (0.107)	0.305* (0.160)	0.061* (0.037)	0.104** (0.051)	-0.007 (0.024)	0.017 (0.039)
ln(slave 60) · Δ land value	0.172** (0.086)	0.075 (0.117)	-0.032 (0.029)	-0.037 (0.036)	-0.027 (0.023)	-0.018 (0.031)
ln(non-sl 60) · Δ land value	-0.141* (0.083)	0.108 (0.116)	-0.005 (0.030)	-0.016 (0.041)	0.023 (0.019)	0.043 (0.034)
Δ land value, 1860-70	0.209 (0.334)	1.733*** (0.556)	0.079 (0.109)	-0.196 (0.183)	-0.010 (0.065)	-0.058 (0.127)
<i>N</i>	4,234	4,199	3,934	3,902	2,161	2,258

Notes: Coefficients from estimates of equation 3. Regressions also include dummy variables for having any land wealth, slave wealth or non-slave personal wealth in 1860, a quadratic in the age of the household head (and in the age of the son in columns 3-6), and state fixed effects. Columns 1, 3 and 5 interact components of 1860 wealth with actual changes in land values at the county level from 1860 to 1870, while columns 2, 4 and 6 interact components of 1860 wealth with predicted changes in land values. The regression from which these predictions are generated is reported in Appendix Table 2.

TABLE 7: EFFECT OF 1860 WEALTH COMPONENTS ON SONS' OCCUPATION-BASED INCOME, 1880 AND 1900

a. YEAR 1880

	ln(income 1880)			%-ile rank
	Full sample	Landholder	Slaveholder	Full sample
ln(real estate 1860) <i>(or %-ile)</i>	0.049** (0.020)	0.050** (0.022)	0.071*** (0.023)	0.103*** (0.037)
ln(slave 1860) <i>(or %-ile)</i>	0.009 (0.017)	0.007 (0.018)	-0.009 (0.017)	0.055 (0.049)
ln(non-slave 1860) <i>(or %-ile)</i>	0.014 (0.016)	0.011 (0.019)	0.037* (0.020)	0.017 (0.039)
<i>N</i>	4,110	3,186	2,312	4,110

b. YEAR 1900

	Ln(income00)			%-ile rank
	Full sample	Landholder	Slaveholder	Full sample
ln(real estate 1860) <i>(or %-ile)</i>	0.025* (0.014)	0.025 (0.015)	0.040** (0.017)	0.133*** (0.051)
ln(slave 1860) <i>(or %-ile)</i>	0.017 (0.013)	0.018 (0.015)	0.012 (0.015)	0.054 (0.065)
ln(non-slave 1860) <i>(or %-ile)</i>	-0.001 (0.011)	0.002 (0.013)	-0.004 (0.016)	-0.022 (0.054)
<i>N</i>	2,258	1,783	1,334	2,175

Notes: Coefficients from estimates of equation 2. In columns 1-3, the dependent variable is ln(occupation-based income) and the main right-hand side variables are ln(wealth components in 1860). Column 4 instead uses percentile ranks of occupation-based income and 1860 wealth components. Regressions also include dummy variables for having any land wealth, slave wealth or non-slave personal wealth in 1860, a quadratic in the ages of the household head and the son in 1860, and state fixed effects. Column 2 (3) contains only households with some real estate wealth in 1860 (some slave wealth in 1860).

TABLE 8: IMPLIED ELASTICITY OF SONS' INCOME WITH RESPECT TO FATHERS' WEALTH

Predicting ln(father wealth in 1870) using...	1880	1900
1. 1860 wealth only (Table 4)	0.151*** (0.031)	0.044** (0.021)
2. Interact with land values (Table 6, col 1)	0.144*** (0.028)	0.038* (0.020)
3. Interact with predicted values (Table 6, col 2)	0.121*** (0.026)	0.043** (0.020)

Notes: Coefficients from estimates of equation 4, regressing the logarithm of sons' occupation-based income on the logarithm of fathers' predicted wealth in 1870. We predict fathers' wealth using asset allocation in 1860 (row 1) or interactions between 1860 wealth components and land values (rows 2 and 3). Regressions also include a quadratic for the ages of fathers and sons in 1860 and state fixed effects.

TABLE 9: MECHANISMS RELATING FATHERS' WEALTH TO SONS' ADULT OUTCOMES

a. YEAR 1880

	In ag ln(inc)	Not in ag ln(inc)	Agri. occup.	In birth county	HH head	Literate
ln(pred wealth70)	0.121*** (0.033)	0.106*** (0.018)	-0.028** (0.013)	0.068*** (0.012)	-0.046*** (0.011)	0.013*** (0.004)
<i>N</i>	2,641	1,293	4,234	4,234	4,234	4,234

b. YEAR 1900

	In ag ln(inc)	Not in ag ln(inc)	Agri. occup.	In birth county	HH head	Literate
ln(pred wealth70)	0.008 (0.026)	0.091*** (0.030)	-0.009 (0.018)	0.046*** (0.016)	-0.022** (0.011)	0.036*** (0.013)
<i>N</i>	1,408	767	2,245	2,245	2,245	2,245

Notes: Coefficients from versions of equation 4, regressing sons' adult outcomes on fathers' predicted wealth in 1870. Columns 1 and 2 split the sample into sons in agricultural and non-agricultural occupations and re-estimate the effect of fathers' wealth on sons' occupation-based income. The dependent variables in columns 3-6 are indicators for being in an agricultural occupation, living in one's birth county, being a household head and being literate. Regressions also include a quadratic for the ages of fathers and sons in 1860 and state fixed effects.

TABLE 10: THE EFFECT OF 1860 WEALTH COMPONENTS ON SONS' INCOME, BY SONS' AGE IN 1860

	1880	1900
ln(real estate 1860) x Age 0-4	0.045** (0.022)	0.023 (0.016)
ln(real estate 1860) x Age 5-9	0.047** (0.022)	0.024 (0.015)
ln(real estate 1860) x Age 10-14	0.059*** (0.021)	0.027* (0.014)
ln(real estate 1860) x Age 15-17	0.042* (0.022)	0.025 (0.015)
ln(slave wealth 1860) x Age 0-4	0.015 (0.018)	0.014 (0.014)
ln(slave wealth 1860) x Age 5-9	0.017 (0.018)	0.019 (0.014)
ln(slave wealth 1860) x Age 10-14	0.007 (0.017)	0.018 (0.013)
ln(slave wealth 1860) x Age 15-17	0.006 (0.018)	0.013 (0.013)
<i>N</i>	4,110	2,258

Notes: Dependent variables are the logarithm of sons' occupation-based income in 1880 or 1900. Regressions also include fathers' ln(non-slave personal wealth) interacted with sons' age group; indicator variables for sons' age group in 1860; dummy variables for father having any land wealth, slave wealth or non-slave personal wealth in 1860, a quadratic in the age of the father, and state fixed effects.

**TABLE 11: THE EFFECT OF 1860 WEALTH COMPONENTS ON FERTILITY
DURING AND AFTER THE CIVIL WAR**

	Number children, Born 1866-1870	Number children, Born 1861-1865
ln(real estate 1860)	0.045** (0.018)	-0.014 (0.017)
ln(slave 1860)	0.014 (0.015)	0.046** (0.018)
ln(non-slave 1860)	0.005 (0.013)	0.017 (0.013)

Notes: $N = 4,383$. Regressions include dummy variables for having any land wealth, slave wealth or non-slave personal wealth in 1860, a quadratic in the age of the household head, state fixed effects, and a control for the number of children in the household born between 1845-1860 (from the 1860 Census).

TABLE 12: ASSESSING ROBUSTNESS OF EFFECT OF 1860 WEALTH COMPONENTS ON 1870 HOUSEHOLD WEALTH

	Inverse hyperbolic sine	ln(wealth 1870) Drop no wealth or top 1%	ln(wealth 1870) Use slave age- sex at HH level
Real estate 1860	0.284*** (0.086)	0.259*** (0.061)	0.246*** (0.061)
Slave 1860	-0.049 (0.068)	-0.027 (0.049)	-0.015 (0.044)
Non-slave 1860	0.154** (0.064)	0.139*** (0.047)	0.139*** (0.045)
<i>N</i>	4,422	4,237	4,422

Notes: Coefficients from estimates of equation 2. In column 1, the dependent variable is the inverse hyperbolic sine of wealth 1870. In columns 2-3 the dependent variable is ln(wealth 1870). All regressions include dummy variables for having any land wealth, slave wealth or non-slave personal wealth in 1860, a quadratic in the age of the household head, and state fixed effects.

APPENDIX TABLE 1: COMPARING MATCHED SAMPLE TO POPULATION IN 1860

	Population mean	Difference: Match - population
Age	41.01	-0.514 (0.323)
Children in household	1.813	0.129*** (0.033)
=1 if farmer	0.608	0.055*** (0.016)
=1 if urban	0.111	-0.044*** (0.010)
=1 if wealth zero or missing	0.088	-0.017* (0.009)
Personal Wealth	2663.30	143.53 (302.11)
Ln(personal wealth+1)	5.674	0.238*** (0.082)
Ln(personal wealth + 1) if personal wealth>0	6.315	0.078 (0.058)
Real Estate Wealth	2131.44	19.092 (271.17)
Ln(Real Estate Wealth + 1)	4.282	0.417*** (0.121)
Ln(Real Estate Wealth + 1) if real estate wealth>0	7.161	-0.007 (0.055)
N		5,578

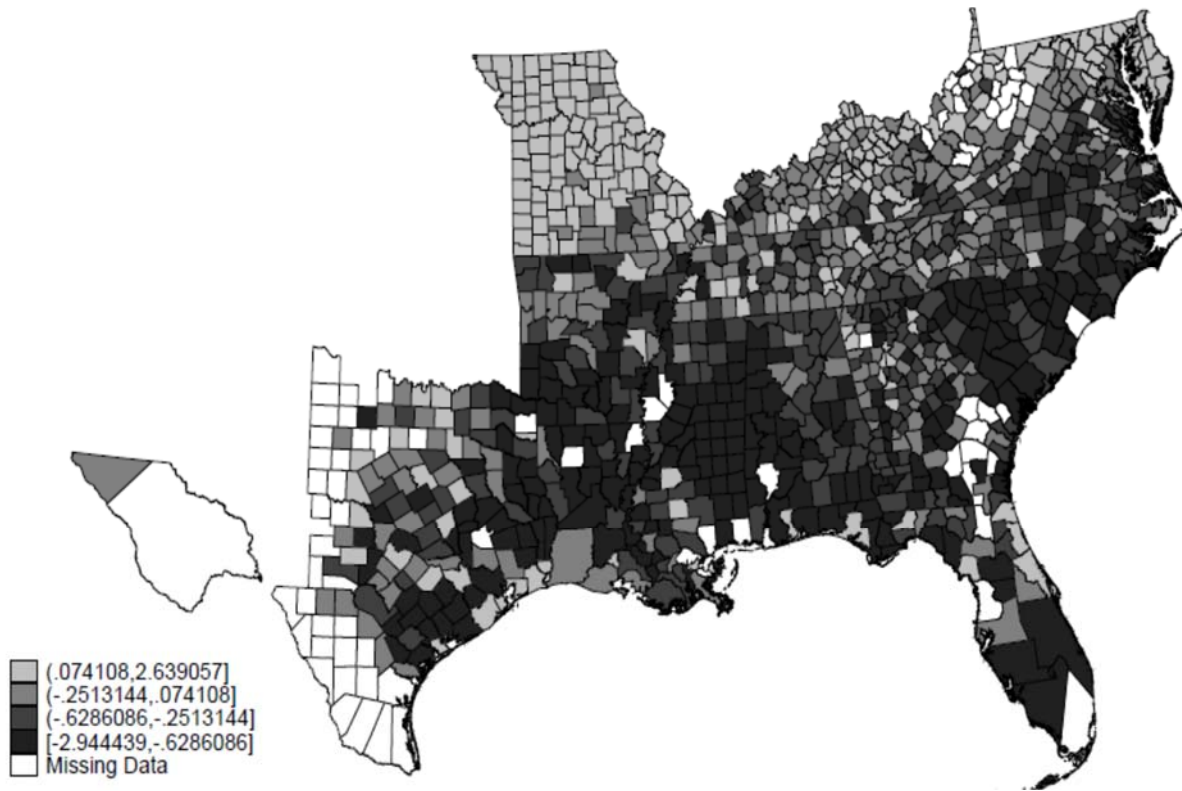
Notes: Analysis includes male household heads living in the South with at least one son aged 3-15. Observations are drawn from the 1860 IPUMS sample. Column 2 contains coefficients from regressions of each 1860 characteristic on a dummy variable equal to one if the household head can be matched to 1870 and at least one of son matches to 1880.

APPENDIX TABLE 2: PREDICTING CHANGES IN LAND VALUES AT THE COUNTY LEVEL, 1860-70

Dependent variable = Change in land values, 1860-70	
	(1)
Share cotton, 1860	-1.550*** (0.517)
Share tobacco, 1860	-0.012*** (0.003)
Latitude	0.101*** (0.016)
Longitude	0.038*** (0.009)
ln(Mean farm size 1860)	0.193*** (0.040)
Share slaves 1860	-0.394*** (0.114)
Share urban 1860	0.571*** (0.146)
=1 if Water Transport	0.002 (0.034)
=1 if Railway	0.071** (0.033)
Observations	1,038
R-squared	0.459

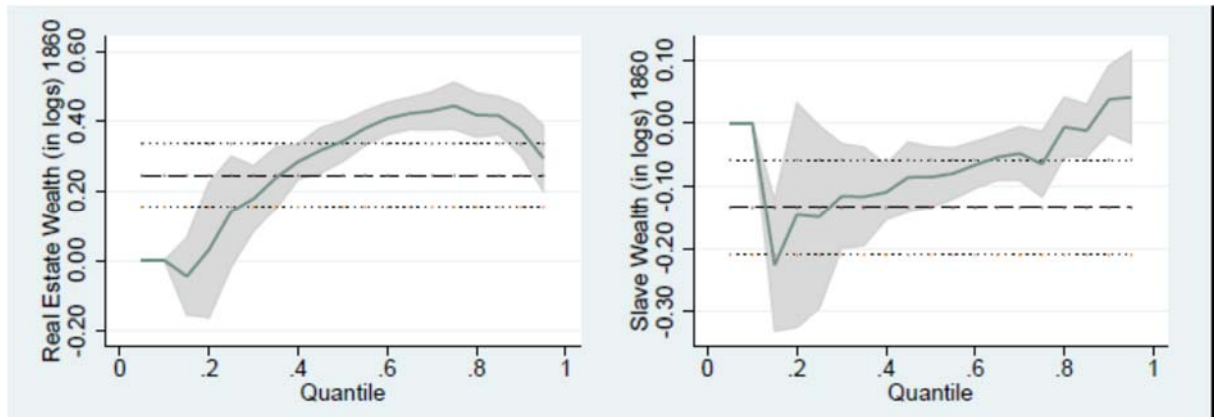
Notes: Regressions contain state fixed effects.

FIGURE 1: CHANGE IN VALUE OF FARM LAND AND BUILDINGS PER ACRE, US SOUTH 1860-70

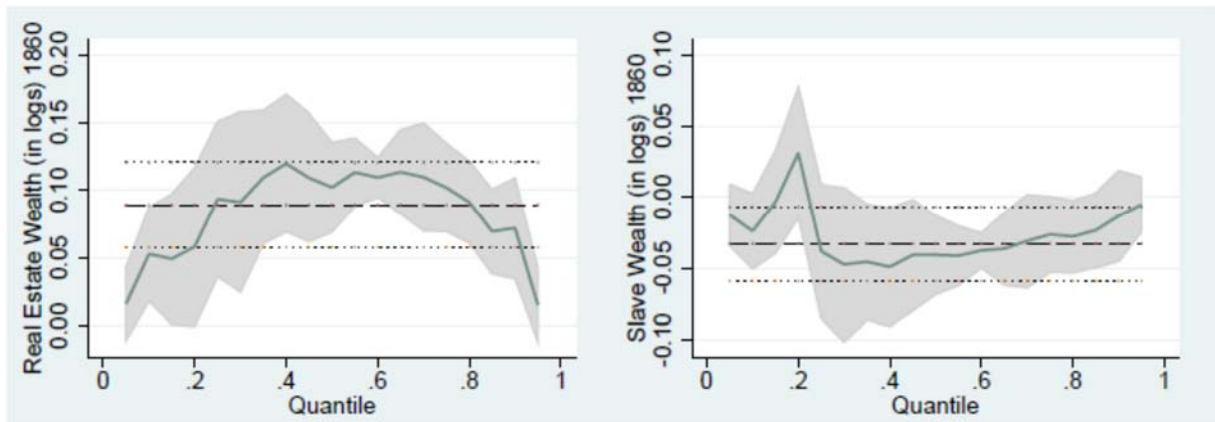


**FIGURE 2: QUANTILE REGRESSIONS,
EFFECT OF WEALTH COMPONENTS IN 1860 ON HOUSEHOLD WEALTH
(1870) AND OCCUPATION-BASED INCOME (1880)**

A. LN(HOUSEHOLD WEALTH 1870)



B. LN(OCCUPATION-BASED INCOME 1880)



Notes: Coefficients from quantile regressions of equation 2. Regressions also include $\ln(\text{non-slave personal wealth in 1860})$, dummy variables for having any land wealth, slave wealth or non-slave personal wealth in 1860 and a quadratic in the age of the household head (and son in panel B). Note that regressions do not include state fixed effects.