

Betting on Secession:
Quantifying Political Events Surrounding
Slavery and the Civil War

By CHARLES W. CALOMIRIS AND JONATHAN PRITCHETT

Online Appendix

I. Lincoln's election and slave prices

Many southerners worried that Lincoln's election would lower slave prices and the financial wealth of the South. For the editors of the *Charleston Mercury*, Lincoln's election was equivalent "to a submission of the Southern States, to the rule of Abolitionism at Washington." Beginning with the Frontier States, "slaveholders will despair... and force their slaves on the markets of the Cotton States, the timid in the Cotton States, will also sell their slaves. The consequence must be, slave property must be greatly depreciated. We see advertisements for the sale of slaves in some of the Cotton States, for the simple object of getting rid of them; and we know that standing orders for the purchase of slaves in this market have been withdrawn, on account of an anticipated decline of value from the political condition of the country" (October 11, 1860).

Interregional traders were very concerned about Lincoln's candidacy and its possible effect on the market for slaves. Beginning in September 1860, the Richmond auctioneers of Betts and Gregory advised their clients to sell their slaves immediately, saying that although prices were currently high, "[t]he Chances are they will be lower." Should their clients wish to purchase slaves, "we would advise you [to] not buy nothing but good negroes and buy them at prices to sell immediately." This market uncertainty was directly linked to the fall election. According to Betts and Gregory, "The Presidents [sic] election is having a considerable effect on the market[.] how it will go no man can tell."

Things got progressively worse for traders with Lincoln's election in November. Dickinson and Hill advised their clients that the "financial crisis still rages and is not likely to abate for some months. We have no hope for any political change which will give peace and confidence in commercial matters." Such pessimism was pervasive across the South. In February 1861, Memphis slave trader G.W. Chrisp wrote that the current political crisis "will have a very bad afflict [sic] on the negro

market [...] what we are coming two the lord onely noes [sic][...] We think our state might to be in Hell" [underlining and spelling are from the original document]. The same month, slave trader A. J. Rux reported falling prices and fewer sales in Mobile. Traders were "Selling some in Orleans but a long ways under cost. . . . I am in hopes times will get better before long but I don't much think there will be any market this winter to do any good."

II. Representativeness of the working sample

Our original dataset consists of all slave sales recorded in the New Orleans Conveyance Office between the dates October 1, 1856 and August 31, 1861. As previously discussed, not all observations could be used for our regression analysis (a summary of the dropped observations is presented in Table 2). Here we consider the effect of removing almost 30 percent of the observations on the representativeness of the working sample. For the kept and dropped samples, a histogram for age is presented in Figure A1. For both samples, relatively more slaves, aged 15 to 29 years, were sold in New Orleans than slaves in other age groups. Because children were often sold in groups (without individual prices), relatively more children are dropped than kept in the sample. In addition, slightly more males than females were dropped from the working sample. (Males were sometimes shipped as members of work gangs and they sold for a single price.) The proportion of males in the kept sample is 46.7 percent and the corresponding figure for the dropped sample is 50.3 percent. Most importantly, as seen in Figure A2, the relative number of dropped observations does not appear to vary systematically over time. These results suggest that the sample construction process did not systematically delete observations from our working sample.

[Insert Figure A1 Here]

[Insert Figure A2 Here]

III. Credit Sales

For credit sales, the recorded prices may be inflated because they include the opportunity cost of the borrowed funds. In this paper, we adjust prices so that they accurately reflect the time-varying and time-invariant characteristics of the slave and the transaction. We considered alternative means of adjusting for credit sales, and here report the consequences of alternative adjustments.

A. Predicting an implicit interest rate for credit loans without recorded rates

In his empirical study of the New Orleans slave market, Laurence Kotlikoff (1979) accounts for credit sales by including a covariate for the maximum number of months of credit extended to the buyer in his regression specification. Kotlikoff (1979, p. 504) argues that “the coefficient on months of credit may be interpreted as an implicit monthly interest rate, since it is the percentage contribution to the sale price of a month’s credit.” Kotlikoff’s specification is appropriate for a simple loan with no down payment and no intermediate payments until the loan matures. Let N represent the number of months of credit, X is the cash price, Y is the credit price, and r is the interest rate. Then $X(1+r)^N = Y$ or $N \cdot \ln(1+r) = \ln(Y/N)$ or $rN \approx \ln Y/N$. In words, the percentage increase in the sale price is a direct function of the maturity of the loan and the estimated regression coefficient for the number of months of credit (N) approximates the interest rate.

Unfortunately, installment loans or loans with down payments are not additively separable and are not easily incorporated into a regression specification. Instead of using Kotlikoff’s procedure, therefore, we calculate the present value of the loan payments and use this estimate in lieu of a cash price. Because we allow for complex loans, we believe that our procedure represents an improvement over

Kotlikoff's methodology. Consider, for example, Françoise, who was sold for \$750, with an initial down payment of \$250 and ten promissory notes of \$50, five payable in 6 months and five payable in twelve months after the sale date (Conveyance Office, volume 71, page 609). No interest rate is recorded on the invoice. If the seller charged an annual rate of 8 percent for the loan (which corresponds to a monthly rate of 0.006434), then the present value of the loan would equal $250 + \frac{250}{1.006434^6} + \frac{250}{1.006434^{12}} = 722.04$. Using our methodology, we substitute the present value of the loan payments for the credit price recorded on the sales invoice.

One drawback with this methodology is that in some cases the interest rate is not reported. Here we predict these unknown rates using credit information from sales with recorded interest rates. Three-fourths of the slaves in our sample sold for cash and the rest were sold on credit. For the 2,464 credit sales in our sample, 1,672 (or 67 percent) report an interest rate. For those credit sales with recorded interest rates, 75 percent charged an 8 percent annual interest rate and 24 percent charged an annual rate of 6 percent. We use these interest rates to calculate the cash price equivalent for the 792 credit prices without recorded interest rates.

Using regression analysis, we explore the possibility that interest rates varied systematically with the risk and the term structure of the loan. Our sample includes all credit sales with recorded rates and the dependent variable is the annual interest rate. The independent variables include a dummy variable indicating whether the buyer made a down payment and the maximum length of the loan in months. The regression results are presented in Table A1. Approximately 50 percent of the buyers made a down payment on their purchases and sellers charged them slightly lower interest rates (approximately 40 basis points). In addition, we find that sellers charged higher interest rates for longer loans. The average length of the loan was slightly less than thirteen months. A one year increase in the length of the loan

increased the interest rate by approximately 23 basis points. Finally, taking into account the presence of a down payment and the maximum length of the loan accounts for slightly more than 10 percent of the variation in interest rates. From Table A1, we predict the interest rates for loans without recorded rates. We then calculate the present values of these loans and substitute them for the sales price recorded on the invoice.

[Insert Table A1 Here]

The choice of discount rates has little quantitative significance for our empirical work. Most slaves were sold for cash rather than credit and for those slaves sold on credit, 70 percent of the loans matured in one year or less. Credit sales without recorded interest rates (our primary reason for writing this section) represent only 8 percent of our working sample. The average price of these slaves (as recorded on the invoice) is \$1,098.30. If we substitute the present value of the payment stream for the recorded price, discounted at 8 percent, the mean price is \$1,052.74. If we use a 6 percent discount rate to calculate the present value of the payment stream, the mean price equals \$1062.97. Consequently, using the lower discount rate increases the present value of the payment stream by less than 1 percent. Because most sales were for cash and because most credit sales represent short-term loans, the list price should closely approximate the cash price.

IV. Including Cotton Prices When Constructing a Slave Price Counterfactual

Measuring the effect of political events requires the construction of a credible counterfactual measure of slave prices – that is, what slave prices would have been absent the political events – by properly taking into account other, non-political influences and their effects on slave prices. In regression (2) of Table 3, we include the consol price in our counterfactual (that is, we abstract from changes in interest

rates when measuring the effects of political events on slave prices). We also considered including other variables in regression (2) of Table 3. As noted in the literature, the most important observable factor that may have influenced the expected cash flows from slave labor is the price of cotton. The link between cotton and slave prices has been a central theme of the empirical literature on slavery from its inception. As Phillips (1918) noted, cotton cultivation was among the most profitable uses of slaves: “The cotton belt and the sugar bowl accordingly made a market to attract labor by offering prices higher than rice or tobacco earnings would warrant. The younger staples thus, on different schedule of buoyancy, were the main factor determining slave prices in every corner of the South. Cotton by reason of its immense area and volume of production, reduced even sugar to a secondary role” (p. 176). As Phillips recognized, “The slaves themselves were ‘securities’ – investments made with a view to future income. . . . The price of a slave was affected by the price of cotton for the same reason that copper shares are influenced by the current price of copper metal.” (p. 179).

Gray (1933) – who referenced Phillips’ work – also commented on the connections between slave and cotton prices: “Slave prices were strongly influenced by the rise and fall in cotton prices. In the earlier years of the nineteenth century there was a belief that slaves should rise \$100 for each increase of 1 cent in price of cotton above cost of production.” (p. 664).

Nevertheless, the connection between cotton prices and slave prices is not straightforward. As Phillips and Gray both recognized, the relationship between the long-term trends of slave prices and cotton prices seems to have changed in the 1850s. Phillips noted that: “After five years of western bankruptcy a new climb was begun, roughly parallel to the cotton curve until 1857, when cotton went down but slaves continued upward. In this concluding decade there was again a notable spread between the two pairs of markets.” (p. 178) Gray noted that the diverging trends of cotton and slave prices produced big changes in their ratios over time: “In

this last speculative movement [of the late 1850s], as Phillips has shown, the prices of slaves advanced much higher in relation to the prices of cotton than in earlier periods of peak prices. Thus, in terms of cents of cotton to hundreds of dollars in average slave prices in New Orleans, the ratio was nearly 4 to 1 in 1805, a little over 1 to 1 in 1819, 1 to 1 in 1837, but only about 0.6 to 1 in 1860.” (p. 667)

Phillips saw the divergence between cotton and slave prices as an indication of unsustainable speculation, but there are other interpretations of that divergence. As Fogel and Engerman (1974) put it: “To [Phillips] the ratio of cotton to slave prices was as crucial in evaluating the wisdom of an investment in slaves as the price-to-earnings ratio was for evaluating the wisdom of an investment in corporate stocks.... The data assembled by Phillips showed that the ratio of slave to cotton prices rose by over six fold between 1805 and 1860. A change of this magnitude clearly indicated to Phillips that, by the last decade of the antebellum era, slaves were overvalued – that is, priced too high to permit an investor to earn a normal rate of profit....The rise, Phillips concluded was primarily the consequence of speculation. The supply of slaves had been ‘cornered’ as a consequence of the closing of the slave trade. Hence ‘it was unavoidable that the price should be bid up to the point of overvaluation.’” (pp. 61ff).

Contrary to Phillips, Fogel and Engerman (1974, pp. 91-93) argued that the rising ratio of slave prices to cotton prices reflected a legitimate market perception of increased productivity in cotton cultivation rather than a speculative price bubble. “Among the developments which made cotton farming increasingly more efficient were the improvements in the varieties of cotton seeds, the introduction of the cotton gin, the reduction in transportation and other marketing costs, and the relocation of cotton production in the more fertile land of the New South.” Like Fogel and Engerman, Gray concluded that the effect on revenues of the production expansion had more than offset its effects on cotton prices: “In the last five years of the period cotton sold at prices that were highly remunerative, especially

considering the fact that the average annual product of the five years was much larger than it had ever been before. In the Cotton Belt, therefore, as in other parts of the South, the Civil War brought to a close a period of exceptional prosperity.” (p. 700).

The *changing* relationship between cotton and slave prices – something about which all of these researchers agree – raises potential problems for any attempt to include cotton prices in a counterfactual estimation of the links between political events and slave prices. It is important to recognize that there is no theoretical presumption that the relationship between the cotton and slave prices should be positive or that it should be constant over time. If cotton price variation were driven entirely by transitory shocks to supply and demand (that is, shocks viewed as transitory by slave market participants) then there should be no observed relationship between slave and cotton prices. If the *persistent shocks* affecting the price of cotton (that is, those that slave market participants expected to persist) were exclusively *demand-side* shocks, then the relationship between cotton and slave prices should be positive. If the persistent shocks were exclusively supply-side shocks, then the relationship between cotton prices and slave prices could be either positive or negative, depending on the elasticities of supply and demand in the cotton market (which would determine the relationship between supply shocks and revenue changes). Obviously, the mix between persistent supply and demand shocks can change over time, implying variation over time in the co-variation of cotton and slave prices.

Olmstead and Rhode (2008) estimate productivity of cotton picking and find an upward trend over time, and Surdam (2001) provides evidence of low-frequency influences from both supply and demand and the cotton market. Olmstead and Rhode (2008) show that new breeds of cotton seeds were associated with these improvements in productivity. Ideally, if high-frequency data were available on the quantity of cotton, such data could be combined with high-frequency cotton price

data to estimate a supply and demand model for cotton. Unfortunately, such high-frequency data are not available.

To arrive at a better understanding of the relationship between cotton and slave prices, we first perform a simple analysis of the co-variation of the percentage change in cotton prices with the annual percentage change in the quantity of cotton produced. Figure A3 illustrates a striking fact: the correlation between the quantity and price of cotton is positive (0.319) from 1815 to 1850, but is negative (-0.217) from 1851 to 1861. From this admittedly simple analysis, it appears that demand shocks dominated the cotton market prior to 1850, but that supply shocks (related to changes in productivity) dominated the market after 1850.

[Insert Figure A3 Here]

In light of the previous discussion, we estimate a counterfactual model including slave prices which includes covariates for the price of cotton and the price of the British consol. (The consol is a long-term asset, and its price variation is likely to be largely but not entirely exogenous to political news coming from the United States.) The results for this model are presented in Table A2.¹ The estimated regression coefficient for the logarithm of cotton prices is negative, suggesting that persistent supply-side shocks dominated the cotton market during this time period. Because higher consol prices imply lower discount rates, we predict a positive correlation between log of slave prices and the log of consol prices. The estimated regression coefficient is positive although it is not statistically different from zero.

¹ Our results are robust to a variety of alternative specifications, which we explored in earlier drafts of this paper. Those included other variables, such as railroad stock price indexes, which we constructed using Smith and Cole (1935). The problem with including these indexes is that, as Calomiris and Schweikart (1991) show, railroad stocks were themselves affected by political news having to do with the future of slavery. Thus, including them likely would bias our construction of a slave price index intended to capture political news. We also included the New York commercial paper rate in some specifications. It did not display a large or statistically significant effect on slave prices. None of these alternative specifications affected the conclusions we draw from the results we report below.

[Insert Table A2 Here]

The qualitative results derived from the counterfactual model that includes cotton prices are quite similar to those presented in Table 3 in the main text. As in regression (2) of Table 3, in Table A2, the regression includes indicator variables to capture changes in the prices for slave sales made two months prior and two months following each political event. The differences in the regression coefficients for these indicator variables on either side of the political event being considered estimates the impact of each of these political events. Table A3 summarizes the statistical tests associated with these indicator variables.

We find that slave prices increased by 10.1 log points, or 11 percent, following the announcement of the Dred Scott decision. Slave prices fell by approximately 3 percent during the Banking Panic of 1857 whereas Lincoln's nomination had little effect on prices. Lincoln's election had a large, negative effect on slave prices, which decreased by 16.2 log points during the fall of 1860. Although prices seem to stabilize immediately prior to the onset of war, prices fell sharply during the early stages of the War. Of course, none of these approaches is perfect as a means of removing the influence of demand and supply shocks in the cotton market on slave prices. If some years – 1860, in particular – saw a mix of both persistent supply and demand shocks (which is consistent with the view of Wright 1978), then a counterfactual model that imposes a stable relationship between cotton prices and slave prices would understate the effect of the cotton market on slave price increases in 1860. This possible counterfactual misspecification could lead one to overstate the extent of the decline in slave prices from their 1860 peak.

[Insert Figure A4 Here]

[Insert Figure A5 Here]

[Insert Figure A6 Here]

[Insert Figure A7 Here]

[Insert Figure A8 Here]

[Insert Figure A9 Here]

V. War and the Prices of Financial Assets

In addition to the prices of slaves, the threat of war could have lowered the prices of financial assets. To test this hypothesis we construct an equally weighted index of equity prices for four railroads operating in the New Orleans area. These railroads include the Carrollton, Pontchartrain, Opelousas, and Jackson railroads as reported in the *New Orleans Price Current*. As seen in Figure A10, the temporal pattern of the railroad price index is similar to that of the hedonic slave price index with a few notable exceptions. In particular, the decrease in railroad prices following the banking panic of 1857 was much more severe than the decrease in slave prices. We find that local railroad prices fell by 26 percentage points between October and December 1857 whereas slave prices fell by approximately 6 percent. Similar to slave prices, railroad prices increased during the years 1858 and 1859, reaching a peak in summer 1860. Unfortunately, after November 1860, the *New Orleans Price Current* did not publish stock prices on a regular basis. From sporadic price quotes, we infer that railroad prices decreased sharply (by approximately 20 percent) between November 1860 and March 1861. Overall, for the period Oct. 1856 – Nov. 1860, the correlation between the New Orleans railroad index and the hedonic slave price index is 0.46. These similar price movements suggests that the threat of war affected the prices of railroads and the prices of slaves in a similar fashion.

[Insert Figure A10 Here]

We suspect that the decreases in slave prices and railroad prices were symptomatic of a general decrease in the prices of financial assets. We also recognize, however, that the threat of war may have affected investor confidence in a variety of different ways. Railroad investors, for example, may have worried that war would lower the volume of trade and the demand for transport services. In addition, railroad investors may have worried that opposing armies would capture or destroy the railroad tracks and rolling stock. Slaveholders had a different set of worries. Wartime disruptions would have made it easier for slaves to escape. Slaveholders worried about market disruptions caused by embargos or blockades, and as previously discussed, the possibility of uncompensated emancipation. Consequently, the threat of war may have had very different quantitative effects on the prices of financial assets.

VI. Emancipation Schemes and the Relative Prices of Slaves

Expectations of emancipation may have affected the relative prices of slaves. The effect, however, is potentially complex and depends on the details of the emancipation scheme. In general, changing expectations of immediate uncompensated emancipation will have little to no effect on relative prices whereas changing expectations of uncompensated emancipation at a future date will effect relative prices. Consider the following proposed schemes and their predicted effects on relative prices.

A. Immediate Uncompensated Emancipation

Presumably, an immediate uncompensated emancipation would result in a zero price for all former slaves. A slaveholder would lose any legal claim to the slave's earnings as well as any legal obligation to maintain the slave. If buyers thought

that the probability of immediate uncompensated emancipation is δ , then the expected price for the slave would equal:

$$(4) \quad E(P) = \delta \cdot 0 + (1 - \delta) \cdot P^s,$$

where P^s is the present value of the slave's net earnings. Under such circumstances, expectations of immediate uncompensated emancipation would have lowered the prices of all slaves by $(1-\delta)$ and the relative prices of slaves would not have been affected.

To the extent that emancipation without compensation was perceived as a possibility during our sample period, it would not have been perceived as an immediate possibility. If the South remained within the United States, prior to secession it had enough support in Congress and the Senate to prevent any emancipation bill from passing. Nor was uncompensated emancipation proposed by President Lincoln; indeed, Lincoln assured southerners that he was willing to agree to a Constitutional Amendment to preserve slavery in the existing South. Concerns about emancipation without compensation, therefore, are best thought of as a prospective concern about a long-term future action, either as a consequence of war or, in the absence of secession, some long-term change in Northern societal sensibilities along with a reduced ability of the South to block it. After all, slavery had been abolished by all countries in the world by the 1880s.

Although in retrospect emancipation without compensation occurred soon after the Civil War began – first, as the result of the Emancipation Proclamation of 1863, and later through the adoption of the Thirteenth Amendment to the U.S. Constitution in 1865 – as of early 1861, such an action would have been hard to imagine. In the absence of the Civil War, it would have been unconstitutional for the government to have taken away the property of slaveholders without compensating them. Clearly, then, to the extent that emancipation without

compensation was a reasonable possibility to imagine in 1860 and 1861, it was not an immediate prospect. The Civil War, however, made the possibility of emancipation without compensation – or with very low compensation – an imaginable, if unprecedented, possibility.

B. Annual Risk of Uncompensated Emancipation

Now, consider the effect of an increase in the *annual* probability of uncompensated emancipation. Such an increase would affect relative prices. Ignoring the mortality adjustment (Fogel and Engerman 1974, p. 59), the price of the male slave can be expressed as the present value of a finite annuity:

$$(5) \quad P_1 = \sum_{i=1}^N \frac{R_i}{(1+r)^i} = \frac{R}{r} \left[1 - \frac{1}{(1+r)^N} \right]$$

where R is the rental rate (VMP – maintenance), r is the discount rate, and N is the length of the slave's working life. Now, let δ represent the annual probability of emancipation. Adjusting for this probability, the price of the male slave is expressed by the following equation:

$$(6) \quad P_2 = \sum_{i=1}^N \frac{R_i (1-\delta)^i}{(1+r)^i} = \frac{R(1-\delta)}{r+\delta} \left[1 - \frac{(1-\delta)^N}{(1+r)^N} \right]$$

The price of the slave relative to his previous price can be expressed as follow:

$$(7) \quad \frac{P_2}{P_1} = \frac{r(1-\delta)}{r+\delta} \frac{(1+r)^N - (1-\delta)^N}{(1+r)^N - 1}.$$

Fogel and Engerman (1974, p. 70) estimate the rate of return to slavery was approximately 10 percent ($r=0.1$). For a slave with a ten year working life, a 5 percent annual probability of emancipation ($\delta=0.05$) would decrease the expected value of the slave's earnings by approximately 20 percent. For a slave with a twenty

year working life, a 5 percent annual probability of emancipation would decrease the expected value of the slave's earnings by approximately 30 percent. Consequently, an increase in the annual probability of emancipation would decrease the price of a younger slave (with a longer expected working life) relative to the price of an older slave (with a shorter expected working life).

C. Gradual Emancipation

Northern states chose emancipation schemes which minimized the cost to taxpayers and slaveholders. Consequently, most of the cost of emancipation was borne by the slave himself (Fogel and Engerman 1974). The northern emancipation schemes were based on "free born" or "free womb" laws – At the time of passage, no living slaves were to be freed. Only slaves who were yet to be born would be emancipated, and only after serving a period of "apprenticeship" or servitude. Freeborn males were to be emancipated in their mid to late twenties and freeborn females at slightly younger ages.² Because no living slaves were to be freed, the passage of this act would have no effect on the prices of males. The prices of (some) female slaves would be affected, however. Fogel and Engerman estimate that a female's child-bearing capacity accounted for approximately 10 percent of her market price. Any additional children she might bear during her lifetime would (eventually) be freed and as a consequence, the value of this capacity would be lost to the owner. Consequently, a gradual emancipation proposal similar to those adopted in northern states would have lowered the prices of females relative to those of males.

² Delayed emancipation could result in the abandonment of children whose earnings were less than their costs of maintenance. Potentially, these abandoned children would become wards of the state, resulting in an expense for the taxpayer. The slave's labor during the period of apprenticeship provided slaveholder compensation for the slave's maintenance costs while young. Indeed, Fogel and Engerman (1992, p. 595) calculate that the "breakeven" age for rearing the slave was 26 years. Because most slaves were not released from bondage until they reached this age, most slaveholders were fully compensated for the freeborn slaves.

D. Emancipation in the British West Indies

The British emancipation scheme relied on a combination of taxpayer payments and gradual emancipation (borne by slaves) to compensate slaveholders. Actual selling prices for slaves were used as the basis of the appraisal. Fogel and Engerman (1992, p. 599) calculate that slaveholders received cash payments for their slaves equal to 49 percent of the slaves' market values. As originally proposed, slaves were required to serve a six year apprenticeship to their owners whereas children aged less than six years were freed immediately. During their apprenticeship, slaves were limited to supplying a maximum of 48 hours of labor each week to their former owners. Due to the threat of slave rebellions, the apprenticeship program was voluntarily terminated by slaveholders in 1838, prior to the proposed termination date (Fogel and Engerman 1992, p. 600).

The British emancipation scheme had ambiguous effects on the relative prices of slaves. To the extent that slaveholder received cash compensation for their slaves in direct proportion to their market values, the relative prices would not have been affected. The apprenticeship program, however, would have affected relative prices. Because children, aged six year or less, were immediately emancipated, their prices would have fallen to zero. As discussed previously, the delayed emancipation of slaves would have lowered the price of prime-aged slaves relative to older slaves. In addition, the prices of women of childbearing age would have fallen relative to those of males.

E. Other Emancipation Schemes

In November 1861, nearly a year after secession and several months after the Civil War had begun, Lincoln proposed a gradual emancipation scheme for the state of Delaware, reasoning that this state, with its relatively small enslaved population, would make a good test case for his ideas. His original plan was a bit unusual,

however. Lincoln proposed the immediate emancipation of all slaves older than 35 years. Younger slaves would be freed once they reached the age of 35 years. In compensation, slaveholders would receive \$500 per slave (Winkle 2013, p. 251). Had this proposal been enacted, some slaveholders would have received more than the market value of their slaves (because their market values were less than \$500). Obviously, this scheme would have affected the relative prices of slaves. The market value of slaves aged more than 35 years would be set at \$500 (and then freed). For younger slaves, the market price would equal the discounted present value of a shortened earnings stream and the discounted value of the \$500 payment once they reached the age of 35 years.

F. The District of Columbia Compensation Act

The District of Columbia Compensation Act was signed by President Lincoln on April 16, 1862. A full year after the Civil War had begun, this law provided for an average payment of \$300 to slaveholders for each slave emancipated within the District. Kenneth Winkle (2013, p. 270) calculates the congressional appropriation equaled only one-third of the market value of the slaves residing in the district. To assess the slave's market value, the commissioners hired a well-known slave trader, B. M. Campbell. According to Campbell, slaves "cannot be said to have had a current salable value since the commencement of the war." Instead, the Commission "adopted the plan of first classifying the slaves according to their value before the commencement of the war, when sales were frequent, and then reducing these classifications to the average compensation allowed by law" (US House of Representatives, p. 3). Because the prices of all slaves were reduced in the same proportion, this emancipation scheme would not have affected the relative price of slaves.

REFERENCES

- Calomiris, Charles W., and Larry Schweikart.** 1991. "The Panic of 1857: Origins, Transmission, and Containment." *Journal of Economic History*, 52(4): 807-34.
- Fogel, Robert W., and Stanley L. Engerman.** 1974. *Time on the Cross: The Economics of American Negro Slavery*. Boston: Little Brown.
- Fogel, Robert W., and Stanley L. Engerman.** 1974. "Philanthropy at Bargain Prices: Notes on the Economics of Gradual Emancipation," *Journal of Legal Studies* 3(2): 377-401.
- Goldin, Claudia.** 1973. "The Economics of Emancipation." *Journal of Economic History*, 33(1): 66-85.
- Gray, Lewis C.** 1933. *History of Agriculture in the Southern United States to 1860*. Washington: Carnegie Institution.
- Kotlikoff, Laurence.** 1979. "The Structure of Slave Prices in New Orleans, 1804 to 1862." *Economic Inquiry*, 17(4): 496-517.
- Kotlikoff, Laurence.** 1992. "Quantitative Description of the New Orleans Slave Market, 1804 to 1862," In *Without Consent or Contract: Markets and Production, Technical Papers*, 1, edited by Robert W. Fogel and Stanley L. Engerman, 31-53. New York: W. W. Norton.
- Louisiana.** 1806. *Acts*, 1st Leg., New Orleans.
- Louisiana.** 1827. *Acts*, 1st Leg., New Orleans: John Gibson, State Printer.
- Olmstead, Alan L., and Paul W. Rhode.** 2008. "Biological Innovation and Productivity Growth in the Antebellum Cotton Economy." *Journal of Economic History*, 68(4): 1123-1171.
- Phillips, Ulrich B.** 1918. *American Negro Slavery*. New York: D. Appleton.
- Pritchett, Jonathan and Mallorie Smith.** 2013. "Sequential Sales as a Test of Adverse Selection in the Market for Slaves." *Journal of Economic History*, 73(2):

479-499.

Smith, Walter, and Arthur Cole. 1935. *Fluctuations in American Business*.
Cambridge, MA: Harvard University Press.

Surdam, David G. 2001. *Northern Naval Superiority and the Economics of the
American Civil War*. Columbia: University of South Carolina Press.

US House of Representatives. 1864. "Emancipation in the District of Columbia."
38th Congress, 1st Session House Ex. Document. 42. Washington DC: GPO.

Winkle, Kenneth J. 2013. *Lincoln's Citadel: The Civil War in Washington, DC*.
New York: W.W. Norton.

Wright, Gavin. 1978. *The Political Economy of the Cotton South: Households,
Markets, and Wealth in the Nineteenth Century*. New York: Norton.

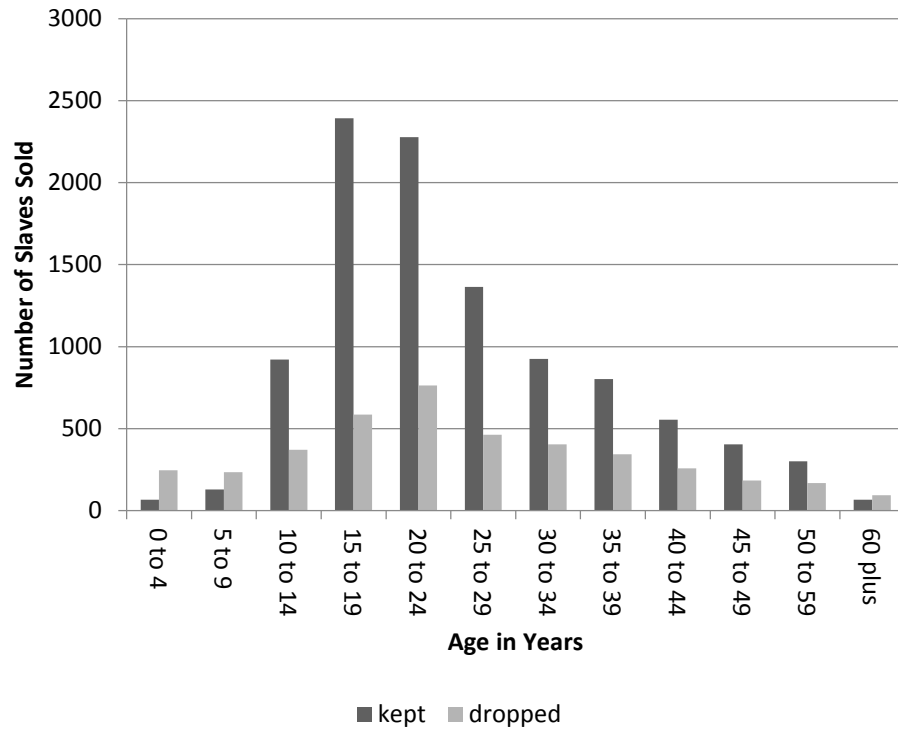


FIGURE A1. AGE DISTRIBUTIONS FOR KEPT AND DROPPED OBSERVATIONS FROM THE SAMPLE

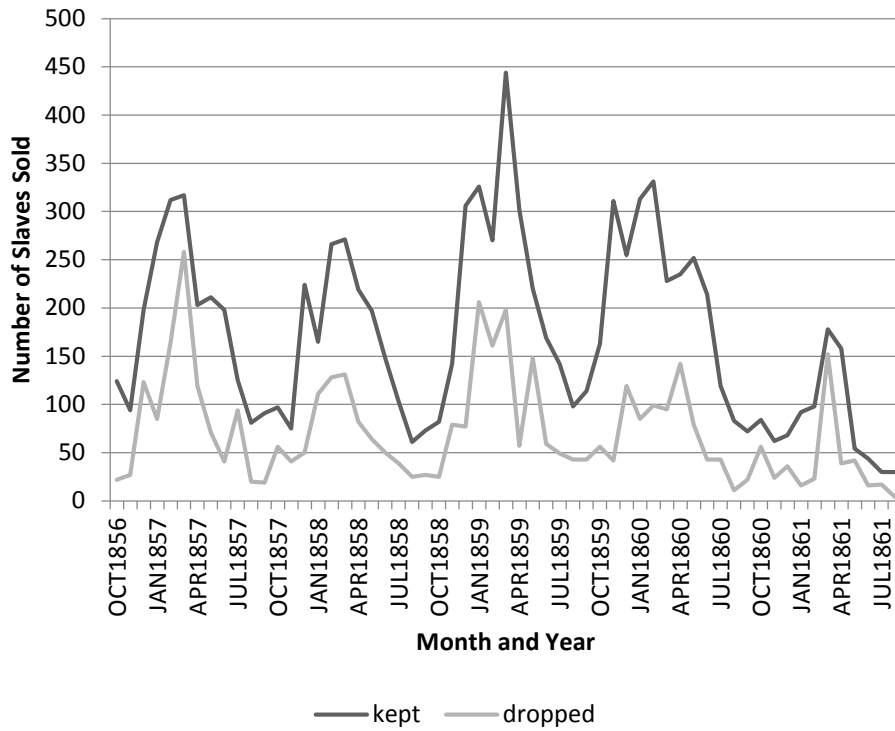


FIGURE A2. TEMPORAL VARIATION IN KEPT AND DROPPED OBSERVATIONS FROM THE SAMPLE.

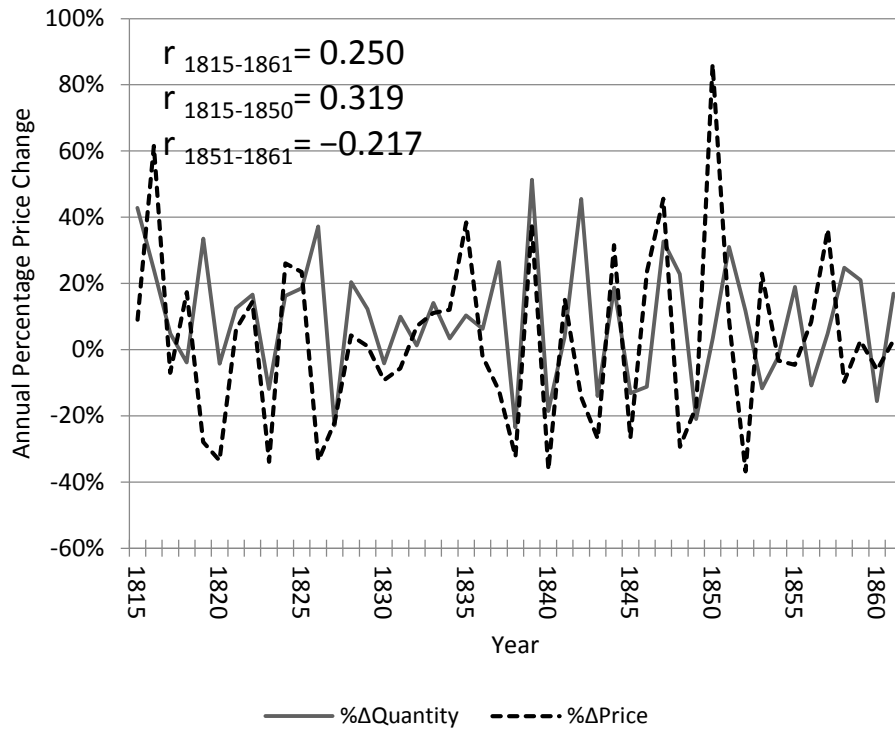


FIGURE A3. ANNUAL COTTON PRICES AND PRODUCTION

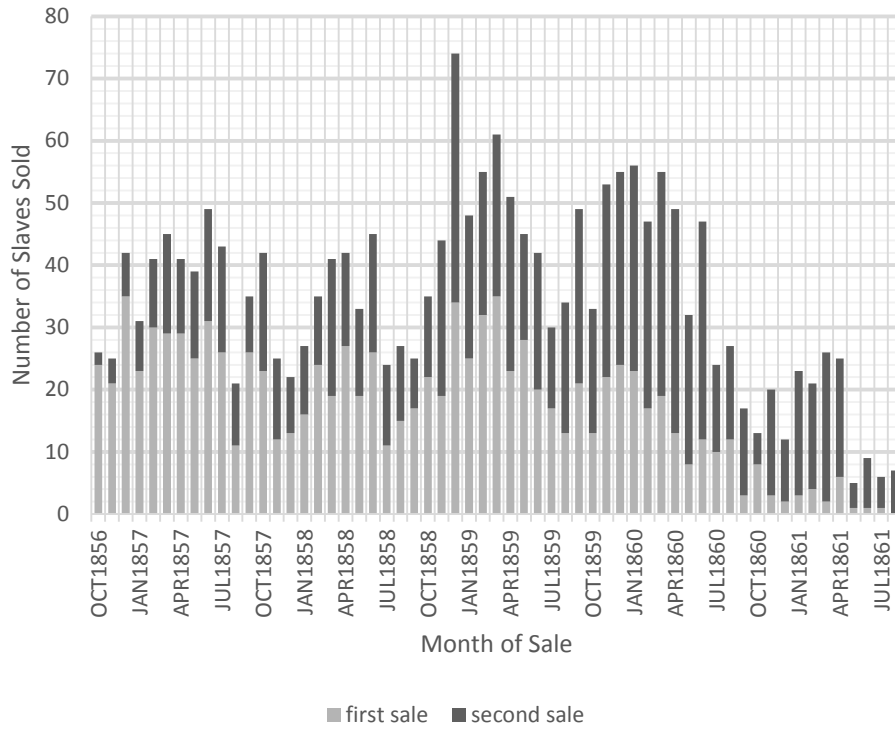


FIGURE A4. FREQUENCY DISTRIBUTION OF MATCHED SALES RECORDS

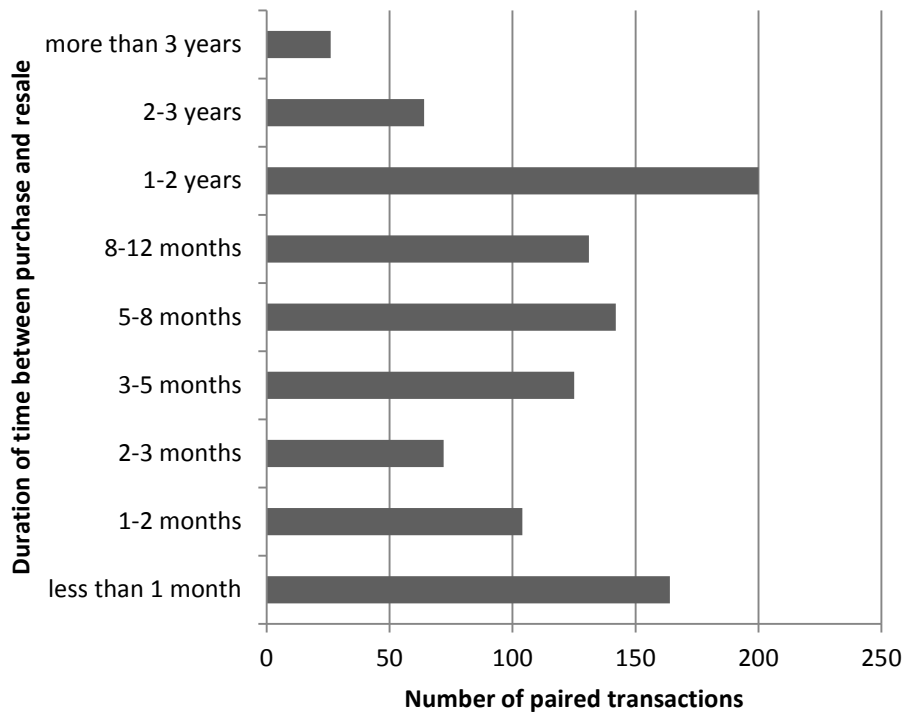


FIGURE A5. DURATION BETWEEN INITIAL PURCHASE AND SUBSEQUENT RESALE, MATCHED SALES RECORDS.

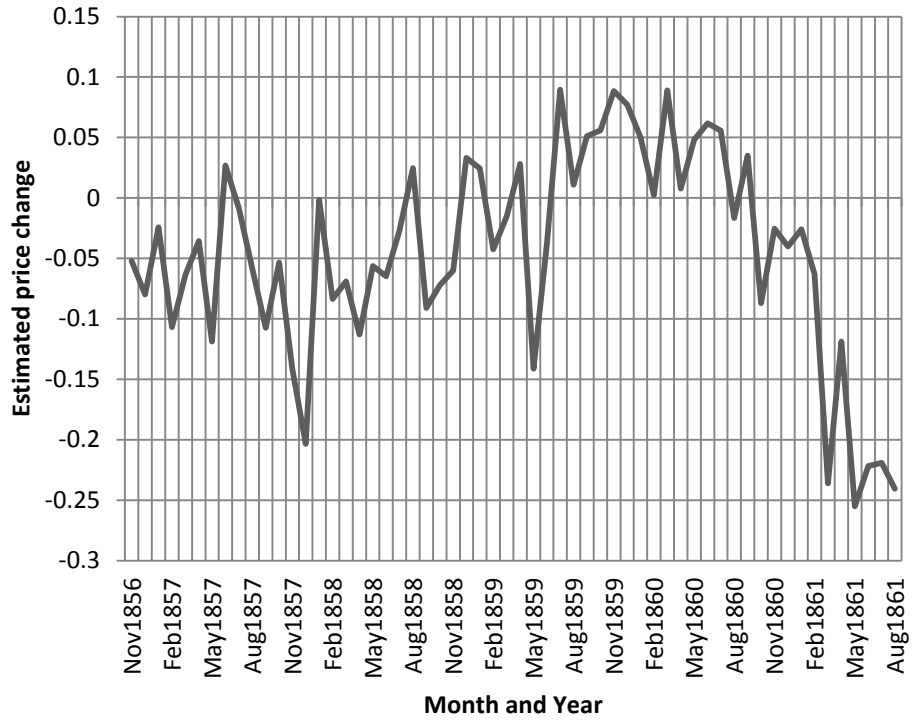


FIGURE A6. REPEAT SALES PRICE INDEX, OCTOBER 1856 -- AUGUST 1861.

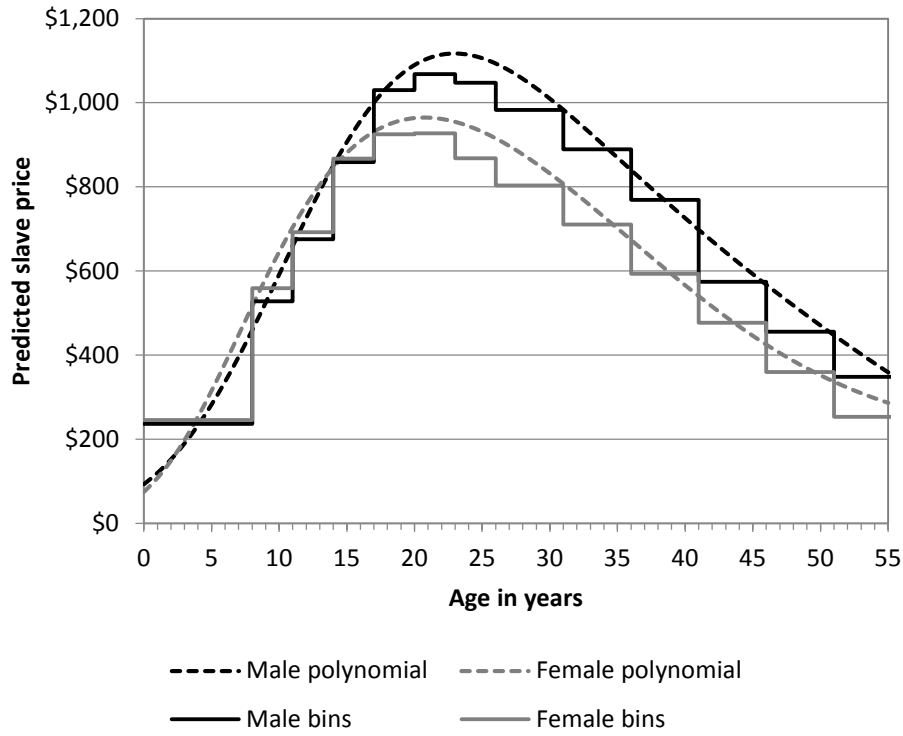


FIGURE A7 -- AGE/PRICE PROFILE, ESTIMATED WITH POLYNOMIAL (TABLE 3, REGRESSION 1), AND A STEP FUNCTION (UNREPORTED REGRESSION).

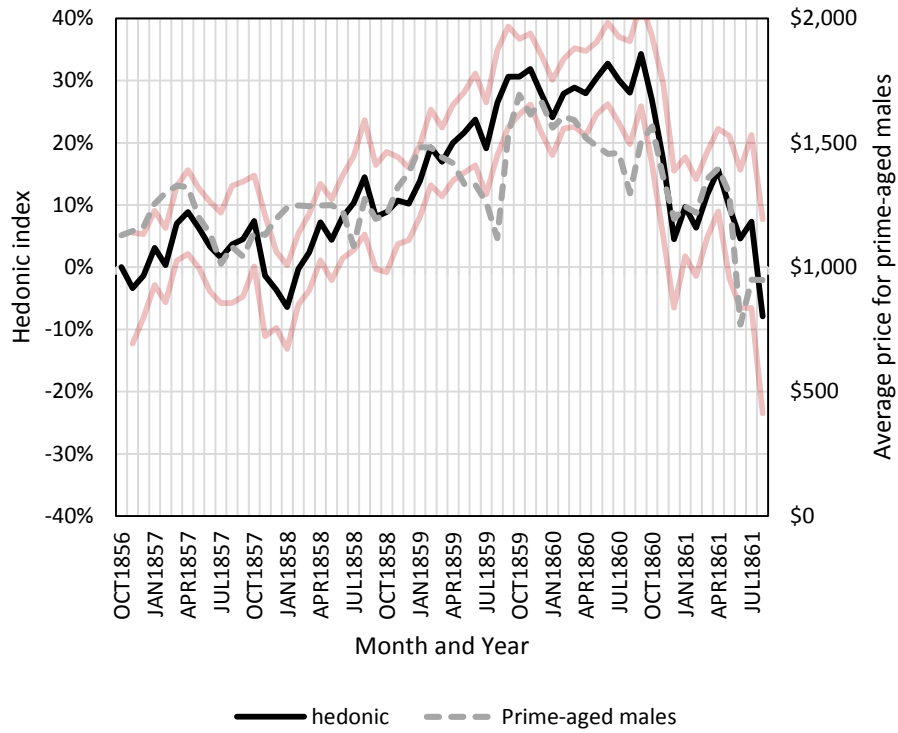


FIGURE A8. HEDONIC PRICE INDEX W/ CONFIDENCE INTERVAL

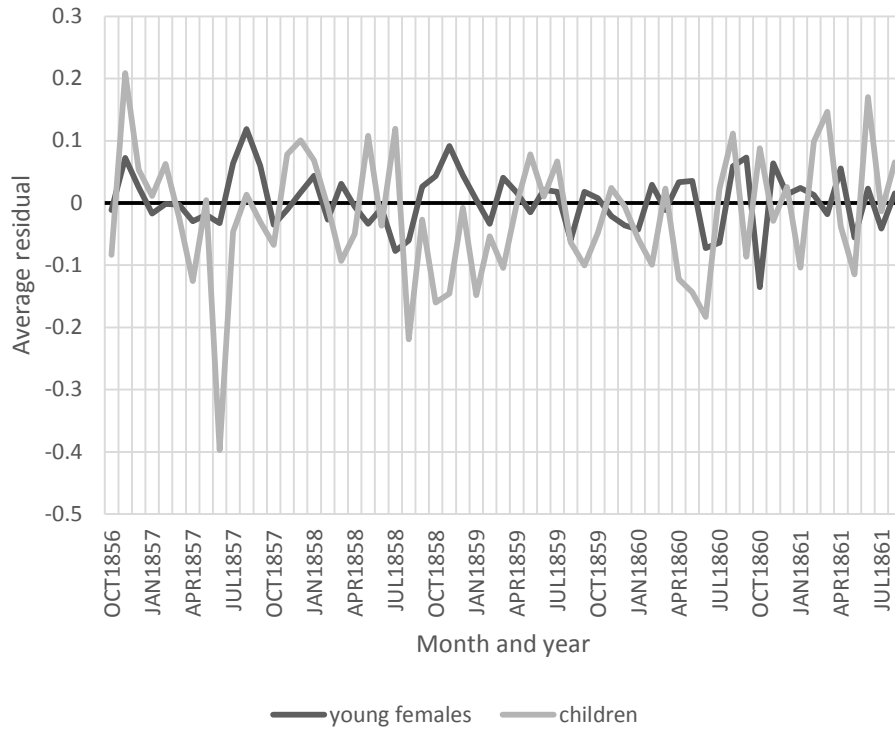


FIGURE A9. PLOT OF MONTHLY MEAN OF RESIDUALS FOR REGRESSION 1, TABLE 3.

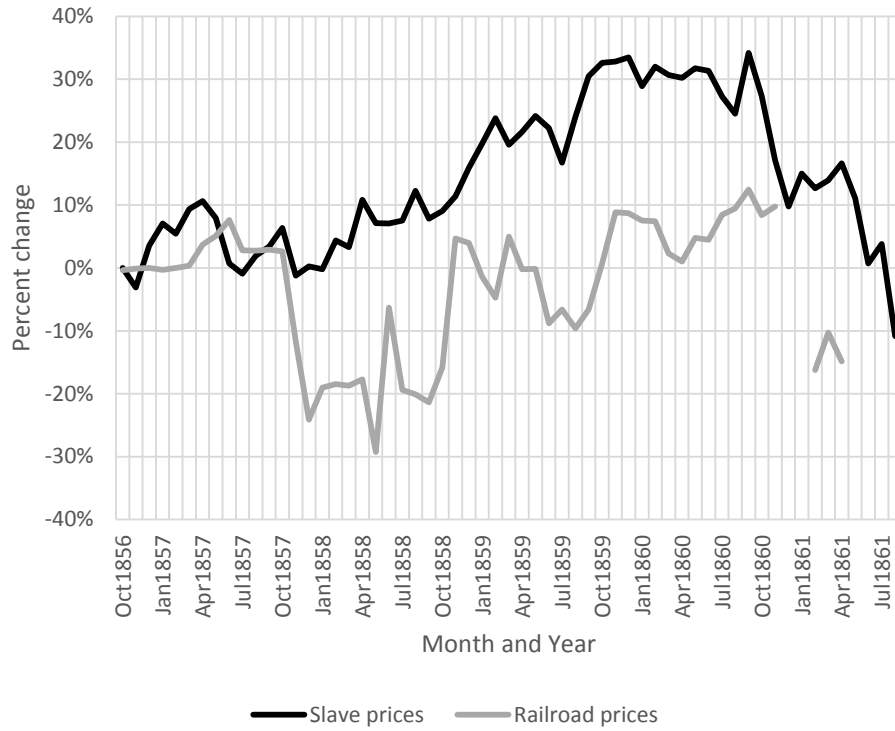


FIGURE A10. HEDONIC SLAVE PRICE INDEX AND NEW ORLEANS RAILROAD INDEX

TABLE A1—OLS REGRESSION RESULTS: RECORDED INTEREST RATES FOR CREDIT SALES

Covariate	Regression Coefficient	Mean & Std. Dev.
Dependent variable: annual interest rate		0.0752 (0.0086)
Intercept	0.0748*** (0.0005)	1
Down payment (1=yes, 0=no)	-0.0042*** (0.0004)	0.4919 (0.5001)
Maximum number of months for loan	0.0002*** (0.0000)	12.9378 (7.7425)
partial R ²	0.106	
number of observations	1672	

Source: New Orleans Conveyance records.

Note: The sample includes credit sales with recorded interest rates.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

TABLE A2 – OLS REGRESSION RESULTS: NEW ORLEANS CONVEYANCE OFFICE SLAVE SALE RECORDS,

OCTOBER 1856 TO AUGUST 1861

Covariate	Estimated coefficient	Standard error	Mean	Standard deviation
Dependent variable: Logarithm of slave's price			6.865	0.503
Logarithm of monthly cotton price	-0.346*	0.190	2.444	0.085
Logarithm of British consol price	1.549*	0.845	4.549	0.022
Jan. 1, 1857 – Feb. 28, 1857 (1=yes, 0=no)	-0.090***	0.016	0.057	0.232
Mar. 7, 1857 – May 6, 1857 (1=yes, 0=no)	0.010	0.027	0.048	0.213
Oct. 1, 1857 – Nov. 30, 1857 (1=yes, 0=no)	-0.020	0.053	0.017	0.129
Feb. 23, 1860 – Apr. 22, 1860 (1=yes, 0=no)	0.117***	0.025	0.046	0.210
Jun. 25, 1860 – Aug. 24, 1860 (1=yes, 0=no)	0.121***	0.030	0.020	0.141
Nov. 7, 1860 – Jan. 6, 1861 (1=yes, 0=no)	-0.041	0.052	0.014	0.116
Apr. 12, 1861 – Jun. 11, 1861 (1=yes, 0=no)	0.016	0.033	0.016	0.126
Jul. 21, 1861 – Aug. 31, 1861 (1=yes, 0=no)	-0.160***	0.056	0.004	0.063
Sold during Summer 1858 (1=yes, 0=no)	-0.089***	0.033	0.031	0.172
Sold during Fall 1858 (1=yes, 0=no)	-0.100***	0.033	0.029	0.168
Male (1=yes, 0=no)	0.348**	0.144	0.467	0.499
Light-colored female (1=yes, 0=no)	0.033***	0.011	0.148	0.355
Light-colored male (1=yes, 0=no)	0.003	0.011	0.090	0.287
Male sold with guarantee (1=yes, 0=no)	0.166***	0.049	0.446	0.497
Female sold with guarantee (1=yes, 0=no)	0.308***	0.048	0.510	0.500
Number of children, ages 1-2, sold with mother	0.045***	0.016	0.057	0.245
Number of children, ages 3-5, sold with mother	0.184***	0.016	0.038	0.204
Number of children, ages 6-9, sold with mother	0.361***	0.017	0.039	0.217
Sold on Credit (1=yes, 0=no)	0.041***	0.011	0.242	0.428
Credit sale with 8% interest (1=yes, 0=no)	0.033***	0.012	0.124	0.329
Skilled worker (1=yes, 0=no)	0.235	0.184	0.002	0.045
Female with household occupation (1=yes, 0=no)	0.240*	0.141	0.001	0.028
Male with household occupation (1=yes, 0=no)	0.331*	0.173	0.000	0.017
No recorded occupation (1=yes, 0=no)	0.020	0.105	0.997	0.058
Seller is small slave trader (1=yes, 0=no)	0.069***	0.014	0.110	0.313
Seller is large slave trader (1=yes, 0=no)	0.162***	0.011	0.254	0.435
Sold with family member (1=yes, 0=no)	0.010	0.022	0.104	0.305
Buyer from New Orleans (1=yes, 0=no)	-0.032**	0.013	0.659	0.474
Sold at estate sale (1=yes, 0=no)	-0.020	0.036	0.029	0.168
Emancipation (1=yes, 0=no)	-0.153**	0.061	0.008	0.091
Self-purchase (1=yes, 0=no)	-0.377**	0.145	0.002	0.046
Sold in group of 2 to 5 slaves (1=yes, 0=no)	0.068***	0.013	0.227	0.419
Sold in group of 6+ slaves (1=yes, 0=no)	0.016	0.014	0.138	0.345
Age in years	0.392***	0.036	25.483	10.852
Age ² · 10 ⁻²	-2.445***	0.377	7.672	6.762
Age ³ · 10 ⁻³	0.829***	0.194	26.681	37.174

Covariate	Estimated coefficient	Standard error	Mean	Standard deviation
Age ⁴ · 10 ⁻⁴	-0.166***	0.051	104.573	206.746
Age ⁵ · 10 ⁻⁵	0.018***	0.007	450.685	1199.825
Age ⁶ · 10 ⁻⁶	-0.001**	0.000	2093.655	7298.957
Male · Age	-0.116***	0.043	11.643	14.190
Male · Age ² · 10 ⁻²	1.437***	0.473	3.369	5.577
Male · Age ³ · 10 ⁻³	-0.717***	0.246	11.222	26.362
Male · Age ⁴ · 10 ⁻⁴	0.176***	0.065	42.450	138.596
Male · Age ⁵ · 10 ⁻⁵	-0.021**	0.008	178.765	785.972
Male · Age ⁶ · 10 ⁻⁶	0.001**	0.000	820.825	4738.155
Covariates indicating month and year of sale	No			
Intercept	-2.151	4.086	1	
Number of observations	10209		10209	
F-statistic	1836.060			
R ²	0.608			
Root MSE	0.316			

Source: New Orleans Conveyance Office.

Note: Data are seasonally adjusted. The dependent variable is the natural logarithm of the slave's price. The omitted variable refers to an unguaranteed dark-colored female, sold singly for cash to an out-of-town buyer. Standard errors are clustered by month of sale.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

TABLE A3 – PRICE TRENDS, 1856 – 1861

Event	Time Period	Difference in Regression Coefficients
Dred Scott	Mar. 7, 1857 to May 6, 1857 – Jan. 1, 1857 to Feb. 28, 1857	0.101***
Banking Panic	Oct. 1, 1857 to Nov. 30, 1857 – Mar. 7, 1857 to May 6, 1857	-0.030
Lincoln's Nomination	Jun. 25, 1860 to Aug. 24, 1860 – Feb. 23, 1860 to Apr. 22, 1860	0.004
Lincoln's Election	Nov. 7, 1860 to Jan. 6, 1861 – Jun. 25, 1860 to Aug. 24, 1860	-0.162***
Fort Sumter	Apr. 12, 1861 to Jun. 11, 1861 – Nov. 7, 1860 to Jan. 6, 1861	0.057
First Bull Run or Manassas	Jul. 21, 1861 to Aug. 31, 1861 – Apr. 12, 1861 to Jun. 11, 1861	-0.177***
Civil War	Jul. 21, 1861 to Aug. 31, 1861 – Nov. 7, 1860 to Jan. 6, 1861	-0.120**
Lincoln's Election & Civil War	Jul. 21, 1861 to Aug. 31, 1861 – Jun. 25, 1860 to Aug. 24, 1860	-0.281***
Lincoln's Nomination, & Civil War	Jul. 21, 1861 to Aug. 31, 1861 – Feb. 23, 1860 to Apr. 22, 1860	-0.278***

Source: Table A2

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

TABLE A4 – OLS REGRESSION RESULTS FOR NEW ORLEANS SLAVE SALES, OCT. 1856 TO AUG. 1861

Covariate	Prime-aged slave (18 to 30 years)	Male Slave	Prime-aged male (18 to 30 years)	Mean & Std. Dev.
Dependent Variable: Prime-aged slave, 18 to 30 years (1=yes, 0=no)				0.423 (0.494)
Dependent Variable: Male slave (1=yes, 0=no)				0.479 (0.500)
Dependent Variable: Prime-aged male, 18 to 30 years (1=yes, 0=no)				0.237 (0.425)
Intercept	0.405*** (0.007)	0.451*** (0.007)	0.206*** (0.006)	1
Sold during months Dec. – May (1=yes, 0=no)	0.032*** (0.008)	0.045*** (0.009)	0.052*** (0.007)	0.695 (0.461)
Sold after Sept. 1860 (1=yes, 0=no)	-0.061*** (0.015)	-0.048*** (0.015)	-0.063*** (0.012)	0.071 (0.257)
Number of observations	16310	16310	16310	16310
F-statistic	14.29	17.62	34.16	
adjusted R ²	0.002	0.002	0.004	
Root MSE	0.494	0.499	0.424	

Source: New Orleans Conveyance Office.

Note: The omitted variable refers to slave sold in summer, 1861. Heteroscedasticity consistent standard errors listed in parentheses.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

TABLE A5 – PRICE TRENDS, 1856–1861

Event	Time Period	Difference in Regression Coefficients
Dred Scott	April 1857 – February 1857	0.071
Banking Panic	November 1857 – September 1857	-0.034
Lincoln's Nomination	July 1860 – March 1860	-0.034
Lincoln's Election	December 1860 – October 1860	0.047
Fort Sumter	May 1861 – March 1861	-0.019
First Bull Run or Manassas	August 1861 – June 1861	-0.019
Civil War	August 1861 – March 1861	-0.004
Lincoln's Election & Civil War	August 1861 – October 1860	-0.153
Lincoln's Nomination, & Civil War	August 1861 – March 1860	-0.329***

Source: Repeat sales index regression.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.