Slave Escape, Prices, and the Fugitive Slave Act of 1850

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Abstract

This paper examines the spatial relationship among slave prices, escape, and slave owners' property rights using the Fugitive Slave Act of 1850 as a natural experiment. The act reinforced slave owners' property rights, but its effect diminished with distance to the North. Estimates suggest that prices in Northern slave states increased by up to 35 percent relative to Southern states because of the act. The paper's findings are robust to changes in sample restrictions, spatial composition effects, and placebo tests on the act's implementation date. The contention that the act had an effect on escape risk is supported by a reduction in rewards offered and the frequency of advertisements for runaways observed in newspaper advertisements from the time.

1. Introduction

In the antebellum South, slave prices were persistently higher in locations farther south. Figure 1 illustrates this price-distance relationship using Fogel and Engerman's (2006) slave sales and appraisal data set from probate records.[1] Works such as Evans (1962) and Fogel and Engerman (1974) attribute the north-south price gradient to regional variation in agricultural productivity. They suggest that longer growing seasons, increased hours of sunlight, and better soil quality led

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[1] Figure 1 plots average appraisal values by county for slaves older than 10 as a function of distance in miles to the Pennsylvania component of the Mason-Dixon line, the boundary between slave and nonslave states. The measure of distance used in Figure 1 is the minimum distance from the most northern point of a county to the closest point on the Pennsylvania portion of the Mason-Dixon line. As explained in greater detail in Section 2, permanent escape to a nonslave state involved eventually crossing into Pennsylvania because of restrictions on free blacks in Iowa, Ohio, Illinois, Texas, and Indiana. There are no observations around the 600-mile mark because the data set contains few records from Alabama or northern Mississippi in that time period.

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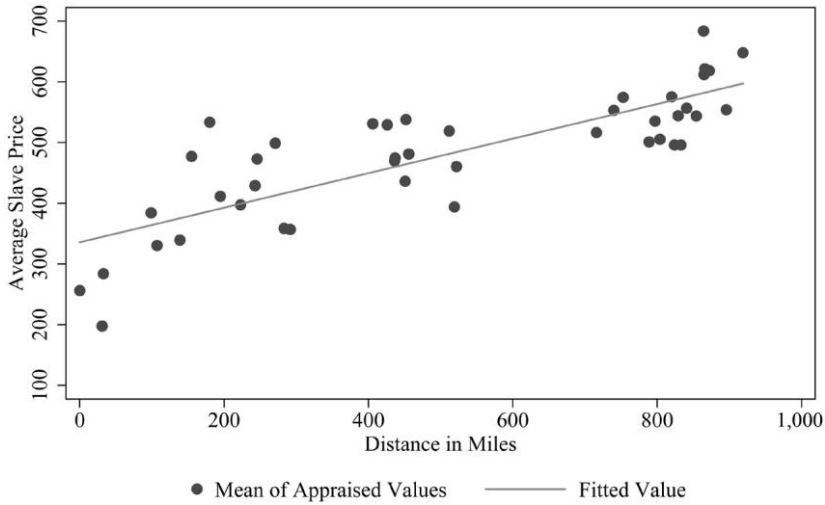

Figure 1. Probate appraisal values by county distance from Mason-Dixon line, 1820–50

to greater productivity in the Deep South.[2] Olmstead and Rhode (2008) reaffirm these productivity differences using rich plantation-level data.[3] Despite productivity differences, arbitrage should have ensured that similar slaves would sell for the same price regardless of location. However, Section 2 explains that the costs and risks associated with moving a slave south were significant. These costs preserved the positive relationship between slave prices and distance to the North over many decades.

The idea that agricultural productivity determined slave prices assumes that willingness to pay depends on a slave's marginal revenue product (net of maintenance and monitoring costs).[4] Prices would then change whenever expected productivity, marginal revenue, or monitoring costs changed for reasons such as changes in technology, the price of substitute factors of production, or the price of agricultural outputs.[5] This paper does not dispute that prices were higher in the Deep South because of differences in productivity. Instead, because ease of escape to the North was arguably a function of distance, the paper examines if escape could be a complementary source of price differences across antebellum slave states.

[2] It also ensured that the choice of staple crop (tobacco or cotton) was different. The potentially confounding nature of this difference is discussed later in the paper.

[3] Olmstead and Rhode (2008) find that slaves in the Deep South picked much more cotton per day on average. Their work provides new insights into the long-running debate on the source and extent of slave efficiency ignited by Fogel and Engerman (1977).

[4] Marginal revenue product is physical product times marginal revenue.

[5] For example, the cotton gin is often credited with preserving slavery as an institution. In addition, Calomiris and Pritchett (2016) suggest that slave prices were set in this forward-looking fashion. They find that by the August following President Abraham Lincoln's election, slave prices in New Orleans had fallen by one-third relative to an 1860 peak. They also find that slave prices responded to the Civil War's major turning points.

Escape affects prices because marginal physical product equals 0 if a slave runs away. If escape was easier from slave states closer to the North (hereafter, northern slave states), then willingness to pay would be diminished there for reasons unrelated to a slave's day-to-day productive abilities. Alternatively, slave owners in northern slave states could mitigate escape risks by increasing monitoring efforts. However, then willingness to pay would be reduced because of the cost of these efforts. Importantly, prices could then be lower because of the risk of escape without observed rates of escape being higher closer to the North (although evidence suggests that they typically were).[6] Any legislative reinforcement of slave owners' property rights could therefore affect prices in two ways: escape would become less likely, which would increase expected slave productivity, and slave owners could reduce monitoring efforts.[7]

Both escape risk and productivity are potentially correlated with distance to the North. As a result, establishing a causal relationship between prices and escape requires an exogenous change in the likelihood of escape that leaves productivity unchanged. The 1850 Fugitive Slave Act (FSA) provides this kind of change. The act strengthened slave owners' property rights by closing legal loopholes, mandating federal and state officials to assist recapture efforts, allowing bounty hunters to cross into the North to recover slaves, and imposing fines of up to $1,000 (in 1850 dollars) and 6 months' imprisonment for civilians who assisted fugitives or officials who refused to assist in recapture.[8] The 1850 act replaced the original 1793 FSA, which had been nullified by a series of legislative and judicial decisions in free states that made the repatriation of an escaped slave unlikely (see Section 2).

While the 1850 act represents a de jure improvement in slave owners' property rights, its de facto effects are an empirical question. If escape was not an issue, then there would be no associated effect on prices. Indeed, many have argued that escape was so uncommon that the act was little more than political grandstanding. However, via a review of the literature surrounding slave escape and political events before and after the act, this paper shows that actual and threatened slave escape was an issue in states closer to the free Northern states. The paper also supports this contention using hand-collected data from antebellum newspapers. They show a significant decrease in both rewards offered and the number of advertisements for runaway slaves in northern slave states following the act's implementation.

My estimation relies on a difference-in-differences approach that compares slave prices in different regions before and after 1850 using Fogel and Engerman's slave sales and appraisal data set from probate records. The estimates suggest that the 1850 FSA boosted slave owners' property rights. The data show a

[6] See the discussion of Hummel and Weingast (2006) in Section 2 for more on this point.

[7] This type of argument is firmly rooted in the role of transaction costs in the enforcement of property rights. See Demsetz (1967), Alchian and Demsetz (1973), and North (1991) for more details.

[8] For the original text of the act, see Lillian Goldman Law Library, Fugitive Slave Act of 1850 (http://avalon.law.yale.edu/19th_century/fugitive.asp).

relative increase in prices of between 15 percent and 30 percent in states closer to the North compared with the Deep South. The estimates are robust to alternate specifications, different time periods, sample restrictions, and a series of placebo tests, and they cannot be explained by output prices for the products produced in each region. The contention that the act caused these changes is further supported by an analysis of trends before the act. In addition, despite initial support for the 1850 act, free Northern states later implemented personal liberty laws protecting fugitives. Estimates suggest that these renewed protections, which weakened slave owners' property rights and increased the chance of successful escape, reversed much of the FSA's effects.

Finding that property rights matter for economic outcomes will surprise few. However, scholars have argued that the FSA was neither necessary nor relevant. For example, Geyl (1951) and McPherson (1988) argue that slave owners' property rights were already strong. Their argument rests on the fact that relatively few slaves escaped before or after 1850. However, such a view restricts slaves' agency by implying that they could not use the threat of escape to their benefit. If the FSA had a large impact on prices, it suggests that property rights were weaker than previously thought and that the act was not simply a perfunctory nod to Southern interests. Indeed, the dismissal of the act in the existing slavery literature is puzzling: if property rights were strong, slaves did not escape, and slave owners did not worry about losing valuable assets, why would two acts of Congress dealing with slave escape be required?

Section 2 provides the context of the 1850 FSA and visits the limited literature on slave escape. It also details the challenges faced by domestic slave traders, which preserved regional price differences. Section 3 describes Fogel and Engerman's (2006) data set. Section 4 presents estimates of the act's impact on prices using a variety of controls and measures of distance. It also considers the role of output prices as a potentially confounding factor. Section 5 explores the robustness of these estimates and the effect of renewed personal liberty laws in free states and presents data on runaways collected from newspaper notices in Southern cities around 1850. Section 6 concludes.

2. The Importance of Slave Escape

Relative to the slave population, the 1850 and 1860 censuses suggest that runaways were rare.[9] This prompted some authors (see, for example, Geyl 1951; McPherson 1988) to claim that the FSA was mere political grandstanding.[10] In contrast, Freehling (1990) and Hummel and Weingast (2006) argue that runaways would be a concern for slave owners in states bordering the North. Hummel and Weingast use the census data to show that runaways in Delaware, Maryland, Virginia, Kentucky, and Missouri combined to account for more than half

[9] In 1850, 1,011 fugitives were reported, and 803 were reported in 1860 (US Census Office, Population of the United States in 1860, p. xvi [http://www2.census.gov/prod2/decennial/documents/1860a.zip]).

[10] Geyl (1951, p. 160) suggests that "[s]outherners clung to the law because they desired to have from the North an acknowledgment of their right rather than because of the material advantage."

of all runaways listed.[11] At the time, these states contained less than a fourth of the total slave population.[12] However, the census data cannot fully capture the effect of the threat of escape. Slave owners in the Upper South may have treated slaves less harshly and devoted significant resources to monitoring and security.[13] If so, escape could play a significant role in the determination of market prices without many escapees being observed in any location.

Campbell (1989) and Deyle (2005) anecdotally highlight the effect that the threat of escape had on the market for slaves.[14] From correspondence between a slave owner in Illinois and his brother in Mississippi, Deyle (2005, p. 86) highlights how the threat of escape increased the supply of slaves and reduced demand: "The sole object in disposing of [the slave] is the danger of loosing [*sic*] him here. We are on the edge of the state of Illinois, and [slaves] can make their escape across that state to Canada. And do do it every day."[15] The literature has not examined the relationship between slave owner and slave through this lens and has therefore missed how the potential for escape affected prices in the various regions of the South.

The 1793 FSA should have protected slave owners' property rights, but free states undermined the act via personal liberty laws (Rosenberg 1971). These laws ensured that a slave who made it across the Mason-Dixon line would rarely be sent back to the South.[16] In response, an enhanced FSA made its way through Congress as part of the Compromise of 1850.[17] The compromise admitted California to the Union and created a free-state majority. The 1850 FSA was a concession to Southern interests to compensate for the new imbalance, and to ease tensions Northern legislatures initially supported the act.[18] However, its enforcement

[11] Organized monitoring efforts in the Deep South might ensure that runaways remained fugitives for shorter periods than in Northern slave states, which would censor the data. Differences in runaway frequency across the South might reflect only differences in the time to recapture in the two regions.

[12] Hummel and Weingast (2006) consider Kentucky and Missouri as being next to free states but do not appear to be aware of the Black Laws enacted in states such as Iowa, Ohio, and Indiana that excluded free blacks from entry to those states. See Hur (2012).

[13] Note that the census data record only a snapshot of current fugitives. Franklin and Schweninger (1999) suggest that closer to 50,000 slaves attempted escape each year.

[14] Deyle (2005) also provides evidence to show that slaves used escape as a bargaining chip. He highlights that the threat of escape was one of the ways slave families managed to remain together. Given any hint that they may be separated by sale, slave families responded by escaping or with threats of violence. Deyle reports that slave traders would place advertisements in newspapers highlighting their discretion.

[15] Thomas P. Copes to Joseph Copes, October 31, 1846, Joseph S. Copes Papers, Tulane University Library.

[16] In the context of this institutional reality, the Underground Railroad helped thousands of slaves escape to the North. For further details, see Snodgrass (2008), Still (1968), and Blockson (1987).

[17] For more information, see USHistory.org, The Compromise of 1850 (http://www.ushistory.org/us/30d.asp).

[18] Strother (1962, p. 97) reports how in February 1851 Democrats in Hartford, Connecticut, announced their support for the act by claiming "[t]hat we hold in undiminished veneration the Constitution of the United States—that we will abide in good faith by all its Compromises—and that we have no sympathy with those who, to evade its provisions, appeal to a 'higher law' that teaches discord and disunion, and sectional hatred, and the violation of that Constitution under which this country has arrived at its present greatness and power."

led to conflict after President Franklin Pierce took office in 1853.[19] In response, Connecticut reinstated protections for fugitive slaves via a new personal liberty law in 1854. Rhode Island followed with one later that year, while Massachusetts, Maine, and Michigan followed with laws in 1855. Wisconsin, Ohio, and New Hampshire passed similar laws in 1857.[20] In 1858 Vermont was the last state to pass a renewed personal liberty law.[21]

In this paper, the likelihood of escape is considered to be, in part, a function of distance to Pennsylvania's southern border. This is because states in the Atlantic Northeast protected escaped slaves while others actively excluded them. Nonslave states such as Ohio, Indiana, and Illinois had laws requiring free blacks to produce documents proving that they were not enslaved and to post a good-behavior bond (Farnam 1938). Ohio's Black Laws, enacted in 1804 and 1807, required a bond of $500, a prohibitively large sum for the time.[22] In the other direction, escape to Mexico was hampered by Texan legislation and institutions.[23]

Despite the potential for slave escape to affect prices, price differences between areas have been ascribed to productivity differences. Of course, any price gap between regions would be expected to close because of trade. However, the risks associated with moving slaves in the 19th century were not trivial. The journey south took several weeks, and success and safety were threatened daily not only by abolitionists, theft, and the elements but also by the risk of slaves engineering their own escapes.[24] In addition, expenses were significant. Slaves who were to be transported had to be housed in pens until departure, and the trader had to finance food and lodging for each slave plus wages for the employees during the long journey south. Because of the challenges of moving slaves southward, it is not surprising that the prices of slaves in the Upper South remained persistently lower than prices in the Deep South. The movement of slaves was laborious, financially risky, and physically dangerous to both the trader and the slave.

[19] A well-documented example of Pierce's approach is that of Anthony J. Burns. The events surrounding Burns's recapture (as explained in von Frank [1998]) advanced the abolitionist political agenda and led to enhanced personal liberty laws in Northern states.

[20] The renewed personal liberty laws restricted detention of slaves in state jails, required the identity of the fugitive to be established beyond doubt, guaranteed jury trials, imposed a fine and imprisonment for representing any free person as a slave, and provided legal counsel and the protections of habeas corpus for alleged fugitives (Johnston 1884).

[21] Hur (2012) provides an in-depth historical treatment of these laws and the context surrounding their passage.

[22] Similar laws came into effect in Illinois in 1819, 1829, and 1853. In Indiana, such laws were enacted in 1831 and 1852. Michigan, Iowa, and Oregon also had laws effectively prohibiting persons of color from entering the state.

[23] In 1846, the Texas legislature created a patrol system granting slaveholders the power to search places suspected of harboring escapees. Rewards were divided among patrol members, and these "paterollers" became feared by slaves. For slaves who were not indentured in Texas, the long journey through Texas from other states would have been close to impossible because free persons of color were prohibited from entering the state in 1840. Under the law, a slave who wanted to escape to Mexico via Texas could be reenslaved immediately in Texas.

[24] Transportation came to be managed by specialized slave traders. These traders purchased slaves and made their way back to the Deep South with the slaves connected by chains in a coffle. Daily progress was painstakingly slow: coffles frequently featured 100 or more slaves, and it took "7 to 8 weeks to travel from the Chesapeake to Mississippi in good weather" (Deyle 2005, p. 99).

Finally, scholars have hesitated to exploit the regulatory changes brought about by the FSA and associated personal liberty laws. This is odd because so many authors have attempted to rationalize slavery, and the FSA of 1850 provides an ideal test for rational behavior by all parties (including slaves themselves) to the institution.[25] The fact that slave owners clamored for an act that would reinforce the institution suggests that slaves were exploiting any advantages that they could: they had agency. They were not unable and unwilling to act in their own interests, but instead were resourceful and tenacious in the face of extreme adversity.

3. Data

The Inter-university Consortium for Political and Social Research hosts a data set of probate-related slave sales and appraisals that took place from 1775 to 1865 in eight states: Virginia, Maryland, North Carolina, South Carolina, Louisiana, Tennessee, Georgia, and Mississippi.[26] In total, records for 43,670 males and 32,726 females appear in the digitized data that were first used in Fogel and Engerman (2006). The data set documents slaves' locations (county and state), sale or probate appraisal value, age, sex, skills, and sometimes health. As this analysis is structured around the effect of the 1850 FSA in a difference-in-differences framework, the focus is on the period immediately before and after the act (8 years, from 1846 to 1853 inclusive). This restriction identifies over 14,000 probate records. While the majority of slaves were appraised for probate purposes, many have no appraisal record. For some of these, there is a listed sale price that can potentially be used as a substitute for appraisal value. The 179 records that have neither a sale nor an appraisal value were dropped from the analysis.[27] In addition, only slaves who were 11 or older at the time of appraisal are considered because the appraisal of children is not likely to represent meaningful information.[28] This restriction eliminates several thousand observations.[29]

Table 1 presents summary statistics for the remaining observations by state

[25] While early work suggests an unprofitable (Phillips 1918), inefficient (Flanders 1930), and barbarous (Bancroft 1931) institution, Conrad and Meyer (1958), Evans (1962), Fogel and Engerman (1974), and Kotlikoff (1979) reveal a profitable and rational enterprise.

[26] The data are a digitized version of physical records on deposit at the Genealogical Society Library of the Church of Jesus Christ of Latter-day Saints in Salt Lake City, Utah.

[27] One extreme outlier, with a reported value of $525,000, was also eliminated, as all others had an appraised value of less than $2,000. A small number of observations were eliminated because of a listed "defect." A variety of defects are reported in the data ranging from being a "girl," a "fellow," an "orphan" or "small" to having cancer or being deaf. To avoid making a judgment on which of these defects should be considered valid or how they affect prices, these observations were all eliminated.

[28] Numerous states had laws prohibiting the separate sale of slaves aged 10 or younger (see Deyle 2005, p. 52). In addition, escape was probably not a realistic consideration for a small child, and the appraised value of the child was likely to be hard to separate from that of the child's parent. As Deyle (2005, pp. 52–53) notes, it was the case that "young children were more of a liability than an asset."

[29] The proportion of small children in the sample is consistent with the demographics of the slave population on the eve of the Civil War. Few slaves lived into old age, and females gave birth to many children, many of whom did not make it to adulthood. In 1860, almost half of the black population (of which the majority were slaves) was under 16 years of age, according to the 1 percent 1860 census extract (see Ruggles et al. 2010).

Table 1

Summary Statistics, 1846–53

				Age		Female Price		Male Price	
	N	Relative Frequency	% Male	Female	Male	$	SD	$	SD
Maryland	753	57.35	57.1	28.61	28.81	311.51	189.23	445.87	234.07
Virginia	292	22.24	61.2	24.2	29.22	454.56	192.36	532.05	225.86
North Carolina	268	20.41	61.7	23.85	25.29	503.92	204.04	686.76	236.91
Upper South	1,313	100.00	58.9	26.80	28.18	377.09	209.34	515.58	250.79
Tennessee	27	.34	70.4	22.38	26.79	570.38	182.85	622.47	247.84
South Carolina	449	5.68	60.8	28.72	27.26	440.54	177.01	614.49	232.86
Georgia	820	10.37	54.5	29.27	29.03	475.38	190.80	648.42	241.51
Mississippi	1,310	16.58	53.1	29.93	30.58	559.48	212.61	692.67	269.23
Louisiana	5,298	67.03	59.9	28.6	31.0	508.02	212.06	681.55	286.72
Deep South	7,904	100.00	58.3	28.91	30.51	510.46	210.01	675.80	277.48

and region for males and females. Note that North Carolina is considered to be in the Upper South despite appearing more similar to South Carolina and Tennessee than to Maryland. In Table 1 there are relatively few slaves in the Upper South who meet the sample selection criteria. The ratio of male to females in the two areas is consistent, but slaves in the Upper South appear to be younger, in general, than those in the Deep South. Census records indicate that in 1850 there were 834,921 slaves living in Maryland, Virginia, and North Carolina. In South Carolina, Louisiana, Tennessee, Georgia, and Mississippi, there were 1,106,163 slaves. A greater than 6:1 ratio of observations is well in excess of the expected ratio based on population.[30] As long as the way the data are selected is not changing before and after 1850, there should be little cause for concern.

The reliance on appraisal values rather than market-determined prices may be problematic. Helpfully, a sale price is reported for close to 10 percent of the observations. A simple regression of prices (from 1846 to 1855) on observable characteristics with an indicator for sale suggests that sale prices and appraisal values in the Upper South were not statistically different. That is, the coefficient on the sale indicator is not different from 0. Under the same approach, sale prices farther south tended to be higher than appraised values for similar slaves during the same period.[31] However, inference cannot be made on a broader relationship between appraisal and sale, as slaves who were sold may not be representative of all slaves in the sample. Higher average sale prices (compared with appraisal values) in the Deep South are not evidence that appraisal values are systematically biased. The slaves who were sold may have been different from the slave population in unobserved ways. For the same reason, observing no difference between sale and appraisal values in the Upper South does not mean that the appraisal values were free of error.

On the other hand, a benefit of using probate records is that they are less likely to be affected by selection effects. Slaves who were sold may have been selected positively or negatively, as considered in Choo and Eid (2008) and Greenwald and Glasspiegel (1983). Greenwald and Glasspiegel (1983) consider negative selection, arguing that slave owners would try to conceal deficiencies in North-South trade, which would leave more productive slaves in the Northern slave states. Choo and Eid (2008) examine the opposite selection story. They test for an Alchian-Allen explanation for price differences for slaves sold at auction in New Orleans (Alchian and Allen 1964). According to Alchian and Allen, slaves with highly valued characteristics would be more likely to be shipped from more

[30] The largest plantations were in the Deep South, so relatively more slaves would be appraised in probate records from that area after a slave owner's death. Also, given the lower productivity and the higher risk of escape in the Northern slave states, the Deep South may (at the margin) have been attractive to slave owners who had larger numbers of slaves. If these were also relatively older slave owners, then slave owners' deaths and associated probate records will be more prevalent in the Deep South. In addition, if slave owners were older when moving south, more probate records would be found in the Deep South and fewer in the areas from which they moved.

[31] Similar patterns can be observed in a broader sample from 1820 to 1860. These estimates are available from the author on request.

distant regions. In the antebellum South, that would mean that less productive slaves would not be transported South. Choo and Eid (2008) find no support for an Alchian-Allen explanation using data on antebellum slave auctions in New Orleans. That is, Upper South slave prices were not lower simply because high-productivity slaves were transported to the Deep South.

4. Estimates

Given the changes brought about by the FSA, this section examines if price differences between regions declined after 1850. If not, then the risk of escape was likely not a determinant of price differences across slave states. The estimating equation used is

$$\text{slave price} = \beta_0 + \mathbf{\Pi}X + \beta_1 D_1(1 = \text{After 1850}) + \beta_2 D_2(1 = \text{Upper South}) + \delta D_3(1 = \text{After 1850} \times \text{Upper South}) + \varepsilon.$$

Here $\mathbf{\Pi}$ is a vector of coefficients $\pi_1, \ldots, \pi_n$ corresponding to the effect of individual characteristics $x_1, \ldots, x_n \in X$. The difference-in-differences estimator $\hat{\delta}$ represents the differential effect of the FSA on slave prices in states considered to be in the Upper South, which can change depending on specification.

Identification using a difference-in-differences approach also requires an assumption that there would be parallel trends across the South in the absence of the FSA. However, violations of such an assumption are possible, which would bias estimates upward or downward. On one hand, slave prices in states closer to the North may have fallen relative to those in the Deep South in the absence of the 1850 FSA. For example, changing attitudes toward slavery combined with manumission and abolition movements may have made the slave trade less attractive in the Upper South. This would bias estimates toward 0, which would work against finding any significant effect of the act even if it were present.

On the other hand, other factors (such as the value of commodities produced using slave labor) that affected slave prices in a specific place at a particular time could be varying in such a way as to cause slave prices to increase in the Upper South relative to the Deep South. The main concern would be that the relative price of tobacco (typically produced in northern slave states) and cotton (the staple crop in the Deep South) may have changed in such a way as to cause the value of slaves in northern slave states to appreciate relative to those in the South. To address this concern, the paper considers the production and prices of crops in each region.[32]

[32] Directly accounting for such events potentially leads to endogeneity problems. If the Fugitive Slave Act caused slave prices to rise, then prices of commodities that were produced mainly using slave labor in the same area may also rise. If so, using commodity prices as a control variable in a regression is problematic. Any increase in commodity prices should be swift, as supply curves will reflect the opportunity costs of production, including holding onto rather than selling a slave whose sale price increases. With data observed at a higher frequency, tests for Granger causality would separate the two effects, but with such a short time period and only yearly slave price data, that approach is not feasible.

Table 2
Ordinary Least Squares Estimates

			No Sale Price		
	Log of Slave Price (1)	Appraised Value (2)	Log of Slave Price (3)	Appraised Value (4)	Appraised Value (5)
Male	.299**	154.3**	.294**	146.2**	140.4**
	(.01)	(4.06)	(.01)	(3.89)	(5.39)
Age	.0643**	18.98**	.0653**	19.55**	18.96**
	(.00)	(1.23)	(.00)	(1.19)	(1.23)
Age^2	−.00123**	−.357**	−.00124**	−.361**	−.356**
	(.00)	(.02)	(.00)	(.02)	(.02)
Upper South	−.544**	−206.2**	−.549**	−203.2**	−190.1**
	(.03)	(5.91)	(.03)	(5.86)	(8.24)
After 1850	.212**	126.0**	.196**	113.8**	105.8**
	(.01)	(4.59)	(.01)	(4.32)	(5.90)
Upper South × After 1850	.302**	93.40**	.326**	103.2**	94.54**
	(.03)	(10.07)	(.03)	(10.08)	(14.61)
Upper South × Sex					−28.95*
					(11.45)
After 1850 × Sex					34.33**
					(8.85)
Upper South × After 1850 × Sex					.595
					(19.95)
N	9,204	9,204	8,333	8,333	9,204

Note. Estimates use the Fogel and Engerman (2006) data set. Robust standard errors are in parentheses. Upper South = Virginia, Maryland, and North Carolina.

* Significant at the 5% level.

** Significant at the 1% level.

4.1. Main Estimates

Table 2 presents estimates that use either the log price or appraised values of a slave as the dependent variable. The omission of slaves who have a sale price rather than an appraisal price has a relatively mild effect on the coefficients of interest. The sample is restricted to 4 years on either side of the FSA. The 4 years before January 1, 1850, are considered to be before the FSA, and the 4 years from January 1, 1850, to December 31, 1853, are considered to be after the FSA.[33]

The estimates in Table 2 suggest that the FSA had a significant effect on slave prices in the Upper South. The coefficient estimate for Upper South in column 1 suggests that slave prices were 41.96 percent lower in the Upper South across the sample period. In the years after 1850, prices were 23.62 percent higher everywhere. The difference-in-differences term (Upper South × After 1850) suggests an additional 35.26 percent increase in prices in the Upper South compared with the Deep South after the act.

[33] The act did not go into effect until September 1850. Considering the treatment date to be from January 1, 1850, allows for anticipated effects to preempt the law. Moving the treatment date to 1851 (as the data are not stratified by month) reduces estimates only slightly; see Section 5.

Using the log of slave price as the dependent variable is preferred, as the distribution of slave prices has a heavier right tail. However, to aid interpretation, column 2 of Table 2 uses appraised values as the dependent variable. Those estimates suggest that slave prices in the Upper South were $206.20 lower than in the Deep South. After the FSA, prices rose in all slave states by an average of $126.00 but by an additional $93.40 in the Upper South. Given that the FSA reduced the chance of successful escape instead of eliminating it, it is possible that escape could have driven even more of the regional price differences than observed here.

Column 5 of Table 2 interacts an indicator for sex with the difference-in-differences terms from columns 1–4. This produces a triple-difference interaction term that can be interpreted as how the FSA affected males and females differentially in the Upper South. The triple-difference term's coefficient suggests an effect that did not differ meaningfully by sex. As males escaped more often, this might seem surprising. However, it is consistent with the data on rewards from advertisements presented in Section 5, which show similar proportional reductions in male and female runaways in the Upper South after the act.[34] In addition, the estimates in column 5 provide some assurance that the effects attributed to the FSA are not caused by changes in productivity or commodity prices. As males tended to be more productive, increases in output prices or technological productivity improvements would have been associated with relatively higher prices for males.

The estimates presented in Table 2 may be biased because of the aggregation of states into two regions—the Upper and Deep South. Table 1 shows that states had different pre-1850 prices, and a composition bias could be driving the results because the data may contain more observations from higher-priced states in the Upper South after 1850. To see this, Table 3 splits the 1846–53 period into two 4-year periods and provides summary statistics for each state and weighted average prices for each region based on the relative frequency of observations. The data suffer from a composition bias in the Upper South: there are more observations from North Carolina and Virginia in the post-1850 period relative to the pre-1850 period. Because these states already had higher prices than Maryland before 1850, the fact that there are more of them in the sample after 1850 ensures that the average price in the constructed Upper South is mechanically higher after 1850. As a result, the estimates provided in Table 2 are biased upward: they represent the joint effects of the FSA and a changing sample composition.

While there are changes in the composition of the sample, the effect of the FSA can still be observed in Table 3. For example, in Maryland the increase in the average price between the two periods is over $180 (close to a 60 percent increase compared with the 1846–49 average price), which suggests that a changing sample composition is not the only source of Upper South price increases. In addition, as

[34] The number of advertisements for runaway males in Baltimore and Richmond totaled 222 in 1849–50 and fell to 181 in 1851–52. In the same time period, the number of advertisements for escaped females fell from 51 to 34. As both female and male runaways seem to have become less common, it is not surprising that the act affected prices for both similarly.

Table 3

Prices and Relative Frequency by State and Region before and after 1850

	1846–49				1850–53			
			Price				Price	
	N	Relative Frequency	$	SD	*N*	Relative Frequency	$	SD
Maryland	412	73.97	305.52	142.01	341	45.90	488.16	264.86
Virginia	105	18.85	399.57	142.69	186	25.03	559.76	229.55
North Carolina	40	7.18	427.84	109.25	216	29.07	651.76	243.19
Upper South	557	100.00	332.04	146.96	743	100.00	553.64	259.23
Tennessee	13	.35	473.08	138.99	14	.34	731.43	227.56
South Carolina	114	3.04	440.86	172.99	335	8.07	582.19	234.64
Georgia	321	8.56	484.65	200.09	499	12.02	624.42	241.39
Mississippi	653	17.40	547.64	194.95	657	15.82	712.34	276.68
Louisiana	2,651	70.66	550.13	221.41	2,647	63.75	673.87	303.92
Deep South	3,752	100.00	540.51	215.12	4,152	100.00	666.81	289.35

Note. Prices for the Upper South and Deep South are weighted average prices for the regions based on the relative frequency of observations from a state in a given region.

Table 4
Ordinary Least Squares Estimates with Restrictions

	(1)	(2)	(3)
Male	.299**	.299**	.300**
	(.01)	(.01)	(.01)
Age	.0650**	.0654**	.0643**
	(.00)	(.00)	(.00)
Age^2	−.00124**	−.00124**	−.00123**
	(.00)	(.00)	(.00)
Upper South	−.573**	−.641**	−.616**
	(.03)	(.03)	(.03)
After 1850	.212**	.212**	.228**
	(.01)	(.01)	(.01)
Upper South × After 1850	.268**	.273**	.198**
	(.04)	(.05)	(.03)
N	8,948	8,657	9,204
Includes North Carolina	No	No	Yes
Includes Virginia	Yes	No	Yes
State fixed effects	No	No	Yes

Note. The dependent variable is log of slave price. Using dollar values for a slave as the dependent variable does not change the observed effects. Robust standard errors are in parentheses.

** Significant at the 1% level.

mentioned earlier, North Carolina may be misclassified if it is considered to be part of the Upper South. Indeed, some parts of North Carolina (particularly the important trading port of Wilmington) are farther from the Mason-Dixon line than parts of Tennessee and South Carolina, and North Carolina prices are similar to those in South Carolina and Tennessee before 1850 and higher than those in South Carolina after 1850. Given that North Carolina slaves may have had the same probability of escape as those in South Carolina and Tennessee and there are five times as many observations after 1850 than before 1850 for that state, an alternate specification excluding North Carolina is examined in Table 4.[35]

Column 1 of Table 4 shows that the effects of the FSA (the coefficient on the difference-in-differences term) are little altered by the removal of North Carolina observations from the sample. The estimate of the act's impact is now 30.73 percent (corresponding to the .268 difference-in-differences coefficient estimate).[36] The estimates are little changed despite the composition bias because the inclusion of North Carolina as an Upper South state reduces the overall price difference between the two areas across the sample period. That is, the effect of excluding North Carolina reduces the before-1850 slave price in the Upper South and the post-1850 average slave price. Column 2 illustrates the effect of having only Maryland considered to be Upper South. Column 3 examines how the in-

[35] Considering North Carolina as part of the Deep South would address the issue of the probability of escape but would not address the issue of composition bias.

[36] The effect is just over $70 in a specification using the appraised value of a slave as the dependent variable.

clusion of state-level fixed effects alters the estimated coefficients. This specification allows the price intercept to vary for each state across the sample period. The difference-in-differences estimate decreases to 21.9 percent but remains statistically significant and reaffirms that the FSA resulted in higher prices for slaves in states closest to the Mason-Dixon line. As this specification absorbs some of the post-1850 price changes in states closer to the Mason-Dixon line, the decrease in the act's effect on prices is not surprising. Most important, the estimates from these specifications ease concerns that composition effects drive the estimates seen in Table 2.

September 1, 1850, was the official implementation date of the act. In the estimates presented, the act is considered to affect all observations after and including 1850. Treating the date the law came into effect as 1850 potentially overestimates any effect, while treating it as 1851 would underestimate it.[37] In regression estimates not reported here, considering observations occurring in 1850 to be before the act rather than after reduces the magnitude of the effect on prices to 23.98 percent when the dependent variable is log of slave price or $68.29 in a specification using the dollar value as the dependent variable. A reduction in the magnitude of the effect also occurs with the addition of state fixed effects, as seen in Table 4.[38] Finally, excluding observations from 1850 leaves estimates largely unchanged.[39]

4.2. A True Spatial Effect?

Table 5 shows the population, proportion of slaves relative to the total population, and annual production of major agricultural commodities for each of the states in the Fogel and Engerman (2006) appraisal data. Tobacco was prevalent in Northern slave states, and cotton was produced in large quantities only farther south. This pattern poses a potential identification issue: if tobacco prices increased relative to cotton's at the same time as the FSA, then willingness to pay for slaves in the North may also have increased.

Figure 2 plots the ratio of tobacco to cotton prices using monthly data from five cities from 1845 to 1859: Philadelphia, New Orleans, Charleston (cotton only), Cincinnati, and New York.[40] While the relative price of tobacco increases in early 1851, the ratio is nearly at a series minimum again by April 1852, while it was near a maximum in October 1848. If tobacco prices were the cause of slave

[37] Either choice results in an unknown number of slaves appraised in 1850 being classified as pretreatment when they were appraised after the act took effect or as posttreatment when they were appraised before the law was enacted.

[38] These estimates are available from the author on request.

[39] Allowing for a 10-year window (1845–54) does not change the magnitude of the effect of the act but tightens confidence intervals because of additional data points. A narrow 4-year window (1849–52) reduces the sample size, and the estimated effect becomes smaller and less precise relative to the 8-year window used in Table 4.

[40] The data for Figure 2 were gathered and published in Cole (1938) and digitized by Mario J. Crucini, Chris I. Telmer, and Robert A. Margo (see Centers for International Price Research, Cole Historical Data [http://centerforinternationalprices.org/micro-price-data/cole-historical-data]).

Table 5

Census of Agricultural Production by State

	Tobacco	Cotton	Wool	Potatoes	Wheat	Corn	Population	Slave %
Maryland	21,407	0	477	974	4,495	10,750	583,034	15
Virginia	56,803	1,579	2,861	3,131	11,213	35,254	1,119,348	40
North Carolina	11,985	29,538	971	5,716	2,130	27,941	869,039	33
South Carolina	74	120,360	487	4,474	1,066	16,271	668,507	58
Georgia	424	199,636	990	7,214	1,089	30,080	906,185	42
Tennessee	20,149	77,813	1,364	3,846	1,619	52,276	1,002,717	24
Mississippi	50	193,717	560	5,003	138	22,447	606,526	51
Louisiana	27	71,495	110	1,524	0	10,266	517,762	47

Source. State-specific files from US Census Office, Seventh Census of the United States, 1850 Census Publications (http://agcensus.mannlib.cornell.edu/AgCensus/censusParts.do?year=1850).

Note. Data are for the year ending in June 1850. Agricultural output values are in thousands of pounds except for potatoes and wheat, which are in bushels.

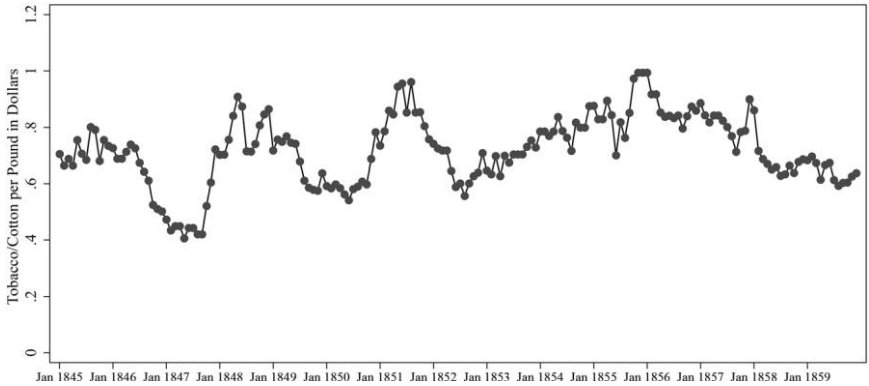

Figure 2. Ratio of tobacco prices to cotton prices

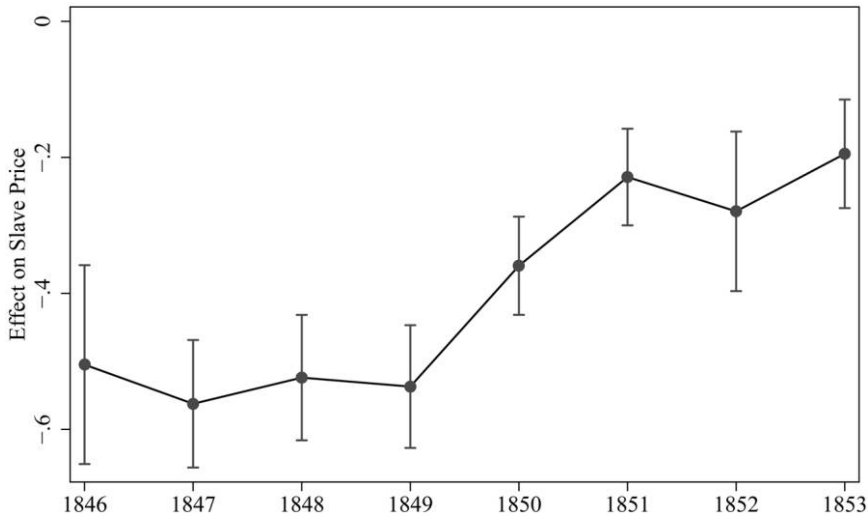

Figure 3. Upper versus Deep South trends

price increases in early 1851, then slave prices should have decreased by 1852. They also should have increased in the Upper South from 1847 to 1848.

Figure 3 is a plot of the postestimation predicted effect on prices in the Upper South by year from 1846 to 1853. The estimation considers appraisal prices as a function of age, sex, year fixed effects, and region-specific effects, and there is an interaction between year and region fixed effects. As can be seen, the effect of

Table 6
Ordinary Least Squares Estimates of State-Specific Changes in Slave Prices

	Relative to Maryland	After Fugitive Slave Act
Maryland		.491**
		(.05)
Virginia	.346**	−.170**
	(.04)	(.06)
North Carolina	.504**	−.224**
	(.05)	(.07)
South Carolina	.321**	−.173*
	(.07)	(.07)
Georgia	.559**	−.228**
	(.04)	(.08)
Mississippi	.696**	−.255**
	(.03)	(.05)
Louisiana	.641**	−.267**
	(.03)	(.05)

Note. The dependent variable is log of slave price. Controls for age and sex are included but not reported. Robust standard errors are in parentheses. $N = 9{,}177$.
* Significant at the 5% level.
** Significant at the 1% level.

being in the Upper South was stable in the years leading up to 1850. Then something happened in 1850 to cause a jump in prices in the Upper South.[41] The pre-1850 stability and the marked change after 1850 suggest a causal relationship between the act and slave prices in the Upper South. Given these patterns, changes in output prices were likely not the source of slave price changes.[42]

Moreover, if higher slave prices in the Upper South were related to higher tobacco prices, Table 5 suggests that the effects in Virginia should be at least as strong as in Maryland because of tobacco's relative prevalence. Instead, Table 6 shows that the post-1850 increase in prices was greater in Maryland than in Virginia. In the estimation results presented in Table 6, each state is given a state-specific intercept before and after the FSA. Maryland is the omitted state.[43] Other than in South Carolina, the post-1850 effect on slave prices dissipates with distance to the North. Moreover, the effects of the act are essentially the opposite

[41] The pattern is even more pronounced after 1850 if North Carolina is removed from the analysis.

[42] A variety of specifications similar to those seen in Tables 2 and 4 including cotton and tobacco prices by state and year yield similar findings. Tobacco and cotton prices have a mildly negative effect on slave prices, as output prices varied while slave prices increased over the sample period. The effect on the difference-in-differences term of interest (Upper South after 1850) in these remains at between 18 percent and 28 percent and is statistically significant in all specifications. These estimates are not presented, as including commodity prices that vary only by year and state is equivalent to controlling for year-by-state fixed effects, which causes serial correlation bias in a difference-in-differences framework (see Bertrand, Duflo, and Mullainathan 2004).

[43] Tennessee was excluded from this regression, as there are only a dozen or so slave appraisals before and after 1850, and the resulting state-specific effect cannot be measured precisely.

Table 7
Summary Statistics for County Data

	1846–49	1850–53
Average appraisal ($)	513.55	649.63
	(219.02)	(287.84)
Male (%)	55.8	60.7
Average distance (miles)	698.51	664.75
	(275.76)	(281.89)
Appraised slaves	4,309	4,895

Note. The data are for 28 counties. The minimum county distance to the Mason-Dixon line was 31 miles (Queen Anne's County, Maryland), and the maximum distance was 896 miles (De Soto County, Louisiana). Standard deviations are in parentheses.

of the pattern of price differences before the act: states that had lower prices to begin with see the largest increases after 1850, exactly as would be predicted if escape risk and weak property rights were affecting slave prices. Given that agricultural output prices cannot explain these changes, it would be an unlikely coincidence if price increases that seem neatly correlated with distance from the Mason-Dixon line (and also reverse the existing patterns) were caused by anything other than the FSA.

4.3. County-Level Analysis

In addition to providing state and year of appraisal, the probate records almost always contain the county from which the record originates. There are 28 counties with usable appraisals for slaves 10 or older in the years before and after 1850. The counties are assigned a distance in miles to the Mason-Dixon line constructed as the distance from the most northerly point in a given county to the southern Pennsylvania border. Summary statistics for the county-level data are provided in Table 7. Using county-level measures of distance rather than an indicator for state provides an alternative way to test if the FSA's effects were a function of distance to the Mason-Dixon line.

Table 8 provides the estimates from a difference-in-differences estimation of the FSA's effect on prices using the county-level measures of distance. Column 1 suggests that prices increase by 6.6 percent for every 100 miles from the Mason-Dixon line. After 1850, there is an increase in slave prices of 59.4 percent everywhere, but the effect of distance on prices diminishes by 2.88 percent for every 100 miles in the period after 1850.[44] In other words, the positive relationship between distance from the Mason-Dixon line and slave prices weakens after 1850. This finding is consistent with the idea that the act reduced the North-South price gap by reducing the likelihood of escape in the Upper South.

[44] Using the dollar value of a slave as the dependent variable produces a difference-in-differences estimate of $6.01 for each 100 miles. The effect is significant at the 1 percent level.

Table 8
The Fugitive Slave Act's Impact as a Function of Miles from the Mason-Dixon Line

	(1)	(2)	(3)	(4)
Distance (miles)	.000662**	.00110**	.00198**	.00420**
	(.00)	(.00)	(.00)	(.00)
After 1850	.466**	.547**	.562**	.627**
	(.03)	(.04)	(.05)	(.06)
After 1850 × Distance	−.000288**	−.000661**	−.00112**	−.00282**
	(.00)	(.00)	(.00)	(.00)
N	9,204	2,596	1,749	1,044
North Carolina	Yes	Yes	Yes	No
South Carolina	Yes	Yes	Yes	No
Tennessee	Yes	Yes	No	No
Georgia	Yes	Yes	No	No
Mississippi	Yes	No	No	No
Louisiana	Yes	No	No	No

Note. The dependent variable is log of slave price. Coefficients on sex and age are not reported. All regressions include Maryland and Virginia. Robust standard errors are in parentheses.
** Significant at the 1% level.

The estimation includes controls for the same demographic variables as in earlier estimations, although those coefficients are not reported. Using this continuous measure of distance also controls for preexisting differences in prices across the period of interest, which minimizes concerns about composition bias.

In columns 2–4 of Table 8, the estimations progressively drop states, leaving just Maryland and Virginia. The increasingly negative coefficients on the difference-in-differences term in the specifications reflect how the act had a larger impact on slave prices closer to the North. This highlights that the FSA had its biggest impact on the price-distance gradient in the states closest to the free Northern states.[45]

In sum, the passage of the FSA appears to be associated with slave prices increasing in the Upper South relative to the Deep South. These effects are not caused by a composition bias in the data, nor can they be explained by agricultural output prices. Most important, the size of the observed increase is related to distance using either indicators for state or county-level measures of distance to the Mason-Dixon line. Adding further evidence to suggest that the Upper South price increases are causally related to the act, Table 8 shows that the change in the price-distance gradient was largest in the Upper South. For these empirical observations to be unrelated to the FSA, there would have to be some event that oc-

[45] Table 8 also hints that the spatial effect of the act on prices is preserved even if the route of escape differed for slaves in different locations. Although not reported here, similar estimates are obtained if the sample is restricted to observations from counties closest to the Atlantic coast in Maryland, Virginia, North Carolina, South Carolina, or Georgia. The same remains true whether the restriction includes only the *n*-nearest counties to the coast in each state, observations from counties where Pennsylvania is the closest nonslave state, or only observations within a specified number of miles to the Atlantic coast.

curred around 1850 that had the same spatial impact as the FSA, not only across the various slave states but also within northern slave states.

5. Robustness

5.1. Reverse Experiment and Sample Restrictions

Renewed personal liberty laws in Northern states (see Section 2) eventually undermined the 1850 FSA. These laws created new safe harbors for runaway slaves, which made successful escape more likely and should undo some of the increases in slave prices observed in the Upper South in response to the 1850 FSA. Focusing on the period from 1852 to 1856, and using the renewed personal liberty laws of 1854 as the treatment date in a difference-in-differences specification including state fixed effects, the paper finds that the renewed personal liberty laws were associated with a fall in slave prices in the Upper South. The effects in the preferred log specification show that prices fell after 1854 relative to those in the Deep South, but the effect was small (4.1 percent) and not quite statistically significant in a log specification. The estimate was significant and large (a $51 decrease in prices) in a specification using the dollar value of a slave as the dependent variable with state fixed effects.[46] The smaller effect is unsurprising, as the personal liberty laws varied in their timing and content across the free states from 1854 onward (see Hur 2012). Using county-level distances to the Mason-Dixon line tells a similar story. The effect of the enhanced personal liberty laws was a statistically significant $9.77 decrease in slave prices for each 100 miles closer to the Mason-Dixon line after 1854.

The estimates presented in Section 4 do not differ meaningfully by sex. However, the effects of the act could be expected to differ by age. If very young or older slaves were less likely to run away, then the effect of the act on prices in the Upper South should change with age. To examine this issue, the sample was split into adolescent (10–17 years old) and adult (18 and older) slaves. The effect of age on prices after 1850 is essentially 0 for the adolescent group. However, within the 18 and older group, prices for younger slaves increased more than for older slaves, which suggests that the effect on prices was highest for slaves who were the most likely to escape.

5.2. Additional Evidence from Newspaper Advertisements

NewsBank's America's Historical Newspapers collection provides digitized editions of historical daily newspapers from across the United States, searchable by key word. This is helpful because notices regarding runaway slaves were placed in newspapers. These notices provided a combination of a description of the slave, perhaps the county from which the slave fled, and a dollar value and terms of a reward for recapture. Typical advertisements looked like the one presented in Figure 4. The frequency of these advertisements along with information

[46] However, slave prices had increased to an average of over $700 by the mid-1850s.

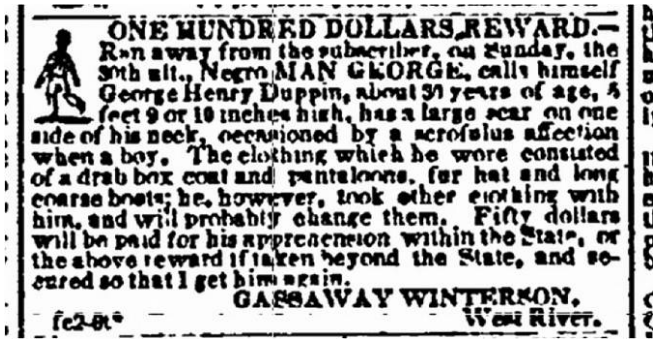
ONE HUNDRED DOLLARS REWARD.—
Ran away from the subscriber, on Sunday, the
30th ult., Negro MAN GEORGE, calls himself
George Henry Duppin, about 30 years of age, 5
feet 9 or 10 inches high, has a large scar on one
side of his neck, occasioned by a scrofulus affection
when a boy. The clothing which he wore consisted
of a drab box coat and pantaloons, fur hat and long
coarse boots; he, however, took other clothing with
him, and will probably change them. Fifty dollars
will be paid for his apprehension within the State, or
the above reward if taken beyond the State, and se-
cured so that I get him again.
GARSAWAY WINTERSON.
fe2-6t* West River.

Figure 4. Typical advertisement for a runaway

on rewards can provide further evidence to understand the FSA's effects on escape.

To gather data, a key word search was completed in NewsBank's archives for advertisements containing words associated with escape in the 4-year period from January 1849 to December 1852.[47] The search returned tens of thousands of results from newspapers during the antebellum period.[48] To economize on data collection, only advertisements from Louisiana, Georgia, Maryland, and Virginia were examined (as these account for most of the observations in the Fogel and Engerman [2006] data). Despite these restrictions, there remained over 6,000 notices for runaway slaves to be manually coded. Within those, there were many advertisements for the same escapee, while some were missing crucial information such as the slave's age, sex, or details of a monetary reward. The usable sample contains just under 1,000 unique observations.

The frequency of advertisements before and after September 1850 is shown in Table 9 by location. Fewer runaways are observed in both locations after 1850. However, before the FSA, there were more advertisements in the Upper South than in the Deep South. After the act, there were fewer, and the number of unique advertisements per month fell from almost 14 to fewer than eight per month in the Upper South.

Table 10 presents complete summary statistics from the advertisement data. Advertisements for runaways were most often for male slaves, and on average runaways were in their mid- to late twenties.[49] However, the number of advertisements observed in each area provides less value than might first be expected.

[47] Search terms used were "abscond," "runaway," "run away," "ran away," "fugitive," "escape(d)," and "apprehend."

[48] Most of these were not advertising escaped slaves.

[49] The limited number of observations in the sample causes a lot of variation in the summary statistics. There were no valid observations for Georgia in 1852, which exacerbates the problem. There were advertisements in that year, but they were missing sex, age, or specific details of a reward.

Table 9
Frequency of Advertisements before and after the Fugitive Slave Act

	January 1849–August 1850	September 1850–December 1852
Deep South	267	236
	(13.35)	(8.42)
Upper South	274	215
	(13.7)	(7.68)

Note. Values are monthly averages. Robust standard errors are in parentheses.

This is because the act could have varying effects on the number of runaways and associated advertisements.[50]

On the other hand, the information about rewards for recapture provides an alternative test of this paper's main thesis. If rewards decrease after 1850, it is evidence that stronger slave owners' property rights are driving the observed results. This is because the Fogel and Engerman (2006) data show that slave prices in the Upper South increased after 1850. This should increase rewards offered, all else being equal. In contrast, rewards offered should fall if it became easier to recapture an escaped slave.[51]

Table 11 provides estimates of the FSA's effects on rewards offered. The estimation uses the same difference-in-differences framework presented in Section 4 combined with the newspaper data on rewards and repeated advertisements. After the act's implementation, it appears that rewards in the Upper South fell by a statistically significant $18.76 relative to rewards offered farther south. In column 2, where the dependent variable is log rewards, the sign of the estimate is consistent with improved property rights for slave owners, but it is not statistically significant. However, in contrast to slave prices, the distribution of rewards is not skewed heavily rightward. As a result, the specification with the level of rewards offered in dollars is preferable. Column 3 suggests that the repetition of advertisements also decreased significantly after 1850 relative to the Deep South. The estimates are not driven by composition bias, as they are unchanged after controlling for state fixed effects.[52]

[50] If slave owners react to stronger property rights by imposing harsher conditions on their slaves, it might make sense if more slaves attempted to run away. However, if slaves were fully aware of the act's repatriation provisions, they might have been less motivated to try to escape.

[51] The value of this empirical exercise is asymmetrical: even if property rights were improved by the act's changes, the increasing price of slaves could have overwhelmed any associated reduction in rewards in the Upper South.

[52] Aside from data-composition issues, the act could have changed the incentive to advertise runaways in either direction. The act made recapture easier but increased slave prices, which increased the value of a slave. Because age and sex were highly correlated with prices, the demographic characteristics of slaves appearing in the advertisements should change if left or right censoring by slave owners' decisions to advertise were driving these findings. However, in the advertisement data there are no statistically significant demographic changes in the Upper South, while there are contradictory changes in the Deep South (relatively more females and generally older slaves). Overall, the type

Table 10
Summary Statistics for Advertising Data

	Male (%)	Reward ($)	Age	Ad Repeats	*N*
Georgia:					
1849	92	65.56	29.58	5.08	12
		(76.79)	(8.22)	(5)	
1850	80	16.43	23.5	1.7	10
		(8.02)	(4.88)	(.82)	
1851	71	17.14	25.43	3	7
		(6.99)	(7.81)	(4.43)	
1852					
Louisiana:					
1849	78	31.6	24.78	4.95	167
		(32.2)	(6.31)	(8.84)	
1850	68	33.45	26.52	5.42	78
		(26.26)	(8.39)	(5.36)	
1851	70	60.59	28.41	11.22	99
		(95.73)	(7.55)	(16.89)	
1852	68	35.9	27.03	11.08	130
		(36.4)	(6.85)	(13.9)	
Maryland:					
1849	82	70.99	23.73	2.76	101
		(68.58)	(8.21)	(2.32)	
1850	80	85.99	22.24	2.82	115
		(78.29)	(5.84)	(2.42)	
1851	83	83.84	23.58	3.24	71
		(78.13)	(7.4)	(2.39)	
1852	81	53.07	20.25	3.66	103
		(46.99)	(6.61)	(5.17)	
Virginia:					
1849	88	27.88	27.88	2.62	26
		(22.22)	(6.85)	(2.3)	
1850	77	39.33	25.71	2.47	32
		(35.15)	(7.31)	(1.27)	
1851	95	36.9	35.14	3.86	21
		(31.48)	(11.06)	(2.9)	
1852	95	44.25	26.3	2.15	20
		(41.68)	(6.32)	(2.43)	

Note. Standard deviations are in parentheses.

The advertisement data show fewer runaways, smaller rewards, and fewer repeated advertisements in the Upper South, all while prices were rising after 1850 there. Rising rewards would be consistent with some other event causing slave prices to increase in the Upper South. However, the patterns in the data suggest that improved property rights caused prices to increase.

of slave advertised does not change in a clear direction toward less or more valuable slaves, which minimizes any censoring concerns.

Table 11
Frequency of Advertisements before and after the Fugitive Slave Act

	Reward (1)	Log of Reward (2)	Ad Repeats (3)	Reward (4)	Log of Reward (5)	Ad Repeats (6)
Upper South	37.53**	.555**	−2.154**			
	(4.719)	(.0848)	(.499)			
After 1850	12.95*	.190*	5.779**	12.29*	.176*	5.597**
	(5.240)	(.0753)	(1.087)	(5.204)	(.0756)	(1.082)
Upper South × After 1850	−18.76*	−.205	−5.100**	−18.92*	−.204	−4.934**
	(7.939)	(.130)	(1.143)	(7.740)	(.127)	(1.138)
N	932	932	992	932	932	992
State fixed effects	No	No	No	Yes	Yes	Yes

Note. The number of observations for repeated ads is higher, as advertisements in which a reward amount was not specified are included. All regressions include controls for age (polynomial) and sex (plus interaction with age). Robust standard errors are in parentheses.

* Significant at the 5% level.

** Significant at the 1% level.

6. Conclusion

Regional differences in antebellum slave prices have been attributed to regional variation in agricultural productivity. However, this paper considers if slave prices in northern slave states were affected by the risk of escape because of the geographical proximity to free states. Only scattered contributions have suggested that slave escape was an issue, and those provide limited empirical evidence to back their claims.

To examine the effect of escape risk, the paper uses the FSA of 1850 as a natural experiment. The act boosted slave owners' property rights and made successful escape less likely. After the 1850 act, the gap in regional slave prices diminished significantly, which suggests that slave owners' property rights were not as strong as previously thought and shows that slave prices may have varied by region for reasons other than agricultural output. The observed effect is robust to alternate sample restrictions, controls for composition-bias concerns, and displays a pattern both across states and within northern slave states that suggests the act had a causal effect on slave prices. In addition, when free states later enacted legislation to undermine the FSA, the act's effects were partially reversed. The pattern of the act's effects also cannot be explained by variation in agricultural output or the associated output prices.

The paper's main findings are supported by hand-collected data on fugitive slaves from newspaper notices around 1850 in slave states. The newspaper data show a reduction in the number of runaways, which supports the contention that the FSA reduced escape risk. In addition, a decrease in rewards offered and fewer repeat advertisements in northern slave states support the idea that property rights were enhanced by the 1850 act. If rewards had increased, it would suggest that slave prices were increasing in the Upper South for reasons unrelated to the act or slave owners' property rights.

The paper's findings are important, as even those who view slavery as a complex institutional arrangement dismiss the role of escape. Those authors ignore how a credible threat of escape and costly monitoring efforts could impact slave prices even without escape becoming common. Indeed, the estimates presented in this paper may understate the importance of slave owners' property rights because the act reduced rather than eliminated the chance of escape.[53]

Ultimately, the available evidence suggests that slave prices varied across regions not only because of productivity differences but also because of the perils associated with owning human beings, who can act and choose for themselves in ways that livestock and inanimate objects cannot. The findings complement productivity-based explanations of the regional price gap and show that slaves' agency played an important role in the Peculiar Institution.

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[53] In addition, abolition and manumission efforts in the North, if influential, may have reduced the demand for slaves in border states.

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