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More Than Met the Eye: Industry in the Antebellum Gulf South

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MORE THAN MET THE EYE:
INDUSTRY IN THE ANTEBELLUM GULF SOUTH

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of History

by

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For Melissa

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As I look back now on all of the time and effort that it took to complete this work I cannot help but to be reminded of all of those people who gave their time, expertise, and support to help me to finish this endeavor. I have been extremely fortunate that I have so many wonderful friends, teachers, and family who were willing to at least feign interest in my work while I endlessly droned on about maps, tables, charts, and the importance of industry in the antebellum Gulf South.

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At this point, most authors writing their acknowledgments take the time to thank all of the libraries and archives that they worked in, and I am no different. As part of this dissertation, I performed research that was not just taxing on me, but it was taxing also on the staff of the archives I was working in. Retrieving rolls of microfilm constantly just to see me find only one issue of a newspaper and returning it must have been frustrating to the staff. But, the staff of the Mississippi State Archives, the Alabama State Archives, and the Texas State Archives, not only did this work with a smile on their face, they went out of their way to make suggestions of archival sources in their repositories that could be of use to me. The staff of the archives of the Harvard Business School taught me the ins and outs of the R. G. Dun collection, which this dissertation could not be written without. The staff at facilities such as this do not get half of the credit and thanks that they truly deserve.

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ABSTRACT

1860 was a census year. Census marshals spread out across the United States to record many different aspects of American society, including information on population, agriculture and, most importantly for this study, manufacturing. The antebellum Gulf South has traditionally been viewed as a region with little industrial development. But, both contemporaries and historians based their view of industry in the Gulf South on what was recorded in the census schedules. Alabama, Mississippi, and Texas were portrayed in the census as areas with little industrial development. But, as many historians have discovered, there were errors in the 1860 census, especially errors of omission. The geography, resources, and people of the Gulf South gave the region the potential to create many manufacturing concerns that could have supported economic development and perhaps the future war effort.

This dissertation argues that the census understated industry in the Gulf South states of Alabama, Mississippi, and Texas. This has given us a distorted view of the antebellum South. The region was not as agrarian as the census would lead us to believe. Other primary sources, such as newspapers, journals, local histories, city and county directories, and the R. G. Dun credit reports allowed the recovery of many of these missing firms. Census marshals missed almost 20% of the industrial concerns that existed in these three states. Moreover, the Gulf South depended less on imports and industry was more geographically diffuse and locally intensive than historians gave it credit for. The South did not have the industry to win the Civil War, but, perhaps, these missed firms can help explain how the Confederacy persisted through four years of conflict with little outside support.

CHAPTER ONE: PERCEPTIONS

Speaking before the pivotal Second Session of the 36th Congress on January 15, 1861, Representative John Reagan of Texas explained the benefits that the South would receive by leaving the Union. “It will compel us,” he stated, “to manufacture for ourselves, to build up our own commerce, our own great cities, our own railroads and canals.”¹ A year before, when recording census data for Attala County, Mississippi, Census Marshal James J. Durham described the underlying situation: “This is a country adapted to farming and but little of the Industrial pursuit is followed by our citizens.”² Even earlier, at the Southern Commercial Convention in 1855, Albert Pike, an Arkansas newspaper editor, gave a speech warning that an agrarian South should not be dependent on the North for all of its manufactured goods.³ His concern was not uncommon among Southerners who saw the South as a region of large fields of cotton worked by slave labor, with little in the way of industry. For them, the South was an agrarian paradise and industry was something to be pursued at a later date, should that prove necessary. As historian Ronald Lewis observed, “The roar of a blast furnace, or the din of a cotton factory, was more likely to jar the southern imagination than to capture it, given the South’s traditional idealization of itself as an Arcadian paradise.”⁴ This moonlight and magnolia

¹ Congressional Globe, 36th Congress, 2nd Session (15 January 1861), 391.

² *Agricultural and Manufacturing Census Records of Fifteen Southern States for the Years 1850, 1860, 1870, and 1880* (Chapel Hill: University of North Carolina Library, 1962), microfilm, 8, located at the Mississippi State Archives in Jackson, Mississippi, hereafter cited as *Mississippi Schedule of Manufacturers*. All punctuation, spelling, and grammar in quotations will remain as written in the original documents.

³ Vicki Vaughn Johnson, *The Men and Vision of the Southern Commercial Conventions* (Columbia: University of Missouri Press, 1992), 112.

⁴ Ronald L. Lewis, *Coal, Iron, and Slaves: Industrial Slavery in Maryland and Virginia, 1715-1865* (Westport: Greenwood Press, 1979), 3.

image of the South, popularized in *Gone With the Wind*, has long been the commonly held view of the antebellum South. But, is it correct?

To counter the pastoral image of the South and change minds in hopes of drumming up business, many southern manufacturers used newspapers to urge industrialization. But, they fought against a very strong current when they published their pleas for the South to embrace manufacturing. Southern firms tried to convince consumers that goods manufactured at home were just as good as anything being produced in the North. A Houston, Texas, newspaper ran at the top of its advertisement section a banner reading, "ENCOURAGE Southern Manufactures!"⁵ Other papers in the region printed advertisements containing personal statements from manufacturing concern owners asking for customers to support southern industry, such as, "Hurrah For Home Manufacture! Certain Downfall of Abolitionism!"⁶ One manufacturer went so far as to call northern-made goods a "sham" when compared to southern products, while another explained:

We know that strong efforts are being made to prejudice the minds of the people against all manufacturing establishments South of Mason and Dixon's line, but if purchasers will give our Furniture an impartial examination, we feel assured that the style and price will satisfy them that it is to their interest to patronize home institutions.⁷

Many Southerners thought that these manufacturers were aberrations to be tolerated in small numbers, but they would never really affect the region's society or economy. Perhaps, the perceived marginalization of manufacturing suggests that southern industry and society did not possess the "creative tension" needed to develop a southern manufacturing sector.⁸

⁵ *Weekly Telegraph*, 2 October 1860.

⁶ *West Alabamian*, 6 June 1860.

⁷ *Weekly Telegraph*, 17 April 1860; *Daily Confederation*, 15 June 1860.

⁸ Gavin Wright, *The Political Economy of the Cotton South: Households, Markets, and Wealth in the Nineteenth Century* (New York: W.W. Norton, 1978), 8; also, Hugh Aitken, *Did Slavery Pay?* (Boston: Houghton

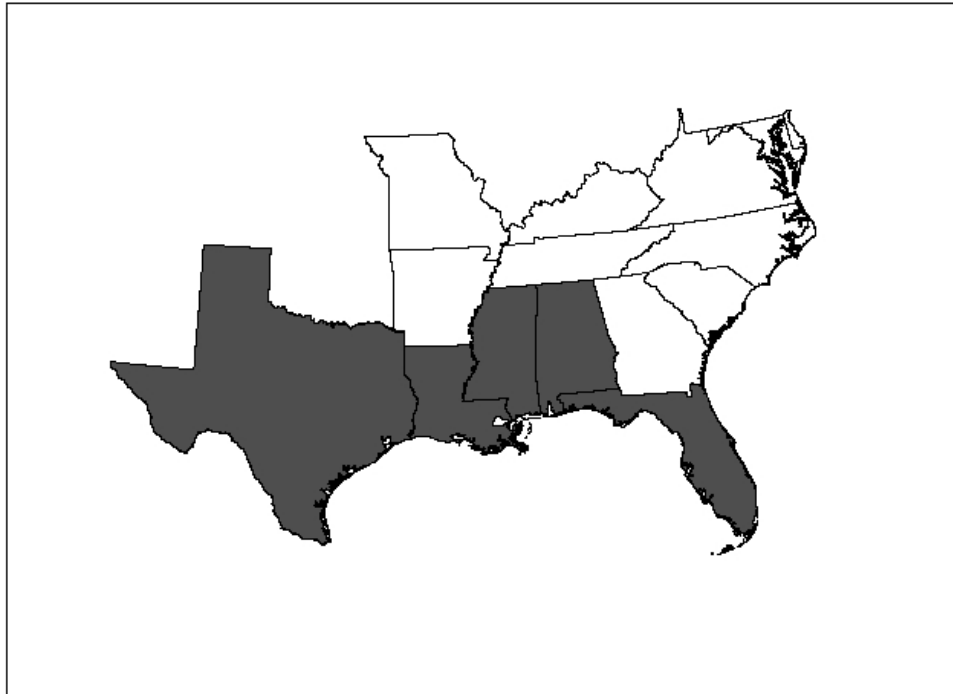
This dissertation re-evaluates the extent of the South's industrial base on the eve of the Civil War going beyond the 1860 census numbers to show how extensive it truly was. If there were more manufacturing firms than the census and the Old South's conventional wisdom suggests, it would be significant for historians' understanding of how the late antebellum southern economy functioned and allow a re-evaluation of the presumed depressive effect that the South's slavery system had on industrialization. In fact, industrial concerns were just as important to the antebellum South as they were to any other part of the nation. Further, these firms were not aberrations on the southern landscape; they were firmly integrated into southern society. Manufacturing firms, much as farms or plantations, did not exist in an economic or environmental vacuum devoid of context. That is, they existed and operated in and over a geography and therefore a geographical perspective is the most appropriate one from which to study them. This work examines the Gulf South states of Alabama, Mississippi, and Texas to determine the nature and scope of manufacturing and to consider it in geographic and statistical terms.⁹ The Gulf South was a relatively homogenous area. Map 1.1 shows the Gulf South in relation to the rest of the slave states in 1860. The states in the region had similar patterns of development and extensive ties with one another and the rest of the South.¹⁰ By looking at manufacturing geographically, we can determine how industrial concerns interacted with each

Mifflin, 1971), 329. Aitken explains that a society needs the ability to "transform itself" to be able to industrialize and that the presence of slavery kept the South from being able to transform into a more modern economy.

⁹ I have excluded Florida from this study, even though it is a Gulf South state, because in 1860 Florida had only 185 firms, a negligible industrial base. Moreover, the state's sparse settlement inhibited even the beginning of industrialization. I will discuss Louisiana briefly but, because its Manufacturing Census Schedules are lost, I could not make an in-depth study of the state.

¹⁰ Walter Buenger, *Secession and the Union in Texas* (Austin: University of Texas, 1984), 16. Buenger explains that while Texas was a special case, Texans identified closely with Alabama and Mississippi because of the developing slave based cotton economy. See also Andrew Torget, "Cotton Empire: Slavery and the Texas Borderlands, 1820-1837" (Ph.D. diss., University of Virginia, 2009). Torget concurs in this view and demonstrates that Texas was fully integrated into the Gulf South's slave economy.

other and the relationships that existed between the location of manufacturing establishments and markets, resources, and transportations facilities.¹¹



Map 1.1 ó The Gulf South as a subset of the slave states in 1860

Areas throughout the South had varying degrees of industry. In places where intensive industrialization occurred, it depended upon the availability of transportation facilities, markets, complementary concerns, labor, and the presence of exploitable resources, such as coal and iron and, in the case of textile manufacturing, cotton. As John Friedmann explains in *Regional Development Policy*, most development in a given area is externally stimulated and typically

¹¹ While the border South was developing manufacturing before the war, the Deep South was not seen as an industrializing area. See James Huston, "The Pregnant Economics of the Border South, 1840-1860: Virginia, Kentucky, Tennessee, and the Possibilities of Slave Labor Expansion," in Diane Barnes, Brian Schoen, and Frank Towers, eds, *The Old South's Modern Worlds: Slavery, Region, and Nation in the Age of Progress* (Oxford: Oxford University Press, 2011), 123; and Richard Goff, *Confederate Supply* (Durham: Duke University Press, 1969), 4. Both Huston and Goff contend that beyond the Piedmont and New Orleans there was little or no industry anywhere else in the Lower South.

leads to a concentration of investments upon one or two areas.¹² The existence of these factors are most readily appreciated when considered geographically. Maps produced with Graphical Information System (GIS) software can display these relationships and concentrations while also showing the actual extent of industry in these states.¹³

This dissertation is the first application of GIS analysis to the question of antebellum southern industrialization. The historical geographer Sam B. Hilliard, in *Hog Meat and Hoecake*, examined southern agriculture from a geographic perspective, but historians have yet to apply that approach to southern industry.¹⁴ As Hilliard succinctly explained, "discussion or analysis of any area of substantial size is made easier through the simple act of studying it piece by piece."¹⁵ A further advantage to such an approach, he went on to say, is that:

[t]he field of cartography is not limited to showing graphic representations of reality; it offers other types of maps whose versatility permits display of a wide variety of quantitative information, not simply numbers of people or animals, or amounts of crops, but of abstractions, such as ratios, densities, and proportions.¹⁶

A geographical study of the Gulf South will provide new insights into southern industry. The reluctance of historians to adopt this approach has deprived them of some obvious benefits, and this work takes advantage of what GIS generated maps can offer.

¹² John Friedmann, *Regional Development Policy: A Case Study of Venezuela* (Cambridge: Massachusetts Institute of Technology, 1966), 9, 22.

¹³ *Ibid.*, 43. Friedmann also explains that these centers of concentration will stimulate development in the surrounding area, something maps will display.

¹⁴ Sam Bowers Hilliard, *Hog Meat and Hoecake: Food Supply in the Old South, 1840-1860* (Carbondale: Southern Illinois University Press, 1972), 221. Hilliard explores southern agriculture in detail and provides in his work maps that show production of every major crop and their access to transportation for marketing, something not yet done for industry.

¹⁵ Sam Bowers Hilliard, *Atlas of Antebellum Southern Agriculture* (Baton Rouge: Louisiana State University Press, 1984), 1.

¹⁶ *Ibid.*, 3.

The South was not an industrial juggernaut capable of matching the output of the northern states in 1860. As historians Fred Bateman and Thomas Weiss point out, "southern industrial accomplishments should not be exaggerated [and] any evaluation of the region's industrial achievements or its capability at the time of secession hinges crucially on the reference standard."¹⁷ The standard by which to judge the industrial capacity of the South will not solely be that of the North. The main standard used will be the traditional view of the South, first drawn before the war and preserved by historians to form our current picture of what the South was before the conflict.¹⁸ Lewis's characterization of the southern imagination has become ingrained in the scholarship of southern industry, and any attempt to alter this view must deal with how this happened.

Before the outbreak of hostilities a picture of antebellum southern industry etched itself in the minds of Americans. One of the best known accounts from before the war is Hinton Helper's *The Impending Crisis*. Helper was adamant that slavery and slave-owners were destroying the South economically and industrially and that, "in a commercial, mechanical, manufactural, financial, and literary point of view, we are helpless as babes."¹⁹ Attacking his own home, his words carried more weight, making him a turncoat in the eyes of much of the white South.²⁰ His view was supported both by northern abolitionists, who saw slavery as

¹⁷ Fred Bateman and Thomas Weiss, "Manufacturing in the Antebellum South" in Paul Uselding, ed., *Research in Economic History*, Volume 1 (Greenwich: JAI Press, 1976), 3.

¹⁸ For an example of a comparison to the North see Richard Graham, "Slavery and Economic Development: Brazil and the United States South in the Nineteenth Century," *Comparative Studies in Society and History* 23 (October 1981): 620; or Marc Egnal, *Clash of Extremes: The Economic Origins of the Civil War* (New York: Hill and Wang, 2009). More recent work is turning away from northern comparisons to put the South in an Atlantic perspective, see Anthony Kaye, "Second Slavery: Modernity in the Nineteenth-Century and the Atlantic World," *The Journal of Southern History* 75 (August 2009): 627-650.

¹⁹ Hinton Rowan Helper, *The Impending Crisis of the South: How to Meet It* (New York: Burdick Brothers, 1857), 23.

²⁰ *Ibid.*, 335.

incompatible with industrial development, and Southerners, who believed that industry disrupted the region's agricultural way of life.²¹

Others at the time, such as Thomas Kettell, a magazine editor and author in the 1850s, believed the South was making strides in its development, even if the North was getting rich from manufacturing and marketing southern cotton. Southerners had a great deal of capital available and the raw materials that they exported could be used by local firms instead. Also, manufactured items imported by the South could be made at home for a domestic market that already existed. Kettell asserted that, "[t]he figures show that it [the South] is fast supplanting Northern and imported goods with its own industry."²² Moreover, he insisted, if the North worked to end slavery, the economic disturbances caused by abolition would cripple both sections.²³ His ideas appeared in other works, such as that of J. D. B. De Bow, and circulated widely throughout the region and the nation.²⁴

In the same vein as Kettell, De Bow was an antebellum southern industrial booster. *De Bow's Review*, one of the most widely circulated journals in the region, published many articles on the benefits of developing the South's nascent industrial capacity. In February 1850, for example, De Bow printed an article from "A Mississippi Planter," who stated: "The South ought to supply the North with Cotton manufactures; and it is a matter of wonder, that northern

²¹ Frederick Law Olmsted, *The Cotton Kingdom* (New York: Mason Brothers, 1861), 38; Olmsted's travel books paint a picture of a South that is backwards because of its dependence on slave labor. Most Southerners are shown as ignorant, violent, dirty, and uneducated and supported the stereotypes of an un-industrial South. For example, the only mill Olmsted mentions in the Gulf South is a "rude corn-mill" in Southeast Louisiana.

²² Thomas Prentice Kettell, *Southern Wealth and Northern Profits* (New York: George W. & John A. Wood, 1860), 62.

²³ *Ibid.*, 172-3.

²⁴ Thomas Prentice Kettell in James De Bow, *Industrial Resources, Statistics, & of the United States and More Particularly of the Southern and Western States*, Volume 3 (New York: Appleton, 1852), 53.

capitalists have not availed themselves of the superior advantages offered them in the cotton growing regions for manufacturing purposes.²⁵ The planter went on to explain:

As it is, a planter desires a bale of cotton made into cloth. He gins and bales it, drags it, often, sixty or seventy miles to a shipping point; it goes to New Orleans, thence to Boston, and finally to Lowell. It is manufactured, sent back to Boston, thence to New Orleans, thence to the point of original shipment, and is once more hauled through the mud to the cabin of the planter.²⁶

Both De Bow and this planter clearly saw great potential for southern manufacturing. De Bow also published a three-volume work on industry in the South based on the 1850 census, of which he was superintendent, which indicated that manufacturing was developing in the region. He even created a plan for planters to encourage industry by assigning a certain number of hands to manufacturing to keep them from sitting idle during off seasons, thereby doubling the value of their labor.²⁷ At least some Southerners saw industry as vital to the South and believed that the area's economic system could support development without causing any major upheaval. But, if this was true, why has the *Gone With the Wind* view of the South become so entrenched and persistent?

This image of a rusticated, un-industrialized South was not confined to Americans before the war. John Cairnes, an Englishman, wrote that slavery and manufacturing were incompatible in the South and industry was at variance with the best interests, material as well as moral, of its inhabitants.²⁸ Slaves could never be used in industry, Cairnes asserted, because of the fear of

²⁵ "A Mississippi Planter," *De Bow's Review* 2 (February 1850), 100.

²⁶ *Ibid.*, 99.

²⁷ De Bow, *Industrial Resources*, 80.

²⁸ John Cairnes, *The Slave Power: Its Character, Career, and Probable Designs* (London: Macmillan, 1863), 66.

revolt by large gatherings of such workers.²⁹ In the end, this pre-war vision of the South disappeared into the smoke of the Civil War and came out the other side confirmed, even strengthened; the South had no industry at all.

After the war, northern and southern historians had to grapple with the Civil War when exploring southern society and economics. Most portrayals of the South after the war show a prostrate South, completely destroyed by the Union Army. That view is changing though as historians, such as Paul Paskoff, have shown that the destruction of agriculture, public property, and railroads were not nearly as extensive as many believed.³⁰ But southern industry was in a shambles because of destruction and overuse, and took decades to recover.³¹ The most convenient explanation for historians was not the problems created by the war, but the slave-based society of the former Confederate states. Also, Southerners had to deal with psychological trauma of being the only Americans to be on the losing side of the war.³² All of this taken together created a drive among historians to explain all the problems of the post-war South in such a way as to allow the reintegration of the region into mainstream American society. So, very early on a solution to these problems was created: the "Lost Cause" narrative and the Ulrich B. Phillips school on the history of slavery.

²⁹ *Ibid.*, 71.

³⁰ Paul Paskoff, "Measures of War: A Quantitative Examination of the Civil War's Destructiveness in the Confederacy," *Civil War History* 54 (2008): 35-62.

³¹ For a discussion on war running down industry in the South see Mary DeCredico, *Patriotism for Profit: Georgia's Urban Entrepreneurs and the Confederate War Effort* (Chapel Hill: University of North Carolina Press, 1990), xvi. Further, Union forces did destroy any major industrial concerns they could reach, for example the Mississippi state Penitentiary was burned because of its extensive textile works. Inspection Records, November 1863, Mississippi State Penitentiary Records, Mississippi Department of Archives and History.

³² C. Vann Woodward, *Origins of the New South, 1877-1913* (Baton Rouge: Louisiana State University Press, 1971).

The "Lost Cause" mythology took root immediately after the end of the war as a way of coping with defeat. The earliest use of this term was in an 1866 book by Edward Alfred Pollard. Pollard, using the 1860 census returns as his data set, described a South that was out-numbered and out-produced at the outset of the struggle.³³ But in Pollard's opinion the war still had to be fought in defense of principles:

Two great political schools of American — that of the Consolidation and that of the States Rights — were founded on different estimates of the relations of the General Government of the States. All other controversies in the political history of the country were subordinate and incidental to this great division of parties.³⁴

Post-war authors who subscribed to this view of the region ignored any manufacturing that existed because the South was destined to lose anyway. The "Lost Cause" became so ingrained in the South after the war that southern apologists never considered industry because there was no need to look at something that had not existed.³⁵ Because of this belief, and the industrial backwardness of the post-war South, historians ignored manufacturing in the antebellum South for almost one hundred years.

Next, U. B. Phillips's work on American slavery became the standard for how slavery, slaves, and slave owners were viewed. Phillips believed that slavery was a backward economic system and that, given time, it would have collapsed under its own weight.³⁶ The South's slave-based economy was stuck in a never-ending cycle in which owners used their money to buy land

³³ Edward Pollard, *The Lost Cause: A New History of the War of the Confederates* (New York: E.B. Treat, 1866), 131.

³⁴ *Ibid.*, 41.

³⁵ Gaines M. Foster, *Ghosts of the Confederacy: Defeat, the Lost Cause, and the Emergence of the New South* (Oxford: Oxford University Press, 1985).

³⁶ Ulrich B. Phillips, *American Negro Slavery* (New York: D. Appleton and Company, 1918). Also see Charles W. Ramsdell, *The Natural Limits of Slavery Expansion* (Indianapolis: Bobbs-Merrill, 1929).

and slaves, which they then used to make more money, which in turn went into new investment in more land and slaves.³⁷ As far as Phillips was concerned there was nothing more worthwhile to invest in than slaves in the antebellum South.³⁸ Slavery therefore held back southern industrial development because no one with money to invest placed their capital willingly in manufacturing. Phillips's view kept intact the traditional view of the South as an agrarian paradise. Also, this explained why so little economic development occurred in the immediate post-war South, and why so few manufacturing concerns, such as cotton mills, were founded before the 1880s.³⁹ As Charles Beard wrote, "Planters did not take kindly to manufacturing; their rural habits of life ran against it or possibly they had the tribesman's instinctive dislike for unaccustomed ways."⁴⁰ The agricultural focus of slave-owners made the South backwards, which carried over to make the post-war South just as backwards.

At the beginning of the twentieth century, historians painted a picture of a South retarded by slavery and one in which the effects of slavery carried over into the post-war period. But even at that early date, some historians, such as Emory Hawk, studied industry in the antebellum South. The only problem that Hawk saw with the South before the war was that it lagged far behind the North. Capital investment in the South in 1860 was on the same level as that of the

³⁷ Phillips, *American Negro Slavery*, 397.

³⁸ *Ibid.*, 395. Phillips was not wrong as slaves increased in value greatly in the decade leading up to the war.

³⁹ Broadus Mitchell, "The Rise of Cotton Mills in the South," *Johns Hopkins University Studies in Historical and Political Science* 39 (1921): 27, 46.

⁴⁰ Charles and Mary Beard, *The Rise of American Civilization* (New York: Macmillan Company, 1930), 657-663. The Beards found many reasons that slavery and slave owners held back the antebellum South, from investment of outsiders, to slave-owners, to labor. Furthermore, the Beards were not the only ones to point out that a tribesman's point of view may have affected southern life. See also Grady McWhinney, *Cracker Culture: Celtic Ways in the Old South* (Tuscaloosa: The University of Alabama Press, 1988). McWhinney's work makes the same point based on Southerners' Celtic background.

North in 1850 and continuing to grow.⁴¹ Unfortunately, the South was never really considered in any way other than in a direct comparison to the North. This does nothing to show the development of southern industry, just that it was not as strong as its northern counterpart. The opposing views of Hawk and Beard can be seen throughout the historiography of antebellum southern industry. Discerning which side is correct is one of the driving forces behind this work.

Scholars have generally studied the subject of southern industry in two ways. The earlier approach was qualitative, even anecdotal, in character, exemplified by Eugene Genovese's *Political Economy of Slavery*.⁴² Genovese argued that the South's slave-based economy was pre-capitalist and was incapable of becoming industrialized like the North.⁴³ His contention became widely accepted and has held back the study of southern manufacturing as it explained very neatly how the South lost the war and preserved its agrarian traditions. Genovese's work, and others like it, looked at small parts of the southern industrial base, focusing on the writings of the people during the period, including industrialists, newspaper editors, and slave-owners, as they explained their perceptions of manufacturing.⁴⁴ Although these monographs provided an idea of how Southerners viewed industry, their lack of a large quantitative statistical base of

⁴¹ Emory Hawk, *Economic History of the South* (New York: Prentice-Hall, Inc., 1934), 278. Hawk's view would slowly be adapted over time by other historians to create a South with no real industry because it was being compared to a highly industrial North, something that will be explored later in detail.

⁴² Eugene D. Genovese, *The Political Economy of Slavery* (New York: Vintage Books, 1967).

⁴³ *Ibid.*, 20.

⁴⁴ For works that follow Genovese's example of slavery holding back development see John Ashworth, *Slavery, Capitalism, and Politics in the Antebellum Republic: The Coming of the Civil War, 1850-1861* (Cambridge: Cambridge University Press, 2007); Robin Blackburn, *The Making of New World Slavery: From the Baroque to the Modern, 1492-1800* (London: Verso, 1997); Douglas Egerton, "Markets Without a Market Revolution: Southern Planters and Capitalism," *Journal of the Early Republic* 16 (Summer 1996): 207-221; and Raimondo Luraghi, *The Rise and Fall of the Plantation South* (New York: Franklin Watts, 1978).

evidence does not afford a systematic, comprehensive view of the extent and intensity of manufacturing in the South.

In a second, later approach, historians did compile quantitative data to study the antebellum South. Douglass North's statistical work on the American economy reinforced the idea that the South was held back by its slave-based economy. He concluded that the South's staple crops flowed out of the region for the purchase of goods and services, while the North supplied the South with transportation, marketing, and insurance.⁴⁵ All the South needed was a few places along its borders to gather and ship out cotton and sugar.⁴⁶ North's statistics then confirmed Genovese's view. Beginning in the 1950s and 1960s, economic historians such as Alfred Conrad and John Meyer, Robert Fogel and Stanley Engerman, and Yasukichi Yasuba expanded this statistical view by employing an innovative approach, cliometrics, to the study of antebellum southern economics and slavery and began to alter the traditional view.⁴⁷ Conrad and Meyer's work, while not focused on industry specifically, proved that slavery was profitable and was not going to disappear on its own.⁴⁸ Fogel and Engerman's work showed that slaves made good agricultural workers and their labor created a large amount of wealth for their owners. Fogel later went on to do more work on his own about slavery and explained that, even though the South was an agricultural area, its manufacturing and trade were highly enough developed

⁴⁵ Douglass C. North, *The Economic Growth of the United States, 1790-1860* (New York: W.W. Norton & Company, 1966), 67,113.

⁴⁶ *Ibid.*, 126.

⁴⁷ Alfred Conrad and John Meyer, *The Economics of Slavery* (Chicago: Aldine Publishing Company, 1964); Robert William Fogel and Stanley L. Engerman, *Time on the Cross: The Economics of American Negro Slavery* (Boston: Little, Brown and Company, 1974); Yasukichi Yasuba, "The Profitability and Viability of Plantation Slavery in the United States," in *Did Slavery Pay*, Hugh G.J. Aitken, ed. (Boston: Houghton Mifflin Company, 1971). Cliometrics is the study of historical data using econometric methodology.

⁴⁸ Alfred Conrad and John Meyer, "The Economics of Slavery in the Ante Bellum South," *The Journal of Political Economy* 66 (April 1958): 119-120.

to place it among the forefront of nations in these respects.⁴⁹ Unfortunately, because the South was so far behind the North in industry and commerce, many dismissed this development. Statistics now were being applied to the study of the antebellum southern economy, but the old disagreements still cropped up. Bateman and Weiss were the first to turn their attention specifically to southern industry using cliometrics, and their results have become the standard on the subject. They did not see much development before the war because slavery held back industrial development.⁵⁰

Most studies on southern industry and urbanization do not attempt to gather large amounts of statistical data on what manufacturing existed in 1860. For example, Richard Wade's work on antebellum southern cities showed slaves living in large numbers within urban areas. Slaves could be used as industrial workers by southern industrialists even though many white urban residents felt uncomfortable about their presence in the workplace.⁵¹ Further, southern planters worked to create slave-based manufacturing concerns in the region, investing surplus capital in these firms. Robert Starobin, who uncovered evidence of manufactories which used slave labor, did not explore the extensiveness of these firms.⁵² Claudia Goldin's work continues in the same vein as Starobin's, finding that slaves were well suited for industrial pursuits. But, the need for agricultural labor made the cost of workers for manufacturing

⁴⁹ Robert William Fogel, *Without Consent or Contract: The Rise and Fall of American Slavery* (New York: Norton, 1989), 103.

⁵⁰ Fred Bateman and Thomas Weiss, *A Deplorable Scarcity: The Failure of Industrialization in the Slave Economy* (Chapel Hill: University of North Carolina Press, 1980).

⁵¹ Richard Wade, *Slavery in the Cities: The South 1820-1860* (Oxford: Oxford University Press, 1964), viii.

⁵² Robert S. Starobin, *Industrial Slavery in the Old South* (Oxford: Oxford University Press, 1970), 231.

concerns too high, stunting industrial growth.⁵³ Overall then, we are back to where we started in the earliest historiography of southern industry. The South, because of a myriad of reasons related to slavery, did not have an industrial base from which to fight the Civil War.

Those general studies of southern industry were followed by more focused works on specific states in the South. Industry in the Lower South during this period attracted the attention of many historians, most notably John Hebron Moore, J. Mills Thornton III, Joseph Reidy, and Mary DeCredico, who wrote state studies of Alabama, Georgia, and Mississippi.⁵⁴ Others, such as W. David Lewis, looked at the development of individual towns, in his case Birmingham, Alabama, to show that industrialization began well before the outbreak of hostilities.⁵⁵ Other historians moved on to looking at specific industries, rather than specific areas, to study southern industry. William Thomas's recent work, *The Iron Way: Railroads, the Civil War, and the Making of Modern America*, for one example, took a fresh look at southern railroads.⁵⁶ Thomas found that they were not built to fight a war, but for economic reasons. As valuable as these books and articles are, they do not go into the detail needed to understand the level of industry in

⁵³ Claudia Dale Goldin, *Urban Slavery in the American South, 1820-1860: A Quantitative History* (Chicago: University of Chicago Press, 1976).

⁵⁴ John Hebron Moore, *The Emergence of the Cotton Kingdom in the Old Southwest* (Baton Rouge: Louisiana State University, 1988); J. Mills Thornton, *Politics and Power in a Slave Society: Alabama, 1800-1860* (Baton Rouge: Louisiana State University Press, 1978); Joseph Reidy, *From Slavery to Agrarian Capitalism in the Cotton Plantation South: Central Georgia, 1800-1880* (Chapel Hill: University of North Carolina Press, 1992); Mary DeCredico, *Patriotism for Profit*. DeCredico's work may not seem to fit here as she focuses more on Georgia during the Civil War, but it does give some attention to pre-war industrial development in Georgia.

⁵⁵ W. David Lewis, "The Emergence of Birmingham as a Case Study of a Continuity between the Antebellum Planter Class and Industrialization in the New South," *Agricultural History* 68 (Spring 1994): 62-79. Also see, for information on Vicksburg, Christopher Morris, *Becoming Southern: The Evolution of a Way of Life, Warren County and Vicksburg, Mississippi, 1770-1860* (Oxford: Oxford University Press, 1995). For San Antonio, for an example from Texas, see, Raymond Boryczka, "The Busiest Man in Town: John Herman Kampmann and the Urbanization of San Antonio, Texas, 1848-1885," *Southwestern Historical Quarterly* 115 (April 2012): 329-363.

⁵⁶ William Thomas, *The Iron Way: Railroads, the Civil War, and the Making of Modern America* (New Haven: Yale University Press, 2011).

the region. Industrialization took place in the South, especially after the Panic of 1837, and planters invested in industry, at least locally, to attempt to keep from ever going through something like the Panic again. The extent and results of this investment has never been systematically studied in detail for the entire Gulf South.⁵⁷

Other recent studies returned to the earliest ideas of why the South did not, or could not, industrialize. Southern planters, who controlled most of the region's capital, had a choice to make: purchase more land and slaves or invest in other concerns and diversify their holdings. Planters took the first option more often because it proved safer and better known.⁵⁸ As James McPherson explains, "the Southern economy grew, but it did not develop."⁵⁹ Southern agriculture produced more in 1860 than in 1800, but the increase resulted from better organization and the larger size of plantations, not from the adoption of new machines or techniques.⁶⁰ Marc Egnal's recent work even returns to the old ideas put forward by Charles and Mary Beard.⁶¹ The South, he concludes, did not want or need to keep up with the changes the North so readily adopted, something Phillips was arguing almost a century before.

As, stated earlier, Bateman and Weiss undertook the first systematic cliometric study of southern industry in their now classic book, *A Deplorable Scarcity: The Failure of*

⁵⁷ There have also been many recent studies focused on industry in other small areas of the antebellum South such as Tom Downey, *Planting a Capitalist South: Masters, Merchants and Manufacturers in the Southern Interior, 1790-1860* (Baton Rouge: Louisiana State University Press, 2006); and Michael Gagnon, *Transition to an Industrial South: Athens, Georgia, 1830-1870* (Baton Rouge: Louisiana State University Press, 2012).

⁵⁸ John McCardell, *The Idea of a Southern Nation: Southern Nationalists and Southern Nationalism, 1830-1860* (New York: W.W. Norton, 1979).

⁵⁹ James McPherson, *Ordeal by Fire: The Civil War and Reconstruction* (New York: McGraw-Hill, 1992), 31.

⁶⁰ *Ibid.*, 30-1.

⁶¹ Marc Egnal, *Clash of Extremes*, 283.

Industrialization in the Slave Economy.⁶² While not the last book to be written chronologically, this work, and others in the same vein by this pair, became the accepted view of the level of industrialization in the antebellum South.⁶³ Because of this, a detailed look at how they came to their conclusions is important to any work on antebellum southern manufacturing. As they state, the study of southern industry before this work, "evolved more from historiographical inferences than from direct examination or analysis of this region's industrial status before the Civil War."⁶⁴ Bateman and Weiss, as the title of their book suggests, concluded that the South did not have a large industrial base because slavery inhibited its formation by diverting capital and talent from manufacturing to plantation agriculture, making slave-based agriculture the driving force in the southern economy.⁶⁵ But, southern industrial firms were, overall, small, making them easy to overlook when studying the area. Thus, careful work is needed to discover all of the manufacturing concerns in the region.

The South did have industry before the war but lagged far behind the North. This imbalance worsened after the war. According to Bateman and Weiss, this disparity suggested that something was fundamentally wrong with the antebellum southern economy.⁶⁶ For example, at the beginning of the conflict, the South and the West were relatively equal in their levels of industrialization. During and after the war though, the West surged ahead while the

⁶² Bateman and Weiss, *A Deplorable Scarcity*.

⁶³ See Fred Bateman and Thomas Weiss, "Comparative Regional Development in Antebellum Manufacturing," *The Journal of Economic History* 35 (March 1975); and Fred Bateman, Thomas Weiss, and James Foust, "The Participation of Planters in Manufacturing in the Antebellum South," *Agricultural History* 48 (April 1974): 277.

⁶⁴ Bateman and Weiss, *Deplorable Scarcity*, 5.

⁶⁵ *Ibid.*, 4, 5, 10, 13.

⁶⁶ *Ibid.*, 23.

South became a backwater. Before the conflict though, “[t]here is little to suggest that the West was poised to become a major industrial region while the South was destined to remain dependent on agriculture.”⁶⁷ They put forward six reasons as to why the South’s industrial development was so stunted: limited market size, the comparative advantage of agriculture, social and political barriers, slavery, entrepreneurial inability, and income distribution.⁶⁸

The availability of markets proved an important consideration for southern industrialists. If they could not sell what they produced, they would quickly go out of business. If the market size was too small manufacturing may have been stunted. All manufacturers, not just southern ones, faced this problem. Smaller markets caused industry to not operate at full capacity at all times, but that does not mean that firms could not operate.⁶⁹ Southern industry was being built up around local consumption; there was very little need for external support and markets for this level of development.⁷⁰ Although concerns in the South did not, for the most part, take full advantage of economies of scale, very few places anywhere in the country at this time were, so market size did not hold back southern manufacturing.⁷¹ Also, as Bateman and Weiss pointed out: “Virtually nothing is known regarding the structure of industrial markets before the Civil War.”⁷²

⁶⁷ *Ibid.*, 98; Bateman and Weiss, “Comparative Regional Development,” 184-5; quote from Fred Bateman, Thomas Weiss, and James Foust, “The Participation of Planters in Manufacturing in the Antebellum South,” *Agricultural History* 48 (April 1974): 277.

⁶⁸ Bateman and Weiss, *A Deplorable Scarcity*, Chapter 2.

⁶⁹ *Ibid.*, 51-58.

⁷⁰ *Ibid.*, 69.

⁷¹ Bateman and Weiss, “Comparative Regional Development,” 200.

⁷² *Ibid.*, 201.

Southern manufacturing faced many other obstacles that Bateman and Weiss studied in great detail. They wrote about the problems caused by monopolies, which were detrimental to development as the lack of competition slowed innovation. Monopolies though were common throughout the nation before the war and industry continued to expand.⁷³ Bateman and Weiss also found that capital and labor were both available in sufficient quantities to support manufacturing.⁷⁴ Planters though, who controlled much of the region's labor and capital, had to be willing to support industry.⁷⁵ Slaves were a form of both capital and labor, and while there were some drawbacks to this system, it could easily coexist with industrial development.⁷⁶ In the end, after discussing the numerous reasons why industrial development was slow, slavery was yet again the answer a new generation of historians settled on to explain why manufacturing was not as developed in the South as it was in the North. This conclusion is not surprising based on how industry and economic development have been studied by historians, slavery was not supposed be modern enough to support industrial development. As Walter Johnson explains, "If it is hard to think about slavery as capitalism, that is because it is supposed to be: slavery is, in some sense, 'unthinkable' in the historical terms that frame western political economy."⁷⁷

⁷³ Bateman and Weiss, *A Deplorable Scarcity*, 148-150.

⁷⁴ *Ibid.*, 156. See also Bonnie Martin, "Slavery's Invisible Engine: Mortgaging Human Property," *The Journal of Southern History* 76 (November 2010): 817-866. Martin's work shows that slaves themselves were used as security for loans to keep capital flowing in the South.

⁷⁵ Bateman and Weiss, *A Deplorable Scarcity*, 70.

⁷⁶ *Ibid.*, 121, 77. Slaves were capital that moved with their owners so they could be used to support local development while allowing employment for idle hands during off planting seasons, something James De Bow pointed out in the 1850s. The interaction of labor has received much attention in recent years, see Jacqueline Jones, "Labor and the Idea of Race in the American South," *The Journal of Southern History* 75 (August 2009): 613-626; and John J. Zaborney, *Slave for Hire: Renting Enslaved Laborers in Antebellum Virginia* (Baton Rouge: Louisiana State University Press, 2012).

⁷⁷ Walter Johnson, "The Pedestal and the Veil: Rethinking the Capitalism/Slavery Question," *Journal of the Early Republic* 24 (Summer 2004): 300.

Many people in the antebellum United States believed that slaves could not perform industrial tasks, or that slave workers stopped native whites or immigrants from wanting to do the same work. Slaves, however, were good industrial workers for the firms that used them.⁷⁸ For example, the Tredegar Iron Works, in Richmond, Virginia, used slaves alongside white workers profitably and was one of the largest manufacturers of its kind in the nation.⁷⁹ Now perhaps slave labor was over-capitalized. Once a slave was purchased you could not lay them off during slow times, they had to be taken care of forever or sold, and capital, as a result, became tied up in the labor force. As Bateman and Weiss explain, "Proponents of one of the most enduring arguments accounting for Southern industrial backwardness claim that by absorbing Southern savings, slavery prevented accumulation of nonhuman capital and inhibited the emergence of a large manufacturing sector."⁸⁰ Over capitalization decreased the amount of money available for investment, but not enough to stop southern industrialization.⁸¹ Engerman understood this, pointing out that slavery was not going to end. Other uses for slave labor would be found to keep it alive or conditions would change in some unforeseeable way.⁸² Further, as

⁷⁸ Bateman and Weiss, *Deplorable Scarcity*, 77; and Theodore Kornweibel, "Railroads and Slavery," *Railroad History* 189 (Fall-Winter 2003): 34.

⁷⁹ Charles Dew, *Ironmaker to the Confederacy: Joseph R. Anderson and the Tredegar Iron Works* (New Haven: Yale University Press, 1966), 3.

⁸⁰ Bateman and Weiss, *Deplorable Scarcity*, 31.

⁸¹ *Ibid.* Furthermore, slaves could be mortgaged to gain liquid assets, see Bonnie Martin, "Slavery's Invisible Engine."

⁸² Stanley Engerman, "Chicken Little, Anna Karenina, and the Economics of Slavery: Two Reflections on Historical Analysis, with Examples Drawn Mostly from the Study of Slavery," *Social Science History* 17 (Summer 1993): 161-171.

historian John Bezis-Selfa explains, “[b]oth slavery and free labor met the demands of entrepreneurs for flexibility.”⁸³

Overall, as argued in *A Deplorable Scarcity*, there were few obvious reasons for industry not to have developed in the South: the rates of return on manufacturing investments were high, there were sufficient markets, protection from outside competition existed, scale was not a problem, and labor and capital were available.⁸⁴ So finally, Bateman and Weiss concluded that there should have been more industry in the antebellum South than was present, and the only explanation for the lack of industrial investment came from slaveholders themselves. They poured all of their capital into land and slaves. U. B. Phillips’s refrain was repeating itself in a new form.⁸⁵ As Bateman and Weiss succinctly explain, “While the South was not merely so devoid of industry as conventionally believed, it no doubt could have done better. That it did not, largely reflects upon the behavior of southern investors.”⁸⁶ Most historians based their views of southern industry on these conclusions.

There are however problems with their work. Bateman and Weiss used the 1860 manufacturing census, both the published compilation and the original manuscript schedules, to create their data set. They believed the census was the most complete set of data available to

⁸³ John Bezis-Selfa “A Tale of Two Ironworks: Slavery, Free Labor, Work, and Resistance in the Early Republic,” *The William and Mary Quarterly* 56 (October 1999): 677-700.

⁸⁴ Bateman and Weiss, *Deplorable Scarcity*, 158-160.

⁸⁵ Bateman and Weiss, *A Deplorable Scarcity*, 162; Bateman, Faust, and Weiss, “Participation of Planters,” 291-292; Bateman and Weiss, “Manufacturing in the Antebellum South,” 38-39. Using the same data set, Bateman and Weiss would reprint their conclusions in many forms, thus reaching a wide audience and implanting this theory deeply in the historiography of the subject.

⁸⁶ Bateman and Weiss, “Manufacturing in the Antebellum South,” 39. Bateman and Weiss make a direct connection between their views and Eugene Genovese’s work on planters being pre-capitalist and not modern, and again these views have become very accepted over time as they fit so neatly with the popular view of the antebellum South.

study the extent of southern industrialization.⁸⁷ They created two samples from this data, a primary one of 200 concerns for each state, and a secondary one of the top one percent of all firms, based on production, in each state, with a minimum of twenty concerns selected. They assumed that the census did not omit any significant number of firms and that their sample was therefore truly representative of the total number of manufacturers.⁸⁸ They used these samples not just for *A Deplorable Scarcity*, but for many other works as well.

Omission of establishments by enumerators in the manuscript schedule of manufacturing was unlikely to have occurred randomly. Consequently, a random sample drawn from the census of manufacturers would unavoidably reproduce omissions of establishments and therefore not fairly reflect the actual number of manufacturing firms and the intensity of manufacturing in the South. Bateman and Weiss also excluded many categories, especially primary processing firms, from their work because such enterprises were not industrial, while others, such as ginning, sugar refining, and rice cleaning, because they were done on plantations, went unreported completely.⁸⁹ Bateman and Weiss questioned many parts of the original census records, such as capital figures, wages, and employees, and also the accuracy of the census summaries compiled from the manuscript census, but they did not ask if there were any industrial firms missing.⁹⁰

⁸⁷ Bateman and Weiss, "Manufacturing in the Antebellum South," 2.

⁸⁸ Bateman and Weiss, *A Deplorable Scarcity*, 165.

⁸⁹ *Ibid.*, 93, 166. Household production could add as much as 10% to southern manufacturing production while plantation production, such as cotton ginning, rice cleaning, and sugar refining, adds \$216.1 million dollars and 100,000 workers to southern industry. But Bateman and Weiss believe that, "these activities are not part of a true industrial sector in the commercial and developmental sense." Bateman and Weiss, "Manufacturing in the Antebellum South," 40.

⁹⁰ Bateman and Weiss, *A Deplorable Scarcity*, 13, 23-26, 167-170. For example Bateman and Weiss found that the published census summary listed 102 firms for a certain county, while the manuscript schedules enumerated 104 firms. Also, Bateman and Weiss did not think that the missing records from Louisiana and Georgia affect in any way their conclusions on Southern industry, even though these states were two of the most industrialized in the region; *Ibid.*, 25.

They explained away the errors they found: "In some cases, census errors cancel each other out while in others they compound themselves. Indeed, it is our judgment that the samples themselves provide a better description of the parent population than do the published census summaries."⁹¹ Bateman and Weiss also believed that this data could be used for many different applications, such as an exploration of market development in the antebellum South.⁹²

Many have debated the validity of Bateman and Weiss's sample, and the use of sampling, in general.⁹³ Richard Vedder and Lowell Gallaway questioned the use of a sample when the information for the entire population was readily available and suggested that the sample seemed to be skewed towards helping Bateman and Weiss make their case.⁹⁴ Others question not the sample itself, but Bateman and Weiss's starting assumptions, because they based their exploration on a wage-labor driven, Northern-derived understanding of industrialization that does not fully consider a mix of free and enslaved labor.⁹⁵ Moreover, *A Deplorable Scarcity* did not take into account the geographic location of the firms studied. Industrial firms are not just numbers on a chart; they relate to one another over space and grow in relationship to each other. Bateman and Weiss ignored these relationships completely. Engerman asks: "[T]he data

⁹¹ *Ibid.*, 171.

⁹² *Ibid.*, 146.

⁹³ Herbert Gutman, *Slavery and the Numbers Game* (Urbana: University of Illinois Press, 1975), 60, 70. Gutman shows the problems with using sampling in great detail. His attacks, though, focus on Fogel and Engerman's *Time on the Cross*, going into great detail about the book's sample deficiencies, which could have been avoided, such as the sample being too small to be representative, problems that *A Deplorable Scarcity* also possesses.

⁹⁴ Richard Vedder and Lowell Gallaway, "Profitability of Antebellum Manufacturing: Some New Estimates," *The Business History Review* 54 (Spring 1980): 95-6, 103.

⁹⁵ L. Diane Barnes, "Industry and Its Laborers, Free and Slave in Late-Antebellum Virginia," in Diane Barnes, Brian Schoen, and Frank Towers, eds, *The Old South's Modern Worlds: Slavery, Region, and Nation in the Age of Progress* (Oxford: Oxford University Press, 2011), 190.

for 1840 and 1860 are, by now, familiar, as is their [Bateman and Weiss] interpretations. Are there any other regional data which can be used for suggestive inferences on Southern growth?⁹⁶ The answer to Engerman's question is emphatically yes, and, for reasons listed above, a more detailed look at all of the available data on southern industry is warranted. This dissertation provides that closer, more detailed look. Bateman and Weiss's sample is not representative of the industry that actually existed and is skewed towards the larger manufacturing establishments that were easier to find and record by census takers. Bateman and Weiss themselves lament that, "[N]o one has ever completely told the story of the transformation from an agrarian to an industrial economy."⁹⁷ Now this narrative will begin to be written.

R. Ogilvie Buchanan, in his landmark work of economic geography, stated: "[M]an himself decides which, if any, of the possibilities he will attempt to exploit, and how, if at all, he will attempt to overcome the difficulties."⁹⁸ The South used slave labor to overcome its labor difficulties, and in the opinion of many, held back industrial development. A finding that more industry than previously believed existed in the antebellum South has a significance for historians' understanding of how the late antebellum southern economy functioned and the need to re-evaluate the presumed depressive effect that the South's slavery system had on industrialization. At the same time I will demonstrate the advantages of studying antebellum industry by applying a historical geographic approach using GIS, as economic development

⁹⁶ Stanley Engerman, "A Reconsideration of Southern Economic Growth, 1770-1860," *Agricultural History* 49 (April 1975): 350.

⁹⁷ Bateman and Weiss, *A Deplorable Scarcity*, 59.

⁹⁸ R. Ogilvie Buchanan, *The Pastoral Industries of New Zealand* (London: George Philip & Son, LTD, 1935), 70.

shows the combined effect of physical environment, technology, and social institutions.⁹⁹ Bateman and Weiss believed that the roots of retardation had indeed been planted before the Civil War, and many other historians concurred that it was not until after the war that a New South developed, one more open to modern ways and industrial development.¹⁰⁰ Richard Brown agreed, explaining, "Modern America is generally said to have emerged some time between 1865 and the First World War, the decades when telegraphy and the railroads reached full development and when the ascendancy of the national government became secure."¹⁰¹ John Majewski saw an antebellum South full of "economic black holes" caused by slavery.¹⁰² But, more recently, historians, including Lewis, Steven Collins, and Jonathan Wells, have shown that the New South had extensive pre-war roots.¹⁰³ This work will contribute to our understanding of the origins of this industrial New South, one that began its development well before the outbreak of hostilities, living by William Gregg's motto of, "The Plow, the Anvil, and the Loom."¹⁰⁴

⁹⁹ Harold Williamson, ed., *The Growth of the American Economy: An Introduction to the Economic History of the United States* (New York: Prentice-Hall, Inc., 1944), 2.

¹⁰⁰ Bateman and Weiss, *A Deplorable Scarcity*, 23.

¹⁰¹ Richard Brown, *Modernization: The Transformation of American Life, 1600-1865* (New York: Hill and Wang, 1976), 4.

¹⁰² John Majewski, *Modernizing a Slave Economy: The Economic Vision of the Confederate Nation* (Chapel Hill: University of North Carolina Press, 2009), 16-17.

¹⁰³ Lewis, *Coal, Iron, and Slaves*; Steven G. Collins, "System in the South: John W. Mallet, Josiah Gorgas, and Uniform Production at the Confederate Ordnance Department," *Technology and Culture* 40 (July 1999): 517-544; Steven G. Collins, "System, Organization, and Agricultural Reform in the Antebellum South, 1840-1860," *Agricultural History* 75 (Winter 2001): 1-27. Collins's work especially shows that there were many in the South who had the same views on modernization that Northerners had, and that they readily accepted new technologies and ideas that would help them to run their businesses and plantations as efficiently as possible. Jonathan Wells, "The Southern Middle Class," *The Journal of Southern History* 75 (August 2009): 651-662. Wells presents a dynamic middle class forming before the war that was a driving force after the conflict ended. Anthony Kaye, in his work, shows a "second slavery" that was modern and capitalistic well before the war. See Kaye, "The Second Slavery," 633.

¹⁰⁴ Johnson, *Southern Commercial Conventions*, 120.

CHAPTER TWO: LAY OF THE LAND ó PHYSICAL AND ECONOMIC GEOGRAPHY

One of the greatest challenges facing industrialists in the Gulf South was finding the natural resources needed for development. As the *Daily Confederation* of Montgomery, Alabama pointed out in an editorial about the region in February 1859, “Outside of Agriculture and Commerce the great mass of our people require for their employment, cotton, iron, leather and coal, none of which, save iron and leather, and these to a very limited extent, have we here.”¹ A lack of such natural resources and a weak transportation system to move resources around, were cited as reasons for the backwardness of Southern manufacturing.² But, the South did possess more of the resources needed for industrialization than casual observers perceived. While cotton dominated the southern landscape, “the Southern states, even the cotton states, together possessed population and resources sufficient to enable them to take their place among the nations of the earth.”³ What was both on and under the landscape of the Gulf South would be a major factor in the growth of manufacturing in the region.

Availability of the natural resources necessary for southern industrial development was, of course, a function of the region’s geography, and their supply did not hinder industrial development. Those large fields of cotton, common across the region, played a vital role in the growth of Southern industry, supplying raw material, capital and, often, during off-seasons, labor. The assertion made by historian Harold Woodman that “the South was hamstrung by its climate, topography, natural resources, [and] location with respect to the North and to Europe,”

¹ *Daily Confederation*, 26 February 1859.

² Dew, *Ironmaker to the Confederacy*, 22.

³ Robert Royal Russel, *Economic Aspects of Southern Sectionalism, 1840-1861* (Urbana: The University of Illinois Press, 1924), 235. J. Mills Thornton said much the same thing in his work, see J. Mills Thornton, *Politics and Power in a Slave Society: Alabama, 1800-1860* (Baton Rouge: Louisiana State University Press, 1978).

is overstated.⁴ An accurate assessment of the industrialization of Alabama, Mississippi, and Texas must rest on an understanding of the foundation upon which it was built: the natural resources and transportation facilities available to the average southern entrepreneur. As H. P. Chapman and J. F. Battle asserted in 1895, capitalists in the Gulf South had the capacity to develop manufacturing, "It is the land for the husbandman, for the merchant and manufacturer; for the hunter, for the lumberman, for the tourist."⁵

The Gulf South's endowment of natural resources played an important role in manufacturing. These resources could be, and often were, imported from other regions, indigenous resources also facilitated the establishment of new manufacturing concerns. Local iron, coal, cotton, and other materials cut the cost of manufactures and potentially made southern firms more competitive with those outside the South. The Gulf South had those resources in abundance, but the technology of the time and the knowledge of what was under the ground limited what people were able to obtain, a circumstance that was hardly peculiar to the South.⁶ Of all the South's resources, land was of course the most important, especially acreage planted in cotton.

⁴ Harold D. Woodman, "The Profitability of Slavery: A Historical Perennial," *The Journal of Southern History* 29 (August 1963). Historians today still make these claims. While individual examples of industrial success existed, such as Daniel Pratt's gin factories in Alabama and William Gregg's textile works in South Carolina, most believe that the South still had to import most of its industrial needs.

⁵ H. P. Chapman and J. F. Battle, *Picturesque Vicksburg: A Description of the Resources and Prospects of that City and the Famous Yazoo Delta, Its Agriculture and Commercial Interests, To Which is Attached a Series of Sketches of Representative Industries: Profoundly Illustrated* (Vicksburg: Vicksburg Printing and Publishing Company, 1895), 2. Chapman and Battle go on to say that all the area needed was capital to drive development. Capital may have been a problem in the post-war South, but before the war there was enough capital available for manufacturing as chapter 3 will show.

⁶ *Ibid.*, 15, 310.

Cotton was king in the South and was the region's signal economic asset.⁷ Map 2.1 illustrates the extent of cotton production in the region. Manufacturing in the region would always run second to cotton production, but running second need not mean that industry was insignificant. Moreover, cotton stimulated the development of manufacturing. Henry Hughes, an important southern writer of the day, explained that British industry got seventy-five to eighty percent of its cotton from the South and that southern cotton also supplied the needs of northern textile manufacturers along with the South's own mills.⁸ Cotton production could be quite profitable and, by 1860, "taken as a whole the cotton interest was never in a more prosperous condition."⁹ As demand for cotton increased, the profits from growing cotton rose, and more people were drawn into its production.¹⁰ The industrial revolution that first swept Great Britain and Northern Europe, then the North, and then the South, drove the expansion of cotton production as, "agriculture was more and more called upon to produce what was necessary to the development of industry."¹¹ Rapid expansion of textile production, both woolens and cotton, drove much of the industrialization of Great Britain, as well as that of the northeastern United States, particularly in New England. Robert Russel explained the importance of cotton:

The South produced an immense surplus for export of great staples, particularly cotton, which had become necessities for millions of people the world over, supported a large part of the commerce and trade of the world, constituted the raw materials for factories in England and America employing millions of capital and hundreds of thousands of hands, and furnished the basis for American credit in Europe.¹²

⁷ North, *The Economic Growth of the United States*, 122-123.

⁸ Henry Hughes, *Treatise on Sociology, Theoretical and Practical* (Philadelphia: Lippincott, Grambo & Company, 1854), 170.

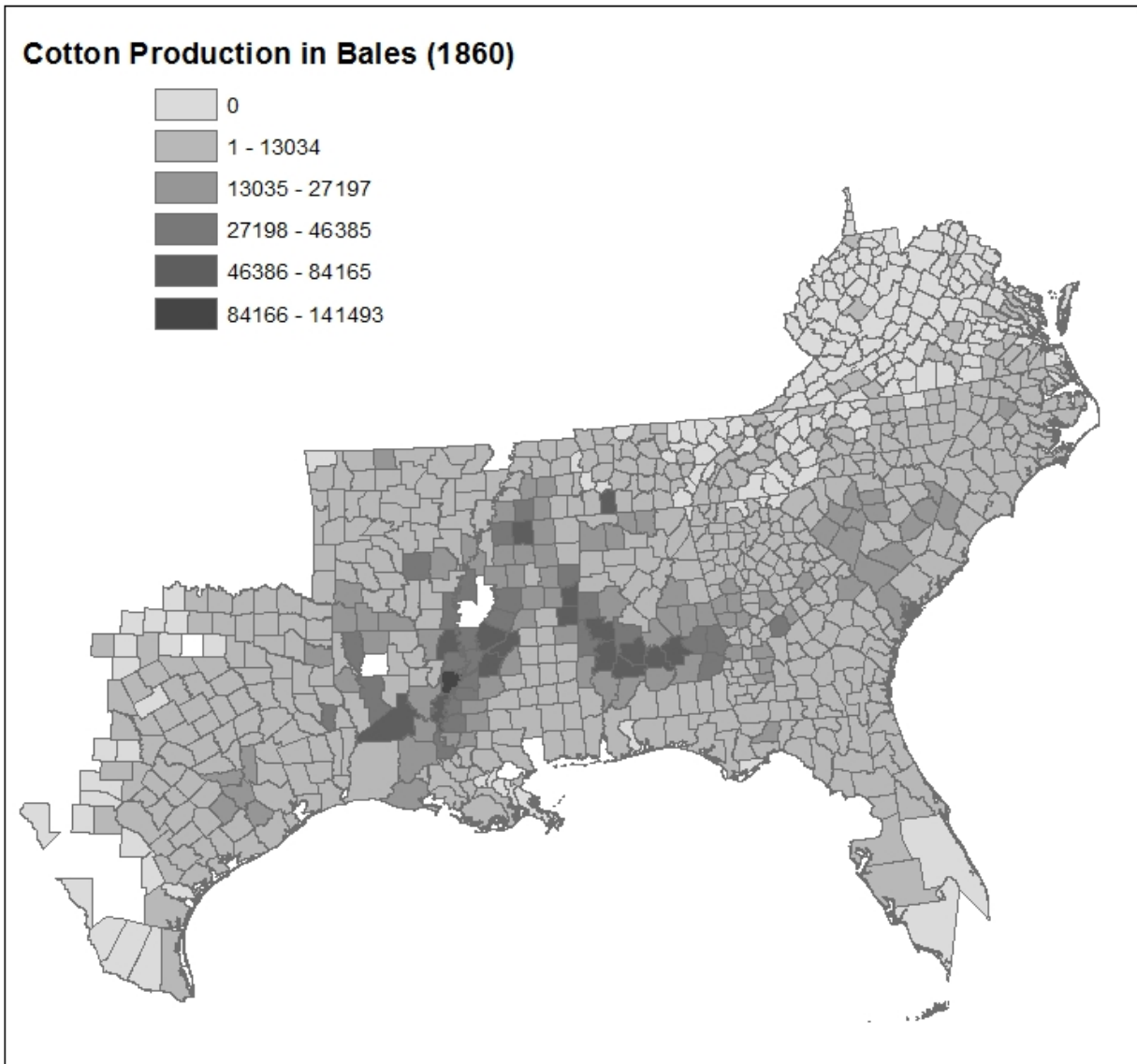
⁹ *Jacksonville Republican*, 12 Jan 1860.

¹⁰ James Oakes, *Slavery and Freedom: An Interpretation of the Old South* (New York: Alfred A. Knopf, 1990).

¹¹ Luraghi, *The Rise and Fall of the Plantation South*, 57.

¹² Russel, *Economic Aspects of Southern Sectionalism*, 207.

Cotton generated a great deal of money for Southerners, much of which they reinvested in more land and slaves to grow more cotton.¹³ But, not all of the profits went back into cotton production; some of it became capital for other investments, such as manufacturing concerns.



Map 2.1 ó The Cotton Belt

Source: Census of 1860, Agriculture.

¹³ This is the old Charles Beard argument of almost a century ago, an argument that will not go away, for example, Marc Egnal, in his work *Clash of Extremes*, makes this same argument yet again. See Egnal, *Clash of Extremes*, 10.

Large-scale cotton production was possible because the Gulf South was one of the richest agricultural areas in the United States. Known as the Black Belt, or the Cotton Belt, it was an area intensively farmed by cotton planters. The combination of fertile river valleys and a congenial climate created an expanse of fertile agricultural land through the middle of the region that turned it into a major cotton producing and manufacturing area.¹⁴ The number of slaves increased to meet the labor needs of the area as white Southerners moved west, filling in the land from Alabama to the Texas frontier.¹⁵ When looking for a reason to explain the failure of the South to industrialize, many scholars point to the comparative natural advantage that climate and physical geography provided to the region. Cotton agriculture created a way of life for the South, especially the Gulf South, and Southerners capitalized on what nature had provided and grew as much cotton as possible.¹⁶

Land was important for industrial development, and the Gulf South had an abundance of it. In J. D. B. De Bow's opinion the region's good soil and cheap land drew people to the area in large numbers.¹⁷ Contrary to common belief today, once there, most Southerners took care of their land, and grew not only cotton or sugar but enough food to live on, using crop rotation to

¹⁴ Thornton, *Politics and Power in a Slave Society*, 31. Also see Fogel and Engerman, *Time on the Cross*, 198-199.

¹⁵ Charles S. Davis, *The Cotton Kingdom in Alabama* (Montgomery: Alabama State Department of Archives and History, 1939), 45. Donald A. Reynolds, *Texas Terror: The Slave Insurrection Panic of 1860 and the Secession of the Lower South* (Baton Rouge: Louisiana State University Press, 2007), 24-26. In 1860 the region underwent pronounced drought that caused crop failures and economic problems for many plantations.

¹⁶ As Davis Smiley explains, "the climate and its alleged offspring, the plantation, the planter, the staple crop, and the Negro, all set in a rural scene surrounded by primitive folkways, have provided students with the ingredients for a central theme." Davis Smiley, "The Quest for the Central Theme in Southern History," *The South Atlantic Quarterly* 71 (Summer 1972): 318. Randolph Campbell, in his work *Empire for Slavery*, also comments on this natural advantage of climate, as do many other historians who only look at the visible surface of the southern landscape. Randolph Campbell, *An Empire for Slavery: The Peculiar Institution in Texas, 1821-1865* (Baton Rouge, Louisiana State University Press, 1989), 78-81.

¹⁷ J.D.B. De Bow, *The Industrial Resources, Statistics, & of the United States and More Particularly of the Southern and Western States* (New York: Appleton, 1852), 45.

keep fields fertile and productive.¹⁸ Yet, the myth persists that planters wore out the land and then packed up and moved west to new, more fertile land, leaving behind areas that could no longer be profitably used.¹⁹ According to this myth, ðplanters bought land as they might buy a wagon ó with the expectation of wearing it out.ö²⁰ Plantation owners then used their capital to buy new land to produce more cotton, keeping the old cycle going. This was simply not true. The idea that they destroyed their most important natural resource and then moved on arose because ðthe persona of the southern soil miner fits too neatly into a morality play that juxtaposes southern evil and northern virtue.ö²¹ Moreover, before the outbreak of the war, the South was self-sufficient in supplying most, if not all, of its food needs.²² Money and goods therefore did not have to leave the South to pay for food imports or to purchase new land. Instead, the money that Southerners earned could be used to fuel industrial development.²³

Adequate sources of energy were also important for the development of industry in the Gulf South. While water power was used wherever possible, other forms of motive power were needed, especially in the iron industry and for railroads. In the first half of the nineteenth

¹⁸ Carville Earle, *Geographical Inquiry and American Historical Problems* (Stanford: Stanford University Press, 1992), 290.

¹⁹ Lewis Cecil Gray and Esther Katherine Thompson, *History of Agriculture in the Southern United States to 1860* (Washington: The Carnegie Institution of Washington, 1933), 445.

²⁰ *Ibid.*, 446.

²¹ Earle, *Geographical Inquiry*, 260.

²² Hughes, *Treatise on Sociology*, 172-173.

²³ Hilliard, *Hog Meat and Hoecake*, 235. Some planters did use outside food sources, but, according to Hilliard, this was by choice, as transportation costs were low, making importing food cheap and easy. Mississippi, for example, was a major agricultural state growing large amounts of not just cotton, but wheat and corn as well. This made Mississippi relatively self-sufficient and provided the raw materials needed to begin industrialization, such as the processing of these crops into a useable product, such as corn milling, cotton ginning, and others. For example, Mississippi was able to locally grow enough food for itself. Yes, some areas did need to import food, such as major cotton areas, but this food was brought in from other parts of the state. Thus, local capital stayed in the state and could be put to use in other endeavors, such as building small manufacturing firms.

century most power came from the burning of wood. Forests, which covered most of the Gulf South, were a major source of fuel, in the form of chopped wood or charcoal.²⁴ Most fuel across the nation was used not for industrial purposes but for home heating or cooking and only about one-tenth of the total fuel supply was converted into mechanical energy.²⁵ This use of fuel wood was beginning to make significant reductions to the timber of the South, but, before the war, wood was still readily available for use by industry.²⁶ Most wood for industry was converted into charcoal because it was a superior source of energy. Railroads and steamboats still used most of the fuel wood, but the iron industry consumed large amounts of wood to make the 70-75 million bushels of charcoal that it used each year before the Civil War.²⁷

Coal was also available, but it was just beginning to be used for industrial purposes.²⁸ It was a better fuel than wood or charcoal because it provided more energy per unit of weight. Coal mining began in Pennsylvania, but fields spread all the way south into Alabama and helped to spur industrial development by making iron cheaper and easier to produce.²⁹ Even so, large-scale coal mining in the South did not begin until after the Civil War.

²⁴ Michael Williams, "Industrial Impacts on the Forests of the United States, 1860-1920," *Journal of Forest History* 31 (July 1987): 110.

²⁵ *Ibid.*, 51.

²⁶ Hawk, *Economic History of the South*, 20-21. R.V. Reynolds, *Fuel Wood Used in the United States, 1630-1930* (Washington: United States Department of Agriculture, 1942) 9. In the decade leading up to the Civil War the Eastern Gulf States used 88,100 billion boardfeet of wood for fuel, while the Lower Mississippi Valley States used 82,490 billion boardfeet.

²⁷ Sam H. Schurr and Bruce C. Netschert, *Energy in the American Economy, 1850-1975* (Baltimore: The Johns Hopkins Press, 1960), 52.

²⁸ *Ibid.*, 46-7.

²⁹ Alfred Chandler, "Anthracite Coal and the Beginnings of the Industrial Revolution in the United States," *The Business History Review* 46 (Summer 1972): 179-180; Hawk, 18.

Alabama was the most important coal producing state in the Gulf South, especially the northern part.³⁰ Map 2.2 shows all of the counties that produced coal in the state in 1860. Coal was very important to Alabama, as well as the rest of the Gulf South, for industrial development. In 1849, De Bow explained the state of coal mining in Alabama: "there were about 200 persons engaged in the coal trade of the state; and as only three beds are worked underground, the rest of the coal raised is taken from the bed of the river, and streams."³¹ Production had only just begun in the state, but it would continue to grow throughout the antebellum period.

Coal was a major export of many Alabama counties, and coal fields advertised in northern newspapers for experienced miners to manage and work at these concerns. For example, the Alabama Coal Mining Company in Shelby County hired a man from Philadelphia in 1854 to manage its fields, and "sent from fifty to a hundred boatloads of coal a year down to Wetumpka, Montgomery, and Mobile until the outbreak of the Civil War."³² The Shelby County mines were the first underground mines in Alabama.³³ Shelby was the center of industrial development in antebellum Alabama because it was located in the middle of the Alabama mineral belt, where coal had been mined since 1830.³⁴

³⁰ Williamson, *The Growth of the American Economy*, 7.

³¹ De Bow, *Industrial Resources*, 61.

³² Ethal Armes, *The Story of Coal and Iron in Alabama* (Birmingham: Birmingham Chamber of Commerce, 1910), 68-69. The First President of the ACMC was John Storrs and was based out of Montevallo. James Day, "Dealing in Black Diamonds: Joseph Squire and Alabama's Early Coal-Mining Operations," *The Alabama Review* 64(2011): 6.

³³ Armes, *The Story of Coal and Iron*, 149.

³⁴ Joyce Jackson, "History of the Shelby Iron Company, 1861-1868," (Thesis, University of Alabama, 1948), 1-2.

The huge bituminous coal vein running through Shelby began near the Black Warrior River around Tuscaloosa and spread into Georgia and Mississippi, running forty miles wide and sixty-seven miles long in Shelby County.³⁵ By the eve of the war over half of the iron produced in the United States was produced using coal as a fuel, and Alabama coal went to furnaces around the region and country to spur this development.³⁶

Of course, one of the most important resources for the development of manufacturing was iron ore, which in the South came in many varieties: hematite, brown ore, magnetite, and iron carbonate.³⁷ Iron ore was mined, or at least gathered on the surface, from the earliest days of settlement, and iron foundries became ubiquitous parts of the southern landscape. The Gulf South had some significant deposits of iron in Alabama as iron ore deposits were found in many places in the northern and central parts of the state.³⁸ Map 2.3 shows where iron ore was mined in Alabama. Deposits of coal and large veins of brown hematite ore near the Coosa River encouraged the development of production in the area.³⁹ The first blast furnace to use this ore was in Franklin County and began operations in 1818. Called the Cedar Creek Furnace, it consumed surface deposits of ore and charcoal made from local cedar.⁴⁰

³⁵ De Bow, *Industrial Resources*, 60-61. Day, "Dealing in Black Diamonds," 4. This vein ran through St. Clair, Jefferson, Shelby, and Bibb counties. William Phineas Browne and Philip J. Weaver owned companies that mined in this field, known as the Cahaba Field, and supplied coal to Selma, Montgomery, Marion, Uniontown, and Mobile. Browne also owned a rolling mill in Bibb County named "Bright-Hope." See Day, "Dealing in Black Diamonds," 7.

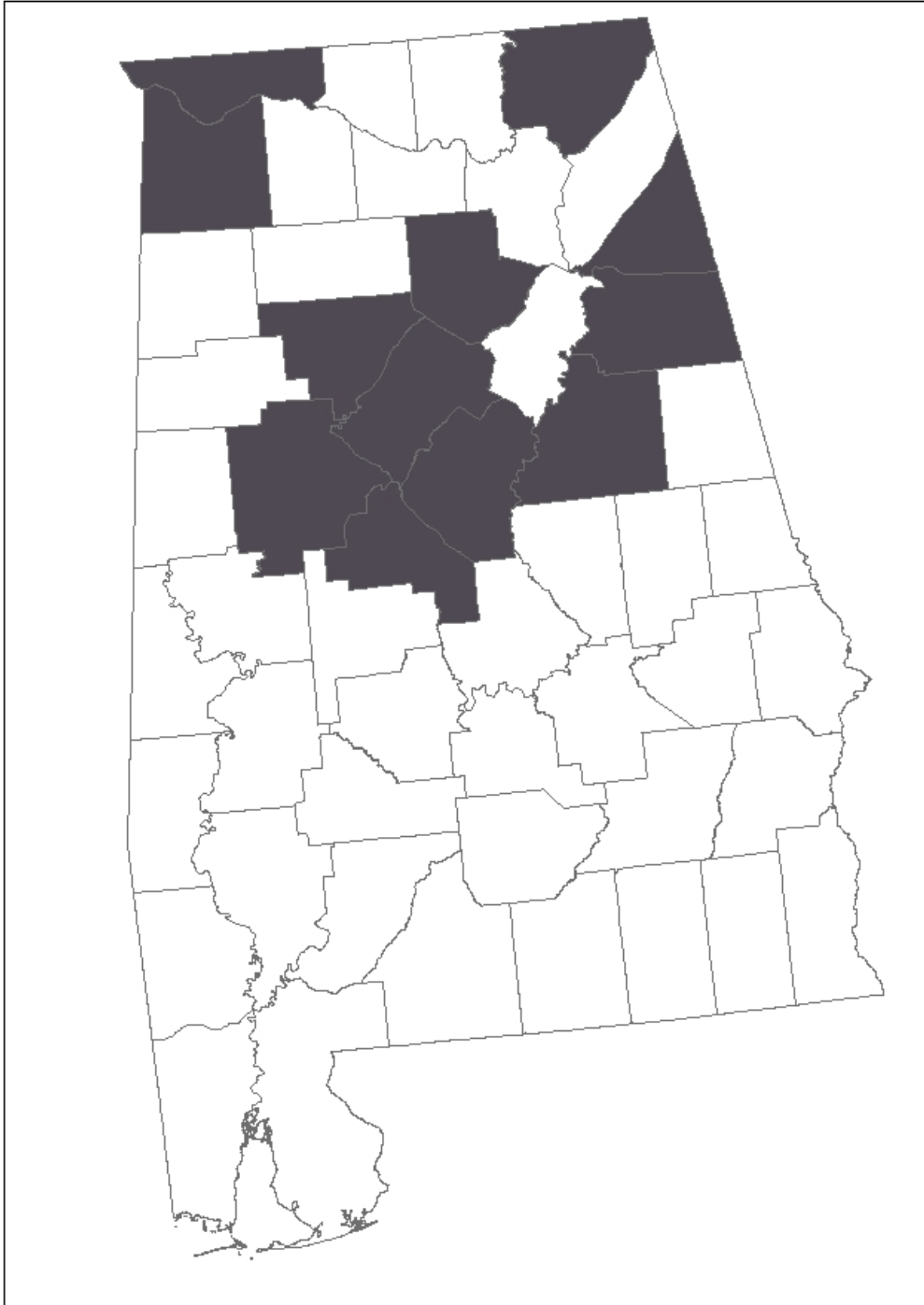
³⁶ Sean Patrick Adams, "The US Coal Industry in the Nineteenth Century," <http://eh.net/encyclopedia/article/adams.industry.coal.us> Accessed on 17 September 2013.

³⁷ Hawk, *Economic History of the South*, 15-16.

³⁸ Weymouth T. Jordan, *Ante-Bellum Alabama: Town and Country* (Tuscaloosa: University of Alabama Press, 1987), 145.

³⁹ Jackson, "History of the Shelby Iron Company," 3-4.

⁴⁰ Armes, *The Story of Coal and Iron*, 27-29.



Map 2.3 ó Iron ore producing counties in Alabama before the war

Source: Ethel Armes, The Story of Iron and Coal in Alabama

The other major iron area in the state was near Talladega, where the Talladega Iron Works, founded six miles east of the town, smelted local brown hematite ore.⁴¹ Brown hematite ore was also found in Cherokee, Benton, Shelby, Bibb, and Franklin Counties.⁴² Three other furnaces also operated in Alabama: the Round Mountain Furnace, the Polkville Furnace, and the Shelby Furnace.⁴³ All three of these furnaces used charcoal rather than the local coal deposits and steam engines to power their blasts and produced a combined output of 1,495 tons of pig iron in 1856.⁴⁴ Mining ore in the northern part of the state was often a family affair and, the women and children shoveled out the ore and piled it on kilns of timber, where they roasted it to make it crumble. It was then carted to a forge, and they were paid for it by the load.⁴⁵

Coal and iron were hardly Alabama's only raw materials. Red ochre was produced near Bucksville to make paint, lead ore was mined in Benton and Clark counties, manganese was taken from Benton County, and limestone and marble deposits were available in many parts of

⁴¹ *Ibid.*, 83.

⁴² J.P. Lesley, *The Iron Manufacturer's Guide to the Furnaces, Forges, and Rolling Mills of the United States* (New York: John Wiley Publishers, 1859), 595. Alabama coal and iron production was centered on a group of counties, made up of: Franklin, Blount, Jefferson, Walker, Tuscaloosa, Bibb, Shelby, Talladega, Calhoun, Cherokee, Lauderdale, and Lamar. See Armes, *The Story of Coal and Iron*, 40. Alabama had four main mineral regions: the Highland Rim, full of brown ore; the Cumberland Plateau, with Red Mountain ore and two great coal fields, the Black Warrior field and the Lookout Mountain field; the Appalachian Valley, containing two more coal fields, the Coosa and the Cahaba, along with large amounts of brown ore; and finally the Ashland Plateau, which was a mix of many different types of iron ore and other minerals. See Armes, xxix. Cherokee County also was the only place in the state to mine dyestone fossil ores. See Lesley, *Iron Manufacturer's Guide*, 631.

⁴³ *Ibid.*, 78-79.

⁴⁴ *Ibid.*, 759.

⁴⁵ Olmsted, *The Cotton Kingdom*, 114-115.

the state, especially along the Cahawba River.⁴⁶ Much of the state's marble went to Mobile where stonecutters shaped it into everything from church alters to tombstones.⁴⁷

Southerners were willing to invest capital in industrial ventures, just as they were willing to invest in the expansion of cotton production, as long as the raw necessary materials were available to allow development.⁴⁸ Alabama had the raw materials to spur manufacturing investment.

Alabama's cotton, land, and other resources such as coal and iron combined to make it the most developed of the three states discussed here. Other states in the Gulf South did not have comparable endowments of raw materials. Yet, as John Hebron Moore has noted, Mississippi in 1860 unquestionably possessed the essential elements for developing a balanced agricultural and industrial economy.⁴⁹ The state grew a great deal of cotton before the war and the state's textile mills consumed some of the crop. Mississippi did not have an abundance of coal or iron, but people in the state still needed iron goods, and small producers arose to fill this need, importing iron and coal as needed from neighboring states like Alabama. Such local demand helped to spur small-scale industrialization such as smithies and foundries that developed into larger concerns to serve nearby markets. Although, Mississippi's economy in 1860 was still overwhelmingly agricultural, some industrialization had already gotten underway.

⁴⁶ De Bow, *Industrial Resources*, 59-60.

⁴⁷ Harriett E. Amos Doss, "Cotton City, 1813-1860," in Michael V.R. Thomason, *Mobile: The New History of Alabama's First City* (Tuscaloosa: University of Alabama Press, 2001), 88.

⁴⁸ William Scarborough, *Masters of the Big House: Elite Slaveholders of the Mid-Nineteenth Century South* (Baton Rouge: Louisiana State University Press, 2003), 226. For Alabama, the total of all coal and iron mined and processed is not completely known, because a great deal of this production was never recorded in a systematic way. This was a problem in all industrial processes of the antebellum South, not just coal and iron production. See Armes, *The Story of Coal and Iron in Alabama*, 121. Further, J.P. Lesley, in his enumeration of iron manufacturers, listed no furnaces in Alabama that made use of local deposits of coal.

⁴⁹ Moore, *The Emergence of the Cotton Kingdom*, 205.

In 1860, much of Texas was still a frontier region. Although some areas had been settled for decades, most were still being opened for settlement. Texans then were still discovering and developing their state's natural resources. Again, De Bow's work is the best record we have of the resources used by Texans, including the great variety of mines: silver from the San Saba mines and along the Bedais River, gold in Atoyac, iron ore scattered all over the state, bituminous coal near the Trinity and Upper Brazos rivers, and lime throughout North Texas.⁵⁰ Because many Texas towns were located along trade routes, they were able to bring in needed materials from distant sources. For example, a newspaper in Austin ran advertisements for the sale in town of copper from a mine in Arizona.⁵¹ Despite these resources, manufacturing, one historian argued, "remained virtually nonexistent," and the 1860 census seems to support his characterization.⁵² But, as will be seen, readily obtainable raw materials encouraged industrial development. Manufacturers served local markets which would otherwise have had difficulty getting goods from distant parts of the Union. Even so, however, "antebellum Texas, surrounded by cotton fields and forests, imported cotton cloth and paper."⁵³

Economic development, of any kind required infrastructure, especially a transportation network and few towns enjoyed local access to all of the resources needed for industrialization. But, access to an efficient transportation network would make exploitation of local resources less important. The usefulness of these internal improvements cannot be overstated: "[l]iterally fixed to the ground, roads, canals, and other internal improvements were capable of altering political

⁵⁰ DeBow, *Industrial Resources*, 325.

⁵¹ *Alamo Express*, 1 October, 1860.

⁵² Randolph Campbell, *Gone to Texas: A History of the Lone Star State* (Oxford: Oxford University Press, 2003), 212.

⁵³ *Ibid.*

and economic geography: such was their express purpose.⁵⁴ Interregional connection proliferated as canals, steamboats, and railroads permitted greater movement of people and gave entrepreneurs who wished to start manufacturing concerns access to the materials needed for their businesses, markets for their goods, and connections to credit to help with both. People in the Gulf South were just as affected by this development as anywhere else in the nation and those living in rural areas of Mississippi and Alabama spoke of going to town as if New Orleans was only a mile distant.⁵⁵ John C. Calhoun saw the importance of internal improvements, stating, "let us then bind the Republic together with a perfect system of roads and canals. Let us conquer space."⁵⁶

Rivers were the first form of transportation when settlers arrived in an area. Alabama has a very large and important river system and the state can be broken into six geographical regions based mostly on these rivers: the Tennessee Valley, the hill region, the Alabama and Tombigbee river valleys, the Coosa River valley, the Black Belt, and the coastal plain.⁵⁷ Further, Alabama's river systems also split the state into two large sections, a northern part oriented toward Tennessee and a southern part drawn to the markets along the Gulf of Mexico.⁵⁸ Geography not only influenced the economy of the state, but its politics as well, and that influence explains why

⁵⁴ John Lauritz Larson, *Internal Improvements: National Public Works and the Promise of Popular Government in the Early United States* (Chapel Hill: University of North Carolina Press, 2001), 257.

⁵⁵ William McCain and Charlotte Capers, *Memoirs of Henry Tillinghast Ireys* (Jackson: Mississippi Department of Archives and History, 1954), 54.

⁵⁶ John C. Calhoun, *Annals of Congress*, 14th Congress, 2nd Session, 851-960. This was a speech in support of the Bonus Bill and building canals with government support. Some, like John Binder, argue that transportation caused the war as the West united with the East in opposition to the South. See Binder, "Transportation Revolution."

⁵⁷ Davis, *Cotton Kingdom in Alabama*, 1.

⁵⁸ *Ibid.*, 25.

many of the state's regions had different ideas on state support for industrial endeavors, which will be seen in later chapters.⁵⁹

Rivers affected how Alabama developed. One of the most important cities in Alabama, and the most developed industrially, was Mobile. It was the state's major port on the Gulf and, through the Mobile River, was connected to the Alabama River system, that is with the Tombigbee, Black Warrior, Cahaba, Coosa, and Tallapoosa Rivers. These rivers gave Mobile access to a large hinterland market for its goods and in turn gave hinterland manufacturers sources of raw materials and semi-finished goods.⁶⁰ Northern Alabama also benefited from its rivers because "the Tennessee valley was admirably suited, by virtue of its vast water power, for the introduction of manufactures."⁶¹ Many of the state's rivers received some improvements before the war, funded for the most part by the Federal Government; rivalries between sections of Alabama precluded state-supported improvements.⁶²

Mississippi also had industrial potential thanks to its geography, and the Mississippi River was vital to the state's realization of that potential. The river allowed access to distant markets for the state's products and allowed Mississippians to import finished goods, technology, and materials, all of which encouraged and augmented the state's industrial development. Historians have often considered rivers to be conduits through which wealth flowed out of the South. But, in the case of the Gulf South, and Mississippi especially, there was

⁵⁹ Charles Summersell, *Mobile: History of a Seaport Town* (University: University of Alabama Press, 1949), 16.

⁶⁰ *Ibid.*, 16. See also Davis, *Cotton Kingdom*, 1.

⁶¹ Richard W. Griffin, "Cotton Manufacture in Alabama to 1865," *Alabama Historical Quarterly* 18 (Fall 1956): 290.

⁶² William Martin, "Internal Improvements in Alabama," *Johns Hopkins University Studies in Historical and Political Science* 20 (April 1902): 33.

a bi-directional flow that allowed development to flourish and served purposes beyond that of transportation. As was true of the other coastal states, Mississippi had several rivers that ran far into its interior. Most of these rivers eventually came to the fall line, the furthest point to which boats could travel upstream. This line became an important location for industrial development because the water power from the falls could drive a variety of manufacturing works.⁶³

Although Mississippi lacked extensive sources of raw materials, it had a strong river system that could nevertheless support industrial development.

Texas, the third Gulf South state studied here, is the most geographically diverse of them. As Ray Stephens and William M. Holmes explain, "Nowhere but in Texas" is an apt statement to describe the diversity that ranges from seashore to mountains, from swamps to deserts, from subtropical lands to wind-swept plains, from pine forests to short-grass country, with a variety of plant and animal life unparalleled elsewhere.⁶⁴ Despite this great diversity, antebellum Texas followed the pattern established in the rest of the South; as settlers moved west from places like Alabama and Mississippi, many brought with them their traditional way of life, one based on cotton and slave labor.⁶⁵ Texans made the same use of their rivers, such as the Red and the Rio Grande, that the residents of other Gulf South states made of theirs, planting cotton in the river valleys and using the rivers for water power and transportation.⁶⁶ This pattern was especially pronounced in the two most developed regions of Texas, East Texas and the Houston-Galveston

⁶³ Hilliard, *Atlas of Antebellum Southern Agriculture*, 7-8. In the state this fall line separates the Piedmont from the Coastal Plain, which was not just a major geographical border, but a political, social, and economic one as well, much like the divisions in Alabama.

⁶⁴ A. Ray Stephens and William M. Holmes, *Historical Atlas of Texas* (Norman: University of Oklahoma Press, 1989), 4.

⁶⁵ Campbell, *Gone to Texas*, 209.

⁶⁶ *Ibid.*, 211.

area, which were quickly becoming like the rest of the antebellum South.⁶⁷ Many small manufacturing centers developed throughout these regions to meet local demand for goods because transportation from other states was so expensive.⁶⁸

The first transportation improvements to be built in any area were roads and turnpikes. In Mississippi, road building got underway almost as soon as settlers arrived, but even by the 1830s very few roads existed in the eastern part of the state, primarily because there were no large population centers to which to connect. By contrast, all of the roads in the western half of the state connected to New Orleans or Natchez, the major cities of the region, going through smaller cities and towns, such as Jackson, Monticello, Columbus, and Madisonville.⁶⁹ These roads led to the development of centers of trade, where roads came together and met with water transport to the outside world, such as those listed before and also, Memphis, Jackson, Columbus, Vicksburg, and Mobile.⁷⁰ Roads in Alabama followed the same pattern as Mississippi connecting hinterlands to major centers like Mobile and Montgomery.⁷¹

Roads in frontier Texas were more important than in Mississippi and Alabama because of the state's size. Roads were the only form of transportation available in most areas, yet most roads were little more than tracks through the woods and across the prairies, likely to be ankle-

⁶⁷ Buenger, *Secession and the Union in Texas*, 10.

⁶⁸ Stephens, *Historical Atlas of Texas*, 90. Stephens lists many small industrial centers in Texas in 1860, including: Paris, Dallas, Mount Pleasant, Jefferson, Marshall, Tyler, Rusk, Waco, Austin, San Antonio, Hempstead, Houston, and the Huntsville Penitentiary.

⁶⁹ Bradley Bond, *Political Culture in the Nineteenth-Century South: Mississippi 1830-1900* (Baton Rouge: Louisiana State University Press, 1995), 31-32.

⁷⁰ *Ibid.*, 32.

⁷¹ Jordan, *Ante-Bellum Alabama*, 58-59.

deep in dust in the summer and even deeper in mud during the spring and fall.⁷² Carts became a major form of transportation, moving most products and materials around the state at a rate of almost ten cents per mile to carry heavy items.⁷³ The most important antebellum road was the El Paso Road. Split into upper and lower sections, it connected San Antonio with El Paso, a major trade center, and then went on to California.⁷⁴ In East Texas, roads ran to the coast at Galveston, Houston, or Indianola. Then, passengers and freight travelled, using the Southern Steamship Line, to New Orleans.⁷⁵ These roads brought in raw materials from distant places, supplying Texans the means to start industrial concerns.

The next step most states took after building roads was construction of canals. Canals in the South differed in some important ways from their northern counterparts. Most southern canals were built by private companies using slave labor. Few were unprofitable.⁷⁶ For example, even though the President of the Chesapeake and Ohio Canal was an anti-slavery advocate, he used slave labor to build the company's canal.⁷⁷ Southern canals could operate year round because of the South's beneficent climate, but they did not see the same level of traffic,

⁷² Campbell, *Gone to Texas*, 211. In reality, this description fits well for any road built before the war almost anywhere in the nation.

⁷³ *Ibid.*

⁷⁴ *Ibid.*, 190-196. Texas had some special problems though with this network. Cartmen ran ox-carts between San Antonio and Indianola to move goods, and most of these cartmen were Mexicans who had moved into the area before Texan Independence. Anglos began trying to compete with these Mexican cartmen, but they could not meet the prices that the Mexicans set. This would lead, in 1857, to the "Cart War" between the Anglo and Mexican teamsters, with a great deal of violence on both sides and was not stopped until San Antonio businessmen had to step in as transportation costs began to rise. A few companies came to dominate most of the transportation in the state, most notably the stage coach line run by Sawyer & Risher. See Llerna Friend, "The Texan of 1860," *Southwestern History Quarterly* 62 (July 1958): 5.

⁷⁵ *Ibid.*

⁷⁶ Ronald E. Shaw, *Canals for a Nation: The Canal Era in the United States, 1790-1860* (Lexington: University of Kentucky Press, 1990), 125.

⁷⁷ *Ibid.*, 164.

especially passenger traffic, because most immigrants did not move west into the South and also, because the region's rivers handled most freight traffic.⁷⁸ In what little canal development occurred in the Gulf South, Alabama led the way. One of the most important canals in the state was the Muscle Shoals Canal, which was constructed at a cost of \$1,361,057 to help get around obstacles in the Tennessee River.⁷⁹ It ran for almost 36 miles and, along with the 16-mile-long Huntsville Canal, were the only two in the state.⁸⁰ Mississippi and Texas did not buy into the canal craze set off by the opening of the Erie Canal in 1825, primarily because of their later settlement and the failure of other canals in the South to turn a profit.⁸¹ Thus, canals were generally not important to Gulf South development. The people of the Gulf South, making a rational, capitalist choice, quickly passed through the canal-building phase of development and embarked on another faster and cheaper form of transport, the railroad.

Railroads helped drive industrial development in the South by creating trade networks and demand from the railroads themselves for manufactured goods. Railroads were major undertakings, and the investments needed for the land, track, locomotives, rolling stock, and labor to build a railroad were much greater than those required for any canal. There were two main kinds of railroad development. Exploitive development took advantage of avenues of trade that were already in use and was undertaken mostly by private companies for a quick return on

⁷⁸ *Ibid.*, 125.

⁷⁹ Henry S. Tanner, *Canals and Railroads of the United States* (New York: T.R. Tanner and J. Disturnell, 1840), 183.

⁸⁰ De Bow, *Industrial Resources*, 57; Tanner, *Canals and Railroads*, 183.

⁸¹ Shaw, *Canals for a Nation*, 224, 228. The golden age of canal building was the 1830s, much too early for Mississippi, Alabama, and Texas to fully participate in the craze. Further, the Barstaria and Lafourche Canal Company, chartered in Louisiana in 1829, while never completed, was built with slave labor and with the support of important land owners and a large amount of state assistance.

investment. Developmental railroad construction was not instantly profitable and was supported mostly by the state.⁸² Only large companies or governments could find a way to get that funding, especially long term loans for the development needed by the Gulf South.⁸³ John Larson asserts that "in the South, private capitalists habitually favored land and slaves over industry and commerce, so public officials pushed state investment in trunk-line railroads they hoped would be augmented by private branch lines."⁸⁴ This assertion is somewhat overdrawn. Southerners did invest in things other than slaves, but at their beginning southern railroads were an unfamiliar investment which southern investors approached warily.

A "mania" for railroads developed in the Gulf South, as it did in much of the rest of the country, beginning in the 1830s and 1840s.⁸⁵ Public money was spent on these improvements from the very beginning. Consequently states went deeply into debt to fund railroads in order to remain competitive with other states. The Panic of 1837 drove more of the funding from the public to private sector though, as, "[l]awmakers everywhere turned to corporations as buffers between the people's demand for transportation improvement and the state's responsibility for borrowing money or doing the work."⁸⁶ By 1847, after which the state of Alabama stopped borrowing money to build railroads, the state had spent \$204,998 on internal improvements, such as canals, roads, and railroads. Mississippi, in sharp contrast, spent only \$46,500.⁸⁷ Much of the

⁸² Carter Goodrich, *Government Promotion of American Canals and Railroads, 1800-1890* (New York: Columbia University Press, 1960), 7-8.

⁸³ Milton S. Heath, "North American Railroads: Public Railroad Construction and the Development of Private Enterprise in the South before 1861," *The Journal of Economic History* 10 (1950), 44.

⁸⁴ Larson, *Internal Improvements*, 226.

⁸⁵ *Ibid.*, 238.

⁸⁶ *Ibid.*, 233.

⁸⁷ De Bow, *Industrial Resources*, 391.

money for improvements came from the federal government, not the states themselves, and was insignificant compared to what was needed to develop the transportation services needed by these states. This did not discourage people in these states from trying to create a transportation infrastructure, but it did cause promoters to move to the private sector for capital with many state owned works passing into the hands of private investors in the decade before the war.⁸⁸

All of these problems aside, legislators in Montgomery, Jackson, and Austin saw how lucrative undertakings like the Pennsylvania Railroad were and wanted to encourage that kind of development in their own states. State governments helped out when they could with money and land grants, but it would take a combination of federal, state, municipal, county, and private funding to build.⁸⁹ But, railroads in this period would always be a risky undertaking. Thus, the railroad boom left most of the Gulf South buried even further in debt by 1851 as depression and bad choices left these states on the hook for rail lines that were never completed.⁹⁰ Even with all of these problems, fifty-seven percent of the money needed to build southern railroads came from the public sector, compared to the northern average of twenty-five to thirty percent.⁹¹ This reliance on public funding was due in part to the fact that the South's manufacturing sector, while undergoing considerable growth, did not yet have quite the same level of sophistication

⁸⁸ Larson, *Internal Improvements*, 238.

⁸⁹ See the following table for the funding sources for railroad construction up to 1861. All figures are from Heath, "North American Railroads," 41-42.

	Federal	State	Municipal	County	Total
Alabama	\$1,463,789	\$2,149,241	\$3,202,982	\$525,000	\$7,341,012
Mississippi	\$1,490,057	\$2,121,366	\$425,000	\$1,632,330	\$5,668,322

⁹⁰ The Public Debt of Alabama in 1851 was \$10,385,938, Mississippi \$7,271,707, and Texas \$11,050,201. De Bow, *Industrial Resources*, 433.

⁹¹ Brian Schoen, "The Burdens and Opportunities of Interdependence: The Political Economics of the Planter Class," in *The Old South's Modern Worlds: Slavery, Region, and Nation in the Age of Progress* (Oxford: Oxford University Press, 2011), 77.

needed to create large private companies like the Pennsylvania Railroad. Railroad construction, even through all of this, continued unabated until the outbreak of the war, and the region had about as much road per capita as the country as a whole.⁹² In 1842, the North and the South had the same railroad mileage, but another depression stunted development until the end of the antebellum period and put the South almost ten years behind the North. But, in the decade leading up to the war the South, as a whole, made tremendous gains.⁹³

Southern railroads were built for a specific purpose, and were able to serve this purpose well. They were not built to supply a country trying to fight a major continental war; they were built to connect the various parts of the South with outside markets, bringing in needed goods and sending out their products, building up the South's economy and industry.⁹⁴ Rail lines then ran from interior areas to water transportation, or connected two major market centers.⁹⁵ They were not built to connect the Gulf South to Virginia, even though, by the end of the antebellum period, rail lines had become so interconnected that this travel was possible.⁹⁶ Many of the rail lines ran north to south, from the Border South to areas such as the Gulf South, bringing

⁹² Albert Fishlow, *American Railroads and the Transformation of the Antebellum Economy* (Cambridge: Harvard University Press, 1965), 9.

⁹³ James A. Ward, "A New Look at Antebellum Southern Railroad Development," *The Journal of Southern History* 39 (August 2009): 419-420.

⁹⁴ *Ibid.*, 411. George Rogers Taylor and Irene Neu make the same point that commercial interests in seaboard cities and towns pushed railroad development as a way to draw inland trade to them. See George Rogers Taylor and Irene Neu, *The American Railroad Network, 1861-1890* (Cambridge: Harvard University Press, 1956), 41. See Thomas's *Iron Way* also.

⁹⁵ *A New Map of Mississippi with its Roads and Distances*, Mississippi Department of History and Archives. Many maps were printed during the period showing the distance between cities on steamboat routes and showing where railroads connected with them.

⁹⁶ Ward, "A New Look," 411. Moreover, many of these lines did not run on the same gauge. So, while a network may look complete on a map, railroads would have to stop at a depot, unload all they were carrying, load it onto a different train on a different gauge track, then move on to the next line and repeat the process. Taylor and Neu, *The American Railroad Network*, 43-45.

manufactured goods in, and taking out staple products.⁹⁷ This is the traditional view of U. B. Phillips again coming to light, but in this case Phillips was at least partially correct in his understanding of how goods flowed in and out of the South.⁹⁸ What he and others missed, was the inter-regional traffic into and out of the South and the development of southern internal markets, especially by 1860. Southerners, as they produced more for themselves, greatly changed these market flows and helped prepare, unwittingly, for the disruption of traditional market connections and for breaking the control by merchants in northern cities of southern wealth.

In following the example of northern development, Southerners used methods of railroad building and management that the North had been perfecting for years. The "South, in terms of railroads, took the same path to modernization as the North, except for one critical difference – slave labor."⁹⁹ The South built up a modern, industrial enterprise, using slave labor, showing thereby that slavery and modern development could go hand in hand.¹⁰⁰ This push for a modern industrialized economy resulted in the South building more miles of track than the North in the 1850s.¹⁰¹ While this edge was due to the fact that the North really did not need as many new lines as the South, it does show that the South was industrializing. Railroad development was so

⁹⁷ James Huston, "The Pregnant Economies of the Border South, 1840-1860: Virginia, Kentucky, Tennessee, and the Possibilities of Slave-Labor Expansion," in *The Old South's Modern Worlds: Slavery, Region, and Nation in the Age of Progress* (Oxford: Oxford University Press, 2011), 123.

⁹⁸ U. B. Phillips, *Life and Labor in the Old South* (Boston: Little and Brown and Company, 1929), 146.

⁹⁹ Steven G. Collins, "Organizing the South: Railroads, Plantations, and War," (Ph.D. diss., Louisiana State University, 1999), 40.

¹⁰⁰ Aaron W. Marrs, *Railroads in the Old South: Pursuing Progress in a Slave Society* (Baltimore: Johns Hopkins University Press, 2009), 197.

¹⁰¹ For example, the amount of miles in the South Atlantic states tripled from 1851-1861, from 1650 miles to almost 5400 miles. Robert C. Black, *The Railroads of the Confederacy* (Chapel Hill: University of North Carolina Press, 1998), 2.

intense that ÷in the five years just prior to the Civil Warí [that] the section made rapid progress towards bringing the quality of its rails back up to national standards. Given another decade of peace the South might have succeeded.ö¹⁰² It was not just the networks created by the railroads that drove industrial development; it was also everything needed by a railroad to operate that helped drive manufacturing development, as ÷every large southern railroad built maintenance shops to repair locomotives and cars. Some even constructed their own freight cars, box cars, platform cars, wheel cars, and second-class passenger cars.ö¹⁰³

Every state of the Gulf South participated in the railroad boom. As one would expect Alabama was the most developed of the three states discussed here. Map 2.4 shows the location and extent of railroads in the state. Because of the debt Alabama was under when the boom began from bad investments in canals and early railroad ventures, the state had problems directly supporting railroad development. Most tax money in the decade leading up to the war was needed to pay down the public debt.¹⁰⁴ Most of the public funding for railroads in Alabama came from land grants and bond sales, as ÷legislation had proceeded not by sudden and radical measures differing from all precedent, but by small beginnings which gradually prepared the public mind for the more elaborate schemes which were to follow.ö¹⁰⁵

¹⁰² Ward, ÷A New Look at Antebellum Southern Railroad Development,ö 420. Southerners were also supporters of a transcontinental railroad. They realized its economic importance, as long as it connected to a major southern city, and leaders like John C. Calhoun publicly called for its construction. See Larson, *Internal Improvements*, 242.

¹⁰³ Collins, ÷Organizing the South,ö 34.

¹⁰⁴ William Martin, ÷Internal Improvements in Alabama,ö 31. Also see Goodrich, *Government Promotion*, 156-8. Local and private funds were the most important sources of funding in Alabama.

¹⁰⁵ Martin, ÷Internal Improvements in Alabama,ö 64.



Map 2.4 - Alabama railroads in 1860

In the 1850s many railroads in the state received land grants, including: the Mobile and Ohio; the Alabama and Florida; the Selma, Rome, and Dalton; the Alabama and Chattanooga; the South and North Alabama; and the Mobile and Girard.¹⁰⁶ Not all of these railroads would be completed, or even started for that matter, but the state was willing to support any chance at getting tracks laid. Alabamians even went outside the state for support, asking at the 1852 Southern Commercial Convention, held in New Orleans, for investment in the Mobile and Ohio railroad.¹⁰⁷

The center of the Alabama railroad network was Mobile, and, as Alabama's only seaport, served as state's connection to the rest of the United States and the world. A great deal of traffic went into and out of it. Industry quickly developed, and the need to be able to move goods into the interior of the state became very important, not just for the economic development of Mobile, but for the entire state and region. The major rail line into the city was the Mobile and Ohio Railroad, which connected the city with the Ohio River and gave it access to western markets, bringing staple crops into the city and creating a hinterland for Mobile manufacturers to sell their goods.¹⁰⁸ This railroad was founded in 1857, funded by \$300,000 from the city government of Mobile, but not completed until 1861 when it reached Cairo, Illinois, although it began carrying traffic in sections as soon as possible.¹⁰⁹ It also received indirect federal funding through an 1850 act that gave federal land to states that in turn gave it to railroad companies to defray

¹⁰⁶ *Ibid.*, 68.

¹⁰⁷ De Bow, *Industrial Resources*, 459.

¹⁰⁸ Harriett E. Doss, "Cotton City," 87, in Michael V.R. Thomason, *Mobile: The New History of Alabama's First City* (Tuscaloosa: University of Alabama Press, 2001),

¹⁰⁹ Alan Smith Thompson, "Mobile, Alabama, 1850-1861: Economic, Political, Physical, and Population Characteristics," (Ph.D. diss., University of Alabama, 1979), 84-87.

construction costs.¹¹⁰ This was not the only line to run out of the city, as the Mobile and Cedar Point Railroad, running twenty-eight miles, was also there.¹¹¹ Taken altogether, Mobile, because of its geography and its transportation connections, grew into a major industrial center.

In addition to the Mobile railroads, Alabama boasted other lines that were oppressed by the people with a zeal and activity that are the guarantees of the highest and most brilliant success.¹¹² Most people in the state saw the importance of railroads to economic development. Railroads were the future, and no one wanted to be left behind. Alabamians bought into the railroad craze in full force. In his work on industry in the South, De Bow lists four other major railroads in Alabama: the Montgomery and West Point; the Alabama and Tennessee; the Tuscumbia, Courtland, and Decatur; and the Memphis and Charleston.¹¹³ From these beginning railroads grew across the state at an amazing rate. The Wetumpka Railroad was built to connect the Tennessee River with the Alabama River at Wetumpka, Alabama, which was the furthest steamboats could use the Alabama River before hitting the fall line, extending the reach of the natural waterways of the state.¹¹⁴ The Montgomery and West Point Railroad, an eighty-seven mile long rail line, was built to connect the Alabama railroad system with Georgia, increasing the markets available to people in each state and drawing them closer together.¹¹⁵ The Selma and Cahawba Railroad was built as a branch of the Pensacola and Montgomery Railroad to pull

¹¹⁰ Goodrich, *Government Promotion*, 170-171.

¹¹¹ Tanner, *Canals and Railroads of the United States*, 182.

¹¹² De Bow, *Industrial Resources*, 446.

¹¹³ De Bow, *Industrial Resources*, 476.

¹¹⁴ Tanner, *Canals and Railroads of the United States*, 182. Extending the entire transportation network of the region was always the goal of railroad promoters as it was much easier to use what was available to extend rather than to replace.

¹¹⁵ *Ibid.*

central Alabama into the transportation network of the South, and to allow the growing city of Selma access to developing markets in Florida.¹¹⁶ Cahawba, because of its location, became a rail juncture, and the Cahawba and Marion Railroad further extended and integrated Alabama railroads, reaching Marion in 1857.¹¹⁷ The Selma and Tennessee Railroad was the closest that Alabama would come to a major north/south connection before the war, while the Tuscumbia, Courtland, and Decatur Railroad, running about 44 miles, became another link with Georgia.¹¹⁸

The Montgomery Railroad, originally chartered in 1832, was an important line for the state and was built with mostly slave labor.¹¹⁹ This was not unusual. Slaves were a ready source of labor, and planters were more than willing to lend or hire out their spare hands for railroad construction, especially if it ran near their plantations. Overall, even with cheap labor available, railroads were very expensive undertakings. For example, the Alabama, Florida, and Georgia Railroad, which ran from Pensacola, Florida to Montgomery, cost \$5,500 per mile to build, and the total cost of the road, including track, buildings, and other expenses came to \$2,500,000.¹²⁰ Railroads were not individual undertakings, a large amount of money and people needed to be brought together and organized. This organization could easily bleed into other parts of Alabama's society, such as manufacturing and industry.

¹¹⁶ *Ibid.*

¹¹⁷ *Ibid*; also see Jordan, *Ante-Bellum Alabama: Town and Country*, 36. The railroad ran for 35 miles.

¹¹⁸ Tanner, *Canals and Railroads of the United States*, 182.

¹¹⁹ Clanton Williams, *The Early History of Montgomery and Incidentally of the State of Alabama* (University: Confederate Publishing Company, 1979), 99.

¹²⁰ Tanner, *Canals and Railroads of the United States*, 180-182.

Altogether, Alabama had 308 miles of railroad in 1860, with a great deal more under construction.¹²¹ Thus, Alabama had more than enough miles of rail line to be able to meet its needs to move products and resources around the state. Railroad construction in the state created a boom in industry to support these new transportation networks.¹²² The northern and southern parts of the state needed railroads to tie them together into one working whole.¹²³ The railroads not only knitted the region and the country together, it brought together states and spurred people into keeping up with modern development.

Mississippi also played a major role in the development of the Gulf South rail network and these lines are shown in Map 2.5. Mississippians felt that railroads signaled economic independence since they provided access to markets, and viewed railroads as another sign of their autonomy.¹²⁴ Much of Mississippi's railroad development was brought on by New Orleans and Mobile merchants attempting to capture the Mississippi market.¹²⁵ In Mississippi, as in Alabama and much of the rest of the South, the role of railroads was to tie together hinterlands with market centers.¹²⁶ Because of bank failures and other economic problems, a familiar refrain, the credit of the Mississippi state government was not well suited to support widespread railroad development.¹²⁷

¹²¹ *Ibid.*, 183.

¹²² Thornton, *Politics and Power in a Slave Society*, 280.

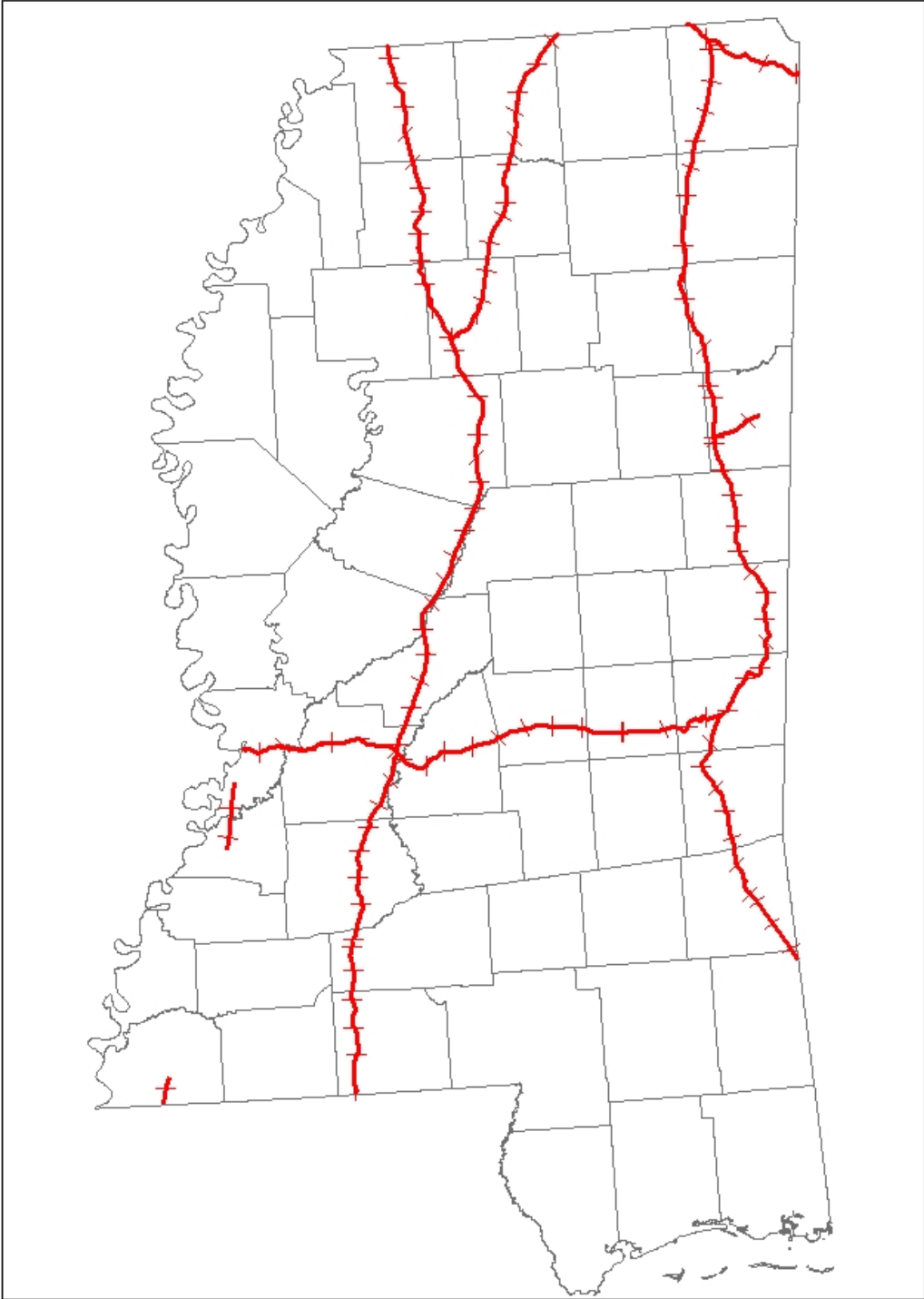
¹²³ Armes, *The Story of Coal and Iron in Alabama*, 104. The two halves of the state would not be completely brought together until the Alabama Central Railroad was finally completed after the end of the Civil War as a gap in the line existed until then.

¹²⁴ Bond, *Political Culture in the Nineteenth-Century South*, 110.

¹²⁵ Goodrich, *Government Promotion*, 159.

¹²⁶ For example, the Memphis and St. Louis Packet Company, which would later become the Anchor Line, ran to Vicksburg by the start of the war. See Chapman, *Picturesque Vicksburg*, 77.

¹²⁷ Goodrich, *Government Promotion*, 160.



Map 2.5 - Mississippi railroads in 1860

Other sources of funding were available, however. For example, in March 1860, *The Jackson Daily News* reported that all of the bonds for the newly planned Vicksburg and Shreveport Railroad had been sold in the city and reported that, "A safe investment like these securities offer, at 80c. for 8 percent bonds, never remain long on our market, because there is usually a large surplus of capital here watching such opportunities."¹²⁸ Also, Mississippi, like many other states, looked not just for internal sources of capital for their new lines, they looked outside the state also. Mississippians at the 1852 New Orleans Commercial Convention asked, as Alabama had, for funding for the New Orleans, Jackson, and Nashville Road; the New Orleans, Holly Springs, and Ohio Road; and the Vicksburg and Jackson Road.¹²⁹

At the time of the 1852 Commercial Convention there were five railroads in operation in the state: the Raymond, the St. Francisville and Woodville, the Vicksburg and Brandon, the Mobile and Ohio, and the Memphis and Charleston.¹³⁰ But it needed more as far as De Bow and many others were concerned, as "Mississippi can as yet boast of but few works on internal improvement."¹³¹ The most important line in the state during the antebellum period was the railroad between Jackson, the state capital, and Vicksburg, the most important trading center in the state with access to the Mississippi River.¹³² Vicksburg held a place in Mississippi much as Mobile did for Alabama.

¹²⁸ *Jackson Daily News*, 26 March 1860.

¹²⁹ De Bow, *Industrial Resources*, 459. The reason that De Bow mentions this conference so much in his work was that he was a major industrial and railroad booster for the South and was an important figure in the Commercial Convention movement.

¹³⁰ *Ibid.*, 476.

¹³¹ *Ibid.*, 44.

¹³² *Ibid.*

By 1860 there were many railroads in operation, connecting most of the state's plantation regions with market centers and connecting the state to rail networks in other states. The Mississippi Railroad ran from Natchez to Canton, through Gallatin and Jackson for a total length of 150 miles connecting inland areas with market centers.¹³³ The Springfield and Liberty Railroad ran thirty miles through Amite County to bring plantation products to market.¹³⁴ The Vicksburg and Clinton went between its namesake cities and was planned to be expanded as far as Jackson in the future.¹³⁵ There were also many smaller lines. The Grand Gulf and Port Gibson was only a little over seven miles long, while the Jackson and Brandon ran for fourteen miles, connecting outlying areas with Jackson.¹³⁶ Overall, when the first shot was fired in the war, Mississippi had about 872 miles of operating track.¹³⁷ This network served the needs of the state, connecting inland areas to established water routes, moving goods cheaply and reliably, which was needed for manufacturing development. Moreover, railroads were an important undertaking that brought together people such as the members of the Board of Directors of the Gulf and Ship Island Railroad Company shown in Table 2.1. The men listed here were leaders of their communities who saw how bringing a railroad to an area could benefit the people of Mississippi. They worked to bring this railroad into being, and the local population recognized and supported it. As this chart suggests, many parts of Mississippi participated in the development of the state's railroads.

¹³³ Tanner, *Canals and Railroads of the United States*, 184.

¹³⁴ *Ibid.*, 189.

¹³⁵ *Ibid.*, 184. This was a 54 mile long road.

¹³⁶ *Ibid.*

¹³⁷ *Ibid.*

Table 2.1 ó Board of Directors of the Gulf and Ship Island Company

Name	County	Name	County
Cornelius McLaurin ó Pres.	Jackson	Walter Goodman	Marshall
Joseph McAfee	Rankin County	Samuel White	Hancock
M.J. Mackie	Madison	T.J. Blackwell	Smith
Joel E. Welborne	Jones	Porter J. Myers	Perry
Danø McLaurin	Covington	F. Pope	Covington
L.B. Walker	Simpson	L. Lulienne ó Sec of Board	Jackson
W.R. Tegarden	Harrison		

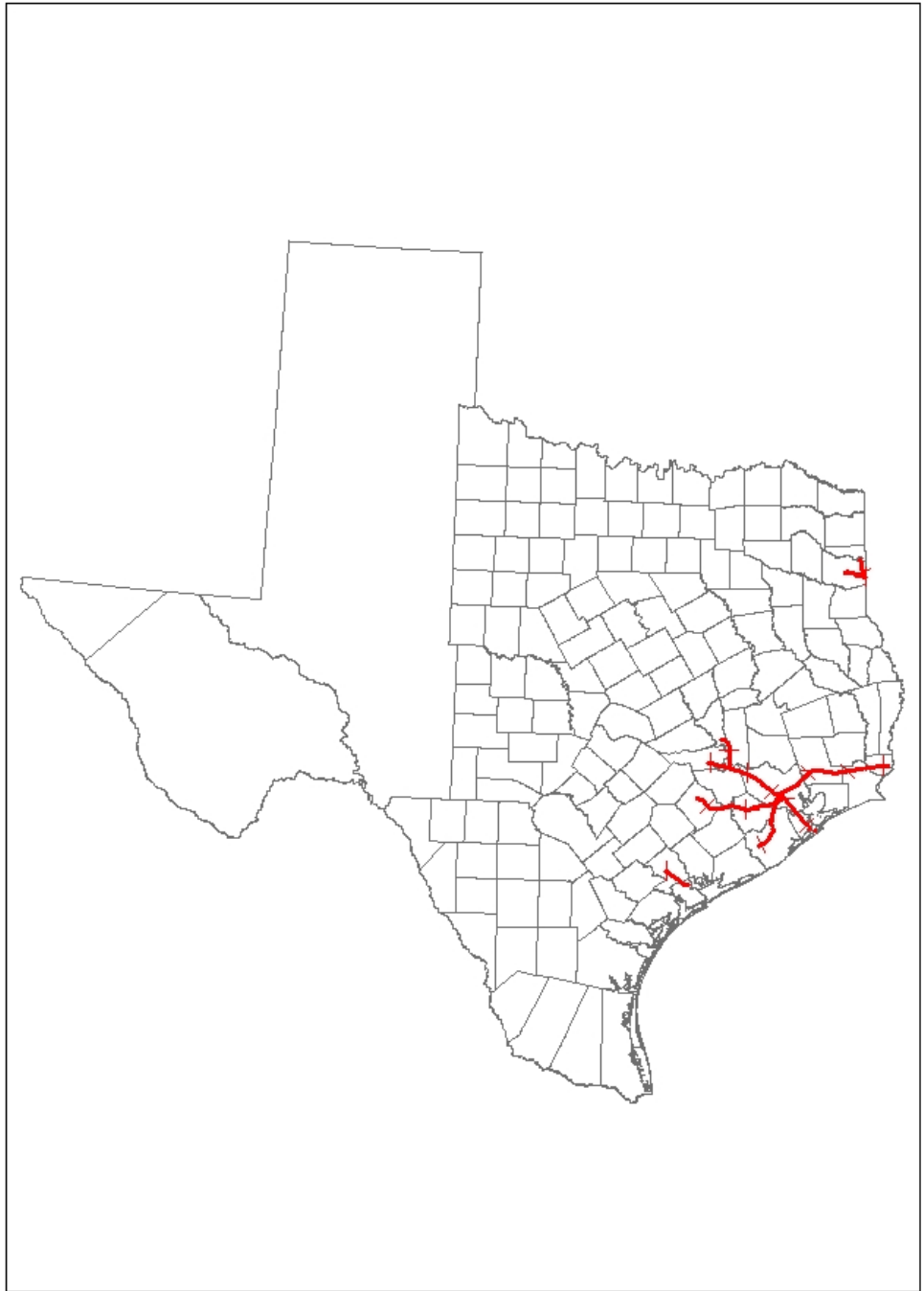
Source: *Jackson Daily News*, 13 March 1860.

Texas experienced a large railroad boom in the 1850s, in large part, because of the drive for new cotton lands. Texas had some of the best, and cheapest, cotton lands left in the South, and needed some form of reliable transportation to exploit them.¹³⁸ In 1853, in the aftermath of the Mexican-American War, Texas only had twenty miles of track. Less than a decade later, in 1860, the state had built 306 miles of railroad.¹³⁹ Map 2.6 shows these rail lines. Texas was by far the largest state in the Union and arguably had the greatest need for railroads to push it from being a frontier area into the mainstream of the American economy. The construction of railroads did not even begin in Texas until 1852, much later than any other state in the South, even though charters had been granted for many roads before that time.¹⁴⁰

¹³⁸ Buenger, *Secession and the Union in Texas*, 17.

¹³⁹ US Census Compilation for 1860, Schedule E, 230.

¹⁴⁰ Stephens, *Historical Atlas of Texas*, 51.



Map 2.6 - Texas railroads in 1860

The first railroad opened in the state was the Buffalo Bayou, Brazos, and Colorado Railroad in 1853.¹⁴¹ From the beginning Houston was the railroad hub of the entire state as Houston businessmen were particularly adept at securing railroad transportation and by 1861 a rail line stretched from Houston up to Washington and Brazos counties and down into Brazoria County.¹⁴² Railroads were important to development in Texas to expand and develop markets and industry over such vast distances. Before the war though, no railroad line crossed the borders of the state, all of them either connected with rivers or to the coast.¹⁴³

Although the growth in mileage in the decade leading up to the war was fantastic, it really did not begin to reach all of Texas. De Bow again called for more development for Texas and attempted to get its railroads tied into the rest of the South, but this did not occur before the war as he had hoped.¹⁴⁴ By late 1859, there were eight major railroads operating in Texas: the Galveston, Houston, and Henderson; the Buffalo Bayou, Brazos, and Colorado; the Houston Tap and Brazoria; the Houston and Texas Central; the Washington County Line; the San Antonio and Mexican Gulf; the Southern Pacific; and the New Orleans and Texas.¹⁴⁵ The state supported this development the best that it could and offered land grants to railroads along with state backed loans.¹⁴⁶ Luckily, the one thing that Texas, and the rest of the Gulf South, had was the labor to build and maintain any railroads they constructed. Overall, the Gulf South had railroads, the total amount of which is shown in Table 2.2, which served the region's needs.

¹⁴¹ De Bow, *Industrial Resources*, 477.

¹⁴² Buenger, *Secession and the Union in Texas*, 11.

¹⁴³ Campbell, *Gone to Texas*, 212.

¹⁴⁴ De Bow, *Industrial Resources*, 459.

¹⁴⁵ Friend, "The Texan of 1860," 5.

¹⁴⁶ Goodrich, *Government Promotion*, 161-162.

Table 2.2 - Gulf South railroad mileage

State	Railroad Mileage in 1860
Alabama	743.16
Mississippi	872.39
Texas	306.00

Source: U.S. Census Compilation, Schedule E, 230.

In the antebellum South, slavery and railroads went hand in hand. Many Southerners believed that “the railroad ensured slavery’s and the South’s future.”¹⁴⁷ This was not a universal view. Slavery was sometimes perceived, especially by people outside of the South, as backwards, and railroads were cutting edge technology. Supposedly then, a slave society could not support railroad building internally. But, as James Ward explains: “A closer look at the development of antebellum railroads in the South indicates that a rural slave owning society was not inherently incapable of financing and constructing a quality rail system.”¹⁴⁸ Now this is not to say that Southerners were able to build everything needed to run a railroad, including track, cars, and other necessities themselves. They had to go outside the region for some of the material that they needed, especially at the beginning of railroad development.¹⁴⁹ But, overtime, many major southern railroads began building their own cars, and made use of slave labor to do so. In 1860, at least 14,600 slaves worked on southern railroads, with many more unrecorded.¹⁵⁰ Some railroad companies owned their own slave workforce, while almost all hired

¹⁴⁷ Thomas, *The Iron Way*, 34.

¹⁴⁸ Ward, “A New Look at Antebellum Southern Railroad Development,” 419.

¹⁴⁹ DeCredico, *Patriotism for Profit*, 73. DeCredico cites only three southern companies that made railroad equipment before the start of the Civil War: Tredegar in Richmond, the Nashville Manufacturing Company, and the Forest City Foundry in Augusta Georgia. But, many railroads, as time went on began building cars for themselves. These three may have been the only three advertising that they were making equipment for general sale, but the roads themselves made what they could for internal use.

¹⁵⁰ Kornweibel, “Railroads and Slavery,” 36.

slave labor as needed. Because of this, “the use of slave labor was nearly universal on antebellum railroads in the South.”¹⁵¹

Slave labor for railroad construction had advantages over free labor for antebellum southern entrepreneurs wanting to make the South more modern and economically competitive. First, slaves were widely available throughout the region. Second, slaves were a guaranteed workforce that once trained would be on the job permanently. A third factor was the cost of slave labor versus free. For example, as Steven Collins points out in his work, a white railroad carpenter in Charlotte, North Carolina demanded a wage of \$40 a month, a black carpenter on the same line would only need room and board of about \$20; a white foreman had to be paid \$35 a month, while a black foreman only required \$15 in room and board.¹⁵² While the initial cost of buying a slave has to be factored in, over time, slave workers would more than pay for themselves between labor cost, training, and control. R. G. Morris, Esq. reported in 1854, that “slaves belonging to a company can excavate earth for less than half ó can excavate rock for about one-fourth ó and can construct culverts, bridges, abutments, locks, dams, &c. at about one-seventh that the same kind of work will cost contractors.”¹⁵³ Edward G. Parker, the treasurer of the Charleston and Savannah Railroad, hired a slave named Caesar from a Rev. L. H. Cavnish of Aiken, South Carolina for seventeen days of work for \$9.80.¹⁵⁴ While the type of work Caesar did is not listed, this receipt shows that railroad companies used slave labor. For the South then,

¹⁵¹ *Ibid.*, 34.

¹⁵² Collins, “Organizing the South,” 42-43.

¹⁵³ R. G. Morris, Esq, “Slave Labor Upon Public Works at the South,” *De Bow’s Review* 17 (July 1854): 78-79.

¹⁵⁴ LMVC, Edward G. Parker papers, 1859.

slaves were good workers for both skilled and unskilled labor, and the use of slaves was widespread throughout the region on railroads.¹⁵⁵

The South was well situated to provide for itself. It had the climate to grow what was needed to feed its population and supply industry with raw materials. Moreover, it had the natural resources needed to promote manufacturing and the transportation facilities to move goods to and from markets. Although writing a few years after the war, H. P. Chapman nevertheless captured what the late antebellum South was like:

Southern factories possess the advantages of proximity to the cotton fields, and a climate whose mildness insures them against these interlopers to work, which, in severe winters, are often causes of inconvenience and loss to Northern mills. Other advantages over the North are cheaper land, cheaper building material, fuel and labor, and longer working hours. Nearness to the cotton fields means not only a saving in cost of transportation of the raw material and a reduction to the minimum of inevitable loss in weight by handling, but it means also a better selection and lower prices. Southern mills can buy their cotton direct and save the profits and changes which the Northern mills must pay to brokers and middle-men.¹⁵⁶

Yet, as far as many were concerned, Southerners ignored all of these natural advantages as, "the South sits immovable, and is content to derive her food and clothing from regions thousands of miles away."¹⁵⁷ But, that perception was wrong. The South was manufacturing for itself. Railroads, canals, and roads were not scattered haphazardly across the landscape, but were instead located where needed to support agriculture, commerce, and industry.¹⁵⁸ The South then was on a path to modernity, contrary to the widely held opinion of a slave-based society at the

¹⁵⁵ Lewis, *Coal, Iron, and Slaves*, 87.

¹⁵⁶ Chapman, *Picturesque Vicksburg*, 42.

¹⁵⁷ Mississippi Planter, "Production and Manufacture of Cotton," *De Bow's Review* (February 1850): 100.

¹⁵⁸ Lewis, *Coal, Iron, and Slaves*, 49. For a brief but insightful discussion of the role of the South's transportation system in the region's development, as well as that of its rapidly emerging telegraph network, see Laird Bergad, "American Slave Markets during the 1850s," in Davis Eltis, Frank D. Lewis, and Kenneth L. Sokoloff, eds., *Slavery in the Development of the Americas* (Cambridge: Cambridge University Press, 2004), 228.

time. As Richard Brown points out, "Historians frequently associate the modern era with dramatic technological advances in communication, transportation, and production as well as with the creation of the nation-state."¹⁵⁹ If we appraise the South against this standard of what constitutes a modern society, we see that the South does in fact measure up. De Bow saw a bright future for the South when he wrote in 1852 that "having constructed a system of railroads netting every section of our territory, the South and West will naturally resort to manufacturing which is our second great remedy for the evils which present shows and the future foreshadows."¹⁶⁰ By 1860, resources, geography, and transportation links combined to give southern industry a foundation on which to develop.

¹⁵⁹ Brown, *Modernization*, 3-4.

¹⁶⁰ De Bow, *Industrial Resources*, 80.

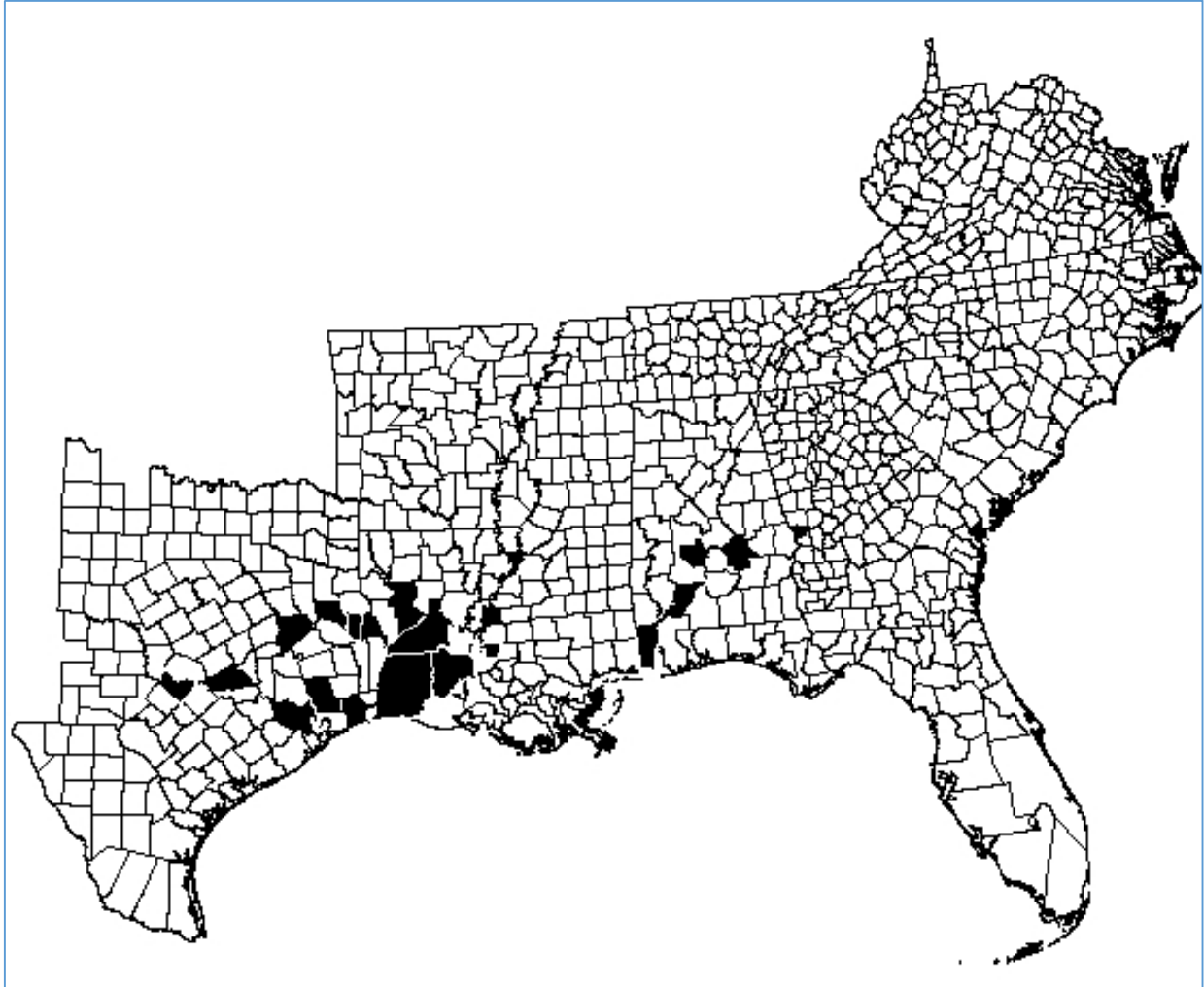
CHAPTER THREE: THE FIRM 6 LOCATION, ORGANIZATION, AND OWNERSHIP

Better known as the designer of Central Park in New York City, Frederick Law Olmsted, an anti-slavery northern writer, had traveled in the South from 1852 to 1854.¹ On his journey he observed southern society and recorded his observations for an eventual northern audience. Acknowledged by historians as having been biased against the region, Olmsted's accounts of his travels are nevertheless cited time and again to provide a picture of the antebellum South.² Olmsted's book claimed to explain how the region's social, political, and economic systems functioned and to show that slavery held back southern progress at every turn. His travels seemed so extensive and his writing so detailed that his many readers considered the work, notwithstanding its rather obvious bias, to be one of the more comprehensive accounts of life in the South.

Olmsted saw the free North and its society as virtuous and progressive and the slave-based society of the South as immoral and backward. As Map 3.1 shows, though, he really experienced very little of the region, even of the cotton states. Olmsted traveled to perhaps forty counties in the slave states, less than five percent of the total number of counties in these states. Yet, he drew conclusions about all of southern slave society from his tiny bit of exposure to it. He did find some of what he saw in his travels to be commendable. For example, the nicest house in the Alabama hill country was owned by a man who was a marked exception to Olmsted's conception of a typical Southerner: he grew no cotton, owned a sawmill, was the

¹ For more information on the life of Frederick Law Olmsted see, Laura Wood Roper, *FLO: A Biography of Frederick Law Olmsted* (Baltimore: Johns Hopkins University Press, 1973).

² Olmsted, *The Cotton Kingdom*.



Map 3.1 6 Counties Olmsted travelled through according to his accounts

Source: Olmsted, *The Cotton Kingdom*, passim.

General Note: Shaded areas denote counties visited by Olmsted in his travels.

postmaster for the local area, and had been in the State Legislature.³ Passing through Montgomery, Alabama, he commented on how pleasant and prosperous the town was, but asserted that its happy condition resulted from the fact that most of the people living there were northern or foreign born.⁴ Mobile, populated mostly by Southerners, presented a sharp contrast

³ *Ibid.*, 381-382.

⁴ *Ibid.*, 214.

to Montgomery and Olmsted described it as a dirty town with very high prices. The city's only assets, its one hotel and the beginning of a ship building industry, were, of course, owned and operated by northern men or foreign born merchants.⁵ Similarly, San Augustine, Texas, settled by migrants from the lower South, was a filthy, drunken, violent place with no redeeming qualities at all.⁶ Olmsted insisted that during all of his travels in East Texas he never saw a single person read and that the population was mired in ignorance.⁷ One of the most important cities in the Southwest at this time, Vicksburg, barely rated a mention from Olmsted beyond a complaint about the condition of its dock facilities.⁸ He stopped at no smaller towns or villages in Mississippi and none at all in Tennessee because all of the inhabitants there were in his estimation dirty, toothless, ignorant, or flea ridden. The city of Natchez was not any better, as "the houses and shops within the town are generally small, and always inelegant."⁹ Olmsted found what he was looking for in his travels, a region backward and blighted, lacking in virtue and industry.

Olmsted, however, was wrong. Many cities and towns in the South boasted cultural amenities and manufacturing firms. Those who believed that the South was developing, such as J. D. B. De Bow, saw firms being founded throughout the region. De Bow believed that "no country has ever acquired permanent wealth by exporting its unmanufactured products," and so he pushed for industrial development in the South.¹⁰ Another industrial booster and a textile mill

⁵ *Ibid.*, 219-221.

⁶ *Ibid.*, 291-293.

⁷ *Ibid.*, 301.

⁸ *Ibid.*, 336.

⁹ *Ibid.*, 423.

¹⁰ De Bow, *The Industrial Resources*, 114.

owner, himself, William Gregg, touted the importance of the textile industry: "cotton manufacturers have been the pioneers which have introduced and given impetus to all other branches of mechanism in Great Britain, the continent, and this country."¹¹ These manufacturing endeavors were beginning to alter the southern landscape. Machines and the time and motion disciplines intrinsic to manufacturing were transforming the relationship between workers and employers and even the concept of labor itself.¹² The antebellum South was undergoing rapid economic development and that tide of development was eroding political and cultural opposition to industrial enterprise.¹³

Informed observers of the antebellum South considered "the census of 1860 [to be] a proper and suitable starting point," for studying the industrial base of the region.¹⁴ Map 3.2 shows the locations of industrial firms across most of the Gulf South, based on the 1860 manufacturing census schedules. As the map shows, the region was scarcely devoid of manufacturing concerns. Manufactories were engaged in many lines of business, including foundries, machine shops, clothing manufacturers, and a large variety of mills. Many of concerns were located on railroad lines and in market centers, helping southern towns and cities to grow into economic centers. Urban areas in turn contributed to the growth of these firms by affording them readily accessible markets. Although the South had far fewer firms than the North, this

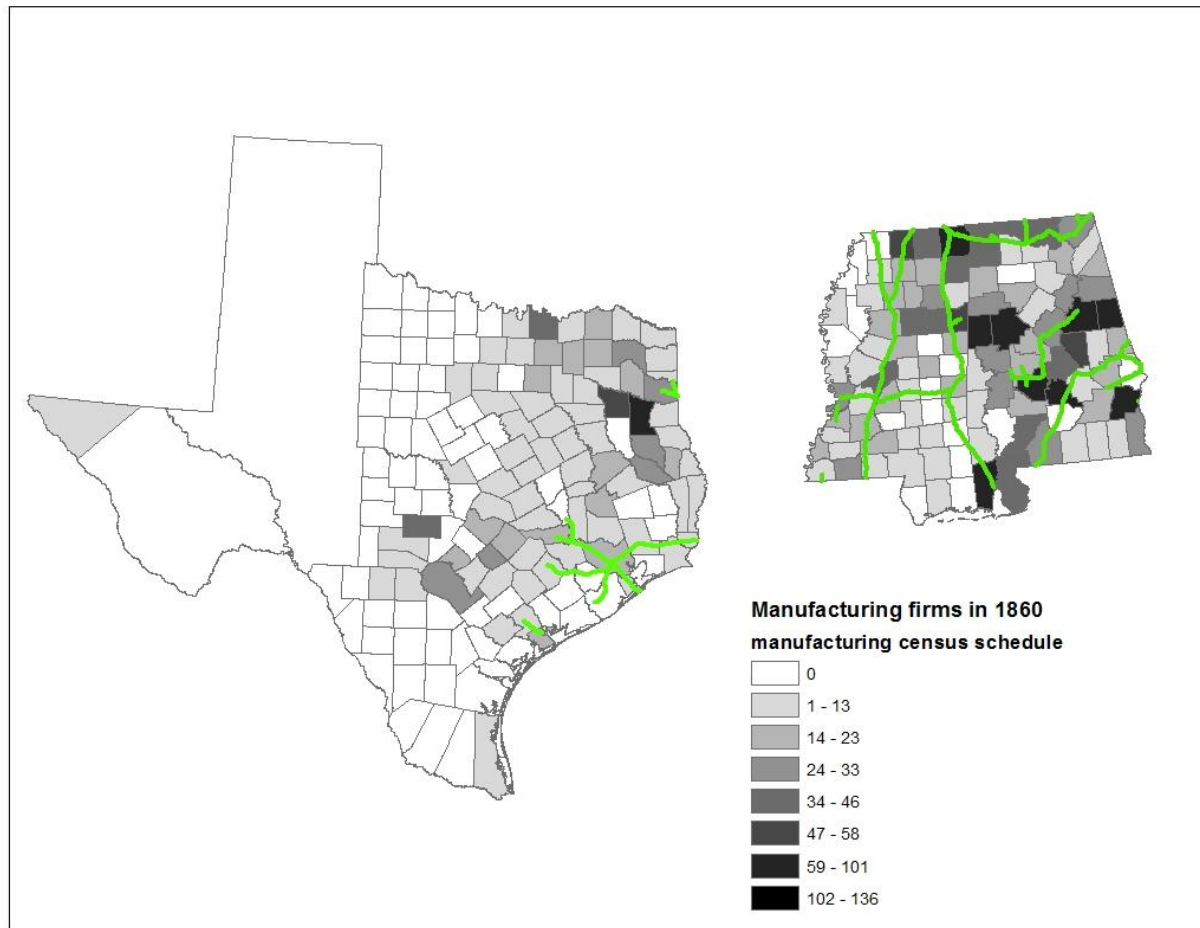
¹¹ William Gregg, *Essays on Domestic Industry: An Inquiry into the Expediency of Establishing Cotton Manufacturers in South Carolina* (Charleston: Burges & James, 1845; reprint, Graniteville: Graniteville Company, 1941), 34 (page citations are to the reprint edition).

¹² Peter Stearns, *The Industrial Revolution in World History* (Boulder: Westview Press, 1993), 2.

¹³ Brian Schoen, *The Fragile Fabric of Union: Cotton, Federal Politics, and the Global Origins of the Civil War* (Baltimore: Johns Hopkins University Press, 2009), 207.

¹⁴ J. M. Edmunds, *Manufacturers of the United States in 1860: Compiled from the Original Returns of the Eighth Census, under the Direction of the Secretary of the Interior* (Washington: Government Printing Office, 1865), vii.

map shows that, industrial enterprise was anything but scarce in the Gulf South. But, while the census found more industry than Olmsted reported on in his travels, the South, when compared to other parts of the country, nevertheless seemed like an industrial "Sahara."¹⁵



Map 3.2 ó Manufacturing firms listed in the 1860 census for Alabama, Mississippi, and Texas

Source: Census of 1860 Manufacturing Schedules

¹⁵ Mitchell, "The Rise of Cotton Mills in the South," 11.

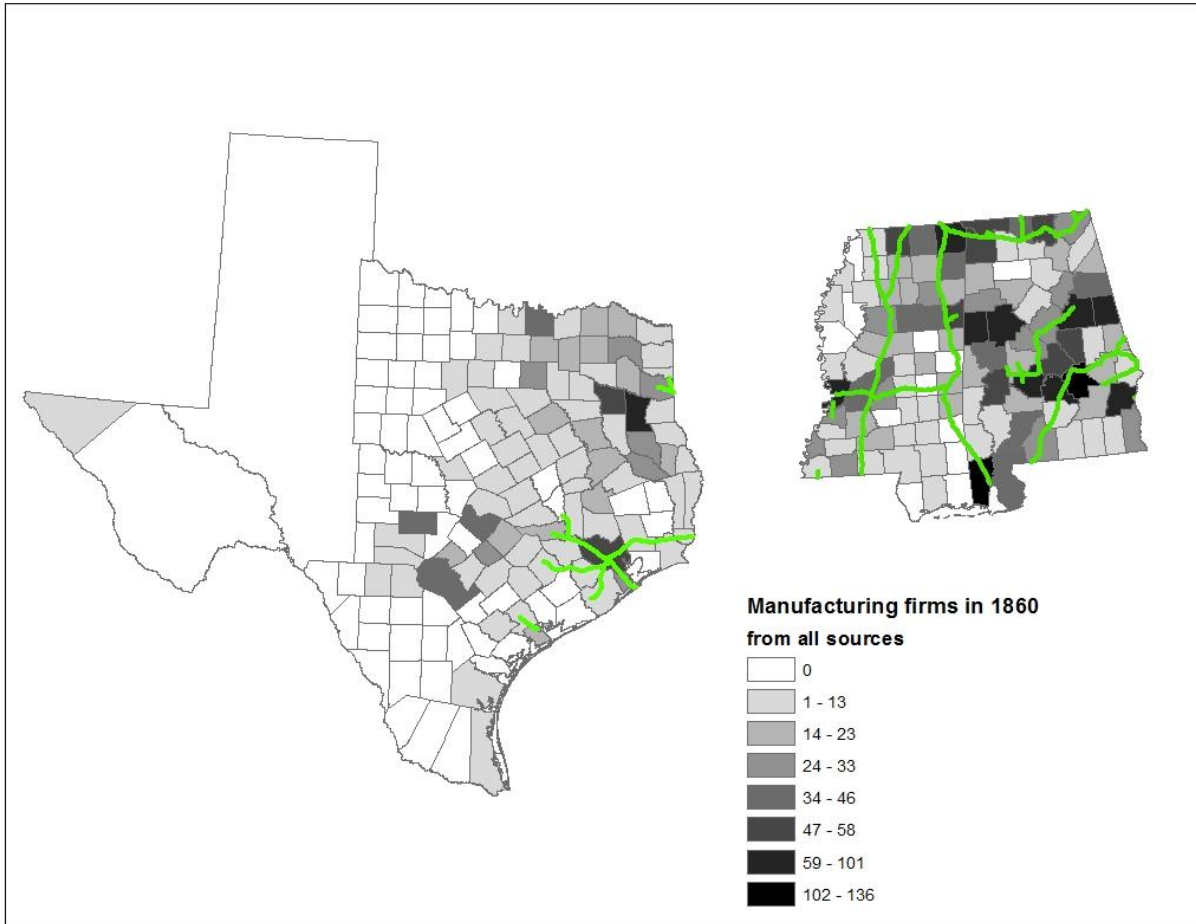
Even though census marshals supposedly performed their duties "with fidelity and zeal," historians have found many problems associated with the 1860 census enumerations.¹⁶ Some census takers simply missed firms that operated in their assigned areas while other unaccounted-for concerns were in locations that the marshals never reached. Moreover, some firm owners may have attempted to evade the census because they feared what the information would be used for, such as future attempts at taxation by the federal government.¹⁷ These deficiencies resulted in an undercounting of manufacturing firms in the Gulf South and, it follows, an understatement of the region's industrial capacity. Although missing from the census returns, the identities of many of these unenumerated firms are recoverable through the use of other, contemporaneous sources, such as newspapers, city directories, credit reports, as well as local histories.

The 1860 census lists 3,280 manufacturing firms in Alabama, Mississippi, and Texas. When the 788 firms found in other sources are added to the census concerns the new total is 4,068, an increase of 19.4% over the total reported in the census records alone. Map 3.3 indicates the county-level distribution of all industrial firms in the region. Moreover, this map reveals that industry in the Gulf South was more widespread than suggested by the census. The

¹⁶ Census Office, *Eighth Census, United States – 1860: Instructions to U.S. Marshals* (Washington: Geo. W. Bowman, Public Printer, 1860), 10. There are many problems with the census itself. For example, Bateman and Weiss estimated that adding household production to the total of output in the South could have added 10% to southern manufacturing in 1860. See Bateman and Weiss, *A Deplorable Scarcity*, 93-94. Vera Lea Dugas found a great deal of manufacturing taking place outside of factories in Texas on the eve of the war and the money that was kept in Texas by this manufacturing would help to fund further industrial enterprises. See Vera Lea Dugas, "Texas Industry, 1860-1880," *Southwestern Historical Quarterly* 59 (October 1955): 153. Stanley Engerman has also pointed out that items that were made in quantity on southern plantations such as flour, soap, liquor, clothing, and shoes should have been added to the manufacturing totals of the South. Moreover, as Engerman noted, cotton ginning should have been counted as manufacturing. See Engerman, "A Reconsideration of Southern Economic Growth, 1770-1860," 357-358.

¹⁷ Census Office, *Eighth Census, United States – 1860: Instructions to U.S. Marshals* (Washington: Geo. W. Bowman, Public Printer, 1860), 24.

geography presented by Map 3.3 is a composite picture of manufacturing in the Gulf South, based on evidence drawn from every reliable source, in addition to the census.¹⁸ There were,



Map 3.3 ó Manufacturing firms in 1860, derived from all sources

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

however, counties in the Gulf South for which few, if any, records of manufacturing are available. Newspapers were lost to fires, floods, or carelessness, and some firms may never have

¹⁸ For a detailed discussion of these sources, see Appendix A ó Sources.

been recorded at all in any source. If anything, the number of industrial concerns, as shown in Table 3.1, most likely understates the extent of manufacturing in the region.

Table 3.1 ó Manufacturing firms in 1860

	Census	Other Sources	Total
Alabama	1407 (76.3%)	436 (23.7%)	1843
Mississippi	882 (82.9%)	182 (17.1%)	1064
Texas	991 (85.4%)	170 (14.6%)	1161
Total	3280 (80.6%)	788 (19.4%)	4068

Source: Census of 1860 Manufacturing Schedules, newspapers, county directories, journals, and the R. G. Dun Credit Reports.

General Note: Numbers in parentheses are the percentage of each states total number of firms, those enumerated by the census plus those found in non-census sources. Thus, for example, 23.7 percent of Alabama's 1,843 firms were found in non-census sources but were not listed in the census. See Appendix C for a breakdown of firms omitted from the census by county for Alabama, Mississippi, and Texas.

Table 3.2 provides a breakdown of how some of these new firms were listed in the available sources. As the table shows there is not a great deal of overlap among the census, newspaper advertisements, and the Dun reports. Thus, most of the firms listed in sources other than the census were those missed by the marshals. One reason for the omission of a firm from the census was the set of guidelines to be followed by the census marshals. Inclusion in the census required that a firm have an annual output of at least \$500.¹⁹ The purpose of that restriction, according to the marshals instructions, was to exclude small household production from the manufacturing schedules, as well as firms not considered substantial enough to be recorded. To keep this production amount in perspective, we can look at the most well-known product of the antebellum South, cotton. The price of cotton in 1860 was about 13 cents per

¹⁹ Census Office, *Eighth Census, United States – 1860: Instructions to U.S. Marshals* (Washington: Geo. W. Bowman, Public Printer, 1860), 25.

pound. According to the 1860 census the average bale of cotton weighed 400 pounds.²⁰ This means that one bale of cotton was worth about \$52. To get to the \$500 that a manufacturing firm had to produce to be included in the census, a cotton farmer would have had to grow just over nine-and-a-half bales. Thus, because newspaper advertisements and listings in the Dun reports did not include production numbers, marshals may have left out some of these firms intentionally because they did not reach the \$500 threshold.

Table 3.2 ó Synoptic table of firms listed and unlisted in census

	Number of firms in census	Number of firms not in census but in newspaper	Number of firms not in census or newspaper but in R.G. Dun reports	Number of firms not in census but in newspaper and R.G. Dun reports
Alabama	1407	218	52	34
Mississippi	882	56	66	9
Texas	991	136	34	1
Total	3280	410	152	44

Source: Census of 1860 Manufacturing Schedules, newspapers, and the R. G. Dun Credit Reports.

The listing of a firm in the Dun reports indicates that a business with an interest in a southern concern's credit-worthiness had asked the R. G. Dun Company to investigate.²¹ Most likely, such southern firms were fairly substantial. That is, their business would have been producing at least \$500 worth of products and therefore should have been included in the census schedule. Moreover, the Dun reports have entries in them for counties about which the census recorded nothing, such as DeSoto and Coahoma counties in Mississippi, Clarke in Alabama, and

²⁰ Edmunds, *Manufacturers of the United States in 1860*, 2.

²¹ James D. Norris, *R. G. Dun & Co. 1841-1900: The Development of Credit-Reporting in the Nineteenth Century* (Westport: Greenwood Press, 1978), 44-45.

Bosque and Brazoria in Texas. Credit reporters, it seems, were more willing to go into certain areas than were census marshals. Moreover, areas well represented in the census had many firms missed by marshals, but were included in the reports of Dun's correspondents. For example, as Table 3.3 shows, the marshals missed nineteen firms in Mobile, Alabama, for which businessmen requested credit reports. For this reason, and others as well, the Dun reports are a

Table 3.3 ó Mobile, Alabama businesses in the Dun reports but omitted in the census, for 1860

Company Name	Line of Business
Beach, Ela, & Company	Saddle and Harness
A&S Metzgar	Carriages
Michael Hines	Machinist & Blacksmith
Theo Byrnes	Saddler
JC McGuire	Blacksmith
F Winter & GB Miller	Furniture
EJ Rollings	Carriage Maker
Mobile and Ohio Railroad	Railroad
Geo Spanagel	Furniture
Bowen & Gillman	Cabinet Maker
W Welch & Company	Carriage Makers
GK Palmes	Coach Maker
JF Jewett	Steam Lumber Mill
John Suter	Cabinet Maker
J Fichet	Shoes and Leather
F Jones	Blacksmith
John Ryan	Shoemaker
JM & T Meaher	Sawmill and Ship Building
JW Porter & Company	Sash and Door Factory

Source: Alabama, Vol. 17, p. 38-318, R.G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

valuable resource in any effort to reconstruct the antebellum southern industrial base. Dunø's efforts also provide a window into the character of industry in the Gulf South, especially about the ownership and forms of organization of industrial concerns.

Newspaper advertisements were relatively inexpensive. In 1860, the *Daily Confederation* of Montgomery, Alabama, for example, charged \$5 to run a 61 square advertisement for one month in its daily edition and \$2.50 for one square for a month in its weekly edition.²² Firms that were producing less than \$500 worth of goods however would most likely have avoided the expense of advertising. Perhaps some firms advertising in local newspapers aspired to turn out at least \$500 worth of products and used advertisements in an attempt to carve out a spot in the local market to reach that goal. But, a six-month run of advertisements in a daily newspaper cost \$30. That expense amounted to six percent of the annual output of a firm that manufactured \$500 worth of goods, an all but prohibitive expense for a small enterprise. Although a few concerns found in these other sources may have fallen below the \$500 threshold for inclusion in the census, it is reasonable to assume that most should have been recorded by the census marshals.

Moreover, much like the Dun reports, advertisements in newspapers offer insights into the extent and types of industry in the antebellum Gulf South, quite apart from a determination of what firms were missing from the census schedules. Some editors in 1860 created columns in their newspapers advertisement sections specifically dedicated to home industry so that southern consumers could find southern manufacturers from which to purchase goods.²³ Many newspapers touted industrial growth in the South, either as good in its own right or as protection

²² See *Daily Confederation*, 1 February 1860.

²³ See the *Natchez Daily Courier*, July 1860, for one example of a practice that became widespread throughout the Gulf South over the rest of the year.

against perceived northern economic aggression. These papers reported on manufacturing in their local areas and applauded the efforts of entrepreneurs to invest in it and expand existing firms.²⁴ For example, manufacturers in northeastern Alabama found out from their local newspapers that they could get southern-built steam engines in nearby Columbus, Georgia.²⁵ The Central Railroad Company used the *Weekly Houston Telegraph* to announce that its local rail yards were now producing their own rolling stock. A grist mill manufacturer in Clinton, Mississippi, advertised in the *Vicksburg Whig* that he was able to supply the area with all sizes of mills and provided a list of the prices for mills of varying types and sizes.²⁶ The Southern Agricultural Implement Factory of Jackson, Mississippi, supplied much of the state with plows and cultivators and ran ads in newspapers throughout Mississippi touting its products.²⁷ The editors of the *Vicksburg Whig* even printed an article about a newly run advertisement by the Vicksburg Foundry, applauding the firm's impressive size:

We invite attention to the advertisement of the Vicksburg Foundry by A.B. Reading. We believe this foundry is as large, if not larger, than any other in the southern country. We doubt whether New Orleans can furnish its equal in point of size, or capability to turn out a large amount of work. A boiler yard has lately been added to it, where our planters can have their boilers either made or repaired. Mr. Reading is now prepared to build a steam engine every week, besides furnishing all the mill and gin work that may be called for.²⁸

²⁴ Richard Griffin, "Cotton Manufacture in Alabama to 1865," 296. Griffin explains that the *Tuscaloosa Monitor* reported the extent of cotton manufacturing in the local area and the eighteen factories producing products. Of course, not all newspapers printed articles that supported industry in the South. For example, the *Daily Confederation*, of Montgomery, Alabama, printed an article that asserted that manufacturers continually asked for handouts from the government while good agricultural producers did not want the government to do anything but leave them alone. *Daily Confederation*, 10 June 1859. The *Texas State Gazette* of Austin, Texas, made much the same point as it talked of the inequality of the tariffs which supported northern business at the expense of southern farmers. *Texas State Gazette*, 20 June 1857.

²⁵ *South Western Baptist*, 23 February 1860. This advertisement appeared in newspapers throughout northern and eastern Alabama.

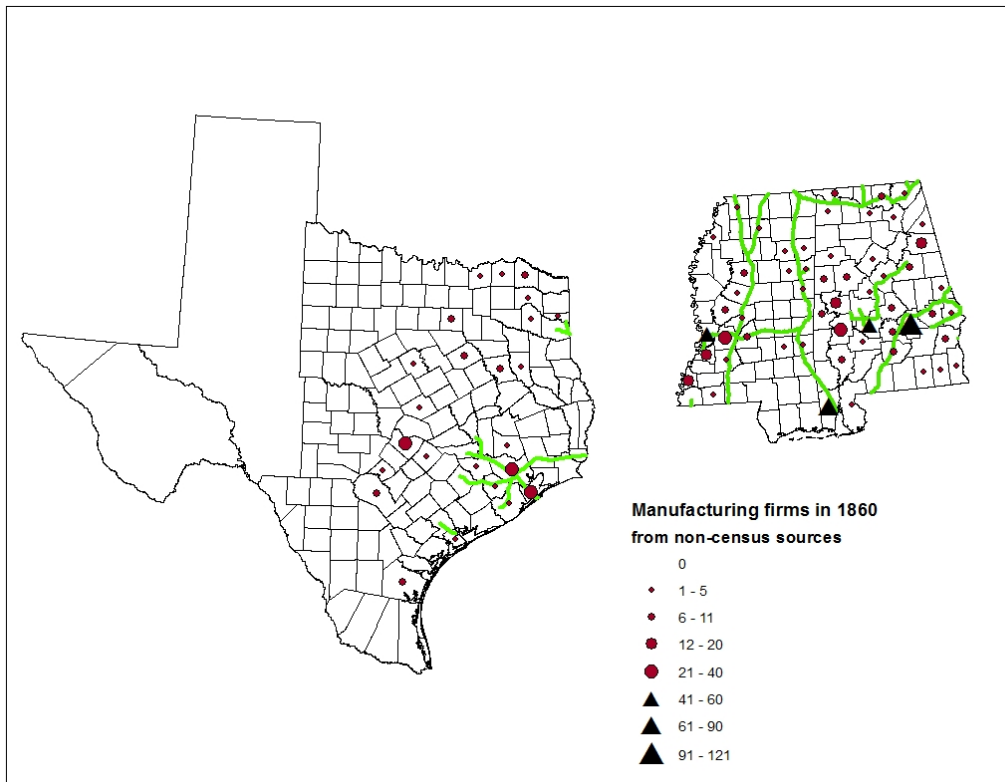
²⁶ *Weekly Houston Telegraph*, 6 July 1859. *The Vicksburg Whig*, 19 May 1860.

²⁷ *The Vicksburg Whig*, 28 April 1860.

²⁸ *Vicksburg Whig*, 14 August 1857, Reading-Pierson Vertical File, McCardell Library, Old Courthouse Museum, Vicksburg, MS.

Curiously, the census listed this concern as merely a foundry, neglecting the firm's other, extensive industrial activity. Many newspaper editors, planters, and industrialists used newspapers to promote the industrial economy of the South and the founding of firms all over the region.²⁹

Map 3.4 shows where firms missing in the census were located and concentrated. As the map indicates, the counties with the most firms missing from the census fall into two main categories. Some of the missing concerns were in areas far from railroad and river



Map 3.4 ó Number and locations of manufacturing firms not listed in the 1860 Census

Sources: Newspapers, county directories, journals, local histories, and the R. G. Dun credit reports.

²⁹ It was not just newspapers that businesses used to promote their companies. Copper, tin, and sheet iron manufacturer R.A. Smith of Jackson, Mississippi, printed its advertisements on envelopes used by many Confederate soldiers to send letters home during the war. See Humphrey's Collection, Folder 1, Mississippi Department of Archives and History.

transportation. Most likely census marshals missed these firms because of the difficulty and expense involved in getting to outlying areas. The counties that were easier to reach were consequently more thoroughly covered by the census. But census enumerators also failed to record firms that operated in well-surveyed areas. As Table 3.4 illustrates, some fairly large cities, such as Vicksburg and Natchez, Mississippi, supported a great deal of manufacturing that census marshals did not find. The 15 manufacturing firms reported by the census for Adams County, in which Natchez was located, accounted for only 47 percent of the 32 firms operating within the county. The census's coverage for Vicksburg's Warren County was even worse, capturing less than a third of the county's 77 manufacturing firms.

Table 3.4 ó Census coverage and omission of manufacturing firms in two urban Mississippi counties in 1860

	Census	Other Sources	Total
Adams County, Mississippi (Natchez)	15 (47%)	17 (53%)	32
Warren County, Mississippi (Vicksburg)	24 (31%)	53 (69%)	77

Source: 1860 manufacturing census schedules for Adams and Warren County, Mississippi, local newspapers, local histories, and the R. G. Dun Credit reports.

General Note: Figures in parentheses are the percentages of each city's total number of firms. Thus, as the text points out, of Adams County's total of 32 firms, only 47% were enumerated in the census.

The census listed the Spangler Manufacturing Company, founded by S. Spangler of Vicksburg, as a mill. But local histories show that, along with being a lumber and grist mill, the firm also produced sashes, doors, and blinds.³⁰ The Dun reports also vetted many firms in Vicksburg missed by the census, including one that turned out railroad products for the Vicksburg, Shreveport, and Texas Railroad.³¹ The census also missed George Smith, a

³⁰ Chapman and Battle, *Picturesque Vicksburg*, 124, 166.

³¹ Mississippi, Vol. 21, p. 91F, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

Vicksburg foundry owner with an important contract to make fittings for the city's gas works.³² In Natchez, firms missing from the census enumerations included a substantial wagon and carriage factory owned by A. R. Tyler, another carriage manufactory owned by George G. Dickerman, and a cabinet shop owned by Henry Keim whose "future looked bright."³³ Also omitted were such important firms as James Orr's wagon and plow factory and Andrew Boyer's wagon firm.³⁴ The firms missed by the census marshals were not just small concerns with no impact; the people living in these cities recognized them as important parts of their communities.

The census did, of course, identify many large manufacturing firms that operated in the Gulf South. Such firms served as examples to would-be industrialists and as engines to drive further development. The best known industrialist in the region was Daniel Pratt. Credit correspondents hired by Dun discussed the credit worthiness of Pratt's factory at Prattville in Autauga County, Alabama. Contrary to what Olmsted might have thought about this area because 57 percent of its population was enslaved, the report on Pratt described him as being "quite responsible" and as having "the best gin factory in America."³⁵ An advertisement in the 28 August 1860 issue of the *Southern Statesman*, reproduced in Figure 3.1, explains the

³² Mississippi, Vol. 21, p. 42B, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³³ Mississippi, Vol. 2, p. 20, 47, 66, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³⁴ Mississippi, Vol. 2, p.18, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³⁵ Alabama, Vol. 2, p. 12, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

DR. S. Herb Pills.

With a perfect likeness of the strange Astro Nation, will find a full account of the pills and Almanac—two for these Pills.

Area of "Judson's Mountain" greater part of his life in the city among the Indians of color, and it was thus that he discovered a very rare disease there, you will find all diseases arise from **BLOOD!**

Many foreign or unhealthy erythema feels the poison, complain. The stomachic action of the heart is weak. The lungs are weak; hence, a impurity at the fountain of you had thrown some spring, from which ran the whole course of the disease. An quickly part and leave its sting on abstracted, and unless lamp of life soon die out a blood, but regenerate all are, therefore, unvaried.

THE DISEASES, e. g. This *Anti-Bilious* and secretions pure and of the vital organs. That we are able to place like the "Mountain" issue of the body, and cause the flush of beauty and

Best Remedy for existing Complaints:

Forward Weakness, Liver Complaints, Rheumatism, Gout, Gravel, Secondary Symptoms.

MEDICINE!


Should never be without food, remove obstructions, all simple and blotches, to the pale cheek.

If which these Pills are surprising way among men in Mexico. Get the will read with delight, contains the "Crazy

Herb Pills are put up in a 40 pills, and Retailers have the signature of

N. & Co.

IMPROVED COTTON GINS,



DANIEL PRATT, PRATTVILLE, ALA.

With an experience of **Twenty-Nine** years in the Gin Business—during which time has made and sold nearly **FOURTEEN THOUSAND STANDS**, together with excellent machinery, the best of material, and workmen, the undersigned feels no hesitation in warranting his Gins to be equal to any now in use.

His Gins are all **RUN WITH SEED COTTON** before leaving the Factory, and none sent away that will perform well. He could produce *thousands* of certificates from planters in the cotton growing States, testifying to the superiority of his Gins, but the fact that his sales during the past year have **INCREASED EIGHTY-THREE THOUSAND DOLLARS OVER THE SALES OF THE PREVIOUS YEAR** is sufficient proof of the popularity of his Gins.

He was unable to satisfy the demand the past year, consequently has increased his facilities for manufacturing. He is now able to make five gins per day, and thinks he shall be able to fully supply the demand. He solicits the patronage of all in want of Gins. It is desirable that orders should be forwarded early so that there need be no delay in delivering.

Those who order, are requested to be particular in stating the name of their Post Office address.

He has built a large Iron Foundry on the most approved plan, and will be able to furnish Gin Segments, Boats and Mill Gearing and a variety of other castings. Smith & Ormsby have established a Machine Shop, connected with the Foundry, and will be able to finish up any work in their line that may be ordered.

He has made a change in his business which commenced on the 1st day of January, 1860, as follows:

He manufactures the gins and delivers them to the firm of Pratt & Ticknor. (M. E. Pratt, S. F. Ticknor), General Agents at a certain price. They sell them on their own account. All orders therefore, should be addressed to Pratt & Ticknor, Prattville, Ala. The following local agents will attend promptly to orders for his Gins: viz:

S. MIMS & SON..... MONTGOMERY, ALA.;
 CAMPBELL & CO..... MOBILE, ALA.
 HALE, MURDOCK & Co..... COLUMBUS MISS.
 FLEMING & BALDWIN..... NATCHEZ, MISS.
 E. M. APPERSON & Co..... MEMPHIS, TENN.
 DANIEL PRATT..... NEW ORLEANS, LA.;
 DR. F. TICKNOR..... COLUMBUS, GA.
 MATHER, HUGHES & SAUNDERS..... GALVESTON, TEXAS;
 L. C. MOORE & Co..... Vicksburg, MISS.

For the convenience of persons ordering goods from Prattville, I give the following directions: Orders for Cotton Gins should be directed to Pratt & Ticknor. Orders for Cotton and Wagon goods, to Wm. W. Fay, agent. Orders for Horse Mills, to R. P. Robinson. Orders for Wagons, of E. C. Clepper. Orders for Sash, Doors and Blinds E. S. Morgan. Orders for Machinery and Mill Work, to Mather & Ormsby.


The following is a statement of the business of Prattville:—

	1857.	1858.	1859.
Cotton Gin Manufactory.....	\$144,000 00	\$170,251 50	\$253,117 00
Prattville Manufacturing Co.....	161,724 00	187,220 42	166,787 00
Foundry.....	11,432 00	16,747 00	18,443 00
Machine and Blacksmith Shops.....	3,694 00	7,479 00	12,776 64
Sash, Door and Blind Manufactory.....	13,360 00	12,642 71	10,865 44
Horse Mills.....	17,160 00	16,720 00	21,560 00
Wagon Manufactory.....	6,500 00	8,962 00	16,797 00
Tin Manufactory.....	9,950 00	2,500 00	2,925 00
Printing Business.....	8,000 00	8,225 00	8,400 00
Mercantile Business.....	158,246 00	155,519 00	170,027 47
	\$510,169 00	\$587,291 63	\$681,937 55

Prattville, January, 1860.—11.

Crockery, Crockery, Sash, Door and Blind

HARDWARE AND CUTLERY.



To which the attention of planters, build chanciers, housekeepers, &c., is invited.

BLANK BOOKS
MUSTANG GRAY—a new supply received by B. B. DAVIS Jan 14 Masonic Bul

OF all kinds—also, a full assortment of Jan 14 Masonic Bul

Something New.
JUST received permeser St. Charles and superior assortment of
Cust Steel Hoes; two doz. S. W. Axes, one doz. Ames' long hand Shovels; a large assortment of Trace Chains; also an assortment of C and Shot of all sizes, at the store of
 Jan 28th McWILLIAMS & S

Furnishing Goods
JUST received a beautiful stock of Shirts, Drawers, Hat, Hose, Gloves, Hats, &c., of every style and quality is made at the Clothing Emporium of W. G. & A. R. ANDREWS.

Take Notice That
A. Sample
 Keeps constantly on hand at the **MASONIC BUILDING IN KINGS** a good assortment of **HATS, BOOTS & SHOES** **Ready Made Clothing**. Calicoes, Domestic, Worlten Goods, and everything useful or desirable, which will very cheap for Cash. Also, **Family Medicines and Groceries** Sugar, Coffee, Bacon, Flour, Salt, and a variety of choice Tobaccos, &c., with a fresh every week, and will buy Cotton, Corn, Poultry, Butter, Eggs, Beeswax, and Dr. Will pay fair prices for produce goods under city prices. Call and see. Kingston, Oct. 26th, 1859.

Cook & Coppee Esca
PUT RECAPTURED AND EXBOU
 We take this method of informing our and the public generally, that we ing goods of any description at low figures will not be undervalued. Give us a call!

Figure 3.1 6 Prattville advertisement from 1860

Source: Southern Statesman, 28 April 1860.

successfulness of Pratt's concerns. Pratt's twenty-nine years of experience had created a firm that had a gross income of \$742,514.35 in 1860, spread across the numerous concerns of his Prattville complex.³⁶ Pratt's success suggests that, under the right guidance, southern industry could develop and prosper. Of course, firms like Pratt's did not appear overnight, and as Pratt and other manufacturers were well aware, industrial development took time and required investment in supporting enterprises, especially in transportation infrastructure.³⁷

Manufacturing was becoming important enough in the region to influence public policy. Beginning in 1852, the Mississippi state legislature passed laws to "encourage the establishment of manufacturing enterprises."³⁸ By then, Jackson, the state capital, had become a center of trade and industry, home to such enterprises as carriage manufactories, boot and shoe factories, and iron works. Jackson was, of course, hardly alone in its industrial activity and new concerns were being founded across the Gulf South by individual proprietors, partnerships, and companies, as Table 3.5 shows.

Unfortunately, the census did not explicitly record the form of organization or type of ownership of the firms reported in it. The Dun reports also neglected to report this information. Consequently, we can only infer ownership type by the name of the firm and the list of its proprietors. Firm size also influenced the organizational form of a business. We can reasonably assume that a smaller firm with one listed proprietor and no business name was owned by an

³⁶ For 1860 value of production see, 1860 Manufacturing Census Schedules for Autauga County, Alabama. For the production values for 1857-1859, see *Southern Statesman*, 28 April 1860. For more information on Daniel Pratt and his Prattville factories see Curtis Evans, *The Conquest of Labor: Daniel Pratt and Southern Industrialization* (Baton Rouge: Louisiana State University, 2001).

³⁷ Randall M. Miller, "Daniel Pratt's Industrial Urbanism: The Cotton Mill Town in Ante-bellum Alabama," *The Alabama Historical Quarterly* 34 (Spring 1972): 13.

³⁸ William D. McCain, *The Story of Jackson: a History of the Capital of Mississippi, 1821-1851* Volume 1 (Jackson: J. F. Hyer Publishing Company, 1953), 313.

Table 3.5 ó Distribution of firms by form of organization, 1860, from census

	Individual	Partnership	Company	Total
Alabama	1048 (74.5%)	180 (12.8%)	179 (12.7%)	1407
Mississippi	711 (80.6%)	115 (13%)	56 (6.4%)	882
Texas	729 (73.6%)	165 (16.6%)	97 (9.8%)	991
Total	2488 (76%)	460 (14%)	332 (10%)	3280

Sources: Census of 1860 manufacturing schedules.

General Note: Figures in parentheses are the percentages of each states total number of firms, as recorded in the census.

individual. In fact, as the table indicates, most firms in the Gulf South were owned by individuals in 1860. Firms owned by two proprietors were generally simple partnerships and made up fourteen percent of the census total. The largest firms, with business names listed and perhaps the suffix "Company" or "Inc.," were likely to have been companies. Such concerns constituted only 10% of the total.

For concerns not listed in the census, individual proprietorships were also the dominant form of business, accounting for almost sixty-three percent of all manufacturing firms in Alabama, Mississippi, and Texas (Table 3.6). Surprisingly though, the second most missed type of firm was the company. While only 10% of the firms listed in the census records were companies, 17.5% of firms missed by the census were of that type. More surprising is the fact that the census marshals in Alabama, Mississippi, and Texas together failed to report close to a third (30.7 percent) of all companies operating in the region in 1860. The corresponding levels of omissions for individual proprietorships and partnerships were 18 percent and 18.6 percent, respectively (Table 3.7). This distribution shows then that concerns census marshals missed in the Gulf South were not insubstantial ones. Moreover, many of these firms were listed in the

Table 3.6 ó Distribution of firms by ownership type, 1860, from non-census sources

	Individual	Partnership	Company	Total
Alabama	279 (64%)	66 (15.1%)	91 (20.9%)	436
Mississippi	148 (81.3%)	16 (8.8%)	18 (9.9%)	182
Texas	118 (69.4%)	23 (13.5%)	29 (17.1%)	170
Total	545 (69.2%)	105 (13.3%)	138 (17.5%)	788

Sources: Newspapers, county directories, journals, and the R. G. Dun Credit Reports.

General Note: Figures in parentheses are the percentages of each states total number of firms by ownership type.

Table 3.7 ó Levels of omission of manufacturing concerns by organizational type in Alabama, Mississippi, and Texas in 1860

	Individual	Partnership	Company	Total
Alabama	1327 (21%)	246 (26.8%)	270 (33.7%)	1843 (23.7%)
Mississippi	859 (17.2%)	131 (12.2%)	74 (24.3%)	1064 (17.1%)
Texas	847 (13.9%)	188 (12.2%)	126 (23%)	1161 (14.6) %
Total	3033 (18%)	565 (18.6%)	470 (29.4%)	4068

Sources: Census of 1860 Manufacturing Schedules, newspapers, county directories, journals, and the R. G. Dun Credit Reports.

General Note: Figures in parentheses are the percentage of firms of the given ownership type missed by the census marshals.

Dun reports which indicates that businessmen in the North knew of their existence and requested information on them. Northern creditors called for investigations of all types of firms in the region. But, southern companies, which may have hoped to do business over a wider area than would a firm owned by an individual or by a partnership, would naturally have received a great deal of attention. One such firm, Samuel Coale and Company's steam mill in Clarke County, Alabama, was worth "some \$15000 or \$20000" and according to its Dun report, was "good for

all contracts.³⁹ Yet, somehow the census marshals overlooked the firm. Census marshals missed not only small firms, but a large number of important ones as well.

Overall, as Table 3.8 shows, the distribution by ownership type for all manufacturing firms comes close to matching, proportionally, the breakdown of the census displayed in Table 3.5. This suggests that the organization of concerns in the region followed a pattern. Most firms were owned by individuals and were founded to produce for their local areas. This was a function that could be performed by one owner who hired a few hands. But, larger firms did exist, and these manufacturers used the advantages provided by transportation and raw materials to form larger and more complex concerns. The large number of partnerships and companies, making up twenty-five percent of all firms in the Gulf South, shows that industry was developing and expanding.

Table 3.8 ó Distribution of firms by ownership type, 1860, from all sources

	Individual	Partnership	Company	Total
Alabama	1327 (72%)	246 (13.3%)	270 (14.7%)	1843
Mississippi	859 (80.7%)	131 (12.3%)	74 (7%)	1064
Texas	847 (73%)	188 (16.2%)	126 (10.8%)	1161
Total	3033 (74.5%)	565 (13.9%)	470 (11.6%)	4068

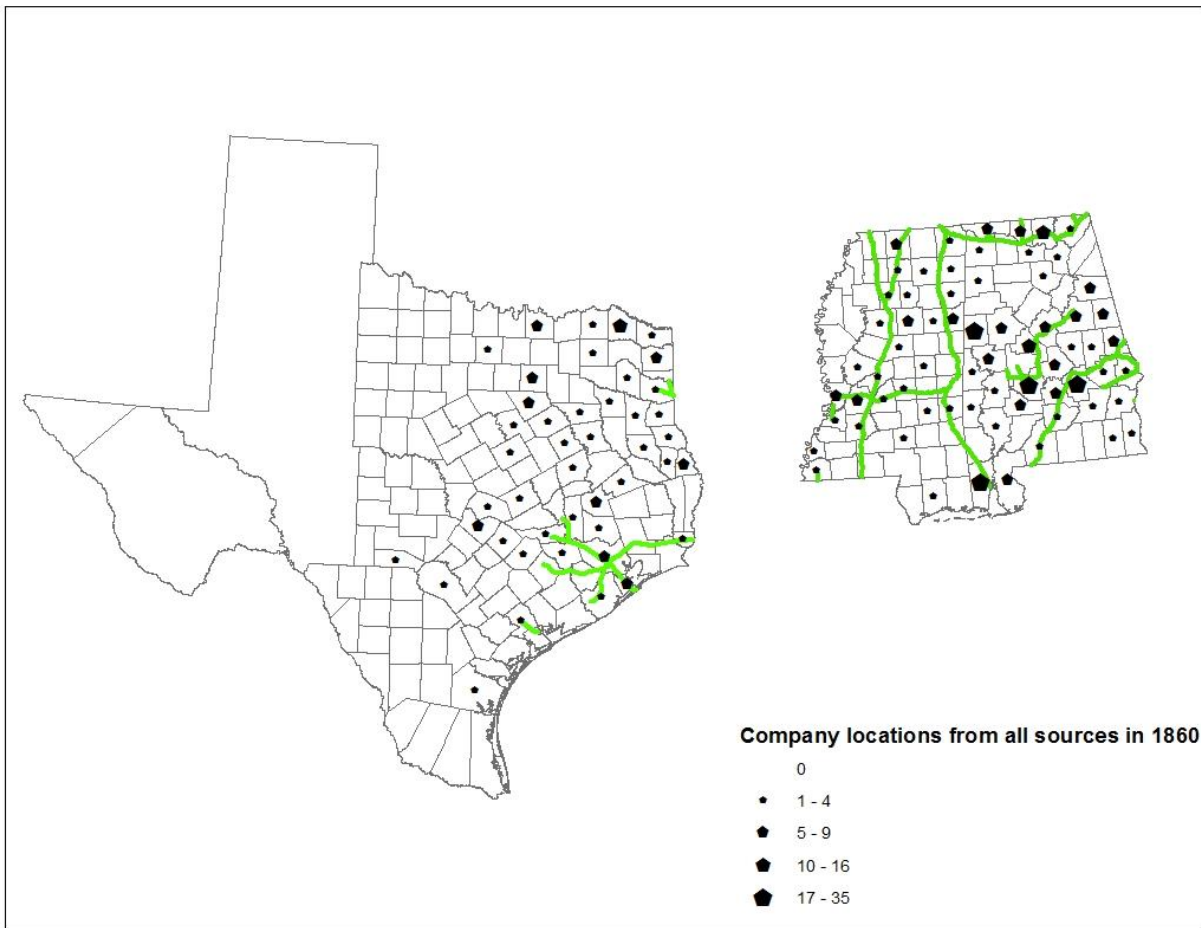
Sources: Census of 1860 Manufacturing Schedules, newspapers, county directories, journals, and the R. G. Dun Credit Reports.

General Note: Figures in parentheses represent the percentages of the total firms from all sources.

The companies engaged in manufacturing in the Gulf South were distributed throughout the region, but tended to be concentrated along railroads lines and in areas where raw materials were readily available. Map 3.5 plots the distribution of companies in Alabama, Mississippi, and

³⁹ Alabama, Vol. 8, p. 7, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

Texas. This map also delineates the areas off the main transportation routes that had no companies. But, almost any area with raw materials or access to transportation and markets supported at least one manufactory, even a company. Many of these concerns, such as Pratt's factory, which built some of the best cotton gins in the nation, took advantage of the resources in their local areas to produce goods demanded by Southerners.



Map 3.5 6 Numbers and locations of companies from all sources in 1860

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Other firms used local cotton to feed textile mills, while iron work firms such as the Selma Iron Works and the Alabama Iron Manufacturing Company took advantage of nearby iron

and coal deposits to turn out a range of iron products.⁴⁰ The Planters Factory in Autauga County, Alabama, spun and wove locally grown cotton into thread and cloth and, according to the Dun report on it, had the reputation of doing a good & safe business [sic].⁴¹

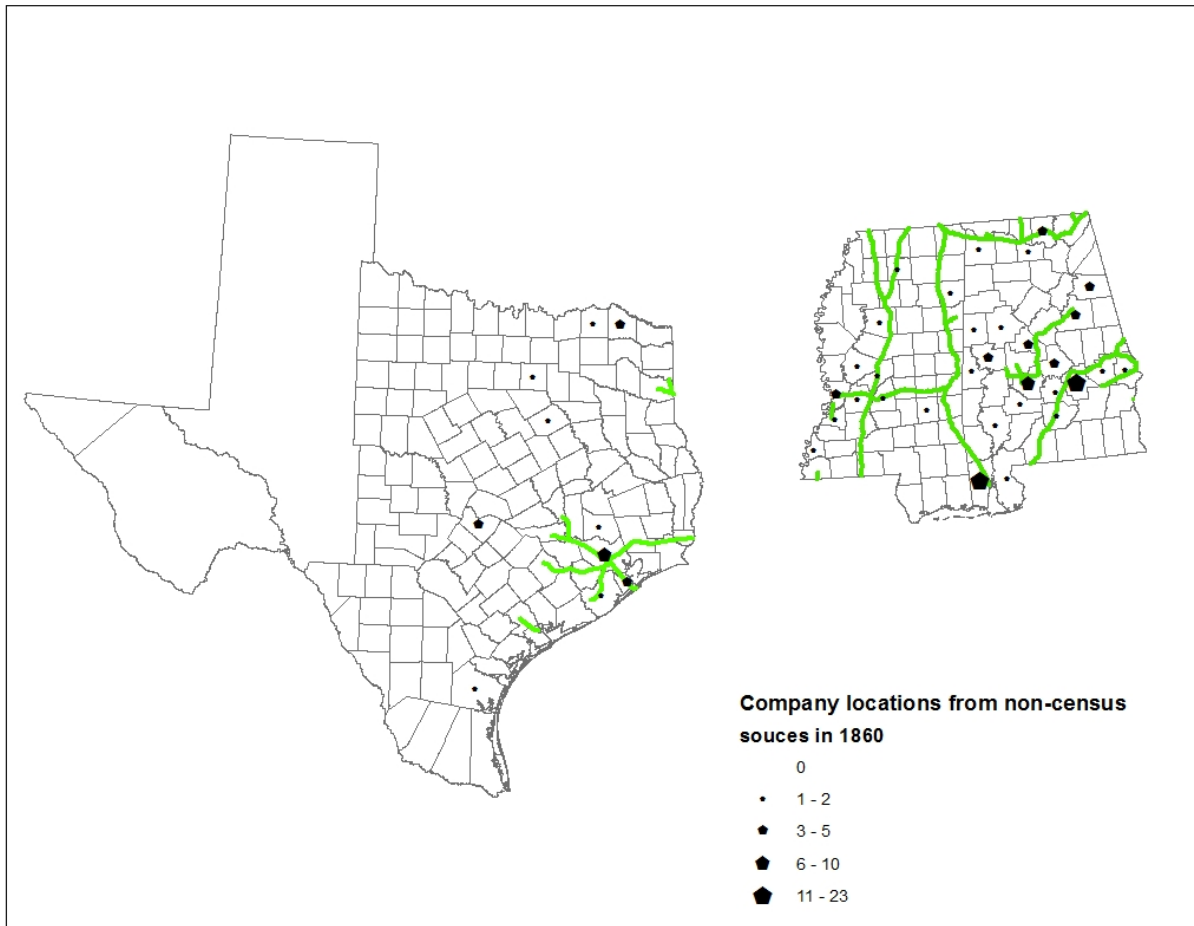
The companies missed by the census marshals were located, for the most part, in urban areas and along railroad routes, as shown by Map 3.6. The location of companies in urban areas such as Vicksburg, Mobile, Montgomery, or Natchez is understandable. As stated earlier, concerns in these areas benefited from the availability of transportation lines, access to raw materials, and the existence of complimentary firms, all of which spurred growth. For example, George F. Plant and Company of Selma, Alabama, was able to build a well-respected tinware and stove firm not only because of the good habits and character of the men involved in the company, but also because of the urban character of its local markets.⁴² Somehow, though, the census marshals missed this firm. It is interesting that any concerns, let alone companies, were missed in urban areas. Unfortunately, the reason for their omission may never be known, but incompetence and laziness seem to be the most likely explanations.

Another organizational type that existed in the Gulf South was state ownership of a manufacturing operation. The primary examples of such enterprises were the region's state penitentiaries, and, of course, the census recorded them. Prisoners were another kind of unfree

⁴⁰ Alabama, Vol. 10, p. 132 and 87, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁴¹ Alabama, Vol. 2, p. 6, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁴² Alabama, Vol. 10, p. 116, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.



Map 3.6 6 Numbers and locations of companies not listed in the census in 1860

Sources: Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

labor of which Southerners took advantage, and state prisons were some of the largest industrial enterprises in the region. The Mississippi State Penitentiary, for example, was a major and growing concern. As early as 1846, its Superintendent, Benjamin G. Weir, advertised in local newspapers that the prison was selling õhorse and ox wagons, carts, drays, carryalls, buggies, carriages, sulkies, spinning wheels, reels, cooperø ware, chairs, cribs, washstands, wardrobes, safes, plows, boots, and harness.ö⁴³ By 1860, the prison turned out thousands of dollars of

⁴³ McCain, *Story of Jackson*, Vol. 1, 83.

products each month from its cotton factory, woodshop, shoe shop, and smithy and purchased cotton from as far away as New Orleans.⁴⁴ The Alabama State Penitentiary was also an important industrial concern. An advertisement in the 21 March 1860 issue of the *Southern Messenger* informed readers that the prison factory sold a variety of products, including sashes, doors, blinds, russet brogans, wagons, carts, and threshing machines.⁴⁵ Finally, the Texas Penitentiary, which opened its factory in October 1849, was running 100 looms and producing a great amount of osnaburgs and woollens by 1860.⁴⁶ Plantation owners from the local area in Walker County supplied the factory with cotton and bought the firm's finished products.⁴⁷ Moreover, prisons were not small firms focused on one product; they were, instead, very large and diversified undertakings that produced many different items.⁴⁸

Most manufacturing establishments were not prison enterprises, but were, instead, privately owned firms. What then do we really know about their owners? Managing a

⁴⁴ Mississippi State Penitentiary Account Sheets, RG 29, Mississippi Department of Archives and History, 1860. The records of the Penitentiary show how much each shop in the facility brought in for various months in 1860 as the table below shows.

Money Received from Sales of Products at Mississippi State Penitentiary

	June 1860	July 1860	November 1860
Cotton Factory	\$2244.36	\$1693.32	\$846.64
Wood Shop	\$150.60	\$391.50	\$102.65
Shoe Shop	\$136.90	\$389.32	\$91.30
Smith Shop		\$15.00	

⁴⁵ *Southern Messenger*, 21 March 1860. Other products listed were: wheat fans, well buckets, cabinet ware, and five and ten gallon kegs. The factory was leased by Burrows, Holt, and Company.

⁴⁶ W. & D. Richardson, *The Texas Almanac for 1860, with Statistics, Historical and Biographical Sketches, &c. Relating to Texas* (Galveston: The Galveston News, 1860), 201-202.

⁴⁷ Abigail Holbrook, "A Glimpse of Life on Antebellum Slave Plantations in Texas," *Southwestern Historical Quarterly* 76 (April 1973): 371-372.

⁴⁸ Louisiana also had a state prison factory where slaves were incarcerated along with white prisoners. The prisoners made clothing that was sold on the open market and, in a speech before the state legislature, Senator Buffington in March 1857, predicted that "the day is not far distant, when we will see every inhabitant of the South clothed in fabrics made by our own slave labor." *Official Reports of the Senate of Louisiana*, 3rd Legislature, 2nd Session, 1857, 36-39.

successful concern required a range of skills and a sharp mind. Understanding more about these owners will help us to understand better the development of industry in the region. The manufacturing schedules of the census provide no information about owners beyond their names. Even the Dun reports said little about the owners of firms other than whether or not they were good credit risks. The Dun report on a Bexar County, Texas, boot and shoe manufacturer, M. Eisman, described him, in January 1860 as “young and industrious,” and doing a “fine trade,” even though, according to Olmsted, Eisman would have never seen a book.⁴⁹ Moreover, Dun judged Eisman to be worthy of credit by the northern investors who had ordered the Dun report. Robert Clark, a carriage manufacturer in Adams County, Mississippi, owned, according to the Dun report on him, a “valuable manufactory employing some 12 or 15 workmen,” and was worthy of northern support.⁵⁰ Of course, not all of the concerns listed in the Dun reports were good credit risks. One described a nephew of the great southern industrialist Daniel Pratt was described as always being behind in his payments and from whom creditors had a hard time getting repaid. But, the credit reporter believed that his uncle might still make good his debts.⁵¹

Curiously, while the manufacturing census missed many industrial concerns, owners of some of these missing firms nevertheless appeared in the population and slave census schedules. Cross-referencing the names of the owners of the 334 firms found in the Dun reports with the names in the population and slave census schedules, turned out 157 owners of concerns for whom census information exists. Birthplace is one piece of information that can be recovered.

⁴⁹ Texas, Vol. 3, p. 120B, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁵⁰ Mississippi, Vol. 2, p. 59, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁵¹ Alabama, Vol. 2, p. 9, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

Finding out where an owner of a concern was born can tell us to what degree southern industrial development was home-grown. As Table 3.9 shows, industrialists in the Gulf South were born within and outside the South, and even outside the United States, with one man even listing his place of birth as "At Sea."⁵²

Table 3.9 ó Place of birth of firm owners listed in Dun reports

South	87
North	34
Europe	32
Miscellaneous ^a	2
Total ^b	155

Source: R.G. Dun Reports and the 1860 Population Census Schedules

^A Miscellaneous includes birthplaces listed as Canada West and Born At Sea.

^B Two owners had no birthplace listed.

Contrary to what Olmsted asserted, the majority of these entrepreneurs were southern-born. Moreover, most of the European- and northern-born owners were craftsmen such as jewelers, watchmakers, tinsmiths, and silversmiths. Southern-born owners devoted themselves to heavier industry: foundries, carriage and wagon factories, milling, and similar enterprises. Many of the southern-born owners were from the three states being studied here. Some areas of these states had, by 1860, only recently come open to settlement; this was especially true of Texas. Thus, a number of owners came from other southern states, mostly Virginia and the Carolinas.⁵³ Industrial development in the Gulf South, then, was very much driven by firms owned and operated by native-born Southerners.

⁵² 1860 Population Census Schedules, Claiborne County, Mississippi.

⁵³ 1860 Population Census Schedules.

The population census schedules also lists the occupation for each person interviewed by census marshals. How owners reported their profession in the schedules says a great deal about industry in the antebellum Gulf South. Most southern firm owners listed their occupation as that of an operator of an industrial concern such as a mechanic, millwright, carriage manufacturer, boot or shoe maker, harness maker, and others covering the wide range of industrial work carried on in the region. For example, S. C. Tanner, who owned a major lumber mill and was an influential man in Dallas County, Alabama, does not appear in the manufacturing census but was listed in the population census as being in the lumber trade.⁵⁴

Sixteen industrialists listed their occupation in the population schedules as something unrelated to their manufacturing concerns. These men, who owned large amounts of real and personal estate, including significant numbers of slaves, listed their occupations as farmer or planter. Owning a plantation, or being a farmer, had greater cachet than owning an industrial concern, so status-conscious men strived to reach this level. More important, however, this planter investment in manufacturing suggests the transfer of capital from agriculture to industry. Close students of antebellum southern manufacturing have tended to minimize the importance of this transfer because, so the thinking goes, planters had ða general inability or unwillingness to transfer resources out of agriculture.ö⁵⁵ But, it should not be surprising that planters would diversify their interests. As the *Trinity Advocate* editorialized:

Each planter will improve his condition by producing everything which he consumes, and the community would be an hundred fold enriched by the establishment of manufacturing industry in close contiguity to the cotton fields, not only producing at home the fabrics we consume, but exporting the manufactured article instead of the raw material.⁵⁶

⁵⁴ Alabama, Vol. 10, p. 106, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁵⁵ Fred Bateman and Thomas Weiss, ðManufacturing in the Antebellum South,ö *Research in Economic History* 1 (October 1976): 14. Bateman and Weiss elaborate on this point in *A Deplorable Scarcity*, 157-163.

⁵⁶ *Trinity Advocate*, Palestine, Texas, 8 June 1859.

Also, planters and large farmers had the capital to invest in and sustain industrial firms.⁵⁷

Planters, then, could play an important role in southern industry by investing in manufacturing concerns when they saw that they could be profitable.

Owners of manufacturing firms possessed widely varied amounts of both personal and real estate to draw upon for their industrial endeavors. In the census, personal estate was anything that could be moved or carried off, while real estate was, of course, land and buildings. The owner of a manufacturing concern would have had a large personal estate because the census usually included the products of the firm in the total. The mean value of the personal estate of the men who were subjects of the Dun reports was \$15,216; their average real estate holding was \$7,358. These amounts were equivalent, respectively, to personal and real estates of \$440,000 and \$213,000 today.⁵⁸ The size of such estates made their owners men of considerable wealth. Personal and real estates were important to the reporters who contributed to the Dun evaluations because such information was used to determine credit worthiness. For example, J. C. McGuire, a foundry owner in Mobile, was reported as "doing well, owns real estate and slaves, [and was] good for contracts."⁵⁹ Another owner, J. C. Harris of Carroll County, Mississippi, was a "very industrious and economical man, worth at least \$100000."⁶⁰ Many of

⁵⁷ The idea that planters were the people in the antebellum South with the most capital to invest was covered in detail by William Scarborough in his book *Masters of the Big House*. See William Scarborough, *Masters of the Big House*, 218.

⁵⁸ Value in today's currency determined with www.measuringworth.com.

⁵⁹ Alabama, Vol. 17, p. 100, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁶⁰ Mississippi, Vol. 4, p. 30H, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School. Harris was missed by both the manufacturing and population census.

these manufacturers were men of substance who had the capital resources needed to run successful firms.

Several of the owners of these industrial concerns also owned slaves, something which lay outside Olmsted's conception of the possible. Olmsted said many times in his book that owning slaves degenerated slave owners and that they therefore could never own modern industrial concerns.⁶¹ Bateman and Weiss said much the same thing, asserting that slave owners ignored investment opportunities and avoided risk whenever possible.⁶² The evidence supports neither Olmsted nor Bateman and Weiss. One-third of the business owners who were the subjects of Dun reports owned at least one slave. The typical industrial entrepreneur listed in the Dun reports owned twelve slaves. There is no way to know whether slaves held by owners of manufacturing firms labored in those concerns, and the Dun reports are of little help in providing an answer because they only mention slaves as collateral for credit. For example, the credit report on Isaac Young listed him as a successful carriage maker in Franklin County, Alabama, and noted that he owned slaves as part of his personal property.⁶³ The report, however, made no mention of what labor the slaves performed. But, slaves worked in many industrial concerns in the South, and it would not be surprising if the slave owners listed in the Dun reports used slave labor in their manufacturing operations.⁶⁴

Olmsted offered a picture of the antebellum South based on very little hard evidence and considerable bias. The data presented here paint a very different picture of the average

⁶¹ Olmsted, *Cotton Kingdom*, 117-121.

⁶² Bateman and Weiss, *A Deplorable Scarcity*, 113, 160.

⁶³ Alabama, Vol. 11, p. 66, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁶⁴ For more information on industrial firms that used slave labor see William Gregg, *Essays on Domestic Industry*; Curtis Evans, *The Conquest of Labor*; and Charles Dew, *Ironmaker to the Confederacy*.

antebellum Gulf South manufacturer. Owners lived and worked in sparsely settled semi-frontier areas, as well as in large urban centers. The average southern manufactory owner had been born in the region, and well over half had been born in one of the states studied here. He owned sufficient personal property and real estate to enable him to found his firm, operate it, and turn a profit. Moreover, there was a one in three chance that he was also a substantial slave owner. These industrialists were esteemed by the other members of their communities and were men of significant wealth and enterprise. As substantial as many of these owners were, we might well expect that the marshals would have listed their firms in the census. The inclusion in the census of these firms and their owners would have contributed to a more complete and more accurate view of the industrial base of the South on the eve of the Civil War. Their omission has distorted the views of both contemporaries and historians alike.

CHAPTER FOUR: FACTORS OF PRODUCTION ó CAPITAL, RAW MATERIALS, LABOR

On January 11, 1860, the *New Orleans Bee* printed an editorial celebrating òthe determination of Southern men to encourage their own home industry, in order to protect their rights and institutions.ö¹ There were, as we have seen, many Southerners to be celebrated. These entrepreneurs were willing and able to build manufacturing concerns and worked to develop an industrial base in the Gulf South. But, there is a great deal more to the creation of a successful concern than a willing owner and a good location. Other factors ó availability of capital, raw materials, and labor ó were essential to manufacturing, and the Gulf South had ample supplies of them. As the Dun reports show, Southerners had money of their own to invest, and Northerners were willing to extend them credit. These sources of capital, applied to the region's raw materials by the labor of its white and black workers fueled the antebellum South's industrial development. The location of firms, their ownership, and their organizational forms provide the outlines of a picture of manufacturing in the Gulf South. The factors of production that this chapter discusses will provide definition to that picture.

As the number of manufacturing firms in the Gulf South increased, their supplies of the factors of production increased as well. Industrial boosters understood the importance of capital, raw materials, and labor and pushed entrepreneurs to apply these factors of production to new undertakings, urging: òWhy not then embark a portion of your capital, or your labor, which is the same thing, in manufactures? It would be an experiment, it is true; but without experiments great results can never be obtained.ö² The creation and operation of these firms began a

¹ *New Orleans Bee*, 11 January 1860.

² *Macon Telegraph*, 18 August 1828.

transformation of the region, and, while many hoped it would be for the better, some feared it would be for the worse. J. D. B. De Bow confronted this uncertainty:

It is also said, that where manufacturing and commerce flourish, morals are corrupted and free institutions do not prosper. It is undoubtedly true, that when men congregate in cities and factories, the vices of our nature are more fully displayed, while the purist morals are fostered by rural life. But, on the other hand, the compensations of association are great. It develops genius, stimulates enterprise, and rewards every degree of merit.³

Probably, for every naysayer there was at least one booster, touting the benefits to be realized from industrialization.

Although information on capital, raw material costs, labor, and wages was listed in the manufacturing census schedules, such information was, for the most part, not available for firms missed by the census. Newspaper advertisements listed the location of such concerns, what they sold, and the cost of their products. Some even included an illustration or two. But, they did not present any information about how many employees worked for the firm or their wages. The Dun reports had the same deficiencies. They included information on a firm's credit-worthiness and sometimes on its personal property, real estate, and slave ownership, but the reporters rarely provided any information on capital investment, the costs and types of raw materials used by the concern, or the wages that they paid their free workers. Contemporaneous local histories and city and county directories, which focused on political, military, and social events, also offered little in the way of such information. But, it is possible to arrive at estimates of the capitalization, raw materials costs, and the wage bills of firms by using the averages of each of those factors of production provided for firms enumerated in the census.⁴

³ De Bow, *Industrial Resources*, 28.

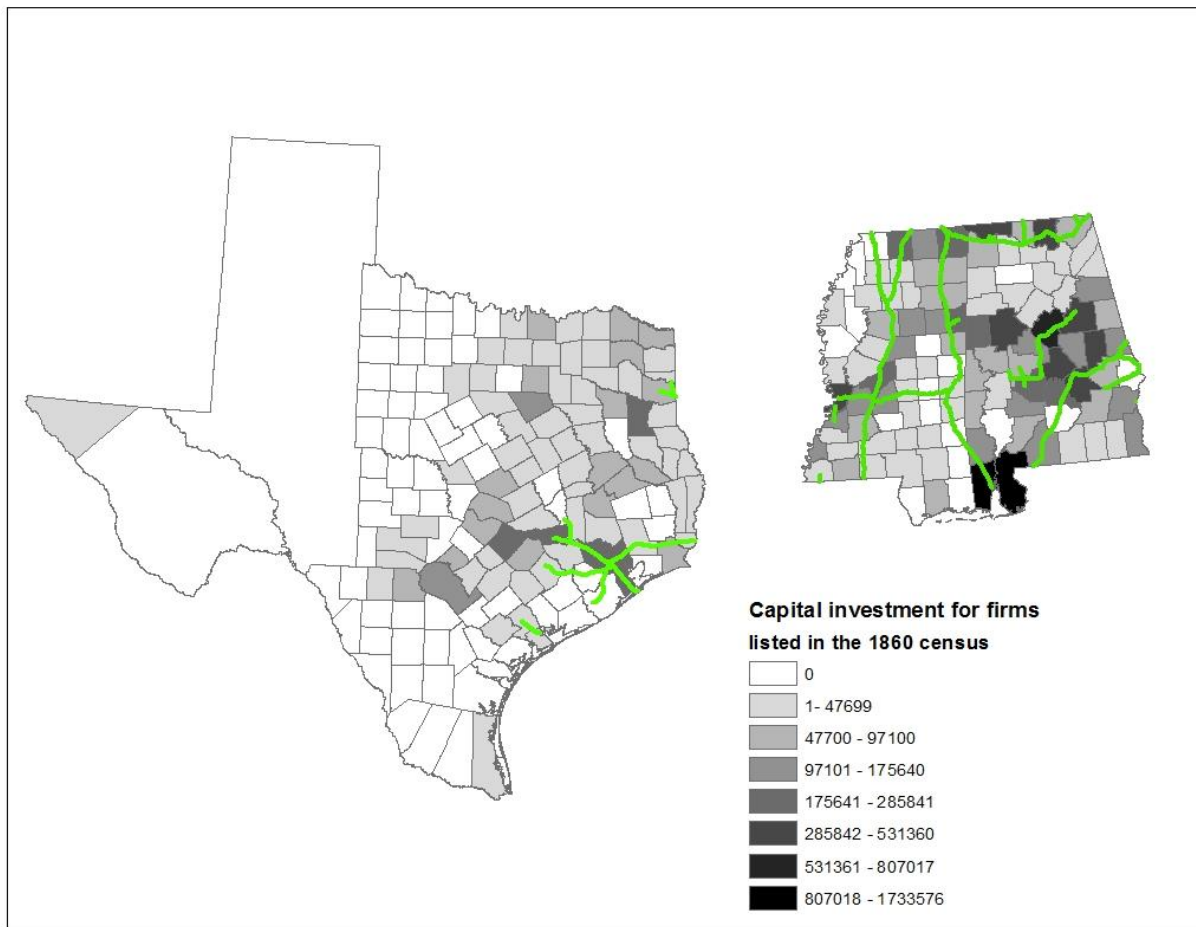
⁴ See Appendix B 6 Methods, for a more detailed explanation of how missing data was estimated.

Investors in the Gulf South had many different capital investment opportunities available to them. The traditional view of the southern economy holds that Southerners invested primarily in land and slaves because of the high returns that could be made in cotton and other staples. This characterization of antebellum southern investment practices somewhat overstates the case. Of course, many men in the region did buy land and slaves to engage in cotton production. But, entrepreneurs invested capital in several types of business in the region, including foreign and domestic commerce, city and town property, houses, canals, railroads, manufactures, banking, insurance, iron and coal mining, timber trade, steamboats, and shipping.⁵ Industrial firms required capital to buy land or rent buildings, purchase machinery and raw materials, and meet other, miscellaneous expenses. The census schedules included a column in which marshals were to record the amount of capital invested in each firm. The results of the census's tabulation of capital invested in manufacturing are displayed in Map 4.1. Not surprisingly, the greatest concentrations of industrial capital were in the major urban centers of the Gulf South. But, overall, investment in manufacturing, at least according to the census, was fairly widespread. Moreover, as the map shows, there was a belt of capital investment that ran through the middle of Alabama and Mississippi. This belt followed the railroad lines and also corresponds to counties with large amounts of cotton production, and, unsurprisingly, large numbers of slaves.⁶ As chapter 3 explained, some of this capital came from cotton planters who diverted it from further agricultural investment and moved it into manufacturing enterprises in an attempt at diversification. A long line of writers, from Olmsted to Charles Beard to Bateman and Weiss, have asserted that economic diversification in the antebellum South was inhibited, even

⁵ De Bow, *Industrial Resources*, 58.

⁶ See Map 4.12 for the location of the slave population in the Gulf South in 1860.

precluded, by the investment preferences and behavior of the planter class.⁷ But, that view does not stand up well in the face of available evidence. As William Scarborough has demonstrated, planters were one of the largest sources of capital in the region, and any significant economic development would have required their support.⁸



Map 4.1 ó Capital investment of firms listed in the 1860 census

Source: Census of 1860 Manufacturing Schedules

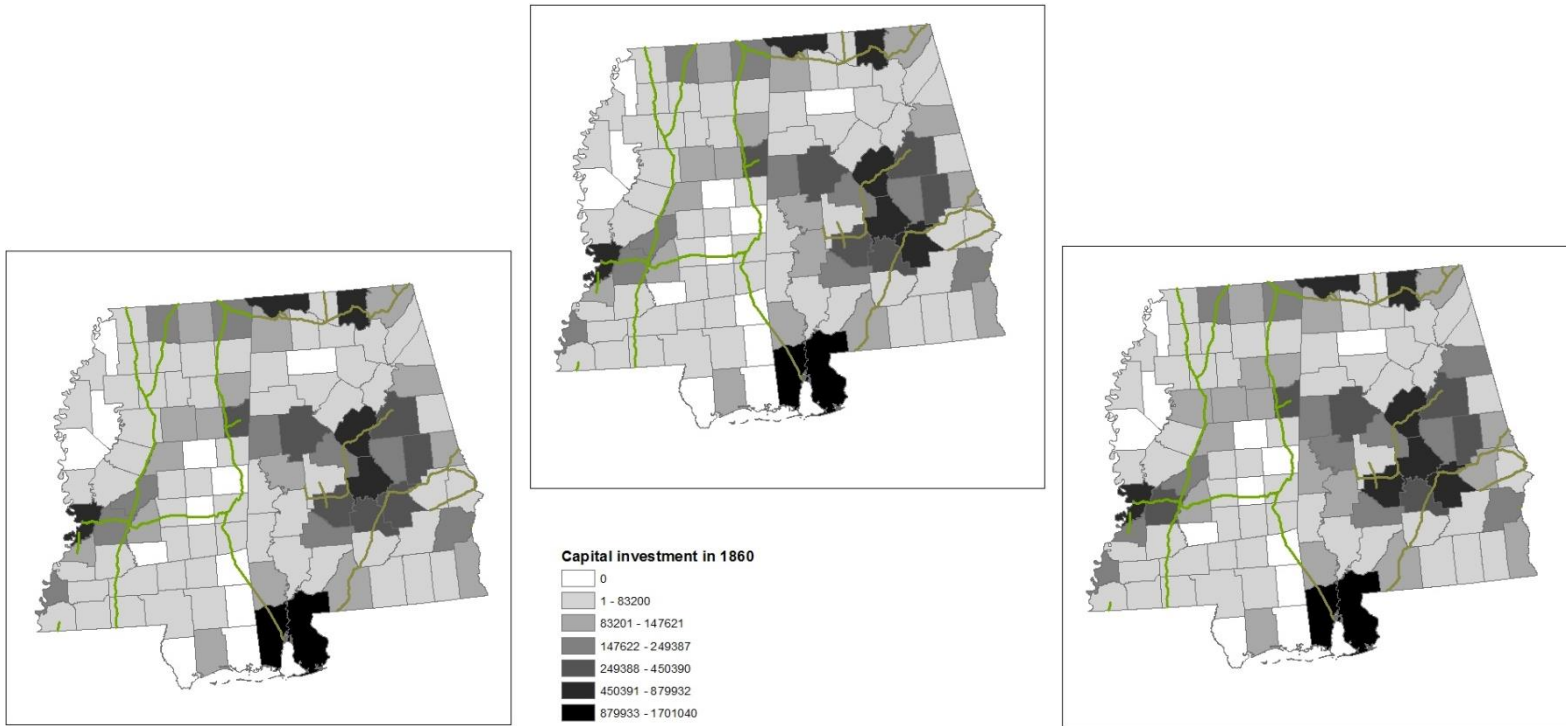
⁷ Olmsted, *The Cotton Kingdom*, 381-382; Beard, *The Rise of American The Civilization*, 669-671; Bateman and Weiss, *A Deplorable Scarcity*, 31-32.

⁸ Scarborough, *Masters of the Big House*, 218.

Since there were many firms missing from the census, the amount of capital investment in manufacturing in the Gulf South was, accordingly, considerably larger than the census reported. Maps 4.2 and 4.3 display the estimated capital investment for each county in Alabama, Mississippi, and Texas. These maps show a range of possible estimates of investment in the region, and it is clear that capital investment was more widespread than the census reported and also significantly larger in those areas where it was geographically concentrated. The urban Gulf South had far more investment than the marshals found, and entrepreneurs put industrial capital to work in almost every part of the region. Table 4.1 displays estimates of the actual total amounts of industrial capital in the Gulf South.⁹ These estimates suggest that capital investment in the region's manufacturing concerns in 1860 was between 3.40% and 21.47% greater than the census reported. Industrial boosters, entrepreneurs, and plantation owners were rational economic actors. People living and working in the Gulf South needed goods that local industrial concerns could supply and the region offered many advantages to founders of manufacturing firms, such as transportation lines, readily accessible raw materials, and abundant supplies of labor. Consequently, men with capital saw the Gulf South as a fertile region for manufacturing investment, not just in the larger urban areas, but in more rural parts of these states as well.

⁹ The basic procedure I followed was to calculate the lower 25%, the middle 50%, and the upper 25% of capital investment of manufacturing firms in each industry reported by the census. Having arrived at these figures, I then multiplied each of them by the number of firms not reported by the census in each of the corresponding industries. For a more detailed explanation see Appendix B ó Methods.

Median

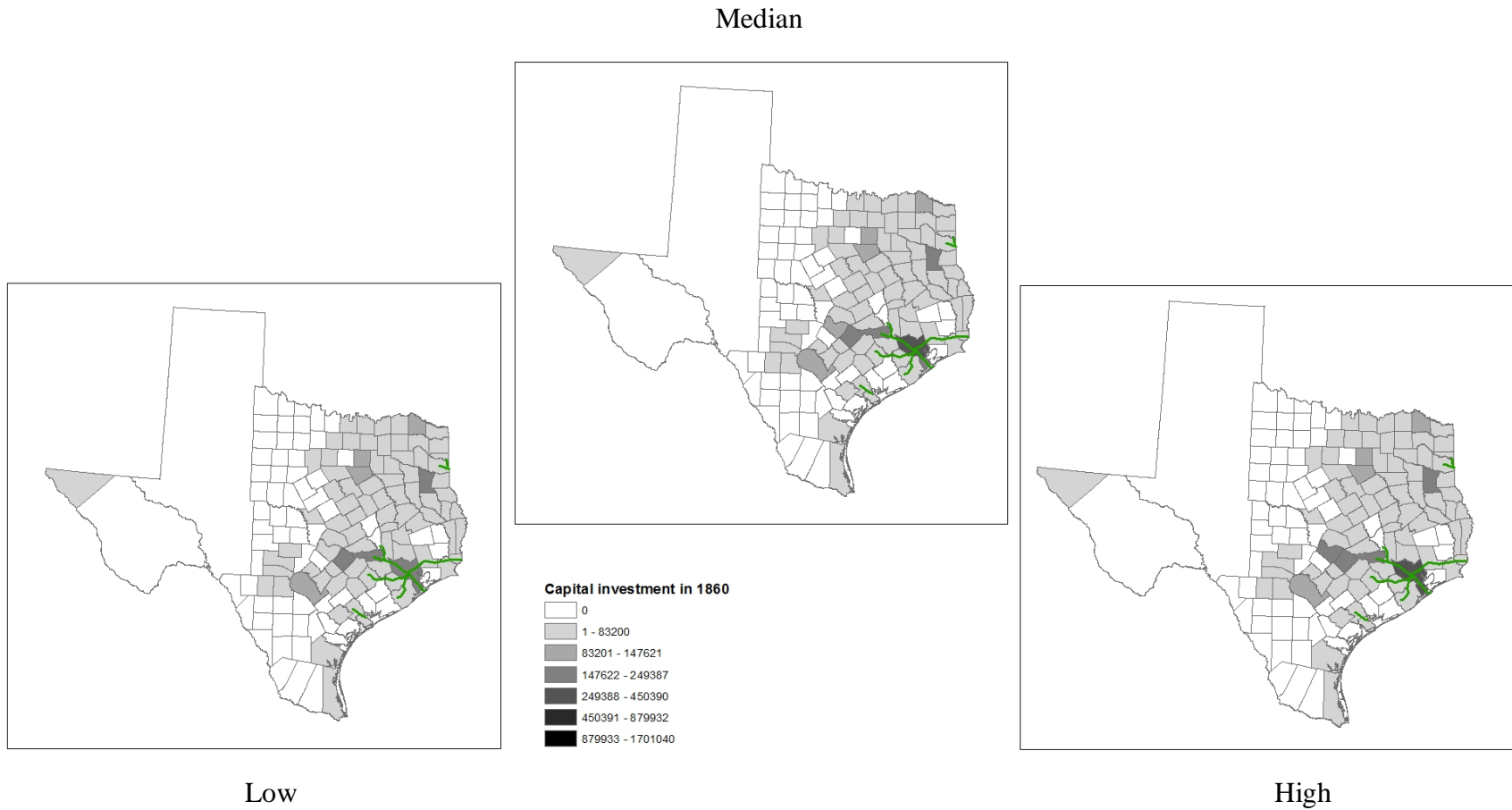


Low

High

Map 4.2 ó Estimated levels of capital investment in 1860 for firms found in all sources for Alabama and Mississippi

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.



Map 4.3 ó Estimated levels of capital investment in 1860 for firms found in all sources for Texas

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table 4.1 ó Range of possible capital investment in manufacturing concerns in 1860 for census and non-census firms¹⁰

	Census Firms	Lower Bound Estimate	Mean	Upper Bound Estimate
Alabama	\$9,382,593	\$9,709,809 (3.49%)	\$10,215,898 (8.88%)	\$11,464,593 (22.19%)
Mississippi	\$3,658,468	\$3,772,286 (3.11%)	\$3,940,858 (7.72%)	\$4,368,468 (19.41%)
Texas	\$3,502,014	\$3,622,631 (3.44%)	\$3,806,609 (8.70%)	\$4,261,014 (21.67%)
Total	\$16,543,075	\$17,104,726 (3.40%)	\$17,693,365 (8.59%)	\$20,094,075 (21.47%)

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

General Note: Figures in parentheses are percentages above the amount of capital investment given by the census.

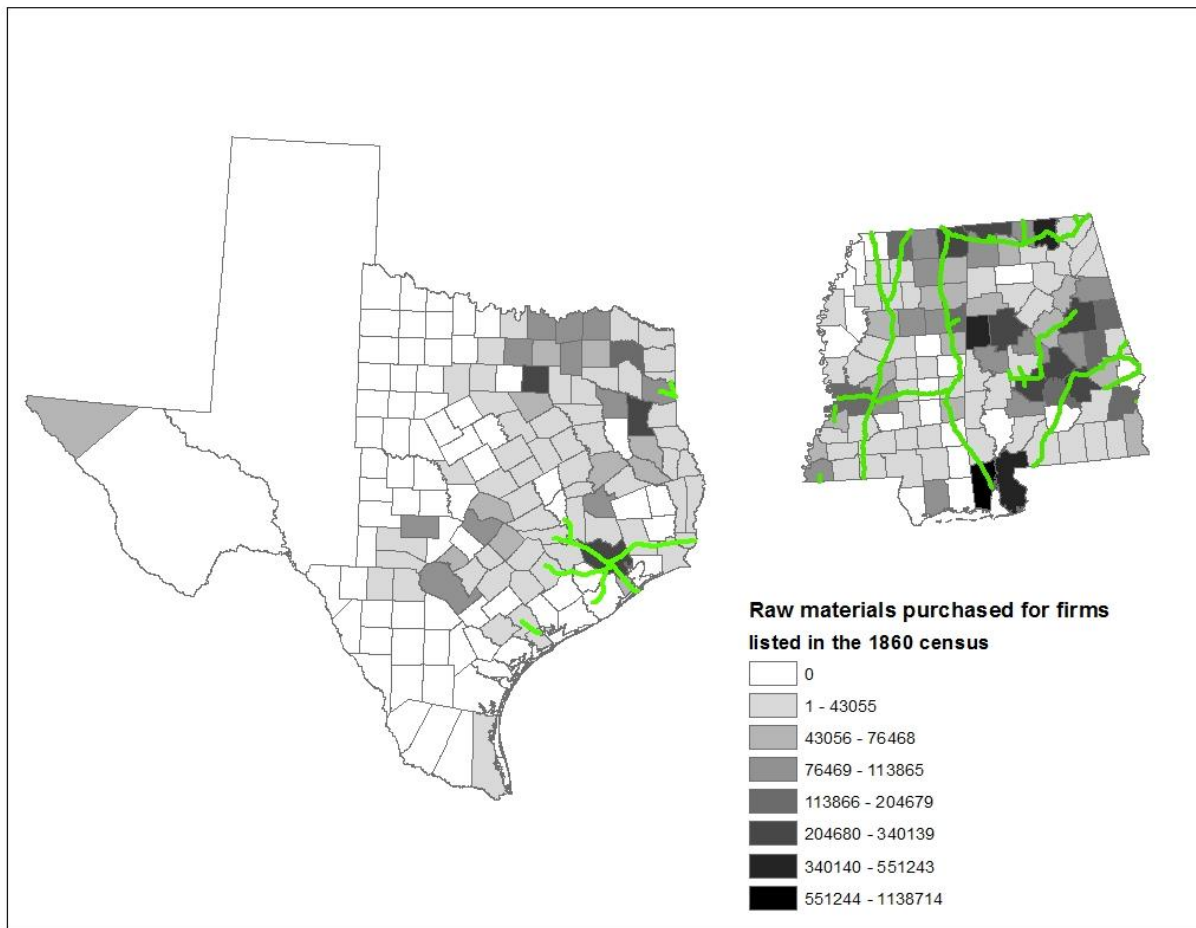
Another important factor of production for any industrial firm was the value of raw materials used to build its products. As chapter 2 explained, the Gulf South had substantial supplies of raw materials. Alabama, according to De Bow, had “surplus productions [of] cotton, lumber, staves, turpentine, [and] coal.”¹¹ De Bow was not the only person in the South to see that there were raw materials in the region that could be profitably used by local industry. The editor of the *Jackson Daily News* on 14 March 1860 argued that Southerners needed to take advantage of what the Gulf South supplied in abundance:

¹⁰ See Appendix C for lines of business and organization type data.

¹¹ De Bow, *Industrial Resources*, 57.

An Opportunity for Southern Enterprise ó we would not offer the following in a spirit of disparagement or derision, but only with the hope that the evil may ore long be corrected. Out of four million bales of cotton raised last year, only about one hundred thousand of them (one-fortieth part) were manufactured into cloth, in all the slaveholding States.¹²

Map 4.4 shows the value of raw materials used by firms listed in the census. The location of readily-available raw materials influenced entrepreneurs' decisions about where to establish their manufacturing plants.



Map 4.4 ó Raw material costs listed in the census in 1860

Source: Census of 1860 Manufacturing Schedules

¹² *Jackson Daily News*, 14 March 1860.

For example, there were many wool factories in Texas because the state had good land for running sheep. One company built a large factory three miles outside of San Antonio to take advantage of the abundant supply of raw wool and produce woolens for the area.¹³ Of course, cotton spurred the founding and development of many concerns in the Gulf South. There were, for example, multiple firms in the Huntsville, Alabama, area that used locally grown cotton to produce cotton textiles which, for quality and durability, would compare with goods made in the manufacturing towns of the North.¹⁴ The Florence Factory, in Florence, Alabama, according to De Bow, had 46 looms and made 80,000 yards of cloth per week using locally grown cotton.¹⁵ Moreover, firms like Daniel Pratt produced machinery and other items, such as bale ties, that made cotton production easier. The Shelby Iron Company, of Shelby County, Alabama, took advantage of local iron ore and used \$2 worth of ore, \$10 worth of charcoal, and \$0.75 worth of limestone to produce one ton of iron in 1860.¹⁶ From gins, to bale ties, to many other items, southern industrial firms took advantage of the materials available in the region to produce goods that people needed. All of these concerns were listed in the 1860 manufacturing census schedules.

Of course the map of raw material values from the census firms tells only part of the story. When the estimates of the missing firms' raw materials are added to the census values, the picture changes, as Maps 4.5 and 4.6 illustrate. Just as the maps of capital investment did, these maps show a range of estimates of the value of raw materials used by Gulf South firms to manufacture their products. Concerns in the region used large amounts of raw materials, at least

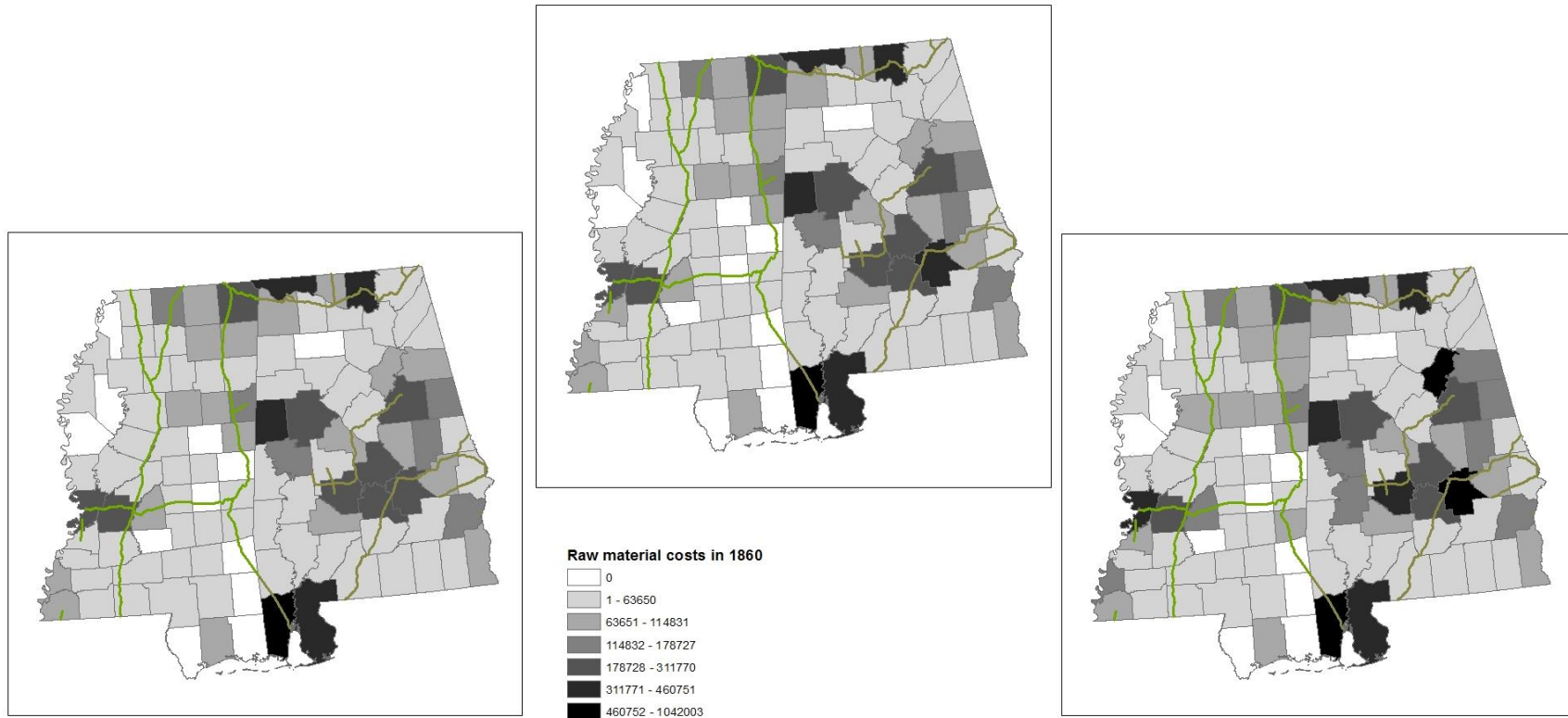
¹³ De Bow, *Industrial Resources*, 338-340.

¹⁴ *Ibid.*, 233.

¹⁵ *Ibid.*, 233.

¹⁶ Jackson, "History of the Shelby Iron Company," 12.

Median



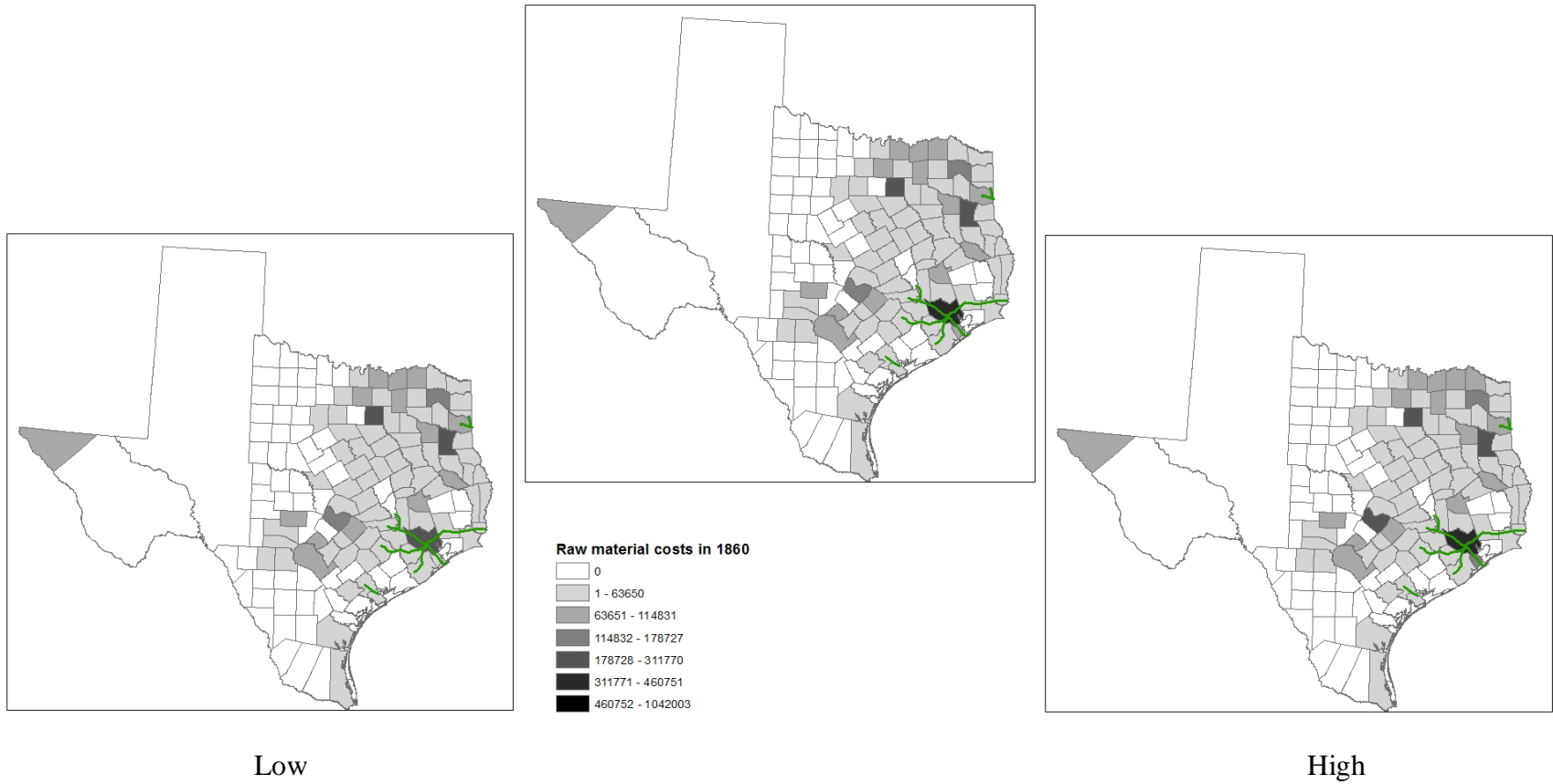
Low

High

Map 4.5 ó Raw materials purchased by all firms in 1860 for Alabama and Mississippi

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Median



Map 4.6 ó Raw materials purchased by all firms in 1860 for Texas

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

some of which were locally produced. Locally available materials gave these firms a considerable advantage because they lowered costs. “A Mississippi Planter,” writing in *De Bow’s Review*, explained that “there is no region on earth which can make and deliver coarse and medium cottons and threads as cheaply as the South.”¹⁷ Moreover, the *Trinity Advocate*, of Palestine, Texas, wanted Southerners to produce the textiles that they needed for themselves and export any extra that they could produce.¹⁸ The editor of the *Southern Business Directory and General Commercial Advertiser* also thought that the region possessed excellent sources of raw materials. This guide praised Montgomery, Alabama, because “its iron, wood and other manufactories, are large, and creditable for so young a city.”¹⁹ Throughout the Gulf South firms took advantage of available raw materials to build and develop. If cotton agriculture had a natural advantage in the region, then any industry that either made use of this cotton or could help with the production of cotton would also have an advantage in the Gulf South. Table 4.2 shows the value of raw materials for firms in the census and the estimated range of what the firms missing from the census used. Overall, the estimate of the costs of raw materials was somewhere between 3.29% and 24.56% higher than what the census reported. Most likely, the actual number would be between the mean estimated value of 8.31% and the high value.²⁰

¹⁷ Mississippi Planter, “Production and Manufacture of Cotton,” *De Bow’s Review* 7 (February 1850): 101.

¹⁸ *Trinity Advocate*, 23 September 1857.

¹⁹ John P. Campbell, *Southern Business Directory and General Commercial Advertiser* (Charleston: Press of Walker and James, 1854), 7.

²⁰ This statement is based on the actual distribution of the raw material costs in each industry for firms reported in the census. See Appendix B “Methods” for a more detailed explanation.

Table 4.2 ó Value of raw materials used by industrial firms in the Gulf South in 1860 for census and non-census firms²¹

	Census Firms	Lower Bound Estimate	Mean	Upper Bound Estimate
Alabama	\$5,597,848	\$5,817,559 (3.92%)	\$6,151,698 (9.89%)	\$7,229,698 (29.15%)
Mississippi	\$2,502,866	\$2,580,785 (3.11%)	\$2,700,566 (7.90%)	\$3,092,666 (23.56%)
Texas	\$3,421,006	\$3,502,676 (2.39%)	\$3,626,956 (6.02%)	\$4,028,906 (17.77%)
Total	\$11,521,720	\$11,901,019 (3.29%)	\$12,479,220 (8.31%)	\$14,351,270 (24.56%)

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

General Note: Figures in parentheses are percentages above the value of raw materials used given by the census.

Pratt proved the importance of local sources of raw materials with his Prattville factories. Pratt, a Whig who supported industrial development in the South, used locally produced items whenever possible for his firms.²² He believed that “Alabama possessed the raw materials, labor and businessmen needed to increase its manufacturing, but her legislature had not enacted the proper legislation to encourage industry.”²³ Pratt hoped that taxes could be lowered on

²¹ See Appendix C for a breakdown of this information at the country level.

²² Jordan, *Ante-Bellum Alabama*, 158-159. Pratt was also a Know Nothing for a time and he supported John Bell, the Constitutional Unionist in the 1860 presidential election.

²³ *Ibid.*, 158. It is important to note though that Henry Walker Collier, the one-time Chief Justice and Governor of Alabama, was a very important political figure who supported Alabama’s industrial development and helped get laws passed to support manufacturing development. See Griffin, “Cotton Manufacture in Alabama to 1865,” 299.

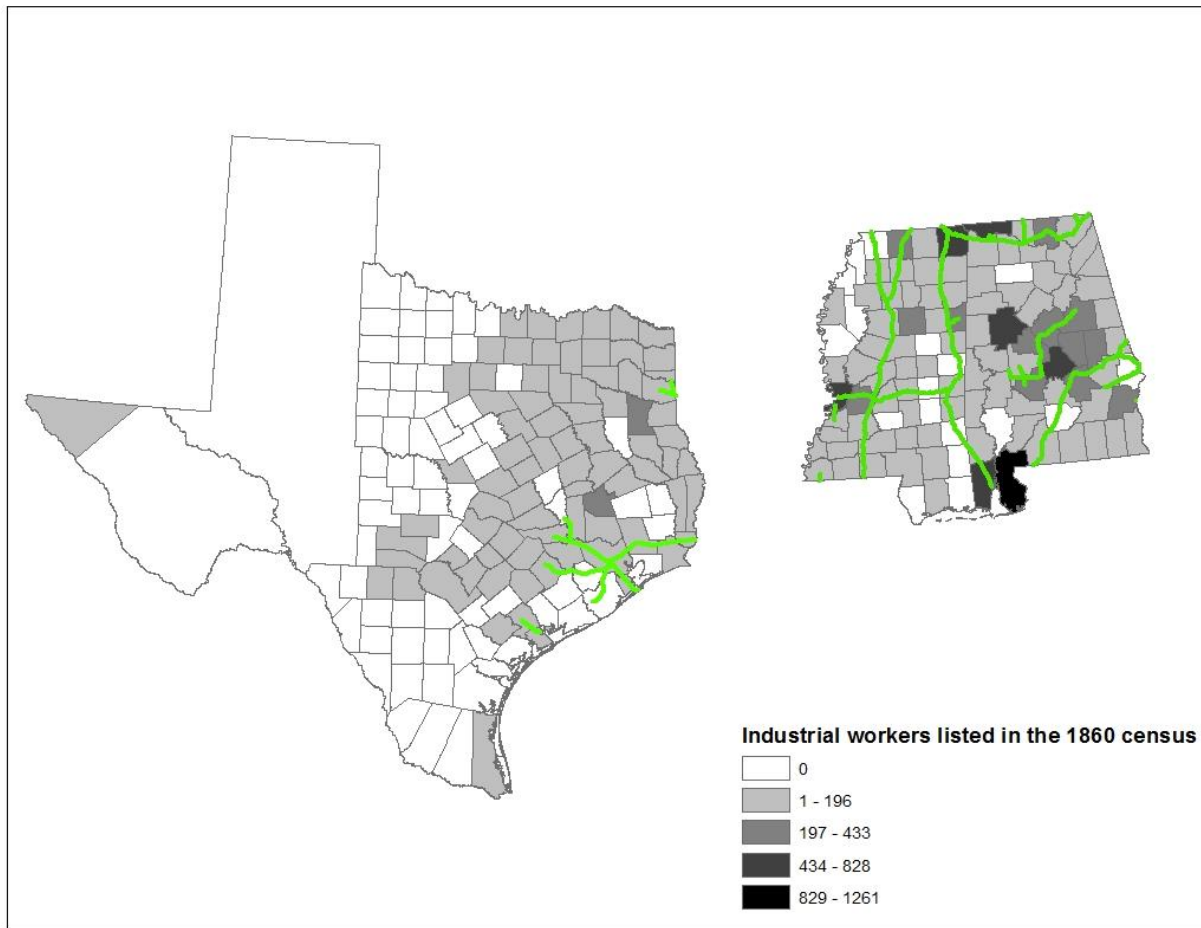
manufactories to help promote development. He also pushed for other kinds of state support such as improvements to Alabama's transportation infrastructure, like railroads, and other internal improvements.²⁴ But Pratt was not all talk, he did what he could to support development himself by purchasing his raw materials from all over Alabama and the rest of the South. Pratt used 40 tons of shafting per year that he purchased from a firm in Etowah, Georgia; he got 150 tons of pig iron from Shelby County, Alabama; all of the lime and coal that Prattville used came from local sources; also, Pratt used 1200 bales of Alabama cotton.²⁵ Moreover, according to a note in a Texas newspaper, the Prattville factories used 120,000 pounds of wool from Nueces County, Texas.²⁶ Pratt, a transplanted Northerner, took to heart living in and supporting the South and its manufacturing efforts and used locally produced materials whenever possible to aid the region's development.

Industrialization was centered on the use of machines to augment the labor of people. While most workmen in the Gulf South labored on the land, there was a small, but nevertheless significant, number of workers employed in manufacturing. Map 4.7 shows the concentrations of industrial workers in the Gulf South for firms listed in the census. These employees came from the large group of lower-class whites that existed throughout the South. This class, according to some contemporaries and historians, opposed any kind of industrial labor, perhaps because of a cultural antipathy toward manual labor, concern over a loss of social standing, or

²⁴ Miller, "Daniel Pratt's Industrial Urbanism," 14-15. Some politicians and editors in the South attacked Pratt of these ideas. They claimed he was pushing for artificial support of industry. This was something, they argued, that Northerners did, and should not be copied by the South. Pratt was also northern-born and some in the South held that against him and used it to attack industrial development in the region. Curtis Evans made the same point in his work, especially when discussing Pratt's political activism. See Evans, *The Conquest of Labor*, 194-196.

²⁵ Miller, "Pratt's Industrial Urbanism," 33.

²⁶ *State Gazette*, 30 January 1860.



Map 4.7 ó Industrial workers listed in the 1860 census schedules

Source: Census of 1860 Manufacturing Schedules

the fear of change inherent in something as unsettling as moving from the farm to the factory.

Grady McWhiney claimed that Southerners would not work in manufacturing because they òfavored fighting rather than business and looked down on townspeople and tradesmen.ö²⁷

While most historians of the South do not subscribe to McWhiney's interpretation, many nevertheless accept the idea that Southerners resisted giving up their rural ways of life because

²⁷ McWhiney, *Cracker Culture*, 253. William Miller argued that Southerners did not have many opportunities to find industrial work and that they could keep themselves sustained through hunting and fishing. But, as this work shows there were jobs out there if Southerners wanted them, and many did. See William Miller, òSlavery and the Population of the South" *Southern Economic Journal* 28 (July 1961): 49.

to forsake the soil for the factory signaled the white's failure within traditional Southern economic and social channels.²⁸ John Cairnes, writing during the Civil War from his home in Great Britain, attempted to explain what was transpiring in the United States. In the course of his explanation, he asserted that lower class white Southerners were not good laborers because "the demoralization produced by the presence of a degraded class renders the white man at once an unwilling and inefficient laborer."²⁹ But, the idea that the people of the Gulf South would not be industrial workers was incorrect, as Map 4.7 shows. Firms throughout the Gulf South employed white men and women, and, between 1850 and 1860, a growing number of lower-class southern whites were giving up farm life for industrial labor.³⁰ Some in the region even saw manufacturing work as a good thing. Industrial employment, according to William Gregg, was a way to integrate people who lived on the margins into mainstream society and lift them to the state of civilization that mills afforded them.³¹

There are some in the region who argued that the problem of industry in the South was "ignorance and laziness on the part of those who *ought* to labor."³² But, industrial workers, both male and female, as Maps 4.8 and 4.9 display, were employed in most counties of the Gulf

²⁸ Miller, "Pratt's Industrial Urbanism," 29.

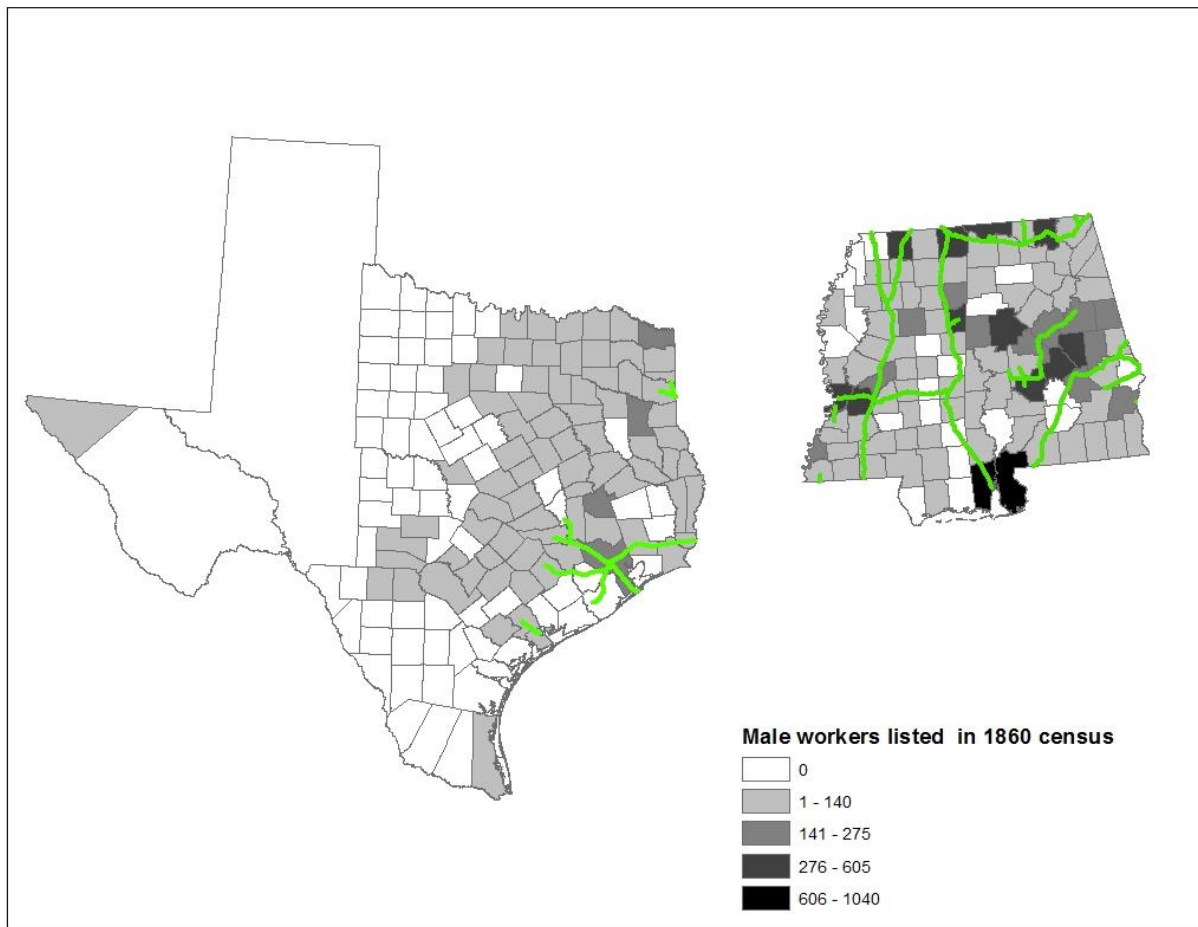
²⁹ Cairnes, *The Slave Power*, 147. Of course, the degraded class that Cairnes was talking about consisted of the slaves that existed in all parts of the antebellum South. Cairnes goes into great detail about how slavery made it impossible for white men to do the same kinds of work. See *Ibid.*, 148.

³⁰ Between 1850 and 1860 the number of manufacturing employees grew by 43.43% in Alabama, 37.58% in Mississippi, and 72.42% in Texas. See U.S. Census, 1850 and 1860, Population. David Ward explains this transition and why southern whites were seeking industrial work especially in and around William Gregg's Graniteville factories. See David C. Ward, "Industrial Workers in the Mid-Nineteenth Century South: Family and Labor in The Graniteville (SC) Textile Mill," *Labor History* 28 (Summer 1987): 342.

³¹ Jones, "Labor and the Idea of Race in the American South," 615.

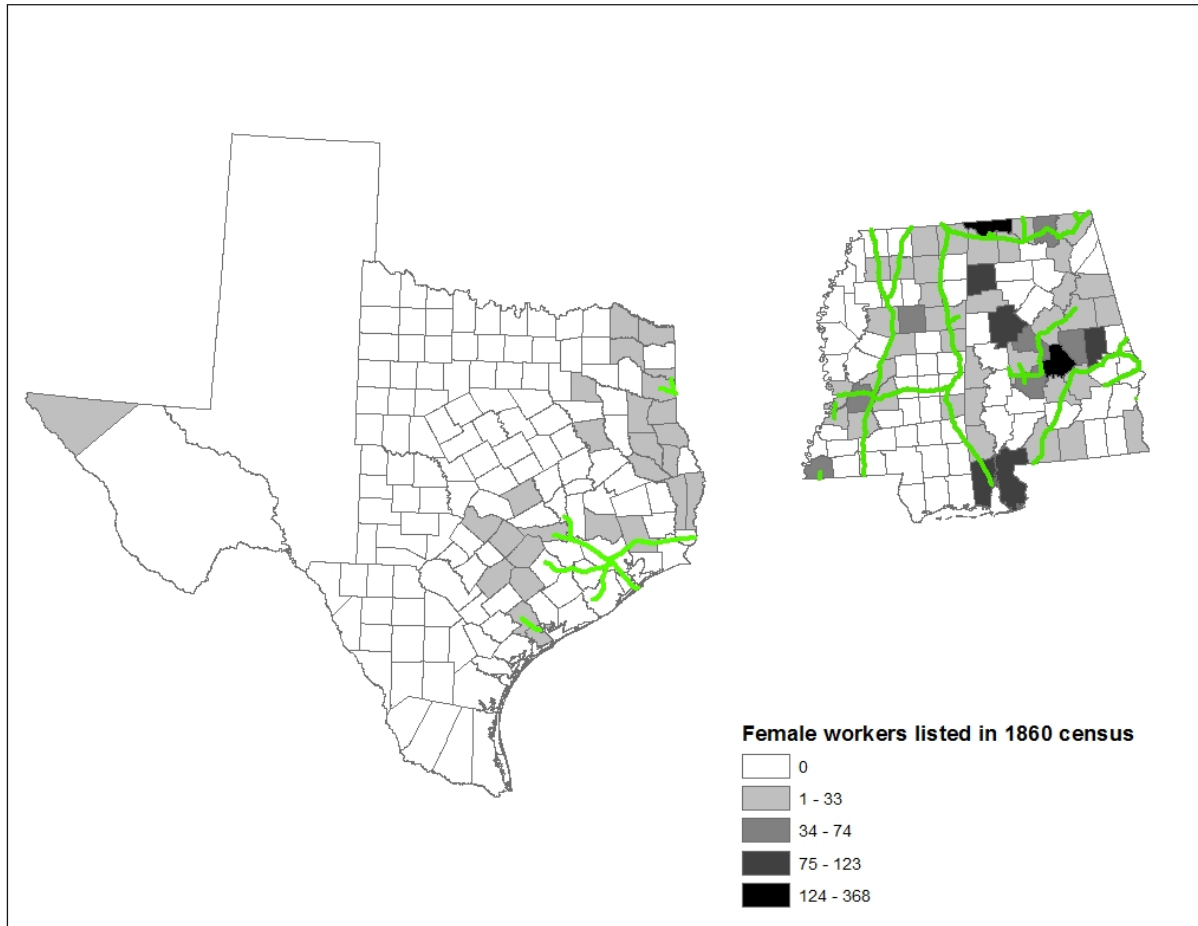
³² William Gregg, "Domestic Industry ó Manufactures at the South" *De Bow's Review* 8 (February 1850): 134; taken from Paul Paskoff and Daniel Wilson eds., *The Cause of the South: Selections from De Bow's Review, 1846-1867* (Baton Rouge: Louisiana State University Press, 1982), 94.

South. Industrial work was becoming a part of life in the region, and learning that one's neighbor worked in a manufactory was, by 1860, likely to have been unsurprising. Moreover, as Maps 4.8 and 4.9 show, the largest concentrations of industrial workers, of either gender, were in the urban areas of the Gulf South.



Map 4.8 ó Male employees listed in the 1860 census schedules

Source: Census of 1860 Manufacturing Schedules



Map 4.9 6 Female employees listed in the 1860 census schedules

Source: Census of 1860 Manufacturing Schedules

Table 4.3 shows the distribution of employees by state and gender as recorded in the census. The marshals recorded 17,582 men and women employed in southern firms, or less than 1% of the total population.³³ But, industry was just beginning in Alabama, Mississippi, and Texas. It is important to note that these numbers do not contain any slaves who may have been part of the southern industrial labor force because the census schedules, except in one case, did

³³ Bateman and Weiss, while finding far few industrial employees than this study does, also found that less than one percent of the population worked in industrial pursuits. Bateman and Weiss, *Deplorable Scarcity*, 4.

not list slaves as workers.³⁴ The existence of these industrial workers began to change the Gulf South. Employees and owners both wanted a greater say in how the region was run as their numbers grew. This would be seen by old guard, conservative political leaders as a threat because the clout of people tied to industry grew as their numbers increased.³⁵

Table 4.3 ó Manufacturing employees listed in the 1860 census schedules

	Male Employees	Female Employees	Total
Alabama	7524	1205	8729
Mississippi	4782	205	4987
Texas	3752	114	3866
Total	16058	1524	17582

Source: Census of 1860 Manufacturing Schedules

Men and women were not employed in equal numbers in the industrial concerns of the Gulf South. For a variety of reasons, many lines of business did not use women, while other types of concerns found women to be much better workers than men. For example, foundries, which would prize strength and stamina, would shy away from hiring women, while textile firms, which did not have as much of a need for strength to run machines, hired many women. Thus, female workers were far more plentiful and widespread in Alabama where cotton textile manufacturing operated in greater numbers and were more developed. Even though most women worked in cotton, wool, and textile firms, as Table 4.4 indicates, they were also employed in many other lines of business. But, of the 3,280 manufacturing firms listed in the

³⁴ In Madison County, Alabama, at the Bell Factory, the census schedule records that the employees listed by the marshals were slaves.

³⁵ Starobin, *Industrial Slavery in the Old South*, 189. Daniel Pratt is a prime example of this. In his first run for state representative, in 1855, he was defeated by because of his Whig political views, but, in 1860, he was elected to the State House of Representatives because his importance and political clout had grown. Evans, *The Conquest of Labor*, 137-138, 211-212.

1860 census for the Gulf South, only 209, or 6.37 percent, employed women. Women then were a small, but needed, part of the southern industrial workforce, or firms would not have hired any female employees at all. Also, as with other parts of the country, entire families were drawn into industrial firms as women and children found work in the same factories as their husbands and fathers.³⁶

Table 4.4 ó Lines of business that employed women and the number of employees recorded in the 1860 census

Baker 1	Blacksmith 1	Boots & Shoes 8	Brickmaker 52
Cabinet Maker 2	Carpenter 2	Carriage & Wagon 1	Charcoal 2
Coal 3	Confectioner 2	Cotton & Wool 924	Cotton Gins 6
Grist Mill 20	Hats 10	Leather 6	Lime 15
Lumber 117	Marble & Stone 1	Millinery 5	Oysters 3
Pottery 4	Printer 5	Rope and Bags 5	Saddle and Harness 1
Salt 6	Saw Mill 9	Textiles 179	Tobacco 3
Turpentine 131			

Source: Census of 1860 Manufacturing Schedules

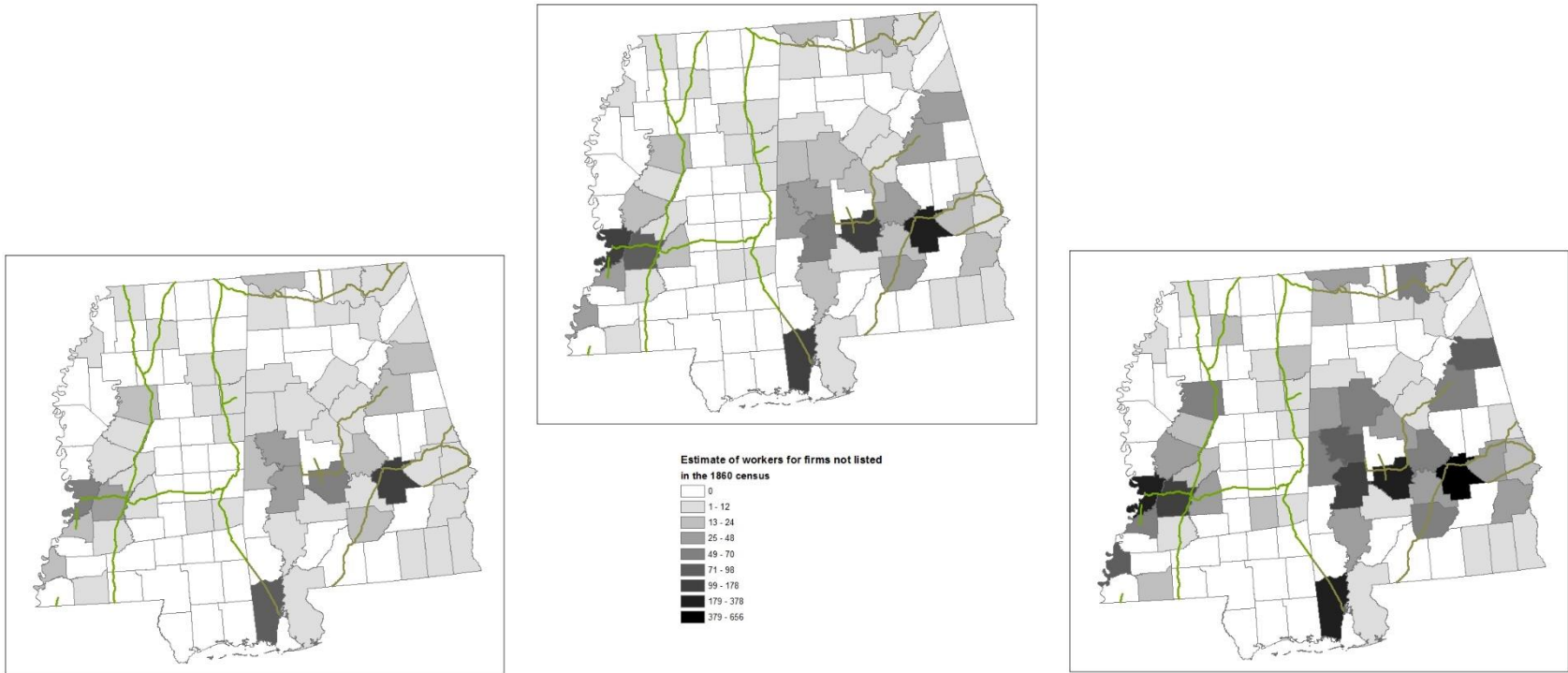
³⁶ Ward, "Industrial Workers," 334.

Of course, as the number of firms increased so, too, did the number of workers. Maps 4.10 and 4.11 display an estimate of the number of manufacturing employees at firms listed in all of the available sources. Manufacturing was just beginning in the region and industrial workers made up only about one percent of the population of the Gulf South, even after adding in the employees of firms missed by the census.³⁷ Table 4.5 shows an estimate of how many employees were hired by Gulf South firms. Based on this estimate somewhere between 5.86 percent and 23.83 percent more manufacturing employees should to be added to the 1860 census to get closer to the real number of people in the South who worked in industrial firms. Moreover, the number of missed employees is, based on the distribution of firms, closer to the middle value of 14.57 percent. The reason for this under-reporting was the lines of business that were missed by the census. Concerns such as textiles and milling, which made up 115 of the 788 concerns missed by the census marshals, hired more employees than other kinds of firms, thus the number of missing workers grew.³⁸ As stated earlier, enslaved workers were not recorded as part of the manufacturing census. So, the true number of industrial workers is undoubtedly higher than what is estimated here.

³⁷ Campbell, *An Empire for Slavery*, 212. Campbell explains that only 1% of the Texas population worked in industry and that the state should have done more, importing paper and textiles when cotton and wood were available all over Texas. Of course, the actual relative significance of the manufacturing workforce in the Gulf South was, for various reasons, considerably greater. Women, for example, did not work in most industries, especially the heavier lines on manufacturing. Also, employers generally preferred to hire younger male workers rather than older men because young men were stronger and healthier. All in all, such considerations meant that the number of manufacturing workers as a percentage of the available workforce was considerably greater than at first meets the eye. The 17,582 manufacturing workers reported by the census for Alabama, Mississippi, and Texas represented 2.91% of the male and female population of 604,018 in those states between the ages of 15 and 50. That figure's relative size was still greater if calculated as the proportion of just the male population in that age group. U.S. Census, 1860 Population Schedules, for Alabama, Mississippi, and Texas.

³⁸ See Appendix C for a breakdown of employees by line of business.

Median



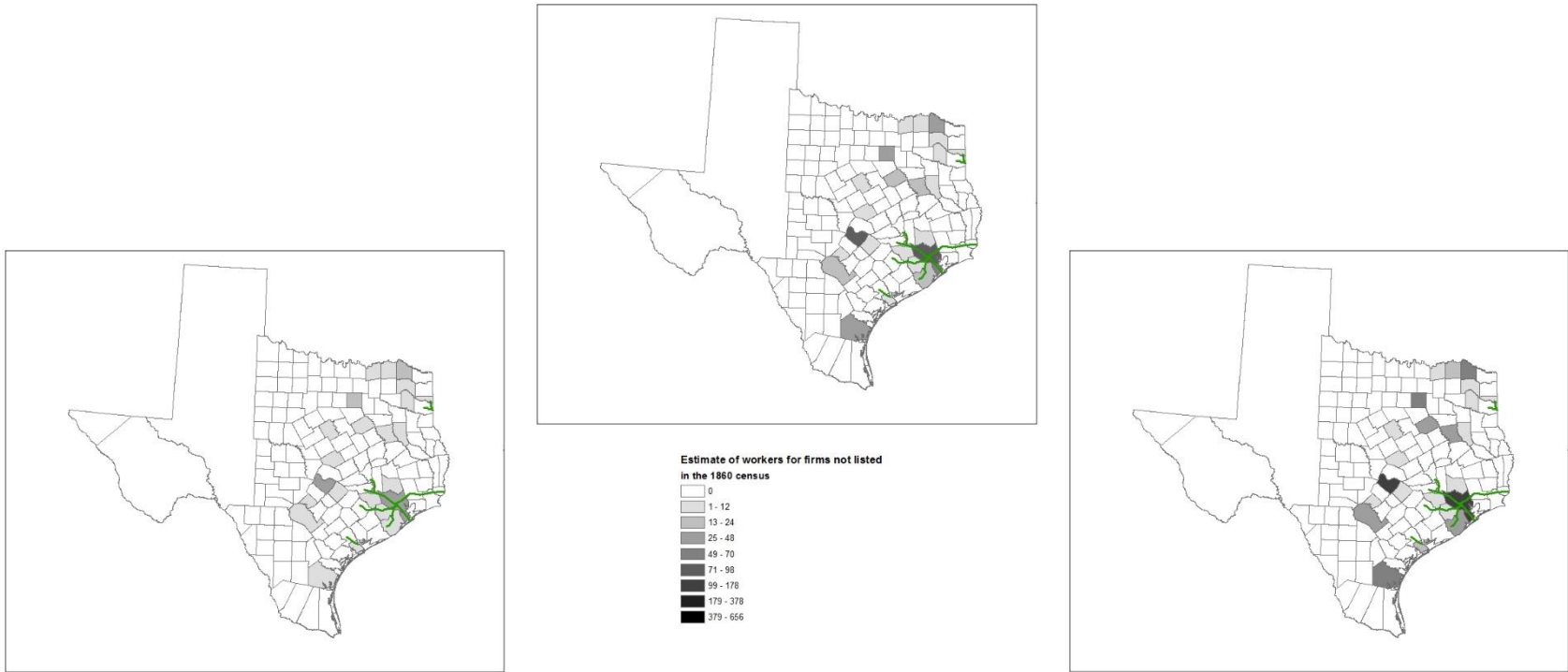
Low

High

Map 4.10 ó Estimates of manufacturing employees for industrial concerns not listed in the 1860 census for Alabama and Mississippi

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Median



Low

High

Map 4.11 ó Estimates of manufacturing employees for industrial concerns not listed in the 1860 census for Texas

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table 4.5 Estimates of employees for firms listed in all sources in 1860

	Census Firms	Lower Bound Estimate	Mean	Upper Bound Estimate
Alabama	8,729	9,323 (6.80%)	10,443 (19.64%)	11,151 (27.75%)
Mississippi	4,987	5,203 (4.33%)	5,403 (8.34%)	5,855 (17.41%)
Texas	3,866	4,087 (5.72%)	4,297 (11.15%)	4,766 (23.28%)
Total	17,582	18,613 (5.86%)	20,143 (14.57%)	21,772 (23.83%)

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Many Southerners, then, did not have an anti-industry bias. Men and women in the region worked for southern firms and depended on them for their livelihood. Some of these workers came a great distance to work in the Gulf South. For example, Louis Ferdinand Alexander Hoffman was born in 1823 in Berlin and learned his trade at a machine and locomotive shop there. He immigrated to the United States in 1852 and ended up working in the Zimmerman and Reading Foundry in Vicksburg in 1860.³⁹ Local histories do not record any more information about Hoffman, but the free population schedule of the 1860 census lists him as a Gun Smith with a real estate valued at \$4,000, the equivalent of \$116,000 today.⁴⁰ This

³⁹ *In and About Vicksburg: An Illustrated Guide Book to the City of Vicksburg, Mississippi* (Vicksburg: The Gibraltar Publishing Company, 1890), 181.

⁴⁰ 1860 Population Census Schedules for Warren County, Mississippi. The value of Hoffman's real estate in today's money done with www.measuringworth.com.

company was capitalized at \$130,000 and employed 125 workers and paid the highly skilled among them, such as Hoffman, accordingly.⁴¹

These industrial workers, whether listed in the census or not, needed to be gathered in by industrialists to work in their firms. To that end some manufacturers tried to found new urban areas from scratch based on the model created by the mills of Lowell, Massachusetts. Pratt was a prime example of this approach to industrialization, and he created a manufacturing town of 943 free people, centered on his concern.⁴² Many contemporaries believed that these towns had a great advantage and ÷with a small, homogeneous population such villages were secure from the crime and social ÷ismsø which disrupted Northern urban life.ö⁴³ Places like Prattville, and nearby Autaugaville, which was centered on the Autaugaville Mill, were founded at the fall lines of rivers where they could get the power needed to run their firms and have access to transportation.⁴⁴ Again the South was just following a tried and true pattern. Moreover, these new towns attracted the workers that owners needed to fill factories and served as ÷the prototype of ante-bellum Alabama industrial enterprise.ö⁴⁵

To be able to live, industrial workers needed to be paid. Thus, wages were another important factor of production. Employees needed to earn not just enough to live, but enough to be willing to give up their traditional, agricultural way of life and work at a manufacturing concern. This wage is known as the transfer wage and, according to research done by Carville

⁴¹ 1860 Manufacturing Census Schedules for Alabama.

⁴² U.S Census, 1860 Population Schedules, Autauga County, Alabama.

⁴³ Miller, ÷Prattø Industrial Urbanism,ö 11. For more information on the founding of Prattville see Evans, *The Conquest of Labor*, 17-18.

⁴⁴ Jordan, *Ante-Bellum Alabama*, 149.

⁴⁵ *Ibid.*, 148.

Earle, was higher in the South than in other parts of the nation because of the existence of slavery and the high value of cotton.⁴⁶ Many Southerners resisted performing what they saw to be slave labor in a factory and would have to be paid enough to overcome this very strong and important bias. Cotton agriculture also drew off its share of labor from the workforce. Moreover, labor markets did not compete on equal footing with one another. Labor did not move from place to place as needed because of the limitations of communication and transportation in 1860. The real competition for labor was not between various urban areas, but between rural and urban areas.⁴⁷ Thus, Vicksburg and Natchez did not compete with one another for the available labor in the market; Vicksburg and Natchez industrialists competed with agriculture in their hinterlands for whatever labor was available. Once the shift from agricultural to industrial work had begun though, it was only a matter of time before employees became dependent on their manufacturing wages. Over time, many members of a family were drawn in to industrial work, including wives and children.⁴⁸

Industrial workers made enough to support themselves and their families. Based on the 1860 census schedules, the average male manufacturing employee earned a monthly wage of \$30.51 while female workers were paid \$10.47 per month. These wages varied by type of firm and location. For example, the Census Compendium for 1860 placed the average wage for an employee in a southern textile mill at \$145.41 per year.⁴⁹ But this was just an average wage,

⁴⁶ Earle, *Geographical Inquiry*, 321.

⁴⁷ *Ibid.*, 316.

⁴⁸ Ward, "Industrial Workers," 334.

⁴⁹ J. M. Edmunds, *Manufactures of the United States in 1860: Compiled from the Original Returns of the Eighth Census, under the Direction of the Secretary of the Interior* (Washington: Government Printing Office, 1865), xii.

people working in specific concerns made vastly different amounts. Male employees at Pratt's factory in Prattville were paid \$37 a month, while a smaller firm in Bibb County, Alabama, only paid \$13 a month.⁵⁰ Thus, location and concern size mattered in determining the wage rate. Moreover, the census does not have any records about the term of employment for these workers. This is something that Olmsted came across in his travels. In Mississippi, a local man explained to him that unskilled laborers were paid from fifty cents to one dollar a day if hired by the day, eight dollars a month if hired for that term, and these workmen were never hired by the year.⁵¹ This fits with the idea that industry was beginning its development in many parts of the Gulf South and people were just starting to make the transition from agricultural work to industrial labor. At first, many workers sought factory jobs during slack times in the fields. Over time workers came to see steady wages as a good thing and spent more and more time working in industrial concerns and helping to create growing urban areas in the region.⁵² Table 4.6 shows the wages that firms in the census annually paid to their workers along with estimates of what the wage bill looked like when firms not listed in the census are included. As this table illustrates, wages varied greatly from state to state. Also, there is no proof that the wage bill for the census concerns, on which the estimates for the firms missed by the marshals is based, is accurate. The census marshals recorded wages as the total paid to employees monthly. There is no indication that workers were hired for an entire year, so wage costs could be lower than what was listed in the census compendium. But, if we assume year round employment, as the census did, 26.57% to 52.59% more in wages should be added to the census totals.

⁵⁰ 1860 Manufacturing Census Schedules for Autauga and Bibb Counties, Alabama.

⁵¹ Olmsted, *Cotton Kingdom*, 396.

⁵² Tom Terrill, Edmond Ewing, and Pamela White, "Eager Hands: Labor for Southern Textiles, 1850-1860," *Journal of Economic History* 36 (March 1976): 84.

Table 4.6 ó Annual wages for firms listed in the 1860 census and an estimate range for firms from all sources

	Census Firms	Lower Bound Estimate	Mean	Upper Bound Estimate
Alabama	\$2,132,940	\$2,936,172 (37.66%)	\$3,201,060 (50.08%)	\$3,747,900 (75.72%)
Mississippi	\$1,618,320	\$1,850,400 (14.34%)	\$1,924,920 (18.95%)	\$2,072,040 (28.04%)
Texas	\$1,161,756	\$1,431,844 (23.14%)	\$1,516,336 (30.41%)	\$1,676,596 (44.19%)
Total	\$4,913,016	\$6,218,416 (26.57%)	\$6,642,316 (35.20%)	\$7,496,536 (52.59%)

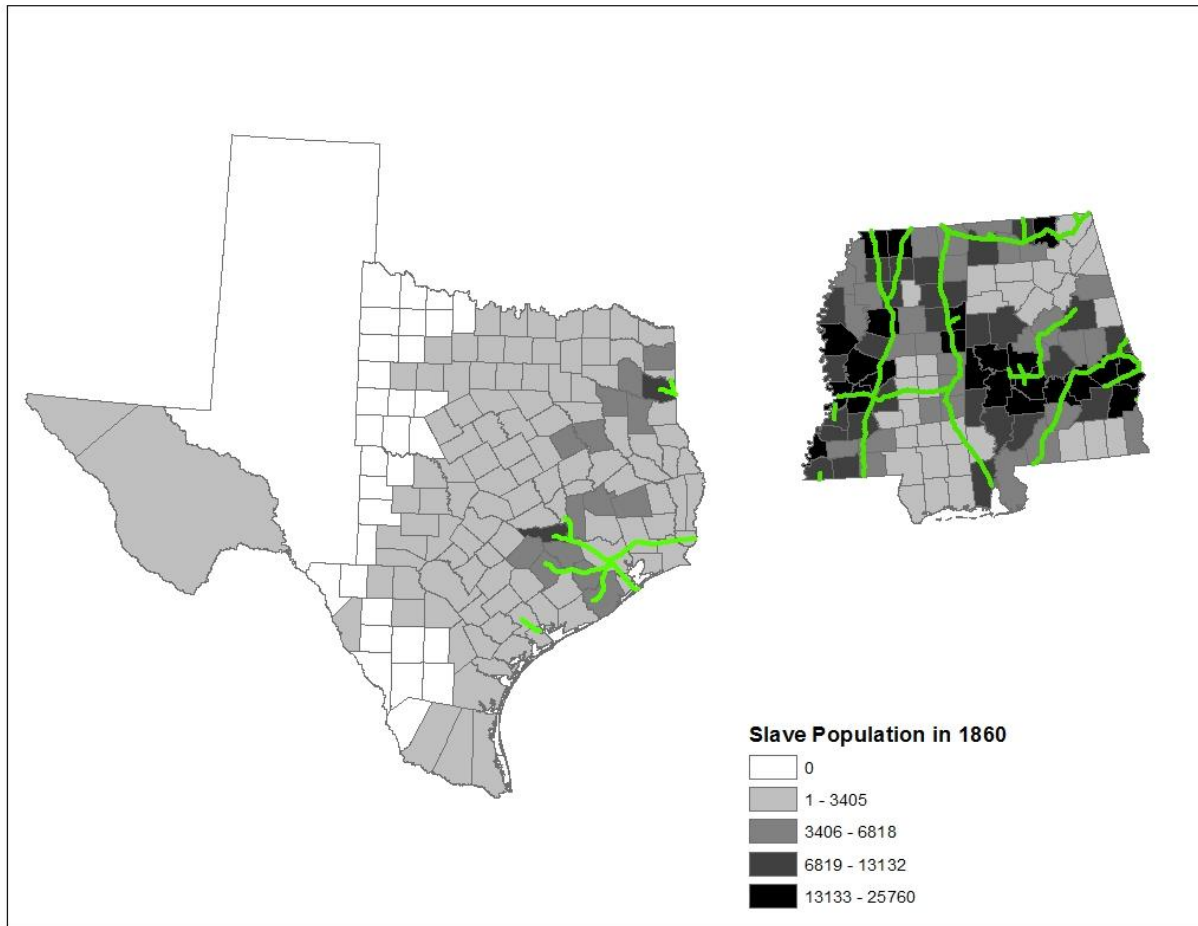
Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

General Note: Figures in parentheses are percentages above the amount of wages given by the census.

Not all workers in the South were paid wages. Slavery was an important part of southern life and, of course, this system of labor would be important to industrial development in the Gulf South. As Earle and Ronald Hoffman so succinctly explain, “the halting steps toward manufacturing in the 1850s were aimed not at inducing white labor to the factories but at adapting slave labor to the factory system.”⁵³ Even Karl Marx saw the importance of slavery in economic development as “the veiled slavery of the wage-workers in Europe needed, for its

⁵³ Carville Earle and Ronald Hoffman, “Foundation of the Modern Economy: Agriculture and the Costs of Labor in the United States and England, 1800-60,” *The American Historical Review* 85 (December 1980): 1077.

pedestal, slavery pure and simple in the new world.⁵⁴ As Map 4.12 displays, there were slaves in every single settled county in the Gulf South.⁵⁵



Map 4.12 Slave population in the Gulf South in 1860

Source: Census of 1860 Manufacturing Schedules

The slave population was especially dense in many parts of Alabama and Mississippi. These areas made up the wide cotton belt that stretched through the region and created a great deal of the wealth in these states. As discussed earlier, this belt corresponds with the counties

⁵⁴ Karl Marx, *Capital*, Reprint (New York: Penguin Books, 1990), 711.

⁵⁵ There are many blank counties on Map 4.13 in Texas. But, these counties had been created by the state government before people had moved there. Thus we can consider these counties to be unsettled.

that earlier maps showed as having large amounts of industrial investment. Thus, we can assume that some of the money made through slave-based cotton agriculture was being transferred into manufacturing.

Even though slave labor made many Southerners rich, there were still problems with the system. Owners lost money anytime a slave sat idle. Slaves could not be fired or laid off; they had to be cared for until death.⁵⁶ Moreover, agricultural slavery had limits, as many Southerners saw by 1860. As William Harper explained, "When the demand for agricultural labour shall be fully supplied, then of course the labour of slaves will be directed to other employments and enterprises."⁵⁷ De Bow also believed that slave labor would have to be turned to pursuits other than agriculture as the amount of new land to be opened to cotton agriculture was dwindling and "in this way the slave labor of the south will, instead of contributing to the wealth of the north, as it has heretofore done, become the successful competition of northern white labor in those departments of industry of which the north has in times past enjoyed a monopoly."⁵⁸ Thus, if slavery was confined to where it existed in 1860, at some point in the future the slave population would be so large that other uses for their labor would have to be found. As De Bow again argued:

The "slave states," so called, have the black lines drawn about them. There will soon be no more Mississippi lands to clear, no more cotton fields to subdue, and unless some

⁵⁶ Jones, "Labor and the Idea of Race," 615. Jones states that "slave labor was relatively inflexible and expensive to maintain during the slack season of production." This seems to be a strong argument for the use of slaves in industrial concerns wherever possible. Ralph Anderson and Robert Gallman also commented on this idea as they believed that slavery created a need for full employment and pushed forward plantation diversity. See Ralph Anderson and Robert Gallman, "Slaves as Fixed Capital: Slave Labor and Southern Industrial Development" *The Journal of American History* 64 (June 1977): 45-46.

⁵⁷ William Harper, *Memoir on Slavery* (Charleston: James S. Burges Publisher, 1838), 53.

⁵⁸ De Bow, *Industrial Resources*, 313.

means be devised of getting rid of the negro increase, the time must come ó and sooner or later it will come ó when there will be an excess in these states of black people.⁵⁹

While some people in both the North and the South felt that slaves were not intelligent enough to be able to perform industrial tasks, a writer in an Augusta newspaper felt that they would make good industrial workers as:

The African has an aptitude for endurance, and at the south will succeed in many of the laborious operations where others would fail. For manufacturing in the hot and lower latitudes, they are peculiarly qualified; and the time is approaching when they will be sought as the operators most to be preferred and depended on.⁶⁰

Of course, industrial firm owners did not need to be told that slaves would make good manufacturing employees. Manufactory owners wanted their concerns to make money and used enslaved labor anytime it was profitable. Once a slave was trained to perform their industrial jobs their skills could not be lost, they could not quit or go on strike, take a day off, or make any demands on their employers.⁶¹ Slaves could also be used as a source of capital by their owners. As part of an industrialist's personal property, slaves could be moved around the region and were also easy to sell. This meant that along with being laborers, enslaved workers could also be used as collateral for loans and "slaves represented a huge store of highly liquid wealth."⁶² Industrial concern owners could enter the credit market and use slaves as a way to get money for new

⁵⁹ *Ibid.*, 11-12. Slaves were good agricultural laborers, but there would be a limit to the number of people agriculture could support, and when that limit was reached they would have to be put to some other work. See Harper, *Memoir on Slavery*, 53. The problem of an expanding slave population was something that Southerners recognized very early on. See De Bow, *Industrial Resources*, 313.

⁶⁰ *Ibid.*, 339.

⁶¹ Jones, "Labor and the Idea of Race," 615.

⁶² Bonnie Martin found large networks of credit based on slave property operating all over frontier areas of the antebellum South. See Martin, "Slavery's Invisible Engine," 818, 865. For further information about the use of slaves as collateral see Richard Kilbourne, *Debt, Investment, Slaves: Credit Relations in East Feliciana Parish, Louisiana* (Tuscaloosa: University of Alabama Press, 1995). Quote from *Ibid.*, 5.

machines and materials. This is why the Dun reports were so concerned with slave property.⁶³ Slaves then served as both labor and capital for antebellum southern industry.

Industrial firm owners and southern industrial boosters put a great deal of effort into persuading planters to transfer slaves from agricultural to manufacturing endeavors. Cities like Birmingham, which became a very important post-war industrial center, were planned by prewar agricultural capitalists as an industrial center where surplus slaves could be profitably utilized in staffing blast furnaces and rolling mills.⁶⁴ Slaves filled this role well and profitably across the South. Colonel James Wesson used slaves to operate many parts of his firm, the Mississippi Manufacturing Company in Choctaw County, Mississippi, including the steam engine and other dangerous and very dusty parts of his factory, even though the majority of his employees were white.⁶⁵ When Wesson used slaves to perform this kind of labor he was very pleased to discover that they were equal to the task.⁶⁶ Gregg employed slaves in his factories because of the many advantages they provided: they could be put to work younger than white workers, they needed no education, they could not strike, and they could not quit so there were no worries that as soon as a person was trained to do their job that they would pack up and leave.⁶⁷ One of the largest industrial enterprises in the antebellum South, the Tredegar Iron

⁶³ The Dun reports list many cases of slave ownership by industrial owners such as \$15,000 in slaves owned by Edwin Reese of Green County, Alabama and the \$5,000 in slaves the Robert Logan owned in Chambers County, Alabama. These slaves were good collateral for any credit a northern firm extended. See Alabama, Vol. 11, p. 174, R.G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School; and Alabama, Vol. 6, p. 126, R.G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁶⁴ Lewis, "The Emergence of Birmingham," 63.

⁶⁵ Moore, *The Emergence of the Cotton Kingdom*, 222.

⁶⁶ *Ibid.*, 223.

⁶⁷ Gregg, *Essays on Domestic Industry*, 48-49. Also see Jones, "Labor and the Idea of Race": 615.

Works in Richmond, Virginia, also employed a large number of slave laborers.⁶⁸ Slave labor was important in the region and perhaps should have been more so as De Bow explained:

Wherever negro labor has been applied, it has been with great success. Of the 700,000 negros, whose labor has added nothing to the wealth we had ten years ago, could 100,000 be diverted to the construction of railroads, the South might open several thousand miles every year, and would have the same means of ironing them that she has now from her other resources.⁶⁹

Pratt also used slaves in his factories, not because they were always better workers, but to fight against the growth of organized labor in Prattville and to be able to make sure his workforce stayed after he trained them.⁷⁰ Moreover, slaves worked on almost every railroad line in the South with more than 14,600 employed by 1860.⁷¹ These slaves performed every task possible from clearing right of ways, to laying track, to building and maintaining rolling stock.⁷² It seems then that enslaved labor could be turned to any task and owners could expect them to perform it well. Slaves, then, were a well-known commodity in the southern labor market, and manufacturing firm owners used them if the opportunity presented itself either through industrial firm operators looking for labor, planters looking for work for their slaves, or even through slaves looking for work themselves.

John P. Parker, a slave in antebellum Mobile, is a good example of an enslaved laborer used for industrial work. Parker convinced a widow to buy him and allow him to hire himself

⁶⁸ Dew, *Ironmaker to the Confederacy*, 3.

⁶⁹ De Bow, *Industrial Resources*, 79.

⁷⁰ Randall Miller, "Cotton Mill Movement in Antebellum Alabama," (Ph.D. diss. Ohio State University, 1971), 219. Curtis Evans also discussed the use of slave labor by Pratt. He argued that Pratt used slave labor for the same reason that William Gregg did, to have greater control over his workforce. See Evans, *The Conquest of Labor*, 80-83.

⁷¹ Kornweibel, "Railroads and Slavery," 36.

⁷² *Ibid.*, 34.

out. He earned money for his owner and, through overwork, money to buy his own freedom.⁷³ Parker described his hiring situation, writing: "A new foundry was starting. They needed molders and I applied for a job and got it at once. The next morning I was around as soon as the doors were opened, once more alert and hopeful. The first week I lived in that shop. Early and late I was at my bench."⁷⁴ Enslaved workers had constantly to prove themselves so that they could keep these sought-after positions. As Parker explained, "[l]ong before other workmen were around in the morning, I was hard at work over my molds."⁷⁵ Moreover, slaves changed jobs to ones that had better working conditions or that paid for work by the piece so that the harder they worked the more they made.⁷⁶ Slaves even bid against each other to get better deals for themselves because owners would generally listen to them about which employer would make the most money for both of them. Many Southerners, though, were afraid that allowing slaves control over their own time, in the way that Parker was, weakened the entire slave system.⁷⁷ But, the labor of enslaved workers was needed by manufacturing firms.⁷⁸ No matter the feelings of some people about slave use in industry, they were a very important part of the development of manufacturing in the antebellum Gulf South.⁷⁹

⁷³ John Parker, *His Promised Land* (New York: W.W. Norton, 1996), 7-8.

⁷⁴ *Ibid.*, 68.

⁷⁵ *Ibid.*, 67.

⁷⁶ *Ibid.*, 66-7.

⁷⁷ According to James Huston, some Northerners also feared industrial slave labor, such as Parker's, because it challenged the free labor driven model of industrialization. See James L. Huston "Property Rights in Slavery and the Coming of the Civil War" *The Journal of Southern History* 65 (May 1999): 271.

⁷⁸ *De Bow's Review*, 26 (May 1859): 600.

⁷⁹ Arnold Rose, in his work, argues that slaves dominated the unskilled and skilled labor markets. See Arnold Rose, *The Negro in America* (Boston: Beacon Press, 1948), 101-2. This, of course, was an overstatement, and Rose does not have the data to back up this assertion, but slave labor was very important to the South and as all the examples given here it was also important to industrial development in the region.

Stanley Lebergott, in his book *The Americans*, wrote, "Manufacturing expanded on a broad front from the mid-1820s to 1860 ó textile firms, tanneries, iron forges, chemical and glass works. But it is well to keep in mind that the nation's comparative advantage still lay in agriculture."⁸⁰ Moreover, Tennessee Governor Aaron Brown, at the 1852 New Orleans Southern Commercial Convention, said "manufacturing was an attractive addition to the South's economy, but not a replacement for the agrarian mode."⁸¹ Brown and Lebergott were right; industry was not a replacement but, as the maps presented in this chapter show, it could be a complement that perhaps, given time, would develop into a partner of cash crop agriculture. Many Southerners were not opposed to modernization; they merely wished to follow their own road.⁸² As De Bow wrote:

Cotton, wool, and iron may be regarded as the three great staples of the southwest. But there is so close a relation between these and many other branches of manufacturers, that the establishment of any one or more of them upon an extensive scale would draw after them others.⁸³

Firms could, and did, use the cotton and iron of the region to drive the development of industry in the Gulf South as this review of the factors of production has shown. We now have a more accurate picture of what manufacturing in the region really looked like. There were not only firms and owners in many parts the Gulf South; there was also a great deal of capital invested in these concerns. Manufacturers purchased raw materials in sufficient quantities to turn out products needed by the region. Moreover, industrialists found free workers for their firms in Alabama, Mississippi, and Texas and paid them enough to induce them to give up agricultural

⁸⁰ Stanley Lebergott, *The Americans: An Economic Record* (New York: W.W. Norton, 1984), 136. Also see North, *The Economic Growth of the United States*, 128.

⁸¹ Johnson, *The Men and the Visions*, 119.

⁸² Majewski, *Modernizing a Slave Economy*, 6-14.

⁸³ De Bow, *Industrial Resources*, 113.

work. Slaves augmented the supply of free labor for the region's manufacturing firms. Manufacturers in the Gulf South wielded a substantial labor force, considerable capital investment, and readily available raw materials to produce a large and varied array of goods for other industrial producers, farms and plantations, and individual consumers. As the next chapter will make clear, the scale of this production was considerably greater than contemporaries thought and historians believe was the case.

CHAPTER FIVE: PRODUCTION AND SCALE

In the 19 May 1858 issue of the Montgomery, Alabama, *Daily Confederation*, the paper's editor celebrated the South's agrarian character:

That the North does our trading and manufacturing mostly is true, and we are willing that they should. Ours is an agricultural people, and God grant that we may continue so. We never want to see it otherwise. It is the freest, happiest, most independent, and with us the most powerful condition on earth. We never want to become a section of shopkeepers, or a hive of manufacturers.¹

This was the traditional view of the South held by many people before the war. Southerners worked the land; they did not work in factories. Moreover, according to this editorial, the people of the region were happy about their agricultural way of life and had little interest in industrial development. William Gregg, even though he ran a large manufacturing enterprise in South Carolina, bemoaned the fact that the region functioned in the fashion described in the *Daily Confederation* and wrote in exasperation about how cotton left plantations in the South, went into northern factories to be turned into cloth and clothing, and then returned to southern plantation for purchase at an inflated price.² Notwithstanding such commonly held views, however, entrepreneurs in the antebellum Gulf South were developing the beginnings of a "hive" and were manufacturing a broad range of products, from clothing to saddles to iron products to agricultural equipment, for consumption by the people of the region. The Southerners who purchased these items realized the importance of these business owners and their concerns to their communities.

¹ *Daily Confederation*, 19 May 1858.

² Gregg, *Essays on Domestic Industry*, 6-7. Douglass North, in his work on American economic growth before 1860, observed that "residential industry failed to develop because a local market did not grow." See North, *The Economic Growth of the United States*, 133.

The tangible effect of industry on society was, of course, the goods that it produced. A "Mr. Marshall," in an article published in *De Bow's Review*, understood how important manufacturing production was for the South and argued that the region needed to "manufacture at home" the actual necessities — such as farming implements, clothing, and shoeing.³ Manufacturers' hopes for profits depended for realization on the existence of vigorous and growing markets. Industrialists in the Gulf South therefore took every opportunity to showcase their wares. For example, in October 1860, the people of Navarro County, Texas, hosted the "First Annual Fair of the Navarro County Agricultural and Mechanical Association," the highlight of which was a competition of domestically manufactured goods.⁴ Thus, even on a frontier — Navarro County was on the far western part of settled Texas — people recognized the importance of industrial production and celebrated the availability of locally manufactured goods. Moreover, as this work has explained, owners used advertisements in local newspapers as well to promote their concerns' wares.

There are many examples of manufacturers opening firms and producing goods needed in their local areas. The Spangler family of Mississippi, made up of siblings Joseph, Seraphine, and Hubert, founded firms in several parts of the state. Joseph built a cotton factory on the banks of the Pearl River, Seraphine built saw mills in Rankin and Madison counties, and Hubert founded a blind and sash firm in Jackson.⁵ All of these enterprises, according to family history, produced goods sold in local markets and did very well until they were burned during the Civil War. John Alexander Klein, who was born in Virginia, moved to Vicksburg in 1836 and opened a jeweler's

³ Mr. Marshall, "We Must Diversify Our Industry," *De Bow's Review* 24 (March 1858): 261.

⁴ *The Navarro Express*, 2 June 1860.

⁵ Hubert Spangler, "In Memorium of the Spanglers," n.p., 1937, Spangler Vertical File, McCardell Library, Old Courthouse Museum, Vicksburg, Mississippi.

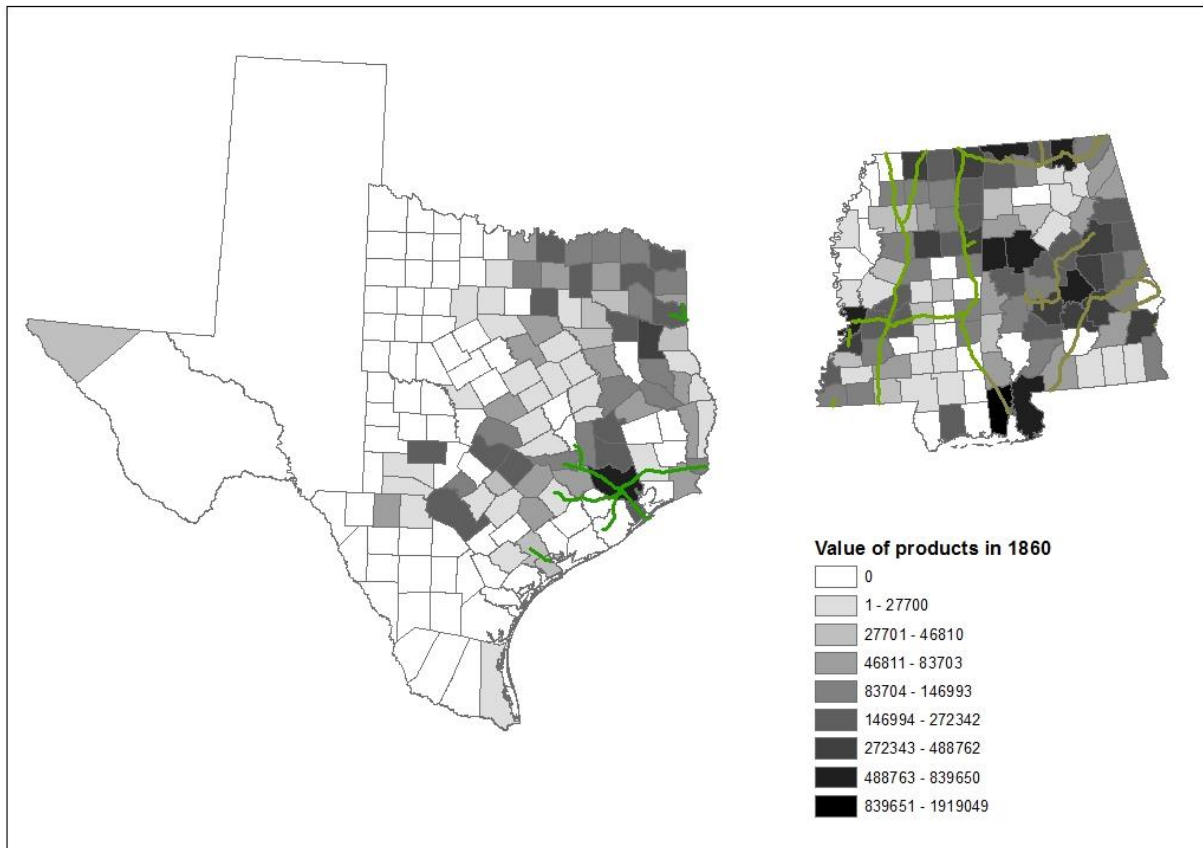
shop. With the money that he made from this business he opened several saw mills in and around the city, most of which were destroyed during the war.⁶ The products of his mills helped to build and expand Vicksburg and were very important to the people of the area. What was true of Vicksburg was also true of other communities, large and small, in which industrialists and manufacturers lived and worked. Thus, while capital, labor, and materials were important, the production of a firm really integrated industry into a community.

The 1860 census reported the dollar value of production for each manufacturing firm. As was explained earlier, the census only reported such firms that produced goods worth at least \$500. This output value was not differentiated into the various items a firm produced. For example, a carriage and wagon manufacturer may have produced a variety of different carriages, wagons, and carts, and may also have produced related items such as wheels and other replacement parts. The census does not break down the value of industrial production to reflect how many of each of these items were produced; the returns only show a total value for all of the output of a concern. Thus, we cannot know exactly how many carriages or wagons a firm was able to build in 1860.

Map 5.1 displays the value of production listed in the census for firms in the Gulf South. As the map shows, there were manufacturing concerns that operated in many parts of the region. But, there were still counties, according to the census, that had no industrial activity at all, and many urban areas, such as Natchez, Montgomery, Vicksburg, and Mobile, had little manufacturing output for their size and importance. Moreover, as the map illustrates, counties that had railroad lines running through them had a larger amount of production, whereas areas

⁶ *In and About Vicksburg: An Illustrated Guide Book to the City of Vicksburg, Mississippi, Its History, Its Appearance, Its Business Houses: To Which is Added a Description of the Resources and Progress of the State of Mississippi, as an Investing Field for Immigration and Capital* (Vicksburg: The Gibraltar Publishing Co., 1890), 189. Klein's concern was also listed in the census records.

further away from rail transport, in general, had lower amounts. Railroads were built in the antebellum Gulf South as vehicles of trade to serve the backcountry and connect them with urban areas.⁷ It was no surprise then that many of the counties that had no production listed were off of the major lines of transportation.



Map 5.1 ó Value of production for firms listed in the 1860 census

Source: Census of 1860 Manufacturing Schedules.

Table 5.1 provides the value of production recorded by the census for firms in Alabama, Mississippi, and Texas. Taken together, the map and the table indicate that the Gulf South did possess some considerable concentrations of industrial production. Moreover, some places in the

⁷ Taylor and Neu, *The American Railroad Network*, 45.

Table 5.1 ó Value of production for all firms listed in the 1860 census⁸

	Value of Production	Share of total regional production
Alabama	\$10,454,762	44%
Mississippi	\$6,345,862	27%
Texas	\$6,927,015	29%
Total	\$23,727,639	100%

Source: Census of 1860 Manufacturing Schedules.

region were becoming known for certain products. For example, Alabama was the largest cotton gin producing state in the country, with sixteen different manufacturers listed in the 1860 census, thanks to Daniel Pratt and others who attempted to compete with him.⁹ Also, Alabama was becoming known for its iron production and had a large number of firms which the marshals recorded in the manufacturing census schedules.¹⁰ Most of the iron producing concerns in Alabama were founded in the 1850s and, by 1860, were producing more than enough iron for local needs and had begun to export their products, especially to other Gulf South states.¹¹ Some lines of business were more important than others in the region, especially concerns that worked in the primary processing of raw materials. According to the census, mills, both lumber and grist, produced the greatest value of output in the region with a total of \$11,291,779 in 1860,

⁸ For a breakdown of the value of production see Appendix C ó Data.

⁹ 1860 U.S. Census Manufacturing Schedules. Weymouth Jordan discusses the gin industry in his work. See Jordan, *Antebellum Alabama*, 152.

¹⁰ In 1860, Alabama had 24 iron firms according to the manufacturing census schedules.

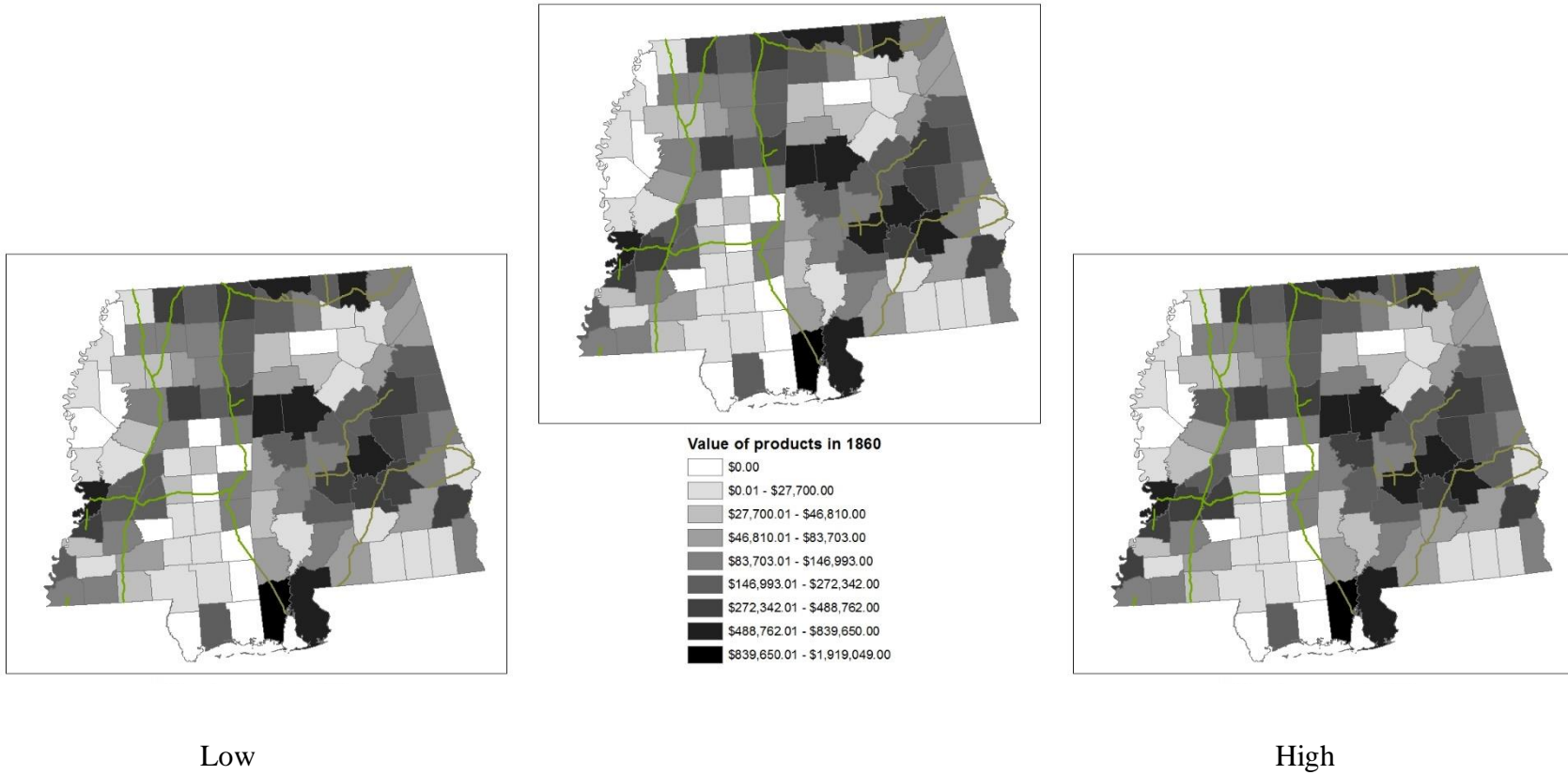
¹¹ J.P. Lesley, in his guide to iron manufacturing in the United States, lists many different firms that were producing iron in Alabama and explained that many of them were taking advantage of transportation avenues, such as railroads and rivers, to begin exporting this production to other areas. See Lesley, *Iron Manufacturing*, 78-19, 194-196.

which was 47.6% of the total value of output for Alabama, Mississippi, and Texas.¹² Cotton and wool textile factories were also large producers according to the census. Textile concerns accounted for \$2,074,741 of output. The only other lines of business to produce over one million dollars were carriage and wagon makers, with a total output of \$1,211,193, and foundries, which turned out \$1,242,247 of goods. Overall, the census records fifty-eight different kinds of concerns that produced at least \$500 worth of products in 1860. Thus, according to the census, manufacturing was developing in the Gulf South and industrial production was reaching a level in some industries to adequately supply needs outside of firms' local areas. Moreover, some industries and concerns, such as Pratt's gin factory, had begun to attract national attention.

Of course, as earlier chapters have established, the census was not a complete listing of all of the firms that operated in Alabama, Mississippi, and Texas in 1860. Firms missed by the census in each state produced goods, the value of which ought to be added to the reported census totals to yield a more accurate determination of the Gulf South's production capacity. Maps 5.2 and 5.3 show estimates of the production of all firms located in the region. As with capital and raw materials, estimates have to be made of the value of production based on what similar firms in the census listed for their output. Once this was done, a range of output levels was created of what all firms in the Gulf South could have potentially produced. When these estimates are represented geographically, as in Maps 5.2 and 5.3, we can see that there was a greater value of

¹² Walter Buenger explained that lumber mills were the most prevalent form of manufacturing in the South before the war and that people had a great deal of their industrial interactions with these firms. See Buenger, *Secession and the Union in Texas*, 13.

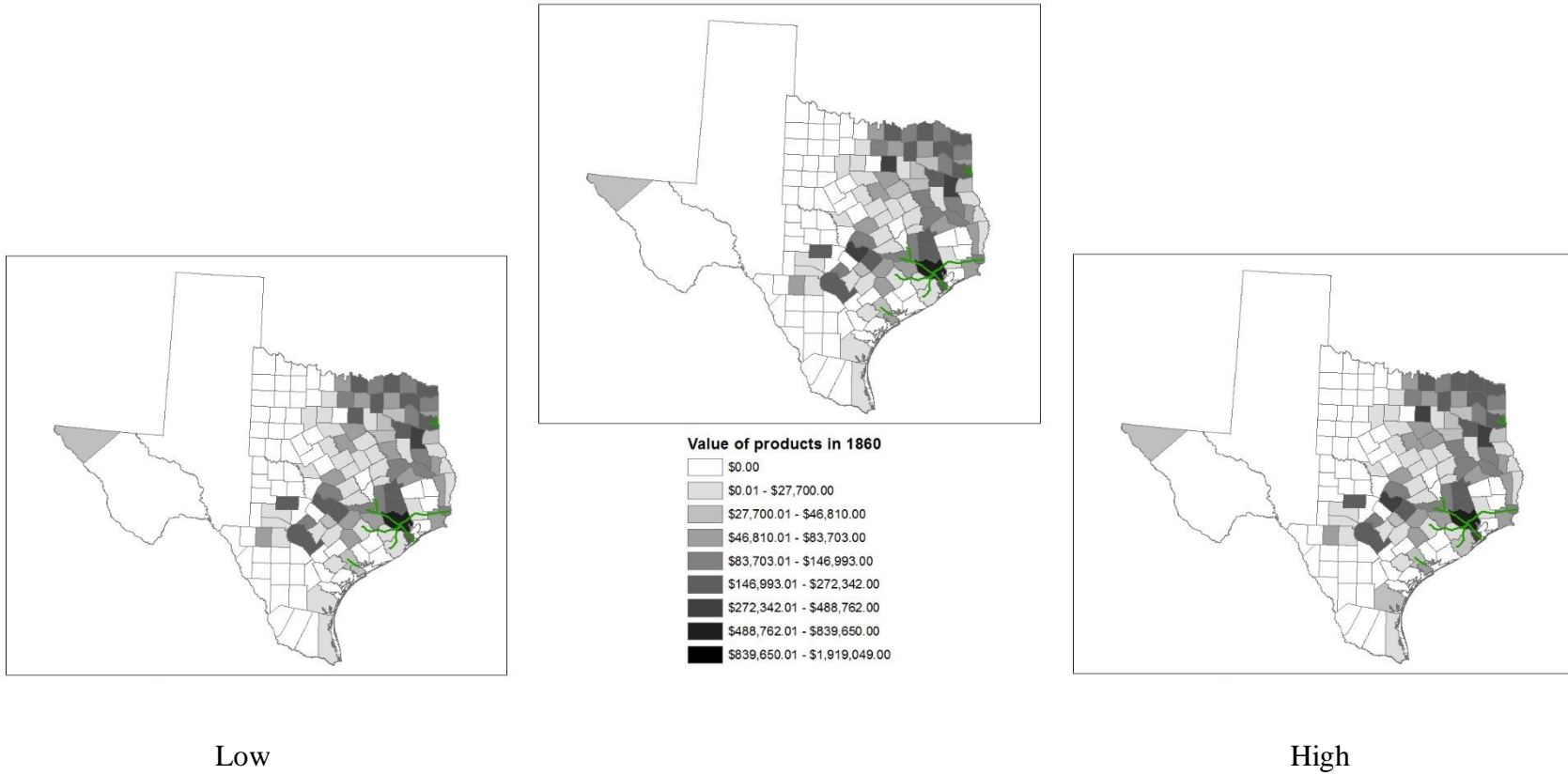
Mean



Map 5.2 ó Range of estimates for the value of production for all firms in Alabama and Mississippi in 1860

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Mean



Map 5.3 ó Range of estimates for the value of production for all firms in Texas in 1860

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

production in the Gulf South than previously believed. More counties were involved in industrial work, and many areas had a larger output than the census recorded. The census missed many types of firms, the largest number having been 87 boot and shoe manufacturers. Marshals also missed 81 carriage and wagon makers and 66 mill operators. It was interesting that these types of concerns were the most often missed. While boot and shoe makers may not have needed large physical plants to operate profitably, such was not true of mills and carriage and wagon works. The considerable floor space and grounds of these enterprises should have been very hard to overlook. Moreover, these firms produced considerable quantities and values of output. The average boot and shoe concern turned out \$2,946 of product in 1860, while carriage firms produced \$4,923; mill output was \$9,532.¹³

Table 5.2 shows the estimated value of production for firms listed in all sources in the Gulf South in 1860. The level of under-reporting for the region was between 2.37% to 14.84%, which means that at least a half a million dollars of production was missed. In today's money this comes out to at least \$16,200,000 in unreported output.¹⁴ This was a significant amount of industrial production that went un-recorded by the marshals. Alabama had the greatest amount of missed production because the state had the most firms unrecorded by the census takers and these concerns were larger and in lines of business that had greater amounts of output. For example, both concerns that produced blinds, sashes, and doors and foundries had larger than

¹³ Census of 1860 Manufacturing Schedules.

¹⁴ The conversion to today's currency was done using measuringworth.com.

average production values.¹⁵ In Mississippi the census marshals missed one blind, sash, and door firm and four foundries. Marshals missed two blind, sash, and door enterprises and three foundries in Texas. Ten blind, sash, and door manufactories and fifteen foundries were missed in Alabama.

Table 5.2 ó Value of production for concerns listed in the census and estimations for firms listed in all sources in Alabama, Mississippi, and Texas in 1860 (percent of under-reporting)¹⁶

	Census	Low	Median	High
Alabama	\$10,454,762	\$10,781,971 (3.13%)	\$11,288,067 (7.97%)	\$12,531,762 (19.87%)
Mississippi	\$6,345,862	\$6,459,682 (1.79%)	\$6,628,242 (4.45%)	\$7,049,862 (11.09%)
Texas	\$6,927,015	\$7,047,627 (1.74%)	\$7,232,210 (4.41%)	\$7,668,015 (10.70%)
Total	\$23,727,639	\$24,289,280 (2.37%)	\$25,148,519 (5.99%)	\$27,249,639 (14.84%)

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

General Note: The value provided in parentheses is the percent over the census totals of the estimated amount.

This was not surprising because Alabama had a more developed transportation network and more raw materials than Mississippi or Texas, which allowed the state to create and develop a larger number of firms. Moreover, of the concerns missed in Alabama, many were of more complex organizational types, such as partnerships and companies, while most of the firms

¹⁵ According to the 1860 census schedules for Alabama, Mississippi, and Texas, the average blind, sash, and door firm produced \$17,701 and an average foundry put out \$28,232. The average firm in the Gulf South produced \$7,241 in 1860.

¹⁶ See Appendix C for a breakdown of production by line of business and organization type.

missed in Texas and Mississippi were individually owned.¹⁷ While the value of production in Mississippi and that in Texas were almost equal, as Table 5.3 shows, Texas had a higher per capita output because of its lower population. In general though, per capita output was relatively equal throughout the region.

Table 5.3 ó Per capita output derived from the 1860 census for Alabama, Mississippi, and Texas

	Population	Value of Production	Per capita output
Alabama	964,201	\$10,454,762	\$10.84
Mississippi	791,305	\$6,345,862	\$8.02
Texas	604, 215	\$6,927,015	\$11.46
Total	2,359,721	\$23,727,639	\$10.06

Source: Census of 1860 Manufacturing and Population Schedules.

When compared with Map 5.1, the production for concerns listed in the census, we can see through Table 5.2 and Maps 5.2 and 5.3 that production was, as stated earlier, more widespread and deeper in the region than the census recorded. Moreover, concerns missed by the census were producing goods that people in their local areas were willing to purchase while also providing owners with the potential to grow and expand. For example, John Sciple was a saw mill owner in Macon, Mississippi. This mill produced goods for the town and, according to the Dun reports, Sciple was industrious and good for any amount of credit that a subscriber to the reports would be willing to extend.¹⁸ E. R. Johnson, a shoemaker in Vicksburg, Mississippi, had

¹⁷ See Table 3.6 for a listing of missed firms by organization type.

¹⁸ Mississippi, Vol. 17, p. 33, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

a listing in Dun similar to that of Sciple and was responsible for any amount he would venture to ask for.¹⁹ Thus, Sciple and Johnson produced products that the local area needed, and, if they wanted to expand, other people in their communities thought they would be good risks to which to extend credit. While it is true that of population, of internal improvements, of manufactures, and of all artificial wealth the North held much the larger share, the Gulf South was more industrially developed than anyone at the time, or any time after, has really understood.²⁰

Maps 5.4 and 5.5 show the amounts of estimated production for just the firms missed by the census marshals. These maps illustrate that the areas where one would expect to have large amounts of industrial development, the urban centers of the Gulf South, also had the most value of production not listed in the census. As discussed earlier, the fact that so much output was missed by census marshals in urban areas was surprising. What was not surprising was that so much industry existed in the larger towns and cities of the region. The urban South was important to industrial development and the people who lived in these cities showed heightened levels of excitement about future progress.²¹ But, this view was based on the census returns alone. As Maps 5.4 and 5.5 show, there was much more to be excited about in the Gulf South as some counties potentially had over a half a million dollars worth of missed production.

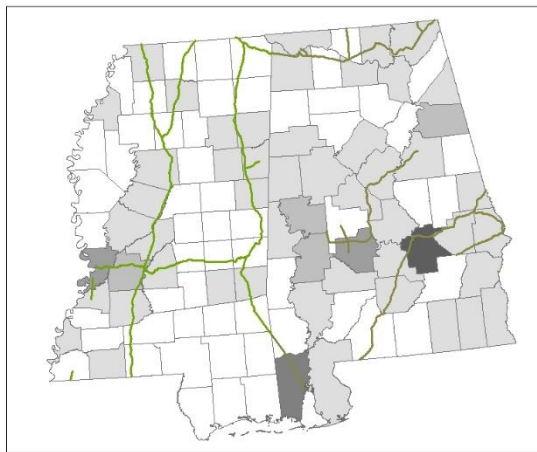
Counties off of the major transportation routes did have some missed production, but, as Maps 5.4 and 5.5 show, the estimates of the unrecorded output in these counties was not as large as in the cities of Alabama, Mississippi, and Texas. The firms in areas outside the Gulf South's urban areas were more likely to be smaller individually owned concerns, while those in cities

¹⁹ Mississippi, Vol. 21, p. 19, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

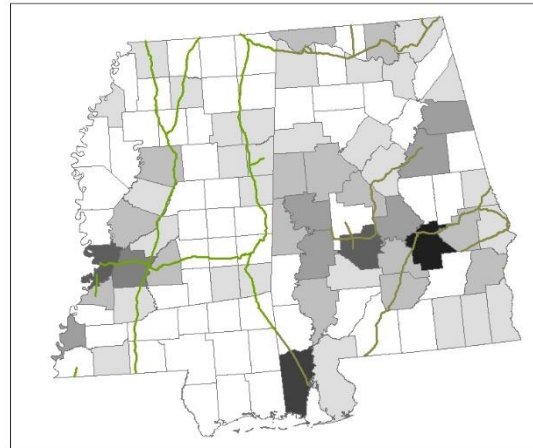
²⁰ Pollard, *The Lost Cause*, 101.

²¹ Schoen, *Fragile Fabric of Union*, 208.

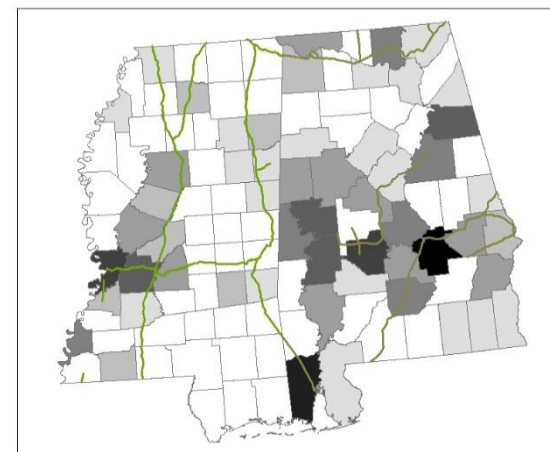
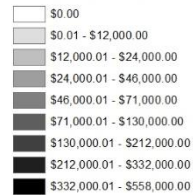
Median



Low



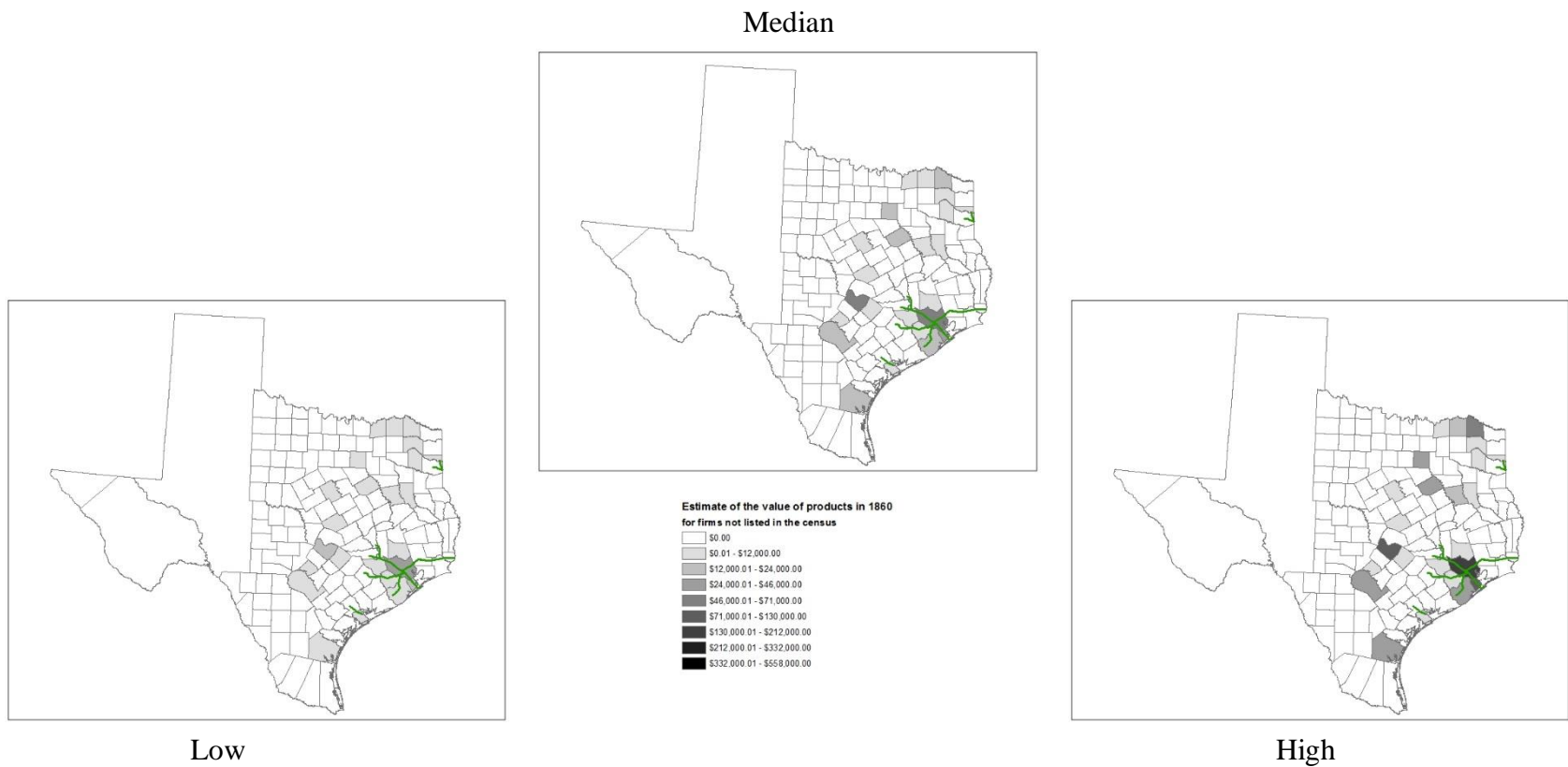
Estimate of the value of products in 1860
for firms not listed in the census



High

Map 5.4 ó Estimates of the value of production for firms not listed in the 1860 census for Alabama and Mississippi

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.



Map 5.5 ó Estimates of the value of production for firms not listed in the 1860 census for Texas

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

were more likely to be larger partnerships and companies. But, when these smaller amounts of missed production are combined, they too reach significant amounts. Some of these unrecorded concerns were in large cotton producing counties, which showed that agriculture and industrial development were not antithetical to each other. Moreover, as stated in chapter 3, they may have even supported one another, especially in outlying areas where access to capital and credit was harder for an industrial entrepreneur to obtain. Manufactory owners founded firms wherever in the Gulf South that the products of the concern were needed and turned a profit; at least that is what happened if an owner wanted their business to succeed. Producing for a local market was less risk for an entrepreneur.²² Credit reporters, as they were a part of the local community, were familiar with what was going on in an area and also saw the need for these firms and recorded that in their reports.²³

An in-depth look at the production of firms missing from the census in the Gulf South's urban areas can tell us more about industrial output and development in the region. The cities of the Gulf, like those elsewhere, performed a variety of essential commercial functions, including providing services as importation hubs and distribution centers.²⁴ But, industry was developing in these urban areas, as well. Mobile and Montgomery in Alabama and Natchez and Vicksburg in Mississippi all had many firms that the census marshals failed to record. Even without the production value of those missing firms, these cities, and their surrounding counties, supported a considerable amount of manufacturing. Mobile, for example, was the leading industrial area in

²² Paul Paskoff, *Industrial Evolution: Organization, Structure, and Growth of the Pennsylvania Iron Industry, 1750-1860* (Baltimore: Johns Hopkins Press, 1983), 3.

²³ Norris, *R. G. Dun*, 22.

²⁴ Gavin Wright, *Slavery and American Economic Development* (Baton Rouge: Louisiana State University Press, 2006), 80-81.

Alabama based on the census records alone.²⁵ But, there was a great deal of manufacturing output in Mobile that census marshals missed. Table 5.4 shows the value of production for all four of these cities as recorded in the census, as well as estimates of the likely output of all firms listed in all sources for these urban areas. These four cities had higher levels of production

Table 5.4 ó Value of production for firms listed in the census and estimated value of production for firms listed in all sources for four cities in the Gulf South in 1860

	Census	Low Estimate	Median Estimate	High Estimate
Mobile	\$1,587,049	\$1,638,816 (3.26%)	\$1,720,284 (8.40%)	\$1,919,049 (20.92%)
Montgomery	\$281,650	\$369,885 (31.32%)	\$505,515 (79.48%)	\$839,650 (198.12%)
Natchez	\$236,000	\$247,539 (4.89%)	\$264,610 (12.12%)	\$307,000 (30.08%)
Vicksburg	\$646,300	\$675,919 (4.58%)	\$719,065 (11.26%)	\$828,300 (28.16%)

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

General Note: The value provided in parentheses is the percent over the census totals of the estimated amount.

under-reporting than any other areas in Alabama and Mississippi, as shown when you compare Table 5.4 with Table 5.2. Montgomery, Alabama, which received Olmsted's praise for being a "pleasant" town with "prosperous and energetic" people, had a large amount of under-

²⁵ Harriet Amos, *Cotton City: Urban Development in Antebellum Mobile* (University: University of Alabama Press, 1985), 213. Amos explains in detail that Mobile was by any conceivable measure the leading industrial county in Alabama. Also, Mobile was a major export center for the Gulf South and in the decade before the war, a large variety of goods passed through the city bound for other areas. See Jordan, *Antebellum Alabama*, 18.

reporting.²⁶ As a state capital, one would expect the work of the census marshals to be more thorough.

Although it was surprising that the marshals did not record all of the production of concerns in cities such as Montgomery, it was not surprising that these areas had many firms in them. In cities, all of the ingredients for industrial development came together and production was at its greatest. Manufacturing endeavors in these cities had access to transportation to bring in raw materials and ship out finished products. Moreover, complementary concerns were also located here, which spurred growth. Thus, the foundries and mills in these urban areas supplied needed materials to other firms, keeping the cost of production lower for businesses like furniture makers or wagon factories.²⁷ In Mobile, Bowen and Gillman was a cabinet concern that was listed as "quite wealthy and doing a good business," and was "good beyond a doubt," and their products were well thought of in the city.²⁸ This concern, which was missed by the census, most likely took advantage of the iron and lumber other firms in the city produced. By 1860, a shift occurred in Mobile from imported goods to the use of local industrial products. The large number of industrial firms in the city, both recorded and unrecorded in the census, most likely sold at least some of their goods locally. These concerns had to produce for a market, and the most easily accessible was in the local area.²⁹ Also, manufacturing was seen as important

²⁶ Olmsted, *Cotton Kingdom*, 214.

²⁷ Beringer argued that public and private industrial efforts made the region less dependent on imports. Richard Beringer, Herman Hattaway, Archer Jones, and William N. Still, Jr, *Why the South Lost the Civil War* (Athens: University of Georgia Press, 1986), 63.

²⁸ Alabama, Vol. 17, p. 204, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

²⁹ Thompson, "Mobile, Alabama," 269. Stanley Engerman concluded that the problems faced by southern industry arose because the local market was too small. But if industrial production was larger than previously believed then the market was larger and southern industry may not have been held back by market size. See Engerman, "A Reconsideration of Southern Economic Growth," 359.

enough to tax as a source of revenue as Mobile started to tax manufacturing machinery in 1857.³⁰ Other cities also had large amounts of production missed by the census that earned the respect of their local areas based on the goods they produced. A. R. Tyler, a wagon and carriage maker in Natchez, Mississippi, was turning out good products and was considered to be "safe."³¹ A foundry owned by Ben Tappan in Vicksburg was a "large profitable business" that was producing products used by many other firms in the city.³² These were just a few examples of the manufacturers that the marshals missed that made these urban areas more important industrial centers than the census has led us to believe.

There are other ways to put the value of manufacturing production into perspective. One way is to examine the wholesale prices of specific commodities and then to determine how many units of each commodity were produced. For example, R. A. Baker and Company, a firm in Baldwin County, Alabama, was "extensively engaged in the turpentine business of large means and property."³³ Census marshals missed this large concern. Because there is no census record we cannot know the value of its production. But, for a firm of this type, the estimated value of its production was somewhere between \$2,500 and \$16,000.³⁴ Because the Dun credit reporter characterized the firm as large and having a lot of property, we may assume that the concern's scale of production was closer to the higher end of this range. The next step is to divide the

³⁰ Thompson, "Mobile, Alabama," 286.

³¹ Mississippi, Vol. 2, p. 66, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³² Mississippi, Vol. 21, p. 28, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³³ Alabama, Vol. 2, p. 113, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³⁴ See Appendix B "Methods" to see how this estimate was determined.

lower and upper bounds of the value of the firm's output by the price per gallon. The wholesale price of turpentine in 1860 was just over 42 cents per gallon.³⁵ Thus, R. A. Baker and Company produced between 5,910 and 37,825 gallons of turpentine. In today's dollars the value of the firm's output would be somewhere between \$72,000 and \$462,000.³⁶ Another fairly large firm missed by the census was H. Mayer and Company, a grist mill concern in Austin, Texas, and, again, because it was not listed in the census, we can only estimate the value of its production.³⁷ Based on H. Mayer and Company's line of business, the concern most likely produced between \$2,995 and \$12,500.³⁸ The wholesale price of a 196-pound barrel of flour was \$5.19.³⁹ Using that figure, we may estimate that H. Mayer and Company produced between 577 and 2,408 barrels of flour [or 113,092 to 471,968 pounds] in 1860. When converted into today's money this output would be worth somewhere between \$86,600 and \$361,000.⁴⁰ This production was significant, but none of it was recorded in the census.

Beyond looking at just the value of production and what this output actually was in finished products, we may also use other approaches to appraise a firm's activities. A particularly useful measure of a firm's operation was the ratio of its output to its capital investment. By looking at this ratio we can see how much output each dollar of capital represented. Investors in Alabama, Mississippi, and Texas wanted to get a return on any capital

³⁵ U. S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 1* (Washington: U. S. Government Printing Office, 1975), 209.

³⁶ The conversion of 1860 dollars to 2013 dollars, which is the closest to today that can be currently determined, was done using the currency converter on www.measuringworth.com.

³⁷ *Texas State Gazette*, 15 June 1860.

³⁸ See Appendix B ó Methods ó to see how this estimate was determined.

³⁹ *Historical Statistics of the United States*, 209.

⁴⁰ The conversion to today's money was done using www.measuringworth.com.

that they invested, and, to the extent that they could, they pressed their equipment to produce the largest output possible.⁴¹ Table 5.5 shows the ratio of capital to output for firms listed in the census by organizational form. As this table illustrates, as the organizational complexity increases, the capitalization of the firm also increases. Tables 5.6, 5.7, and 5.8 show estimates of the ratio of output to capital for concerns found in all sources based on organizational form. The addition of the firms missed by the census marshals increases the ratio of capital to output, and, just as with the census concerns alone, as the organization of a firm became more complex, the level of its capitalization also grew. No matter how a business was organized, an industrial entrepreneur could expect to get \$1.28-\$1.61 worth of output for every dollar of capital invested in a manufactory. These figures do not, of course, apply to every industry. Rather it is the ratio of output to capital for the entire industrial sector. There were industries with higher and others with lower rates. Table 5.9 shows the average output to capital ratio for agricultural implement firms. For this high-technology line of business we can see that partnerships had a much higher amount of capital and output per firm than individually-owned concerns did, while companies were considerably larger than partnerships.⁴² Tables 5.10 and 5.11 show that this holds true for firms that used a median level of technology, boot and shoe firms, and also for a low-technology industry like lumber mills. Moreover, the lower technology, primary processing lumber firms

⁴¹ According to Edward Pessen, antebellum investors did not plan their investments; rather, they just invested in whatever would turn a profit, and a "rational" investment was the one likely to pay off. See Edward Pessen, "How Different from Each Other Were the Antebellum North and South?" *The American Historical Review* 85 (December 1980): 1126. William Scarborough also discussed the investment patterns of Southerners in his work *Masters of the Big House*. See Scarborough, *Masters of the Big House*, 217-237.

⁴² The values listed in Table 5.9 for capital, output, and ratio of output to capital for agricultural implements concerns owned by partnerships is not an average. There was only one firm of that type listed in the census, thus the values in the table are for that one concern.

had a much larger ratio of output to capital than the higher technology agricultural implement and boot and shoe firms.⁴³

An example of a specific firm illustrates this point. J. O. and D. L. Young, were "both honest and upright industrious men," who owned a successful tanning, shoe, and harness making firm in Carrollton, Mississippi.⁴⁴ A reporter for the R. G. Dun Company recorded that the firm produced between \$6000 to \$8000 worth of products in a year.⁴⁵ Based on the estimate calculated from the census for capital investment in a concern such as the Youngs in 1860, the

Table 5.5 Average capital, output, and ratio of output to capital for firms listed in the census by organizational form

Firms owned by	Number of firms	Average \$ of capital per firm	Average \$ of output per firm	Average ratio of output to capital
Individual	2488	3,661	5,661	1.55
Partnership	460	5,970	8,127	1.36
Company	332	14,124	17,782	1.26

Source: Census of 1860 Manufacturing Schedules.

⁴³ Bateman and Weiss also looked at rate of return for the firms in their sample and found that investment of capital in manufacturing was profitable. But, there are problems with determining how to judge what values to use when determining something like the ratio of output to capital. For example, slaves owned as part of a firm's holdings may not be included in capital investment and therefore the ratio could look much different. See Bateman and Weiss, *A Deplorable Scarcity*, 126-127 and 195-197.

⁴⁴ Mississippi, Vol. 4, p. 37, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

⁴⁵ Mississippi, Vol. 4, p. 37, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School. This is a rare instance where a Dun reporter actually recorded amounts of production.

Table 5.6 ó Estimates of average capital, output, and ratio of output to capital for the 3,033 individually-owned firms listed in all sources

	Low estimate	Median estimate	High estimate
Average \$ of capital per firm	3,093	3,218	3,542
Average \$ of output per firm	4,856	5,084	5,687
Average ratio of output to capital	1.57	1.58	1.61

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table 5.7 ó Estimates of average capital, output, and ratio of output to capital for the 565 concerns owned by partnerships listed in all sources

	Low estimate	Median estimate	High estimate
Average \$ of capital per firm	5,030	5,251	5,790
Average \$ of output per firm	6,989	7,368	8,475
Average ratio of output to capital	1.39	1.40	1.46

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table 5.8 ó Estimates of average capital, output, and ratio of output to capital for the 470 companies listed in all sources

	Low estimate	Median estimate	High estimate
Average \$ of capital per firm	10,389	11,139	12,914
Average \$ of output per firm	13,295	14,616	17,259
Average ratio of output to capital	1.28	1.31	1.34

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table 5.9 ó Average capital, output, and ratio of output to capital for agricultural implement firms listed in the census

Firms owned by	Number of firms	Average \$ of capital per firm	Average \$ of output per firm	Average ratio of output to capital
Individual	16	3,573	3,735	1.05
Partnership	1	5,100	6750	1.32 ^a
Company	5	10,800	9,818	0.91

Source: Census of 1860 Manufacturing Schedules.

^a The values listed in Table 5.9 for capital, output, and ratio of output to capital for agricultural implements concerns owned by partnerships is not an average. There was only one firm of that type listed in the census, thus the values in the Table are for that one concern.

Table 5.10 ó Average capital, output, and ratio of output to capital for boot and shoe concerns listed in the census

Firms owned by	Number of firms	Average \$ of capital per firm	Average \$ of output per firm	Average ratio of output to capital
Individual	173	1,343	2,801	2.09
Partnership	22	2,593	3,972	1.53
Company	19	1,525	3,088	2.02

Source: Census of 1860 Manufacturing Schedules.

Table 5.11 ó Average capital, output, and ratio of output to capital for lumber firms listed in the census

Firms owned by	Number of firms	Average \$ of capital per firm	Average \$ of output per firm	Average ratio of output to capital
Individual	447	5,762	7,879	1.37
Partnership	106	5,501	9,334	1.70
Company	79	7,519	10,940	1.45

Source: Census of 1860 Manufacturing Schedules.

ratio of output to capital for this firm was between \$2.31 and \$3.08, which was much higher than an average firm listed in the census. This firm, and its significant amount of production, was somehow overlooked by the census marshals. Of course, receiving two to three dollars in production for every dollar invested does not mean that a company was profitable. There were many other costs associated with doing business beyond capital investment. But, historians determined that people with capital in the South could earn a good return on manufacturing investments in the region, something that these output to capital ratios seem to uphold.⁴⁶ As William Scarborough pointed out, "Some used the capital generated by their agricultural enterprises to purchase additional land and slaves, but others developed extremely diversified economic portfolios."⁴⁷

Output per worker is another way to look at industrial production. By dividing the number of workers a firm employed into the value of its output for the year we can determine the output per worker. This ratio showed how productive a worker was in the Gulf South. Efficiency is the mark of a modern, industrial society, and output per worker is one measure of this.⁴⁸ Moreover, as chapter 4 explained, there were many people in the antebellum United States who did not think that lower-class southern whites made good industrial workers.⁴⁹ But others, such as the editor of the *Independent Monitor*, felt that "there was a large population of a

⁴⁶ Bateman and Weiss, *A Deplorable Scarcity*, 109-113. Of course, Bateman and Weiss stated that people with capital neglected this kind of investment opportunity even though it was profitable. Moreover, Bateman and Weiss also discussed some of the other costs of doing business that needed to be considered. See *Ibid.*, 195-197.

⁴⁷ Scarbrough, *Masters of the Big House*, 428. Scarbrough also explained that planters invested in banking, manufacturing, railroads, steamboats, land speculation, and many other things. *Ibid.*, 219.

⁴⁸ Gregory Clark, *A Farewell to Alms: A Brief Economic History of the World* (Princeton: Princeton University Press, 2007), 67

⁴⁹ Historians continue to say the Southerners did not make good industrial workers. For example, as Richard Brown argued, the southern workforce was held back by poor education, a lack of immigration, and slavery. See Brown, *Modernization*, 145-147.

class whose means of support are very uncertain [whose] labor at cheap rates can always be commended.⁵⁰ Cheap, of course, does not necessarily mean that workers were good at their jobs. Seeing how productive labor was, by determining output per worker, could help to put to rest the idea of a southern workforce that did not perform well. Based on the census returns, an average industrial worker in the antebellum Gulf South produced \$1,353.62 worth of industrial products in 1860.⁵¹ Chart 5.1 displays comparable values for Gulf South firms missed by the census according to type of organization. As one would expect, there were some gains on a per-worker basis as the size and complexity of industrial concerns grew, that is, companies generally

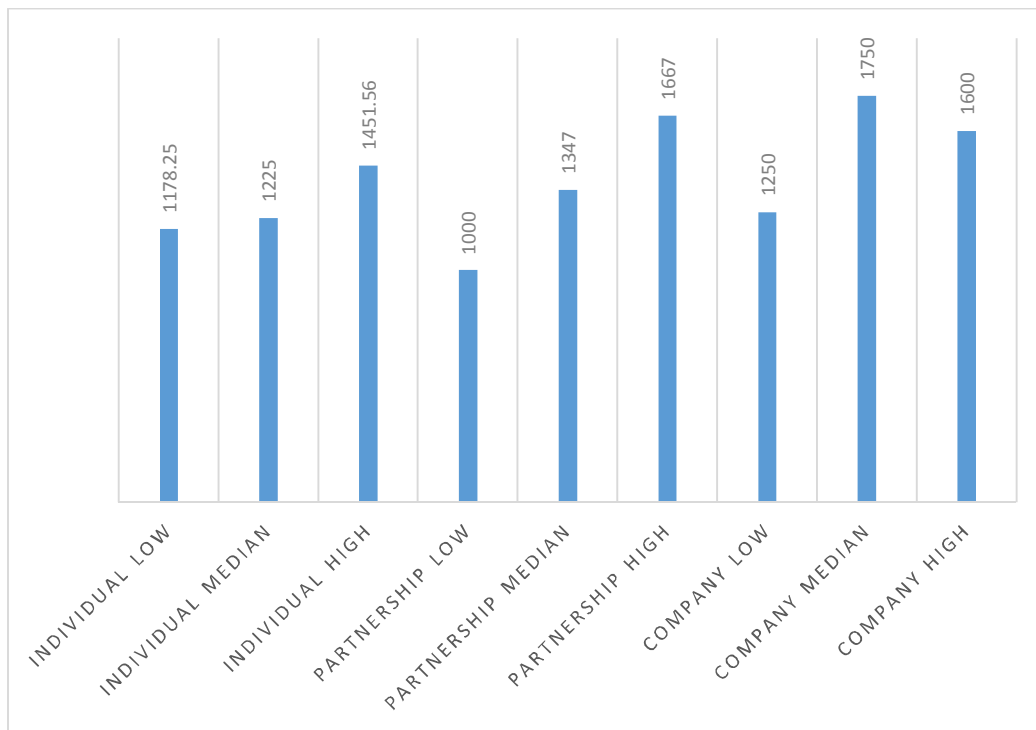


Chart 5.1 - Estimates of output per worker for non-census firms by type of organization

Source: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

⁵⁰ *Independent Monitor*, 22 April 1846; taken from Terrill "Eager Hands," 87.

⁵¹ US Census Compendium for 1860.

produced somewhat more per worker than did individually-owned firms or partnerships.⁵² Moreover, for the United States as a whole in 1860, the average value of production per worker was \$1,426.70, which means that, when compared to Chart 5.1, the Gulf South was right in line with the rest of the nation.⁵³

George Fitzhugh wrote before the outbreak of the Civil War, in *Sociology for the South*, that there was a "tendency of modern improvements in locomotion and intercommunication, which naturally rob the extremities to enrich the centers of Power and Trade."⁵⁴ Perhaps this was happening. As the maps in this chapter show, industrial production concentrated in the cities of the Gulf South. Railroads promoted the development of markets and provided connections to distant sources of raw materials. The growth of urban economic and industrial centers was, though, notwithstanding Fitzhugh's misgiving, not a bad thing. Development of this kind allowed Southerners to obtain locally the manufactured goods they needed rather than having to spend extra money to import them. Moreover, industrial firms in the Gulf South produced a considerable volume and variety of goods and did so at rates in line with the rest of the nation. De Bow argued in support of just such development:

It is strenuously contended that the introduction of manufacturers in the South would undermine our free-trade principles, and destroy the last hope of the great agricultural interest. It is susceptible of demonstration, that the consequences would necessarily be precisely the reverse.⁵⁵

⁵² The top 25% of companies does have a lower output per worker than we would expect it to have. But, this was most likely because of the small number of firms that are in the category.

⁵³ US Census Compendium for 1860.

⁵⁴ George Fitzhugh, *Sociology for the South, or, The Failure of Free Society* (Richmond: A. Morris, 1854), 203.

⁵⁵ De Bow, *Industrial Resources*, 28.

De Bow was right. Cotton production was extremely high in 1860, yet a large number of manufacturing concerns, larger than contemporaries in 1860 and historians writing since then thought, operated without any detrimental effects on the cotton economy.⁵⁶

⁵⁶ William Cooper, *Liberty and Slavery: Southern Politics to 1860* (New York: Knopf, 1983), 253.

EPILOGUE

Bateman and Weiss, in their work on antebellum southern industry, explain that “the traditional interpretation depicts the South, even during the late antebellum era, as an agrarian-commercial export economy almost totally devoid of any manufacturing.”¹ Thus, the South has generally been seen as having had little industrial development because of the region’s dependence on slavery, a way of life that did not embrace change, and a world-view that looked backward rather than forward. Antebellum Southerners, though, were more modern on the eve of the war than even they may have understood. Some in the region, such as De Bow, Pratt, and Gregg, pushed for further manufacturing development and felt that the South needed to “inaugurate its own industrial revolution.”² These men struggled to attract investment to the region, get more manufacturing firms founded, and broader public support.³ By 1860, with the development that had taken place, “the South as a whole ó was as much a land of villages and towns as of planters, slaves, and yeoman farmers.”⁴ There was more manufacturing in the Gulf South than the census marshals recorded. The region, if left to its own devices, with no major disruption to its society, would likely have continued to create and expand its already considerable number of industrial concerns.

¹ Bateman and Weiss, “Manufacturing in the Antebellum South,” 1.

² Schoen, *Fragile Fabric of Union*, 206.

³ Laurence Shore explains that many people in the region wanted more support for industry. See Laurence Shore, *Southern Capitalists: The Ideological Leadership of an Elite, 1832-1885* (Chapel Hill: University of North Carolina Press, 1986), 61.

⁴ Darrett Rutman, “The Village South,” in Darrett B. Rutman and Anita Rutman, *Small Worlds, Large Questions: Explorations in Early American Social History, 1600-1850* (Charlottesville: University Press of Virginia, 1994), 271.

At the outbreak of the Civil War, the South, compared with most nations, was well developed industrially. Fogel and Engerman determined that the states that made up the Confederacy ranked fifth in the world in cotton manufacturing and eighth in the world in iron production on the eve of the war.⁵ Moreover, this would-be nation had the world's fourth highest per capita income in 1860.⁶ Gavin Wright argued that the "South was not one of the truly impoverished or backwards economies of its day."⁷ The region was, as he determined, fifteenth on a world scale economically and fell in with other "middling" nations, such as Spain, Austria, Norway, and Portugal.⁸ Engerman agreed, writing that "the image of a backward, low-income economy is certainly not the appropriate one for the antebellum South."⁹ These assertions were based on the census records. As we have seen, the actual amount of industry in the region, once the firms missed by the census are added to the census totals, was considerably greater.

But, then the war came and industry in the region was put to the test. The Civil War was an industrial war. It would not just be southern men marching off into combat; southern industrial firms, owners, and employees were also called upon to play their parts.¹⁰ Winfield Scott's Anaconda Plan, something many Northerners scoffed at, became the strategy by which

⁵ Fogel and Engerman, *Time on the Cross*, 6.

⁶ *Ibid.*, 250.

⁷ Wright, *Slavery and American Economic Development*, 124.

⁸ *Ibid.*

⁹ Engerman, "Southern Economic Growth," 351. Engerman went on to argue that most economies in European countries were still based on large economic sectors, just as the South, and even the North, were.

¹⁰ Raimondo Luraghi argued that, "To enter the war with a minimum probability of survival, the Confederacy, obviously, had to industrialize or die." The results of the war seem to prove his case. See Luraghi, *Plantation South*, 110-111.

the Union forces ultimately fought and won the war. The implementation of this plan increasingly cut the South off from the outside world and forced the Confederacy to rely almost wholly on what could be produced within its territory. Thus, the war pushed Southern industry to its limits.¹¹

Before any shots were fired, secession caused economic disruptions. *The Panola Star*, of Panola, Mississippi, on the eve of secession, warned its readers to use up all of their banknotes from South Carolina, Georgia, and Tennessee because there was no way of knowing what was going to happen next.¹² As we now know, what happened next was four long years of grinding war. Industry in the region was not built to fight this kind of war. Entrepreneurs had founded manufacturing firms in the Gulf South to turn a profit by catering to local markets, and hopefully, in the future, to grow and diversify. Although concerns might be able to convert to war production, they were organized, even on the eve of the war, to meet the demands of a peacetime economy.¹³ Grist mills and foundries were not established to feed the army or make equipment for troops. They were founded to make flour and iron goods for local consumption. Thus, Southerners marched off to war without many of the pieces of basic equipment that soldiers should possess. For example, in a letter to his wife, June, in December 1861, George

¹¹ For more information on the blockade see Davis, Lance E. and Stanley L. Engerman, *Naval Blockades in Peace and War: An Economic History Since 1750* (Cambridge: Cambridge University Press, 2006); Thornton, Mark and Robert B. Ekelund Jr., *Tariffs, Blockades, and Inflation: The Economics of the Civil War* (Wilmington: Scholarly Resources, 2004).

¹² *Panola Star*, 29 November 1860.

¹³ The Dun reports show this. In all entries on the eve of war, the local reporters make no mention of fears of war or of business founded to meet expected war needs.

Dobson, of Jackson, Mississippi, reported from his camp that there were not enough rifles for all of the new troops being enlisted.¹⁴

Upon the outbreak of fighting, most discussions of southern industry focused on shortages and breakdowns. These complaints confirmed what many believed, that manufacturing in the South was either almost non-existent or quickly overwhelmed by wartime demands. But, when the war broke out, there was more industry in the Gulf South than had been previously reported and some of this unknown production was turned to the war effort. This additional industrial capacity may explain how the South was able to sustain its war effort for four years.¹⁵ When the shooting began, many manufacturing firms in the Gulf South switched from the production of goods for southern consumers to items that the Confederacy needed to fight a war. The Confederate government sent purchasing agents throughout the region to find industrial goods for the army.¹⁶ Soldiers frequently needed to replace their equipment, so industry had plenty of orders to fill. Patriotism and profit, in the words of Mary DeCredico, now became driving forces in Gulf South manufacturing.¹⁷

Many firms in the Gulf South turned to war production. Mississippi, for example, had several manufactories that helped to support the Confederate war effort. The A. B. Reading and Brother Foundry, in Vicksburg, produced 3-inch rifled cannons for both the state of Mississippi

¹⁴ Letter of George Dobson to his wife, 9 December 1861, Humphreyø (David Colin) Collection, Mississippi Department of Archives and History.

¹⁵ John Ashworth has stated that the South had the economic strength to fight four years of war. He had, however, very little statistical data upon which to base this assumption. See Ashworth, *Slavery, Capitalism, and Politics*, 16.

¹⁶ The Confederate government did not purchase everything offered to it, and many large and important firms, such as the Phoenix Iron Works in New Orleans, the Selma Powder Works, and William Greggø Graniteville Mill were all turned down by the Confederacy at one point or another. See Goff, *Confederate Supply*, 12.

¹⁷ Mary DeCredico, *Patriotism for Profit*, xvi.

and the Confederate government throughout much of the war. Of course, this was a new type of production for the firm, and there were problems. The *Vicksburg Whig* reported in May 1861 that one of the cannons produced by the concern exploded in testing and killed a bystander.¹⁸ The Confederate government took much of the foundry's equipment during the war, and the business was in shambles by the end of the conflict.¹⁹ The textile factory in Bankston, Mississippi, joined the war effort by manufacturing uniforms for the army which greatly enhanced the economic importance of the concern.²⁰ Both firms were listed in the 1860 manufacturing census. Almost certainly, firms, especially larger ones, missed by the census marshals also switched over to war production. The needs of the army altered the character and demand of the market. In order to survive and make a profit, firms needed to produce for that changed market.

In 1860, Alabama produced the most industrial goods in the Gulf South, so naturally there was war production in the state. Selma, Alabama, became a major Confederate industrial center, something that this work showed began before the war. In 1860, the census listed 59 firms in Selma, while other primary sources added 42 more to the total. These concerns were founded to take advantage of the natural resources, such as lumber, coal, and iron, which were available in the area. During the war a government arsenal was founded in the city because the facilities here for the production of cartridges, saltpeter, powder, shot and shell, and for the assemblage of lumber, coal, and iron, were greater than at any other point existing in the

¹⁸ *Vicksburg Whig*, 13 May 1861.

¹⁹ Un-identified obituary of A.B. Reading, Reading-Pierson Vertical File, McCardell Library, Old Courthouse Museum, Vicksburg, Mississippi.

²⁰ Moore, *Emergence of the Cotton Kingdom*, 225.

South.²¹ Of course, Mobile, Alabama's most important industrial city, also had concerns which changed over to wartime production. The Mobile Foundry, owned by Skaates & Company, for one example, signed a contract to produce cannons for the government, along with artillery shells and mortars.²² The Wright and Rice Foundry in Florance, Alabama, also produced cannons for the army.²³ Another arsenal was established in Montgomery, which made accouterments and cartridges.²⁴

Of course, many industrial concerns did not survive the conflict, especially as Union troops entered the Gulf South on offensive operations. The textile mill in Bankston, Mississippi, was burned in 1864, and, without its economic engine, the town itself was abandoned soon after.²⁵ The Mississippi State Penitentiary Factory, which produced large amounts of material for the army, such as uniforms and other accoutrements, on 20 November 1863, recorded in the inspection records of the factory: "Then, here came the Blamed Yankees under Tecump. Sherman ó Blue bellies ó and burned the penitentiary with fire [sic]."²⁶ The Alabama Iron Manufacturing Company was listed in the Dun reports in 1866 as "dissolved, their works were destroyed when the federal forces occupied Selma."²⁷ Destruction by enemy troops though was

²¹ Armes, *Coal and Iron in Alabama*, 134-135.

²² Arthur W. Bergeron, Jr., *Confederate Mobile* (Baton Rouge: Louisiana State University Press, 1991), 16-17.

²³ Larry Daniel and Riley Gunter, *Confederate Cannon Foundries* (Union City: Pioneer Press, 1977), 89.

²⁴ Goff, *Confederate Supply*, 15.

²⁵ Ben Wynne, *Mississippi's Civil War: A Narrative History* (Macon: Mercer University Press, 2006), 101. Life in the town was based around the mill and once it was gone there was no reason for people to stay and Bankston became a ghost town.

²⁶ Inspection Records, November 1863, Mississippi State Penitentiary Records, Mississippi Department of Archives and History.

²⁷ Alabama, Vol. 10, p. 87, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

only one way that industrial firms stopped production during the conflict. As Harold Wilson explained, "after four years of deprivation and eighty-hour work weeks, many Southern workers were in a poor physical state."²⁸ So, after fighting four years of war, a great deal of southern industry was either worn out or destroyed.

The credit reporters employed by R. G. Dun provided the first look we have at the war's effect on Gulf South industry. As earlier chapters explained, before the war, the Dun reporters recorded information about manufacturing firms in the Gulf South that the census marshals missed. These reporters saw that the region was more industrially developed than anyone really understood. Moreover, these reports showed no recognition that the war was on the horizon. As late as March of 1861 reports were being entered into the R. G. Dun Company's ledgers about the credit worthiness of southern firms even for states that had left the Union, such as Mississippi, Alabama, and Texas. In 1866, a year after the end of hostilities, information on firms began to be entered again for the Gulf South states. Some concerns did not survive the war. W. T. Gunter, a railroad contractor in Jackson County, Alabama, was listed in the Dun reports after the war as "Busted."²⁹ J. Franklin Kerr, a gunsmith in Hinds County, Mississippi, went out of business because of his wartime conduct. The reports recorded that Kerr was "not worth anything, not good, deserted from Rebel Army."³⁰ Kerr's entry was a rarity though.

²⁸ Harold S. Wilson, *Confederate Industry: Manufacturers and Quartermasters in the Civil War* (Jackson: University Press of Mississippi, 2002), 215. Mary DeCredico made the same point about people wearing out by the end of the war in her work on Georgia. See also DeCredico, *Patriotism for Profit*, 152-154

²⁹ Alabama, Vol. 12, p. 125, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³⁰ Mississippi, Vol. 9, p. 78, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

There was actually very little mention of the war in these post-war updates beyond whether the firm survived the conflict and if it was credit worthy.

By looking at the Dun reports, then, we can see what firms persisted through the conflict. Table E.1 shows the concerns listed in the Dun reports that survived the war. 28.1% of the manufactories listed in the ledgers of Dun still existed in 1866. Map E.1 illustrates the location of the firms that made it through the conflict. The largest concentrations of concerns that made it through the war were in the urban areas of the Gulf South. But, there were other scattered concerns that survived the conflict. For example, James Throckmorton, who owned a sawmill in Franklin County, Alabama, survived the war *ö*very good~~ö~~ and thrived during Reconstruction.³¹ As the table and the map illustrate, there were many concerns across the Gulf South with a story similar to Throckmorton~~ö~~. Some counties in Alabama, Mississippi, and especially Texas, were untouched by the conflict.³² Contrary to popular belief, Union forces did not go out of their way

Table E.1 *ö* Persistence of firms listed in the Dun reports

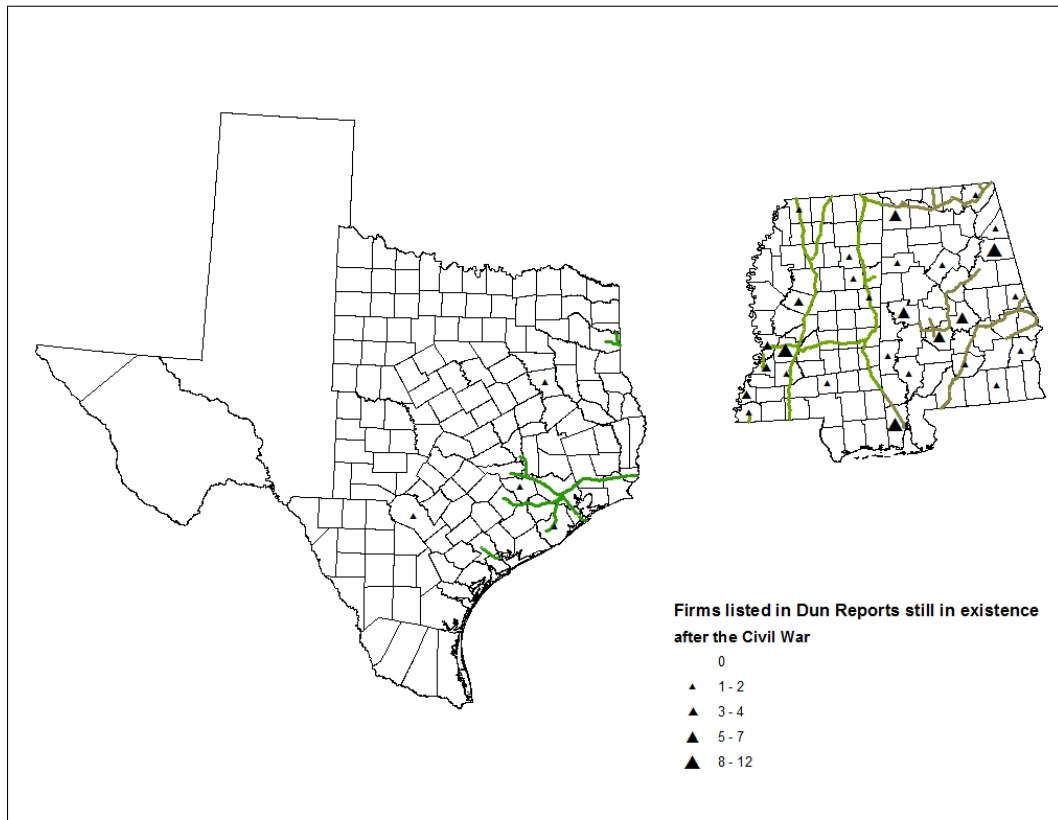
	Listed in Dun Reports for 1860	Listed in Dun Reports after the Civil War
Alabama	170	57 (33.5%)
Mississippi	121	32 (26.4%)
Texas	43	5 (11.6%)
Total	334	94 (28.1%)

Source: R. G. Dun Credit Reports

General Note: Percentages listed in parentheses represent the percent of 1860 firms that were still in existence in 1866.

³¹ Alabama, Vol. 11, p. 11 and 76, R. G. Dun & Co. Credit Report Volumes, Baker Library Historical Collections, Harvard Business School.

³² For a map of the counties in the South that saw conflict during the Civil War see Paskoff, *ö*Measures of War,*ö* 43.



Map E.1 ó Location of firms listed in the Dun reports that survived the war

Source: R.G. Dun Credit Reports

in an attempt to burn everything in the region to the ground, and thus, many firms survived the conflict.³³

Owners of industrial concerns founded before the war then played a role in the war effort and even in post-war reconstruction. The Gulf South in 1860 was endowed with a great deal of human capital. Gulf South industrialists knew how to take advantage of the resources, transportation, and markets available to build successful concerns. Moreover, these manufacturers óhelped lay the foundation of a later, eager acceptance of manufacturing and the

³³ *Ibid.*, 58. While Paskoff does not discuss the impact of the war on industrial concerns specifically, he does make the point that the level of destruction in the South was much lower than believed. There is no reason to think that industrial concerns did not also have a lower level of destruction then.

city as parts of the way of life in the South. In the years before 1860 they were far-sighted.³⁴ Southerners invested in manufacturing as ða growing number of planters, farmers, and merchants in the Cotton South placed their limited capital and more bountiful rhetoric into new businesses and increased manufacturing.³⁵ While a great deal of the Gulf South's industrial development was based on the creation of firms that processed primary materials, it was a beginning that could be used for further development.³⁶ Thus, in 1860, the industrial development of the South was great enough that perhaps we can point to the decade leading up to the war as the beginning of the ðNewö South.³⁷ Even if they lost their firms during the war, the entrepreneurial knowledge of manufacturing concern owners survived and could be drawn upon during Reconstruction.

The South was not as industrially developed as the North in 1860, and even with adding in all of the missed firms re-discovered in the course of this study, the region suffers greatly in comparison. Hinton Helper went to great lengths in his antebellum work to show that while the South and the North were on equal footing at the time of the American Revolution, by the time he wrote his work, the South had fallen far behind in manufacturing.³⁸ Bateman and Weiss, who found such a ðdeplorable scarcityö in southern industry, also agreed that the region did not compare with the North.³⁹ I will not attempt to dispute that idea here, as this is not a work of

³⁴ Jordan, *Antebellum Alabama*, 160.

³⁵ Schoen, *The Fragile Fabric of Union*, 207.

³⁶ DeCredico, *Patriotism for Profit*, 12.

³⁷ Other historians have pushed the start back already. See Lewis, *Coal, Iron, and Slaves*; Collins, ðSystem in the South,ö 517-544; Collins, ðSystem, Organization, and Agricultural Reform in the Antebellum South,ö 1-27.

³⁸ Helper, *Impending Crisis*, 22-34.

³⁹ Bateman and Weiss, *A Deplorable Scarcity*, 163.

counterfactual history. Southern industry lagged far behind northern in 1860. The concerns missed by the census marshals, when added to the census totals, did not put the South on par with the North. Perhaps though, comparisons between the two parts of the country should never have been made. As Engerman explains, "In comparing the South with the Northeast we often overlook the point that, however justified the comparison, it was the Northeast and not the South that was to be considered unusual in the mid-nineteenth-century world."⁴⁰ The regions were more alike, though, than one would expect. The North and South were similarly affected by modern developmental ideas because "in spite of their differences, every region was experiencing modernization. Modernization was a more pervasive, influential process in the North than it was in the South, but the difference were relative, not absolute."⁴¹ The North was ahead, but the South was developing and, as the war showed, southern manufacturing helped to support the four year war effort before it broke down.⁴²

Industry in the antebellum South has been misunderstood for a long time. The census marshals, when compiling census information, missed almost 20% of the firms in Alabama, Mississippi, and Texas. This under-reporting produced a distorted view of the region. The Gulf South was not as agrarian as its residents believed and historians have argued. The people and industries of these states then were also not as dependent on imported goods as Southerners feared and Northerners hoped. Manufacturing was more geographically diffuse and locally intensive than the census showed and more of the Gulf South was involved in industry than

⁴⁰ Engerman, "Southern Economic Growth," 354.

⁴¹ Brown, *Modernization*, 152.

⁴² Stanley Engerman explained "the growth in Southern manufacturing was quite rapid, although somewhat slower than in the North during this period of its most rapid growth." See Engerman, "Southern Economic Growth," 357.

anyone realized. Moreover, slavery did not hold back the region and even was able to help with industrial development as both labor and capital.⁴³

Bateman and Weiss, in their work on southern industry, explain: "Having considered these alternatives, specifically that of industrialization, we have found that the South could have done better than it did. Had there been more manufacturing investment, southern economic performance would have improved."⁴⁴ Bateman and Weiss were right that more investment would have helped economic performance. But, there was more investment in the antebellum Gulf South than they knew about. There was investment missed by the census marshals, and thus Bateman and Weiss missed it because they based their work on the census alone.

Conclusions based solely on the census records then, such as Bateman and Weiss's, require revision based on what was not recorded. The Gulf South was an agrarian golconda. There were huge fields of cotton that stretched across the region, worked by slaves, which made their owners large amounts of money. But, built upon the same landscape were industrial firms. Most people have constructed their views of an antebellum South with little manufacturing based on the concerns reported by the census. When the missed firms are accounted for, though, we can see belts of industry across the region. These belts corresponded to the railroad network and took advantage of the supplies of raw materials, capital, and labor that the Gulf South possessed. Even with the missed firms added in, the South was not a manufacturing juggernaut that could have won the war that erupted the next year. The Gulf South, though, was a region more industrialized and modern than suggested by the census. More to the point, the thinly

⁴³ As stated earlier, most historians understand that slavery did not hold back southern development. As David Eltis explained, "Nevertheless, arguments that slavery stymied the development of the Americas, both before and after its abolition, tend to rely more on hopeful constructions of social development than on hard empirical evidence of how slave societies functioned." See Eltis, *Slavery and Development of the Americas*, 26. Please see Chapter 4 for a further discussion of slavery and industry in the Gulf South.

⁴⁴ Bateman and Weiss, *A Deplorable Scarcity*, 158.

industrialized South of Frederick Law Olmsted, and even that of Bateman and Weiss, almost certainly could not have sustained a four-year, increasingly grinding struggle for independence. The deplorable scarcity has largely rested on what really was a deplorable misunderstanding, one that this work attempts to correct.

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APPENDIX A 6 SOURCES

As I noted in chapter 3, this work rests on an extensive database of antebellum Gulf South industry. Evidence from a wide range of primary sources went into its construction, and the result is a complete, or as nearly complete as possible, list of all of the manufacturing concerns active in Alabama, Mississippi, and Texas in 1860. No one primary source listed all of the industrial firms in the region. Even the census, which scholars have supposed to be the most complete, missed a large number of concerns. As chapter 3 explained, the census left unrecorded almost 20% of the manufactories in Alabama, Mississippi, and Texas. Thus, the census can only be the starting point for any study of the manufacturing base of the antebellum Gulf South. Other sources, notably gazetteers, city and county directories, newspapers, periodicals, the R. G. Dun credit reports, and local histories, provide evidence to augment the listing of manufacturing firms in the census.

The federal census of 1860

The first and most important listing of manufacturing firms in the Gulf South in 1860 was presented in that year's decennial census of the United States. The census record was, by far, the most comprehensive enumeration. Census marshals were hired all over the country and gathered information about the United States, including data about population, agriculture, and most importantly for this work, manufacturing. The census contained not just the names and owners of industrial firms, it also reported capital, output, raw materials used, number of male and female employees, and wages. No other source available for 1860 had this level of information. Figure A.1 shows part of the census law passed by Congress and sent out as the instructions to

the marshals about how to gather the information that would make up the census. As shown in the second paragraph of Figure A.1, the marshals took an oath to do the best that they could to

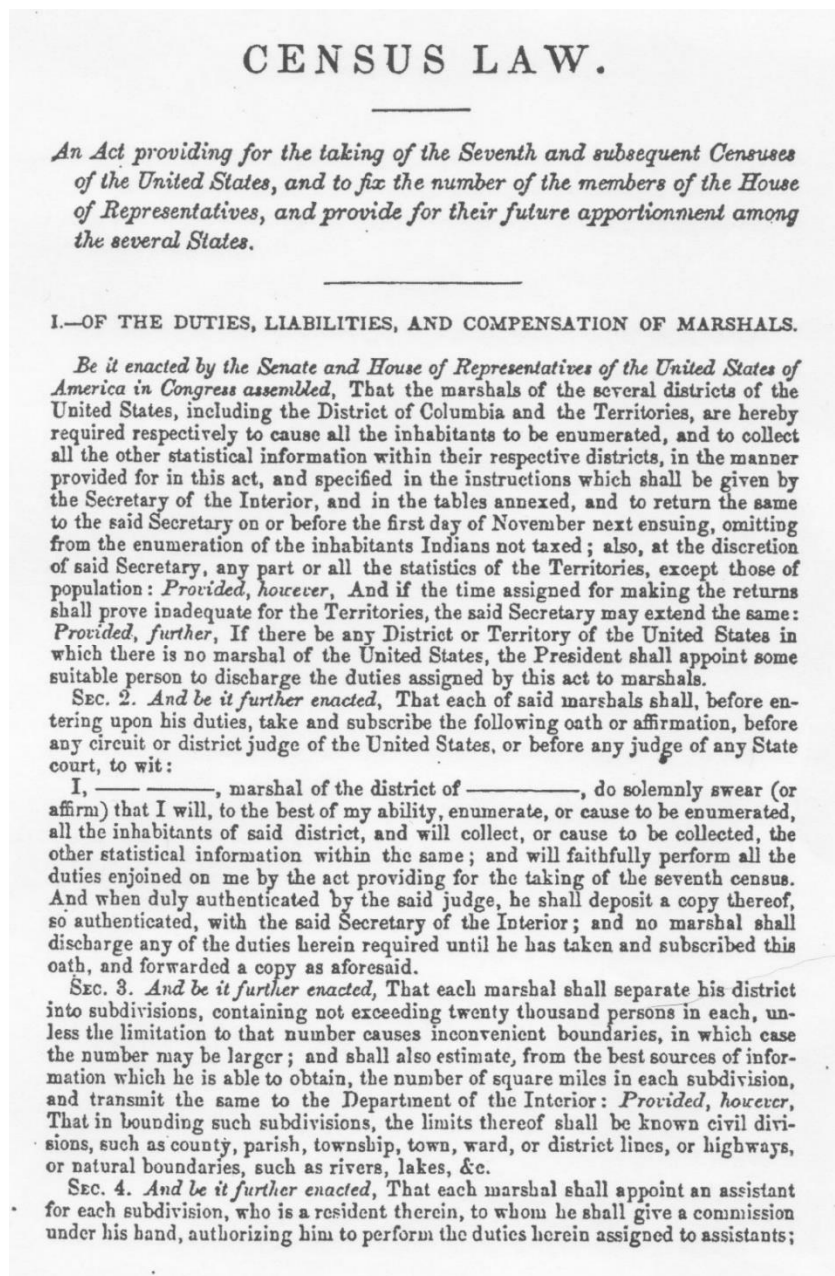


Figure A.1 ó Duties of a census marshal in 1860

Source: *Eighth Census, United States – 1860: Instructions to U.S. Marshals.*

enumerate every last item in the census schedules. Figure A.2 provides specific instructions for filling out the manufacturing census schedules. The manufacturing schedule instructions also discussed how to overcome any resistance of owners to providing data. It seems that, before any work began, Congress had anticipated that the marshals would have difficulty in gathering all of the information requested.

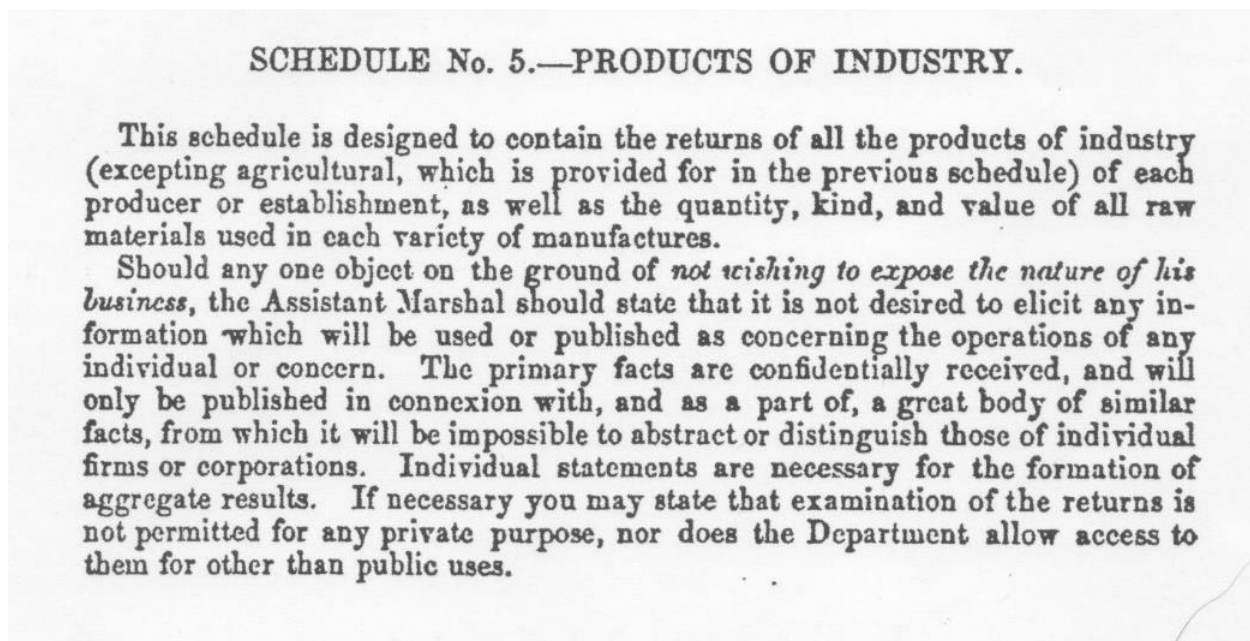


Figure A.2 6 Instructions on filling out the industrial schedules

Source: Eighth Census, United States – 1860: Instructions to U.S. Marshals.

Figure A.3 illustrates what a manufacturing schedule looked like. The schedule had places for capital, materials, labor, and output. But, as this example shows, just because information was entered onto the schedule, it does not mean that the data was readable or correct.

Page No. 1
 SCHEDULE 5.—Products of Industry in the County of Jones State
 of Mississippi during the Year ending June 1, 1860, as enumerated by me, E. H. Devere Ass't Marshal
 Post Office Vicksburg

1	2	3	4			7	8		9		10		
			Quantities	Kinds	Value		M.	F.	10	11	12	13	14
James Thompson	Saw Mill	500	500	logs	500	water	2	24	12	80,000	logs	500	
	grist mill	1,000	1,000	corn	1,000	power	1	12	12	8,000	corn	600	
James M. Packer	Saw Mill	500	500	logs	2,000	"	2	24	12	60,000	logs	600	
	grist mill	1,000	1,000	corn	2,000	"	1	12	12	2,500	corn	250	
J. Jones	Saw Mill	500	500	logs	4,000	"	2	12	12	70,000	logs	700	
	grist mill	1,000	1,000	corn	200	"	1	12	12	4,000	corn	500	
John Sykes	Saw Mill	500	500	logs	2,000	"	1	12	12	8,000	logs	300	
	grist mill	1,000	1,000	corn	100	"	1	12	12	2,000	corn	200	
O. L. Landon	Saw Mill	500	500	logs	500	"	1	12	12	60,000	logs	600	
	grist mill	1,000	1,000	corn	5.00	"	1	12	12	4,000	corn	450	
Parham & Leavelle	Saw Mill	500	500	logs	5,000	steam	7	48	12	800,000	logs	8,000	
	grist mill	1,000	1,000	corn	2,000	power	1	12	12	2,000	corn	250	
												14,200	

Figure A.3 ó Example of a manufacturing census schedule from the 1860 census

Source: Manufacturing Census Schedules, 1860 Census, Jones County, Mississippi.

The completed schedules were forwarded to clerks who compiled state and national level statistics. The census supposedly had strict standards for the workers that they hired. As a Galveston, Texas, newspaper explained:

The census board has become censorious, in the matter of applicants for clerkships. A dispatch from Washington says that ten out of the twelve first examined were rejected for inability to pass the rigid examination to which they are subjected in mathematics, &c., and among the rejected ones was a professor in a literary institution!¹

But, the many errors in the census, at all levels of data entry, seems to belie the idea that census employees were held to rigorous standards. That the census incorporated errors, both of recording and omission, has been a circumstance that scholars have long recognized. A large

¹ *The Civilian & Gazette*, 18 September 1860.

part of these errors arose because of the difficulty of counting every person, farm, or industrial concern in the nation. J. D. B. De Bow, as superintendent of the 1850 census, saw some of these problems as “hundreds of important towns and cities” are not even distinguished on the returns from the body of the counties in which they are situated.”²

As we have seen, the errors of omission in the 1860 census resulted in a decidedly distorted view of southern industry on the eve of the Civil War. Ronald Lewis perhaps explained these errors best, referring specifically to the 1860 census, “Census data do not provide much assistance” since they were collected haphazardly.”³ That is, we cannot know the quality and drive of the men sent out to gather census information. Thus, the census marshals left out or misreported any number of items addressed by the census schedules. In some counties there were more workers listed in the manufacturing census than people who, according to the population schedules, actually held these jobs, making one wonder where the mistakes were made and how they could have happened.⁴ Moreover, some historians believe that wages and other labor costs were not correctly listed in the census because of “the high reported profits for small firms.”⁵ Also, a great deal of industrial production occurred on plantations in 1860. This industrial activity, such as sugar processing, milling, both saw and grist, iron work, and many other lines of business, should have been reported in the manufacturing census. But, the marshals listed this production, when they recorded it at all, in the agricultural schedules. This

² De Bow, *Industrial Resources*, 192.

³ Lewis, *Coal, Iron, and Slaves*, 180.

⁴ Gagnon, *Transition to an Industrial South*, 53. Vera Dugas saw the same thing in Texas, there were more people listed with industrial profession than there were industrial firms to contain them all. Dugas assumed that this meant there was a large amount of production going on outside of factories, but the evidence in this work seems to run in the face of Dugas’s idea. See Dugas, “Texas Industry,” 152-153.

⁵ Vedder and Galloway, “Profitability of Antebellum Manufacturing,” 95.

practice made the South's industrial output in the census seem smaller than it was.⁶ There were other problems associated with the census. Census takers in both the North and the South were very lax when counting and labeling places as towns and villages. These small places were important as trading centers and markets for industrial production and historians who accept the labels at face value do so at their own peril.⁷ For example, Gallatin, Mississippi, was a small town in the central part of the state. It was bypassed by the railroad and quickly began to lose population. Even so, there were still many people living there in 1860. The town and its people, though, were not listed in the census returns.⁸ The omission of Gallatin from the 1860 census was, of course, not a unique occurrence, and many other communities shared Gallatin's misfortune. Marshals did not record this area because the railroads had bypassed it and, thus, it was harder to reach and easier to leave out. Unfortunately, even with all of these census-related problems, most historians who look at industry in 1860 continue to assume that the records are substantially correct and, accordingly, base their work on this information.⁹

Newspapers and Journals

Periodicals from 1860 were another source of information about what industrial firms existed in the Gulf South. While the census had the stated goal of finding and listing all of the

⁶ Fogel, *Without Consent or Contract*, 103; Bateman and Weiss, *A Deplorable Scarcity*, 95-96. Bateman and Weiss estimated that plantation production could have added as much as \$216.1 million in industrial production to the antebellum South's ledgers. Moreover, James Huston argued that some lines of business that were counted as industrial by the census should not have been because they had little to do with the development of the factory system such as wheelwrights, millers, and coopers. See Huston, "Rights in Slavery," 254.

⁷ Rutman, "The Village South," in *Small Worlds*, 237.

⁸ Towers, *Old South's Modern Worlds*, 153.

⁹ Bateman and Weiss were, of course, two historians who did work on antebellum southern industry and assumed that the census was complete. See Bateman and Weiss, *A Deplorable Scarcity*, 166.

manufacturing concerns in the nation, newspapers and journals only published information about manufacturers that made the news or paid for an advertisement. Across the Gulf South, in almost every city and town, there was at least one local newspaper. While some of these papers have been lost over time, many from 1860 have survived. Journals, while fewer in number, circulated over wider geographical areas than did local papers. We may reasonably infer that firms that advertised in these journals sought customers in distant markets and that, correspondingly, such firms tended to be fairly large concerns.

Newspapers and journals carried many articles and editorials about industry. Moreover, the advertising sections of these publications, which ran for numerous pages in most issues, provided information about industrial firms. As stated in chapter 3, firms that advertised in newspapers and journals were most likely substantial ones because of the expense of running an advertisement. Thus, the census should have listed them. These sources, then, supplied information missing from the census of manufacturing in the Gulf South.

The front page of most newspapers in Alabama, Mississippi, and Texas had a column or two devoted to new advertisements. After running for a few weeks, these listings were then moved to the two to three pages of advertising that made up the end of the paper. As most papers consisted of only six to eight pages, these advertisements constituted a substantial amount of space in each issue. For most newspapers, the main advertisement section, at the end of the issue, did not change much from day to day or week to week. This made identifying new listings easier. Unfortunately, beyond the name of a firm, its location, a listing of what they sold, and perhaps a picture, these advertisements did not provide a great deal of information about individual firms or their proprietors. Owners did not tend to list capital investment, raw materials used, or labor information, when trying to find a market for their wares. Very few

newspapers have complete runs available of every issue published in 1860, but most had enough issues to allow many missing firms to come to light. The bibliography of this dissertation contains the complete listing of the newspapers and journals used in this work. A majority of the firms not listed in the census were rediscovered in newspaper and journal advertisements.

The R. G. Dun Credit Reports

As one of the earliest credit reporting firms in the nation, the ledgers of the R. G. Dun Company provide valuable insight on southern industrial concerns. Born in Chillicothe, Ohio, R. G. Dun began working at age sixteen in a general merchandise store in his hometown.¹⁰ Because most stores in this period extended credit to their customers, from the beginning of his work life, Dun learned how credit and credit markets worked. In 1841, Lewis Tappen founded the Mercantile Agency to write credit reports about firms in New York City.¹¹ Tappen hired a man named Benjamin Douglass, who was Dun's brother-in-law.¹² Douglass got Dun a job in the Agency. Dun worked with Tappen and Douglass to expand the scope of the firm and take their credit reports national. In 1859, Dun bought the Mercantile Agency from Tappen and turned it into the premier credit reporting agency of its day.¹³ By 1860, Dun's firm dominated the southern credit-rating business and enjoyed a reputation in the South for accuracy and competence above that of any other credit-rating firm.¹⁴ Tappen, and later Dun, used local

¹⁰ Norris, *R. G. Dun & Company*, 61-63.

¹¹ *Ibid.*, xvi.

¹² *Ibid.*, 63.

¹³ *Ibid.*, 66.

¹⁴ *Ibid.*, 34.

attorneys as their unpaid credit reporters. The two men believed that locals knew their area the best and would be able to find out information outsiders could not. As Tappen explained in a business circular he wrote in 1842, "the local agent [] having his eye upon every trader of importance in his county, and noting it down, as it occurs, every circumstance affecting his credit, favorably or unfavorably, becomes better acquainted with his actual condition than any stranger can be."¹⁵ Moreover, these local attorneys could make money on this arrangement as collectors for overdue bills on credit extended in their areas.¹⁶

When a business owner wanted to know about the credit-worthiness of a firm he would request a credit report from Dun. Then, a local reporter would obtain information about the concern and send it back to the home office where it was entered into ledgers organized by state and county. As new information came in on firms already listed in the reports it was tacked onto the end of the existing entry. In this way, the Dun reports conveyed the perceptions of the standing of a firm in its community, how well-ordered the concern's business affairs were conducted, if it paid its bills on time, as well as other items that the reporters saw fit to include. The Dun reports, then, were a very valuable source for this work. While the reports did not contain much in the way of statistical data, such as capital or output values, the comments on firms' credit worthiness supply a great deal of insight into what local communities thought about the industrial concerns in their midst. Dun reporters were employed all over the Gulf South and reported to a mostly northern audience about concerns. The Dun reports also contained many firms that were missed by the census marshals, adding to the list of Gulf South concerns used in

¹⁵ Lewis Tappen, *Business Circular*, 1842, quoted in Norris, *R. G. Dun & Company*, 22.

¹⁶ *Ibid.*, 10.

this work. Moreover, if an outsider wanted credit information on a firm it leads one to believe that that concern was important and should have been listed in the census.

Local Histories and City and County Directories

Many people wrote histories about their local areas after the war as a form of boosterism for their cities. Other historians wrote about individual cities well after the fact. While these works were not specifically focused on industry in 1860, most begin their histories before the war and mention large firms owned by important people. While most of these firms were listed in the census, these works provide another local look at how people in the Gulf South viewed industrial development, while also contributing a few missed firms to add to the database of the region's manufacturing concerns. This was especially important for places like Vicksburg and Mobile because these areas did not have very many firms listed in the census for cities of their size and importance. Vicksburg had some of the most interesting histories written about it as the city tried to regain its pre-war glory.¹⁷

City and county directories for 1860 were a valuable source of missing firms. Most directories began with a short history of the local area, similar to the boosterism found in local histories. These introductions explained all of the advantages to businesses that these cities provided to prospective entrepreneurs. Then, these directories went on to list all of the people living in the area and all of the businesses the cities or counties contained. By comparing these lists to the census many missed firms were uncovered. Moreover, the back of these directories were filled with advertisements that could be used to shed further light on southern

¹⁷ See, for one example, H. P. Chapman and J. F. Battle. *Picturesque Vicksburg: A Description of the Resources and Prospects of that City and the Famous Yazoo Delta, Its Agriculture and Commercial Interests, To Which is Attached a Series of Sketches of Representative Industries: Profoundly Illustrated* (Vicksburg: Vicksburg Printing and Publishing Co., 1895).

manufacturing and to locate missed industrial concerns. Many directories were consulted for this work including: Marengo County, Alabama; Jackson, Mississippi; Montgomery, Alabama; Mobile, Alabama; Vicksburg, Mississippi; and general directories for the state of Texas and of all southern businesses. In the end, these two kinds of sources did not contain a large number of firms missed by the census marshals, but they did provide a valuable look at antebellum Gulf South industry.

APPENDIX B ó METHODS

James De Bow explained the importance of statistics to his work:

Statistics are far from being the barren array of figures ingeniously and laboriously combined into columns and tables, which many persons are apt to suppose them. They constitute rather the ledger of a nation, in which, like the merchant in his books, the citizen can read, at one view, all of the results of a year or of a period of years, as compared with other periods, and deduce the profit of the loss which has been made, in morals, education, wealth or power.¹

As we have seen statistics can be useful and should be a major part of any study of the industrial base of the antebellum Gulf South. So much has long been apparent. Anecdotal evidence cannot convey the extent and depth of manufacturing in the region. Moreover, while De Bow touted reliance on columns and tables of figures, today's technology allows us to use graphical representations, such as maps, to illustrate relationships at which De Bow's methods could only hint. Of course, because the time period studied here is 150 years in the past, not all of the information needed still exists or is listed in one place. Thus, some reconstruction was required to create the maps, charts, and tables presented here.

This dissertation is based on a database of Gulf South industrial firms in operation in 1860. I constructed that database in the following manner. The first step was to record all of the industrial firms listed in the manufacturing census schedules, along with all of the information about them listed in the census, in a JMP database [a statistical program of the SAS corporation], as shown in Figure B.1. Initially, the JMP database had entries abstracted from the manufacturing census schedules of the 1860 census for state, county, firm name, owner, line of business, capital, raw material value, product values, male and female employees, and wages. This census information was the foundation upon which the rest of the database was built. Next,

¹ De Bow, *Industrial Resources*, 9.

	State	GISJOIN	County	Local	Proprietor(s)	Bus Name	BusType	Ownership	Origin	Census	Newspaper	Directory	Other	Dun	Capital	MatVal	ProdVal	MEmp	FEmp	MWages	FWages	Power
1	AL	G0100010	Autauga	Autaugaville		Autaugaville Mill	Textiles	Corporation	Book	N	N	N	Y	N								
2	AL	G0100010	Autauga	Autaugaville	John F Bond		Saddle & Harness	Individual	Ad	N	Y	N	N	Y								
3	AL	G0100010	Autauga	Autaugaville	M. Scott		Textiles	Individual	Ad	N	Y	N	N	N								
4	AL	G0100010	Autauga	Huntington	A.C. Baker		Lumber	Individual	Schedule	Y	N	N	N	N	1000	175	8481	4	0	50		Water
5	AL	G0100010	Autauga	Huntington	J. C. Zeigler		Lumber	Individual	Schedule	Y	N	N	N	N	3000	600	8184	5	0	75		Water
6	AL	G0100010	Autauga	Huntington	Williams Spears		Lumber	Individual	Schedule	Y	N	N	N	N	4300	1000	2500	5	0	100		Water
7	AL	G0100010	Autauga	Huntington	Isaac Arnett/Idle de Menthis		Turpentine	Partnership	Schedule	Y	N	N	N	N	800	887	1200	2	0	62		Fire and
8	AL	G0100010	Autauga	Huntington	W. W. Hadnot		Leather	Individual	Schedule	Y	N	N	N	N	2000	700	1200	2	0	30		Water ar
9	AL	G0100010	Autauga	Huntington	James Chandler		Leather	Individual	Schedule	Y	N	N	N	N	200	350	670	1	0			Water ar
10	AL	G0100010	Autauga	Huntington	James B. Nixon		Lumber	Individual	Schedule	Y	N	N	N	N	1000	1000	2000	2	0	25		Water
11	AL	G0100010	Autauga	Huntington	C. C. Thompson		Lumber	Individual	Schedule	Y	N	N	N	N	1000	1100	3600	5	0	100		Water
12	AL	G0100010	Autauga	Huntington	A. J. Due		Tin, Copper & Sheet Iron	Individual	Schedule	Y	N	N	N	N	2500	3700	10500	6	0	150		Hand
13	AL	G0100010	Autauga	Huntington	Thomas Stampes		Boots & Shoes	Individual	Schedule	Y	N	N	N	N	300	300	2961	1	0	36		
14	AL	G0100010	Autauga	Huntington	Joseph Gray		Lumber	Individual	Schedule	Y	N	N	N	N	1000	300	1000	3	0	36		Water
15	AL	G0100010	Autauga	Huntington	E. L. Buyck		Lumber	Individual	Schedule	Y	N	N	N	N	3000	310	1500	3	0	50		Water
16	AL	G0100010	Autauga	Huntington	E. L. Buyck		Foundry	Individual	Schedule	Y	N	N	N	N	100	280	800	2	0	30		Hand
17	AL	G0100010	Autauga	Prattville	W.H. Cains		Lumber	Individual	Schedule	Y	N	N	N	N	2000	500	1500	2	0	40		Water
18	AL	G0100010	Autauga	Prattville	T. M. Adams		Leather	Individual	Schedule	Y	N	N	N	N	500	800	1800	2	0	40		Water ar
19	AL	G0100010	Autauga	Prattville	T. M. Adams		Boots & Shoes	Individual	Schedule	Y	N	N	N	N	50	1025	2175	2	0	56		
20	AL	G0100010	Autauga	Prattville	C. C. Dickerson		Boots & Shoes	Individual	Schedule	Y	N	N	N	N	100	900	1820	2	0	52		Water ar
21	AL	G0100010	Autauga	Prattville	E. L. Robinson		Saw and Grist Mill	Individual	Schedule	Y	N	N	N	Y	10000	11800	21000	7	0	140		Water
22	AL	G0100010	Autauga	Prattville	T. W. Hutchinson		Lumber	Individual	Schedule	Y	N	N	N	Y	7000	3880	10000	18	2	339	16	Fire and
23	AL	G0100010	Autauga	Prattville	Camby and Smith		Foundry	Partnership	Schedule	Y	N	N	N	N	3000	2400	3000	2	0	50		Hand ar
24	AL	G0100010	Autauga	Prattville	D.A. Luter		Foundry	Individual	Schedule	Y	N	N	N	N	500	740	2000	2	0	75		Hand
25	AL	G0100010	Autauga	Prattville		? Manufacturing Company	Textiles	Corporation	Schedule	Y	Y	N	N	N	110000	70638	143611	62	79	1238	843	Water
26	AL	G0100010	Autauga	Prattville	Daniel Pratt		Cotton & Wool	Individual	Schedule	Y	Y	N	N	Y	200000	61683	288700	66	0	2500		Water
27	AL	G0100010	Autauga	Prattville	Daniel Pratt		Foundry	Individual	Schedule	Y	Y	N	N	Y	10000	8200	22000	8	0	500		Horse ar
28	AL	G0100010	Autauga	Prattville	J.R. Jones		Printer	Individual	Schedule	Y	N	N	N	N	600	540	3000	3	0	75		Hand
29	AL	G0100010	Autauga	Prattville	J. L. Wainright		Tin, Copper & Sheet Iron	Individual	Schedule	Y	Y	N	N	Y	2500	3755	6150	2	0	62		Hand
30	AL	G0100010	Autauga	Prattville	D. N. Smith		Lumber	Individual	Schedule	Y	N	N	N	N	3000	1000	4000	5	0	200		Water
31	AL	G0100010	Autauga	Prattville	W. C. Howell		Printer	Individual	Schedule	Y	N	N	N	Y	1000	470	3000	3	0	20		Hand
32	AL	G0100010	Autauga	Prattville	J.J. Davis		Lumber	Individual	Schedule	Y	N	N	N	N	2300	900	1560	2	0	40		Water
33	AL	G0100010	Autauga	Prattville	M.D.L. Thomas		Lumber	Individual	Schedule	Y	N	N	N	N	3500	2178	6100	5	0	100		Water ar
34	AL	G0100010	Autauga	Prattville	E.S. Morgan		Blind, Sash, and Door	Individual	Schedule	Y	Y	N	N	N	2500	3500	10000	12	0	450		Water
35	AL	G0100010	Autauga	Prattville	William Linbrick		Foundry	Individual	Schedule	Y	N	N	N	N	200	451	1500	2	0	30		Hand
36	AL	G0100010	Autauga	Prattville	Thomas Coleman		Lumber	Individual	Schedule	Y	N	N	N	N	1200	720	2000	4	0	48		Water
37	AL	G0100010	Autauga	Prattville	Alex McKillian		Lumber	Individual	Schedule	Y	N	N	N	N	1500	1000	2000	4	0	48		Water
38	AL	G0100010	Autauga	Prattville	A.C. Caver		Lumber	Individual	Schedule	Y	N	N	N	N	1000	762	1800	3	0	40		Water
39	AL	G0100010	Autauga	Prattville	JP Cassidy		Boots & Shoes	Individual	Ad	N	Y	N	N	N								
40	AL	G0100010	Autauga	Prattville	EC Clepper	Prattville Carriage & Wagon Factory	Carriage & Wagon	Corporation	Ad	N	Y	N	N	N								
41	AL	G0100010	Autauga	Prattville	Sarah E Goldsmith		Millinery	Individual	Ad	N	Y	N	N	N								
42	AL	G0100010	Autauga	Prattville	ES Morgan		Blind, Sash, and Door	Individual	Ad	N	Y	N	N	N								
43	AL	G0100010	Autauga	Prattville	Miss Hendlay		Millinery	Individual	Ad	N	Y	N	N	N								
44	AL	G0100010	Autauga	Prattville	WC Allen	WC Allen & Co	Boots & Shoes	Corporation	Ad	N	Y	N	N	Y								
45	AL	G0100010	Autauga	?	J. ? Steel		Lumber	Individual	Schedule	Y	N	N	N	N	3000	2600	8000	7	0	135		Fire and
46	AL	G0100010	Autauga	?	J. T. Rivis		Lumber	Individual	Schedule	Y	N	N	N	N	2500	1500	4000	8	0	96		Water
47	AL	G0100010	Autauga	?	J. H. Coker		Lumber	Individual	Schedule	Y	N	N	N	N	2100	933	1800	2	0	32		Water

Figure B.1 ó Screenshot of the JMP database of 1860 Gulf South industry

I added to the database all of the firms listed in newspaper and journal advertisements. At this point, two new fields were needed. The first of these was an origin field to note where a firm was first discovered. So, all of the firms found first in the census were listed as "schedule." If a firm was not recorded in the census but appeared in a newspaper advertisement it was listed as such, and so on with each of the other sources used. The second additional field was actually a set of fields that noted all of the various sources in which a firm was listed. I then added to the database firms listed in the Dun reports. Finally, concerns located in all of the other sources, discussed in detail in Appendix A, were also added. In the end, the database became a listing of at least the name and location of every manufacturing concern that could be located for Alabama, Mississippi, and Texas. I could then use this database to determine how many firms were missed by the census and where they were located. Of course, for most of the firms missed by the census, but found in other sources, data on capital, output, raw materials, or labor, were also missing, which was a hurdle that had to be overcome.

With the JMP database complete, I then constructed a second, county-level database in Microsoft Excel, illustrated in Figure B.2. The first step in building this county-level database was to combine the JMP database with information on population, both free and slave, along with other fields that could later be used to create maps, such as one that showed which counties in the Gulf South had particular types of raw materials, coal and iron, for example. This second database was needed so that the information in the first database could be mapped using Geographic Information Systems (GIS) software. The level of the individual county was the lowest at which these data could be mapped. Once the Excel database listing the total number of firms and all available corresponding statistical data was complete, I geocoded this database so

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	Pr		
1	GIS/OIN	State	County	1866	AllComp	NonComp	Ad	Book	Directory	Dun	Schedule	TotEstab	RawUnd	PerUnd	MEmpTot	FEmpTot	TotEmp	CapCen	CapHigh	CapMed	CapLow	MatCen	MatHigh	MatMed	MatLow	ProdCen	ProdHigh	ProHMis	ProdMed	Pr	
2	G0100010	AL	Autauga	6	6	4	8	1	0	2	46	57	11	19.3	416	217	633	475350	536350	499570	484454	242024	287674	257324	248046	658146	719146	61000	682366		
3	G0100030	AL	Baldwin		5	1	0	0	0	1	34	35	1	2.86	992	123	1115	1691040	1701040	1694995	1692441	440122	446722	442372	440997.5	553849	563849	10000	557804		
4	G0100050	AL	Bibb	2	1	0	10	0	0	0	62	72	10	13.89	319	9	328	148170	182170	161970	153995	114618	144618	124818	118698	283069	317069	34000	296869		
5	G0100070	AL	Bibb		11	4	1	4	0	0	21	26	5	19.23	258	58	316	171460	214460	188480	177564	78440	107590	88340	82302	165397	208397	43000	182417		
6	G0100090	AL	Blount		1	0	0	0	0	0	2	2	0	0	8	0	8	6000	6000	6000	6000	1375	1375	1375	1375	4300	4300	0	4300		
7	G0100130	AL	Butler	1	2	2	10	0	0	0	10	10	10	100	72	14	86	50000	20210	8039.5					38950	13500	5351	50000	50000	20210	
8	G0100150	AL	Calhoun	12	7	4	18	0	0	0	26	44	18	40.91	214	107	321	110105	194105	143625	123121.5	85802	151952	108002	94584	174500	258500	84000	208020		
9	G0100170	AL	Chambers	1	7	0	0	0	0	2	21	23	2	8.7	86	2	88	101590	109590	104890	103002.5	38332	45082	40732	39292	118254	126254	8000	121554		
10	G0100190	AL	Cherokee	1	0	0	0	0	0	1	17	18	1	5.56	81	1	82	44000	49000	46100	44912.5	32271	36271	33771	32871	47087	52087	5000	49187		
11	G0100230	AL	Choctaw	1	2	0	0	0	0	0	9	9	0	0	58	2	60	64975	64975	64975	64975	14600	14600	14600	14600	41440	41440	0	41440		
12	G0100250	AL	Clarke	1	1	1	4	0	0	0	8	8	8	100	22	6	28	35000	14155	5726				28350	9750	3875.5		35000	35000	14155	
13	G0100310	AL	Coffee	1	0	0	0	0	0	2	7	9	2	22.22	25	2	27	15150	21150	17550	16150	8136	13636	9936	8856	19890	25890	6000	22290		
14	G0100350	AL	Coconuch		4	0	0	0	0	0	26	26	0	0	84	1	85	121600	121600	121600	121600	19122	19122	19122	19122	54273	54273	0	54273		
15	G0100370	AL	Coosa		1	0	0	0	0	0	54	54	0	0	345	40	385	159575	159575	159575	159575	108798	108798	108798	108798	296547	296547	0	296547		
16	G0100390	AL	Covington		0	0	0	0	0	0	4	4	0	0	25	2	27	21375	21375	21375	21375	13097	13097	13097	13097	11550	11550	0	11550		
17	G0100450	AL	Dale		3	0	0	0	0	1	6	7	1	14.29	20	1	21	13750	16750	14950	14250	7820	10570	8720	8180	16400	19400	3000	17600		
18	G0100470	AL	Dallas	6	23	10	30	1	0	11	59	101	42	41.58	605	93	698	280211	492211	365361	313521	211239	375239	267339	233434	437315	649315	212000	522465		
19	G0100490	AL	DeKalb		0	0	0	0	0	0	12	12	0	0	28	0	28	19675	19675	19675	19675	37076	37076	37076	37076	51719	51719	0	51719		
20	G0100570	AL	Fayette	1	0	0	0	1	0	0	30	31	1	3.23	85.5	3	88.5	31520	36520	33620	32432.5	45696	49696	47196	46296	80202	85202	5000	82302		
21	G0100590	AL	Franklin	5	2	1	1	0	0	1	46	48	2	4.17	105	13	118	90985	103985	96140	92886	101043	110393	104193	102278.5	169746	182746	13000	174901		
22	G0100630	AL	Greene	7	8	3	14	0	0	3	24	41	17	41.46	238	30	268	82603	166603	116668	96281	112927	178727	135877	122033.5	199915	283915	84000	239647		
23	G0100670	AL	Henry		3	0	0	0	0	2	24	26	2	7.69	71	3	74	103020	111020	106320	104432.5	65071	71821	66031	87000	95000	8000	90300			
24	G0100710	AL	Jackson	1	4	0	1	0	0	1	27	29	2	6.9	149	4	153	93837	99837	96237	94837	34777	40277	36577	35497	92965	98965	6000	95365		
25	G0100730	AL	Jefferson	1	0	0	0	0	0	1	3	4	1	25	34	40	74	4100	9100	6200	5012.5	2200	6200	3700	2800	4800	9800	5000	6900		
26	G0100770	AL	Lauderdale		9	0	10	1	0	0	38	49	11	22.45	423	312	735	482113	519113	497113	488438	310871	343621	320971	315311	565920	602920	37000	580920		
27	G0100790	AL	Lawrence		0	0	0	0	0	0	10	10	0	0	48	2	50	37153	37153	37153	37153	47150	47150	47150	47150	88000	88000	0	88000		
28	G0100830	AL	Limestone		6	0	0	0	0	0	45	45	0	0	113	5	118	54505	54505	54505	54505	84857	84857	84857	84857	161111	161111	0	161111		
29	G0100850	AL	Lowndes		6	2	8	0	0	0	61	69	8	11.59	230.5	12	242.5	257227	297227	273237	263441.5	182735	213685	193235	186886	304665	344665	40000	320675		
30	G0100870	AL	Macon		4	2	6	0	0	0	16	22	6	27.27	167	4	171	67800	101800	81410	79014.5	71200	96650	79900	74631	122700	156700	34000	136310		
31	G0100890	AL	Madison		16	5	6	1	0	0	44	51	7	13.73	366	67	433	458260	514260	480425	466265	361545	400045	374595	366642.5	727329	793329	56000	795514		
32	G0100910	AL	Marengo		1	0	0	0	34	0	24	58	34	58.62	186	32	218	42950	144950	83750	59950	31075	124575	61675	43315	106122	208122	102000	146922		
33	G0100930	AL	Marion		3	0	0	0	0	0	16	16	0	0	39	113	152	22200	22200	22200	22200	25421	25421	25421	25421	46810	46810	0	46810		
34	G0100950	AL	Marshall		1	0	1	0	0	0	14	15	1	6.67	28	2	30	21875	24875	23075	22375	15881	18631	16781	16241	27037	30037	3000	28237		
35	G0100970	AL	Mobile	10	35	17	8	8	28	19	73	136	63	46.32	1040	221	1261	1183335	1515335	1316570	1235102	788303	1042003	875153	822626.5	1587049	1919049	332000	1720284		
36	G0100990	AL	Monroe		0	0	0	0	0	0	36	36	0	0	114	0	114	50050	50050	50050	50050	41239	41239	41239	41239	95500	95500	0	95500		
37	G0101010	AL	Montgomery		25	23	26	3	92	0	13	134	121	90.3	840	368	1208	321932	879932	545797	410167.5	216247	658797	366397	275743.5	281650	839650	558000	505515		
38	G0101030	AL	Morgan		1	1	1	0	0	0	8	9	1	11.11	87	0	87	14450	24450	18405	15851	8492	15092	10742	9367.5	20100	30100	10000	24055		
39	G0101050	AL	Perry		0	0	0	0	0	0	14	14	0	0	50	2	52	69650	69650	69650	69650	30539	30539	30539	30539	88625	88625	0	88625		

Figure B.2 ó Screenshot of Excel database of county level data

that I could match it to a GIS shapefile of counties in the Gulf South in 1860.² The Excel database was then saved in a Comma Separated Values (CSV) format so that it could be joined to the shapefile in ArcGIS, the GIS program used for this work. Once the two files were joined, I could then create maps of the data. But, before any map was possible, the problem of information missing from non-census firms demanded attention.

The only source with extensive information about capital, raw materials, output, labor, and wages was, perversely enough, the 1860 census. In order to have any idea about the factors of production and value of output of non-census firms, I had to estimate what such concerns could have used, consumed, and produced based on the consumption and production figured for similar firms in the census. There were two ways to arrive at these estimates. The first was based on line of business or industry. For example, one could consider all of the grist mills listed in the census and, using JMP, calculate the dollar-values of raw materials, capital investment, and wages, as well as the size of the workforce of the average firm in that industry. I computed just such averages for the largest 25 percent of firms, the smallest 25 percent of firms, and the middle 50 percent of firms in each industry. By creating this range, we can get some idea of the possible magnitude of the factors of production and output for non-census firms. Most likely, because many such firms took the time and expense to advertise or were the subject of the Dun reports on their credit-worthiness, these concerns were almost certainly similar to the larger firms enumerated by the census.

The second way to make these estimates was based on the organizational form of a firm, as discussed in chapter 3. The census schedules did not indicate whether a concern was an

² A shapefile is a term used in GIS to denote the computer file which contains the outlines and positioning for various geographic areas. For this work a shapefile with the outlines of the counties in Alabama, Mississippi, and Texas in 1860 are used. Each county in the file has a number assigned to it which allows data from other sources to be matched to a specific county in the file. This process is called geocoding.

individual proprietorship, a partnership, or a company. But, based on the owners listed, the name of the firm, and its size, it was possible to determine how a given firm was organized. The same method described immediately above was used to estimate the highest, median, and lowest values of capital, raw materials, labor, wages, and output.³ I calculated estimated values by using both methods and the maps and tables are labeled accordingly to show which one was used. Of course, all of this work to create the two databases used here and to estimate values of the various factors of production was done to make possible the creation of appropriate maps.

³ See Appendix C ó Data, for both organizational and line of business break downs of Gulf South industry.

APPENDIX C ó DATA

As explained in Appendix B, missing firms were located in a variety of primary sources. Tables C.1, C.2, and C.3 provide a listing by county for each state based on what kind of primary source, either the census, city/county directories, newspaper and journal advertisements, the R. G. Dun credit reports, or local histories, in which a concerns were first located. The maps of missing firms in chapter 3 are based off of this county-level information.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table C.1 ó Source where firm was first located in for counties in Alabama

County	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Autauga	8	0	1	2	46
Baldwin	0	0	0	1	34
Barbour	10	0	0	0	62
Bibb	1	0	4	0	21
Blount	0	0	0	0	2
Butler	10	0	0	0	0
Calhoun	18	0	0	0	26
Chambers	0	0	0	2	21
Cherokee	0	0	0	1	17
Choctaw	0	0	0	0	9
Clarke	4	0	0	4	0
Coffee	0	0	0	2	7
Conecuh	0	0	0	0	26
Coosa	0	0	0	0	54
Covington	0	0	0	0	4
Dale	0	0	0	1	6
Dallas	30	0	1	11	59
DeKalb	0	0	0	0	12
Fayette	0	0	1	0	30
Franklin	1	0	0	1	46
Greene	14	0	0	3	24
Henry	0	0	0	2	24
Jackson	1	0	0	1	27
Jefferson	0	0	0	1	3
Lauderdale	10	0	1	0	38

County	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Lawrence	0	0	0	0	10
Limestone	0	0	0	0	45
Lowndes	8	0	0	0	61
Macon	6	0	0	0	16
Madison	6	0	1	0	44
Marengo	0	34	0	0	24
Marion	0	0	0	0	16
Marshall	1	0	0	0	14
Mobile	8	28	8	19	73
Monroe	0	0	0	0	36
Montgomery	26	92	3	0	13
Morgan	1	0	0	0	8
Perry	0	0	0	0	14
Pickens	10	0	0	0	64
Pike	0	0	0	0	15
Randolph	0	0	0	0	88
Russell	3	0	0	0	0
Shelby	2	0	0	0	29
St. Clair	0	0	0	0	27
Sumter	11	0	0	0	7
Tallapoosa	0	0	0	0	11
Talladega	11	0	0	0	71
Tuscaloosa	9	0	1	0	77
Walker	0	0	0	0	22
Washington	0	0	0	0	6
Wilcox	1	0	0	0	18

Table C.2 ó Source where firm was first located in for counties in Mississippi

County	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Adams	11	0	0	6	15
Amite	5	0	0	0	25
Attala	0	0	0	0	23
Bolivar	0	0	0	0	1
Calhoun	0	0	0	0	23
Carroll	2	0	0	7	21
Chickasaw	0	0	0	3	29
Choctaw	0	0	0	0	36
Claiborne	2	0	0	10	20
Clarke	0	0	0	3	11
Coahoma	0	0	0	2	0
Copiah	1	0	0	2	14
Covington	0	0	0	0	13
DeSoto	0	0	0	2	0
Franklin	0	0	0	0	5
Harrison	0	0	0	0	12
Hinds	1	19	8	8	10
Holmes	3	0	0	2	10
Issaquena	0	0	0	0	1
Itawamba	0	0	0	0	42
Jasper	3	0	0	0	0
Jefferson	0	0	0	0	3
Jones	0	0	0	0	6
Lafayette	2	0	0	0	17
Lauderdale	0	0	0	0	18

County	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Lawrence	0	0	0	0	15
Leake	0	0	0	0	6
Lowndes	1	0	0	1	55
Madison	2	0	0	0	34
Marion	0	0	0	0	2
Marshall	0	0	0	0	52
Monroe	2	0	1	0	11
Neshoba	0	0	0	0	22
Noxubee	3	0	0	0	19
Oktibbeha	0	0	0	1	41
Panola	0	0	0	0	10
Perry	0	0	0	0	2
Pike	0	0	0	0	12
Pontotoc	0	0	0	0	22
Rankin	8	0	0	0	23
Scott	0	0	0	0	5
Smith	0	0	0	0	11
Tallahatchie	0	0	0	0	6
Tippah	0	0	0	0	43
Tishomingo	0	0	0	0	85
Warren	2	43	0	8	24
Wilkinson	0	0	0	0	11
Yalobusha	0	0	0	0	15
Yazoo	7	0	1	0	1

Table C.3 ó Source where firm was first located in for counties in Texas

County	Advertisement	R.G. Dun Report	Schedule
Anderson	1	5	10
Angelina	0	0	31
Austin	0	3	6
Bandera	0	0	1
Bastrop	0	2	14
Bell	0	1	11
Bexar	0	10	28
Bosque	0	1	0
Bowie	0	0	9
Brazoria	4	1	0
Burleson	0	0	1
Caldwell	0	0	25
Calhoun	4	0	15
Cameron	0	0	4
Cass	0	0	9
Cherokee	1	0	0
Collin	0	0	17
Colorado	0	0	4
Comal	1	0	16
Cooke	0	0	6
Dallas	12	0	15
Denton	0	0	10
El Paso	0	0	3
Ellis	0	0	9
Falls	0	0	2

County	Advertisement	R.G. Dun Report	Schedule
Fannin	2	0	5
Fayette	0	0	9
Fort Bend	1	0	0
Freestone	0	0	13
Galveston	13	11	9
Gillespie	0	0	38
Goliad	0	0	1
Gonzales	0	0	3
Grayson	0	0	38
Grimes	0	0	10
Guadalupe	0	0	11
Harris	29	0	22
Harrison	0	0	33
Henderson	0	0	5
Hills	0	0	7
Hopkins	0	0	15
Houston	0	0	22
Hunt	0	0	20
Jasper	0	0	4
Jefferson	0	0	4
Johnson	0	0	1
Kaufman	0	0	13
Kerr	0	0	5
Lamar	2	0	15
Lampasas	0	0	1
Lavaca	0	0	11

County	Advertisement	R.G. Dun Report	Schedule
Leon	0	0	3
Liberty	0	0	6
Limestone	0	0	10
Madison	0	0	2
Marion	3	0	7
McLennan	0	0	9
Medina	0	0	3
Milam	0	0	2
Montgomery	1	0	12
Nacogdoches	0	0	27
Navarro	9	0	8
Newton	0	0	2
Nueces	10	0	0
Orange	0	0	5
Palo Pinto	0	0	1
Panola	0	0	11
Parker	0	0	4
Red River	10	0	13
Rusk	0	0	86
Sabine	0	0	6
San Augustine	0	0	15
Shelby	0	0	6
Smith	0	0	58
Titus	1	0	25
Travis	31	0	15
Trinity	0	0	4

County	Advertisement	R.G. Dun Report	Schedule
Upshur	1	0	21
Uvalde	0	0	1
Van Zandt	0	0	7
Victoria	0	0	9
Walker	0	0	16
Washington	0	0	17
Williamson	0	0	7
Wise	0	0	5
Wood	0	0	7

The importance of ownership type to industrial development in the Gulf South was discussed in chapter 3 through various tables and maps at the state level to show where firms of various ownership forms were located in the region. Tables C.4, C.5, and C.6 show the breakdown by county of ownership form for each state reviewed in this work.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table C.4 ó Ownership type of firms by county for Alabama

County	Company	Individual	Partnership
Autauga	6	49	2
Baldwin	5	22	8
Barbour	1	56	15
Bibb	11	9	6
Blount	1	1	0
Butler	2	5	3
Calhoun	7	31	6
Chambers	7	11	5
Cherokee	0	17	1
Choctaw	2	4	3
Clarke	1	5	2
Coffee	0	9	0
Conecuh	4	18	4
Coosa	1	43	10
Covington	0	4	0
Dale	3	4	0
Dallas	23	65	13
DeKalb	0	11	1
Fayette	0	29	2
Franklin	2	44	2
Greene	8	23	10
Henry	3	16	7
Jackson	4	17	8
Jefferson	0	2	2
Lauderdale	9	32	8
Lawrence	0	10	0
Limestone	6	33	6

County	Company	Individual	Partnership
Lowndes	6	56	7
Macon	4	15	3
Madison	16	29	6
Marengo	1	52	5
Marion	3	9	4
Marshall	1	12	2
Mobile	35	85	16
Monroe	0	34	2
Montgomery	25	92	17
Morgan	1	7	1
Perry	0	13	1
Pickens	34	35	5
Pike	2	8	5
Randolph	6	76	6
Russell	1	1	1
Shelby	7	19	5
St. Clair	0	20	7
Sumter	4	12	2
Tallapoosa	3	8	0
Talladega	5	67	10
Tuscaloosa	5	75	7
Walker	0	19	3
Washington	0	3	3
Wilcox	5	10	4

Table C.5 6 Ownership type of firms by county for Mississippi

County	Company	Individual	Partnership
Adams	3	24	5
Amite	0	26	4
Attala	3	18	2
Bolivar	0	1	0
Calhoun	2	18	3
Carroll	2	24	4
Chickasaw	0	29	3
Choctaw	5	22	9
Claiborne	2	28	2
Clarke	1	12	1
Coahoma	0	2	0
Copiah	1	15	1
Covington	1	12	0
DeSoto	0	2	0
Franklin	0	5	0
Harrison	3	6	3
Hinds	6	35	5
Holmes	0	15	0
Issaquena	0	1	0
Itawamba	2	34	6
Jasper	1	2	0
Jefferson	0	2	1
Jones	0	5	1
Lafayette	1	18	0
Lauderdale	0	11	7
Lawrence	0	15	0
Leake	0	5	1

County	Company	Individual	Partnership
Lowndes	5	46	6
Madison	1	34	1
Marion	0	2	0
Marshall	6	39	7
Monroe	1	9	4
Neshoba	3	17	2
Noxubee	0	21	1
Oktibbeha	2	30	10
Panola	0	8	2
Perry	0	2	0
Pike	0	11	1
Pontotoc	2	14	6
Rankin	2	28	1
Scott	3	2	0
Smith	0	9	2
Tallahatchie	0	6	0
Tippah	0	34	9
Tishomingo	4	64	17
Warren	8	66	3
Wilkinson	1	10	0
Yalobusha	1	13	1
Yazoo	2	7	0

Table C.6 ó Ownership type of firms by county for Texas

County	Company	Individual	Partnership
Anderson	2	11	3
Angelina	0	29	2
Austin	1	8	0
Bandera	1	0	0
Bastrop	3	12	1
Bell	0	9	3
Bexar	2	28	8
Bosque	0	1	0
Bowie	1	4	4
Brazoria	2	2	1
Burleson	0	1	0
Caldwell	0	24	1
Calhoun	0	18	1
Cameron	0	4	0
Cass	5	0	4
Cherokee	0	0	1
Collin	0	14	3
Colorado	0	3	1
Comal	0	16	1
Cooke	0	4	2
Dallas	8	14	5
Denton	0	8	2
El Paso	0	3	0
Ellis	5	2	2
Falls	0	2	0
Fannin	0	5	2
Fayette	2	7	0

County	Company	Individual	Partnership
Fort Bend	0	1	0
Freestone	1	9	3
Galveston	9	21	3
Gillespie	0	38	0
Goliad	0	0	1
Gonzales	0	2	1
Grayson	6	22	10
Grimes	3	4	3
Guadalupe	0	9	2
Harris	9	38	4
Harrison	2	27	4
Henderson	1	4	0
Hills	2	2	3
Hopkins	1	12	2
Houston	0	22	0
Hunt	0	17	3
Jasper	0	4	0
Jefferson	0	3	1
Johnson	0	1	0
Kaufman	0	7	6
Kerr	0	4	1
Lamar	1	11	5
Lampasas	0	0	1
Lavaca	0	11	0
Leon	1	2	0
Liberty	0	5	1
Limestone	0	9	1
Madison	0	2	0

County	Company	Individual	Partnership
Marion	0	9	1
McLennan	2	6	1
Medina	0	1	2
Milam	2	0	0
Montgomery	1	11	1
Nacogdoches	2	21	4
Navarro	1	15	1
Newton	0	2	0
Nueces	2	7	1
Orange	2	3	0
Palo Pinto	0	1	0
Panola	2	9	0
Parker	0	4	0
Red River	12	6	5
Rusk	1	65	20
Sabine	6	0	0
San Augustine	3	10	2
Shelby	1	2	3
Smith	1	45	12
Titus	0	18	8
Travis	5	37	4
Trinity	1	2	1
Upshur	1	14	7
Uvalde	0	1	0
Van Zandt	0	7	0
Victoria	1	6	2
Walker	5	5	6
Washington	4	12	1

County	Company	Individual	Partnership
Williamson	2	4	1
Wise	1	2	2
Wood	0	6	1

To get the estimated values of the various factors of production and output in the process described in appendix B the following industrial line of business information sheets were created. Each sheet shows how many of each firm type were listed in the census, how many were found in other primary sources, and estimates of the capital, raw materials used, employees, wage bills, and production for all of the missing firms. There are no sheets included here for any line of business that did not have any missing firms discovered for it.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Agricultural Implements

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
22	\$116,275	\$117,846

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
154	\$15,699	\$115,605

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	1	0	2	4

	Low estimate	Median estimate	High estimate
Capital	\$1,900	\$4,000	\$29,500
Raw materials	\$1,200	\$1,850	\$7,300
Employees	8	12	21
Wages	\$170	\$200	\$474
Output	\$4,658	\$7,400	\$27,180

Estimates for all 26 firms

	Low estimate	Median estimate	High estimate
Capital	\$118,175	\$120,275	\$145,775
Raw materials	\$119,046	\$119,696	\$125,146
Employees	162	166	175
Wages	\$15,869	\$15,899	\$16,173
Output	\$120,263	\$123,005	\$142,785

Baker

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
3	\$9,667	\$20,503

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
7	\$210	\$26,061

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	0

	Low estimate	Median estimate	High estimate
Capital	\$500	\$2,500	\$6,667
Raw materials	\$1,770	\$8,062	\$10,671
Employees	2	2	3
Wages	\$40	\$70	\$80
Output	\$3,412	\$9,087	\$13,562

Estimates for all 4 firms

	Low estimate	Median estimate	High estimate
Capital	\$10,167	\$12,167	\$16,334
Raw materials	\$22,273	\$28,565	\$31,174
Employees	9	9	10
Wages	\$250	\$280	\$290
Output	\$23,473	\$35,148	\$39,623

Blacksmith

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
492	\$560,920	\$270,092

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
1,270	\$43,066	\$920,571

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	6	8	21	0	35

	Low estimate	Median estimate	High estimate
Capital	\$10,500	\$17,500	\$35,000
Raw materials	\$8,470	\$14,000	\$23,625
Employees	70	70	105
Wages	\$1,050	\$1,750	\$2,625
Output	\$29,444	\$48,562	\$77,000

Estimates for all 527 firms

	Low estimate	Median estimate	High estimate
Capital	\$571,420	\$578,420	\$595,920
Raw materials	\$278,562	\$284,092	\$293,717
Employees	1,340	1,340	1,375
Wages	\$44,116	\$44,816	\$45,691
Output	\$950,015	\$969,133	\$997,571

Blind, Sash, and Door

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
18	\$209,700	\$129,035

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
254	\$7,672	\$318,630

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	10	2	0	13

	Low estimate	Median estimate	High estimate
Capital	\$47,450	\$78,000	\$191,750
Raw materials	\$15,243	\$44,200	\$120,900
Employees	91	130	169
Wages	\$1,950	\$3,998	\$6,455
Output	\$91,000	\$156,098	\$266,825

Estimates for all 31 firms

	Low estimate	Median estimate	High estimate
Capital	\$257,150	\$287,700	\$401,450
Raw materials	\$144,278	\$173,235	\$249,935
Employees	345	384	423
Wages	\$9,622	\$11,670	\$14,127
Output	\$409,630	\$474,728	\$585,455

Boots & Shoes

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
214	\$318,351	\$304,860

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
668	\$20,954	\$630,566

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	10	31	45	1	87

	Low estimate	Median estimate	High estimate
Capital	\$26,100	\$43,500	\$130,500
Raw materials	\$39,150	\$59,813	\$130,500
Employees	87	174	261
Wages	\$2,414	\$4,350	\$8,700
Output	\$87,000	\$148,988	\$300,150

Estimates for all 301 firms

	Low estimate	Median estimate	High estimate
Capital	\$344,451	\$361,851	\$448,851
Raw materials	\$344,010	\$364,673	\$435,360
Employees	755	824	929
Wages	\$23,368	\$25,304	\$29,654
Output	\$717,566	\$779,554	\$930,716

Brewery

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
8	\$103,250	\$45,560

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
39	\$1,470	\$135,353

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	3	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$5,550	\$12,000	\$75,000
Raw materials	\$4,578	\$8,520	\$28,035
Employees	9	14	22
Wages	\$90	\$480	\$908
Output	\$15,409	\$34,500	\$97,875

Estimates for all 11 firms

	Low estimate	Median estimate	High estimate
Capital	\$108,800	\$115,250	\$178,250
Raw materials	\$50,138	\$54,080	\$73,595
Employees	48	53	61
Wages	\$1,560	\$1,950	\$2,378
Output	\$150,762	\$169,853	\$233,228

Brickmaker

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
33	\$223,959	\$52,519

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
448	\$13,375	\$187,333

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	6	1	1	9

	Low estimate	Median estimate	High estimate
Capital	\$8,550	\$27,000	\$78,750
Raw materials	\$4,500	\$8,100	\$13,500
Employees	50	108	189
Wages	\$608	\$1,800	\$2,790
Output	\$18,000	\$34,650	\$71,325

Estimates for all 42 firms

	Low estimate	Median estimate	High estimate
Capital	\$232,509	\$250,959	\$302,709
Raw materials	\$57,019	\$60,619	\$66,019
Employees	498	556	637
Wages	\$13,983	\$15,175	\$16,165
Output	\$205,333	\$221,983	\$258,658

Cabinet Maker

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
85	\$116,358	\$53,014

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
190	\$6,659	\$175,425

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	5	10	15	0	30

	Low estimate	Median estimate	High estimate
Capital	\$11,250	\$15,600	\$60,000
Raw materials	\$5,100	\$9,600	\$21,675
Employees	30	60	90
Wages	\$1,200	\$1,500	\$2,700
Output	\$22,575	\$40,500	\$87,600

Estimates for all 115 firms

	Low estimate	Median estimate	High estimate
Capital	\$127,608	\$131,958	\$176,358
Raw materials	\$58,114	\$62,614	\$74,689
Employees	220	250	280
Wages	\$7,859	\$8,159	\$9,359
Output	\$198,000	\$215,925	\$263,025

Carpenter

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
33	\$86,222	\$42,563

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
169	\$4,315	\$144,653

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	4	3	0	9

	Low estimate	Median estimate	High estimate
Capital	\$1,913	\$7,200	\$23,004
Raw materials	\$2,396	\$5,544	\$12,762
Employees	9	18	54
Wages	\$315	\$720	\$1,890
Output	\$7,200	\$18,000	\$51,750

Estimates for all 42 firms

	Low estimate	Median estimate	High estimate
Capital	\$88,135	\$93,422	\$109,226
Raw materials	\$44,959	\$48,107	\$55,325
Employees	178	187	223
Wages	\$4,630	\$5,035	\$6,205
Output	\$151,853	\$162,653	\$196,403

Carriage & Wagon

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
246	\$597,627	\$362,240

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
1100	\$34,287	\$1,211,193

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	19	46	15	1	81

	Low estimate	Median estimate	High estimate
Capital	\$40,500	\$81,000	\$198,126
Raw materials	\$16,686	\$40,500	\$118,665
Employees	162	243	405
Wages	\$2,835	\$4,050	\$10,125
Output	\$81,000	\$162,000	\$398,682

Estimates for all 327 firms

	Low estimate	Median estimate	High estimate
Capital	\$638,127	\$678,627	\$795,753
Raw materials	\$378,926	\$402,740	\$480,905
Employees	1262	1343	1505
Wages	\$37,122	\$38,337	\$44,412
Output	\$1,292,193	\$1,373,193	\$1,609,875

Confectioner

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
9	\$33,187	\$28,606

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
45	\$3,186	\$70,070

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	7	9	5	0	21

	Low estimate	Median estimate	High estimate
Capital	\$26,250	\$52,500	\$80,714
Raw materials	\$42,000	\$65,100	\$72,219
Employees	53	84	168
Wages	\$2,363	\$3,360	\$12,285
Output	\$94,500	\$151,452	\$182,259

Estimates for all 30 firms

	Low estimate	Median estimate	High estimate
Capital	\$59,437	\$85,687	\$113,361
Raw materials	\$70,606	\$93,706	\$100,825
Employees	98	129	213
Wages	\$5,549	\$6,546	\$15,471
Output	\$164,570	\$221,522	\$252,329

Cooper

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
3	\$3,300	\$5,536

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
19	\$340	\$18,557

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	1	0	2

	Low estimate	Median estimate	High estimate
Capital	\$600	\$1,000	\$5,000
Raw materials	\$560	\$3,900	\$6,612
Employees	2	12	24
Wages	\$40	\$80	\$600
Output	\$1,600	\$17,514	\$18,000

Estimates for all 5 firms

	Low estimate	Median estimate	High estimate
Capital	\$3,900	\$4,300	\$8,300
Raw materials	\$6,096	\$9,436	\$12,148
Employees	21	31	43
Wages	\$380	\$420	\$940
Output	\$20,157	\$36,071	\$36,557

Cotton & Wool

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
49	\$1,972,057	\$1,021,989

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
2,289	\$26,236	\$2,074,741

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	4	0	1	6

	Low estimate	Median estimate	High estimate
Capital	\$9,000	\$60,000	\$237,485
Raw materials	\$14,250	\$60,000	\$213,300
Employees	12	48	426
Wages	\$225	\$537	\$2,502
Output	\$17,325	\$53,760	\$414,450

Estimates for all 55 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,981,057	\$2,032,057	\$2,209,542
Raw materials	\$1,036,239	\$1,081,989	\$1,235,289
Employees	2,301	2,337	2,715
Wages	\$26,461	\$23,773	\$28,738
Output	\$2,092,066	\$2,128,501	\$2,489,191

Cotton Gin Manufacturing

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
20	\$236,400	\$118,458

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
136	\$3,980	\$378,800

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	0	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$3,000	\$3,600	\$4,300
Raw materials	\$4,230	\$5,400	\$7,600
Employees	6	8	8
Wages	\$128	\$160	\$175
Output	\$6,700	\$8,000	\$11,500

Estimates for all 22 firms

	Low estimate	Median estimate	High estimate
Capital	\$239,400	\$240,000	\$240,700
Raw materials	\$122,688	\$123,858	\$126,058
Employees	142	144	144
Wages	\$4,108	\$4,140	\$4,155
Output	\$385,500	\$386,800	\$390,300

Distillery

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
23	\$31,609	\$31,229

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
59	\$1,360	\$84,937

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	2	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$1,200	\$2,100	\$6,000
Raw materials	\$1,620	\$2,760	\$5,535
Employees	6	6	9
Wages	\$75	\$120	\$240
Output	\$3,600	\$6,000	\$8,000

Estimates for all 26 firms

	Low estimate	Median estimate	High estimate
Capital	\$32,809	\$33,709	\$37,609
Raw materials	\$32,849	\$33,989	\$36,764
Employees	65	65	68
Wages	\$1,435	\$1,480	\$1,600
Output	\$88,537	\$90,937	\$92,937

Foundry

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
45	\$1,090,464	\$366,414

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
996	\$30,108	\$1,242,247

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	3	10	2	7	22

	Low estimate	Median estimate	High estimate
Capital	\$44,000	\$220,000	\$541,552
Raw materials	\$24,068	\$94,908	\$203,225
Employees	88	220	770
Wages	\$1,320	\$7,040	\$22,352
Output	\$56,100	\$280,500	\$660,000

Estimates for all 67 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,134,464	\$1,310,464	\$1,632,016
Raw materials	\$390,482	\$461,322	\$569,639
Employees	1,084	1,216	1,766
Wages	\$31,428	\$37,148	\$52,460
Output	\$1,298,347	\$1,522,747	\$1,902,247

Furniture

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
13	\$26,025	\$7,835

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
46	\$545	\$36,775

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	4	11	2	0	17

	Low estimate	Median estimate	High estimate
Capital	\$2,550	\$3,400	\$21,250
Raw materials	\$2,423	\$2,720	\$14,280
Employees	17	34	34
Wages	\$510	\$680	\$850
Output	\$10,838	\$17,000	\$49,925

Estimates for all 30 firms

	Low estimate	Median estimate	High estimate
Capital	\$28,575	\$29,425	\$47,275
Raw materials	\$10,258	\$10,555	\$22,115
Employees	63	80	80
Wages	\$1,055	\$1,225	\$1,395
Output	\$47,613	\$53,775	\$86,700

Gas Works

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
2	\$207,350	\$28,000

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
27	\$2,115	\$78,700

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	1	2

	Low estimate	Median estimate	High estimate
Capital	\$164,700	\$207,350	\$250,000
Raw materials	\$12,000	\$28,000	\$44,000
Employees	14	27	40
Wages	\$630	\$2,115	\$3,600
Output	\$41,400	\$78,700	\$116,000

Estimates for all 4 firms

	Low estimate	Median estimate	High estimate
Capital	\$371,350	\$414,700	\$457,350
Raw materials	\$40,000	\$56,000	\$72,000
Employees	41	54	67
Wages	\$2,745	\$4,230	\$5,715
Output	\$120,100	\$157,400	\$194,700

Grist Mill

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
413	\$1,711,490	\$3,618,541

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
974	\$21,935	\$4,471,232

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	13	1	0	14

	Low estimate	Median estimate	High estimate
Capital	\$14,000	\$28,000	\$61,250
Raw materials	\$33,600	\$70,000	\$140,000
Employees	14	28	28
Wages	\$280	\$420	\$700
Output	\$41,930	\$84,000	\$175,000

Estimates for all 427 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,725,490	\$1,739,490	\$1,772,740
Raw materials	\$3,652,141	\$3,688,541	\$3,758,541
Employees	988	1002	1002
Wages	\$22,215	\$22,355	\$22,635
Output	\$4,513,162	\$4,555,232	\$4,646,232

Gunsmith

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
11	\$18,280	\$2,311

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
18	\$625	\$18,227

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	9	11	1	23

	Low estimate	Median estimate	High estimate
Capital	\$4,140	\$17,250	\$57,500
Raw materials	\$1,150	\$2,254	\$4,830
Employees	23	23	46
Wages	\$575	\$920	\$1,150
Output	\$11,500	\$23,391	\$43,700

Estimates for all 34 firms

	Low estimate	Median estimate	High estimate
Capital	\$22,420	\$35,530	\$75,780
Raw materials	\$3,461	\$4,565	\$7,141
Employees	41	41	64
Wages	\$1,200	\$1,545	\$1,775
Output	\$29,727	\$41,618	\$61,927

Hats

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
10	\$60,350	\$11,360

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
38	\$1,668	\$104,375

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	5	0	0	5

	Low estimate	Median estimate	High estimate
Capital	\$1,500	\$2,750	\$38,750
Raw materials	\$1,290	\$3,740	\$9,575
Employees	5	13	38
Wages	\$357	\$688	\$1,305
Output	\$3,625	\$14,125	\$29,375

Estimates for all 15 firms

	Low estimate	Median estimate	High estimate
Capital	\$61,850	\$63,100	\$99,100
Raw materials	\$12,650	\$15,100	\$20,935
Employees	43	51	76
Wages	\$2,025	\$2,356	\$2,973
Output	\$108,000	\$118,500	\$133,750

Jewelry & Watches

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
10	\$34,800	\$20,326

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
28	\$1,200	\$58,900

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	5	32	5	1	43

	Low estimate	Median estimate	High estimate
Capital	\$11,825	\$17,200	\$126,850
Raw materials	\$2,182	\$17,200	\$152,650
Employees	43	65	215
Wages	\$1,290	\$3,010	\$9,138
Output	\$37,625	\$77,400	\$548,250

Estimates for all 53 firms

	Low estimate	Median estimate	High estimate
Capital	\$46,625	\$52,000	\$161,650
Raw materials	\$22,508	\$37,526	\$172,976
Employees	71	93	243
Wages	\$2,490	\$4,210	\$10,338
Output	\$96,525	\$136,300	\$607,150

Leather

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
230	\$556,225	\$400,985

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
549	\$16,156	\$741,173

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	6	4	1	0	11

	Low estimate	Median estimate	High estimate
Capital	\$6,600	\$15,125	\$28,325
Raw materials	\$6,306	\$12,573	\$22,275
Employees	11	22	33
Wages	\$275	\$440	\$825
Output	\$12,925	\$22,000	\$44,000

Estimates for all 241 firms

	Low estimate	Median estimate	High estimate
Capital	\$562,825	\$571,350	\$584,550
Raw materials	\$407,291	\$413,558	\$423,260
Employees	560	571	582
Wages	\$16,431	\$16,596	\$16,981
Output	\$754,098	\$763,173	\$785,173

Lime

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
3	\$53,000	\$10,900

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
61	\$1,470	\$58,950

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,500	\$1,500	\$50,000
Raw materials	\$100	\$600	\$10,200
Employees	2	4	55
Wages	\$10	\$260	\$833
Output	\$750	\$3200	\$55,000

Estimates for all 4 firms

	Low estimate	Median estimate	High estimate
Capital	\$54,500	\$54,500	\$103,000
Raw materials	\$11,000	\$11,500	\$21,100
Employees	63	65	116
Wages	\$1,480	\$1,730	\$2,303
Output	\$59,700	\$62,150	\$113,950

Lumber

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
632	\$3,752,704	\$1,954,857

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
3791	\$115,751	\$5,371,546

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	6	25	1	0	32

	Low estimate	Median estimate	High estimate
Capital	\$56,000	\$96,000	\$192,000
Raw materials	\$22,400	\$60,128	\$108,800
Employees	96	160	256
Wages	\$1,440	\$3,200	\$6,400
Output	\$69,376	\$177,872	\$320,000

Estimates for all 664 firms

	Low estimate	Median estimate	High estimate
Capital	\$3,808,704	\$3,848,704	\$3,944,704
Raw materials	\$1,977,257	\$2,014,985	\$2,063,657
Employees	3,887	3,951	4,047
Wages	\$117,191	\$118,951	\$122,151
Output	\$5,440,922	\$5,549,418	\$5,691,546

Machine Shop

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
13	\$79,248	\$86,933

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
239	\$7,437	\$315,995

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	1	0	2

	Low estimate	Median estimate	High estimate
Capital	\$3,500	\$6,400	\$12,192
Raw materials	\$900	\$5,786	\$18,500
Employees	6	12	75
Wages	\$110	\$240	\$1,562
Output	\$3,200	\$20,300	\$75,550

Estimates for all 15 firms

	Low estimate	Median estimate	High estimate
Capital	\$82,748	\$85,648	\$91,440
Raw materials	\$87,833	\$92,719	\$105,433
Employees	245	251	314
Wages	\$7,547	\$7,677	\$8,999
Output	\$319,155	\$336,295	\$391,545

Marble & Stone

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
19	\$269,000	\$63,961

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
150	\$13,657	\$205,590

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	11	3	0	14

	Low estimate	Median estimate	High estimate
Capital	\$42,000	\$91,000	\$420,000
Raw materials	\$14,140	\$39,200	\$56,000
Employees	42	84	168
Wages	\$1,050	\$3,864	\$8,400
Output	\$46,200	\$151,480	\$224,000

Estimates for all 33 firms

	Low estimate	Median estimate	High estimate
Capital	\$311,000	\$360,000	\$689,000
Raw materials	\$78,101	\$103,161	\$119,961
Employees	192	234	318
Wages	\$14,707	\$17,521	\$22,057
Output	\$251,790	\$357,070	\$429,590

Mill Manufacturing

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
20	\$166,926	\$75,934

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
115	\$3,005	\$201,390

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	6	4	2	12

	Low estimate	Median estimate	High estimate
Capital	\$15,750	\$27,000	\$165,600
Raw materials	\$8,094	\$20,400	\$41,364
Employees	24	36	93
Wages	\$480	\$660	\$2,250
Output	\$25,500	\$81,000	\$172,126

Estimates for all 32 firms

	Low estimate	Median estimate	High estimate
Capital	\$182,676	\$193,926	\$332,526
Raw materials	\$84,028	\$96,334	\$117,298
Employees	139	151	208
Wages	\$3,485	\$3,665	\$5,255
Output	\$226,890	\$282,390	\$373,516

Printers

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
56	\$159,649	\$52,745

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
222	\$6,550	\$263,324

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	10	13	7	0	30

	Low estimate	Median estimate	High estimate
Capital	\$30,000	\$56,625	\$101,250
Raw materials	\$9,030	\$15,225	\$32,663
Employees	60	90	120
Wages	\$1,500	\$2,325	\$4,275
Output	\$54,450	\$89,250	\$150,000

Estimates for all 86 firms

	Low estimate	Median estimate	High estimate
Capital	\$189,649	\$216,274	\$260,899
Raw materials	\$61,775	\$67,970	\$85,408
Employees	282	312	342
Wages	\$8,050	\$8,875	\$10,825
Output	\$317,774	\$352,574	\$413,324

Railroad

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
2	\$15,000	\$118,606

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
127	\$5,460	\$261,938

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	4	12	2	0	18

	Low estimate	Median estimate	High estimate
Capital	\$135,000	\$135,000	\$135,000
Raw materials	\$346,320	\$1,067,454	\$1,788,588
Employees	1,026	1,143	1,260
Wages	\$45,000	\$49,140	\$53,280
Output	\$979,884	\$2,357,442	\$3,735,000

Estimates for all 20 firms

	Low estimate	Median estimate	High estimate
Capital	\$150,000	\$150,000	\$150,000
Raw materials	\$464,926	\$1,186,060	\$1,907,194
Employees	1,153	1,270	1,387
Wages	\$50,460	\$54,600	\$58,740
Output	\$1,241,822	\$2,619,380	\$3,996,938

Saddle & Harness

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
123	\$224,729	\$205,308

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
405	\$17,676	\$537,703

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	11	30	10	0	51

	Low estimate	Median estimate	High estimate
Capital	\$25,500	\$51,000	\$102,000
Raw materials	\$20,400	\$37,995	\$76,500
Employees	51	102	153
Wages	\$1,938	\$2,550	\$5,100
Output	\$56,100	\$102,000	\$255,000

Estimates for all 174 firms

	Low estimate	Median estimate	High estimate
Capital	\$250,229	\$275,729	\$326,729
Raw materials	\$225,708	\$243,303	\$281,808
Employees	456	507	558
Wages	\$19,614	\$20,226	\$22,776
Output	\$593,803	\$639,703	\$792,703

Saw and Grist Mill

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
152	\$905,873	\$784,892

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
733	\$17,733	\$1,449,001

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	6	10	4	0	20

	Low estimate	Median estimate	High estimate
Capital	\$30,000	\$70,000	\$120,000
Raw materials	\$18,400	\$60,000	\$103,340
Employees	40	60	140
Wages	\$660	\$1,280	\$3,150
Output	\$40,000	\$104,380	\$202,200

Estimates for all 172 firms

	Low estimate	Median estimate	High estimate
Capital	\$935,873	\$975,873	\$1,025,873
Raw materials	\$803,292	\$844,892	\$888,232
Employees	773	793	873
Wages	\$18,393	\$19,013	\$20,883
Output	\$1,489,001	\$1,553,381	\$1,651,201

Ship Building

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
2	\$4,500	\$2,400

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
17	\$1,248	\$91,281

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	0	1	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,500	\$2,250	\$3,000
Raw materials	\$200	\$1,200	\$2,200
Employees	6	9	11
Wages	\$588	\$624	\$660
Output	\$17,000	\$45,641	\$74,281

Estimates for all 3 firms

	Low estimate	Median estimate	High estimate
Capital	\$6,000	\$6,750	\$7,500
Raw materials	\$2,600	\$3,600	\$4,600
Employees	23	26	28
Wages	\$1,836	\$1,872	\$1,908
Output	\$108,281	\$136,922	\$165,562

Soap

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
5	\$13,500	\$8,881

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
13	\$365	\$25,937

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	3	1	0	4

	Low estimate	Median estimate	High estimate
Capital	\$1,600	\$2,800	\$24,000
Raw materials	\$2,510	\$3,980	\$13,262
Employees	4	8	18
Wages	\$100	\$160	\$550
Output	\$3,800	\$9,348	\$43,400

Estimates for all 9 firms

	Low estimate	Median estimate	High estimate
Capital	\$15,100	\$16,300	\$37,500
Raw materials	\$11,391	\$12,861	\$22,143
Employees	17	21	31
Wages	\$465	\$525	\$915
Output	\$29,737	\$35,285	\$69,337

Textiles

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
27	\$273,998	\$177,091

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
400	\$9,226	\$321,537

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	5	16	15	7	43

	Low estimate	Median estimate	High estimate
Capital	\$17,200	\$107,500	\$215,000
Raw materials	\$20,963	\$96,750	\$225,750
Employees	86	129	344
Wages	\$2,150	\$3,440	\$12,900
Output	\$55,900	\$150,500	\$387,000

Estimates for all 70 firms

	Low estimate	Median estimate	High estimate
Capital	\$291,198	\$381,498	\$488,998
Raw materials	\$198,054	\$273,841	\$402,841
Employees	486	529	744
Wages	\$11,376	\$12,666	\$22,126
Output	\$377,437	\$472,037	\$708,537

Tin, Copper & Sheet Iron

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
86	\$311,620	\$304,991

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
264	\$13,487	\$588,100

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	11	18	11	1	41

	Low estimate	Median estimate	High estimate
Capital	\$27,675	\$77,900	\$148,625
Raw materials	\$31,775	\$61,500	\$143,090
Employees	82	82	164
Wages	\$2,050	\$3,280	\$6,253
Output	\$82,000	\$149,650	\$303,400

Estimates for all 127 firms

	Low estimate	Median estimate	High estimate
Capital	\$339,925	\$389,520	\$460,245
Raw materials	\$336,766	\$366,491	\$448,081
Employees	346	346	428
Wages	\$15,537	\$16,767	\$19,740
Output	\$670,100	\$737,750	\$891,500

Tobacco

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
4	\$18,000	\$3,400

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
12	\$220	\$16,150

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$500	\$4,000	\$9,000
Raw materials	\$150	\$900	\$1,500
Employees	1	2	7
Wages	\$13	\$55	\$98
Output	\$863	\$1,750	\$9,500

Estimates for all 5 firms

	Low estimate	Median estimate	High estimate
Capital	\$18,500	\$22,000	\$27,000
Raw materials	\$3,550	\$4,300	\$4,900
Employees	13	14	19
Wages	\$233	\$275	\$318
Output	\$17,013	\$17,900	\$25,650

Turpentine

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
38	\$1,616,370	\$592,055

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
1,096	\$21,487	\$536,599

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$950	\$23,435	\$60,000
Raw materials	\$3,344	\$15,540	\$15,580
Employees	4	20	43
Wages	\$99	\$303	\$909
Output	\$1,400	\$6,431	\$19,525

Estimates for all 39 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,617,320	\$1,639,805	\$1,676,370
Raw materials	\$595,399	\$607,595	\$607,635
Employees	1,100	1,116	1,139
Wages	\$21,586	\$21,790	\$22,396
Output	\$537,999	\$543,030	\$556,124

Wheelwright

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
35	\$21,390	\$15,546

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
61	\$1,886	\$59,350

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	6	0	8

	Low estimate	Median estimate	High estimate
Capital	\$1,600	\$2,400	\$5,200
Raw materials	\$1,600	\$2,000	\$4,000
Employees	8	16	16
Wages	\$240	\$320	\$600
Output	\$5,600	\$9,600	\$16,000

Estimates for all 43 firms

	Low estimate	Median estimate	High estimate
Capital	\$22,990	\$23,790	\$26,590
Raw materials	\$17,146	\$17,546	\$19,546
Employees	69	77	77
Wages	\$2,126	\$2,206	\$2,486
Output	\$64,950	\$68,950	\$75,350

The following chart shows the sources where all of the firms used in this work were originally located by line of business. As can be seen here, there were some industries for which no missed firms were discovered, while, for other lines of business, many firms were missed.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table C.7 - Source where firms were located

Line of Business	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Agricultural Implements	1	0	2	1	22
Baker	0	0	0	1	3
Blacksmith	8	21	0	6	492
Blind, Sash, and Door	10	2	0	1	18
Boots & Shoes	31	45	1	10	214
Brewery	3	0	0	0	8
Brickmaker	6	1	1	1	33
Cabinet Maker	10	15	0	5	85
Carpenter	4	3	0	2	33
Carriage & Wagon	46	15	1	19	246
Charcoal	0	0	0	0	10
Coal	0	0	0	0	9
Confectioner	9	5	0	7	9
Cooper	1	1	0	0	3
Cotton & Wool	4	0	1	1	49
Cotton Gin	0	0	0	2	20
Dentist	0	0	0	0	1
Distillery	2	0	0	1	23
Firewood	0	0	0	0	6
Fishery	0	0	0	0	2
Foundry	10	2	7	3	45
Furniture	11	2	0	4	13
Gas Works	0	0	1	1	2

Line of Business	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Glasses	1	0	0	0	0
Grading	0	0	0	0	1
Grist Mill	13	1	0	0	413
Gunsmith	9	11	1	2	11
Hats	5	0	0	0	10
Jewelry & Watches	32	5	1	5	10
Leather	4	1	0	6	230
Lime	1	0	0	0	3
Lumber	25	1	0	6	632
Machine Shop	1	1	0	0	13
Marble & Stone	11	3	0	0	19
Mattress	3	0	1	0	1
Medicine Manufacturer	0	0	0	0	1
Mfg of Wood Working Eq	1	0	0	0	0
Mill Manufacturer	6	4	2	0	20
Millinery	24	18	3	7	2
Oil Factory	0	0	0	0	1
Ornament Making	0	0	0	0	1
Oyster Business	0	0	0	0	4
Paint Shop	0	0	0	0	3
Pottery	0	0	0	0	19
Preserved Food	0	0	0	0	1

Line of Business	Advertisement	Directory	Local History	R.G. Dun Report	Schedule
Printer	13	7	0	10	56
Railroad	12	2	0	4	2
Rope and Bags	0	0	0	0	1
Saddle & Harness	30	10	0	11	123
Sailmaker	0	1	0	0	0
Salt	0	0	0	0	2
Saw and Grist Mill	10	4	0	6	152
Sewing Machine Mfg	1	0	0	0	0
Shingles	0	0	0	0	5
Ship Building	0	0	1	0	2
Soap	3	1	0	0	5
Steam Engine Mfg	2	2	0	0	1
Textiles	16	15	7	5	27
Tin, Copper & Sheet Iron	18	11	1	11	86
Tobacco	1	0	0	0	4
Turpentine	0	0	0	1	38
Wheelwright	2	6	0	0	35
Wigs	1	0	0	0	0
Wine Mfg	0	0	0	1	0

To get the estimated values of the various factors of production and output in the process described in appendix B the following organizational form information sheets were created.

Each sheet shows how many of each firm type were listed in the census, how many were found in other primary sources, and estimates of the capital, raw materials used, employees, wage bills, and production for all of the missing firms.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Individual

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
2488	\$9,107,601	\$6,941,762

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
9,797	\$308,239	\$14,085,455

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	94	257	177	17	545

	Low estimate	Median estimate	High estimate
Capital	\$272,500	\$654,000	\$1,635,000
Raw materials	\$196,200	\$490,500	\$1,498,750
Employees	1,090	1,090	2,180
Wages	\$16,350	\$27,250	\$54,500
Output	\$642,419	\$1,335,250	\$3,164,406

Estimates for all 3033 firms

	Low estimate	Median estimate	High estimate
Capital	\$9,380,101	\$9,761,601	\$10,742,601
Raw materials	\$7,137,962	\$7,432,262	\$8,440,512
Employees	10,887	10,887	11,977
Wages	\$324,589	\$335,489	\$362,739
Output	\$14,727,874	\$15,420,705	\$17,249,861

Partnership

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
460	\$2,746,123	\$1,961,074

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
3,127	\$76,505	\$3,738,528

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	25	59	19	2	105

	Low estimate	Median estimate	High estimate
Capital	\$95,813	\$220,500	\$525,000
Raw materials	\$63,000	\$157,500	\$420,000
Employees	210	315	735
Wages	\$4,200	\$7,875	\$18,244
Output	\$210,000	\$424,200	\$1,050,000

Estimates for all 565 firms

	Low estimate	Median estimate	High estimate
Capital	\$2,841,936	\$2,966,623	\$3,271,123
Raw materials	\$2,024,074	\$2,118,574	\$2,381,074
Employees	3,337	3,442	3,862
Wages	\$80,705	\$84,380	\$94,749
Output	\$3,948,528	\$4,162,728	\$4,788,528

Company

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
332	\$4,689,351	\$2,618,884

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
4,658	\$119,631	\$5,903,656

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	21	85	20	12	138

	Low estimate	Median estimate	High estimate
Capital	\$193,338	\$545,790	\$1,380,000
Raw materials	\$120,819	\$310,500	\$910,800
Employees	276	552	1,380
Wages	\$5,520	\$15,525	\$35,880
Output	\$345,000	\$966,000	\$2,208,000

Estimates for all 470 firms

	Low estimate	Median estimate	High estimate
Capital	\$4,882,689	\$5,235,141	\$6,069,351
Raw materials	\$2,739,703	\$2,929,384	\$3,529,684
Employees	4,934	5,210	6,038
Wages	\$125,151	\$135,156	\$155,511
Output	\$6,248,656	\$6,869,656	\$8,111,656

The importance of ownership type to industrial development in the Gulf South was discussed in chapter 3 through various tables and maps at the state level showing where firms of various ownership forms were located in the region. Tables C.8 shows the breakdown by line of business for ownership type for each concern reviewed in this work.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Table C.8 ó Ownership of firms by line of business

Line of Business	Company	Individual	Partnership
Agricultural Implements	5	19	2
Baker	0	4	0
Blacksmith	20	446	61
Blind, Sash, and Door	10	14	7
Boots & Shoes	26	247	28
Brewery	1	8	2
Brickmaker	1	35	6
Cabinet Maker	3	98	14
Carpenter	2	28	12
Carriage & Wagon	38	248	41
Charcoal	0	10	0
Coal	3	6	0
Confectioner	9	21	0
Cooper	0	3	2
Cotton & Wool	21	24	10
Cotton Gin	0	21	1
Dentist	0	1	0
Distillery	4	20	2
Firewood	0	6	0
Fishery	0	1	1
Foundry	23	34	10
Furniture	2	22	6
Gas Works	4	0	0
Glasses	0	1	0
Grading	1	0	0

Line of Business	Company	Individual	Partnership
Grist Mill	56	314	57
Gunsmith	2	31	1
Hats	4	10	1
Jewelry & Watches	3	47	3
Leather	11	188	42
Lime	2	2	0
Lumber	84	463	117
Machine Shop	5	6	4
Marble & Stone	5	22	6
Mattress	2	3	0
Medicine Manufacturer	0	1	0
Mfg of Wood Working Eq	0	0	1
Mill Manufacturer	9	17	6
Millinery	1	48	5
Oil Factory	1	0	0
Ornament Making	1	0	0
Oyster Business	0	4	0
Paint Shop	0	1	2
Pottery	0	19	0
Preserved Food	0	1	0
Printer	8	58	20
Railroad	19	1	0
Rope and Bags	0	1	0
Saddle & Harness	11	140	23
Sailmaker	0	0	1
Salt	0	1	1

Line of Business	Company	Individual	Partnership
Saw and Grist Mill	25	125	22
Sewing Machine Mfg	1	0	0
Shingles	1	4	0
Ship Building	2	0	1
Soap	3	5	1
Steam Engine Mfg	1	4	0
Textiles	15	46	9
Tin, Copper & Sheet Iron	16	88	23
Tobacco	1	4	0
Turpentine	7	20	12
Wheelwright	1	41	1
Wigs	0	1	0
Wine Mfg	0	0	1

The following pages contain the county-level information sheets for each county in Alabama for 1860 in which missed firms were located. These estimates were done by taking all of the concerns listed in the census for a given county and estimating what missed enterprises in the same county may have used. To get the estimated values of production and output in the process described in appendix B the following county-level information sheets were created. Each sheet shows how many of each firm type were listed in the census, how many were found in other primary sources, and estimates of the capital, raw materials used, employees, wage bills, and production for all of the missing firms. There are no sheets included here for any county that did not have any missing firms discovered for it.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Autauga County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
46	\$475,350	\$242,024

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
519	\$9,927	\$658,146

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	8	0	1	11

	Low estimate	Median estimate	High estimate
Capital	\$10,450	\$22,000	\$33,000
Raw materials	\$6,435	\$9,900	\$24,569
Employees	22	33	58
Wages	\$429	\$561	\$1,100
Output	\$16,995	\$25,713	\$72,738

Estimates for all 57 firms

	Low estimate	Median estimate	High estimate
Capital	\$485,808	\$497,350	\$508,350
Raw materials	\$248,459	\$251,924	\$266,593
Employees	541	552	577
Wages	\$10,356	\$10,488	\$11,027
Output	\$675,141	\$683,859	\$730,884

Baldwin County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
34	\$1,691,040	\$440,122

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
1,085	\$21,854	\$553,849

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$15,750	\$26,310	\$63,250
Raw materials	\$1,880	\$4,000	\$15,625
Employees	9	19	47
Wages	\$198	\$420	\$942
Output	\$5,000	\$6,931	\$26,100

Estimates for all 35 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,706,790	\$1,717,350	\$1,754,290
Raw materials	\$442,002	\$444,122	\$455,747
Employees	1,094	1,104	\$1,132
Wages	\$22,052	\$22,274	\$22,796
Output	\$558,849	\$560,780	\$579,949

Barbour County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
62	\$148,170	\$114,618

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
249	\$8,272	\$283,069

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	10	0	0	10

	Low estimate	Median estimate	High estimate
Capital	\$7,875	\$17,500	\$30,000
Raw materials	\$4001	\$9,625	\$30,000
Employees	20	20	60
Wages	\$400	\$600	\$1,061
Output	\$15,000	\$29,000	\$65,375

Estimates for all 72 firms

	Low estimate	Median estimate	High estimate
Capital	\$156,045	\$165,670	\$178,170
Raw materials	\$118,619	\$124,243	\$144,618
Employees	269	269	309
Wages	\$8,672	\$8,872	\$9,333
Output	\$298,069	\$312,069	\$348,444

Bibb County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
21	\$171,460	\$78,440

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
225	\$4,060	\$165,397

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	4	5

	Low estimate	Median estimate	High estimate
Capital	\$788	\$5,000	\$60,000
Raw materials	\$1,443	\$4,000	\$19,250
Employees	5	10	58
Wages	\$125	\$200	\$1,225
Output	\$4,775	\$8,310	\$46,000

Estimates for all 26 firms

	Low estimate	Median estimate	High estimate
Capital	\$172,248	\$176,460	\$231,460
Raw materials	\$79,883	\$82,440	\$97,690
Employees	230	235	283
Wages	\$4,185	\$4,260	\$5,285
Output	\$170,172	\$173,707	\$211,397

Calhoun County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
26	\$110,105	\$85,802

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
124	\$3,140	\$174,500

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	18	0	0	18

	Low estimate	Median estimate	High estimate
Capital	\$8,843	\$21,600	\$72,000
Raw materials	\$6,188	\$8,865	\$36,563
Employees	36	54	72
Wages	\$608	\$1,188	\$1,890
Output	\$27,000	\$36,000	\$122,850

Estimates for all 44 firms

	Low estimate	Median estimate	High estimate
Capital	\$118,948	\$131,705	\$182,105
Raw materials	\$91,990	\$94,667	\$122,365
Employees	160	178	196
Wages	\$3,748	\$4,328	\$5,030
Output	\$201,500	\$210,500	\$297,350

Chambers County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
21	\$101,590	\$38,332

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
82	\$2,163	\$118,254

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	0	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$2,000	\$5,000	\$8,100
Raw materials	\$950	\$2,560	\$5,735
Employees	4	8	10
Wages	\$80	\$200	\$285
Output	\$3,500	\$8,000	\$12,675

Estimates for all 23 firms

	Low estimate	Median estimate	High estimate
Capital	\$103,590	\$106,590	\$109,690
Raw materials	\$39,282	\$40,892	\$44,067
Employees	86	90	92
Wages	\$2,243	\$2,363	\$2,448
Output	\$121,754	\$126,254	\$130,929

Cherokee County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
17	\$44,000	\$32,271

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
77	\$1,116	\$47,087

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$500	\$700	\$1,110
Raw materials	\$200	\$525	\$858
Employees	1	2	2
Wages	\$25	\$40	\$60
Output	\$861	\$1,000	\$2,606

Estimates for all 18 firms

	Low estimate	Median estimate	High estimate
Capital	\$44,500	\$44,700	\$45,110
Raw materials	\$32,471	\$32,796	\$33,129
Employees	78	79	79
Wages	\$1,141	\$1,156	\$1,176
Output	\$47,948	\$48,087	\$49,693

Coffee County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
7	\$15,150	\$8,136

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
19	\$344	\$19,890

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	0	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$1,000	\$6,000	\$6,000
Raw materials	\$800	\$2,000	\$4,000
Employees	4	6	6
Wages	\$54	\$90	\$130
Output	\$3,000	\$6,000	\$8,000

Estimates for all 9 firms

	Low estimate	Median estimate	High estimate
Capital	\$16,150	\$21,150	\$21,150
Raw materials	\$8,936	\$10,136	\$12,136
Employees	23	25	25
Wages	\$398	\$434	\$474
Output	\$22,890	\$25,890	\$27,890

Dale County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
6	\$13,750	\$7,820

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
16	\$316	\$16,400

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$857	\$2,125	\$3,750
Raw materials	\$345	\$1,450	\$2,060
Employees	1	2	5
Wages	\$23	\$38	\$75
Output	\$1,100	\$2,500	\$4,050

Estimates for all 7 firms

	Low estimate	Median estimate	High estimate
Capital	\$14,607	\$15,875	\$17,500
Raw materials	\$8,165	\$9,270	\$9,880
Employees	17	18	21
Wages	\$339	\$354	\$391
Output	\$17,500	\$18,900	\$20,450

Dallas County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
59	\$280,211	\$211,239

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
404	\$10,945	\$437,315

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	11	30	0	1	42

	Low estimate	Median estimate	High estimate
Capital	\$21,000	\$105,000	\$189,000
Raw materials	\$25,200	\$63,000	\$199,500
Employees	84	168	336
Wages	\$2,100	\$3,360	\$6,300
Output	\$63,000	\$154,350	\$399,000

Estimates for all 101 firms

	Low estimate	Median estimate	High estimate
Capital	\$301,211	\$385,211	\$469,211
Raw materials	\$236,439	\$274,239	\$410,739
Employees	488	572	740
Wages	\$13,045	\$14,305	\$17,245
Output	\$500,315	\$591,665	\$836,315

Fayette County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
30	\$31,520	\$45,696

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
67	\$1,194	\$80,202

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	0	0	1	1

	Low estimate	Median estimate	High estimate
Capital	\$388	\$900	\$1,540
Raw materials	\$375	\$725	\$1,686
Employees	1	2	3
Wages	\$23	\$30	\$50
Output	\$815	\$1,500	\$2,607

Estimates for all 31 firms

	Low estimate	Median estimate	High estimate
Capital	\$31,908	\$32,420	\$33,060
Raw materials	\$46,071	\$46,421	\$47,382
Employees	68	69	70
Wages	\$1,217	\$1,224	\$1,244
Output	\$81,017	\$81,702	\$82,809

Franklin County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
46	\$90,985	\$101,043

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
109	\$2,868	\$169,746

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	1	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$600	\$2,000	\$4,150
Raw materials	\$400	\$1,002	\$3,813
Employees	2	4	6
Wages	\$50	\$77	\$120
Output	\$1,575	\$2,175	\$7,340

Estimates for all 48 firms

	Low estimate	Median estimate	High estimate
Capital	\$91,585	\$92,985	\$95,135
Raw materials	\$101,443	\$102,045	\$104,856
Employees	111	113	115
Wages	\$2,918	\$2,945	\$2,988
Output	\$171,321	\$171,921	\$177,086

Greene County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
24	\$82,603	\$112,927

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
120	\$2,915	\$199,915

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	3	14	0	0	17

	Low estimate	Median estimate	High estimate
Capital	\$25,500	\$42,500	\$91,375
Raw materials	\$18,785	\$41,650	\$82,102
Employees	34	68	132
Wages	\$702	\$1,360	\$2,805
Output	\$74,907	\$93,075	\$189,125

Estimates for all 41 firms

	Low estimate	Median estimate	High estimate
Capital	\$108,103	\$125,103	\$173,978
Raw materials	\$131,712	\$154,577	\$195,029
Employees	154	188	252
Wages	\$3,617	\$4,275	\$5,720
Output	\$274,822	\$292,990	\$389,040

Henry County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
24	\$103,020	\$65,071

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
66	\$1,894	\$87,000

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	0	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$1,200	\$3,750	\$5,750
Raw materials	\$990	\$2,086	\$6,750
Employees	3	4	6
Wages	\$49	\$135	\$232
Output	\$2,450	\$4,700	\$8,300

Estimates for all 26 firms

	Low estimate	Median estimate	High estimate
Capital	\$104,220	\$106,770	\$108,770
Raw materials	\$66,061	\$67,157	\$71,821
Employees	69	70	72
Wages	\$1,943	\$2,029	\$2,126
Output	\$89,450	\$91,700	\$95,300

Jackson County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
27	\$93,837	\$34,777

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
84	\$1,723	\$92,965

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	1	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$700	\$2,000	\$6,000
Raw materials	\$864	\$1,080	\$3,500
Employees	2	4	8
Wages	\$50	\$80	\$160
Output	\$1,500	\$2,620	\$6,050

Estimates for all 29 firms

	Low estimate	Median estimate	High estimate
Capital	\$94,537	\$95,837	\$99,837
Raw materials	\$35,641	\$35,857	\$38,277
Employees	86	88	92
Wages	\$1,773	\$1,803	\$1,883
Output	\$94,465	\$95,585	\$99,015

Jefferson County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
3	\$4,100	\$2,200

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
6	\$100	\$4,800

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$800	\$1,300	\$2,000
Raw materials	\$400	\$800	\$1,000
Employees	1	2	3
Wages	\$25	\$30	\$45
Output	\$800	\$2000	\$2000

Estimates for all 4 firms

	Low estimate	Median estimate	High estimate
Capital	\$4,900	\$5,400	\$6,100
Raw materials	\$2,600	\$3,000	\$3,200
Employees	7	8	9
Wages	\$125	\$130	\$145
Output	\$5,600	\$6,800	\$6,800

Lauderdale County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
38	\$482,113	\$310,871

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
653	\$8,499	\$565,920

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	10	0	1	11

	Low estimate	Median estimate	High estimate
Capital	\$4,318	\$19,250	\$60,500
Raw materials	\$5,500	\$11,000	\$32,272
Employees	22	33	66
Wages	\$440	\$825	\$1,334
Output	\$15,950	\$30,140	\$66,000

Estimates for all 49 firms

	Low estimate	Median estimate	High estimate
Capital	\$486,431	\$501,363	\$542,613
Raw materials	\$316,371	\$321,871	\$343,143
Employees	675	686	719
Wages	\$8,939	\$9,324	\$9,833
Output	\$581,870	\$596,060	\$631,920

Lowndes County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
61	\$257,227	\$182,735

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
200	\$3,681	\$304,665

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	8	0	0	8

	Low estimate	Median estimate	High estimate
Capital	\$4,000	\$16,000	\$52,000
Raw materials	\$3,120	\$9,600	\$23,200
Employees	10	16	32
Wages	\$240	\$400	\$480
Output	\$9,200	\$16,000	\$49,300

Estimates for all 69 firms

	Low estimate	Median estimate	High estimate
Capital	\$261,227	\$273,227	\$309,227
Raw materials	\$185,855	\$192,335	\$205,935
Employees	210	216	232
Wages	\$3,921	\$4,081	\$4,161
Output	\$131,865	\$320,665	\$353,965

Macon County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
16	\$67,800	\$71,200

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
86	\$3,332	\$122,700

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	6	0	0	6

	Low estimate	Median estimate	High estimate
Capital	\$5,100	\$16,500	\$28,500
Raw materials	\$3,600	\$12,375	\$43,500
Employees	12	18	35
Wages	\$278	\$480	\$855
Output	\$9,750	\$29,700	\$55,950

Estimates for all 22 firms

	Low estimate	Median estimate	High estimate
Capital	\$72,900	\$84,300	\$96,300
Raw materials	\$74,800	\$83,575	\$114,700
Employees	98	104	121
Wages	\$3,610	\$3,812	\$4,187
Output	\$132,450	\$152,400	\$178,650

Madison County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
44	\$458,260	\$361,545

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
397	\$9,038	\$737,339

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	6	0	1	7

	Low estimate	Median estimate	High estimate
Capital	\$8,400	\$35,000	\$57,750
Raw materials	\$6,519	\$17,500	\$43,619
Employees	21	28	56
Wages	\$280	\$718	\$1,995
Output	\$23,629	\$40,688	\$93,305

Estimates for all 51 firms

	Low estimate	Median estimate	High estimate
Capital	\$466,660	\$493,260	\$516,010
Raw materials	\$368,064	\$379,045	\$405,164
Employees	418	425	453
Wages	\$9,318	\$9,756	\$11,033
Output	\$760,968	\$778,027	\$830,644

Marengo County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
24	\$42,950	\$31,075

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
92	\$4,270	\$106,122

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	0	34	0	34

	Low estimate	Median estimate	High estimate
Capital	\$13,600	\$37,400	\$102,000
Raw materials	\$8,500	\$13,600	\$68,000
Employees	68	119	204
Wages	\$1,700	\$2,040	\$5,865
Output	\$40,800	\$85,000	\$170,000

Estimates for all 58 firms

	Low estimate	Median estimate	High estimate
Capital	\$56,550	\$80,350	\$144,950
Raw materials	\$39,575	\$44,675	\$99,075
Employees	160	211	296
Wages	\$5,970	\$6,310	\$10,135
Output	\$146,922	\$191,122	\$276,122

Marshall County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
14	\$21,875	\$15,881

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
25	\$593	\$27,037

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$500	\$1,250	\$2,350
Raw materials	\$471	\$855	\$1,163
Employees	1	2	3
Wages	\$25	\$44	\$52
Output	\$975	\$1,096	\$1,962

Estimates for all 15 firms

	Low estimate	Median estimate	High estimate
Capital	\$22,375	\$23,125	\$24,225
Raw materials	\$16,352	\$16,736	\$17,044
Employees	26	27	28
Wages	\$618	\$637	\$645
Output	\$28,012	\$28,133	\$28,999

Mobile County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
73	\$1,183,335	\$788,303

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
694	\$24,394	\$1,587,049

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	19	8	28	8	63

	Low estimate	Median estimate	High estimate
Capital	\$14,175	\$63,000	\$756,000
Raw materials	\$18,900	\$408,335	\$981,540
Employees	126	252	756
Wages	\$3,465	\$6,930	\$20,475
Output	\$75,600	\$308,700	\$1,266,300

Estimates for all 136 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,197,510	\$1,246,335	\$1,939,335
Raw materials	\$807,203	\$1,196,638	\$1,769,843
Employees	820	946	1,450
Wages	\$27,859	\$31,324	\$45,139
Output	\$1,662,649	\$1,895,749	\$2,853,349

Montgomery County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
13	\$321,932	\$216,247

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
233	\$7,287	\$281,650

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	26	92	3	121

	Low estimate	Median estimate	High estimate
Capital	\$1,058,750	\$2,932,072	\$4,961,000
Raw materials	\$211,750	\$726,000	\$3,327,500
Employees	605	1,210	4,114
Wages	\$16,335	\$38,115	\$119,488
Output	\$260,150	\$1,815,000	\$3,152,050

Estimates for all 134 firms

	Low estimate	Median estimate	High estimate
Capital	\$1,380,682	\$3,254,004	\$5,282,932
Raw materials	\$427,997	\$942,247	\$3,543,747
Employees	838	1,443	\$4,347
Wages	\$23,622	\$45,402	\$126,775
Output	\$541,800	\$2,096,650	\$3,433,700

Morgan County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
8	\$14,450	\$8,492

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
24	\$560	\$20,100

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$338	\$1,350	\$3,400
Raw materials	\$185	\$624	\$1,809
Employees	2	3	3
Wages	\$40	\$55	\$115
Output	\$1,210	\$1,680	\$2,975

Estimates for all 9 firms

	Low estimate	Median estimate	High estimate
Capital	\$14,788	\$15,800	\$17,850
Raw materials	\$8,677	\$9,116	\$10,301
Employees	26	27	27
Wages	\$600	\$615	\$675
Output	\$21,310	\$21,780	\$23,075

Pickens County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
64	\$187,750	\$428,151

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
144	\$3,005	\$535,128

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	10	0	0	10

	Low estimate	Median estimate	High estimate
Capital	\$6,000	\$20,000	\$35,000
Raw materials	\$4,568	\$9,295	\$51,500
Employees	10	20	20
Wages	\$250	\$400	\$600
Output	\$15,000	\$24,500	\$69,875

Estimates for all 74 firms

	Low estimate	Median estimate	High estimate
Capital	\$193,750	\$207,750	\$222,750
Raw materials	\$432,719	\$437,446	\$479,651
Employees	154	164	164
Wages	\$3,255	\$3,405	\$3,605
Output	\$550,128	\$559,628	\$605,003

Shelby County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
12	\$137,500	\$18,616

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
86	\$2,505	\$67,110

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$1,950	\$4,500	\$24,750
Raw materials	\$1,200	\$2,000	\$5,000
Employees	6	8	23
Wages	\$105	\$170	\$2,625
Output	\$3,250	\$5,200	\$20,880

Estimates for all 14 firms

	Low estimate	Median estimate	High estimate
Capital	\$139,450	\$142,000	\$162,250
Raw materials	\$19,816	\$20,616	\$23,616
Employees	92	94	109
Wages	\$2,610	\$2,675	\$5,130
Output	\$70,360	\$72,310	\$87,990

Sumter County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
6	\$30,200	\$4,100

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
28	\$295	\$25,200

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	11	0	0	11

	Low estimate	Median estimate	High estimate
Capital	\$12,650	\$55,000	\$93,500
Raw materials	\$1,815	\$7,700	\$13,200
Employees	20	50	83
Wages	\$275	\$303	\$770
Output	\$8,525	\$46,200	\$73,975

Estimates for all 17 firms

	Low estimate	Median estimate	High estimate
Capital	\$42,850	\$85,200	\$123,700
Raw materials	\$5,915	\$11,800	\$17,300
Employees	48	78	111
Wages	\$570	\$598	\$1,065
Output	\$33,725	\$71,400	\$99,175

Talladega County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
71	\$304,822	\$264,870

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
229	\$4,591	\$416,245

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	11	0	0	11

	Low estimate	Median estimate	High estimate
Capital	\$6,600	\$22,000	\$49,500
Raw materials	\$5,500	\$13,475	\$43,175
Employees	11	22	33
Wages	\$220	\$440	\$880
Output	\$17,050	\$28,556	\$66,000

Estimates for all 82 firms

	Low estimate	Median estimate	High estimate
Capital	\$311,422	\$326,822	\$354,322
Raw materials	\$270,370	\$278,345	\$308,045
Employees	240	251	262
Wages	\$4,811	\$5,031	\$5,471
Output	\$433,295	\$444,801	\$482,245

Tuscaloosa County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
77	\$406,390	\$265,202

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
473	\$8,851	\$544,839

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	9	0	1	10

	Low estimate	Median estimate	High estimate
Capital	\$5,000	\$10,000	\$41,440
Raw materials	\$5,150	\$12,000	\$33,000
Employees	10	20	40
Wages	\$200	\$300	\$880
Output	\$12,281	\$25,000	\$60,481

Estimates for all 87 firms

	Low estimate	Median estimate	High estimate
Capital	\$411,390	\$416,390	\$447,830
Raw materials	\$270,352	\$277,202	\$298,202
Employees	483	493	513
Wages	\$9,051	\$9,151	\$9,731
Output	\$557,120	\$569,839	\$605,680

Wilcox County, Alabama

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
18	\$163,990	\$94,714

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
106	\$2,439	\$168,812

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,075	\$3,750	\$10,500
Raw materials	\$958	\$1,964	\$8,375
Employees	1	4	10
Wages	\$30	\$47	\$263
Output	\$1,760	\$5,961	\$14,250

Estimates for all 19 firms

	Low estimate	Median estimate	High estimate
Capital	\$165,065	\$167,740	\$174,490
Raw materials	\$95,672	\$96,678	\$103,089
Employees	107	110	116
Wages	\$2,469	\$2,486	\$2,702
Output	\$170,572	\$174,773	\$183,062

The following pages contain the county-level information sheets for each county in Mississippi for 1860 in which missed firms were located. These estimates were done by taking all of the concerns listed in the census for a given county and estimating what missed enterprises in the same county may have used. To get the estimated values of production and output in the process described in appendix B the following county-level information sheets were created. Each sheet shows how many of each firm type were listed in the census, how many were found in other primary sources, and estimates of the capital, raw materials used, employees, wage bills, and production for all of the missing firms. There are no sheets included here for any county that did not have any missing firms discovered for it.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Adams County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
15	\$155,500	\$71,350

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
156	\$6,880	\$236,000

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	6	11	0	0	17

	Low estimate	Median estimate	High estimate
Capital	\$34,000	\$136,000	\$255,000
Raw materials	\$37,400	\$56,100	\$141,100
Employees	68	136	255
Wages	\$2,550	\$5,100	\$8,500
Output	\$136,000	\$170,000	\$340,000

Estimates for all 32 firms

	Low estimate	Median estimate	High estimate
Capital	\$189,500	\$291,500	\$410,500
Raw materials	\$108,750	\$127,450	\$212,450
Employees	224	292	411
Wages	\$9,430	\$11,980	\$15,380
Output	\$372,000	\$406,000	\$576,000

Amite County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
25	\$64,200	\$40,117

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
81	\$2,440	\$90,041

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	5	0	0	5

	Low estimate	Median estimate	High estimate
Capital	\$5,000	\$10,000	\$12,500
Raw materials	\$1,688	\$3,750	\$15,000
Employees	10	10	23
Wages	\$200	\$350	\$600
Output	\$5,025	\$10,000	\$30,375

Estimates for all 30 firms

	Low estimate	Median estimate	High estimate
Capital	\$69,200	\$74,200	\$76,700
Raw materials	\$41,805	\$43,867	\$55,117
Employees	91	91	104
Wages	\$2,640	\$2,790	\$3,040
Output	\$95,066	\$100,041	\$120,416

Carroll County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
21	\$50,393	\$44,000

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
54	\$1,274	\$121,222

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	7	2	0	0	9

	Low estimate	Median estimate	High estimate
Capital	\$1,800	\$9,000	\$33,300
Raw materials	\$1,125	\$2,700	\$11,700
Employees	9	18	27
Wages	\$248	\$360	\$608
Output	\$6,804	\$7,200	\$31,500

Estimates for all 30 firms

	Low estimate	Median estimate	High estimate
Capital	\$52,193	\$59,393	\$83,693
Raw materials	\$45,125	\$46,700	\$55,700
Employees	63	72	81
Wages	\$1,522	\$1,634	\$1,882
Output	\$128,026	\$128,422	\$152,722

Chickasaw County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
29	\$73,645	\$43,505

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
95	\$2,852	\$107,978

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	3	0	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$1,500	\$6,000	\$11,250
Raw materials	\$996	\$1,623	\$5,675
Employees	6	6	12
Wages	\$146	\$225	\$405
Output	\$3,525	\$6,450	\$16,350

Estimates for all 32 firms

	Low estimate	Median estimate	High estimate
Capital	\$75,145	\$79,645	\$84,895
Raw materials	\$44,501	\$45,128	\$49,180
Employees	101	101	107
Wages	\$2,998	\$3,077	\$3,257
Output	\$111,503	\$114,428	\$124,328

Claiborne County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
20	\$108,100	\$56,044

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
119	\$4,363	\$297,590

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	10	2	0	0	12

	Low estimate	Median estimate	High estimate
Capital	\$24,000	\$45,000	\$120,000
Raw materials	\$7,275	\$21,516	\$55,200
Employees	27	72	96
Wages	\$1,110	\$1,650	\$2,970
Output	\$32,700	\$103,200	\$264,736

Estimates for all 32 firms

	Low estimate	Median estimate	High estimate
Capital	\$132,100	\$153,108	\$228,100
Raw materials	\$63,319	\$77,560	\$111,244
Employees	146	191	215
Wages	\$5,473	\$6,013	\$7,333
Output	\$330,290	\$400,790	\$562,326

Clarke County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
11	\$45,000	\$56,656

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
71	\$1,450	\$97,542

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	3	0	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$1,800	\$6,000	\$9,900
Raw materials	\$3,000	\$16,500	\$19,500
Employees	3	6	45
Wages	\$60	\$90	\$1,170
Output	\$7,500	\$16,500	\$39,000

Estimates for all 14 firms

	Low estimate	Median estimate	High estimate
Capital	\$46,800	\$51,000	\$54,900
Raw materials	\$59,656	\$73,156	\$76,156
Employees	74	77	116
Wages	\$1,510	\$1,540	\$2,620
Output	\$105,042	\$114,042	\$136,542

Copiah County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
14	\$63,100	\$32,021

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
74	\$2,570	\$96,950

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	1	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$9,750	\$15,900	\$18,000
Raw materials	\$4,875	\$9,000	\$9,291
Employees	12	18	22
Wages	\$416	\$630	\$739
Output	\$14,475	\$21,000	\$31,500

Estimates for all 17 firms

	Low estimate	Median estimate	High estimate
Capital	\$72,850	\$79,000	\$81,100
Raw materials	\$36,896	\$41,021	\$41,312
Employees	86	92	96
Wages	\$2,986	\$3,200	\$3,309
Output	\$111,425	\$117,950	\$128,450

Hinds County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
10	\$167,790	\$189,914

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
359	\$16,225	\$223,492

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	8	1	19	8	36

	Low estimate	Median estimate	High estimate
Capital	\$98,100	\$162,000	\$1,170,000
Raw materials	\$39,375	\$106,812	\$1,146,377
Employees	171	198	2,187
Wages	\$4,275	\$5,400	\$33,120
Output	\$135,000	\$365,256	\$973,800

Estimates for all 46 firms

	Low estimate	Median estimate	High estimate
Capital	\$265,890	\$329,790	\$1,337,790
Raw materials	\$229,289	\$296,726	\$1,336,291
Employees	530	557	\$2,546
Wages	\$20,500	\$21,625	\$49,345
Output	\$358,492	\$588,748	\$1,197,292

Holmes County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
10	\$9,800	\$15,470

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
40	\$1,272	\$42,625

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	3	0	0	5

	Low estimate	Median estimate	High estimate
Capital	\$4,500	\$5,000	\$5,250
Raw materials	\$2,875	\$5,750	\$12,169
Employees	10	18	27
Wages	\$375	\$525	\$813
Output	\$11,875	\$15,000	\$35,625

Estimates for all 15 firms

	Low estimate	Median estimate	High estimate
Capital	\$14,300	\$14,800	\$15,050
Raw materials	\$18,345	\$21,220	\$27,909
Employees	50	58	67
Wages	\$1,647	\$1,797	\$2,085
Output	\$54,500	\$57,625	\$78,250

Lafayette County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
17	\$47,450	\$38,522

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
74	\$18,555	\$91,644

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$2,750	\$6,800	\$6,800
Raw materials	\$3,050	\$5,168	\$5,168
Employees	4	10	12
Wages	\$630	\$3,012	\$3,246
Output	\$5,432	\$15,400	\$15,412

Estimates for all 19 firms

	Low estimate	Median estimate	High estimate
Capital	\$50,200	\$54,250	\$54,250
Raw materials	\$41,572	\$43,690	\$43,690
Employees	78	84	86
Wages	\$19,185	\$21,567	\$21,801
Output	\$97,076	\$107,044	\$107,056

Lowndes County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
55	\$270,950	\$152,889

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
385	\$9,540	\$482,762

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	1	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$2,000	\$7,374	\$18,000
Raw materials	\$1,400	\$3,000	\$6,000
Employees	6	10	16
Wages	\$150	\$240	\$480
Output	\$4,384	\$10,000	\$20,000

Estimates for all 57 firms

	Low estimate	Median estimate	High estimate
Capital	\$272,950	\$278,324	\$288,950
Raw materials	\$154,289	\$155,889	\$158,889
Employees	391	395	401
Wages	\$9,690	\$9,780	\$10,020
Output	\$487,146	\$492,762	\$502,762

Madison County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
34	\$203,659	\$53,050

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
166	\$59,251	\$156,351

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$4,000	\$9,857	\$24,400
Raw materials	\$1,712	\$2,500	\$4,100
Employees	6	8	14
Wages	\$2,352	\$3,000	\$4,214
Output	\$5,200	\$8,325	\$11,192

Estimates for all 36 firms

	Low estimate	Median estimate	High estimate
Capital	\$207,659	\$213,516	\$228,059
Raw materials	\$54,762	\$55,550	\$57,150
Employees	172	174	180
Wages	\$61,603	\$62,251	\$63,645
Output	\$161,551	\$164,676	\$167,543

Monroe County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
11	\$95,000	\$61,566

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
142	\$4,755	\$209,000

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	0	1	3

	Low estimate	Median estimate	High estimate
Capital	\$7,500	\$9,000	\$18,000
Raw materials	\$6,300	\$15,000	\$18,000
Employees	21	36	66
Wages	\$600	\$1,350	\$1,500
Output	\$24,000	\$36,000	\$90,000

Estimates for all 14 firms

	Low estimate	Median estimate	High estimate
Capital	\$102,500	\$104,000	\$113,000
Raw materials	\$67,866	\$76,566	\$79,566
Employees	163	178	208
Wages	\$5,355	\$6,105	\$6,255
Output	\$233,000	\$245,000	\$299,000

Noxubee County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
19	\$70,900	\$69,960

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
86	\$1,810	\$116,850

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	3	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$3,600	\$6,000	\$16,500
Raw materials	\$2,400	\$3,750	\$9,291
Employees	6	9	18
Wages	\$150	\$180	\$390
Output	\$5,250	\$9,000	\$21,600

Estimates for all 22 firms

	Low estimate	Median estimate	High estimate
Capital	\$74,500	\$76,900	\$87,400
Raw materials	\$72,360	\$73,710	\$79,251
Employees	92	95	104
Wages	\$1,960	\$2,000	\$2,200
Output	\$122,100	\$125,850	\$138,450

Oktibbeha County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
41	\$123,500	\$110,400

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
110	\$2,325	\$194,280

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$500	\$1,000	\$2,175
Raw materials	\$300	\$500	\$1,560
Employees	1	2	4
Wages	\$30	\$50	\$60
Output	\$1,000	\$1,240	\$3,625

Estimates for all 42 firms

	Low estimate	Median estimate	High estimate
Capital	\$124,000	\$124,500	\$125,675
Raw materials	\$110,700	\$110,900	\$111,960
Employees	111	112	114
Wages	\$2,355	\$2,375	\$2,385
Output	\$195,280	\$196,655	\$197,905

Rankin County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
23	\$103,344	\$97,060

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
114	\$3,192	\$257,687

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	8	0	0	8

	Low estimate	Median estimate	High estimate
Capital	\$20,000	\$33,280	\$47,672
Raw materials	\$7,000	\$36,640	\$46,960
Employees	16	40	56
Wages	\$600	\$1,200	\$1,584
Output	\$25,600	\$60,000	\$116,000

Estimates for all 31 firms

	Low estimate	Median estimate	High estimate
Capital	\$123,344	\$136,624	\$151,016
Raw materials	\$104,060	\$133,700	\$144,020
Employees	130	154	170
Wages	\$3,792	\$4,392	\$4,776
Output	\$283,287	\$317,687	\$373,687

Warren County, Mississippi

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
24	\$526,646	\$183,763

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
441	\$4,551	\$646,300

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	8	2	43	0	53

	Low estimate	Median estimate	High estimate
Capital	\$119,250	\$291,500	\$1,033,500
Raw materials	\$71,550	\$212,000	\$424,000
Employees	279	371	835
Wages	\$3,021	\$6,625	\$15,900
Output	\$265,000	\$583,000	\$1,268,025

Estimates for all 77 firms

	Low estimate	Median estimate	High estimate
Capital	\$645,896	\$818,146	\$1,560,146
Raw materials	\$255,313	\$395,763	\$607,763
Employees	720	812	1,276
Wages	\$7,572	\$11,176	\$20,451
Output	\$911,300	\$1,229,300	\$1,914,325

The following pages contain the county-level information sheets for each county in Texas for 1860 in which missed firms were located. These estimates were done by taking all of the concerns listed in the census for a given county and estimating what missed enterprises in the same county may have used. To get the estimated values of production and output in the process described in appendix B the following county-level information sheets were created. Each sheet shows how many of each firm type were listed in the census, how many were found in other primary sources, and estimates of the capital, raw materials used, employees, wage bills, and production for all of the missing firms. There are no sheets included here for any county that did not have any missing firms discovered for it.

Sources: Census of 1860 Manufacturing Schedules, Newspapers, County Directories, Journals, and the R. G. Dun Credit Reports.

Anderson County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
10	\$30,400	\$27,236

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
85	\$2,895	\$78,625

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	5	1	0	0	6

	Low estimate	Median estimate	High estimate
Capital	\$4,050	\$9,000	\$33,750
Raw materials	\$5,100	\$18,582	\$24,864
Employees	32	51	74
Wages	\$885	\$1,545	\$2,160
Output	\$24,638	\$43,500	\$64,500

Estimates for all 16 firms

	Low estimate	Median estimate	High estimate
Capital	\$34,450	\$39,400	\$64,150
Raw materials	\$32,336	\$42,818	\$52,100
Employees	117	136	159
Wages	\$3,780	\$4,440	\$5,055
Output	\$103,263	\$122,125	\$143,125

Austin County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
6	\$36,250	\$12,900

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
24	\$1,075	\$56,100

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	3	0	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$2,438	\$7,500	\$30,000
Raw materials	\$1,635	\$2,700	\$13,500
Employees	3	8	18
Wages	\$75	\$263	\$863
Output	\$3,225	\$18,000	\$49,500

Estimates for all 9 firms

	Low estimate	Median estimate	High estimate
Capital	\$38,688	\$43,750	\$66,250
Raw materials	\$14,535	\$15,600	\$26,400
Employees	27	31	42
Wages	\$1,150	\$1,338	\$1,938
Output	\$59,325	\$74,100	\$105,600

Bastrop County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
14	\$195,750	\$66,867

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
118	\$3,865	\$157,300

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	2	0	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$3,850	\$6,250	\$35,500
Raw materials	\$1,300	\$4,000	\$71,455
Employees	4	15	26
Wages	\$175	\$400	\$730
Output	\$6,000	\$22,000	\$29,500

Estimates for all 16 firms

	Low estimate	Median estimate	High estimate
Capital	\$199,600	\$202,000	\$231,250
Raw materials	\$68,167	\$70,867	\$138,322
Employees	122	133	144
Wages	\$4,040	\$4,265	\$4,595
Output	\$163,300	\$179,300	\$186,800

Bell County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
11	\$49,827	\$21,907

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
28	\$842	\$56,800

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	1	0	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,000	\$2,000	\$10,000
Raw materials	\$200	\$1,200	\$1,512
Employees	1	2	4
Wages	\$35	\$60	\$100
Output	\$1,500	\$2,500	\$11,375

Estimates for all 12 firms

	Low estimate	Median estimate	High estimate
Capital	\$50,827	\$51,827	\$59,827
Raw materials	\$22,107	\$23,107	\$23,419
Employees	29	30	32
Wages	\$877	\$902	\$942
Output	\$58,300	\$59,300	\$68,175

Bexar County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
28	\$98,560	\$84,831

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
128	\$5,173	\$238,342

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	10	0	0	0	10

	Low estimate	Median estimate	High estimate
Capital	\$3,125	\$6,000	\$30,000
Raw materials	\$3,150	\$14,500	\$30,000
Employees	40	45	58
Wages	\$1,213	\$1,570	\$2,000
Output	\$30,000	\$52,500	\$127,500

Estimates for all 38 firms

	Low estimate	Median estimate	High estimate
Capital	\$101,685	\$104,560	\$128,560
Raw materials	\$87,981	\$99,331	\$114,831
Employees	168	173	186
Wages	\$6,386	\$6,743	\$7,173
Output	\$268,342	\$290,842	\$365,842

Calhoun County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
15	\$17,700	\$18,820

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
41	\$1,385	\$42,017

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	4	0	0	4

	Low estimate	Median estimate	High estimate
Capital	\$1,200	\$2,000	\$6,000
Raw materials	\$1,800	\$3,040	\$7,080
Employees	8	8	12
Wages	\$160	\$300	\$400
Output	\$4,368	\$5,200	\$13,648

Estimates for all 19 firms

	Low estimate	Median estimate	High estimate
Capital	\$18,900	\$19,700	\$23,700
Raw materials	\$20,620	\$21,860	\$25,900
Employees	49	49	53
Wages	\$1,545	\$1,685	\$1,785
Output	\$46,385	\$47,217	\$55,665

Comal County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
16	\$55,800	\$64,836

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
36	\$617	\$102,795

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,125	\$3,000	\$5,750
Raw materials	\$1,369	\$2,245	\$3,600
Employees	1	2	3
Wages	\$20	\$25	\$40
Output	\$2,235	\$3,500	\$6,750

Estimates for all 17 firms

	Low estimate	Median estimate	High estimate
Capital	\$56,925	\$58,800	\$61,550
Raw materials	\$66,205	\$67,081	\$68,436
Employees	37	38	39
Wages	\$637	\$642	\$657
Output	\$105,030	\$106,295	\$109,545

Dallas County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
15	\$85,100	\$220,850

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
111	\$1,885	\$258,592

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	12	0	0	12

	Low estimate	Median estimate	High estimate
Capital	\$30,000	\$60,000	\$96,000
Raw materials	\$18,000	\$94,800	\$361,800
Employees	24	36	72
Wages	\$756	\$1,200	\$2,160
Output	\$81,000	\$144,000	\$280,224

Estimates for all 27 firms

	Low estimate	Median estimate	High estimate
Capital	\$115,100	\$145,100	\$181,100
Raw materials	\$238,850	\$315,650	\$582,650
Employees	135	147	183
Wages	\$2,641	\$3,085	\$4,045
Output	\$339,592	\$402,592	\$538,816

Fannin County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
5	\$41,300	\$93,156

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
26	\$625	\$126,845

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$2,500	\$5,600	\$36,000
Raw materials	\$2,256	\$3,800	\$89,000
Employees	3	12	17
Wages	\$75	\$300	\$400
Output	\$4,445	\$6,000	\$119,400

Estimates for all 7 firms

	Low estimate	Median estimate	High estimate
Capital	\$43,800	\$46,900	\$77,300
Raw materials	\$95,412	\$131,156	\$182,156
Employees	29	38	43
Wages	\$700	\$925	\$1,025
Output	\$131,290	\$132,845	\$246,245

Galveston County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
9	\$183,600	\$50,012

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
142	\$5,862	\$165,529

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	11	13	0	0	24

	Low estimate	Median estimate	High estimate
Capital	\$120,000	\$134,400	\$660,000
Raw materials	\$62,760	\$120,000	\$199,800
Employees	180	360	540
Wages	\$6,360	\$18,000	\$23,184
Output	\$46,704	\$344,640	\$768,000

Estimates for all 33 firms

	Low estimate	Median estimate	High estimate
Capital	\$303,600	\$318,000	\$843,600
Raw materials	\$112,772	\$170,012	\$249,812
Employees	322	502	682
Wages	\$12,222	\$23,862	\$29,046
Output	\$212,233	\$510,169	\$933,529

Harris County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
22	\$224,000	\$291,759

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
162	\$6,492	\$494,558

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	29	0	0	29

	Low estimate	Median estimate	High estimate
Capital	\$87,000	\$174,000	\$355,250
Raw materials	\$138,729	\$319,870	\$645,250
Employees	87	145	290
Wages	\$3,335	\$4,713	\$10,513
Output	\$259,594	\$558,250	\$812,000

Estimates for all 51 firms

	Low estimate	Median estimate	High estimate
Capital	\$311,000	\$398,000	\$579,250
Raw materials	\$430,488	\$611,629	\$937,009
Employees	249	307	452
Wages	\$9,827	\$11,205	\$17,005
Output	\$754,152	\$1,052,808	\$1,306,558

Lamar County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
15	\$34,750	\$76,645

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
46	\$1,588	\$146,240

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	2	0	0	2

	Low estimate	Median estimate	High estimate
Capital	\$1,500	\$3,000	\$6,000
Raw materials	\$600	\$2,200	\$5,500
Employees	4	4	8
Wages	\$96	\$160	\$330
Output	\$3,000	\$6,000	\$16,000

Estimates for all 17 firms

	Low estimate	Median estimate	High estimate
Capital	\$35,875	\$37,750	\$40,750
Raw materials	\$77,245	\$78,845	\$82,145
Employees	50	50	54
Wages	\$1,684	\$1,748	\$1,918
Output	\$149,240	\$152,240	\$162,240

Marion County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
7	\$37,600	\$15,575

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
59	\$1,716	\$47,100

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	3	0	0	3

	Low estimate	Median estimate	High estimate
Capital	\$3,000	\$4,800	\$30,000
Raw materials	\$3,000	\$3,225	\$9,000
Employees	9	12	54
Wages	\$198	\$225	\$1,800
Output	\$6,000	\$10,800	\$43,500

Estimates for all 10 firms

	Low estimate	Median estimate	High estimate
Capital	\$40,600	\$42,400	\$67,600
Raw materials	\$18,575	\$18,800	\$24,575
Employees	68	71	113
Wages	\$1,914	\$1,941	\$3,516
Output	\$53,100	\$57,900	\$90,600

Montgomery County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
12	\$38,040	\$29,150

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
86	\$1,740	\$184,800

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,325	\$2,025	\$4,500
Raw materials	\$850	\$1,625	\$4,800
Employees	3	8	11
Wages	\$60	\$141	\$231
Output	\$3,500	\$9,000	\$14,375

Estimates for all 13 firms

	Low estimate	Median estimate	High estimate
Capital	\$39,365	\$40,065	\$42,540
Raw materials	\$30,000	\$30,775	\$33,950
Employees	89	94	97
Wages	\$1,800	\$1,881	\$1,971
Output	\$188,300	\$193,800	\$199,175

Navarro County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
8	\$7,100	\$4,110

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
20	\$424	\$18,600

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	9	0	0	9

	Low estimate	Median estimate	High estimate
Capital	\$3,150	\$6,750	\$11,588
Raw materials	\$1,013	\$1,800	\$6,750
Employees	18	18	32
Wages	\$291	\$360	\$765
Output	\$7,650	\$15,750	\$34,875

Estimates for all 17 firms

	Low estimate	Median estimate	High estimate
Capital	\$10,250	\$13,850	\$18,688
Raw materials	\$5,123	\$5,910	\$10,860
Employees	38	38	52
Wages	\$715	\$784	\$1,189
Output	\$26,250	\$34,350	\$53,475

Red River County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
13	\$80,500	\$39,200

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
97	\$1,746	\$108,080

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	10	0	0	10

	Low estimate	Median estimate	High estimate
Capital	\$20,000	\$50,000	\$105,000
Raw materials	\$12,500	\$15,000	\$50,000
Employees	20	90	120
Wages	\$500	\$1,650	\$2,105
Output	\$57,500	\$75,000	\$107,500

Estimates for all 23 firms

	Low estimate	Median estimate	High estimate
Capital	\$100,500	\$130,500	\$185,500
Raw materials	\$51,700	\$54,200	\$89,200
Employees	107	187	217
Wages	\$2,246	\$3,396	\$3,851
Output	\$165,580	\$255,080	\$215,580

Titus County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
25	\$66,400	\$158,865

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
95	\$2,214	\$234,100

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$1,000	\$2,000	\$3,850
Raw materials	\$1,600	\$5,000	\$10,250
Employees	2	3	5
Wages	\$50	\$85	\$125
Output	\$3,500	\$10,000	\$13,700

Estimates for all 26 firms

	Low estimate	Median estimate	High estimate
Capital	\$67,400	\$68,400	\$70,250
Raw materials	\$160,465	\$162,865	\$169,115
Employees	97	98	100
Wages	\$2,264	\$2,299	\$2,339
Output	\$237,600	\$244,100	\$247,800

Travis County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
15	\$61,200	\$113,800

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
81	\$2,820	\$227,100

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	31	0	0	31

	Low estimate	Median estimate	High estimate
Capital	\$37,200	\$62,000	\$77,500
Raw materials	\$21,700	\$27,900	\$46,500
Employees	62	93	124
Wages	\$1,860	\$3,100	\$6,200
Output	\$55,800	\$77,500	\$155,000

Estimates for all 46 firms

	Low estimate	Median estimate	High estimate
Capital	\$98,400	\$123,200	\$138,700
Raw materials	\$135,500	\$141,700	\$160,300
Employees	143	174	205
Wages	\$4,680	\$5,920	\$9,020
Output	\$282,900	\$304,600	\$382,100

Upshur County, Texas

Census firms

# of census firms	Total capital investment, in 1860 dollars	Total value of raw materials used, in 1860 dollars
21	\$33,878	\$34,291

Total employees	Total monthly wages, in 1860 dollars	Total output, in 1860 dollars
62	\$1,650	\$109,960

Firms from non-census sources

	Dun	Newspapers and journals	City and county directories	Local Histories	Total
# of firms	0	1	0	0	1

	Low estimate	Median estimate	High estimate
Capital	\$475	\$1,140	\$2,750
Raw materials	\$200	\$500	\$1,525
Employees	2	3	4
Wages	\$43	\$70	\$115
Output	\$950	\$3,000	\$6,300

Estimates for all 22 firms

	Low estimate	Median estimate	High estimate
Capital	\$34,353	\$35,018	\$36,628
Raw materials	\$34,491	\$34,791	\$35,816
Employees	64	65	66
Wages	\$1,693	\$1,720	\$1,765
Output	\$110,910	\$112,960	\$116,260

VITA

Michael Sean Frawley was born and raised in Erie, Pennsylvania. While living in the wilds of northwestern Pennsylvania he learned the true meaning of the words "lake effect" while gaining a lifetime love of reading during the long winters of the region. Frawley earned a Bachelor of Arts in History from Pennsylvania State University at the Behrend College in 2000 and a second Bachelor of Arts in Political Science from the same institution in 2001. He received his Master of Arts in Social Science at Edinboro University of Pennsylvania in 2007 and anticipates earning his Doctor of Philosophy from Louisiana State University in August 2014. Frawley currently lives with his wife Melissa and their three cats, Scotch, Whiskey, and Kahlua in Baton Rouge, Louisiana, but will soon be moving to Odessa, Texas to take up a full-time teaching position at the University of Texas of the Permian Basin.