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Women Workers in the British Industrial Revolution

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Historians disagree about whether the British Industrial Revolution (1760-1830) was beneficial for women. Frederick Engels, writing in the late nineteenth century, thought that the Industrial Revolution increased women's participation in labor outside the home, and claimed that this change was emancipating. ¹ More recent historians dispute the claim that women's labor force participation rose, and focus more on the disadvantages women experienced during this time period.² One thing is certain: the Industrial Revolution was a time of important changes in the way that women worked.

The Census

Unfortunately, the historical sources on women's work are neither as complete nor as reliable as we would like. Aggregate information on the occupations of women is available only from the census, and while census data has the advantage of being comprehensive, it is not a very good measure of work done by women during the Industrial Revolution. For one thing, the census does not provide any information on individual occupations until 1841, which is after the period we wish to study.³ Even then the data on women's occupations is questionable. For the 1841 census, the directions for enumerators stated that "The professions &c. of wives, or of sons or daughters living with and assisting their parents but not apprenticed or receiving wages, need not be inserted." Clearly this census would not give us an accurate measure of female labor force participation. Table One illustrates the problem further; it shows the occupations of men and women recorded in the 1851 census, for 20 occupational categories. These numbers suggest that female labor force participation was low, and that 40 percent of occupied women worked in domestic service. However, economic historians have demonstrated that these numbers are misleading. First, many women who were actually employed were not listed as employed in the census. Women who appear in farm wage books have no recorded occupation in the census.⁴ At the same time, the census over-estimates participation by listing in the "domestic service" category women who were actually family members. In addition, the census exaggerates the extent to which women were concentrated in domestic service occupations because many women listed as "maids", and included in the domestic servant category in the aggregate tables, were really agricultural workers.⁵

Table One

Occupational Distribution in the 1851 Census of Great Britain

Occupational Category	Males (thousands)	Females	Percent
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	(thousands)	Female	
Public Administration	64	3	4.5
Armed Forces	63	0	0.0
Professions	162	103	38.9
Domestic Services	193	1135	85.5
Commercial	91	0	0.0
Transportation & Communications	433	13	2.9
Agriculture	1788	229	11.4
Fishing	36	1	2.7
Mining	383	11	2.8
Metal Manufactures	536	36	6.3
Building & Construction	496	1	0.2
Wood & Furniture	152	8	5.0
Bricks, Cement, Pottery, Glass	75	15	16.7
Chemicals	42	4	8.7
Leather & Skins	55	5	8.3
Paper & Printing	62	16	20.5
Textiles	661	635	49.0
Clothing	418	491	54.0
Food, Drink, Lodging	348	53	13.2
Other	445	75	14.4
Total Occupied	6545	2832	30.2
Total Unoccupied	1060	5294	83.3

Source: B.R. Mitchell, *Abstract of British Historical Statistics*, Cambridge: Cambridge University Press, 1962, p. 60.

Domestic Service

Domestic work – cooking, cleaning, caring for children and the sick, fetching water, making and mending clothing – took up the bulk of women’s time during the Industrial Revolution period. Most of this work was unpaid. Some families were well-off enough that they could employ other women to do this work, as live-in servants, as charring women, or as service providers. Live-in servants were fairly common; even middle-class families had maids to help with the domestic chores. Charring women did housework on a daily basis. In London women were paid 2s.6d. per day for washing, which was more than three times the 8d. typically paid for agricultural labor in the country. However, a “day’s work” in washing could last 20 hours, more than twice as long as a day’s work in agriculture.⁶ Other women worked as laundresses, doing the washing in their own homes.

Cottage Industry

Before factories appeared, most textile manufacture (including the main processes of spinning and weaving) was carried out under the “putting-out” system. Since raw materials were expensive, textile workers rarely had enough capital to be self-employed, but would take raw materials from a merchant, spin or weave the materials in their homes, and then return the finished product and receive a piece-rate wage. This system disappeared during the Industrial Revolution as new machinery requiring water or steam power appeared, and work moved from the home to the factory.

Before the Industrial Revolution, hand spinning had been a widespread female employment. It could take as many as ten spinners to provide one hand-loom weaver with yarn, and men did not spin, so most of the workers in the textile industry were women. The new textile machines of the Industrial Revolution changed that. Wages for hand-spinning fell, and many rural women who had previously spun found themselves unemployed. In a few locations, new cottage industries such as straw-plaiting and lace-making grew and took the place of spinning, but in other locations women remained unemployed.

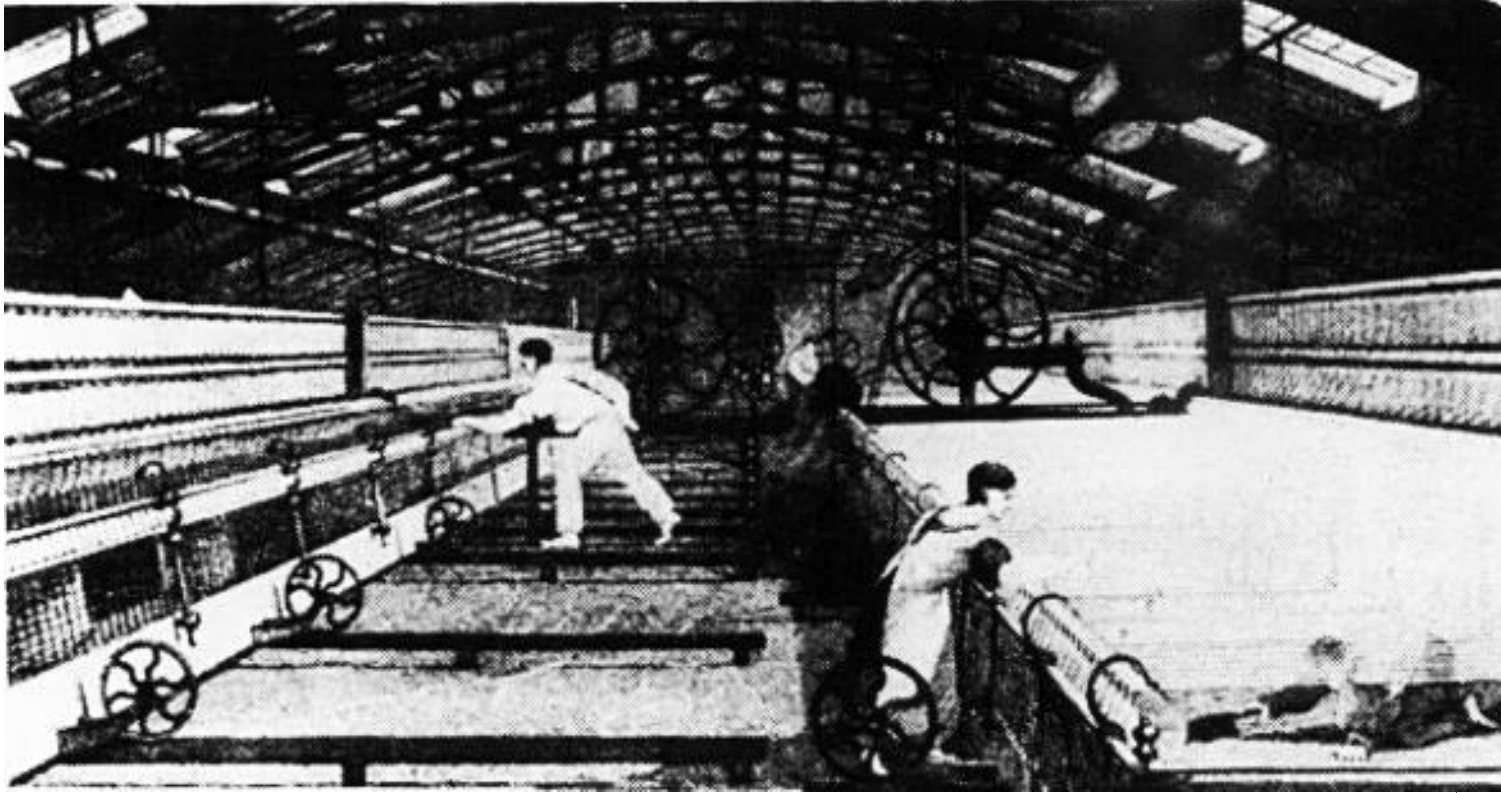
Another important cottage industry was the pillow-lace industry, so called because women wove the lace on pins stuck in a pillow. In the late-eighteenth century women in Bedford could earn 6s. a week making lace, which was about 50 percent more than women earned in agriculture. However, this industry too disappeared due to mechanization. Following Heathcote’s invention of the bobbinet machine (1809), cheaper lace could be made by embroidering patterns on machine-made lace net. This new type of lace created a new cottage industry, that of “lace-runners” who embroidered patterns on the lace.

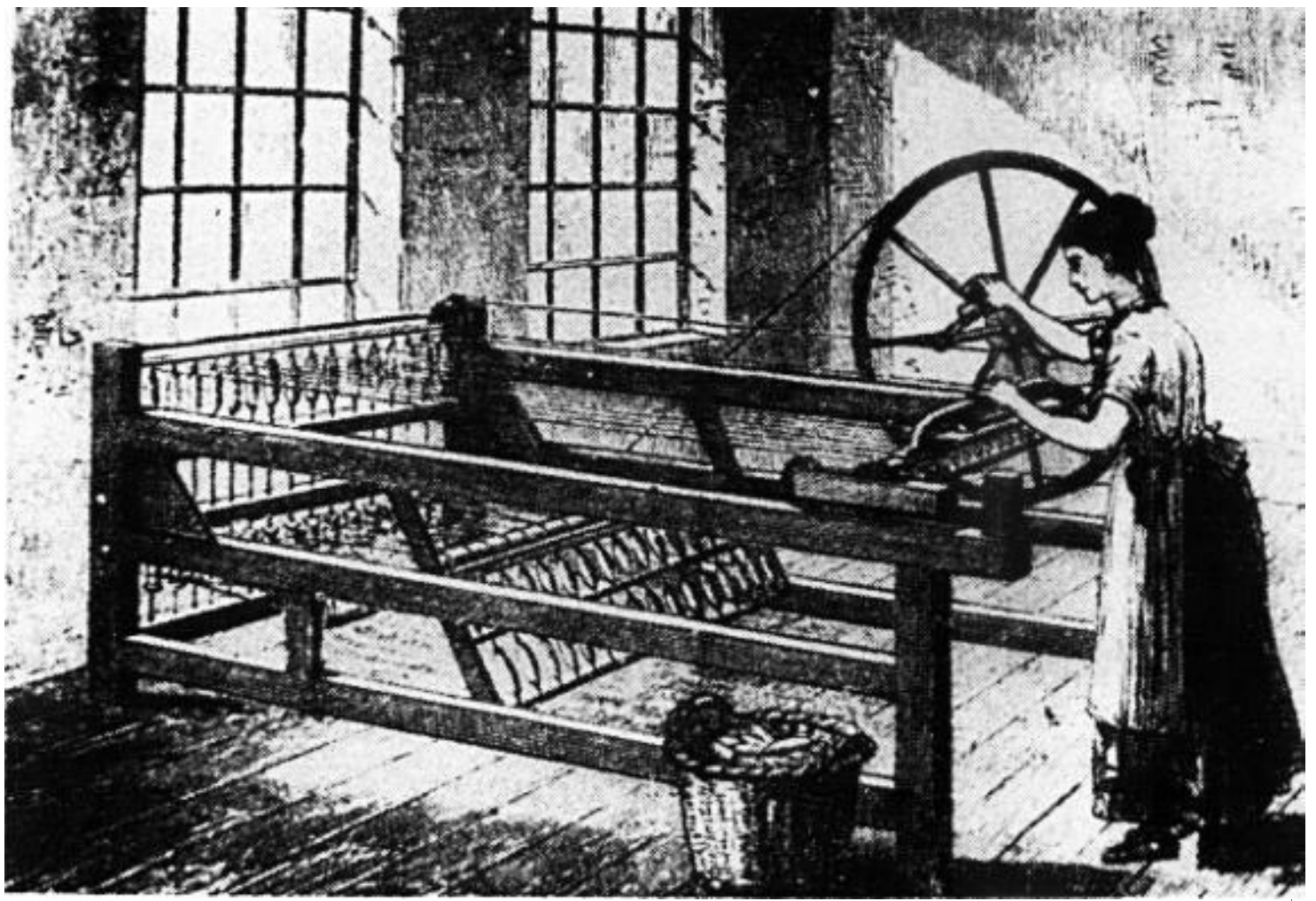
The straw-plaiting industry employed women braiding straw into bands used for making hats and bonnets. The industry prospered around the turn of the century due to the invention of a simple tool for splitting the straw and war, which cut off competition from Italy. At this time women could earn 4s. to 6s. per week plaiting straw. This industry also declined, though, following the increase in free trade with the Continent in the 1820s.

Factories

A defining feature of the Industrial Revolution was the rise of factories, particularly textile factories. Work moved out of the home and into a factory, which used a central power source to run its machines. Water power was used in most of the early factories, but improvements in the steam engine made steam

power possible as well. The most dramatic productivity growth occurred in the cotton industry. The invention of James Hargreaves' spinning jenny (1764), Richard Arkwright's "throstle" or "water frame" (1769), and Samuel Crompton's spinning mule (1779, so named because it combined features of the two earlier machines) revolutionized spinning. Britain began to manufacture cotton cloth, and declining prices for the cloth encouraged both domestic consumption and export. Machines also appeared for other parts of the cloth-making process, the most important of which was Edmund Cartwright's powerloom, which was adopted slowly because of imperfections in the early designs, but was widely used by the 1830s. While cotton was the most important textile of the Industrial Revolution, there were advances in machinery for silk, flax, and wool production as well.⁷







The advent of new machinery changed the gender division of labor in textile production. Before the Industrial Revolution, women spun yarn using a spinning wheel (or occasionally a distaff and spindle). Men didn't spin, and this division of labor made sense because women were trained to have more dexterity than men, and because men's greater strength made them more valuable in other occupations. In contrast to spinning, handloom weaving was done by both sexes, but men outnumbered women. Men monopolized highly skilled preparation and finishing processes such as wool combing and cloth-dressing. With mechanization, the gender division of labor changed. Women used the spinning jenny and water frame, but mule spinning was almost exclusively a male occupation because it required more strength, and because the male mule-spinners actively opposed the employment of female mule-spinners. Women mule-spinners in Glasgow, and their employers, were the victims of violent attacks by male spinners trying to reduce the competition in their occupation.⁸ While they moved out of spinning, women seem to have increased their employment in weaving (both in handloom weaving and eventually in powerloom factories). Both sexes were employed as powerloom operators.

Table Two

Factory Workers in 1833: Females as a Percent of the Workforce

Industry	Ages 12 and under	Ages 13-20	Ages 21+	All Ages
Cotton	51.8	65.0	52.2	58.0
Wool	38.6	46.2	37.7	40.9

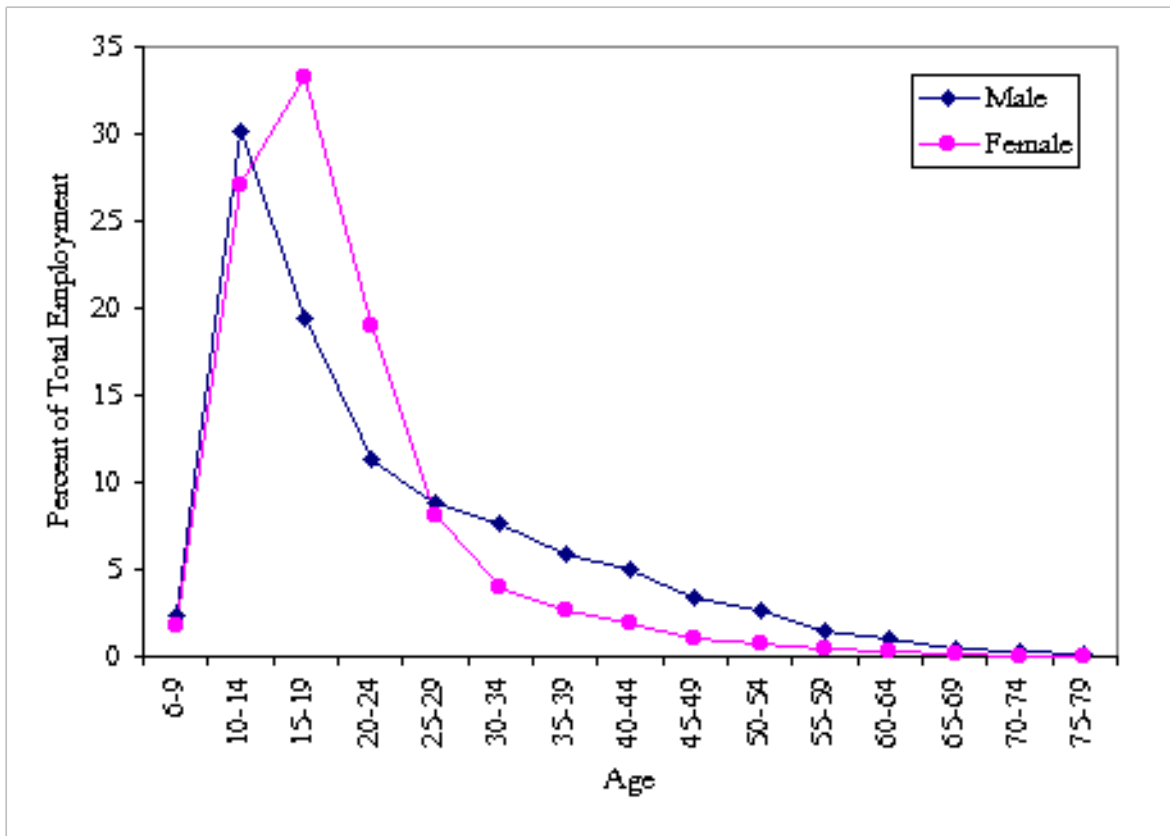
Flax	54.8	77.3	59.5	67.4
Silk	74.3	84.3	71.3	78.1
Lace	38.7	57.4	16.6	36.5
Potteries	38.1	46.9	27.1	29.4
Dyehouse	0.0	0.0	0.0	0.0
Glass	0.0	0.0	0.0	0.0
Paper	-	100.0	39.2	53.6
Whole Sample	52.8	66.4	48.0	56.8

Source: “Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them.” *British Parliamentary Papers*, 1834 (167) XIX. Mitchell collected data from 82 cotton factories, 65 wool factories, 73 flax factories, 29 silk factories, 7 potteries, 11 lace factories, one dyehouse, one “glass works”, and 2 paper mills throughout Great Britain.

While the highly skilled and highly paid task of mule-spinning was a male occupation, many women and girls were engaged in other tasks in textile factories. For example, the wet-spinning of flax, introduced in Leeds in 1825, employed mainly teenage girls. Girls often worked as assistants to mule-spinners, piecing together broken threads. In fact, females were a majority of the factory labor force. Table Two shows that 57 percent of factory workers were female, most of them under age 20. Women were widely employed in all the textile industries, and constituted the majority of workers in cotton, flax, and silk. Outside of textiles, women were employed in potteries and paper factories, but not in dye or glass manufacture. Of the women who worked in factories, 16 percent were under age 13, 51 percent were between the ages of 13 and 20, and 33 percent were age 21 and over. On average, girls earned the same wages as boys. Children’s wages rose from about 1s.6d. per week at age 7 to about 5s. per week at age 15. Beginning at age 16, and a large gap between male and female wages appeared. At age 30, women factory workers earned only one-third as much as men.

Figure One

Distribution of Male and Female Factory Employment by Age, 1833

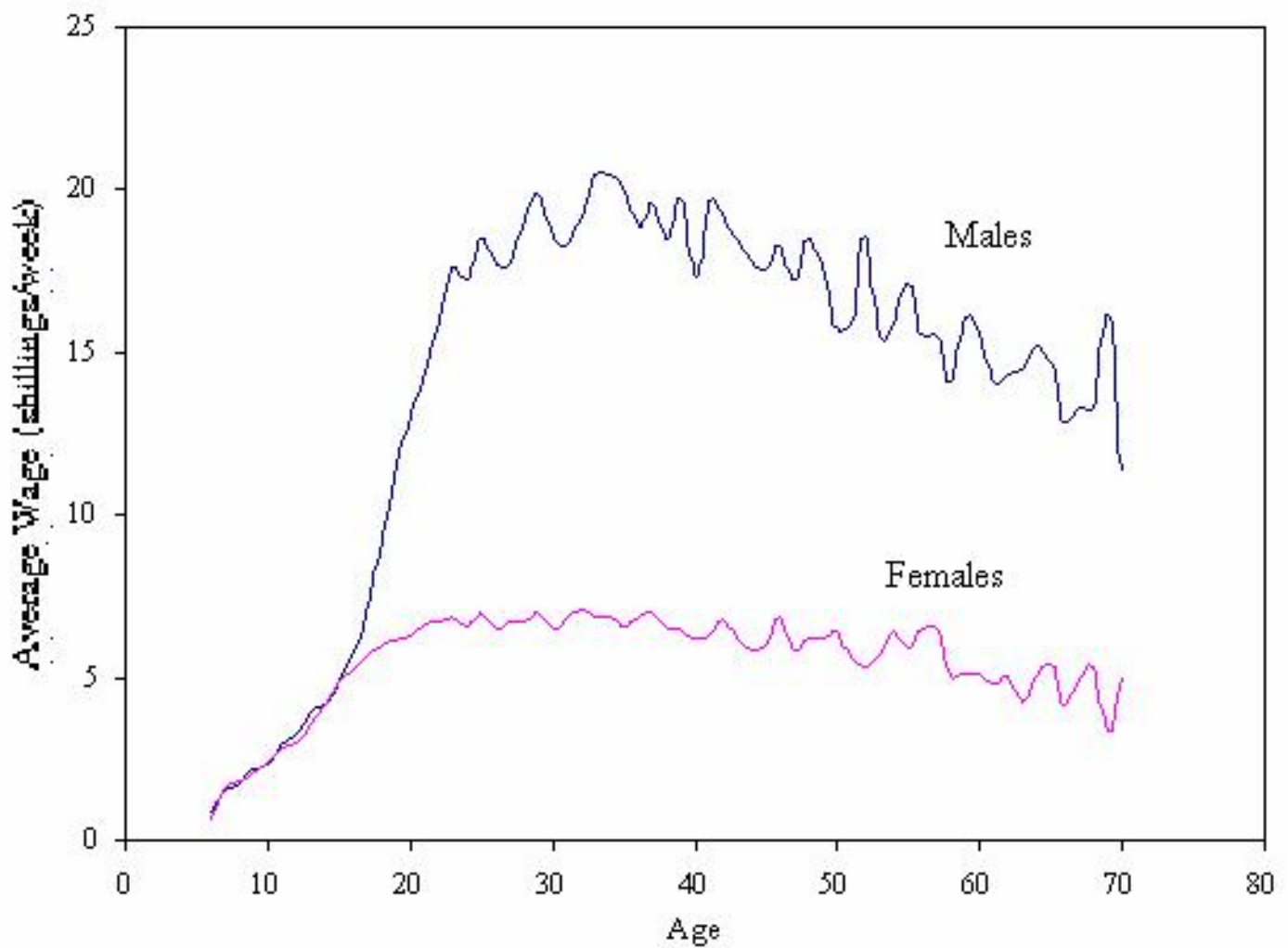


Source: "Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them." *British Parliamentary Papers*, 1834 (167) XIX.

The y-axis shows the percentage of total employment within each sex that is in that five-year age category.

Figure Two

Wages of Factory Workers in 1833



Source: "Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them." *British Parliamentary Papers*, 1834 (167) XIX.

Agriculture

Wage Workers

Wage-earners in agriculture generally fit into one of two broad categories – servants who were hired annually and received part of their wage in room and board, and day-laborers who lived independently and were paid a daily or weekly wage. Before industrialization servants comprised between one-third and one-half of labor in agriculture.⁹ For servants the value of room and board was a substantial portion of their compensation, so the ratio of money wages is an under-estimate of the ratio of total wages (see Table Three). Most servants were young and unmarried. Because servants were paid part of their wage in kind, as board, the use of the servant contract tended to fall when food prices were high. During the Industrial Revolution the use of servants seems to have fallen in the South and East.¹⁰ The percentage of servants who were female also declined in the first half of the nineteenth century.¹¹

Table Three

Wages of Agricultural Servants (£ per year)

Year	Location	Male Money Wage	Male In-Kind Wage	Female Money Wage	Female In-Kind Wage	Ratio of Money Wages	Ratio of Total Wages
1770	Lancashire	7	9	3	6	0.43	0.50

1770	Oxfordshire	10	12	4	8	0.40	0.5
1770	Staffordshire	11	9	4	6	0.36	0.5
1821	Yorkshire	16.5	27	7	18	0.42	0.5

Source: Joyce Burnette, "An Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain," *Economic History Review* 50 (May 1997): 257-281.

While servants lived with the farmer and received food and lodging as part of their wage, laborers lived independently, received fewer in-kind payments, and were paid a daily or a weekly wage. Though the majority of laborers were male, some were female. Table Four shows the percentage of laborers who were female at various farms in the late-18th and early-19th centuries. These numbers suggest that female employment was widespread, but varied considerably from one location to the next. Compared to men, female laborers generally worked fewer days during the year. The employment of female laborers was concentrated around the harvest, and women rarely worked during the winter. While men commonly worked six days per week, outside of harvest women generally averaged around four days per week.

Year	Location	Percent Female
1772-5	Oakes in Norton, Derbyshire	17
1774-7	Dunster Castle Farm, Somerset	27
1785-92	Dunster Castle Farm, Somerset	40
1794-5	Dunster Castle Farm, Somerset	42
1801-3	Dunster Castle Farm, Somerset	35
1801-4	Nettlecombe Barton, Somerset	10
1814-6	Nettlecombe Barton, Somerset	7
1826-8	Nettlecombe Barton, Somerset	5
1828-39	Shipton Moyne, Gloucestershire	19
1831-45	Oakes in Norton, Derbyshire	6
1836-9	Dunster Castle Farm, Somerset	26
1839-40	Lustead, Norfolk	6

Sources: Joyce Burnette, "Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution," *Journal of Economic History* 59 (March 1999): 41-67; Helen Speechley, *Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870*, dissertation, Univ. of Exeter, 1999. Sotheron-Estcourt accounts, G.R.O. D1571; Ketton-Cremer accounts, N.R.O. WKC 5/250

The wages of female day-laborers were fairly uniform; generally a farmer paid the same wage to all the adult women he hired. Women's daily wages were between one-third and one-half of male wages. Women generally worked shorter days, though, so the gap in hourly wages was not quite this large.¹² In the less populous counties of Northumberland and Durham, male laborers were required to provide a "bondager," a woman (usually a family member) who was available for day-labor whenever the employer wanted her.¹³

Table Five

Wages of Agricultural Laborers

Year	Location	Male Wage (d./day)	Female Wage (d./day)	Ratio
1770	Yorkshire	5	12	0.42
1789	Hertfordshire	6	16	0.38
1797	Warwickshire	6	14	0.43
1807	Oxfordshire	9	23	0.39
1833	Cumberland	12	24	0.50
1833	Essex	10	22	0.45
1838	Worcester	9	18	0.50

Source: Joyce Burnette, "An Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain," *Economic History Review* 50 (May 1997): 257-281.

Various sources suggest that women's employment in agriculture declined during the early nineteenth century. Enclosure increased farm size and changed the patterns of animal husbandry, both of which seem to have led to reductions in female employment.¹⁴ More women were employed during harvest than during other seasons, but women's employment during harvest declined as the scythe replaced the sickle as the most popular harvest tool. While women frequently harvested with the sickle, they did not use the heavier scythe.¹⁵ Female employment fell the most in the East, where farms increasingly specialized in grain production. Women had more work in the West, which specialized more in livestock and dairy farming.¹⁶

Non-Wage-Earners

During the eighteenth century there were many opportunities for women to be productively employed in farm work on their own account, whether they were wives of farmers on large holdings, or wives of landless laborers. In the early nineteenth century, however, many of these opportunities disappeared, and women's participation in agricultural production fell.

In a village that had a commons, even if the family merely rented a cottage the wife could be self-employed in agriculture because she could keep a cow, or other animals, on the commons. By careful

management of her stock, a woman might earn as much during the year as her husband earned as a laborer. Women also gathered fuel from the commons, saving the family considerable expense. The enclosure of the commons, though, eliminated these opportunities. In an enclosure, land was re-assigned so as to eliminate the commons and consolidate holdings. Even when the poor had clear legal rights to use the commons, these rights were not always compensated in the enclosure agreement. While enclosure occurred at different times for different locations, the largest waves of enclosures occurred in the first two decades of the nineteenth century, meaning that, for many, opportunities for self-employment in agriculture declined as the same time as employment in cottage industry declined. [17](#)

Only a few opportunities for agricultural production remained for the landless laboring family. In some locations landlords permitted landless laborers to rent small allotments, on which they could still grow some of their own food. The right to glean on fields after harvest seems to have been maintained at least through the middle of the nineteenth century, by which time it had become one of the few agricultural activities available to women in some areas. Gleaning was a valuable right; the value of the grain gleaned was often between 5 and 10 percent of the family's total annual income. [18](#)

In the eighteenth century it was common for farmers' wives to be actively involved in farm work, particularly in managing the dairy, pigs, and poultry. The dairy was an important source of income for many farms, and its success depended on the skill of the mistress, who usually ran the operation with no help from men. In the nineteenth century, however, farmer's wives were more likely to withdraw from farm management, leaving the dairy to the management of dairymen who paid a fixed fee for the use of the cows. [19](#) While poor women withdrew from self-employment in agriculture because of lost opportunities, farmer's wives seem to have withdrawn because greater prosperity allowed them to enjoy more leisure.

It was less common for women to manage their own farms, but not unknown. Commercial directories list numerous women farmers. For example, the 1829 *Directory of the County of Derby* lists 3354 farmers, of which 162, or 4.8%, were clearly female. [20](#) While the commercial directories themselves do not indicate to what extent these women were actively involved in their farms, other evidence suggests that at least some women farmers were actively involved in the work of the farm. [21](#)

Self-Employed

During the Industrial Revolution period women were also active businesswomen in towns. Among business owners listed in commercial directories, about 10 percent were female. Table Seven shows the percentage female in all the trades with at least 25 people listed in the 1788 Manchester commercial directory. Single women, married women, and widows are included in these numbers. Sometimes these women were widows carrying on the businesses of their deceased husbands, but even in this case that does not mean they were simply figureheads. Widows often continued their husband's businesses because they had been active in management of the business while their husband was alive, and wished to continue. [22](#) Sometimes married women were engaged in trade separately from their husbands. Women most commonly ran shops and taverns, and worked as dressmakers and milliners, but they were not confined to these areas, and appear in most of the trades listed in commercial directories. Manchester, for example, had six female blacksmiths and five female machine makers in 1846. Between 1730 and 1800 there were 121 "rouping women" selling off estates in Edinburgh. [23](#)

Table Six

Business Owners Listed in Commercial Directories

Date	City	Male	Female	Unknown Gender	Percent Female	
1788	Manchester		2033	199	321	8.9
1824-5	Manchester		4185	297	1671	6.0
1846	Manchester		11,942	1222	2316	9.3
1850	Birmingham		15,054	2020	1677	11.0
1850	Derby		2415	332	194	12.1

Sources: Lewis's Manchester Directory for 1788 (reprinted by Neil Richardson, Manchester, 1984); Pigot and Dean's Directory for Manchester, Salford, &c. for 1824-5 (Manchester 1825); Slater's National Commercial Directory of Ireland (Manchester, 1846); Slater's Royal National and Commercial Directory (Manchester, 1850)

Table Seven

Women in Trades in Manchester, 1788

Trade	Men	Women	Gender Unknown	Percent Female	
Apothecary/ Surgeon / Midwife		29	1	5	3.3
Attorney		39	0	3	0.0
Boot and Shoe makers		87	0	1	0.0
Butcher		33	1	1	2.9
Calenderer		31	4	5	11.4
Corn & Flour Dealer		45	4	5	8.2
Cotton Dealer		23	0	2	0.0
Draper, Mercer, Dealer of Cloth		46	15	19	24.6
Dyer		44	3	18	6.4
Fustian Cutter / Shearer		54	2	0	3.6
Grocers & Tea Dealers		91	16	12	15.0
Hairdresser & Peruke maker		34	1	0	2.9

Hatter	45	3	4	6.3
Joiner	34	0	1	0.0
Liquor dealer	30	4	14	11.8
Manufacturer, cloth	257	4	118	1.5
Merchant	58	1	18	1.7
Publichouse / Inn / Tavern	126	13	2	9.4
School master / mistress	18	10	0	35.7
Shopkeeper	107	16	4	13.0
Tailor	59	0	1	0.0
Warehouse	64	0	14	0.0

Source: Lewis's Manchester Directory for 1788 (reprinted by Neil Richardson, Manchester, 1984)

Guilds often controlled access to trades, admitting only those who had served an apprenticeship and thus earned the “freedom” of the trade. Women could obtain “freedom” not only by apprenticeship, but also by widowhood. The widow of a tradesman was often considered knowledgeable enough in the trade that she was given the right to carry on the trade even without an apprenticeship. In the eighteenth century women were apprenticed to a wide variety of trades, including butchery, bookbinding, brush making, carpentry, ropemaking and silversmithing.²⁴ Between the eighteenth and nineteenth centuries the number of females apprenticed to trades declined, possibly suggesting reduced participation by women. However, the power of the guilds and the importance of apprenticeship were also declining during this time, so the decline in female apprenticeships may not have been an important barrier to employment.²⁵

Many women worked in the factories of the Industrial Revolution, and a few women actually owned factories. In Keighley, West Yorkshire, Ann Illingworth, Miss Rachael Leach, and Mrs. Betty Hudson built and operated textile mills.²⁶ In 1833 Mrs. Doig owned a powerloom factory in Scotland, which employed 60 workers.²⁷

While many women did successfully enter trades, there were obstacles to women’s employment that kept their numbers low. Women generally received less education than men (though education of the time was of limited practical use). Women may have found it more difficult than men to raise the necessary capital because English law did not consider a married woman to have any legal existence; she could not sue or be sued. A married woman was a *feme covert* and technically could not make any legally binding contracts, a fact which may have discouraged others from loaning money to or making other contracts with married women. However, this law was not as limiting in practice as it would seem to be in theory because a married woman engaged in trade on her own account was treated by the courts as a

feme sole and was responsible for her own debts.²⁸

The professionalization of certain occupations resulted in the exclusion of women from work they had previously done. Women had provided medical care for centuries, but the professionalization of medicine in the early-nineteenth century made it a male occupation. The Royal College of Physicians admitted only graduates of Oxford and Cambridge, schools to which women were not admitted until the twentieth century. Women were even replaced by men in midwifery. The process began in the late-eighteenth century, when we observe the use of the term “man-midwife,” an oxymoronic title suggestive of changing gender roles. In the nineteenth century the “man-midwife” disappeared, and women were replaced by physicians or surgeons for assisting childbirth. Professionalization of the clergy was also effective in excluding women. While the Church of England did not allow women ministers, the Methodists movement had many women preachers during its early years. However, even among the Methodists female preachers disappeared when lay preachers were replaced with a professional clergy in the early nineteenth century.²⁹

In other occupations where professionalization was not as strong, women remained an important part of the workforce. Teaching, particularly in the lower grades, was a common profession for women. Some were governesses, who lived as household servants, but many opened their own schools and took in pupils. The writing profession seems to have been fairly open to women; the leading novelists of the period include Jane Austen, Charlotte and Emily Brontë, Fanny Burney, George Eliot (the pen name of Mary Ann Evans), Elizabeth Gaskell, and Frances Trollope. Female non-fiction writers of the period include Jane Marcet, Hannah More, and Mary Wollstonecraft.

Other Occupations

The occupations listed above are by no means a complete listing of the occupations of women during the Industrial Revolution. Women made buttons, nails, screws, and pins. They worked in the tin plate, silver plate, pottery and Birmingham “toy” trades (which made small articles like snuff boxes). Women worked in the mines until The Mines Act of 1842 prohibited them from working underground, but afterwards women continued to pursue above-ground mining tasks.

Married Women in the Labor Market

While there are no comprehensive sources of information on the labor force participation of married women, household budgets reported by contemporary authors give us some information on women’s participation.³⁰ For the period 1787 to 1815, 66 percent of married women in working-class households had either a recorded occupation or positive earnings. For the period 1816-20 the rate fell to 49 percent, but in 1821-40 it recovered to 62 percent. Table Eight gives participation rates of women by date and occupation of the husband.

Table Eight

Participation Rates of Married Women

	High-Wage Agriculture	Low-Wage Agriculture	Mining	Factory	Outwork	Trades	Al
1787-1815	55	85	40	37	46	63	6

1816-1820	34	NA	28	4	42	30	4
1821-1840	22	85	33	86	54	63	6

Source: Sara Horrell and Jane Humphries, “Women’s Labour Force Participation and the Transition to the male-Breadwinner Family, 1790-1865,” *Economic History Review* 48 (February 1995): 89-117

While many wives worked, the amount of their earnings was small relative to their husband’s earnings. Annual earnings of married women who did work averaged only about 28 percent of their husband’s earnings. Because not all women worked, and because children usually contributed more to the family budget than their mothers, for the average family the wife contributed only around seven percent of total family income.

Childcare

Women workers used a variety of methods to care for their children. Sometimes childcare and work were compatible, and women took their children with them to the fields or shops where they worked.³¹ Sometimes women working at home would give their infants opiates such as “Godfrey’s Cordial” in order to keep the children quiet while their mothers worked.³² The movement of work into factories increased the difficulty of combining work and childcare. In most factory work the hours were rigidly set, and women who took the jobs had to accept the twelve or thirteen hour days. Work in the factories was very disciplined, so the women could not bring their children to the factory, and could not take breaks at will. However, these difficulties did not prevent women with small children from working.

Nineteenth-century mothers used older siblings, other relatives, neighbors, and dame schools to provide child care while they worked.³³ Occasionally mothers would leave young children home alone, but this was dangerous enough that only a few did so.³⁴ Children as young as two might be sent to dame schools, in which women would take children into their home and provide child care, as well as some basic literacy instruction.³⁵ In areas where lace-making or straw-plaiting thrived, children were sent from about age seven to “schools” where they learned the trade.³⁶

Mothers might use a combination of different types of childcare. Elizabeth Wells, who worked in a Leicester worsted factory, had five children, ages 10, 8, 6, 2, and four months. The eldest, a daughter, stayed home to tend the house and care for the infant. The second child worked, and the six-year-old and two-year-old were sent to “an infant school.”³⁷ Mary Wright, an “over-looker” in the rag-cutting room of a Buckinghamshire paper factory, had five children. The eldest worked in the rag-cutting room with her, the youngest was cared for at home, and the middle three were sent to a school; “for taking care of an infant she pays 1s.6d. a-week, and 3d. a-week for the three others. They go to a school, where they are taken care of and taught to read.”³⁸

The cost of childcare was substantial. At the end of the eighteenth century the price of child-care was about 1s. a week, which was about a quarter of a woman’s weekly earnings in agriculture.³⁹ In the 1840s mothers paid anywhere from 9d. to 2s.6d. per week for child care, out of a wage of around 7s. per week.⁴⁰

For Further Reading

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1 "Since large-scale industry has transferred the woman from the house to the labour market and the factory, and makes her, often enough, the bread-winner of the family, the last remnants of male domination in the proletarian home have lost all foundation – except, perhaps, for some of that brutality towards women which became firmly rooted with the establishment of monogamy. . . .It will then become evidence that the first premise for the emancipation of women is the reintroduction of the entire female sex into public industry." Frederick Engels, *The Origin of the Family, Private Property and the State*, in *Karl Marx and Frederick Engels: Selected Works*, New York: International Publishers, 1986, p. 508, 510.

2 Ivy Pinchbeck (*Women Workers and the Industrial Revolution*, Routledge, 1930) claimed that higher incomes allowed some women to withdraw from the labor force. While she saw some disadvantages resulting from this withdrawal, particularly the loss of independence, she thought that overall women benefited from having more time to devote to their homes and families. Davidoff and Hall (*Family Fortunes: Man and Women of the English Middle Class, 1780-1850*, Univ. of Chicago Press, 1987) agree that women withdrew from work, but they see the change as a negative result of gender discrimination. Similarly, Horrell and Humphries ("Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865," *Economic History Review*, Feb. 1995, XLVIII:89-117) do not find that rising incomes caused declining labor force participation, and they believe that declining demand for female workers caused the female exodus from the workplace.

3 While the British census began in 1801, individual enumeration did not begin until 1841. For a detailed

description of the British censuses of the nineteenth century, see Edward Higgs, *Making Sense of the Census*, London: HMSO, 1989.

4 For example, Helen Speechley, in her dissertation, showed that seven women who worked for wages at a Somerset farm had no recorded occupation in the 1851 census. See Helen Speechley, *Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870*, dissertation, Univ. of Exeter, 1999.

5 Edward Higgs finds that removing family members from the “servants” category reduced the number of servants in Rochdale in 1851. Enumerators did not clearly distinguish between the terms “housekeeper” and “housewife.” See Edward Higgs, “Domestic Service and Household Production” in Angela John, ed., *Unequal Opportunities*, Oxford: Basil Blackwell, and “Women, Occupations and Work in the Nineteenth Century Censuses,” *History Workshop*, 1987, 23:59-80. In contrast, the censuses of the early 20th century seem to be fairly accurate; see Tim Hatton and Roy Bailey, “Women’s Work in Census and Survey, 1911-1931,” *Economic History Review*, Feb. 2001, LIV:87-107.

6 A shilling was equal to 12 pence, so if women earned 2s.6d. for 20 hours, they earned 1.5d. per hour. Women agricultural laborers earned closer to 1d. per hour, so the London wage was higher. See Dorothy George, *London Life in the Eighteenth-Century*, London: Kegan Paul, Trench, Trubner & Co., 1925, p. 208, and Patricia Malcolmson, *English Laundresses*, Univ. of Illinois Press, 1986, p. 25. .

7 On the technology of the Industrial Revolution, see David Landes, *The Unbound Prometheus*, Cambridge Univ. Press, 1969, and Joel Mokyr, *The Lever of Riches*, Oxford Univ. Press, 1990.

8 A petition from Glasgow cotton manufactures makes the following claim, “In almost every department of the cotton spinning business, the labour of women would be equally efficient with that of men; yet in several of these departments, such measures of violence have been adopted by the combination, that the women who are willing to be employed, and who are anxious by being employed to earn the bread of their families, have been driven from their situations by violence. . . . Messrs. James Dunlop and Sons, some years ago, erected cotton mills in Calton of Glasgow, on which they expended upwards of [£]27,000 forming their spinning machines, (Chiefly with the view of ridding themselves of the combination [the male union],) of such reduced size as could easily be wrought by women. They employed women alone, as not being parties to the combination, and thus more easily managed, and less insubordinate than male spinners. These they paid at the same rate of wages, as were paid at other works to men. But they were waylaid and attacked, in going to, and returning from their work; the houses in which they resided, were broken open in the night. The women themselves were cruelly beaten and abused; and the mother of one of them killed; . . . And these nefarious attempts were persevered in so systematically, and so long, that Messrs. Dunlop and sons, found it necessary to dismiss all female spinners from their works, and to employ only male spinners, most probably the very men who had attempted their ruin.” *First Report from the Select Committee on Artizans and Machinery, British Parliamentary Papers*, 1824 vol. V, p. 525.

9 Ann Kusmaul, *Servants in Husbandry in Early Modern England*, Cambridge Univ. Press, 1981, Ch. 1

10 See Ivy Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, Ch. 1, and K.D.M. Snell, *Annals of the Labouring Poor*, Cambridge Univ. Press, 1985, Ch. 2.

11 For the period 1574 to 1821 about 45 percent of servants were female, but this fell to 32 percent in 1851. See Ann Kusmaul, *Servants in Husbandry in Early Modern England*, Cambridge Univ. Press, 1981, Ch. 1.

12 Men usually worked 12-hour days, and women averaged closer to 10 hours. See Joyce Burnette, “An

Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain,” *Economic History Review*, May 1997, 50:257-281.

13 See Ivy Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 65.

14 See Robert Allen, *Enclosure and the Yeoman*, Clarendon Press, 1992, and Joyce Burnette, “Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution,” *Journal of Economic History*, March 1999, 59:41-67.

15 While the scythe had been used for mowing grass for hay or cheaper grains for some time, the sickle was used for harvesting wheat until the nineteenth century. Thus adoption of the scythe for harvesting wheat seems to be a response to changing prices rather than invention of a new technology. The scythe required less labor to harvest a given acre, but left more grain on the ground, so as grain prices fell relative to wages, farmers substituted the scythe for the sickle. See E.J.T. Collins, “Harvest Technology and Labour Supply in Britain, 1790-1870,” *Economic History Review*, Dec. 1969, XXIII:453-473.

16 K.D.M. Snell, *Annals of the Labouring Poor*, Cambridge, 1985.

17 See Jane Humphries, “Enclosures, Common Rights, and Women: The Proletarianization of Families in the Late Eighteenth and Early Nineteenth Centuries,” *Journal of Economic History*, March 1990, 50:17-42, and J.M. Neeson, *Commoners: Common Rights, Enclosure and Social Change in England, 1700-1820*, Cambridge Univ. Press, 1993.

18 See Peter King, “Customary Rights and Women’s Earnings: The Importance of Gleaning to the Rural Labouring Poor, 1750-1850,” *Economic History Review*, 1991, XLIV:461-476.

19 Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 41-42 See also Deborah Valenze, *The First Industrial Woman*, Oxford Univ. Press, 1995

20 Stephen Glover, *The Directory of the County of Derby*, Derby: Henry Mozley and Son, 1829.

21 Eden gives an example of gentlewomen who, on the death of their father, began to work as farmers. He notes, “not seldom, in one and the same day, they have divided their hours in helping to fill the dung-cart, and receiving company of the highest rank and distinction.” (F.M. Eden, *The State of the Poor*, vol. i., p. 626.) One woman farmer who was clearly an active manager celebrated her success in a letter sent to the *Annals of Agriculture*, (quoted by Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 30): “I bought a small estate, and took possession of it in the month of July, 1803. . . . As a woman undertaking to farm is generally a subject of ridicule, I bought the small estate by way of experiment: the gentlemen of the county have now complimented me so much on having set so good and example to the farmers, that I have determined on taking a very large farm into my hands.” The *Annals of Agriculture* give a number of examples of women farmers cited for their experiments or their prize-winning crops.

22 Tradesmen considered themselves lucky to find a wife who was good at business. In his autobiography James Hopkinson, a cabinetmaker, said of his wife, “I found I had got a good and suitable companion one with whom I could take sweet council and whose love and affections was only equall’d by her ability as a business woman.” *Victorian Cabinet Maker: The Memoirs of James Hopkinson, 1819-1894*, 1968, p. 96.

23 See Elizabeth Sanderson, *Women and Work in Eighteenth-Century Edinburgh*, St. Martin’s Press, 1996.

24 See K.D.M. Snell, *Annals of the Labouring Poor*, Cambridge Univ. Press, 1985, Table 6.1.

25 The law requiring a seven-year apprenticeship before someone could work in a trade was repealed in 1814.

26 See Francois Crouzet, *The First Industrialists*, Cambridge Univ. Press, 1985, and M.L. Baumber, *From Revival to Regency: A History of Keighley and Haworth, 1740-1820*, Crabtree Ltd., Keighley, 1983.

27 *First Report of the Central Board of His Majesty's Commissioners for inquiry into the Employment of Children in Factories, with Minutes of Evidence, British Parliamentary Papers*, 1833 (450) XX, A1, p. 120.

28 For example, in the case of “LaVie and another Assignees against Philips and another Assignees,” the court upheld the right of a woman to operate as feme sole. In 1764 James Cox and his wife Jane were operating separate businesses, and both went bankrupt within the space of two months. Jane’s creditors sued James’s creditors for the recovery of five fans, goods from her shop that had been taken for James’s debts. The court ruled that, since Jane was trading as a feme sole, her husband did not own the goods in her shop, and thus James’s creditors had no right to seize them. See William Blackstone, *Reports of Cases determined in the several Courts of Westminster-Hall, from 1746 to 1779*, London, 1781, p. 570-575.

29 See Deborah Valenze, *Prophetic Sons and Daughters: Female Preaching and Popular Religion in Industrial England*, Princeton Univ. Press, 1985.

30 See Sara Horrell and Jane Humphries, “Women’s Labour Force Participation and the Transition to the male-Breadwinner Family, 1790-1865,” *Economic History Review*, Feb. 1995, XLVIII:89-117.

31 In his autobiography James Hopkinson says of his wife, “How she laboured at the press and assisted me in the work of my printing office, with a child in her arms, I have no space to tell, nor in fact have I space to allude to the many ways she contributed to my good fortune.” James Hopkinson, *Victorian Cabinet Maker: The Memoirs of James Hopkinson, 1819-1894*, J.B. Goodman, ed., Routledge & Kegan Paul, 1968, p. 96. A 1739 poem by Mary Collier suggests that carrying babies into the field was fairly common; it contains these lines:

Our tender Babes into the Field we bear,
And wrap them in our Cloaths to keep them warm,
While round about we gather up the Corn;
...
When Night comes on, unto our Home we go,
Our Corn we carry, and our Infant too.

Mary Collier, *The Woman’s Labour*, Augustan Reprint Society, #230, 1985, p. 10. A 1835 Poor Law report stated that in Sussex, “the custom of the mother of a family carrying her infant with her in its cradle into the field, rather than lose the opportunity of adding her earnings to the general stock, though partially practiced before, is becoming very much more general now.” (Quoted in Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 85.)

32 Sarah Johnson of Nottingham claimed that she “ Knows it is quite a common custom for mothers to give Godfrey’s and the Anodyne cordial to their infants, ‘it is quite too common.’ It is given to infants at

the breast; it is not given because the child is ill, but 'to compose it to rest, to sleep it,' so that the mother may get to work. 'Has seen an infant lay asleep on its mother's lap whilst at the lace-frame for six or eight hours at a time.' This has been from the effects of the cordial." [*Reports from Assistant Handloom-Weavers' Commissioners, British Parliamentary Papers, 1840 (43) XXIII, p. 157*] Mary Colton, a lace worker from Nottingham, described her use of the drug to parliamentary investigators thus: 'Was confined of an illegitimate child in November, 1839. When the child was a week old she gave it a half teaspoonful of Godfrey's twice a-day. She could not afford to pay for the nursing of the child, and so gave it Godfrey's to keep it quiet, that she might not be interrupted at the lace piece; she gradually increased the quantity by a drop or two at a time until it reached a teaspoonful; when the infant was four months old it was so "wankle" and thin that folks persuaded her to give it laudanum to bring it on, as it did other children. A halfpenny worth, which was about a teaspoonful and three-quarters, was given in two days; continued to give her this quantity since February, 1840, until this last past (1841), and then reduced the quantity. She now buys a halfpenny worth of laudanum and a halfpenny worth of Godfrey's mixed, which lasts her three days. . . . If it had not been for her having to sit so close to work she would never have given the child Godfrey's. She has tried to break it off many times but cannot, for if she did, she should not have anything to eat." [*Children's Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers, 1843 (431) XIV, p. 630*].

33 Elizabeth Leadbeater, who worked for a Birmingham brass-founder, worked while she was nursing and had her mother look after the infant. [*Children's Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers, 1843 (431) XIV, p. 710*.] Mrs. Smart, an agricultural worker from Calne, Wiltshire, noted, "Sometimes I have had my mother, and sometimes my sister, to take care of the children, or I could not have gone out." [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers, 1843 (510) XII, p. 65*.] More commonly, though, older siblings provided the childcare. "Older siblings" generally meant children of nine or ten years old, and included boys as well as girls. Mrs. Britton of Calne, Wiltshire, left her children in the care of her eldest boy. [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers, 1843 (510) XII, p. 66*] In a family from Presteign, Wales, containing children aged 9, 7, 5, 3, and 1, we find that "The oldest children nurse the youngest." [F.M. Eden, *State of the Poor*, London: Davis, 1797, vol. iii, p. 904] When asked what income a labourer's wife and children could earn, some respondents to the 1833 "Rural Queries" assumed that the eldest child would take care of the others, leaving the mother free to work. The returns from Bengeworth, Worcester, report that, "If the Mother goes to field work, the eldest Child had need to stay at home, to tend the younger branches of the Family." Ewhurst, Surrey, reported that "If the Mother were employed, the elder Children at home would probably be required to attend to the younger Children." [*Report of His Majesty's Commissioners for Inquiry in the Administration and Practical Operation of the Poor Law, Appendix B, "Rural Queries," British Parliamentary Papers, 1834 (44) XXX, p. 488 and 593*]

34 Parents heard of incidents, such as one reported in the *Times* (Feb. 6, 1819):

A shocking accident occurred at Llandidno, near Conway, on Tuesday night, during the absence of a miner and his wife, who had gone to attend a methodist meeting, and locked the house door, leaving two children within; the house by some means took fire, and was, together with the unfortunate children, consumed to ashes; the eldest only four years old!

Mothers were aware of these dangers. One mother who admitted to leaving her children at home worried greatly about the risks:

I have always left my children to themselves, and, God be praised! nothing has ever happened to them, though I thought it dangerous. I have many a time come home, and have thought it a mercy to find nothing has happened to them. . . . Bad accidents often happen. [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers*, 1843 (510) XII, p. 68.]

Leaving young children home without child care had real dangers, and the fact that most working mothers paid for childcare suggests that they did not consider leaving young children alone to be an acceptable option.

35 In 1840 an observer of Spitalfields noted, “In this neighborhood, where the women as well as the men are employed in the manufacture of silk, many children are sent to small schools, not for instruction, but to be taken care of whilst their mothers are at work.” [*Reports from Assistant Handloom-Weavers’ Commissioners, British Parliamentary Papers*, 1840 (43) XXIII, p. 261] In 1840 the wife of a Gloucester weaver earned 2s. a week from running a school; she had twelve students and charged each 2d. a week. [*Reports from Assistant Handloom Weavers’ Commissioners, British Parliamentary Papers*, 1840 (220) XXIV, p. 419] In 1843 the lace-making schools of the midlands generally charged 3d. per week. [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 46, 64, 71, 72]

36 At one straw-plaiting school in Hertfordshire,

Children commence learning the trade about seven years old: parents pay 3d. a-week for each child, and for this they are taught the trade and taught to read. The mistress employs about from 15 to 20 at work in a room; the parents get the profits of the children’s labour.[*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 64]

At these schools there was very little instruction; some time was devoted to teaching the children to read, but they spent most of their time working. One mistress complained that the children worked too much and learned too little, “In my judgment I think the mothers task the children too much; the mistress is obliged to make them perform it, otherwise they would put them to other schools.” Ann Page of Newport Pagnell, Buckinghamshire, had “eleven scholars” and claimed to “teach them all reading once a-day.” [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 66, 71] The standard rate of 3d. per week seems to have been paid for supervision of the children rather than for the instruction.

37 *First Report of the Central Board of His Majesty’s Commissioners for Inquiring into the Employment of Children in Factories, British Parliamentary Papers*, 1833 (450) XX, C1 p. 33.

38 *Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 46.

39 David Davies, *The Case of Labourers in Husbandry Stated and Considered*, London: Robinson, 1795, p.14. Agricultural wages for this time period are found in Eden, *State of the Poor*, London: Davis, 1797.

40 In 1843 parliamentary investigator Alfred Austin reports, “Where a girl is hired to take care of

children, she is paid about 9d. a week, and has her food besides, which is a serious deduction from the wages of the woman at work.” [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers, 1843 (510) XII, p.26*] Agricultural wages in the area were 8d. per day, so even without the cost of food, the cost of child care was about one-fifth a woman’s wage. One Scottish woman earned 7s. per week in a coal mine and paid 2s.6d., or 36 percent of her income, for the care of her children.[B.P.P. 1844 (592) XVI, p. 6] In 1843 Mary Wright, a “over-looker” at a Buckinghamshire paper factory, paid even more for child care; she told parliamentary investigators that “for taking care of an infant she pays 1s.6d. a-week, and 3d. a-week for three others.” [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers, 1843 (431) XIV, p. 46*] She earned 10s.6d. per week, so her total child-care payments were 21 percent of her wage. Engels put the cost of child care at 1s. or 18d. a week. [Engels, [1845] 1926, p. 143] Factory workers often made 7s. a week, so again these women may have paid around one-fifth of their earnings for child care. Some estimates suggest even higher fractions of women’s income went to child care. The overseer of Wisbech, Cambridge, suggests a higher fraction; he reports, “The earnings of the Wife we consider comparatively small, in cases where she has a large family to attend to; if she has one or two children, she has to pay half, or perhaps more of her earnings for a person to take care of them.” [*Report of His Majesty’s Commissioners for Inquiry in the Administration and Practical Operation of the Poor Law, Appendix B, “Rural Queries,” British Parliamentary Papers, 1834 (44) XXX, p. 76*]

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Women Workers in the British Industrial Revolution

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Historians disagree about whether the British Industrial Revolution (1760-1830) was beneficial for women. Frederick Engels, writing in the late nineteenth century, thought that the Industrial Revolution increased women’s participation in labor outside the home, and claimed that this change was emancipating.¹ More recent historians dispute the claim that women’s labor force participation rose, and focus more on the disadvantages women experienced during this time period.² One thing is certain: the Industrial Revolution was a time of important changes in the way that women worked.

The Census

Unfortunately, the historical sources on women’s work are neither as complete nor as reliable as we would like. Aggregate information on the occupations of women is available only from the census, and while census data has the advantage of being comprehensive, it is not a very good measure of work done by women during the Industrial Revolution. For one thing, the census does not provide any information on individual occupations until 1841, which is after the period we wish to study.³ Even then the data on women’s occupations is questionable. For the 1841 census, the directions for enumerators stated that

“The professions &c. of wives, or of sons or daughters living with and assisting their parents but not apprenticed or receiving wages, need not be inserted.” Clearly this census would not give us an accurate measure of female labor force participation. Table One illustrates the problem further; it shows the occupations of men and women recorded in the 1851 census, for 20 occupational categories. These numbers suggest that female labor force participation was low, and that 40 percent of occupied women worked in domestic service. However, economic historians have demonstrated that these numbers are misleading. First, many women who were actually employed were not listed as employed in the census. Women who appear in farm wage books have no recorded occupation in the census.⁴ At the same time, the census over-estimates participation by listing in the “domestic service” category women who were actually family members. In addition, the census exaggerates the extent to which women were concentrated in domestic service occupations because many women listed as “maids”, and included in the domestic servant category in the aggregate tables, were really agricultural workers.⁵

Table One

Occupational Distribution in the 1851 Census of Great Britain

Occupational Category	Males (thousands)	Females (thousands)	Percent Female
Public Administration	64	3	4.5
Armed Forces	63	0	0.0
Professions	162	103	38.9
Domestic Services	193	1135	85.5
Commercial	91	0	0.0
Transportation & Communications	433	13	2.9
Agriculture	1788	229	11.4
Fishing	36	1	2.7
Mining	383	11	2.8
Metal Manufactures	536	36	6.3
Building & Construction	496	1	0.2
Wood & Furniture	152	8	5.0
Bricks, Cement, Pottery, Glass	75	15	16.7
Chemicals	42	4	8.7
Leather & Skins	55	5	8.3
Paper & Printing	62	16	20.5
Textiles	661	635	49.0
Clothing	418	491	54.0
Food, Drink, Lodging	348	53	13.2
Other	445	75	14.4
Total Occupied	6545	2832	30.2
Total Unoccupied	1060	5294	83.3

Source: B.R. Mitchell, *Abstract of British Historical Statistics*, Cambridge: Cambridge University Press, 1962, p. 60.

Domestic Service

Domestic work – cooking, cleaning, caring for children and the sick, fetching water, making and mending

clothing – took up the bulk of women’s time during the Industrial Revolution period. Most of this work was unpaid. Some families were well-off enough that they could employ other women to do this work, as live-in servants, as charring women, or as service providers. Live-in servants were fairly common; even middle-class families had maids to help with the domestic chores. Charring women did housework on a daily basis. In London women were paid 2s.6d. per day for washing, which was more than three times the 8d. typically paid for agricultural labor in the country. However, a “day’s work” in washing could last 20 hours, more than twice as long as a day’s work in agriculture.⁶ Other women worked as laundresses, doing the washing in their own homes.

Cottage Industry

Before factories appeared, most textile manufacture (including the main processes of spinning and weaving) was carried out under the “putting-out” system. Since raw materials were expensive, textile workers rarely had enough capital to be self-employed, but would take raw materials from a merchant, spin or weave the materials in their homes, and then return the finished product and receive a piece-rate wage. This system disappeared during the Industrial Revolution as new machinery requiring water or steam power appeared, and work moved from the home to the factory.

Before the Industrial Revolution, hand spinning had been a widespread female employment. It could take as many as ten spinners to provide one hand-loom weaver with yarn, and men did not spin, so most of the workers in the textile industry were women. The new textile machines of the Industrial Revolution changed that. Wages for hand-spinning fell, and many rural women who had previously spun found themselves unemployed. In a few locations, new cottage industries such as straw-plaiting and lace-making grew and took the place of spinning, but in other locations women remained unemployed.

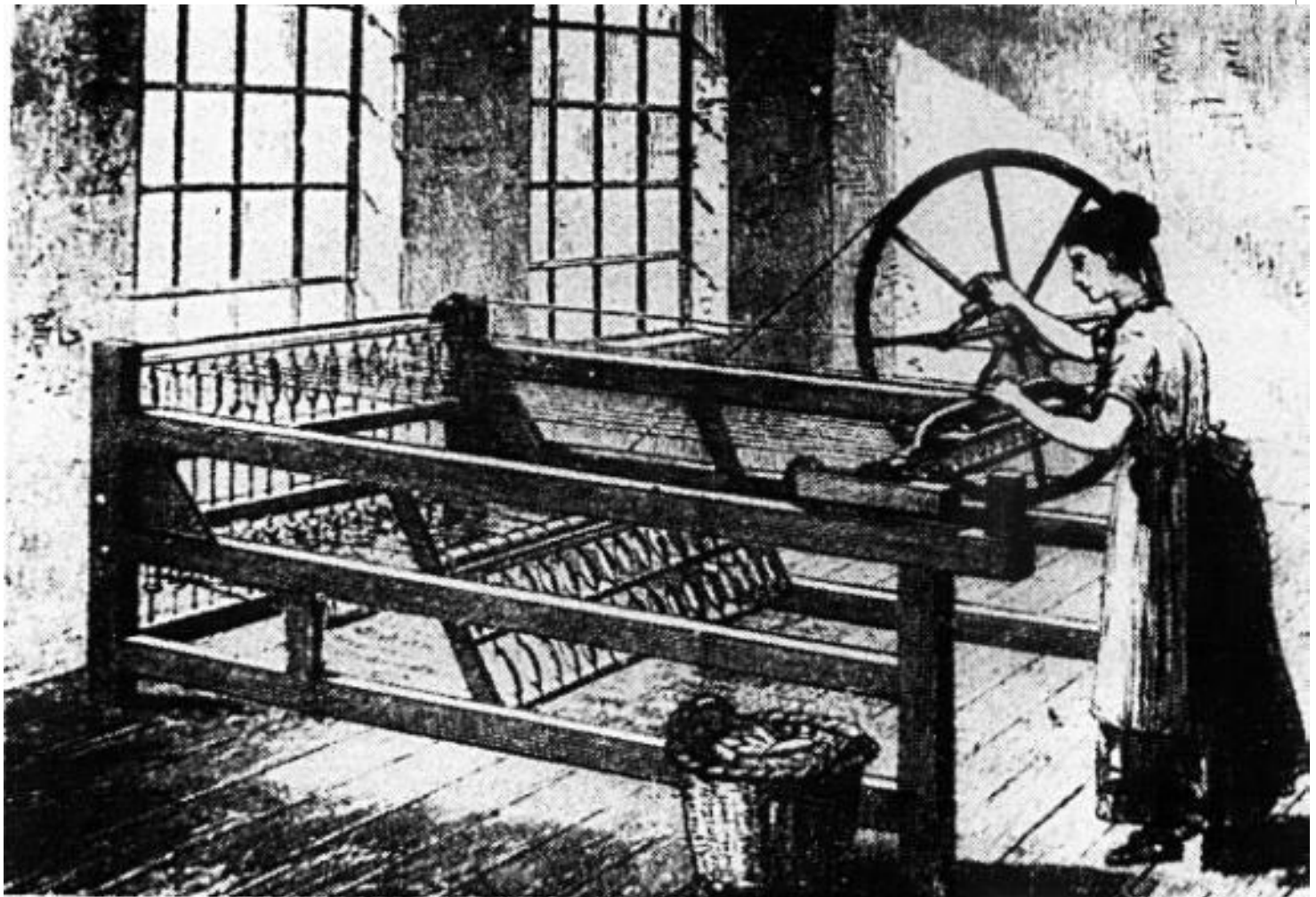
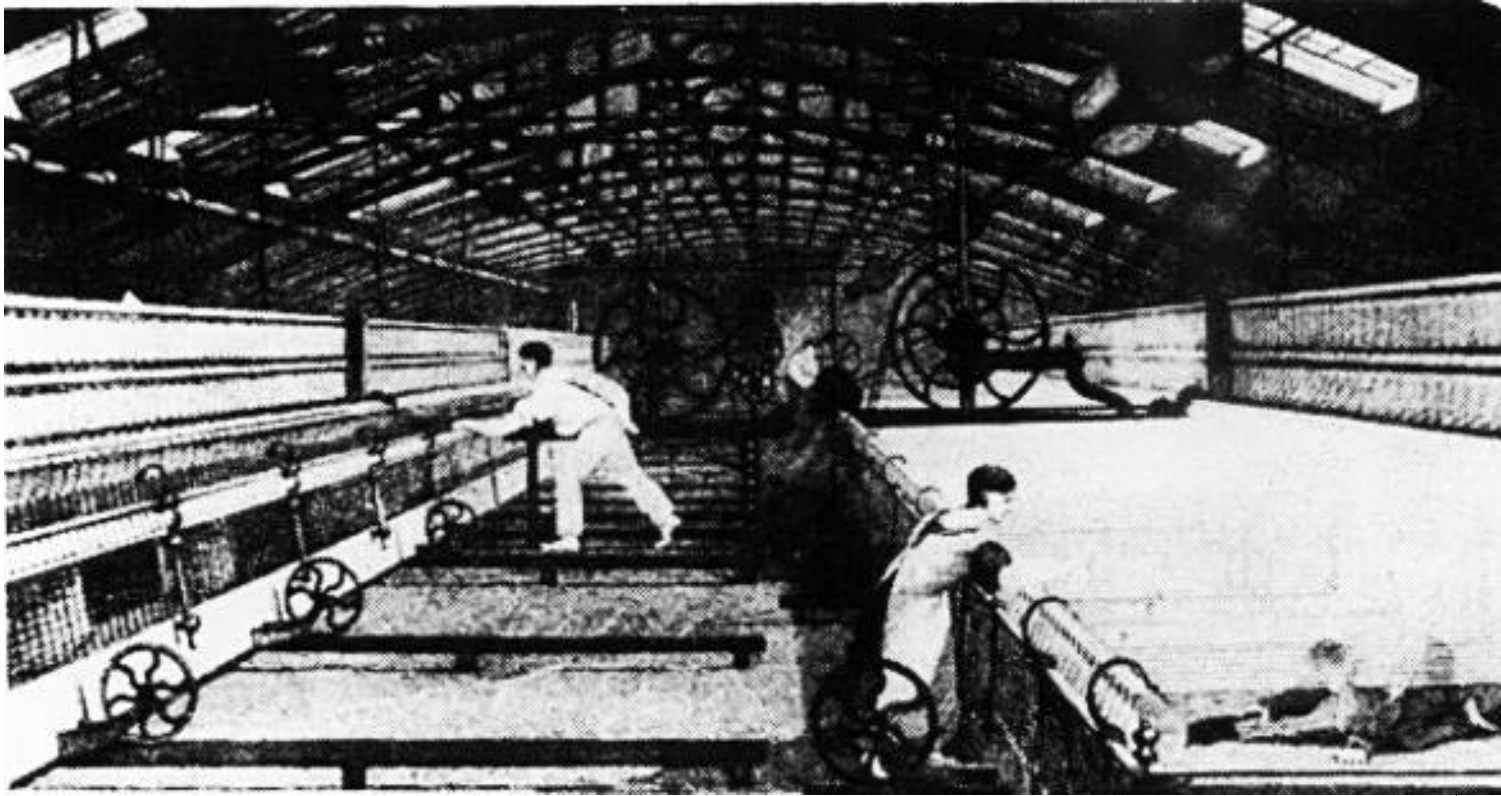
Another important cottage industry was the pillow-lace industry, so called because women wove the lace on pins stuck in a pillow. In the late-eighteenth century women in Bedford could earn 6s. a week making lace, which was about 50 percent more than women earned in agriculture. However, this industry too disappeared due to mechanization. Following Heathcote’s invention of the bobbinet machine (1809), cheaper lace could be made by embroidering patterns on machine-made lace net. This new type of lace created a new cottage industry, that of “lace-runners” who embroidered patterns on the lace.

The straw-plaiting industry employed women braiding straw into bands used for making hats and bonnets. The industry prospered around the turn of the century due to the invention of a simple tool for splitting the straw and war, which cut off competition from Italy. At this time women could earn 4s. to 6s. per week plaiting straw. This industry also declined, though, following the increase in free trade with the Continent in the 1820s.

Factories

A defining feature of the Industrial Revolution was the rise of factories, particularly textile factories. Work moved out of the home and into a factory, which used a central power source to run its machines. Water power was used in most of the early factories, but improvements in the steam engine made steam power possible as well. The most dramatic productivity growth occurred in the cotton industry. The invention of James Hargreaves’ spinning jenny (1764), Richard Arkwright’s “throstle” or “water frame” (1769), and Samuel Crompton’s spinning mule (1779, so named because it combined features of the two earlier machines) revolutionized spinning. Britain began to manufacture cotton cloth, and declining prices for the cloth encouraged both domestic consumption and export. Machines also appeared for other parts of the cloth-making process, the most important of which was Edmund Cartwright’s

powerloom, which was adopted slowly because of imperfections in the early designs, but was widely used by the 1830s. While cotton was the most important textile of the Industrial Revolution, there were advances in machinery for silk, flax, and wool production as well.⁷





The advent of new machinery changed the gender division of labor in textile production. Before the Industrial Revolution, women spun yarn using a spinning wheel (or occasionally a distaff and spindle). Men didn't spin, and this division of labor made sense because women were trained to have more dexterity than men, and because men's greater strength made them more valuable in other occupations. In contrast to spinning, handloom weaving was done by both sexes, but men outnumbered women. Men monopolized highly skilled preparation and finishing processes such as wool combing and cloth-dressing. With mechanization, the gender division of labor changed. Women used the spinning jenny and water frame, but mule spinning was almost exclusively a male occupation because it required more strength, and because the male mule-spinners actively opposed the employment of female mule-spinners. Women mule-spinners in Glasgow, and their employers, were the victims of violent attacks by male spinners trying to reduce the competition in their occupation.⁸ While they moved out of spinning, women seem to have increased their employment in weaving (both in handloom weaving and eventually in powerloom factories). Both sexes were employed as powerloom operators.

Table Two

Factory Workers in 1833: Females as a Percent of the Workforce

Industry	Ages 12 and under	Ages 13-20	Ages 21+	All Ages
Cotton	51.8	65.0	52.2	58.0
Wool	38.6	46.2	37.7	40.9

Flax	54.8	77.3	59.5	67.4
Silk	74.3	84.3	71.3	78.1
Lace	38.7	57.4	16.6	36.5
Potteries	38.1	46.9	27.1	29.4
Dyehouse	0.0	0.0	0.0	0.0
Glass	0.0	0.0	0.0	0.0
Paper	-	100.0	39.2	53.6
Whole Sample	52.8	66.4	48.0	56.8

Source: “Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them.” *British Parliamentary Papers*, 1834 (167) XIX. Mitchell collected data from 82 cotton factories, 65 wool factories, 73 flax factories, 29 silk factories, 7 potteries, 11 lace factories, one dyehouse, one “glass works”, and 2 paper mills throughout Great Britain.

While the highly skilled and highly paid task of mule-spinning was a male occupation, many women and girls were engaged in other tasks in textile factories. For example, the wet-spinning of flax, introduced in Leeds in 1825, employed mainly teenage girls. Girls often worked as assistants to mule-spinners, piecing together broken threads. In fact, females were a majority of the factory labor force. Table Two shows that 57 percent of factory workers were female, most of them under age 20. Women were widely employed in all the textile industries, and constituted the majority of workers in cotton, flax, and silk. Outside of textiles, women were employed in potteries and paper factories, but not in dye or glass manufacture. Of the women who worked in factories, 16 percent were under age 13, 51 percent were between the ages of 13 and 20, and 33 percent were age 21 and over. On average, girls earned the same wages as boys. Children’s wages rose from about 1s.6d. per week at age 7 to about 5s. per week at age 15. Beginning at age 16, and a large gap between male and female wages appeared. At age 30, women factory workers earned only one-third as much as men.

Figure One

Distribution of Male and Female Factory Employment by Age, 1833

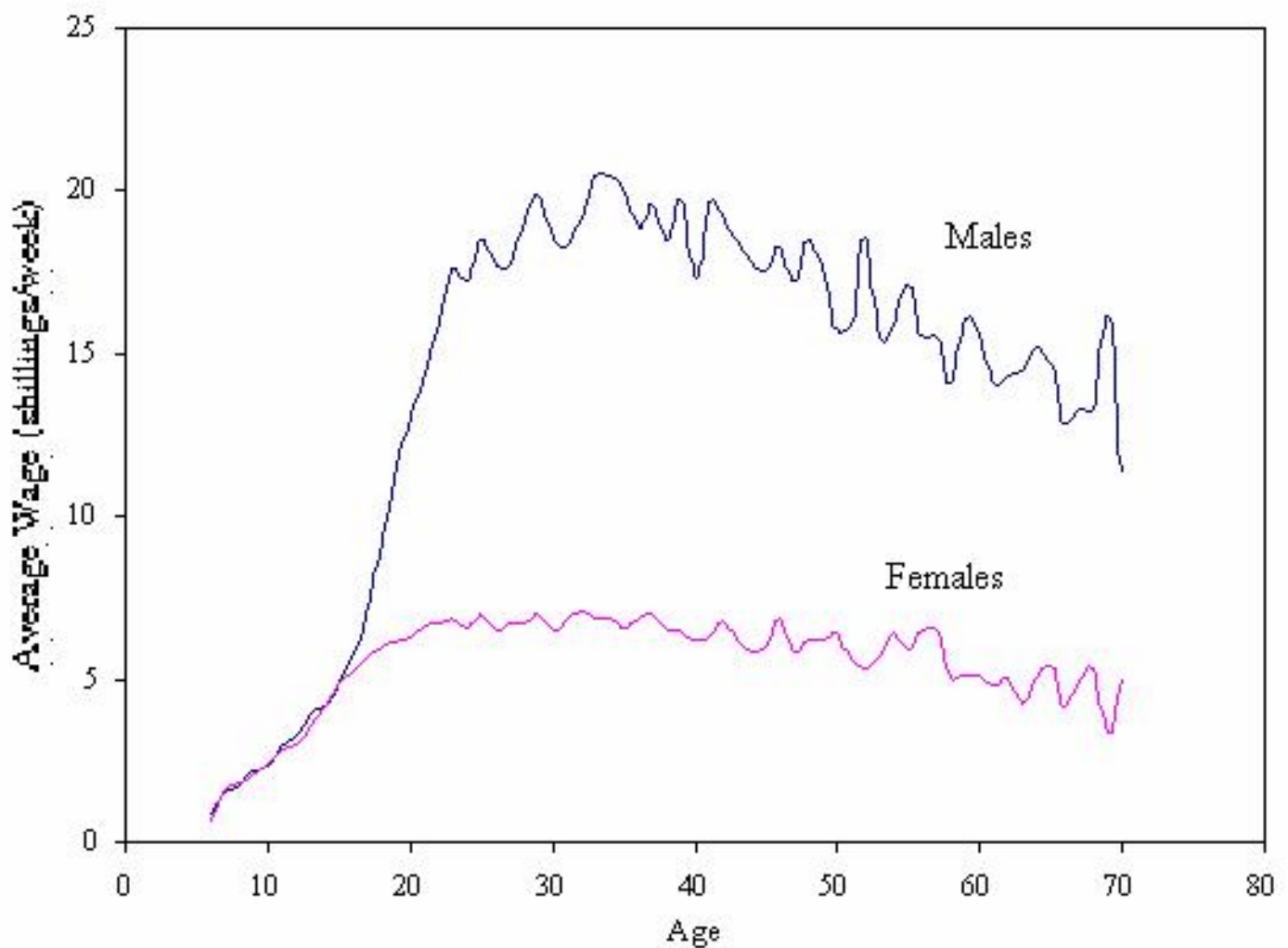


Source: “Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them.” *British Parliamentary Papers*, 1834 (167) XIX.

The y-axis shows the percentage of total employment within each sex that is in that five-year age category.

Figure Two

Wages of Factory Workers in 1833



Source: "Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them." *British Parliamentary Papers*, 1834 (167) XIX.

Agriculture

Wage Workers

Wage-earners in agriculture generally fit into one of two broad categories – servants who were hired annually and received part of their wage in room and board, and day-laborers who lived independently and were paid a daily or weekly wage. Before industrialization servants comprised between one-third and one-half of labor in agriculture.⁹ For servants the value of room and board was a substantial portion of their compensation, so the ratio of money wages is an under-estimate of the ratio of total wages (see Table Three). Most servants were young and unmarried. Because servants were paid part of their wage in kind, as board, the use of the servant contract tended to fall when food prices were high. During the Industrial Revolution the use of servants seems to have fallen in the South and East.¹⁰ The percentage of servants who were female also declined in the first half of the nineteenth century.¹¹

Table Three

Wages of Agricultural Servants (£ per year)

Year	Location	Male Money Wage	Male In-Kind Wage	Female Money Wage	Female In-Kind Wage	Ratio of Money Wages	Ratio of Total Wages
1770	Lancashire	7	9	3	6	0.43	0.56

1770	Oxfordshire	10	12	4	8	0.40	0.55
1770	Staffordshire	11	9	4	6	0.36	0.50
1821	Yorkshire	16.5	27	7	18	0.42	0.57

Source: Joyce Burnette, "An Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain," *Economic History Review* 50 (May 1997): 257-281.

While servants lived with the farmer and received food and lodging as part of their wage, laborers lived independently, received fewer in-kind payments, and were paid a daily or a weekly wage. Though the majority of laborers were male, some were female. Table Four shows the percentage of laborers who were female at various farms in the late-18th and early-19th centuries. These numbers suggest that female employment was widespread, but varied considerably from one location to the next. Compared to men, female laborers generally worked fewer days during the year. The employment of female laborers was concentrated around the harvest, and women rarely worked during the winter. While men commonly worked six days per week, outside of harvest women generally averaged around four days per week.

Table Four

Employment of Women as Laborers in Agriculture:
Percentage of Annual Work-Days Worked by Females

Year	Location	Percent Female
1772-5	Oakes in Norton, Derbyshire	17
1774-7	Dunster Castle Farm, Somerset	27
1785-92	Dunster Castle Farm, Somerset	40
1794-5	Dunster Castle Farm, Somerset	42
1801-3	Dunster Castle Farm, Somerset	35
1801-4	Nettlecombe Barton, Somerset	10
1814-6	Nettlecombe Barton, Somerset	7
1826-8	Nettlecombe Barton, Somerset	5
1828-39	Shipton Moyne, Gloucestershire	19
1831-45	Oakes in Norton, Derbyshire	6
1836-9	Dunster Castle Farm, Somerset	26
1839-40	Lustead, Norfolk	6
1846-9	Dunster Castle Farm, Somerset	29

Sources: Joyce Burnette, "Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution," *Journal of Economic History* 59 (March 1999): 41-67; Helen Speechley, *Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870*, dissertation, Univ. of Exeter, 1999. Sotheron-Estcourt accounts, G.R.O. D1571; Ketton-Cremer accounts, N.R.O. WKC 5/250

The wages of female day-laborers were fairly uniform; generally a farmer paid the same wage to all the adult women he hired. Women's daily wages were between one-third and one-half of male wages. Women generally worked shorter days, though, so the gap in hourly wages was not quite this large.¹² In the less populous counties of Northumberland and Durham, male laborers were required to provide a "bondager," a woman (usually a family member) who was available for day-labor whenever the employer wanted her.¹³

Table Five

Wages of Agricultural Laborers

Year	Location	Male Wage (d./day)	Female Wage (d./day)	Ratio
1770	Yorkshire	5	12	0.42
1789	Hertfordshire	6	16	0.38
1797	Warwickshire	6	14	0.43
1807	Oxfordshire	9	23	0.39
1833	Cumberland	12	24	0.50
1833	Essex	10	22	0.45
1838	Worcester	9	18	0.50

Source: Joyce Burnette, "An Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain," *Economic History Review* 50 (May 1997): 257-281.

Various sources suggest that women's employment in agriculture declined during the early nineteenth century. Enclosure increased farm size and changed the patterns of animal husbandry, both of which seem to have led to reductions in female employment.¹⁴ More women were employed during harvest than during other seasons, but women's employment during harvest declined as the scythe replaced the sickle as the most popular harvest tool. While women frequently harvested with the sickle, they did not use the heavier scythe.¹⁵ Female employment fell the most in the East, where farms increasingly specialized in grain production. Women had more work in the West, which specialized more in livestock and dairy farming.¹⁶

Non-Wage-Earners

During the eighteenth century there were many opportunities for women to be productively employed in farm work on their own account, whether they were wives of farmers on large holdings, or wives of landless laborers. In the early nineteenth century, however, many of these opportunities disappeared, and women's participation in agricultural production fell.

In a village that had a commons, even if the family merely rented a cottage the wife could be self-employed in agriculture because she could keep a cow, or other animals, on the commons. By careful management of her stock, a woman might earn as much during the year as her husband earned as a laborer. Women also gathered fuel from the commons, saving the family considerable expense. The enclosure of the commons, though, eliminated these opportunities. In an enclosure, land was re-assigned so as to eliminate the commons and consolidate holdings. Even when the poor had clear legal rights to use the commons, these rights were not always compensated in the enclosure agreement. While enclosure occurred at different times for different locations, the largest waves of enclosures occurred in the first two decades of the nineteenth century, meaning that, for many, opportunities for self-employment in agriculture declined as the same time as employment in cottage industry declined.¹⁷

Only a few opportunities for agricultural production remained for the landless laboring family. In some locations landlords permitted landless laborers to rent small allotments, on which they could still grow some of their own food. The right to glean on fields after harvest seems to have been maintained at least through the middle of the nineteenth century, by which time it had become one of the few agricultural activities available to women in some areas. Gleaning was a valuable right; the value of the grain gleaned was often between 5 and 10 percent of the family's total annual income.¹⁸

In the eighteenth century it was common for farmers' wives to be actively involved in farm work, particularly in managing the dairy, pigs, and poultry. The dairy was an important source of income for many farms, and its success depended on the skill of the mistress, who usually ran the operation with no help from men. In the nineteenth century, however, farmer's wives were more likely to withdraw from farm management, leaving the dairy to the management of dairymen who paid a fixed fee for the use of the cows.¹⁹ While poor women withdrew from self-employment in agriculture because of lost opportunities, farmer's wives seem to have withdrawn because greater prosperity allowed them to enjoy more leisure.

It was less common for women to manage their own farms, but not unknown. Commercial directories list numerous women farmers. For example, the 1829 *Directory of the County of Derby* lists 3354 farmers, of which 162, or 4.8%, were clearly female.²⁰ While the commercial directories themselves do not indicate to what extent these women were actively involved in their farms, other evidence suggests that at least some women farmers were actively involved in the work of the farm.²¹

Self-Employed

During the Industrial Revolution period women were also active businesswomen in towns. Among business owners listed in commercial directories, about 10 percent were female. Table Seven shows the percentage female in all the trades with at least 25 people listed in the 1788 Manchester commercial directory. Single women, married women, and widows are included in these numbers. Sometimes these women were widows carrying on the businesses of their deceased husbands, but even in this case that does not mean they were simply figureheads. Widows often continued their husband's businesses because they had been active in management of the business while their husband was alive, and wished to continue.²² Sometimes married women were engaged in trade separately from their husbands. Women most commonly ran shops and taverns, and worked as dressmakers and milliners, but they were not confined to these areas, and appear in most of the trades listed in commercial directories. Manchester, for example, had six female blacksmiths and five female machine makers in 1846. Between 1730 and 1800 there were 121 "rouping women" selling off estates in Edinburgh.²³

Table Six

Business Owners Listed in Commercial Directories

Date	City	Male	Female	Unknown Gender	Percent Female
1788	Manchester	2033	199	321	8.9
1824-5	Manchester	4185	297	1671	6.6
1846	Manchester	11,942	1222	2316	9.3
1850	Birmingham	15,054	2020	1677	11.8
1850	Derby	2415	332	194	12.1

Sources: Lewis's Manchester Directory for 1788 (reprinted by Neil Richardson, Manchester, 1984); Pigot and Dean's Directory for Manchester, Salford, &c. for 1824-5 (Manchester 1825); Slater's National Commercial Directory of Ireland (Manchester, 1846); Slater's Royal National and Commercial Directory (Manchester, 1850)

Table Seven

Women in Trades in Manchester, 1788

Trade	Men	Women	Gender	Percent
			Unknown	Female
Apothecary/ Surgeon / Midwife	29	1	5	3.3
Attorney	39	0	3	0.0
Boot and Shoe makers	87	0	1	0.0
Butcher	33	1	1	2.9
Calenderer	31	4	5	11.4
Corn & Flour Dealer	45	4	5	8.2
Cotton Dealer	23	0	2	0.0
Draper, Mercer, Dealer of Cloth	46	15	19	24.6
Dyer	44	3	18	6.4
Fustian Cutter / Shearer	54	2	0	3.6
Grocers & Tea Dealers	91	16	12	15.0
Hairdresser & Peruke maker	34	1	0	2.9
Hatter	45	3	4	6.3
Joiner	34	0	1	0.0
Liquor dealer	30	4	14	11.8
Manufacturer, cloth	257	4	118	1.5
Merchant	58	1	18	1.7
Publichouse / Inn / Tavern	126	13	2	9.4
School master / mistress	18	10	0	35.7
Shopkeeper	107	16	4	13.0
Tailor	59	0	1	0.0
Warehouse	64	0	14	0.0

Source: Lewis's Manchester Directory for 1788 (reprinted by Neil Richardson, Manchester, 1984)

Guilds often controlled access to trades, admitting only those who had served an apprenticeship and thus earned the “freedom” of the trade. Women could obtain “freedom” not only by apprenticeship, but also by widowhood. The widow of a tradesman was often considered knowledgeable enough in the trade that she was given the right to carry on the trade even without an apprenticeship. In the eighteenth century women were apprenticed to a wide variety of trades, including butchery, bookbinding, brush making, carpentry, ropemaking and silversmithing.²⁴ Between the eighteenth and nineteenth centuries the number of females apprenticed to trades declined, possibly suggesting reduced participation by women. However, the power of the guilds and the importance of apprenticeship were also declining during this time, so the decline in female apprenticeships may not have been an important barrier to employment.²⁵

Many women worked in the factories of the Industrial Revolution, and a few women actually owned factories. In Keighley, West Yorkshire, Ann Illingworth, Miss Rachael Leach, and Mrs. Betty Hudson built and operated textile mills.²⁶ In 1833 Mrs. Doig owned a powerloom factory in Scotland, which employed 60 workers.²⁷

While many women did successfully enter trades, there were obstacles to women’s employment that kept their numbers low. Women generally received less education than men (though education of the time was of limited practical use). Women may have found it more difficult than men to raise the necessary capital because English law did not consider a married woman to have any legal existence; she could not sue or be sued. A married woman was a *feme covert* and technically could not make any legally

binding contracts, a fact which may have discouraged others from loaning money to or making other contracts with married women. However, this law was not as limiting in practice as it would seem to be in theory because a married woman engaged in trade on her own account was treated by the courts as a *feme sole* and was responsible for her own debts.²⁸

The professionalization of certain occupations resulted in the exclusion of women from work they had previously done. Women had provided medical care for centuries, but the professionalization of medicine in the early-nineteenth century made it a male occupation. The Royal College of Physicians admitted only graduates of Oxford and Cambridge, schools to which women were not admitted until the twentieth century. Women were even replaced by men in midwifery. The process began in the late-eighteenth century, when we observe the use of the term “man-midwife,” an oxymoronic title suggestive of changing gender roles. In the nineteenth century the “man-midwife” disappeared, and women were replaced by physicians or surgeons for assisting childbirth. Professionalization of the clergy was also effective in excluding women. While the Church of England did not allow women ministers, the Methodists movement had many women preachers during its early years. However, even among the Methodists female preachers disappeared when lay preachers were replaced with a professional clergy in the early nineteenth century.²⁹

In other occupations where professionalization was not as strong, women remained an important part of the workforce. Teaching, particularly in the lower grades, was a common profession for women. Some were governesses, who lived as household servants, but many opened their own schools and took in pupils. The writing profession seems to have been fairly open to women; the leading novelists of the period include Jane Austen, Charlotte and Emily Brontë, Fanny Burney, George Eliot (the pen name of Mary Ann Evans), Elizabeth Gaskell, and Frances Trollope. Female non-fiction writers of the period include Jane Marcet, Hannah More, and Mary Wollstonecraft.

Other Occupations

The occupations listed above are by no means a complete listing of the occupations of women during the Industrial Revolution. Women made buttons, nails, screws, and pins. They worked in the tin plate, silver plate, pottery and Birmingham “toy” trades (which made small articles like snuff boxes). Women worked in the mines until The Mines Act of 1842 prohibited them from working underground, but afterwards women continued to pursue above-ground mining tasks.

Married Women in the Labor Market

While there are no comprehensive sources of information on the labor force participation of married women, household budgets reported by contemporary authors give us some information on women’s participation.³⁰ For the period 1787 to 1815, 66 percent of married women in working-class households had either a recorded occupation or positive earnings. For the period 1816-20 the rate fell to 49 percent, but in 1821-40 it recovered to 62 percent. Table Eight gives participation rates of women by date and occupation of the husband.

Table Eight

Participation Rates of Married Women

	High-Wage Agriculture	Low-Wage Agriculture	Mining	Factory	Outwork	Trades	All
1787-1815	55	85	40	37	46	63	66

1816-1820	34	NA	28	4	42	30	49
1821-1840	22	85	33	86	54	63	62

Source: Sara Horrell and Jane Humphries, “Women’s Labour Force Participation and the Transition to the male-Breadwinner Family, 1790-1865,” *Economic History Review* 48 (February 1995): 89-117

While many wives worked, the amount of their earnings was small relative to their husband’s earnings. Annual earnings of married women who did work averaged only about 28 percent of their husband’s earnings. Because not all women worked, and because children usually contributed more to the family budget than their mothers, for the average family the wife contributed only around seven percent of total family income.

Childcare

Women workers used a variety of methods to care for their children. Sometimes childcare and work were compatible, and women took their children with them to the fields or shops where they worked.³¹ Sometimes women working at home would give their infants opiates such as “Godfrey’s Cordial” in order to keep the children quiet while their mothers worked.³² The movement of work into factories increased the difficulty of combining work and childcare. In most factory work the hours were rigidly set, and women who took the jobs had to accept the twelve or thirteen hour days. Work in the factories was very disciplined, so the women could not bring their children to the factory, and could not take breaks at will. However, these difficulties did not prevent women with small children from working.

Nineteenth-century mothers used older siblings, other relatives, neighbors, and dame schools to provide child care while they worked.³³ Occasionally mothers would leave young children home alone, but this was dangerous enough that only a few did so.³⁴ Children as young as two might be sent to dame schools, in which women would take children into their home and provide child care, as well as some basic literacy instruction.³⁵ In areas where lace-making or straw-plaiting thrived, children were sent from about age seven to “schools” where they learned the trade.³⁶

Mothers might use a combination of different types of childcare. Elizabeth Wells, who worked in a Leicester worsted factory, had five children, ages 10, 8, 6, 2, and four months. The eldest, a daughter, stayed home to tend the house and care for the infant. The second child worked, and the six-year-old and two-year-old were sent to “an infant school.”³⁷ Mary Wright, an “over-looker” in the rag-cutting room of a Buckinghamshire paper factory, had five children. The eldest worked in the rag-cutting room with her, the youngest was cared for at home, and the middle three were sent to a school; “for taking care of an infant she pays 1s.6d. a-week, and 3d. a-week for the three others. They go to a school, where they are taken care of and taught to read.”³⁸

The cost of childcare was substantial. At the end of the eighteenth century the price of child-care was about 1s. a week, which was about a quarter of a woman’s weekly earnings in agriculture.³⁹ In the 1840s mothers paid anywhere from 9d. to 2s.6d. per week for child care, out of a wage of around 7s. per week.⁴⁰

For Further Reading

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1780-1850. Chicago: University of Chicago Press, 1987.

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Valenze, Deborah. *The First Industrial Woman*. Oxford: Oxford University Press, 1995.

1 "Since large-scale industry has transferred the woman from the house to the labour market and the factory, and makes her, often enough, the bread-winner of the family, the last remnants of male domination in the proletarian home have lost all foundation – except, perhaps, for some of that brutality towards women which became firmly rooted with the establishment of monogamy. . . .It will then become evidence that the first premise for the emancipation of women is the reintroduction of the entire female sex into public industry." Frederick Engels, *The Origin of the Family, Private Property and the State, in Karl Marx and Frederick Engels: Selected Works*, New York: International Publishers, 1986, p. 508, 510.

2 Ivy Pinchbeck (*Women Workers and the Industrial Revolution*, Routledge, 1930) claimed that higher incomes allowed some women to withdraw from the labor force. While she saw some disadvantages resulting from this withdrawal, particularly the loss of independence, she thought that overall women benefited from having more time to devote to their homes and families. Davidoff and Hall (*Family Fortunes: Man and Women of the English Middle Class, 1780-1850*, Univ. of Chicago Press, 1987) agree that women withdrew from work, but they see the change as a negative result of gender discrimination. Similarly, Horrell and Humphries ("Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865," *Economic History Review*, Feb. 1995, XLVIII:89-117) do not find that rising incomes caused declining labor force participation, and they believe that declining demand for female workers caused the female exodus from the workplace.

3 While the British census began in 1801, individual enumeration did not begin until 1841. For a detailed description of the British censuses of the nineteenth century, see Edward Higgs, *Making Sense of the*

4 For example, Helen Speechley, in her dissertation, showed that seven women who worked for wages at a Somerset farm had no recorded occupation in the 1851 census. See Helen Speechley, *Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870*, dissertation, Univ. of Exeter, 1999.

5 Edward Higgs finds that removing family members from the “servants” category reduced the number of servants in Rochdale in 1851. Enumerators did not clearly distinguish between the terms “housekeeper” and “housewife.” See Edward Higgs, “Domestic Service and Household Production” in Angela John, ed., *Unequal Opportunities*, Oxford: Basil Blackwell, and “Women, Occupations and Work in the Nineteenth Century Censuses,” *History Workshop*, 1987, 23:59-80. In contrast, the censuses of the early 20th century seem to be fairly accurate; see Tim Hatton and Roy Bailey, “Women’s Work in Census and Survey, 1911-1931,” *Economic History Review*, Feb. 2001, LIV:87-107.

6 A shilling was equal to 12 pence, so if women earned 2s.6d. for 20 hours, they earned 1.5d. per hour. Women agricultural laborers earned closer to 1d. per hour, so the London wage was higher. See Dorothy George, *London Life in the Eighteenth-Century*, London: Kegan Paul, Trench, Trubner & Co., 1925, p. 208, and Patricia Malcolmson, *English Laundresses*, Univ. of Illinois Press, 1986, p. 25. .

7 On the technology of the Industrial Revolution, see David Landes, *The Unbound Prometheus*, Cambridge Univ. Press, 1969, and Joel Mokyr, *The Lever of Riches*, Oxford Univ. Press, 1990.

8 A petition from Glasgow cotton manufactures makes the following claim, “In almost every department of the cotton spinning business, the labour of women would be equally efficient with that of men; yet in several of these departments, such measures of violence have been adopted by the combination, that the women who are willing to be employed, and who are anxious by being employed to earn the bread of their families, have been driven from their situations by violence. . . . Messrs. James Dunlop and Sons, some years ago, erected cotton mills in Calton of Glasgow, on which they expended upwards of [£]27,000 forming their spinning machines, (Chiefly with the view of ridding themselves of the combination [the male union],) of such reduced size as could easily be wrought by women. They employed women alone, as not being parties to the combination, and thus more easily managed, and less insubordinate than male spinners. These they paid at the same rate of wages, as were paid at other works to men. But they were waylaid and attacked, in going to, and returning from their work; the houses in which they resided, were broken open in the night. The women themselves were cruelly beaten and abused; and the mother of one of them killed; . . . And these nefarious attempts were persevered in so systematically, and so long, that Messrs. Dunlop and sons, found it necessary to dismiss all female spinners from their works, and to employ only male spinners, most probably the very men who had attempted their ruin.” *First Report from the Select Committee on Artizans and Machinery, British Parliamentary Papers*, 1824 vol. V, p. 525.

9 Ann Kussmaul, *Servants in Husbandry in Early Modern England*, Cambridge Univ. Press, 1981, Ch. 1

10 See Ivy Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, Ch. 1, and K.D.M. Snell, *Annals of the Labouring Poor*, Cambridge Univ. Press, 1985, Ch. 2.

11 For the period 1574 to 1821 about 45 percent of servants were female, but this fell to 32 percent in 1851. See Ann Kussmaul, *Servants in Husbandry in Early Modern England*, Cambridge Univ. Press, 1981, Ch. 1.

12 Men usually worked 12-hour days, and women averaged closer to 10 hours. See Joyce Burnette, “An Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain,” *Economic*

13 See Ivy Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 65.

14 See Robert Allen, *Enclosure and the Yeoman*, Clarendon Press, 1992, and Joyce Burnette, "Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution," *Journal of Economic History*, March 1999, 59:41-67.

15 While the scythe had been used for mowing grass for hay or cheaper grains for some time, the sickle was used for harvesting wheat until the nineteenth century. Thus adoption of the scythe for harvesting wheat seems to be a response to changing prices rather than invention of a new technology. The scythe required less labor to harvest a given acre, but left more grain on the ground, so as grain prices fell relative to wages, farmers substituted the scythe for the sickle. See E.J.T. Collins, "Harvest Technology and Labour Supply in Britain, 1790-1870," *Economic History Review*, Dec. 1969, XXIII:453-473.

16 K.D.M. Snell, *Annals of the Labouring Poor*, Cambridge, 1985.

17 See Jane Humphries, "Enclosures, Common Rights, and Women: The Proletarianization of Families in the Late Eighteenth and Early Nineteenth Centuries," *Journal of Economic History*, March 1990, 50:17-42, and J.M. Neeson, *Commoners: Common Rights, Enclosure and Social Change in England, 1700-1820*, Cambridge Univ. Press, 1993.

18 See Peter King, "Customary Rights and Women's Earnings: The Importance of Gleaning to the Rural Labouring Poor, 1750-1850," *Economic History Review*, 1991, XLIV:461-476.

19 Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 41-42 See also Deborah Valenze, *The First Industrial Woman*, Oxford Univ. Press, 1995

20 Stephen Glover, *The Directory of the County of Derby*, Derby: Henry Mozley and Son, 1829.

21 Eden gives an example of gentlewomen who, on the death of their father, began to work as farmers. He notes, "not seldom, in one and the same day, they have divided their hours in helping to fill the dung-cart, and receiving company of the highest rank and distinction." (F.M. Eden, *The State of the Poor*, vol. i., p. 626.) One woman farmer who was clearly an active manager celebrated her success in a letter sent to the *Annals of Agriculture*, (quoted by Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 30): "I bought a small estate, and took possession of it in the month of July, 1803. . . . As a woman undertaking to farm is generally a subject of ridicule, I bought the small estate by way of experiment: the gentlemen of the county have now complimented me so much on having set so good and example to the farmers, that I have determined on taking a very large farm into my hands." The *Annals of Agriculture* give a number of examples of women farmers cited for their experiments or their prize-winning crops.

22 Tradesmen considered themselves lucky to find a wife who was good at business. In his autobiography James Hopkinson, a cabinetmaker, said of his wife, "I found I had got a good and suitable companion one with whom I could take sweet council and whose love and affections was only equall'd by her ability as a business woman." *Victorian Cabinet Maker: The Memoirs of James Hopkinson, 1819-1894*, 1968, p. 96.

23 See Elizabeth Sanderson, *Women and Work in Eighteenth-Century Edinburgh*, St. Martin's Press, 1996.

24 See K.D.M. Snell, *Annals of the Labouring Poor*, Cambridge Univ. Press, 1985, Table 6.1.

25 The law requiring a seven-year apprenticeship before someone could work in a trade was repealed in 1814.

26 See Francois Crouzet, *The First Industrialists*, Cambridge Univ. Press, 1985, and M.L. Baumber, *From Revival to Regency: A History of Keighley and Haworth, 1740-1820*, Crabtree Ltd., Keighley, 1983.

27 *First Report of the Central Board of His Majesty's Commissioners for inquiry into the Employment of Children in Factories, with Minutes of Evidence, British Parliamentary Papers*, 1833 (450) XX, A1, p. 120.

28 For example, in the case of “LaVie and another Assignees against Philips and another Assignees,” the court upheld the right of a woman to operate as feme sole. In 1764 James Cox and his wife Jane were operating separate businesses, and both went bankrupt within the space of two months. Jane’s creditors sued James’s creditors for the recovery of five fans, goods from her shop that had been taken for James’s debts. The court ruled that, since Jane was trading as a feme sole, her husband did not own the goods in her shop, and thus James’s creditors had no right to seize them. See William Blackstone, *Reports of Cases determined in the several Courts of Westminster-Hall, from 1746 to 1779*, London, 1781, p. 570-575.

29 See Deborah Valenze, *Prophetic Sons and Daughters: Female Preaching and Popular Religion in Industrial England*, Princeton Univ. Press, 1985.

30 See Sara Horrell and Jane Humphries, “Women’s Labour Force Participation and the Transition to the male-Breadwinner Family, 1790-1865,” *Economic History Review*, Feb. 1995, XLVIII:89-117.

31 In his autobiography James Hopkinson says of his wife, “How she laboured at the press and assisted me in the work of my printing office, with a child in her arms, I have no space to tell, nor in fact have I space to allude to the many ways she contributed to my good fortune.” James Hopkinson, *Victorian Cabinet Maker: The Memoirs of James Hopkinson, 1819-1894*, J.B. Goodman, ed., Routledge & Kegan Paul, 1968, p. 96. A 1739 poem by Mary Collier suggests that carrying babies into the field was fairly common; it contains these lines:

Our tender Babes into the Field we bear,
And wrap them in our Cloaths to keep them warm,
While round about we gather up the Corn;

...

When Night comes on, unto our Home we go,
Our Corn we carry, and our Infant too.

Mary Collier, *The Woman’s Labour*, Augustan Reprint Society, #230, 1985, p. 10. A 1835 Poor Law report stated that in Sussex, “the custom of the mother of a family carrying her infant with her in its cradle into the field, rather than lose the opportunity of adding her earnings to the general stock, though partially practiced before, is becoming very much more general now.” (Quoted in Pinchbeck, *Women Workers and the Industrial Revolution*, Routledge, 1930, p. 85.)

32 Sarah Johnson of Nottingham claimed that she “ Knows it is quite a common custom for mothers to give Godfrey’s and the Anodyne cordial to their infants, ‘it is quite too common.’ It is given to infants at the breast; it is not given because the child is ill, but ‘to compose it to rest, to sleep it,’ so that the mother may get to work. ‘Has seen an infant lay asleep on its mother’s lap whilst at the lace-frame for six or eight hours at a time.’ This has been from the effects of the cordial.” [*Reports from Assistant Handloom-Weavers’ Commissioners, British Parliamentary Papers*, 1840 (43) XXIII, p. 157] Mary Colton, a lace worker from Nottingham, described her use of the drug to parliamentary investigators thus: ‘Was

confined of an illegitimate child in November, 1839. When the child was a week old she gave it a half teaspoonful of Godfrey's twice a-day. She could not afford to pay for the nursing of the child, and so gave it Godfrey's to keep it quiet, that she might not be interrupted at the lace piece; she gradually increased the quantity by a drop or two at a time until it reached a teaspoonful; when the infant was four months old it was so "wankle" and thin that folks persuaded her to give it laudanum to bring it on, as it did other children. A halfpenny worth, which was about a teaspoonful and three-quarters, was given in two days; continued to give her this quantity since February, 1840, until this last past (1841), and then reduced the quantity. She now buys a halfpenny worth of laudanum and a halfpenny worth of Godfrey's mixed, which lasts her three days. . . . If it had not been for her having to sit so close to work she would never have given the child Godfrey's. She has tried to break it off many times but cannot, for if she did, she should not have anything to eat." [*Children's Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers, 1843 (431) XIV, p. 630*].

33 Elizabeth Leadbeater, who worked for a Birmingham brass-founder, worked while she was nursing and had her mother look after the infant. [*Children's Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers, 1843 (431) XIV, p. 710*.] Mrs. Smart, an agricultural worker from Calne, Wiltshire, noted, "Sometimes I have had my mother, and sometimes my sister, to take care of the children, or I could not have gone out." [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers, 1843 (510) XII, p. 65*.] More commonly, though, older siblings provided the childcare. "Older siblings" generally meant children of nine or ten years old, and included boys as well as girls. Mrs. Britton of Calne, Wiltshire, left her children in the care of her eldest boy. [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers, 1843 (510) XII, p. 66*] In a family from Presteign, Wales, containing children aged 9, 7, 5, 3, and 1, we find that "The oldest children nurse the youngest." [F.M. Eden, *State of the Poor*, London: Davis, 1797, vol. iii, p. 904] When asked what income a labourer's wife and children could earn, some respondents to the 1833 "Rural Queries" assumed that the eldest child would take care of the others, leaving the mother free to work. The returns from Bengeworth, Worcester, report that, "If the Mother goes to field work, the eldest Child had need to stay at home, to tend the younger branches of the Family." Ewhurst, Surrey, reported that "If the Mother were employed, the elder Children at home would probably be required to attend to the younger Children." [*Report of His Majesty's Commissioners for Inquiry in the Administration and Practical Operation of the Poor Law, Appendix B, "Rural Queries," British Parliamentary Papers, 1834 (44) XXX, p. 488 and 593*]

34 Parents heard of incidents, such as one reported in the *Times* (Feb. 6, 1819):

A shocking accident occurred at Llandidno, near Conway, on Tuesday night, during the absence of a miner and his wife, who had gone to attend a methodist meeting, and locked the house door, leaving two children within; the house by some means took fire, and was, together with the unfortunate children, consumed to ashes; the eldest only four years old!

Mothers were aware of these dangers. One mother who admitted to leaving her children at home worried greatly about the risks:

I have always left my children to themselves, and, God be praised! nothing has ever happened to them, though I thought it dangerous. I have many a time come home, and have thought it a mercy to find nothing has happened to them. . . . Bad accidents often happen. [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary*

Leaving young children home without child care had real dangers, and the fact that most working mothers paid for childcare suggests that they did not consider leaving young children alone to be an acceptable option.

35 In 1840 an observer of Spitalfields noted, “In this neighborhood, where the women as well as the men are employed in the manufacture of silk, many children are sent to small schools, not for instruction, but to be taken care of whilst their mothers are at work.” [*Reports from Assistant Handloom-Weavers’ Commissioners, British Parliamentary Papers*, 1840 (43) XXIII, p. 261] In 1840 the wife of a Gloucester weaver earned 2s. a week from running a school; she had twelve students and charged each 2d. a week. [*Reports from Assistant Handloom Weavers’ Commissioners, British Parliamentary Papers*, 1840 (220) XXIV, p. 419] In 1843 the lace-making schools of the midlands generally charged 3d. per week. [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 46, 64, 71, 72]

36 At one straw-plaiting school in Hertfordshire,

Children commence learning the trade about seven years old: parents pay 3d. a-week for each child, and for this they are taught the trade and taught to read. The mistress employs about from 15 to 20 at work in a room; the parents get the profits of the children’s labour. [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 64]

At these schools there was very little instruction; some time was devoted to teaching the children to read, but they spent most of their time working. One mistress complained that the children worked too much and learned too little, “In my judgment I think the mothers task the children too much; the mistress is obliged to make them perform it, otherwise they would put them to other schools.” Ann Page of Newport Pagnell, Buckinghamshire, had “eleven scholars” and claimed to “teach them all reading once a-day.” [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 66, 71] The standard rate of 3d. per week seems to have been paid for supervision of the children rather than for the instruction.

37 *First Report of the Central Board of His Majesty’s Commissioners for Inquiring into the Employment of Children in Factories, British Parliamentary Papers*, 1833 (450) XX, C1 p. 33.

38 *Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures), British Parliamentary Papers*, 1843 (431) XIV, p. 46.

39 David Davies, *The Case of Labourers in Husbandry Stated and Considered*, London: Robinson, 1795, p.14. Agricultural wages for this time period are found in Eden, *State of the Poor*, London: Davis, 1797.

40 In 1843 parliamentary investigator Alfred Austin reports, “Where a girl is hired to take care of children, she is paid about 9d. a week, and has her food besides, which is a serious deduction from the wages of the woman at work.” [*Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, British Parliamentary Papers*, 1843 (510) XII, p.26] Agricultural wages in the area were 8d. per day, so even without the cost of food, the cost of child care was about one-fifth a woman’s wage. One Scottish woman earned 7s. per week in a coal mine and paid 2s.6d., or 36 percent of her income, for the care of her children. [B.P.P. 1844 (592) XVI, p. 6] In 1843 Mary Wright, a “over-looker” at a Buckinghamshire paper factory, paid even more for child care; she told parliamentary

investigators that “for taking care of an infant she pays 1s.6d. a-week, and 3d. a-week for three others.” [*Children’s Employment Commission: Second Report of the Commissioners (Trades and Manufactures)*, *British Parliamentary Papers*, 1843 (431) XIV, p. 46] She earned 10s.6d. per week, so her total child-care payments were 21 percent of her wage. Engels put the cost of child care at 1s. or 18d. a week. [Engels, [1845] 1926, p. 143] Factory workers often made 7s. a week, so again these women may have paid around one-fifth of their earnings for child care. Some estimates suggest even higher fractions of women’s income went to child care. The overseer of Wisbech, Cambridge, suggests a higher fraction; he reports, “The earnings of the Wife we consider comparatively small, in cases where she has a large family to attend to; if she has one or two children, she has to pay half, or perhaps more of her earnings for a person to take care of them.” [*Report of His Majesty’s Commissioners for Inquiry in the Administration and Practical Operation of the Poor Law, Appendix B, “Rural Queries,” British Parliamentary Papers*, 1834 (44) XXX, p. 76]

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Constituting Workers, Protecting Women: Gender, Law, and Labor in the Progressive Era and New Deal Years

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Constituting Workers, Protecting Women is an interesting look at the

so-called *Lochner* era of American constitutional jurisprudence through

the lens of the struggle over the constitutionality of so-called “protective”¹

labor legislation, such as maximum hours and minimum wage laws. Many of these

laws applied only to women, and Novkov argues that the debate over the

constitutionality of protective laws for women — which some women’s rights

advocates saw as discriminatory legislation against women — ultimately had

profound implications for the constitutionality of protective labor legislation

more generally.

Liberally defined, the *Lochner* era — the era during which American courts were most likely to declare regulatory legislation unconstitutional, generally as violating of liberty of contract and due process under the recently-passed Fourteenth Amendment — lasted from the *Slaughterhouse Cases* in 1873, in which four of the nine Supreme Court Justices advocated strong constitutional protection for occupational liberty, through the triumph of the New Deal in the late 1930s. Novkov divides the *Lochner* era into four distinct periods. First, 1873-1897, was the “era of generalized balancing,” in which “the tension between liberty and police power emerged as the central focus of claims grounded in due process.” While a few state court decisions overturned occupational regulations during this period, these decisions were clearly the exception to a norm that permitted legislatures to interfere with the employment relationship. This norm survived in part because legislatures were disinclined to engage in much more than minor tinkering with the prevailing laissez-faire bent of labor law.

Next, came the “era of specific balancing,” from 1898-1910, which saw a significant increase in legislative initiative regarding labor relations.

Courts began to focus on the types of labor legislatures sought to regulate, distinguishing between the prototypical male laborer in an “ordinary” occupation on the one hand, and classes of labor considered legitimately in need of government assistance on the other. In cases such as *Lochner v. New York*, 198 U.S. 45 (1905), the Supreme Court held that the states’ police power did not encompass passing regulations that protected males working in ordinary occupations. Ordinary occupations were those that posed no special health risks to the workers themselves or to the public at large. However, the Supreme Court and lower courts held that states could use their police power to aid through legislation women, children, and men in especially unhealthful occupations such as underground mining. For example, just seven years before *Lochner* invalidated a maximum hours law for bakers, a profession deemed

ordinary, the Supreme Court upheld a maximum hours law for miners, *Holden v.*

Hardy, 169 U.S. 366 (1898). Just three years after *Lochner*, the

Court upheld a maximum hours law for women — *Muller v. Oregon*, 208 U.S.

16 (1908).

In the ensuing period of “labor-centered analysis” between 1911 and 1923, courts

focused on “the justifications that could be used to show that protective labor

legislation for women was legitimate” (33). During this era, which coincided

with a spate of relatively Progressive appointments to the Court, the Supreme

Court was favorably inclined toward protective legislation, and almost

overturned *Lochner* itself. Only Justice Brandeis’ recusal in *Bunting*

v. Oregon, 243 U.S. 426 (1917), prevented this result, leaving the Court

deadlocked 4-4. Courts were content to uphold protective legislation for women

based on stereotyped views of women’s role in society, supported by dubious

social science authored by Progressive reformers purporting to show that women

were incapable of competing in the workplace with men.

Finally, the period from 1923 through 1937 was an era of “gendered

rebalancing.” Discussion of protective labor legislation continued to center on

laws that applied to women only, especially minimum wage laws. The era began

with the Supreme Court overturning a minimum wage law for women on the grounds

that women have the same right to liberty of contract with men — *Adkins v.*

Children’s Hospital, 261 U.S. 525 (1923). It ended with the Court upholding

a similar law, accepting the Progressives’ argument that allowing workers with

unequal bargaining power to fend for themselves in contractual negotiations

cannot be considered liberty at all.

In preparing her book, Novkov apparently read every reported federal and state

case on protective labor legislation during the relevant time period. This is a

useful corrective to the all-too-common approach of many scholars of relying

solely on the most famous Supreme Court cases, as if they encompass the entire

range of constitutional decisionmaking. Having read and tabulated these cases,

Novkov finds that in each of the four eras she discusses, both federal and

state courts were more likely, often far more likely, to uphold women's protective legislation than general protective labor legislation.² This is a significant finding, but one that, as Novkov implicitly acknowledges, is not especially remarkable. Even during the height of the *Lochner* era, courts, and especially the United States Supreme Court, were generally reluctant to strike down labor legislation under the Fourteenth Amendment's due process clause.

At least through the early 1920s, most decisions striking down labor laws involved legislation that courts believed had no rational explanation beyond an attempt to aid labor unions. For example, several decisions invalidated legislation banning "yellow dog" contracts that prohibited workers from joining unions. Legislation primarily benefiting labor unions was problematic on two fronts. First, such legislation conflicted with libertarian "free labor" ideology that arose out of the abolitionist movement and that permeated post-Reconstruction America. Pro-union legislation also conflicted with courts' more ancient hostility to "class legislation" that benefited an identifiable group at the expense of the public at large. But while the Supreme Court overturned legislation clearly benefiting labor unions, including the maximum hours law involved in *Lochner* itself, it, along with lower courts, upheld labor laws when a plausible argument was made that the law was public-spirited.³ Reformers successfully argued that women's lesser physical strength, inability to bargain equally with men, and the need to protect women's role as mothers to the next generation, all argued against seeing protective legislation as class legislation that illegitimately restricted women's liberty. (See, e.g., *Muller v. Oregon*, *supra*.)

Eventually, advocates of protective labor legislation for women were forced to make a more radical argument. The Supreme Court declared in 1923 in *Adkins v. Children's Hospital* that henceforth it would not presume that women could be restricted in their liberty of contract when men could not be.

Protective legislation would therefore be presumptively considered to be class

legislation. Defenders of protective legislation were therefore forced to abandon their reliance on the argument that women were especially necessitous, and instead argue that the courts misunderstood the true meaning of liberty of contract. Liberty was not, they argued, the mere absence of state intervention in contractual relations. Rather, liberty consisted of the ability of workers to bargain on an equal footing with their employers, a circumstance that, according to progressive reformers, required government intervention on behalf of women workers. In the absence of such intervention, public aid to these workers would be required, placing a burden on the government. This argument, if accepted, would bring protective labor laws for women well within the states' police power.

Moreover, the obvious corollary to this argument was that male workers also needed government assistance in order to exercise liberty, especially during difficult economic times when workers were said to be willing "to accept any wage to avoid starvation" (204). Minimum wage laws, rather than interfering with liberty of contract, prevented unconscionable employers from relying on the social safety net to subsidize their immoral wage policies. The Supreme Court eventually adopted this argument in 1937 in *West Coast Hotel v.*

Parrish, 300 U.S. 379 (1937). As Novkov notes, "[t]he initial focus on women as particularly vulnerable workers had enabled the logical extension of the argument that the state could intervene in any relationship of employment" once the legal system "acknowledged inequalities in bargaining power as potentially burdensome for the state" (224). While *Parrish* specifically endorsed a minimum wage law for women, its reasoning clearly signaled that the Court believed that more general regulations of the labor market were also within the government police power.

Novkov, however, exaggerates the historical importance of *Parrish*.

First, in focusing exclusively on protective labor legislation, she neglects to recognize that by the New Deal era, Lochnerian jurisprudence had gone well beyond its origins in labor cases and spread to a host of other areas. The

statism and civil liberties violations of World War I unleashed a reaction on both the left and the right. On the left, it led to the formation of the American Civil Liberties Union, and a focus on expanding protection for civil liberties under the First Amendment. On the right it transformed *Lochner*, which, as noted, had nearly been overruled in 1916, into a broader, more vigorous doctrine attempting to police the boundaries of appropriate government action. In the 1920s, the Supreme Court overturned laws segregating private housing, banning German language instruction, closing private schools, restricting entry into businesses, and regulating a host of other economic activities. The Great Depression, combined with two Supreme Court appointees by Progressive Republican Herbert Hoover, halted this libertarian trend. The *Lochner* era effectively ended not in 1937 with *West Coast Hotel*, but in 1934, when the Supreme Court upheld an obscene New York law fixing an above-market price for milk at the height of the Depression — *Nebbia v. New York*. With that case, the argument that the limits of the police power were a significant constraint on economic regulation effectively vanished. Novkov discusses *Nebbia* briefly in the course of a literature review in the beginning of the book (9), but it never appears again. In fairness, the Court did overturn a minimum wage law in 1936, but only on *stare decisis* grounds — the defendant refused to argue that earlier precedents declaring minimum wage laws unconstitutional should be overruled. Regardless, Novkov argues that *Parrish*'s reasoning permitted the Court to uphold broader workplace legislation, such as the Fair Labor Standards Act (FLSA). In fact, however, the reasoning of *Parrish* became almost completely irrelevant well before the FLSA reached the Supreme Court in 1941. In 1937, when *Parrish* was decided, the swing votes on the U.S. Supreme Court still adhered to classical constitutional reasoning, which required economic regulations to be justified as exercises of the government's police power. Within the next several years, however, the Court was taken over by a wave of Roosevelt appointees, all of whom were chosen because they could be

relied upon to uphold both federal and state economic regulation under almost any circumstance, and because they saw no implicit limitations on the government's regulatory authority. As early as 1938, the Court famously announced its view that economic regulations did not impinge on fundamental rights, and that only laws threatening civil liberties and civil rights would receive anything more than the most limited scrutiny. Contrary to the implications of Novkov's thesis, this reviewer has no doubt that had the debate over protective legislation for women never occurred, the Roosevelt Court would still have upheld the FLSA and other New Deal labor legislation with no hesitation.

Other problems with the book should be noted. Novkov clearly sympathizes with Progressive reformers who challenged libertarian legal doctrines, and she is certainly entitled to this perspective. However, her sympathies seem to distort her analysis at times. For example, Novkov acknowledges that she approached her research from a feminist perspective (276), and her book contains lengthy discussions of internal debate among women's rights advocates on the wisdom of pursuing special protective laws for women. It's odd, then, that Novkov neglects to note that two of the strongest judicial pronouncements in favor of equal rights for women before the modern feminist era came in cases in which courts overturned protective labor laws.

First, in *Ritchie v. People*, 155 Ill. 98 (1895), the Illinois Supreme Court discussed at length its view that the legislature may not arbitrarily regulate the conditions of employment based on the sex of the workers involved. The court concluded that "sex is no bar, under the constitution and law, to the endowment of woman with the fundamental and inalienable rights of liberty and property, which include the right to make her own contracts." This is a rather strong statement favoring legal equality for women, announced not too many years after an era in which married women could not even own property. But Novkov fails to quote the opinion, and instead states tepidly only the court "denied that gender should make a difference in the outcome or reasoning of the

case” (61). Novkov thereby implies that the court’s opinion reflects a general hardheartedness, while a more generous reading suggests that the author of the opinion had a principled belief in women’s equality.

Even more striking is Novkov’s treatment of the United States Supreme Court’s opinion in *Adkins v. Children’s Hospital* invalidating a minimum wage law for women. Justice George Sutherland wrote for the Court:

the ancient inequality of the sexes, otherwise than physical . . . has continued ‘with diminishing intensity.’ In view of the great — not to say revolutionary — changes which have taken place since that utterance, in the contractual, political, and civil status of women, culminating in the Nineteenth Amendment, it is not unreasonable to say that these differences have now come almost, if not quite, to the vanishing point. In this aspect of the matter, while the physical differences must be recognized in appropriate cases, and legislation fixing hours or conditions of work may properly take them into account, *we cannot accept the doctrine that women of mature age, sui juris, require or may be subjected to restrictions upon their liberty of contract which could not lawfully be imposed in the case of men under similar circumstances. To do so would be to ignore all the implications to be drawn from the present day trend of legislation, as well as that of common thought and usage, by which woman is accorded emancipation from the old doctrine that she must be given special protection or be subjected to special restraint in her contractual and civil relationships.* (Emphasis added.)

Justice Sutherland’s strong endorsement of women’s equality cannot be dismissed as disingenuous. He was a longstanding advocate of women’s rights, including the Equal Rights Amendment, dating back to his earlier tenure as a Republican Senator from Utah. Yet rather than praise the Supreme Court’s endorsement of women’s rights in *Adkins*, Novkov sees only a reactionary opinion allowing women to be “subject to the same deprivations” as men (226).

The irony in Sutherland’s opinion, according to Novkov, is that because women had gained the right to vote under the Nineteenth Amendment, “they could no

longer be protected by the legislative process.” But Novkov never stops to ponder whether labor legislation was likely to have truly “protected” female workers at a time when women were disfranchised and therefore had no say in the political process. A public choice analysis would suggest that the odds that legislation pertaining to women who could not vote would have had favorable consequences to those women was slim indeed. Legislators had little if any incentive to “protect” the non-voting single, often immigrant, women who typically bore the brunt of the negative consequences of labor laws that discriminated based on sex.

Indeed, Novkov, pays almost no attention to either political economy or economics, much less to public choice specifically, even though there is no inherent contradiction between feminist and economic analysis. Not surprisingly, Novkov’s narrowed purview weakens her analysis. She thoroughly recounts the role of Progressive public interest organizations such as the National Consumers League in promoting protective legislation for women, and the internal debates within the women’s equality movement (anachronistically dubbed “feminism” by the author) over whether such legislation promoted women’s equality. However, as Novkov mentions in passing, protective legislation was also promoted by labor unions that excluded women to prevent women from competing for jobs held or sought by union members.

The coalition between Progressive activists and self-interested labor unions is an example of a classic “Baptists and Bootleggers” coalition,⁴ in which do-gooders and special interests combine forces to endorse legislation (such as Prohibition) that the “Baptists” believe to be morally worthy, and the “Bootleggers” believe will benefit them economically. In the context of protective labor legislation, the National Consumers League and its allies were the Baptists, and the labor unions were the Bootleggers. The typical result of Baptist/Bootlegger coalitions is that the specific interests of the Bootleggers, with their lack of ideological naivete and direct economic interest in the outcome of the legislation, tend to dominate the political

process, shaping the drafting and enforcement of the relevant legislation to their liking. Novkov not only fails to tell the reader whether the interests of the labor movement dominated the drafting and enforcement of protective legislation for women, it apparently never occurred to her to ask the question. Nor does Novkov ever seriously consider whether economic logic suggests that maximum hours laws or minimum wage laws that apply only to female workers actually aids them. Novkov acknowledges that some women's rights advocates argued that applying minimum wage laws to women only would benefit male competitors who could work for less. But, despite the fact that her bibliography contains a reference to a 1933 article by a classical liberal feminist entitled "Wage Laws Result in Unemployment," (288) Novkov never considers an even more basic case against special minimum wage laws — that in a free labor market, workers are paid a wage close to their marginal productivity. Regardless of competition from men, employers faced with a minimum wage law will necessarily dismiss their employees who are covered by that law if the mandated wage exceeds marginal productivity.⁵ Rather than address the economic consequence of "protective" legislation, Novkov seems instead to uncritically accept the position of Progressive propagandists that in the absence of wage legislation protecting necessitous workers, such workers will accept any wage short of starvation, even when their productivity should dictate a much higher wage. Yet if there is any evidence that workers, even during the Great Depression, were getting paid significantly less than their marginal productivity, Novkov fails to present it.⁶

Finally, the readability of this book, like many academic works, could have been improved dramatically through better editing. Stylistically, the book too often reads like a Ph.D. thesis, which it originally was. The author sometimes digresses into discussions of literature that is at best marginal to her thesis, and too often argues from authority (e.g., "Famous Professor So and So has shown,") rather than making a cogent argument and relegating the supporting sources to endnotes. Needless academic jargon pops up here and there, most

annoyingly in the author's consistent reference to "nodes of conflict," a phrase this reviewer found entirely superfluous. Perhaps most important, needless repetition pervades the book. At least one-third of the 276 pages of text could likely be eliminated with no harm done to substance, and with much gain to readability.

Despite these flaws, *Constituting Workers, Protecting Women* is recommended for readers interested in constitutional and women's history. While it does not deliver everything the author promises, or that this reviewer would have liked to see, it is a cogent account of an important legal/historical controversy. The caveat for EH.Net members is that they are likely to be put off by the book's utter lack of an economic sensibility.

Notes: 1. While the advocates of such laws claimed that their purpose was to protect workers, opponents of the laws believed them to be some combination of unduly paternalistic, counterproductive, and mercenary.

2. Unfortunately, however, she neglects to provide an appendix listing the cases she classifies as involving protective labor legislation.

3. The maximum hours law at issue in *Lochner* was intended to aid unionized German bakers, who worked a standard sixty-hour week, at the expense of more recent immigrant Italian and Jewish immigrant bakers, who were on call for longer hours under a different system of production.

4. See, e.g., Bruce Yandle, "Bootleggers and Baptists in Retrospect," *Regulation* 22, no. 3 (1999).

5. The reader is told that "supporters of [women's] equality largely rejected the laissez-faire model of the labor marketplace" (198) (emphasis added). This suggests that some advocates of equality supported laissez-faire, but these libertarians are effectively written out of Novkov's feminist history, making no further appearance in the text.

6. Novkov also fails to discuss the empirical evidence regarding the effect of sex-specific labor laws. Admittedly, this evidence is scanty, but Novkov does not even cite, either in the text or her bibliography, economist Elizabeth

Landes' well known article arguing that maximum hours laws for women created unemployment, especially among immigrant women, "The Effect of State Maximum-Hours Laws on the Employment of Women in 1920," *Journal of Political Economy* 88 (June 1980): 476-94. For criticism, see Claudia Goldin, "Maximum Hours Legislation and Female Employment: A Reassessment," *Journal of Political Economy* 96 (February 1988): 189-205.

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Subject(s): Social and Cultural History, including Race, Ethnicity and Gender

Geographic Area(s): North America

Time Period(s): 20th Century: Pre WWII

In Uncle Sam's Service: Women Workers with the American Expeditionary Force, 1917-1919

Author(s): Zeiger, Susan

Reviewer(s): Nickless, Pamela

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Susan Zeiger, *In Uncle Sam's Service: Women Workers with the American Expeditionary Force, 1917-1919*. Ithaca, NY: Cornell University Press, 1999. x + 211 pp. \$37.50 (cloth), ISBN: 0-8014-3166-2.

Reviewed for EH.NET by Pamela Nickless, Department of Economics, University of North Carolina at Asheville.

The image of an aristocratic (beautiful) young Englishwoman as a heroic ambulance driver or nurse in World War I is common to most of us. Slightly less common perhaps is the smiling (gorgeous) young American canteen girl dispensing coffee, doughnuts and patriotic good cheer to American boys at the front. These Anglo-American images of the role of women in World War I have an

element of truth but they have silenced a far more interesting story that Susan Zeiger (Associate Professor of History, Regis College) tells in this fine book about the first US war in which women were mobilized by the armed forces.

At least 16,500 women were part of the American Expeditionary Force (AEF) as members of the army, civilian employees of the army, or employees of official welfare agencies working with the army. Zeiger uses previously unexplored sources including personnel records and army files, oral histories, and veterans' questionnaires to reinterpret women's wartime service. She finds that the "vast majority of AEF servicewomen were wage earners, white, literate, lower-middle-class, and often self-supporting" (p.2). She places the stories of the servicewomen in the context of women's employment in the early twentieth century and she examines the role played by war in the social construction of gender. In the early twentieth century, the problem of gender and war was very different from our own attempt to grapple with women and military service. The argument, simply put, was more essentialist.

Conservatives like Teddy Roosevelt argued that the US was undergoing "a crisis in masculinity" and that war and military training would "renew the virility of a nation in decline and restore men to a position of leadership and women to their proper role of subservience" (p.4). Prominent leaders of the women's peace movement, like Jane Addams and Carrie Chapman Catt, argued that mother-love was a force against militarism and could lead the nations into a civilization based on peace and mutual respect. Both of these essentialist arguments would be threatened by the deployment of women in the war zone.

Another view of gender neutrality and sex-blind "human" rights began to compete with this notion of essential sex-differences among feminists in the 1910s and many women saw the wartime deployment of women as furthering the notion of gender equality. Women's wartime employment was bound to challenge traditional gender roles and create even more instability about the proper role for women. (Note the common Anglo-American images of women at war were

propagated during the war and do not directly challenge the more essentialist views of women's roles.)

Professor Zeiger has done a great job with this interesting and complex story.

She describes mobilization efforts and the women who enlisted and then spends a chapter each on auxiliary workers (doughnut girls), clerical workers and telephone operators, and nurses. She concludes with a chapter on the meaning of wartime work. A number of Zeiger's findings surprised this reader including the fact that the typical recruit was mature (over 30) and single. Also intriguing were the reasons why the US choose to use auxiliary agencies to recruit women instead of creating a women's corps in the army as the UK did, the battle army nurses waged during and after the war for military rank, and the post-war struggle for veterans' benefits for servicewomen.

The struggle to use women for necessary labor but to avoid challenging traditional gender roles is made clear in all three broad categories of female labor. For example, the clerical workers and telephone operators were workers who possessed skills crucial to the communication necessary to troop and supply movements. They were subject to military discipline but were not in the military (a distinction often lost on the women themselves and soldiers).

Early on it was discovered that men (who were not trained in civilian life to run switchboards and typewriters) could not successfully replace women in these vital roles. The information revolution of the late nineteenth century had created a whole new class of workers required for the functioning of a bureaucracy. Secretaries and telephone operators had access to vital information hence the need for military discipline — yet, many in the military, including the Secretary of War opposed enlisting women. It was decided the women would not be in the army and the YWCA stepped in to oversee the private lives of women and arrange for their living quarters. Women were subjected to military discipline and dress, often putting up with heavy-handed managerial policies because they believed they were in the army. Signal Corps women in particular were disappointed after the war to discover they did not

qualify for veterans benefits and organized to demand recognition.

Nurses really were in the army and were officers but were denied military rank. They technically “out-ranked” the enlisted wounded men under their care but this was greatly complicated by their rank-less officer status. Enlisted men who worked in the hospitals and men under their care often resisted “taking orders” from army nurses whom they often perceived as just bossy civilians. Nurses, unlike other servicewomen, organized during the war and demanded recognition and autonomy but the army was resistant. One measure of the army’s ambivalence toward nurses was that they refused to equip or uniform them. The army required that the Red Cross provide each nurse (who was a member of the army!) with equipment. Further army nurses would not be paid when held as prisoners of war (male personnel were) and were excluded from retirement benefits. The nurses were successful in overturning the pay for prisoners of war ruling during the war but the exclusion from retirement benefits held.

Concern about proper female behavior was paramount in the minds of the military and the auxiliary organizations that recruited women. Auxiliary workers in particular were expected to create a domestic environment on the front. While real families might serve as a distraction (sisters and wives of soldiers were barred from enlistment), surrogate families would serve to improve morale and provide a distraction from the more traditional “camp followers.” So auxiliary workers were to distract soldiers from dangerous French whores, serving instead as substitute sisters — an interesting notion. Many canteen workers had ‘enlisted’ to “stand up beside the boys and say, ‘Here! Look at me! I’m just as good a soldier in my way as you are in yours!’” (p, 60). When they found themselves doing work that resembled unpaid domestic labor and isolated from the military aspects of the war, they were often frustrated. The notion of creating domestic space without sexual tension may have been easier than it seems since most women were ten or more years older than the doughboys. Yet, rumors of sexual misbehavior occasionally

surfaced and camp love affairs did occur. Interestingly, the most vicious and persistent rumors of sexual misbehavior by women or sexual violence by men concerned nurses, the only women who were members of the armed forces. Zeiger argues convincingly that these persistent rumors were a covert way of resisting the dependence of the military on skilled women. The rumors reflect the view that female sexuality was a threat to men at war.

Professor Zeiger argues convincingly that World War I was “a defining moment in the evolution of the U.S. gender system” (p.173). The war exposed the inherent contradiction between the increasing employment of (middle-class) women outside the domestic sphere and the traditional ideology of gender roles. Women’s service on the front in the war and the granting of suffrage to women after a one hundred and twenty year struggle challenged the old definition of citizenship. Women claimed full citizenship on the basis of their participation in the work of the nation, both at home in the labor force and on the front in the war. While there were no dramatic transformations in women’s role as a result of the war, society would try to work out the implications of women’s full membership in the nation state for the rest of the twentieth century. I recommend this very thoughtful book to anyone interested in World War I and to anyone interested in the changing nature of gender roles. The role of the suffrage movement in the war effort and gender role shifts is a very interesting sub-theme, which will also be of general interest. Thanks, Professor Zeiger, I, for one, will never think of World War I in quite the same way!

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Subject(s): Labor and Employment History

Geographic Area(s): North America

Time Period(s): 20th Century: Pre WWII

Women Workers and the Industrial Revolution, 1750-1850

Author(s): Pinchbeck, Ivy

Reviewer(s): Burnette, Joyce

Ivy Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*. London: George Routledge, 1930. x + 342 pp.

Review Essay by Joyce Burnette, Department of Economics, Wabash College.

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A Pioneer in Women's History:

Ivy Pinchbeck's *Women Workers and the Industrial Revolution, 1750-1850*

During the past twenty years economic historians have begun to pay more attention to the role of women in the economy of Industrial Revolution Britain, and how our conclusions might change if we no longer neglect them. We can thank Ivy Pinchbeck for blazing the trail seventy years ago. Her *Women Workers and the Industrial Revolution, 1750-1850* is one of the most significant works in twentieth-century economic history both because of its merits and because of the impact it had on later scholarship. Pinchbeck consulted a huge number of primary sources, and was able to synthesize this material into broader conclusions that have shaped our understanding of women's history. The book was a pioneering effort in the field of women's economic history, and has served as a valuable resource for later researchers.

Ivy Pinchbeck is not one of economic history's superstars, and relatively little is known about her. She was born in 1898. In 1930 she received her Ph.D. in Economic History from the London School of Economics, where she worked under Eileen Power. She spent her entire career (1928 through her retirement) at Bedford College, London. In 1969 she published (with Margaret Hewitt) *Children in English Society*, which examined English children from the sixteenth century to the twentieth century. She also published a couple of articles in the *British Journal of Sociology*, but her list of publications is not particularly long. Pinchbeck wrote about women's history before it was considered an important topic, and she lived, and presumably died, in relative obscurity.

Women Workers and the Industrial Revolution is clearly the product of countless hours of research. The number of texts that Pinchbeck consults is amazing, and this wide-ranging research makes her bibliography of primary sources a valuable resource for the student of women's history. It contains seven manuscript sources, 120 volumes of parliamentary reports, 21 newspapers and periodicals, and 208 contemporary books and pamphlets. This breadth of sources allows her to quote not only from the most famous authors such as Arthur Young and F.M. Eden, but also from more obscure sources such as the pamphlets "A Present for a Servant Maid" and "An Enquiry into the Advantages and Disadvantages

Resulting from Bills of Enclosure.” Pinchbeck quotes liberally from these sources, and each chapter is filled with footnotes, providing a gold mine for the researcher. If there is an important quote in the report of a parliamentary committee, chances are high that you will find that quote in Pinchbeck’s book.

The book is divided into two sections, the first on agriculture and the second on “industry and trade.” The first section examines both female laborers, whose participation in agriculture remained high, and farmers’ wives, who withdrew from farm work during this period. The second section examines women in textiles, domestic industries, mining, metals, and various crafts. One admirable feature of the book is that it examines not only the work of poor women, but also the work of women higher up the occupational ladder. Pinchbeck examines the work of women who ran dairies, kept shops, provided medical services, and participated in a wide variety of trades. Pinchbeck finds evidence of women auctioneers and notes that facts such as this “cause some astonishment at the present day when it is so often wrongly assumed that women have only just begun to enter the business world” (Pinchbeck, p. 286).

While Pinchbeck spends most of her time describing the conditions of employment, she does on occasion pause to draw more general conclusions. Her central claim is that, on the whole, the Industrial Revolution made women better off. Initially women suffered from declining employment opportunities, but after the turn of the nineteenth century their prospects improved. Pinchbeck claims that women were better off in 1850 than in 1750 for two reasons. First, many women withdrew from the labor force and were able to enjoy more leisure and higher social standing. Pinchbeck sees the opportunity to specialize in housework as a privilege, and thus she sees withdrawal of some married women from the labor force as an improvement. While Pinchbeck notes that many women lost economic independence, she considers the gains to be large enough to make up for this loss. Noting the withdrawal of farmers’ wives from productive employment, she claims, “In the change she sacrificed her former economic independence according to the extent to which she ceased to manage her household and contributed to the wealth of her family, but for her, the new conditions meant an advance in the social scale and did not entail any material hardship” (Pinchbeck, p. 42). For Pinchbeck, the move toward a “family wage,” which allowed a man to support a family and allowed wives to withdraw from the labor force, was a clear advance.

The second way in which women were better off in 1850 was in improved working conditions for those women who remained in the labor force. Pinchbeck notes that, while contemporaries thought factory conditions were bad, these conditions were actually better than the conditions in alternative employments in domestic industry. Women entering the factories did not leave behind ideal circumstances, but domestic industries with low pay and poor working conditions. Pinchbeck concludes that “the Industrial Revolution has on the whole proved beneficial to women. It has resulted in greater leisure for women in the home and has relieved them from the drudgery and monotony that characterized much of the hand labour previously performed in connection with industrial work under the domestic system. For the woman workers outside the home it has resulted in better conditions, a greater variety of openings and an improved status” (Pinchbeck, p. 4).

When the book appeared, the topic of women’s work was marginal. A decade earlier Alice Clark had written *The Working Life of Women in the Seventeenth Century*, but women’s work was hardly a popular topic. When Pinchbeck’s book came out it was favorably reviewed. General economics journals such as the *Economics Journal* and the *American Economic Review* carried reviews. Scholars were familiar with the book and considered it important; Kenneth Walker, in a review of a 1948 book on factory legislation, chides the author for failing to keep up with “recent literature pertinent to this subject” such as

Pinchbeck's book. For the most part, however, the book was politely ignored. Both the topic and the book remained on the margins of economic history for five decades. The first *Journal of Economic History* article that cites Pinchbeck is a 1959 article on the Industrial Revolution by R.M. Hartwell. Even here, the focus is not on women's history, but on the standard of living debate; Hartwell quotes Pinchbeck as saying that factories improved the standard of living. Pinchbeck is not cited again in a *Journal of Economic History* article until the 1980s.

Since 1980 Pinchbeck has received more attention because we have come to realize that an economic history that ignores women is a poor economic history (see Humphries, 1991). Pinchbeck has become required reading for students of women in the Industrial Revolution and is universally cited in current works on that topic. Humphries (1991, p. 32) calls the book a "classic text." Jane Rendall (1990, p. 7) claims that "Pinchbeck's work is still of great importance, and for the moment remains the major survey of the impact of industrialization on women workers in Britain." Many works on women's history begin with a reference to Pinchbeck. Duncan Bythell begins "Women in the Work Force" by contrasting Pinchbeck's optimistic view of women's opportunities to Eric Richards' more pessimistic view. While Pinchbeck's book was relatively neglected when it first appeared, it has stood the test of time.

For a historian relying on non-quantitative sources, Pinchbeck did an admirable job of describing the patterns and trends in women's work. Later historians using more quantitative methods generally agree with her descriptions. A good example is Sara Horrell and Jane Humphries' 1995 *Economic History Review* article, which begins with the sentence, "Ivy Pinchbeck argued 65 years ago that the changes in the British economy during the industrial revolution promoted increased dependence on male wages and male wage-earners" (Horrell and Humphries, 1995, p. 89). Using a probit equation to predict female labor force participation, they find a downward trend in female labor force participation throughout the first half of the nineteenth century, which leads them to the conclusion that "Sixty-five years on we find that our evidence largely supports Pinchbeck's views" (Horrell and Humphries, 1995, p. 113). Other historians have also supported Pinchbeck's claims. K.D.M. Snell's *Annals of the Labouring Poor* finds that, in the early nineteenth century, farmers hired fewer workers as annual servants, supporting Pinchbeck's conclusion that "the custom of employing annual servants who lived in the farm declined in favour of day laborers who were responsible for their own board and lodging" (Pinchbeck, p. 37). Snell's examination of the records of parish apprentices confirms Pinchbeck's observation that women were apprenticed to a wide variety of trades. Investigating the employment of day-laborers at a farm near Sheffield, I have found that the pattern of female employment in agriculture fits well with the pattern that Pinchbeck describes: declining female employment between 1815 and 1834, followed by increasing female employment (Burnette, 1999).

Pinchbeck's most controversial conclusion is her claim that the Industrial Revolution made women better off. Jane Rendall (1990, p. 7) claims that "Most modern historians would see her interpretation . . . as unduly optimistic." Many historians see the period as one during which women lost rather than gained. The disagreement seems to be mainly one of interpretation. Pinchbeck notes that many women withdrew from the labor force, and she interprets this as a gain. Women had more leisure, and more time to devote to their housework. Other historians, observing the same change, have interpreted it as a decline in women's position as they were forced out of the labor market. Women may have gained leisure, but they lost independence and bargaining power. Davidoff and Hall (1987, p. 273), for example, note that "the loss of opportunities to earn increased the dominance of marriage as the only survival route for middle-class women."

Occasionally Pinchbeck includes statements that resemble theories later formalized by economics. For example, in her introduction Pinchbeck states that “such occupations as were open to women were overstocked” (Pinchbeck, p. 2). This sounds like the crowding model of discrimination developed by Barbara Bergmann in 1971. At other times Pinchbeck’s theory is not so strong. A weak point in her economics is her theory of wage determination. She assumes wages were based on what one needed to survive, not on productivity. Discussing wages earned by spinners, she claims, “Manufacturers were inclined to base wages on the assumption that the spinners were already maintained by their husbands” (Pinchbeck, p. 144). She claims that the withdrawal of women from the labor force was not really an economic loss to the family because “in many instances women’s earnings only served to keep their husbands’ wages at the level of individual subsistence. In this sense the industrial revolution marked a real advance, since it led to the assumption that men’s wages should be paid on a family basis” (Pinchbeck, p. 313). This theory of wage determination probably comes from the classical wage fund doctrine, but this does not excuse her because other economists at that time recognized the weakness of this theory. Frances Gillespie, in her review of the book, notes that “Whether men’s wages were kept down to the level of their own subsistence because women and children earned their own keep, is arguable” (Gillespie, p. 419-420). Gillespie uses better economic theory when she argues that if women’s employment had any effect on male wages it was through competition in the labor market.

Pinchbeck’s book received little attention for fifty years because it took the rest of the profession that long to realize the importance of her topic. We now recognize the importance of investigating the work of women as well as the work of men, and we must thank Ivy Pinchbeck for leading the way.

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—Reviews of Ivy Pinchbeck's *Women Workers and the Industrial Revolution, 1750-1850*:

1. Edith Abbott, *American Historical Review*, 37 (Jan. 1932): 325-326.

2. George Engberg, *Journal of Economic History*, 31(June 1971): 519-520.

3. Frances E. Gillespie, *Journal of Political Economy*, 39 (June 1931): 418-420.

4. J. de L. Mann, *Economic History Review*, 3 (Oct. 1931): 303-305.

5. Helen Sumner Woodbury, *American Economic Review*, 29 (Dec. 1930): 713-722.

6. Barbara Wootton, *Economic Journal*, 41(Mar. 1931): 128-129.

Subject(s): Labor and Employment History

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Time Period(s): 19th Century

Widows in European Economy and Society, 1600-1920

Author(s): Moring, Beatrice
Wall, Richard

Reviewer(s): Burnette, Joyce

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Beatrice Moring and Richard Wall, *Widows in European Economy and Society, 1600-1920*. Woodbridge, UK: Boydell Press, 2017. xiii + 327 pp. \$120 (hardback), ISBN: 978-1-78327-177-1.

Reviewed for EH.Net by Joyce Burnette, Department of Economics, Wabash College.

While many books have been written on the role of women in economic history, few have focused on widows. Consistently ten to fifteen percent of adult women are widows. Moring (University of Helsinki) and Wall (University of Essex) examine widows, and encourage us to reassess our assumptions about them. The argument of the book is that the typical widow was not lonely and destitute, unable to find a man willing to marry her, but was in fact economically active and living with family. The book focuses on three main themes: poverty, property, and demography.

The book includes a wide variety of data. There are 67 tables in the main text, and an additional 17 tables in the appendices, presenting averages and percentages that describe the lives of widows. Sources include poor law, tax and court records, probate inventories, wills and censuses. Most of the primary data are from Britain and the Nordic countries, since Moring specializes in Finland and Scandinavia, and Wall specializes in Britain. The authors do a good job of supplementing their own research with secondary material from other countries, to provide comparisons across Europe. For example, the authors discuss what portion of property the widow had a right to inherit in France, Germany, Spain, and Italy as well as Britain and the Nordic countries, and they compare co-residence with children in Britain, Germany, Norway, France, and Italy.

While there certainly were poor widows, the typical widow was not poor. Poverty was slightly higher among widows than among men, but widowhood did not necessarily make a woman poor. Only a small minority of widows (less than 20 percent) were on poor relief, and those that were received only a minority of their household support from poor relief payments. Widows were not idle, but their earnings were low. In Britain widows on poor relief earned about two-fifths of their household earnings from their own work. Poor relief provided only about one-fifth of household income, and the remainder came from the earnings of their children. The authors note that poor relief was never meant to provide a widow's entire income: "the intention was to augment the economy of the widow, not to support her" (p. 37). Often widows were not given money or food, but inputs that enabled them to be productive. For example, a Scandinavian widow received the "use of the field and potato patch she has been using until now. She can keep a cow and five adult sheep in the summer on the village grazing grounds" (p. 41).

Many widows had substantial assets. In most countries the widow was legally entitled to somewhere between one-third and one-half of the estate. Widows often inherited the family house. Many widows were wealthy enough to pay taxes; across Europe between 4 and 25 percent of taxpayers were women. While widows had on average fewer assets than men, the typical widow was not destitute. Nordic inventories suggest that the average widow held about half as much property at her death as her husband had at his death, a reduction which makes sense because children had a right to half of the property. Often the farm was not split, but the widow owned only part of the farm, and part was owned by her children.

In many parts of Europe, widows might have a "retirement contract" which gave ownership of the land to the son, but specified that the widow be given food, lodging, and other goods such as firewood, until her death. In Finland about one-fifth of widows lived under such contracts, and in parts of France up to 60 percent of couples had such contracts. Sometimes the contracts were quite specific, specifying the amount and quality of specific grains. The contracts were written so that even if the son were to lose the land to creditors, the new owner would still have to support the widow.

Most widows were economically productive. Inventories of widows' property include goods that demonstrate economic activity, such as fishing boats, shoemaking tools, and shop merchandise. Most

guilds allowed women to continue in their husbands' trade, and typically around ten percent of urban traders were widows. Even widows living under "retirement contracts" received goods suggesting that they remained economically active. For example, a Scandinavian widow received "A quarter of the cowshed and the old stables for a barn, the right to use half the hayloft and half the storage shed" (p. 136), rights which would not have been particularly useful if she were not engaged in animal husbandry. Another widow received "a cabbage patch 5 yards long and 3 yards wide and the space to sow flaxen in suitable soil" (p. 137), which suggests not only gardening but also textile production.

Since census records are not sufficient to answer questions such as the typical length of widowhood, the authors use a technique called micro-simulation to estimate the age distribution of widows and the average duration of widowhood from known demographic data. The typical widow entered that state around age 50, and remained a widow approximately 18 years. About twelve percent had no children at the time they were widowed. The European Marriage Pattern of northern Europe is said to be characterized by nuclear families and limited inter-generational cooperation. Moring and Wall question this claim, noting that the majority of widows lived with their children in both northern and southern Europe.

This book leaves us with a picture of widows as active and empowered rather than lonely and dependent. Men were more likely to remarry than women, but we should not necessarily interpret this as a sign of the widow's weakness; perhaps women enjoyed the autonomy that came with widowhood and did not wish to remarry.

Joyce Burnette is currently working on examining the gender gap and peer effects among Swedish workers c. 1900 and absenteeism among nineteenth-century U.S. workers.

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Subject(s): Business History
Household, Family and Consumer History
Social and Cultural History, including Race, Ethnicity and Gender

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19th Century
20th Century: Pre WWII

Brazil in Transition: Beliefs, Leadership, and Institutional Change

Author(s): Alston, Lee J.

Melo, Marcus Andre
Mueller, Bernardo
Pereira, Carlos

Reviewer(s): Weller, Leonardo

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Lee J. Alston, Marcus Andre Melo, Bernardo Mueller and Carlos Pereira, *Brazil in Transition: Beliefs, Leadership, and Institutional Change*. Princeton: Princeton University Press, 2016. xviii + 259 pp. \$39.50 (hardcover), ISBN: 978-0-691-16291-1.

Reviewed for EH.Net by Leonardo Weller, São Paulo School of Economics, FGV.

Brazil in Transition is an intriguing book that holds the reader's attention throughout. Alston, Melo, Mueller and Pereira make a rather provocative claim: that Brazil is likely to grow into a developed economy because it is in the process of becoming an open, inclusive and fiscally sound society. This inevitably comes as a surprise because Brazil is in its worst economic crisis since the 1930s: GDP fell by 3.8% in 2015 and is expected to fall again by 3.2% in 2016; the government is running a fiscal deficit of 10% of GDP; inflation is way above the 4.5% target; unemployment is at two digits; and poverty has been rising quickly. If one reads the Brazilian press, the book seems out of place, to say the least. Yet this is precisely the reason why it is interesting, whether it is right or wrong. The authors refer to history to contradict the current hysteria. They claim that Brazil is likely to follow a development path that started in the 1990s. The present crisis would be a "bump in the road."

The authors apply a version of the New Institutional Economics in which beliefs play a central role. Beliefs are the way the "dominant network" understands how the "world works." Composed of politicians, entrepreneurs, the media and top civil servants, the dominant network builds institutions that they believe will deliver specific economic results.

In the 1960s and '70s, Brazil's dominant network believed that the state was supposed to stimulate industrialization without redistributing wealth. The institutions put in place resulted in rapid growth and rising inequality. Brazil was ruled by a dictatorship and the well-being of the majority did not concern those in power. This changed, however, in the 1980s, when democratization enfranchised the people, so the need to promote social inclusion became part of the dominant network's beliefs. The book analyzes in detail the 1988 Constitution as an institution forged to redistribute wealth and introduce checks and balances in statecraft. The new constitution extended the public retirement scheme to rural workers, required the state to provide universal free education and healthcare, and professionalized civil servant careers.

The constitution was inclusive but not fiscally sustainable. It required the state to increase expenditure, which resulted in enormous deficits. Four-digit inflation compromised economic growth and lowered real wages in the 1980s. Income concentration reached its record level in the early 1990s. The institutions designed to promote social inclusion failed to do so. Nevertheless, that frustrated outcome opened a "window of opportunity," which the authors define as a crucial moment in which the dominant network may (or may not) adjust its beliefs and change institutions in order to improve economic results.

The authors claim that institutional change is not automatic: it takes leadership to bring about the transition. They assert that former President Fernando Henrique Cardoso (1995-2002) was such a man to provide it. An influential intellectual and respected politician, Cardoso had the reputation and skills to

form a strong coalition that transformed institutions for the better. The Real Plan controlled inflation and the Fiscal Responsibility Law reduced the fiscal deficit. In parallel, the Cardoso administration launched a number of social programs, universalized the access to basic education and privatized inefficient state-owned companies.

Though growth was dismal in the 1990s, price stability redistributed wealth. The public acknowledged the positive outcomes of orthodoxy, so former President Lula (2003-10), a left-wing trade unionist, maintained Cardoso's main macroeconomic policies once in office. His successor and protégé Dilma Rousseff (2011-16) increased expenditure to boost demand but was impeached based on the fiscal laws approved under Cardoso. The book was released before President Michel Temer took office. As predicted in the foreword, his administration is attempting to rebalance fiscal accounts (though so far without success).

Brazil has indeed become a more inclusive, open society. The authors are persuasive when they assert that the changes in beliefs under Cardoso have driven the country into an institutional deepening process that works in an autopilot mode. Yet the conclusion that this process will transform Brazil into a developed economy is quite a stretch. It is true that development is more than growth, but it takes growth to make a developing economy into a developed economy. The book lacks an economic analysis to back its conclusion. It presents rather limited quantitative evidence. It ignores the consequences of deindustrialization and labor laws that date from the 1940s, when the country was industrializing. Legal rigidities between employers and employees keep productivity low in a service economy, and that has not changed at all.

Brazil's extremely complex tax system is a fundamental problem for the book's main argument. Since the 1990s the government has been increasing taxation to match the rise in expenditure that the 1988 Constitution requires. The conjunction of social inclusion and fiscal orthodoxy has pushed Brazil to the wrong side of the Laffer Curve, where companies either evade taxes or go out of business. Taxation alone may block economic development. It explains to a great extent why the investment rate is below 20%, which is far too low for sustainable growth.

Finally, the authors ignore the impact of the demographic bonus in social indicators, from education to income distribution. This is problematic because Brazil experienced one of the world's quickest falls in fertility in the last six decades (precisely the period under analysis): the number of births per fertile woman fell from 6.2 to 1.8 since 1960. As a Brazilian who intends to retire at some point in life, I am afraid that the improvements in education the book joyfully describes have been too little too late. Schools are not forming the highly productive workers the country will need to support its aging population. The public pension scheme is already bankrupt and Brazil performs rather poorly in international education surveys. We will likely get old before getting rich.

Brazil in Transition has the merit of addressing the present crisis in a historical context. Though Alston, Melo, Mueller and Pereira are right in recognizing the country's institutional changes since the 1990s, they fail to acknowledge that persistent economic problems are likely to keep it in the mid-income trap. A window of opportunity may appear in the near future, but, as the authors suggest, it will take leadership to make Brazil suitable for growth. This is guesswork rather than history, but it seems highly unlikely that President Temer will be the man to provide it.

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Subject(s): Economic Development, Growth, and Aggregate Productivity
Government, Law and Regulation, Public Finance

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Time Period(s): 20th Century: WWII and post-WWII

Everyday Technology: Machines and the Making of India's Modernity

Author(s): Arnold, David

Reviewer(s): Manish, G.P.

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Reviewed for EH.Net by G.P. Manish, Department of Economics, Troy University.

The Indian economy during the colonial era was often viewed as being static and unchanging. Production, many observers claimed, proceeded along well-worn grooves; the same products were produced, often with the same outdated and obsolete techniques. Inert to the benefits of adopting new and improved technology, Indians appeared content to undertake production processes that were characterized by extraordinarily low levels of productivity and yielded little. All invention, innovation and change were at a minimum in an economy that also featured extremely limited specialization and division of labor. Indeed, most production and consumption activities were undertaken within the self-sufficient village community, and barely any changes, it was claimed, permeated or affected this world unto itself.

This narrative of stasis served as ideal grist for the mills of Imperial apologists. To these supporters of colonization and empire, it explained why India remained mired in poverty despite the Imperial touch. Indians were poor because they were averse to change and betterment; they were satisfied with little and desired nothing more. Ironically, Indian nationalists adopted an identical view of the colonial economy. For them, however, the lack of change was not something to be lamented but glorified. The self-sufficient village economy with its insularity and its rudimentary production techniques was held up as a moral and spiritual ideal. Untouched by the hustle and bustle of modern industrial life it was a pure rural idyll with no place for modern machinery of any kind.

In *Everyday Technology: Machines and the Making of India's Modernity* David Arnold paints a picture of

the colonial economy that stands in sharp and refreshing contrast to the view sketched above. The Indian economy in the late nineteenth and the first half of the twentieth centuries was characterized by considerable socio-economic change, a lot of it a result of the adoption and use of machines embodying new and improved technology. Both in urban and, to a lesser extent, in rural India, the life of the average Indian was being buffeted by the arrival of a number of novel and modern goods from all over the world. Goods like the sewing machine, as well as bicycles, typewriters, gramophones and the rice mill were gradually altering the everyday relationships that Indians formed with one another. They brought forth, in their wake, changes in the way Indians spent their leisure time and in the way they worked, while also expanding the range and the quality of the goods and services they could produce and consume.

Breaking with the traditional focus on “big” technologies and “big” machines and goods like canals, railroads and the telegraph, Arnold paints a detailed and informative picture of the diffusion and adoption of four “small” technologies embodied in the sewing machine, the bicycle, the typewriter and the rice mill. Given the smaller size and scope of these goods, and the uses that they were put to, the author’s narrative does not remain mired in the sterile world of officialdom. Instead, he is incessantly led, by the very nature of the task at hand, into the homes, offices and streets of colonial India; into the life and world of the common man. This focus on the subaltern world, far away from the centers of power, and the author’s masterful rendition of it in lucid prose, is one of the highlights of the book.

Through the course of the book Arnold sketches the entire life history of these four small technologies in colonial India. He provides a well-researched account of their emergence into the country and into the various individuals and firms from all over the world that were involved in this process (p. 40-68). He analyzes and provides evidence for the gradual increase in their importance for everyday life, citing rising imports of these goods into India, and notes the positive impact that they had on prevailing living standards. The sewing machine, we are told, contributed to significant changes in the modes of dress. Male laborers in the more prosperous provinces, for example, “began to wear shirts and cotton jackets made in town” (p. 37), while the advent of rice milling led to rice no longer being the preserve of the wealthy. Instead, “it was more cheaply available than ever before” and gradually made its way into the diets of “factory hands, plantation workers ... and low caste groups” (p. 118).

Indeed, one of the most noteworthy lessons to be derived from the author’s account of the diffusion of technology into colonial India is how all these goods began by touching the lives of only a minority, usually Europeans and the richer Indians, and then slowly started permeating and entering the lives of the man and the woman on the street. Particularly compelling, in this context, is Arnold’s account of how the sewing machine was marketed and distributed. Initially thought of as a good fit only for the use of Europeans, it was left to an Indian, N.M. Patell, to revolutionize the way it was marketed (p. 70-76). Patell, in an example of brilliant entrepreneurship, began to market it to Indians as well, greatly expanding the machine’s reach and its sales.

Along with the economic impact of these small machines, Arnold also provides an account of their impact on Indian society and culture. Of particular note is his description of the social tumult that the entry of these and other machines caused, especially among Indian nationalists who believed in the goal of Swadeshi enterprise, and among those who equated all machinery with cultural imperialism and domination emanating from the developed world (p. 95-120). While himself sympathetic to the goal of economic self-sufficiency and autarky that this nationalist sentiment ultimately resulted in, Arnold provides a fair and balanced account of the debate surrounding the costs and benefits of the entry of machines into colonial India.

In sum, *Everyday Technology* is an interesting and informative work that all students of Indian economic history can read with both profit and pleasure. Regardless of the reader's political persuasion and of his views regarding India's experiments after independence first with central planning and now with liberalization and market reforms, Arnold's book is bound to provide an enlightening glimpse into the lives of the common man and his relationship with technology during the later years of British rule in India.

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Slavery in the United States

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Slavery is fundamentally an economic phenomenon. Throughout history, slavery has existed where it has been economically worthwhile to those in power. The principal example in modern times is the U.S. South. Nearly 4 million slaves with a market value estimated to be between \$3.1 and \$3.6 billion lived in the U.S. just before the Civil War. Masters enjoyed rates of return on slaves comparable to those on other assets; cotton consumers, insurance companies, and industrial enterprises benefited from slavery as well. Such valuable property required rules to protect it, and the institutional practices surrounding slavery display a sophistication that rivals modern-day law and business.

THE SPREAD OF SLAVERY IN THE U.S.

Not long after Columbus set sail for the New World, the French and Spanish brought slaves with them on various expeditions. Slaves accompanied Ponce de Leon to Florida in 1513, for instance. But a far greater proportion of slaves arrived in chains in crowded, sweltering cargo holds. The first dark-skinned slaves in what was to become British North America arrived in Virginia — perhaps stopping first in Spanish lands — in 1619 aboard a Dutch vessel. From 1500 to 1900, approximately 12 million Africans were forced from their homes to go westward, with about 10 million of them completing the journey. Yet very few ended up in the British colonies and young American republic. By 1808, when the trans-Atlantic slave trade to the U.S. officially ended, only about 6 percent of African slaves landing in the New World had

come to North America.

Slavery in the North

Colonial slavery had a slow start, particularly in the North. The proportion there never got much above 5 percent of the total population. Scholars have speculated as to why, without coming to a definite conclusion. Some surmise that indentured servants were fundamentally better suited to the Northern climate, crops, and tasks at hand; some claim that anti-slavery sentiment provided the explanation. At the time of the American Revolution, fewer than 10 percent of the half million slaves in the thirteen colonies resided in the North, working primarily in agriculture. New York had the greatest number, with just over 20,000. New Jersey had close to 12,000 slaves. Vermont was the first Northern region to abolish slavery when it became an independent republic in 1777. Most of the original Northern colonies implemented a process of gradual emancipation in the late eighteenth and early nineteenth centuries, requiring the children of slave mothers to remain in servitude for a set period, typically 28 years. Other regions above the Mason-Dixon line ended slavery upon statehood early in the nineteenth century — Ohio in 1803 and Indiana in 1816, for instance.

TABLE 1

Population of the Original Thirteen Colonies, selected years by type

1750	1750	1790	1790	1790	1810	1810	1810	1860	1860	1860	State
White	Black	White	Free Nonwhite	Slave	White	Free Nonwhite	Slave	White	Free Nonwhite	Slave	
108,270	3,010	232,236	2,771	2,648	255,179	6,453	310	451,504	8,643	-	Connecticut
27,208	1,496	46,310	3,899	8,887	55,361	13,136	4,177	90,589	19,829	1,798	Delaware
4,200	1,000	52,886	398	29,264	145,414	1,801	105,218	591,550	3,538	462,198	Georgia
97,623	43,450	208,649	8,043	103,036	235,117	33,927	111,502	515,918	83,942	87,189	Maryland
183,925	4,075	373,187	5,369	-	465,303	6,737	-	1,221,432	9,634	-	Massachusetts
26,955	550	141,112	630	157	182,690	970	-	325,579	494	-	New Hampshire
66,039	5,354	169,954	2,762	11,423	226,868	7,843	10,851	646,699	25,318	-	New Jersey
65,682	11,014	314,366	4,682	21,193	918,699	25,333	15,017	3,831,590	49,145	-	New York
53,184	19,800	289,181	5,041	100,783	376,410	10,266	168,824	629,942	31,621	331,059	North Carolina
116,794	2,872	317,479	6,531	3,707	786,804	22,492	795	2,849,259	56,956	-	Pennsylvania
29,879	3,347	64,670	3,484	958	73,214	3,609	108	170,649	3,971	-	Rhode Island
25,000	39,000	140,178	1,801	107,094	214,196	4,554	196,365	291,300	10,002	402,406	South Carolina
129,581	101,452	244,217	12,866	292,627	551,534	30,570	392,518	1,047,299	58,154	490,865	Virginia
934,340	236,420	2,792,325	58,277	681,777	4,486,789	167,691	1,005,685	12,663,310	361,247	1,775,515	United States

Source: Historical Statistics of the U.S. (1970), Franklin (1988).

Slavery in the South

Throughout colonial and antebellum history, U.S. slaves lived primarily in the South. Slaves comprised less than a tenth of the total Southern population in 1680 but grew to a third by 1790. At that date, 293,000 slaves lived in Virginia alone, making up 42 percent of all slaves in the U.S. at the time. South

Carolina, North Carolina, and Maryland each had over 100,000 slaves. After the American Revolution, the Southern slave population exploded, reaching about 1.1 million in 1810 and over 3.9 million in 1860.

TABLE 2

Population of the South 1790-1860 by type

Year	White	Free Nonwhite	Slave
1790	1,240,454	32,523	654,121
1800	1,691,892	61,575	851,532
1810	2,118,144	97,284	1,103,700
1820	2,867,454	130,487	1,509,904
1830	3,614,600	175,074	1,983,860
1840	4,601,873	207,214	2,481,390
1850	6,184,477	235,821	3,200,364
1860	8,036,700	253,082	3,950,511

Source: Historical Statistics of the U.S. (1970).

Slave Ownership Patterns

Despite their numbers, slaves typically comprised a minority of the local population. Only in antebellum South Carolina and Mississippi did slaves outnumber free persons. Most Southerners owned no slaves and most slaves lived in small groups rather than on large plantations. Less than one-quarter of white Southerners held slaves, with half of these holding fewer than five and fewer than 1 percent owning more than one hundred. In 1860, the average number of slaves residing together was about ten.

TABLE 3

Slaves as a Percent of the Total Population
selected years, by Southern state

State	1750 Black/total population	1790 Slave/total population	1810 Slave/total population	1860 Slave/total population
Alabama				45.12
Arkansas				25.52
Delaware	5.21	15.04	5.75	1.60
Florida				43.97
Georgia	19.23	35.45	41.68	43.72
Kentucky		16.87	19.82	19.51
Louisiana				46.85
Maryland	30.80	32.23	29.30	12.69
Mississippi				55.18
Missouri				9.72
North Carolina	27.13	25.51	30.39	33.35
South Carolina	60.94	43.00	47.30	57.18
Tennessee			17.02	24.84
Texas				30.22
Virginia	43.91	39.14	40.27	30.75

Overall 37.97 33.95 33.25 32.27

Sources: Historical Statistics of the United States (1970), Franklin (1988).

TABLE 4

Holdings of Southern Slaveowners
by states, 1860

State	Total slaveholders	Held 1 slave	Held 2 slaves	Held 3 Slaves	Held 4 slaves	Held 5 slaves	Held 1-5 slaves	Held 100-499 slaves	Held 500+ slaves
AL	33,730	5,607	3,663	2,805	2,329	1,986	16,390	344	-
AR	11,481	2,339	1,503	1,070	894	730	6,536	65	1
DE	587	237	114	74	51	34	510	-	-
FL	5,152	863	568	437	365	285	2,518	47	-
GA	41,084	6,713	4,335	3,482	2,984	2,543	20,057	211	8
KY	38,645	9,306	5,430	4,009	3,281	2,694	24,720	7	-
LA	22,033	4,092	2,573	2,034	1,536	1,310	11,545	543	4
MD	13,783	4,119	1,952	1,279	1,023	815	9,188	16	-
MS	30,943	4,856	3,201	2,503	2,129	1,809	14,498	315	1
MO	24,320	6,893	3,754	2,773	2,243	1,686	17,349	4	-
NC	34,658	6,440	4,017	3,068	2,546	2,245	18,316	133	-
SC	26,701	3,763	2,533	1,990	1,731	1,541	11,558	441	8
TN	36,844	7,820	4,738	3,609	3,012	2,536	21,715	47	-
TX	21,878	4,593	2,874	2,093	1,782	1,439	12,781	54	-
VA	52,128	11,085	5,989	4,474	3,807	3,233	28,588	114	-
TOTAL	393,967	78,726	47,244	35,700	29,713	24,886	216,269	2,341	22

Source: *Historical Statistics of the United States* (1970).

Rapid Natural Increase in U.S. Slave Population

How did the U.S. slave population increase nearly fourfold between 1810 and 1860, given the demise of the trans-Atlantic trade? They enjoyed an exceptional rate of natural increase. Unlike elsewhere in the New World, the South did not require constant infusions of immigrant slaves to keep its slave population intact. In fact, by 1825, 36 percent of the slaves in the Western hemisphere lived in the U.S. This was partly due to higher birth rates, which were in turn due to a more equal ratio of female to male slaves in the U.S. relative to other parts of the Americas. Lower mortality rates also figured prominently. Climate was one cause; crops were another. U.S. slaves planted and harvested first tobacco and then, after Eli Whitney's invention of the cotton gin in 1793, cotton. This work was relatively less grueling than the tasks on the sugar plantations of the West Indies and in the mines and fields of South America. Southern slaves worked in industry, did domestic work, and grew a variety of other food crops as well, mostly under less abusive conditions than their counterparts elsewhere. For example, the South grew half to three-quarters of the corn crop harvested between 1840 and 1860.

INSTITUTIONAL FRAMEWORK

Central to the success of slavery are political and legal institutions that validate the ownership of other persons. A Kentucky court acknowledged the dual character of slaves in *Turner v. Johnson* (1838):

“[S]laves are property and must, under our present institutions, be treated as such. But they are human

beings, with like passions, sympathies, and affections with ourselves.” To construct slave law, lawmakers borrowed from laws concerning personal property and animals, as well as from rules regarding servants, employees, and free persons. The outcome was a set of doctrines that supported the Southern way of life.

The English **common law of property** formed a foundation for U.S. slave law. The French and Spanish influence in Louisiana — and, to a lesser extent, Texas — meant that Roman (or civil) law offered building blocks there as well. Despite certain formal distinctions, slave law as practiced differed little from common-law to civil-law states. Southern state law governed roughly five areas: slave status, masters’ treatment of slaves, interactions between slaveowners and contractual partners, rights and duties of noncontractual parties toward others’ slaves, and slave crimes. Federal law and laws in various Northern states also dealt with matters of interstate commerce, travel, and fugitive slaves.

Interestingly enough, just as slave law combined elements of other sorts of law, so too did it yield principles that eventually applied elsewhere. Lawmakers had to consider the intelligence and volition of slaves as they crafted laws to preserve property rights. Slavery therefore created legal rules that could potentially apply to free persons as well as to those in bondage. Many legal principles we now consider standard in fact had their origins in slave law.

Legal Status Of Slaves And Blacks

By the end of the seventeenth century, the status of blacks — slave or free — tended to follow the status of their mothers. Generally, “white” persons were not slaves but Native and African Americans could be. One odd case was the offspring of a free white woman and a slave: the law often bound these people to servitude for thirty-one years. Conversion to Christianity could set a slave free in the early colonial period, but this practice quickly disappeared.

Skin Color and Status

Southern law largely identified skin color with status. Those who appeared African or of African descent were generally presumed to be slaves. Virginia was the only state to pass a statute that actually classified people by race: essentially, it considered those with one quarter or more black ancestry as black. Other states used informal tests in addition to visual inspection: one-quarter, one-eighth, or one-sixteenth black ancestry might categorize a person as black.

Even if blacks proved their freedom, they enjoyed little higher status than slaves except, to some extent, in Louisiana. Many Southern states forbade free persons of color from becoming preachers, selling certain goods, tending bar, staying out past a certain time of night, or owning dogs, among other things. Federal law denied black persons citizenship under the *Dred Scott* decision (1857). In this case, Chief Justice Roger Taney also determined that visiting a free state did not free a slave who returned to a slave state, nor did traveling to a free territory ensure emancipation.

Rights And Responsibilities Of Slave Masters

Southern masters enjoyed great freedom in their dealings with slaves. North Carolina Chief Justice Thomas Ruffin expressed the sentiments of many Southerners when he wrote in *State v. Mann* (1829): “The power of the master must be absolute, to render the submission of the slave perfect.” By the nineteenth century, household heads had far more physical power over their slaves than their employees. In part, the differences in allowable punishment had to do with the substitutability of other means of persuasion. Instead of physical coercion, antebellum employers could legally withhold all

wages if a worker did not complete all agreed-upon services. No such alternate mechanism existed for slaves.

Despite the respect Southerners held for the power of masters, the law — particularly in the thirty years before the Civil War — limited owners somewhat. Southerners feared that unchecked slave abuse could lead to theft, public beatings, and insurrection. People also thought that hungry slaves would steal produce and livestock. But masters who treated slaves too well, or gave them freedom, caused consternation as well. The preamble to Delaware's Act of 1767 conveys one prevalent view: "[I]t is found by experience, that freed [N]egroes and mulattoes are idle and slothful, and often prove burdensome to the neighborhood wherein they live, and are of evil examples to slaves." Accordingly, masters sometimes fell afoul of the criminal law not only when they brutalized or neglected their slaves, but also when they indulged or manumitted slaves. Still, prosecuting masters was extremely difficult, because often the only witnesses were slaves or wives, neither of whom could testify against male heads of household.

Law of Manumission

One area that changed dramatically over time was the law of manumission. The South initially allowed masters to set their slaves free because this was an inherent right of property ownership. During the Revolutionary period, some Southern leaders also believed that manumission was consistent with the ideology of the new nation. Manumission occurred only rarely in colonial times, increased dramatically during the Revolution, then diminished after the early 1800s. By the 1830s, most Southern states had begun to limit manumission. Allowing masters to free their slaves at will created incentives to emancipate only unproductive slaves. Consequently, the community at large bore the costs of young, old, and disabled former slaves. The public might also run the risk of having rebellious former slaves in its midst.

Antebellum U.S. Southern states worried considerably about these problems and eventually enacted restrictions on the age at which slaves could be free, the number freed by any one master, and the number manumitted by last will. Some required former masters to file indemnifying bonds with state treasurers so governments would not have to support indigent former slaves. Some instead required former owners to contribute to ex-slaves' upkeep. Many states limited manumissions to slaves of a certain age who were capable of earning a living. A few states made masters emancipate their slaves out of state or encouraged slaveowners to bequeath slaves to the Colonization Society, which would then send the freed slaves to Liberia. Former slaves sometimes paid fees on the way out of town to make up for lost property tax revenue; they often encountered hostility and residential fees on the other end as well. By 1860, most Southern states had banned in-state and post-mortem manumissions, and some had enacted procedures by which free blacks could voluntarily become slaves.

Other Restrictions

In addition to constraints on manumission, laws restricted other actions of masters and, by extension, slaves. Masters generally had to maintain a certain ratio of white to black residents upon plantations. Some laws barred slaves from owning musical instruments or bearing firearms. All states refused to allow slaves to make contracts or testify in court against whites. About half of Southern states prohibited masters from teaching slaves to read and write although some of these permitted slaves to learn rudimentary mathematics. Masters could use slaves for some tasks and responsibilities, but they typically could not order slaves to compel payment, beat white men, or sample cotton. Nor could slaves officially hire themselves out to others, although such prohibitions were often ignored by masters, slaves, hirers,

and public officials. Owners faced fines and sometimes damages if their slaves stole from others or caused injuries.

Southern law did encourage benevolence, at least if it tended to supplement the lash and shackle. Court opinions in particular indicate the belief that good treatment of slaves could enhance labor productivity, increase plantation profits, and reinforce sentimental ties. Allowing slaves to control small amounts of property, even if statutes prohibited it, was an oft-sanctioned practice. Courts also permitted slaves small diversions, such as Christmas parties and quilting bees, despite statutes that barred slave assemblies.

Sale, Hire, And Transportation Of Slaves

Sales of Slaves

Slaves were freely bought and sold across the antebellum South. Southern law offered greater protection to slave buyers than to buyers of other goods, in part because slaves were complex commodities with characteristics not easily ascertained by inspection. Slave sellers were responsible for their representations, required to disclose known defects, and often liable for unknown defects, as well as bound by explicit contractual language. These **rules stand in stark contrast to the *caveat emptor* doctrine** applied in antebellum commodity sales cases. In fact, they more closely resemble certain provisions of the modern Uniform Commercial Code. Sales law in two states stands out. South Carolina was extremely pro-buyer, presuming that any slave sold at full price was sound. Louisiana buyers enjoyed extensive legal protection as well. A sold slave who later manifested an incurable disease or vice — such as a tendency to escape frequently — could generate a lawsuit that entitled the purchaser to nullify the sale.

Hiring Out Slaves

Slaves faced the possibility of being hired out by their masters as well as being sold. Although scholars disagree about the extent of hiring in agriculture, most concur that hired slaves frequently worked in manufacturing, construction, mining, and domestic service. Hired slaves and free persons often labored side by side. Bond and free workers both faced a legal burden to behave responsibly on the job. Yet the law of the workplace differed significantly for the two: generally speaking, employers were far more culpable in cases of injuries to slaves. The divergent law for slave and free workers does not necessarily imply that free workers suffered. Empirical evidence shows that nineteenth-century free laborers received at least partial compensation for the risks of jobs. Indeed, the tripartite nature of slave-hiring arrangements suggests why antebellum laws appeared as they did. Whereas free persons had direct work and contractual relations with their bosses, slaves worked under terms designed by others. Free workers arguably could have walked out or insisted on different conditions or wages. Slaves could not. The law therefore offered substitute protections. Still, the powerful interests of slaveowners also may mean that they simply were more successful at shaping the law. Postbellum developments in employment law — North and South — in fact paralleled earlier slave-hiring law, at times relying upon slave cases as legal precedents.

Public Transportation

Public transportation also figured into slave law: slaves suffered death and injury aboard common carriers as well as traveled as legitimate passengers and fugitives. As elsewhere, slave-common carrier law both borrowed from and established precedents for other areas of law. One key doctrine originating in slave cases was the “last-clear-chance rule.” Common-carrier defendants that had failed to offer slaves — even negligent slaves — a last clear chance to avoid accidents ended up paying damages to

slaveowners. Slaveowner plaintiffs won several cases in the decade before the Civil War when engineers failed to warn slaves off railroad tracks. Postbellum courts used slave cases as precedents to entrench the last-clear-chance doctrine.

Slave Control: Patrollers And Overseers

Society at large shared in maintaining the machinery of slavery. In place of a standing police force, Southern states passed legislation to establish and regulate county-wide citizen patrols. Essentially, Southern citizens took upon themselves the protection of their neighbors' interests as well as their own. County courts had local administrative authority; court officials appointed three to five men per patrol from a pool of white male citizens to serve for a specified period. Typical patrol duty ranged from one night per week for a year to twelve hours per month for three months. Not all white men had to serve: judges, magistrates, ministers, and sometimes millers and blacksmiths enjoyed exemptions. So did those in the higher ranks of the state militia. In many states, courts had to select from adult males under a certain age, usually 45, 50, or 60. Some states allowed only slaveowners or householders to join patrols. Patrollers typically earned fees for captured fugitive slaves and exemption from road or militia duty, as well as hourly wages. Keeping order among slaves was the patrollers' primary duty. Statutes set guidelines for appropriate treatment of slaves and often imposed fines for unlawful beatings. In rare instances, patrollers had to compensate masters for injured slaves. For the most part, however, patrollers enjoyed quasi-judicial or quasi-executive powers in their dealings with slaves.

Overseers commanded considerable control as well. The Southern overseer was the linchpin of the large slave plantation. He ran daily operations and served as a first line of defense in safeguarding whites. The vigorous protests against drafting overseers into military service during the Civil War reveal their significance to the South. Yet slaves were too valuable to be left to the whims of frustrated, angry overseers. Injuries caused to slaves by overseers' cruelty (or "immoral conduct") usually entitled masters to recover civil damages. Overseers occasionally confronted criminal charges as well. Brutality by overseers naturally generated responses by their victims; at times, courts reduced murder charges to manslaughter when slaves killed abusive overseers.

Protecting The Master Against Loss: Slave Injury And Slave Stealing

Whether they liked it or not, many Southerners dealt daily with slaves. Southern law shaped these interactions among strangers, awarding damages more often for injuries to slaves than injuries to other property or persons, shielding slaves more than free persons from brutality, and generating convictions more frequently in slave-stealing cases than in other criminal cases. The law also recognized more offenses against slaveowners than against other property owners because slaves, unlike other property, succumbed to influence.

Just as assaults of slaves generated civil damages and criminal penalties, so did stealing a slave to sell him or help him escape to freedom. Many Southerners considered slave stealing worse than killing fellow citizens. In marked contrast, selling a free black person into slavery carried almost no penalty.

The counterpart to helping slaves escape — picking up fugitives — also created laws. Southern states offered rewards to defray the costs of capture or passed statutes requiring owners to pay fees to those who caught and returned slaves. Some Northern citizens worked hand-in-hand with their Southern counterparts, returning fugitive slaves to masters either with or without the prompting of law. But many Northerners vehemently opposed the peculiar institution. In an attempt to stitch together the young nation, the federal government passed the first fugitive slave act in 1793. To circumvent its application,

several Northern states passed personal liberty laws in the 1840s. Stronger federal fugitive slave legislation then passed in 1850. Still, enough slaves fled to freedom — perhaps as many as 15,000 in the decade before the Civil War — with the help (or inaction) of Northerners that the profession of “slave-catching” evolved. This occupation was often highly risky — enough so that such men could not purchase life insurance coverage — and just as often highly lucrative.

Slave Crimes

Southern law governed slaves as well as slaveowners and their adversaries. What few due process protections slaves possessed stemmed from desires to grant rights to masters. Still, slaves faced harsh penalties for their crimes. When slaves stole, rioted, set fires, or killed free people, the law sometimes had to subvert the property rights of masters in order to preserve slavery as a social institution.

Slaves, like other antebellum Southern residents, committed a host of crimes ranging from arson to theft to homicide. Other slave crimes included violating curfew, attending religious meetings without a master’s consent, and running away. Indeed, a slave was not permitted off his master’s farm or business without his owner’s permission. In rural areas, a slave was required to carry a written pass to leave the master’s land.

Southern states erected numerous punishments for slave crimes, including prison terms, banishment, whipping, castration, and execution. In most states, the criminal law for slaves (and blacks generally) was noticeably harsher than for free whites; in others, slave law as practiced resembled that governing poorer white citizens. Particularly harsh punishments applied to slaves who had allegedly killed their masters or who had committed rebellious acts. Southerners considered these acts of treason and resorted to immolation, drawing and quartering, and hanging.

MARKETS AND PRICES

Market prices for slaves reflect their substantial economic value. Scholars have gathered slave prices from a variety of sources, including censuses, probate records, plantation and slave-trader accounts, and proceedings of slave auctions. These data sets reveal that prime field hands went for four to six hundred dollars in the U.S. in 1800, thirteen to fifteen hundred dollars in 1850, and up to three thousand dollars just before Fort Sumter fell. Even controlling for inflation, the prices of U.S. slaves rose significantly in the six decades before South Carolina seceded from the Union. By 1860, Southerners owned close to \$4 billion worth of slaves. Slavery remained a thriving business on the eve of the Civil War: Fogel and Engerman (1974) projected that by 1890 slave prices would have increased on average more than 50 percent over their 1860 levels. No wonder the South rose in armed resistance to protect its enormous investment.

Slave markets existed across the antebellum U.S. South. Even today, one can find stone markers like the one next to the Antietam battlefield, which reads: “From 1800 to 1865 This Stone Was Used as a Slave Auction Block. It has been a famous landmark at this original location for over 150 years.” Private auctions, estate sales, and professional traders facilitated easy exchange. Established dealers like Franklin and Armfield in Virginia, Woolfolk, Saunders, and Overly in Maryland, and Nathan Bedford Forrest in Tennessee prospered alongside itinerant traders who operated in a few counties, buying slaves for cash from their owners, then moving them overland in coffles to the lower South. Over a million slaves were taken across state lines between 1790 and 1860 with many more moving within states. Some of these slaves went with their owners; many were sold to new owners. In his monumental study, Michael Tadman (1989) found that slaves who lived in the upper South faced a very real chance of being sold for

profit. From 1820 to 1860, he estimated that an average of 200,000 slaves per decade moved from the upper to the lower South, most via sales. A contemporary newspaper, *The Virginia Times*, calculated that 40,000 slaves were sold in the year 1830.

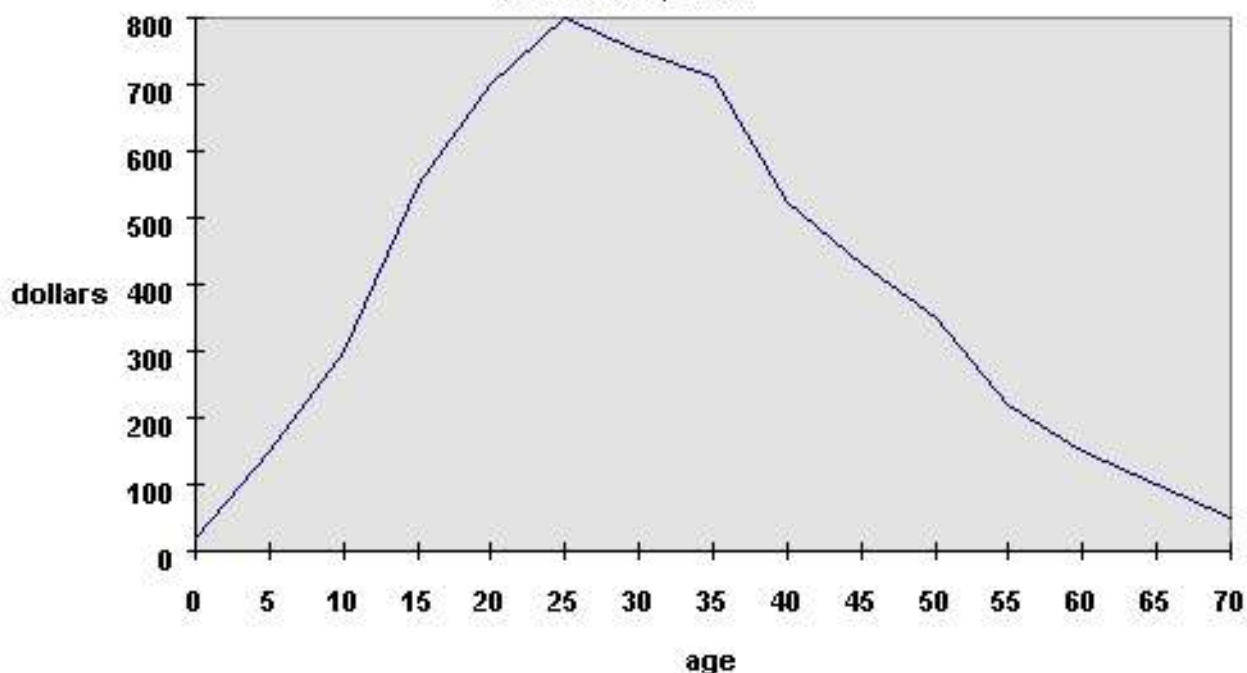
Determinants of Slave Prices

The prices paid for slaves reflected two economic factors: the characteristics of the slave and the conditions of the market. Important individual features included age, sex, childbearing capacity (for females), physical condition, temperament, and skill level. In addition, the supply of slaves, demand for products produced by slaves, and seasonal factors helped determine market conditions and therefore prices.

Age and Price

Prices for both male and female slaves tended to follow similar life-cycle patterns. In the U.S. South, infant slaves sold for a positive price because masters expected them to live long enough to make the initial costs of raising them worthwhile. Prices rose through puberty as productivity and experience increased. In nineteenth-century New Orleans, for example, prices peaked at about age 22 for females and age 25 for males. Girls cost more than boys up to their mid-teens. The genders then switched places in terms of value. In the Old South, boys aged 14 sold for 71 percent of the price of 27-year-old men, whereas girls aged 14 sold for 65 percent of the price of 27-year-old men. After the peak age, prices declined slowly for a time, then fell off rapidly as the aging process caused productivity to fall. Compared to full-grown men, women were worth 80 to 90 percent as much. One characteristic in particular set some females apart: their ability to bear children. Fertile females commanded a premium. The mother-child link also proved important for pricing in a different way: people sometimes paid more for intact families.

**Price of Male Slave over the Life-Cycle
Old South, 1850**



Source: Fogel and Engerman (1974)

Other Characteristics and Price

Skills, physical traits, mental capabilities, and other qualities also helped determine a slave's price. Skilled workers sold for premiums of 40-55 percent whereas crippled and chronically ill slaves sold for deep discounts. Slaves who proved troublesome — runaways, thieves, layabouts, drunks, slow learners, and the like — also sold for lower prices. Taller slaves cost more, perhaps because height acts as a proxy for healthiness. In New Orleans, light-skinned females (who were often used as concubines) sold for a 5 percent premium.

Fluctuations in Supply

Prices for slaves fluctuated with market conditions as well as with individual characteristics. U.S. slave prices fell around 1800 as the Haitian revolution sparked the movement of slaves into the Southern states. Less than a decade later, slave prices climbed when the international slave trade was banned, cutting off legal external supplies. Interestingly enough, among those who supported the closing of the trans-Atlantic slave trade were several Southern slaveowners. Why this apparent anomaly? Because the resulting reduction in supply drove up the prices of slaves already living in the U.S and, hence, their masters' wealth. U.S. slaves had high enough fertility rates and low enough mortality rates to reproduce themselves, so Southern slaveowners did not worry about having too few slaves to go around.

Fluctuations in Demand

Demand helped determine prices as well. The demand for slaves derived in part from the demand for the commodities and services that slaves provided. Changes in slave occupations and variability in prices for slave-produced goods therefore created movements in slave prices. As slaves replaced increasingly expensive indentured servants in the New World, their prices went up. In the period 1748 to 1775, slave prices in British America rose nearly 30 percent. As cotton prices fell in the 1840s, Southern slave prices also fell. But, as the demand for cotton and tobacco grew after about 1850, the prices of slaves increased as well.

Interregional Price Differences

Differences in demand across regions led to transitional regional price differences, which in turn meant large movements of slaves. Yet because planters experienced greater stability among their workforce when entire plantations moved, 84 percent of slaves were taken to the lower South in this way rather than being sold piecemeal.

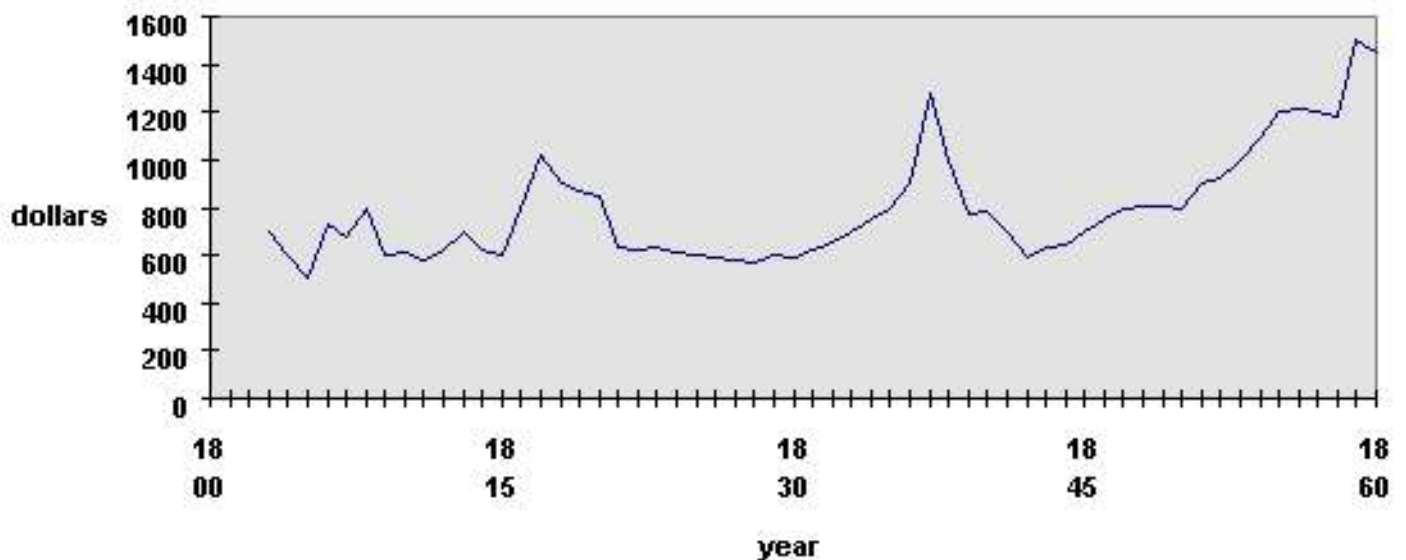
Time of Year and Price

Demand sometimes had to do with the time of year a sale took place. For example, slave prices in the New Orleans market were 10 to 20 percent higher in January than in September. Why? September was a busy time of year for plantation owners: the opportunity cost of their time was relatively high. Prices had to be relatively low for them to be willing to travel to New Orleans during harvest time.

Expectations and Prices

One additional demand factor loomed large in determining slave prices: the expectation of continued legal slavery. As the American Civil War progressed, prices dropped dramatically because people could not be sure that slavery would survive. In New Orleans, prime male slaves sold on average for \$1381 in 1861 and for \$1116 in 1862. Burgeoning inflation meant that real prices fell considerably more. By war's end, slaves sold for a small fraction of their 1860 price.

Price of Prime Male Slave, New Orleans, 1800-1860



Source: Data supplied by Stanley Engerman and reported in Walton and Rockoff (1994).

PROFITABILITY, EFFICIENCY, AND EXPLOITATION

That slavery was profitable seems almost obvious. Yet scholars have argued furiously about this matter. On one side stand antebellum writers such as Hinton Rowan Helper and Frederick Law Olmstead, many antebellum abolitionists, and contemporary scholars like Eugene Genovese (at least in his early writings), who speculated that American slavery was unprofitable, inefficient, and incompatible with urban life. On the other side are scholars who have marshaled masses of data to support their contention that Southern slavery was profitable and efficient relative to free labor and that slavery suited cities as well as farms. These researchers stress the similarity between slave markets and markets for other sorts of capital.

Consensus That Slavery Was Profitable

This battle has largely been won by those who claim that New World slavery was profitable. Much like other businessmen, New World slaveowners responded to market signals — adjusting crop mixes, reallocating slaves to more profitable tasks, hiring out idle slaves, and selling slaves for profit. One well-known instance shows that contemporaneous free labor thought that urban slavery may even have worked too well: employees of the Tredegar Iron Works in Richmond, Virginia, went out on their first strike in 1847 to protest the use of slave labor at the Works.

Fogel and Engerman's *Time on the Cross*

Carrying the banner of the “slavery was profitable” camp is Nobel laureate Robert Fogel. Perhaps the most controversial book ever written about American slavery is *Time on the Cross*, published in 1974 by Fogel and co-author Stanley Engerman. These men were among the first to use modern statistical methods, computers, and large datasets to answer a series of empirical questions about the economics of slavery. To find profit levels and rates of return, they built upon the work of Alfred Conrad and John Meyer, who in 1958 had calculated similar measures from data on cotton prices, physical yield per slave, demographic characteristics of slaves (including expected lifespan), maintenance and supervisory costs, and (in the case of females) number of children. To estimate the relative efficiency of farms, Fogel and Engerman devised an index of “total factor productivity,” which measured the output per average unit

of input on each type of farm. They included in this index controls for quality of livestock and land and for age and sex composition of the workforce, as well as amounts of output, labor, land, and capital

Time on the Cross generated praise — and considerable criticism. A major critique appeared in 1976 as a collection of articles entitled *Reckoning with Slavery*. Although some contributors took umbrage at the tone of the book and denied that it broke new ground, others focused on flawed and insufficient data and inappropriate inferences. Despite its shortcomings, *Time on the Cross* inarguably brought people's attention to a new way of viewing slavery. The book also served as a catalyst for much subsequent research. Even Eugene Genovese, long an ardent proponent of the belief that Southern planters had held slaves for their prestige value, finally acknowledged that slavery was probably a profitable enterprise. Fogel himself refined and expanded his views in a 1989 book, *Without Consent or Contract*.

Efficiency Estimates

Fogel's and Engerman's research led them to conclude that investments in slaves generated high rates of return, masters held slaves for profit motives rather than for prestige, and slavery thrived in cities and rural areas alike. They also found that antebellum Southern farms were 35 percent more efficient overall than Northern ones and that slave farms in the New South were 53 percent more efficient than free farms in either North or South. This would mean that a slave farm that is otherwise identical to a free farm (in terms of the amount of land, livestock, machinery and labor used) would produce output worth 53 percent more than the free. On the eve of the Civil War, slavery flourished in the South and generated a rate of economic growth comparable to that of many European countries, according to Fogel and Engerman. They also discovered that, because slaves constituted a considerable portion of individual wealth, masters fed and treated their slaves reasonably well. Although some evidence indicates that infant and young slaves suffered much worse conditions than their freeborn counterparts, teenaged and adult slaves lived in conditions similar to — sometimes better than — those enjoyed by many free laborers of the same period.

Transition from Indentured Servitude to Slavery

One potent piece of evidence supporting the notion that slavery provides pecuniary benefits is this: slavery replaces other labor when it becomes relatively cheaper. In the early U.S. colonies, for example, indentured servitude was common. As the demand for skilled servants (and therefore their wages) rose in England, the cost of indentured servants went up in the colonies. At the same time, second-generation slaves became more productive than their forebears because they spoke English and did not have to adjust to life in a strange new world. Consequently, the balance of labor shifted away from indentured servitude and toward slavery.

Gang System

The value of slaves arose in part from the value of labor generally in the antebellum U.S. Scarce factors of production command economic rent, and labor was by far the scarcest available input in America. Moreover, a large proportion of the reward to owning and working slaves resulted from innovative labor practices. Certainly, the use of the “gang” system in agriculture contributed to profits in the antebellum period. In the gang system, groups of slaves performed synchronized tasks under the watchful overseer's eye, much like parts of a single machine. Masters found that treating people like machinery paid off handsomely.

Antebellum slaveowners experimented with a variety of other methods to increase productivity. They

developed an elaborate system of “hand ratings” in order to improve the match between the slave worker and the job. Hand ratings categorized slaves by age and sex and rated their productivity relative to that of a prime male field hand. Masters also capitalized on the native intelligence of slaves by using them as agents to receive goods, keep books, and the like.

Use of Positive Incentives

Masters offered positive incentives to make slaves work more efficiently. Slaves often had Sundays off. Slaves could sometimes earn bonuses in cash or in kind, or quit early if they finished tasks quickly. Some masters allowed slaves to keep part of the harvest or to work their own small plots. In places, slaves could even sell their own crops. To prevent stealing, however, many masters limited the products that slaves could raise and sell, confining them to corn or brown cotton, for example. In antebellum Louisiana, slaves even had under their control a sum of money called a peculium. This served as a sort of working capital, enabling slaves to establish thriving businesses that often benefited their masters as well. Yet these practices may have helped lead to the downfall of slavery, for they gave slaves a taste of freedom that left them longing for more.

Slave Families

Masters profited from reproduction as well as production. Southern planters encouraged slaves to have large families because U.S. slaves lived long enough — unlike those elsewhere in the New World — to generate more revenue than cost over their lifetimes. But researchers have found little evidence of slave breeding; instead, masters encouraged slaves to live in nuclear or extended families for stability. Lest one think sentimentality triumphed on the Southern plantation, one need only recall the willingness of most masters to sell if the bottom line was attractive enough.

Profitability and African Heritage

One element that contributed to the profitability of New World slavery was the African heritage of slaves. Africans, more than indigenous Americans, were accustomed to the discipline of agricultural practices and knew metalworking. Some scholars surmise that Africans, relative to Europeans, could better withstand tropical diseases and, unlike Native Americans, also had some exposure to the European disease pool.

Ease of Identifying Slaves

Perhaps the most distinctive feature of Africans, however, was their skin color. Because they looked different from their masters, their movements were easy to monitor. Denying slaves education, property ownership, contractual rights, and other things enjoyed by those in power was simple: one needed only to look at people to ascertain their likely status. Using color was a low-cost way of distinguishing slaves from free persons. For this reason, the colonial practices that freed slaves who converted to Christianity quickly faded away. Deciphering true religious beliefs is far more difficult than establishing skin color. Other slave societies have used distinguishing marks like brands or long hair to denote slaves, yet color is far more immutable and therefore better as a cheap way of keeping slaves separate. Skin color, of course, can also serve as a racist identifying mark even after slavery itself disappears.

Profit Estimates

Slavery never generated superprofits, because people always had the option of putting their money elsewhere. Nevertheless, investment in slaves offered a rate of return — about 10 percent — that was

comparable to returns on other assets. Slaveowners were not the only ones to reap rewards, however. So too did cotton consumers who enjoyed low prices and Northern entrepreneurs who helped finance plantation operations.

Exploitation Estimates

So slavery was profitable; was it an efficient way of organizing the workforce? On this question, considerable controversy remains. Slavery might well have profited masters, but only because they exploited their chattel. What is more, slavery could have locked people into a method of production and way of life that might later have proven burdensome.

Fogel and Engerman (1974) claimed that slaves kept about ninety percent of what they produced. Because these scholars also found that agricultural slavery produced relatively more output for a given set of inputs, they argued that slaves may actually have shared in the overall material benefits resulting from the gang system. Other scholars contend that slaves in fact kept less than half of what they produced and that slavery, while profitable, certainly was not efficient. On the whole, current estimates suggest that the typical slave received only about fifty percent of the extra output that he or she produced.

Did Slavery Retard Southern Economic Development?

Gavin Wright (1978) called attention as well to the difference between the short run and the long run. He noted that slaves accounted for a very large proportion of most masters' portfolios of assets. Although slavery might have seemed an efficient means of production at a point in time, it tied masters to a certain system of labor which might not have adapted quickly to changed economic circumstances. This argument has some merit. Although the South's growth rate compared favorably with that of the North in the antebellum period, a considerable portion of wealth was held in the hands of planters. Consequently, commercial and service industries lagged in the South. The region also had far less rail transportation than the North. Yet many plantations used the most advanced technologies of the day, and certain innovative commercial and insurance practices appeared first in transactions involving slaves. What is more, although the South fell behind the North and Great Britain in its level of manufacturing, it compared favorably to other advanced countries of the time. In sum, no clear consensus emerges as to whether the antebellum South created a standard of living comparable to that of the North or, if it did, whether it could have sustained it.

Ultimately, the South's system of law, politics, business, and social customs strengthened the shackles of slavery and reinforced racial stereotyping. As such, it was undeniably evil. Yet, because slaves constituted valuable property, their masters had ample incentives to take care of them. And, by protecting the property rights of masters, slave law necessarily sheltered the persons embodied within. In a sense, the apologists for slavery were right: slaves sometimes fared better than free persons because powerful people had a stake in their well-being.

Conclusion: Slavery Cannot Be Seen As Benign

But slavery cannot be thought of as benign. In terms of material conditions, diet, and treatment, Southern slaves may have fared as well in many ways as the poorest class of free citizens. Yet the root of slavery is coercion. By its very nature, slavery involves involuntary transactions. Slaves are property, whereas free laborers are persons who make choices (at times constrained, of course) about the sort of work they do and the number of hours they work.

The behavior of former slaves after abolition clearly reveals that they cared strongly about the manner of their work and valued their non-work time more highly than masters did. Even the most benevolent former masters in the U.S. South found it impossible to entice their former chattels back into gang work, even with large wage premiums. Nor could they persuade women back into the labor force: many female ex-slaves simply chose to stay at home. In the end, perhaps slavery is an economic phenomenon only because slave societies fail to account for the incalculable costs borne by the slaves themselves.

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A History of the U.S. Carpet Industry

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Paul Krugman (1993, p. 5) has written that “the most striking feature of the geography of economic activity.... is surely *concentration*” (emphasis in the original). There are few better examples of highly concentrated economic activity than the U.S. carpet industry. Today, carpet mills located within a 65-mile radius of Dalton, Georgia, produce about 85% of the carpet sold in the U.S. market. The U.S. industry accounts for about 45% of the world’s carpet production. While many segments of the textile industry have struggled in the post-World War II era, carpet makers have prospered. The U.S. carpet industry also exemplifies the southward drift of textile production within the United States during the twentieth century. Indeed, it is probably useful to conceptualize the U.S. carpet industry as two distinct industries with different trajectories. The early American carpet industry was, like other textile segments, a product of borrowed (from the United Kingdom) technology and skill that struggled throughout its existence against imports. The second American carpet industry grew from deep southern roots and utilized locally developed technology and skills. The second industry also came along at just the right time to ride the boom in consumer spending associated with the economic golden age that followed World War II.

The First U.S. Carpet Industry

The first U.S. carpet industry emerged at the end of the eighteenth century. Skilled weavers produced carpets and rugs with handloom technology. In its early years, American carpet makers encountered the same problem as other textile manufacturers – imports. Congress protected the infant U.S. industry, along with textiles generally, in 1816 and raised protective tariffs in the 1820s. In an early survey of the industry conducted in 1834, Timothy Pitkin found 20 carpet mills producing about 1 million square yards. By 1850, a government survey found 116 mills producing 8 million square yards of carpets and rugs (employing more than 6,000 workers). Twenty years later, U.S. carpet mills numbered 215, wove more than 20 million square yards, and employed 12,000 persons. In the nineteenth century Americans used carpet to cover poor quality, soft wood floors. A commentator wrote in 1872 that the “general use of carpets was a necessity some few years ago, from the fact that the floors of our houses were generally built of such poor material, and in such a shiftless manner, that the floor was too unsightly to be left exposed” (Greeley, 1872). The mid-nineteenth century saw the introduction of the varnished hardwood floor. With the hardwood floor came a declining demand for wall-to-wall carpets and an increasing demand for smaller rugs to provide stylistic accents.

Employment and production figures indicate that, although there was an incremental increase in productivity, production effectively rose in concert with the number of workers. Erastus Bigelow introduced power loom technology for various types of carpeting in the early 1840s, and others quickly followed with competing designs. Though Bigelow’s idea – the use of power looms in carpet production – would eventually result in great productivity gains, Bigelow’s own looms were not the primary source of the gains, nor did those gains materialize overnight. Handloom production outweighed power loom production as late as the 1870s in the Philadelphia area. Power looms were expensive and manufacturers had great difficulty in matching the quality of goods produced with handlooms.

Boom and Bust in the First Half of the Twentieth Century

After 1870, refinements in power loom technology allowed manufacturers to produce reasonable substitutes for higher quality handloom woven goods. This resulted in a decline in the production of the cheapest carpets as consumers moved toward higher quality goods as the price of higher quality weaves

declined. Large rugs became a staple in upper-middle class American homes by the early twentieth century. Sales ballooned to more than 83 million square yards by 1923. Firms such as Bigelow-Hartford produced lavish catalogs and advertised products direct to consumers in the early twentieth century, bypassing the traditional commission agents who had dominated marketing in the nineteenth century. The industry seemed, however, to have peaked in 1923. Sales fell off even before the Great Depression, and the economic disaster of the 1930s offered no respite. Firms such as Bigelow and Mohawk struggled. Industry production hovered in the 60 million square yard range throughout the 1930s. Most mills converted to war production during the Second World War, a move that helped forestall a deeper crisis. Just after World War II, the industry experienced a brief boom, with sales jumping to nearly 90 million square yards in 1948, but the boom quickly turned bust. Even the seemingly robust sales of 1948 amounted to a scant increase over the peak of a quarter century earlier. When compared with population growth, the industry's sales had actually declined. Worse still, sales fell through the early 1950s back into the 60 million yard range.

The Second U.S. Carpet Industry

Carpet in the United States had three salient characteristics in 1950. Carpets were (1) woven on power looms out of (2) wool in (3) mills located in the northeastern United States. In just one short decade, each of those critical elements had changed dramatically. By 1960, most carpet in the United States was made on tufting machines from synthetic fibers such as nylon in factories located in the southeastern United States – and the vast majority of these new mills were located in and around the Appalachian foothills town of Dalton, Georgia.

The U.S. economy entered a prolonged boom period after World War II that many historians have labeled the “golden age.” The release of pent-up consumer demand associated with the sacrifices of World War II, Keynesian government policies aimed at maintaining a high level of demand, and other factors helped produce a period of unparalleled economic growth. Northeastern carpet manufacturers tried a variety of approaches during the late 1940s and early 1950s to reverse their industry's fortunes, but had little success. Annual per household carpet consumption stood at 1.97 square yards in 1950, virtually unchanged from the beginning of the twentieth century. Industry executives expressed increasing frustration throughout the early 1950s with their inability to tap the booming housing market of the postwar period. Many northern carpet mills began to open new plants in the South. Moving south allowed older firms to escape unionized work forces, take advantage of the region's lower labor costs and, occasionally, benefit from incentives offered by state and local governments in the region (Greenville, Mississippi, built a \$4 million facility to entice the Alexander Smith Company in the early 1950s, for example). Bigelow, Mohawk, and other northeastern companies built facilities in Virginia, South Carolina, Georgia, and Mississippi during the 1950s.

With few exceptions, these facilities produced carpet using weaving technology. The shining new mills in Greenville, Mississippi and Liberty, South Carolina, used the latest and most productive looms and were constructed according to the most up-to-date standards – single-floor construction and concrete floors, for example, to make the use of lift trucks possible. Yet the industry encountered one insurmountable barrier. In spite of decades of incremental progress, woven carpets were still too expensive to penetrate the working class market. The wholesale price of woven carpets rose slightly during the 1950s. The quite modest increases were interpreted within the industry as something of a success.

The woven carpet manufacturers also tried other strategies to boost sales in the 1950s. Some manufacturers experimented with selling carpet “on time” (credit) through retailers; others emphasized

style and elegance. The chief impact of the advertising campaigns seems to have been to raise awareness of and desire for carpeting in general. In 1949, this would have seemed a winning strategy.

Tufted Textiles Take the Floor

During the same decade, however, a new southern industry produced a cheaper substitute for woven goods – tufted carpets and rugs, whose sales grew from near zero in the late 1940s to more than 100 million square yards by 1958. The origins of this new carpet industry in the South can be traced to a combination of purposeful action and historical accident.

The Tufted Bedspread Industry

The historical accident, as Krugman called it, was the revival of the hand tufting tradition in northwest Georgia (and elsewhere in the region) in the early twentieth century. To create a tufted bedspread, the craftsperson inserted raised tufts of yarn into a pre-woven piece of backing material (generally cotton sheeting) to form a pattern, then boiled the sheeting to shrink it and lock in the tufts of yarn. Catherine Evans, a young woman living near Dalton, Georgia, saw an old hand tufted bedspread at a friend's house in 1895. Evans duplicated the design and made a similar spread as a wedding gift. Evans and some of her relatives began teaching other area women the art of tufting. From these beginnings, a cottage industry developed. By the 1920s, local entrepreneurs had created numerous “spread houses.” The spread houses operated a putting out system, sending “haulers” into the countryside with sheeting and yarn. The haulers returned later to pay the farm families for their hand work and pick up tufted spreads for finishing – washing and, for some, dyeing. These spreads found a ready market, not just regionally, but in the northeast as well. (Wannamaker's department stores stocked Georgia bedspreads in the 1930s.) This cottage industry became a source of economic growth in north Georgia even during the Great Depression.

Here the residue of purposeful action intersected with Catherine Evans' historical accident. By the 1920s, the South had become home to the lion's share of U.S. textile production. Some of this shift southward was due to capital movement from North to South, but most of the shift could be accounted for by new southern firms – large firms such as Georgia's West Point Manufacturing and North Carolina's Burlington Mills and smaller firms like Dalton, Georgia's Crown Cotton Mill and American Hosiery Mill. After the Civil War, and especially after 1880, southern firms had borrowed northern technology, begun at the bottom of the quality chain with the coarsest fabrics, and initiated what might be called a process of regional learning. Much of this development was the result of a purposeful effort to industrialize the region. By the early twentieth century, the South still had not developed a regional textile machine-making industry, but the cotton mills, hosiery mills, and other textile firms had recruited and trained a large number of mechanics to maintain machinery purchased in the northeast. Mechanics from the Dalton area and nearby Chattanooga began adapting sewing machines for the purpose of inserting raised yarn tufts, and in the early 1930s many of the spread houses moved toward becoming spread mills, or factories. Spread mill owners employed a largely female work force to operate the sewing machines that now created the raised patterns.

From Spread Mills to Carpet Mills

By the end of the 1930s, a number of these firms had begun to experiment with multi-needle machines that could tuft wider swaths of backing material more quickly. Some firms, such as the cleverly named Cabin Crafts (to conjure the image of a cottage industry that already had ceased to exist) had begun making small rugs by covering the entire surface of a piece of backing material with tufts. Hosiery mill

mechanics like Albert and Joe Cobble founded firms in the southern industrial dynamo of Chattanooga, Tennessee (less than 30 miles from Dalton) to build special machines for the tufted bedspread and small rug industry. From these technological roots, area entrepreneurs began experimenting with making large rugs and wall-to-wall carpeting with this tufting process. About 1949, the Cobble Brothers firm and an innovative Dalton spread making company, Cabin Crafts, introduced tufting machinery wide enough to produce carpeting in a single pass. Carpet makers could buy cheap pre-woven backing materials. Manufacturers tried cotton with mostly poor results. Eventually Indian jute became the primary backing material for tufted carpets through the 1960s. In the 1970s, manufacturers developed suitable synthetic substitutes for jute.

The traditional woven carpet industry primarily used wool. (One manufacturer lamented in 1950 that it was “unfortunate that the carpet industry was tied to the back of a sheep.”) Wool made an excellent material for floor coverings – it was durable and resilient. The new southern tufting mills used cotton yarn at first. Cotton did not compare with wool as a floor covering material – it crushed easily and wore more quickly. Yet already by 1955, southern carpet mills were selling more carpets than northern mills, in spite of the clearly inferior nature of the product. The key was price: the wholesale price of tufted carpet was about half that of woven products. Consumer surveys in the 1950s demonstrated that few carpet buyers could name the manufacturer of the carpets they had purchased. The same consumers were almost without exception unable to distinguish between a tufted and a woven construction with a visual inspection. The old woven firms’ ad campaigns of the 1950s probably helped move more tufted carpet than woven.

Synthetic Fibers

The tufted carpet industry experienced a meteoric rise in the 1950s, but many skeptics saw it as a fad that would fade. One machinery executive quipped that “every year was the last big year for tufting” in the 1950s, according to industry observers. The obvious inferiority of cotton made the argument plausible. Surely consumers, many in the old woven industry argued, would eventually tire of placing glorified bedspreads on their floors. Tufted manufacturers experimented with rayon (disastrously) and staple (chopped, spun) nylon (with some success) in the 1950s. The most significant breakthrough in terms of raw materials came in the mid-1950s from the DuPont Corporation. Woven manufacturers and others had experimented with DuPont’s nylon as a carpet fiber, but nylon lacked the bulk needed in floor coverings. DuPont helped insure that the bust never came by developing bulked continuous filament (BCF) nylon in the mid-1950s. DuPont’s initiative was clearly stimulated by the growth of carpet sales. In essence, tufted manufacturers created a market large enough to justify DuPont’s research and development costs. DuPont even helped the new industry along by launching its own ad campaign for carpets made with its trademark 501 nylon in the late 1950s and early 1960s.

BCF nylon helped insure the long-term future of the tufted carpet industry. Tufted carpets used, and still use, a variety of fibers. Staple nylon could be used in constructions and styles that were not possible with a continuous filament yarn – plush, lustrous constructions. And in recent years, the industry has made increasing use polypropylene and other continuous filament yarns. DuPont’s BCF nylon (and similar products introduced by Monsanto a bit later), however, fit perfectly with the least expensive, low pile height, loop constructions that sold best in the emerging modest income market.

By the end of the 1950s, the new tufted carpet industry had raced past the old woven industry. While the total volume of carpet sales skyrocketed, woven sales actually fell. Tufted products accounted for all the growth in the industry through the 1970s. Tufted carpet sales increased from about 6 million square

yards in 1951 to nearly 400 million yards in 1968. Carpet finally became a staple of middle and working class home furnishings – indeed, it became the default floor covering over much of the nation for decades. The logjam had been broken by product substitution. Per household sales increased for the first time since the turn of the century. By 1990, Americans consumed over 12 square yards of carpet per family per year, up from 1.97 in the early 1950s. Woven sales drifted downward in the same period from 67 million yards to just over 40 million. Woven products did not disappear. High-end consumers still sought the assumed quality of woven goods, and woven products continued to dominate specialty commercial markets – hotel lobbies, casinos, etc. But tufted carpet achieved total dominance of not just the residential carpet market, but the residential flooring market in general.

Table 1

Average Mill Value of Carpet Shipments, 1950-1965 (price per square yard)

	All Broadloom Carpet and Rugs	Woven	Tufted
1950	\$6.26	\$6.26	n.a.
1955	5.30	6.19	3.36
1960	4.50	6.56	3.49
1965	3.76	6.09	3.40

Table 2

Carpet Industry Output, 1951-1968 (square yards)

	Tufted Carpet Shipments(square yards)	Woven Carpet Shipments(square yards)	Total IndustryShipments (square yards)
1951	6,076,000	66,924,000	73,000,000
1960	113,764,000	52,044,000	165,808,000
1963	250,000,000	41,000,000	291,000,000
1968	395,000,000	40,000,000	435,000,000

The tufted carpet industry was the nation’s fourth fastest growing industry in the 1960s, trailing only aircraft, television picture tubes, and computers. Robert Shaw, CEO of Shaw Industries, for two decades the nation’s leading manufacturer of carpet, recalled the late 1950s and 1960s as the era of the “gold coast” in the Dalton area, an era in which demand constantly outstripped supply and small manufacturers and large could succeed with few controls and a “seat-of-the-pants” management style.

Carpet Capital: An Industrial District

The brief narrative sketched above outlines the emergence of an industrial district. By the 1960s, the district had developed several distinct features. The carpet complex was characterized by the rapid emergence of new firms. No single firm accounted for as much ten percent of the industry’s output. The industry had developed from the deep roots of textile manufacture and, specifically, bedspread making. Carpet making emerged out of a process of regional learning (albeit a small region, similar to Jane Jacobs’ “city regions”). Carpet manufacture was also a decentralized affair. A few large firms, such as Cabin Crafts and E.T. Barwick Mills, spun some of their own yarn and finished some of their own carpets in-house by the 1960s, but most of the hundreds of small firms relied on independent yarn spinning or

production mills and independent commission finishing firms. Carpet finishing provided the industry with significant flexibility. Mills produced some carpets with pre-dyed yarns, but tufted significant yardage with undyed yarn. This allowed manufacturers to delay the critical decision on color until later, increasing the company's flexibility. Commission finishing companies provided these services. Initially post-production dyeing was handled in dye becks, or large drums. That is, finishers dyed carpets by the piece (albeit large pieces, 900 feet or more in length). Dye becks were produced locally and regionally.

The Dalton district offered a classic example of the great Victorian economist Alfred Marshall's industrial district based on external economies. Clearly this industry originated in northwest Georgia because of the peculiar skill set developed among managers, mechanics, and workers. The finishing companies and other suppliers clearly filled the role of Marshall's "subsidiary trades" devoted "to one small branch of the process of production." Innovation and ideas were "in the air," as Marshall put it. With so many firms and workers in close proximity, improvements in technology, management practices, marketing, and other arenas were rapidly transmitted throughout the industry. Though different in many ways, Paul Krugman has observed, the relatively low-tech carpet industry of the Appalachian foothills was quite similar to the high-tech Silicon Valley in these respects.

In the 1960s, European firms introduced continuous dyeing equipment to the U.S. carpet market. Continuous dyeing equipment held out the potential for more effective use of mass production techniques – an endless stream of white carpet moving through a dye range capable of rapidly shifting colors. The continuous ranges were, however, frightfully expensive compared to dye becks. The relative expense of the equipment in this evolving industry offers a window into the strategic options available to management. A tufting machine might have sold for \$10,000 in the late 1950s, with Cobble Brothers or some other firm offering in-house financing. Through the 1960s, the well-nigh indestructible tufting machines were available second-hand – a bit slower than brand new models installed by larger mills, but still effective for smaller product runs. That particular barrier to entry into this new industry was quite low. To establish a beck dyeing operation, the equipment alone would have cost more than \$700,000 by the end of the 1960s. The stakes in finishing were much higher, but the risks were shared among the finisher and his many customers. Just one of the new continuous dye ranges in the early 1970s cost more than \$800,000. The capital stakes rose for finishers.

The Maturing of the Industry

The carpet boom slowed in the 1970s as did the rest of the US economy. The recessions of the mid-1970s brought an end to the double-digit annual growth rates of the earlier period. In a slower growth environment, attention to cost became critical. Some firms adapted to the changing environment, but many did not. Adaptation generally involved vertical integration. Particularly during the 1980s, a few firms took the lead in bringing yarn spinning (and eventually production of extruded, continuous filament yarn) in-house, integrating backward toward raw materials. The most successful large manufacturers also integrated forward through finishing, investing in their own dyeing facilities. The recession of 1981-82 proved a pivotal moment – many smaller and mid-sized firms had continued to struggle along and occasionally prosper during the inflationary 1970s. The recession of the early 1980s claimed nearly half of the 285 mills that had been in operation in 1980; by 1992 the industry counted only about 100 mills, down dramatically from its early 1970s peak of more than 400. Shaw Industries, a revamped Mohawk Industries, and a few others bought competitors and moved the industry towards greater consolidation. Moreover, the top four firms, led by Shaw Industries, accounted for more than 80% of total production by the early 1990s.

The Industry Today

The carpet industry today is essentially the domain of a few large firms, led by Shaw Industries and Mohawk. The nation's largest carpet making firms are headquartered in northwest Georgia. Shaw and other carpet firms have moved into the production and distribution of other flooring surfaces – tile, wood, vinyl, etc. – as carpet has slipped in market share. No longer the unchallenged leader in covering America's floors, carpet is still the single most popular choice. Perhaps the most notable change associated with the industry today is its increasing use of workers of Hispanic descent. Since the late 1980s, Hispanic immigrants have moved in large numbers to Dalton, as they have to many new destinations throughout the nation. The region's employers laud the immigrant workers as the saviors of the industry, a solution to the region's recurrent labor shortages. Some community leaders and longtime residents express anxiety about the pace of cultural change in the small communities that still serve as hosts to the industry.

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