

Were Women's Wage Customary?

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Throughout history and all over the world women have earned lower wages than men.

Women's lower economic value can be seen in a Hebrew law which dates back to more than a thousand years B.C.E. Leviticus lists the silver equivalents of persons vowed to the temple:

When a person makes an explicit vow to the Lord concerning the equivalent for a human being, the equivalent for a male shall be: from twenty to sixty years of age the equivalent shall be fifty shekels of silver by the sanctuary shekel. If the person is female, the equivalent is thirty shekels.¹

If the "equivalents" measure the *labor value* of men and women, then the text implies that women were, economically, 60 percent as valuable as men three thousand years ago.² If we look at the wages paid to men and women at other times and places in history, the wage ratio varies, but is often close to 60 percent. In fourteenth-century Britain, women earned two-thirds as much as men when working as masons' assistants.³ Women working in agriculture earned 60 percent as much as men in Suffolk; for reaping they earned 64 percent as much as men in Essex and 75 percent as much in Rutland.⁴ By the early nineteenth century, women's relative wages seem to have gone down rather than up, and were usually less than 50 percent of male wages.

¹ Leviticus 27: 2-4, NRSV.

² The lower redemption value of a female should be interpreted as a measure, not of a woman's spiritual value, but of her *economic* value. Walter Kaiser, in *The New Interpreter's Bible*, says this about the text: "The highest value goes to the male who is in the prime of life and whose ability to carry out the work connected with the sanctuary is at its peak. The lower valuation of females has nothing to do with any perceived notion of worth or alleged negative attitudes toward women. The differentiation in estimates of value is not tied to personal worth, dignity, or esteem; instead, it has to do with the fact that much of the work involves such heavy labor as carrying the weight of heavy beasts offered as sacrifices, which normally men are able to assume more readily than most women. Thus the chart of values represents *labor value*, not personal value." Walter C. Kaiser, Jr., "The Book of Leviticus," in *The New Interpreter's Bible*, Abingdon Press, Nashville, 1994, p. 1187-8.

³ Men earned 1.5 d. per day, and women earned 1d. per day. Miss A.B. Wallis Chapman, "Social and Economic History" in William Page, ed., *The Victoria History of the County of Nottingham*, Vol. 2, London: Constable and Company, 1910, p 272.

⁴ James E. T. Rogers, *Eight Chapters on the History of Work and Wages*, London: Swan Sonnenschein, 1891, p. 59-61.

Parliamentary surveys from 1833 and 1861 suggest that women earned 40 percent as much as men.⁵ In the factories of the Industrial Revolution, boys and girls earned approximately the same wages for factory work until age 18, when male wages jumped sharply upwards. Few adult males worked in textile factories, but those that did earned almost three times as much as the adult women. Women in their 20s earned 38 percent as much as men the same age, and women in their 30s earned only 35 percent as much.⁶

Similar relative wages are found elsewhere in the world. On the continent we observe wage ratios varying from half to two-thirds in the nineteenth century. French women earned 65 percent as much as men in agriculture, 60 percent as much weaving cotton, and half as much in textile factories.⁷ German women earned half as much as men in 1874.⁸ In Swedish agriculture, women earned 58 percent as much as men in 1860, and 62 percent as much in 1890.⁹ In the Swedish textile industry, women earned 65 percent as much as men in 1865.¹⁰ Wage ratios in the nineteenth-century US were similar. In 1832 women earned two-thirds as much as men dying cloth, 56 percent as much as men making boots and shoes, 72 percent as much as men painting glassware, and 42 percent as much as men in cotton factories.¹¹ Women earned about

⁵ However, differences in the number of hours worked may have partially contributed to this gap. See Burnette, "An Investigation of the Female-Male Wage Gap during the Industrial Revolution in Britain." *Economic History Review*. 50(1997):258; *British Parliamentary Papers* 1834 (44) XXX to XXXIV and B.P.P. 1861 (14) L.

⁶ "Report of Dr. James Mitchell to the Central Board of Commissioners" *British Parliamentary Papers*, 1834 (167) Vol. XIX.

⁷ "Report of J.C. Symons," *Reports from Assistant Handloom Weavers' Commissioners*, *British Parliamentary Papers*, 1839 (159) XLII, p.147-149. Donald Cox and John Vincent Nye, "Male-Female Wage Discrimination in Nineteenth-Century France." *Journal of Economic History*. 49(Dec. 1989):903-920.

⁸ Gerhard Bry, *Wages in Germany, 1871-1945*, NBER, Princeton University Press, 1960, p. 93, 451, 452.

⁹ Gosta Bagge, Erik Lundberg, Ingvar Svennilson, *Wages, Cost of Living and National Income in Sweden, 1860-1930*, Vol. II, "Wages in Sweden," PS King & Son, Westminster, 1933, Part Two p. 113.

¹⁰ Gosta Bagge, Erik Lundberg, Ingvar Svennilson, *Wages, Cost of Living and National Income in Sweden, 1860-1930*, Vol. II, "Wages in Sweden," PS King & Son, Westminster, 1933, Part One, p. 220.

¹¹ McLane Report, "Documents Relative to the Manufactures in the United States," U.S. House of Representatives series #222 and 223, Washington: 1833, p. 56, 101, 123, 165.

half as much as men in 1850, and 56 percent as much in 1885.¹² Indian women working in agriculture earned two-thirds the male wage in 1800 and in the 1950s.¹³ In Japan in 1900, female agricultural laborers earned 53 percent as much as male laborers, and female weavers earned 60 percent as much as male weavers.¹⁴ In 1930 Chinese women working in industry did somewhat better, earning 78 percent as much as men.¹⁵ Even in non-capitalist countries we find similar wage ratios; in 1924 women working in state industry in the Soviet Union earned 62 percent as much as men, and in 1929 they earned 68 percent as much.¹⁶ While the wage differences quoted here do vary substantially, the existence of a large wage gap across so many different times and places is striking.

The existence of the wage gap between men and women is well known and not disputed. Women's lower wages seem to be a universal fact of history. What *is* disputed is the interpretation of this fact. On one side there are those, generally economists, who assume that markets function fairly well, and that wage differences must reflect differences in productivity. On the other side are those who are more skeptical of the degree to which wages were determined by markets, who emphasize the customary nature of wages and interpret the wage differences as the result of ideology devaluing women.

Economic theory suggests that, in competitive markets, wages must equal the marginal product of labor. Employers are assumed to maximize profits, and if the marginal product of labor were higher or lower than the wage employers would not be maximizing profits because

¹² Claudia Goldin, *Understanding the Gender Gap: An Economic History of American Women*. Oxford: Oxford University Press, 1990, p. 63, 67.

¹³ Romesh Dutt, *The Economic History of India under Early British Rule*, Routledge, 1956, p. 207. A.N. Agarwal, *Indian Economy*, Delhi, Vikas, 1975, p. 361.

¹⁴ Imperial Japanese Commission, *Japan in the Beginning of the 20th Century*, 1904, p. 568.

¹⁵ Tawney, *Land and Labour in China*, 1964, p. 200-201.

¹⁶ S. Zagorsky, *Wages and Regulation of Conditions of Labour in the USSR*, International Labour Office, Geneva: 1930, p. 173.

they could increase their profits by increasing or decreasing employment. In a competitive market employees are price-takers, but will adjust their hiring so that the marginal product of labor equals the wage. The actions of employers determine the demand for labor, and the wage is determined by the interaction of this demand for labor and the supply of labor. An alternative to the competitive model is the monopsony model. A monopsony occurs when there is only one employer who can hire the worker, and in this situation the employer can use his market power to pay wages lower than the marginal product of labor. However, economists generally do not believe the monopsony model has a wide application.¹⁷ If there is evidence that workers have a choice of possible employers, economists generally assume that markets are competitive and wages are equal to the marginal product of labor.

Economists who believe that markets are competitive use the gender wage gap as evidence of productivity differences between men and women. While it is possible to measure productivity using production functions, it is much easier to use observed wage differences to measure productivity differences. Goldin and Sokoloff assume that the relatively low female wage in the US North indicates that female workers had a relatively low marginal product, and they use this observation to explain the rise of textile manufacturing in the North.¹⁸ When aggregating the amount of labor used by manufacturing firms, Sokoloff counts an adult woman as the equivalent of half an adult man because women's wages were about half of men's wages.

Females and boys have been treated as equal, in terms of their labor input, to one-half of an adult male employee, with these weights having been drawn from evidence on the relative wages of the groups prevailing near the end of the period.¹⁹

¹⁷ For an attempt to apply the monopsony model more broadly, see David Card and Alan Krueger, *Myth and Measurement: The New Economics of the Minimum Wage*, Princeton: Princeton University Press, 1995.

¹⁸ Claudia Goldin and Kenneth Sokoloff, "The Relative Productivity Hypothesis of Industrialization: The American Case, 1820 to 1850," *Quarterly Journal of Economics*, 99(August 1994):461-487.

¹⁹ Kenneth Sokoloff, "Productivity Growth in Manufacturing during Early Industrialization: Evidence from the American Northeast, 1820-1860," in Stanley Engerman and Robert Gallman, eds., *Long-Term Factors in American Economic Growth*, Chicago: University of Chicago Press, 1986, p. 702-3.

In a comment on this article, Jeffrey Williamson questions whether assuming a constant productivity ratio over time is valid, but does not question the assumption that the wage ratio is an accurate measure of the productivity ratio.²⁰ Similarly, Atack, Bateman, and Margo assume, based on the wage ratio, that an adult female worker is equal to 60 percent of an adult male worker in US manufacturing in 1880.²¹

Not everyone agrees that the wage gap is evidence of productivity differences. On the other side of the debate are those who believe that women's lower wages were not justified by productivity differences, but were set by custom. For example, Pamela Sharpe claims that the wages of female servants were "a matter of custom bearing little relationship to economic determinants."²² Sonya Rose claims that "Women could be paid low wages because they were women. They earned a customary wage, not one which was generated out of open competition in a sexually neutral labor market."²³ Similarly, Deborah Simonton claims that, for nineteenth-century women, "Wages, like the gendered character of many jobs, rested on custom rather than real labor value."²⁴ While Woodward finds early modern male wages responding to supply and demand, he thinks female wages were different:

The low rates of pay given to most women were rooted in convictions about their physical, economic and social, intellectual, and political inferiority which characterized English society into the present century, and which were underscored by biblical

²⁰ Jeffrey Williamson, "Comment", in Engerman and Gallman, eds., *Long-Term Factors in American Economic Growth*, Univ. of Chicago Press, 1986, p.729–733.

²¹ Jeremy Atack, Fred Bateman, and Robert Margo, "Productivity in Manufacturing and the Length of the Working Day: Evidence from the 1880 Census of Manufactures," *Explorations in Economic History*, 2003, 40:170-104.

²² Pamela Sharpe, *Adapting to Capitalism: Working Women in the English Economy, 1700-1850*, New York: St. Martin's Press, 1996, p. 114.

²³ Sonya Rose, "Gender Antagonism and Class Conflict: Exclusionary Strategies of Male Trade Unionists in Nineteenth-Century Britain," *Social History*, 13(May 1988): 208.

²⁴ Deborah Simonton, *A History of European Women's Work: 1700 to the Present*, London: Routledge, 1998, p. 170.

authority. Their rates of pay were not simply reflections of the supply of and demand for female labour.²⁵

This group of historians explains women's wages, not in terms of their productivity, but in terms of social expectations of women's inferiority.

There are three main ideological assumptions about women that are usually blamed for keeping women in low-paid work; women were assumed to be weak, unskilled, and dependent on men. Some historians suggest that assumptions about women's physical weakness justified low wages and kept them confined in certain occupations. Michael Roberts suggests two reasons why seventeenth-century farmers saw women as "the weaker vessel" and thus allocated them the lightest tasks. One was the physical weakness caused by pregnancy, and the other was the moral weakness evident in the Biblical story of the fall, where Eve gave in first to temptation.²⁶ An important point is that the assumption of female weakness is not tied to physical reality; Deborah Simonton claims that "The association of women with weakness was not necessarily a biological notion, since the association of woman as the 'weaker vessel' was as much an ideological construction as it was physical."²⁷

Women might also be assigned to low-paying jobs because they were assumed to be unskilled workers. Sonya Rose suggests that women factory workers were paid less than men and were not given jobs with the potential for advancement because it was assumed that they could not acquire the necessary technical skills.

Employers considered mechanical aptitude to be a purely masculine trait. They talked about men's 'natural' technical ability and women's mechanical ineptitude as though this was a gender difference everyone recognized; it was common sense. The belief that

²⁵ Donald Woodward, "The Determinants of Wage Rates in the Early Modern North of England," *Economic History Review*, 48(Feb. 1994): 37.

²⁶ Michael Roberts, "Sickles and Scythes: Women's Work and Men's Work at Harvest Time," *History Workshop*, Spring 1979, #7, p. 11.

²⁷ Deborah Simonton, *A History of European Women's Work: 1700 to the Present*, London: Routledge, 1998, p. 34.

women naturally lacked facility with machinery was in fact widely held, and employers used it to justify paying women less than men for the same jobs.²⁸

The assumption that women were unskilled was strong enough to lead to the re-labeling of work done by women. Bridget Hill found that census officials were unwilling to categorize occupations hiring women and children as skilled.

Albe Edwards, the man responsible for the reclassification, met with a problem when he found certain occupations which technically were classified as 'skilled' had to be downgraded to 'semi-skilled', 'because the enumerators returned so many children, young persons, and women as pursuing these occupations.' Edwards did not hesitate to lower the status of certain occupations when he found women and young people worked in them in large numbers.²⁹

In this case the categorization of occupations as skilled or semi-skilled reflects ideology rather than characteristics of the job.

Women's low wages are often said to result from the fact that, being dependent on men, they "needed" less income. Sonya Rose, for example, emphasizes the expectation that women were secondary earners, who did not need to support a family, and whose wages were only supplementary to the wages of the men on whom they were dependent: "Women were workers who could be paid low wages because of an ideology which portrayed them as supplementary wage earners dependent on men for subsistence."³⁰ Deborah Valenze also claims that "the level of a woman's earnings was determined by an assumption that her wage was a supplement to some other (most likely a breadwinner's) wage."³¹

²⁸ Sonya Rose, *Limited Livelihoods; Gender and Class in Nineteenth-Century England*, Berkeley: University of California Press, 1992, p. 27.

²⁹ Bridget Hill, "Women, Work and the Census: a Problem for Historians of Women," *History Workshop Journal*, 1993, vol. 35. p. 90.

³⁰ Sonya Rose, 1986, "'Gender at Work': Sex, Class and Industrial Capitalism," *History Workshop Journal*, 21(1986):117.

³¹ Deborah Valenze, *The First Industrial Woman*, New York: Oxford University Press, 1995, p. 108. See also p. 89.

However, while it is true that contemporaries did hold these beliefs about women's inferiority and dependence, it does not necessarily follow that these beliefs were the *cause* of women's low wages. In this paper I do not question the claim that contemporaries believed women to be weak, unskilled, and dependent on men. The question is whether these ideologies were the real motivations behind the actions of employers, or whether they were simply the justifications given by employers to disguise their true motivations. I want to ask whether women's wages were fundamentally determined by custom or by the market.

Unfortunately the claim that women were paid customary wages is difficult to evaluate because often the claim is not clearly defined. Different historians seem to mean different things when they use the term. For some historians inflexibility is an important characteristic of customary wages. Sharpe suggests that "On the whole these women's wages were highly inelastic and could remain unchanged across generations regardless of other factors taking place in the economy. This suggests that women's wages had a large customary element."³² Penelope Lane, however, suggests that wages may be customary even if they are flexible: "Historians are aware of the effect produced on female wage levels by male labour shortages, or the availability of alternative employment, but a flexibility that breaks with custom is not evidence of a market wage."³³ So it is not clear whether inflexibility is a necessary characteristic of customary wages.

If we want to determine whether women's wages were customary, we must first define what that term means. In the remainder of this paper I present five possible definitions for "customary wages" and examine whether each definition fits the facts. Wages might be customary in the sense that they are set by the government, or in the sense that they did not

³² Pamela Sharpe, *Adapting to Capitalism: Working Women in the English Economy, 1700-1850*, 1996, p. 145-6.

³³ Penelope Lane, "A customary or market wage? Women and work in the East Midlands, c. 1700-1840," in P. Lane, N. Raven, and K.D.M. Snell, eds., *Women, Work and Wages in England, 1600-1850*, Woodbridge, Suffolk, Boydell Press, 2004, p. 118.

respond to changes in supply and demand. Wages might be customary in the sense that they were lower than fair market wages would have been. Wages might be customary in the sense that, when custom and market forces conflicted, custom took precedence. Finally, wages might be customary in the sense that society developed ideologies and customs designed to justify the wage differences that were created by the market, and most people thought about wages in these terms. I find that the evidence does not support the first four definitions of customary wages, but would support the fifth definition.

Definition 1: Wages are set by government regulation.

Wages might be fairly described as customary if they were set by law rather than the free-market and legal wages were determined by customary ideas about the relative worth of males and females. England did have a legal apparatus for setting wages until 1813. The Elizabethan Statute of Artificers empowered local justices to set maximum wages for various kinds of work; it was passed in 1563 and not repealed until 1813.³⁴ There is some disagreement about whether wage assessments determined actual wage rates, but in any case the system was little used in the eighteenth century. Examining the evidence that compares actual wages to assessed wages, Kelsall concludes that “there is clearly a tendency for assessed and actual rates to diverge in the eighteenth century.”³⁵ By 1813 the law was so irrelevant that members of parliament did not even know of its existence. The Hammonds report that, when the Lancashire cotton weavers appealed to parliament to have wages set according to the law,

³⁴ The Statute of Artificers was not the first English law to provide for maximum wages. Wage regulation began with the Statute of Labourers of 1349. R.H. Tawney, “The Assessment of Wages in England by the Justices of the Peace,” reprinted in W.E. Minchinton, ed., *Wage Regulation in Pre-Industrial England*, Newton Abbot: David & Charles, 1972, p. 38.

³⁵ R. Keith Kelsall, “Wage Regulations Under the Statute of Artificers,” 1938, reprinted in W.E. Minchinton, ed., *Wage Regulation in Pre-Industrial England*, Newton Abbot: David & Charles, 1972, p. 118.

In moving the second reading of the repealing Bill in the House of Lords, Lord Sidmouth remarked that at the time that recent petitions for regulating wages had been discussed in the House of Commons it was not known that there were Acts in existence for regulating the rate of wages ‘but in the course of the last year, it had been discovered that there were Acts both in England and Scotland rendering it imperative on magistrates to fix the rate of wages.’ Sidmouth assumed – and rightly assumed – that it was only necessary to mention the existence of this legislation to secure its repeal.³⁶

While the law permitting justices to set wages was not repealed until 1813, the law had fallen out of use in the eighteenth century, so during the Industrial Revolution period wages were not customary in the sense that they were set by government regulation.

Definition 2: Wages do not respond to the forces of supply and demand.

Some historians have specifically stated that women’s wages were not set by supply and demand. For example, Hudson and Lee claim that “The labour-market was segmented so that excess demand for female labour did not translate itself into higher female wages.”³⁷ Scholliers and Schwarz claim that “For most of the eighteenth and earlier nineteenth centuries the pay of women in agriculture was set at 6d. a day over most of England, irrespective of price movements, but also irrespective of a surplus or shortage of female labour.”³⁸ While he shows that male wages did respond to supply and demand, Woodward claims that women’s wages “were not simply reflections of the supply of and demand for female labour.”³⁹ Paul Johnson identifies customary wages as stable wages, in contrast to market wages, which are flexible:

³⁶ J. L. and B. Hammond, *The Skilled Labourer, 1760-1832*, Second Edition, London: Longmans, Green, and Co., 1920, p. 87.

³⁷ Pat Hudson and W.R. Lee, “Women’s Work and the Family Economy in Historical Perspective,” in Hudson and Lee, eds., *Women’s Work and the Family Economy in Historical Perspective*, Manchester: Manchester Univ. Press, 1990, p. 18.

³⁸ P. Scholliers and L. Schwarz, “The wage in Europe since the sixteenth century,” in Scholliers and Schwarz, eds., *Experiencing Wages: Social and Cultural Aspects of Wage Forms in Europe since 1500*, New York, 2003, p. 9.

³⁹ D. Woodward, “The Determinants of Wage Rates in the Early Modern North of England,” *Economic History Review*, XLVIII (1994), p. 37.

Has the labour market in Britain since early industrialisation been characterized by customary and stable wage differentials, or by flexible wages that have reflected the marginal productivity of the worker and which have readily adjusted to changing supply and demand conditions?⁴⁰

Sometimes the claim that wages did not respond to market forces is a claim about general tendency rather than an absolute rejection of any responses to market conditions. In her 1996 study of women in Essex, Pamela Sharpe also claims that wages were not responsive to economic conditions. She notes that the wages of unskilled domestic servants, “wages were a matter of custom bearing little relationship to economic determinants.”⁴¹ In a 1999 article, though, she acknowledged that the market could occasionally effect wages: while women’s wages were “sticky” at 6d. per day, in a few cases higher wages were paid “which shows that the market certainly had some effect.”⁴² She notes, however, that “the exceptions were only two in number,” suggesting that this alterations due to market forces were rare. Thus wages might on occasion respond to market forces, but this was the exceptional case, and on the whole wages were inflexible and unresponsive to the market.

Were women’s wages inflexible, with only a few rare exceptions? If we look at a large sample of women’s wage over time it is clear that women’s wages were not fixed for generations. Figures 1 shows the summer wages paid to women at a sample of 88 farms. There is a great deal of geographical variation in wages at any one point in time, and there is also movement in wages over time. Figure 1 combines wages from many different farms, but even if we confine ourselves to wages paid at a particular farm we find that women’s wages were flexible over time. Buckland Abbey in Devon paid all its female workers same wage. In 1798

⁴⁰ Paul Johnson, “Age, Gender and the Wage in Britain, 1830-1930,” in Peter Scholliers and Leonard Schwarz, eds., *Experiencing Wages: Social and Cultural Aspects of Wage Forms in Europe since 1500*, New York: Bergham Books, 2003, pp. 229-249.

⁴¹ Pamela Sharpe, *Adapting to Capitalism: Working Women in the English Economy, 1700-1850*, New York: St. Martin’s Press, 1996, p. 114.

⁴² Pamela Sharpe, “The female labour market in English agriculture during the Industrial Revolution” expansion or contraction?” *Agricultural History Review*, 1999, vol. 47, p. 174.

and 1799 they earned 6d. per day year-round; by 1803 this wage had risen to 7d. in the winter and 8d. in the summer.⁴³ A farm in Lillistock, Somerset, owned by the Marquis of Buckingham also paid uniform wages to its female laborers; this wage was 10d. in 1815 and 8d. in 1816 and 1817.⁴⁴ At a farm in Mangursbury, Gloucestershire, the female summer wage was 9d. per day in 1823 and 1824, and rose to 10d in 1825. The winter wage rose at the same time from 6d. to 7d., but fell back to 6d. in 1826.⁴⁵ At the Oakes farm in Derbyshire, the female non-harvest wage remained at 8d. between 1837 and 1846, but in 1847 rose to 10d.⁴⁶ These are just a few of the individual farms at which the female daily wage changed over time. Clearly the female wage was not immutable.

My sample of farm wages also allows me to show that women's wages responded to supply and demand conditions. Regions that had high demand for female labor in alternative occupations should have higher wages in agriculture, since the presence of other work decreased the supply of women available to agriculture. Both the presence of cottage industry and the appearance of factories in the industrial northwest should reduce the supply of women available for agricultural work. If the supply curve shifts left, then we should observe fewer women employed in agriculture and, at the same time, a higher female wage. Both of these predictions are confirmed by the wage data. Table 2 gives the regression equations, and Tables 3 and 4 illustrate the implications of these regressions. Table 3 examines the predicted wages and employment in Bedford, which had extensive cottage industry, and Norfolk, which had little. The presence of extensive cottage industry reduced female employment in agriculture 73 percent, and increased the daily wage 26 percent. Table 4 shows that the appearance of textile

⁴³ Devon Record Office, Drake 346M/E8-E11.

⁴⁴ Rural History Centre, BUC 11/1/11.

⁴⁵ Rural History Centre, GLO 1/2/1.

⁴⁶ Sheffield Archives, OD1518, OD1531.

factories in the northwest, and the opportunities for female employment that came with them also increased female agricultural wages. In Lancashire women's agricultural wages more than doubled between 1770 and 1830, while in Norfolk they increased only 40 percent. At the same time female employment decreased more in Lancashire than in Norfolk. Clearly a high demand for female labor in competing industries reduced the supply of female labourers available to agriculture, and thus increased the wages earned by females in agriculture.

If the claim that women's wages were unresponsive to the market were an absolute claim, then it could be disproven with one example. If the claim admits some exceptions, it is harder to disprove. I have shown that women's wages were not fixed over the period 1740 to 1850, and that they responded to regional opportunities for women's employment, and I hope this is enough to convince the reader that instances of wages responding to market forces were not rare, but were in fact the norm.

Definition 3: Wages were customary in the sense that they were lower than fair market wages.

Wages, even if flexible, might be fairly said to be customary wages if they were lower than market wages would have been. Sometimes the argument boils down to a claim that women were paid too low a wage. Penelope Lane, for example, acknowledges that female wages responded to market conditions, but notes that "flexibility that breaks with custom is not evidence of a market wage."⁴⁷ Lane believes that women's wages were discriminatory because, even after correcting for hours worked, "the gap that remains cannot be accounted for by

⁴⁷ Penelope Lane, "A customary or market wage? Women and work in the East Midlands, c. 1700-1840," in P. Lane, N. Raven, and K.D.M. Snell, eds., *Women, Work and Wages in England, 1600-1850*, Woodbridge, Suffolk: Boydell Press, 2004, p. 118.

differences in productivity.”⁴⁸ Lane specifically points to the case of weeding, where she argues that “it could be argued that women were actually more efficient at this task, since weeding was so closely associated with them in any century, and therefore they should have received higher wages than men.”⁴⁹ Here the claim is not that women’s wages were inflexible, but that they were too low relative to women’s productivity. Supporters of customary wages simply do not believe that women were half as productive as men. If it is true that women’s wages were lower than their marginal product, then wage discrimination in the sense defined by Gary Becker existed.⁵⁰ Evaluation of this claim requires an evaluation of the relative productivity of male and female workers.

Quotes from contemporaries have been used to evaluate relative female productivity, but if we look at a variety of such quotes we can see that they conflict with each other. In 1843 a Kentish farmer told a parliamentary investigator that a man could reap three-quarters of an acre in two days, while a woman could reap only a half acre.⁵¹ Another nineteenth-century author gives a contradictory assessment. Henry Stephens claimed that a woman was “as efficient a worker as a man; indeed, what is called a maiden-ridge, of 3 young women, will beat a bull-ridge, of 3 men, at reaping any sort of corn, on any given day.”⁵² Pamela Sharpe quotes Frederick Eden, who wrote in 1797 that

The wages of man-servants employed in husbandry, who are hired from half-year to half-year, are from 9 to 12 guineas a year, whilst women, who here do a large portion of the

⁴⁸ *ibid.*, p. 112.

⁴⁹ *ibid.*, p. 111-112. Note, however, that the association of women with weeding implies that women had the comparative advantage in this task, but does *not* imply that women were absolutely more productive than men in this task.

⁵⁰ Gary Becker, *The Economic of Discrimination*, Chicago: Univ. of Chicago Press, 1957.

⁵¹ *Women and Children in Agriculture*, 1843, p. 185.

⁵² H. Stephens, *The Book of the Farm*, London, 1844, p. 1051, quoted in Michael Roberts, “Sickles and scythes revisited; Harvest work, wages and symbolic meanings,” in P. Lane, N. Raven, and K.D.M. Snell, eds., *Women, Work and Wages in England, 1600-1850*, Woodbridge, Suffolk: Boydell Press, 2004, p. 101.

work of the farm, with difficulty get half as much. It is not easy to account for so striking an inequality, and still less easy to justify it.⁵³

While Eden was unable to explain the wage differences he observed, individuals interviewed by Alfred Austin and Mr. Vaughn for the 1843 report on *Women and Children in Agriculture* were less mystified by the wage differences. A Dorset farmer claimed “Women are employed in farm-work, but I consider their labour dear; they want 8d. a day, and they don’t come till nine, and are away again at five.”⁵⁴ Other responses suggest that women accomplished less work than men did when working at the same tasks. When asked if women and men worked together in the fields, a Wiltshire farm manager replied, “The women generally work together; they don’t get on so fast as the men in their work, particularly in reaping and hoeing turnips.”⁵⁵ A Surrey landlord claimed that, in poling hops, “The value of the woman’s labour is rather more than a third of the man’s.”⁵⁶ A similar statement was made by Robert Loder in the early seventeenth century; he had hired women to harvest cherries, but noted that “I think it were a better course to hire men, for they would doe twice so much I think.”⁵⁷

Given these conflicting statements by contemporary observers, whom should we trust? The best way to resolve the question of who was right is to look for evidence that is not the expression of someone’s opinion, but is direct evidence from output. Evidence from production functions gives us such direct evidence. The available evidence from production functions uniformly indicates that women had lower marginal productivity than men. Using census data to estimate the marginal products of men and women in the US in 1860, Craig and Field-Hendrey

⁵³ F.M. Eden, *State of the Poor*, 1797, vol. ii, p. 47, quoted in Pamela Sharpe, “The female labour market in English agriculture during the Industrial Revolution: expansion or contraction?” *Agricultural History Review*, 1999, vol. 47, p. 174.

⁵⁴ *Reports of Special Assistant Poor Law Commissioner on the Employment of Women and Children in Agriculture*, London: W. Clowes and Sons, 1843, p. 88.

⁵⁵ *ibid.*, p. 62.

⁵⁶ *ibid.*, p. 198.

⁵⁷ G.E. Fussell, ed., *Robert Loder’s Farm Accounts, 1610-1620*, London: Royal Historical Society, 1936, p. 148.

find that women were about 60 percent as productive as men in agriculture, and 40 to 50 percent as productive in manufacturing.⁵⁸ Cox and Nye use data on nineteenth-century French manufacturing firms to estimate the marginal product of male and female workers and find productivity ratios ranging from 0.37 to 0.63. When they test for wage discrimination, they find no evidence of wage discrimination.⁵⁹ Benjamin and Brandt use a 1936 household survey in China to estimate the contribution of men and women to family income in general and crop income specifically; they find that women contributed 62 percent as much as men to farm production.⁶⁰ Women are also less productive than men in agriculture in developing countries today; Jacoby finds that women were 46 percent as productive as men in Peruvian agriculture in the 1980s.⁶¹ While the estimates of the productivity ratio vary depending on the industry and location, all of the estimates suggest that women were substantially less productive than men in manual labor. Thus I conclude that women's wages, at least in competitive sectors such as agriculture and textile manufacturing, were not customary in the sense that they were lower than women's productivity.

Definition 4: Wages are customary in the sense that they are determined by custom even when custom conflicted with market forces.

Perhaps wages only seem to follow the dictates of the market because custom and market did not often conflict. Michael Roberts speaks of the "lack of incompatibility" between custom

⁵⁸ Lee Craig and Elizabeth Field-Hendrey, "Industrialization and the Earnings Gap: Regional and Sectoral Tests of the Goldin-Sokoloff Hypothesis," *Explorations in Economic History*, 30(January 1993):60-80.

⁵⁹ Donald Cox and John Vincent Nye, "Male-Female Wage Discrimination in Nineteenth-Century France," *Journal of Economic History*, 49(Dec. 1989):903-920.

⁶⁰ Dwayne Benjamin and Loren Brandt, "Markets, Discrimination, and the Economic Contribution of Women in China: Historical Evidence," *Economic Development and Cultural Change*, 44(Oct. 1995):61-104.

⁶¹ Hanan Jacoby, "Productivity of Men and Women and the Sexual Division of Labor in Peasant Agriculture of the Peruvian Sierra," *Journal of Development Economics*, 37(1992):265-287.

and market.⁶² Certainly it is true that custom and market usually prescribed the same thing. Custom led people to expect that women should be paid less, and, as we have seen, productivity differences also suggested that women's wages should be lower than men's. If custom and market pushed in the same directions, perhaps evidence of flexible wages does not disprove the importance of custom in setting wages. But if there is any meaning to the debate about whether wages were market or customary, then there must have been some occasions when market and custom suggested different outcomes, so that it is still meaningful to ask which was the main determinant of wages. Which was the locomotive, and which the caboose? Pamela Sharpe argues that custom was the determining force for wages: "there is evidence for the importance of cultural factors outweighing rational economic decision-making."⁶³ The evidence I find, though, supports the opposite conclusion.

To find evidence of whether custom or market was pulling the train, we need to find evidence of cases where custom and market conflicted, and see which prevailed. One such area of conflict is cases where the market pushed women's wages above men's wages. It is generally agreed that society expected women's wages to be lower than men's wages, so if the market suggested women's wages should be higher than men's wages, there was a conflict between the prescriptions of custom and the market. When market forces increased the demand for occupations where women had skills, we occasionally do see women earning wages higher than men earned. An example is in the lace and straw industries during the Napoleonic Wars. War with France cut off imports, increasing the demand for domestically-supplied lace and straw. In response to this demand, women's wages rose. In some cases women in these industries earned

⁶² Michael Roberts, "Sickles and scythes revisited: harvest work, wages and symbolic meanings," in Lane, Raven, and Snell, eds., *Women, Work and Wages in England, 1600-1850*, Woodbridge, Boydell Press, 2004, p. 89.

⁶³ Pamela Sharpe, "The female labour market in English agriculture during the Industrial Revolution: expansion or contraction?" *Agricultural History Review*, 47 (1999) pp. 161-181.

more than male agricultural labourers (who couldn't switch to making lace because they didn't have the skills). In the straw-plaiting industry, women's wages reportedly rose to 21s. per week, about twice the weekly wage of a male agricultural labourer.⁶⁴ High demand for females in cottage industry meant that female agricultural servants could earn as much as some men in Buckinghamshire in 1813.⁶⁵ Unfortunately these high wages were short-lived, and the end of the wars brought lower wages. Similarly, the invention of the spinning jenny for a brief time allowed a woman using this machine to make more than a man weaving cloth.⁶⁶ This situation was short-lived, though, because the spinning mule soon made the jenny obsolete.

Deborah Valenze explains the relatively low wages earned by female spinners in the eighteenth century as the result of the assumption that the spinners were supported by men:

Stigmatized by its association with women's work, spinning never earned wages commensurate with the demand for thread. . . . Purchases of spun thread, whether middleman or manufacturer, assumed that spinners came from households where male wages provided the primary means of support; thus they deliberately set wages for spinning low, often in complete disregard of other factors involved in the trade.⁶⁷

However, she also presents evidence that high demand for female labor could overcome such concerns and push women's wages above men's wages. When the invention of the flying shuttle caused a shortage of thread, increasing its price. Valenze notes that "Decrying the fact that at times women obtained more for their work than weavers, contemporaries called attention to the seeming injustice of it all."⁶⁸ If it is true that spinning wages were set by the expectation that women were supported by male wages, then how can we explain the fact that for a time women's

⁶⁴ Nicola Verdon, *Rural Women Workers in Nineteenth-Century England: Gender, Work and Wages*, Woodbridge, Suffolk: Boydell Press, 2002, p. 143. See also Sharpe, 1996, p. 57.

⁶⁵ Female annual wages were 10£10s, and male annual wages were 10£10s to 12£12s. Nicola Verdon, *Rural Women Workers in Nineteenth-Century England*, Woodbridge, Suffolk: Boydell Press, 2002, p. 50.

⁶⁶ Deborah Valenze, *The First Industrial Woman*, Oxford Univ. Press, 1995, p. 79.

⁶⁷ Deborah Valenze, *The First Industrial Women*, Oxford Univ. Press, 1995, p. 72.

⁶⁸ Deborah Valenze, *The First Industrial Women*, Oxford Univ. Press, 1995, p. 79.

wage for spinning were *higher* than male wages? The high prices paid to spinners conflicted with custom, leading to complaints from contemporaries, but the high prices were paid anyway.

Similar conflicts arose in seventeenth-century Devon, where women lace-makers could earn 7s. per week, while male agricultural labourers earned only 6d. to 8d. per day.⁶⁹ In this case the high female wages had important social consequences. The sex ratio of burials fell to around 75 males per 100 females as male workers migrated out of the region and female workers migrated in. Age at marriage was high for women, higher even than for men, and few widows remarried, leaving large numbers of women living independently.⁷⁰ High female wages did not fit with cultural expectations, and caused social changes that were probably unsettling to some, but the market prevailed. In this case where market valuations conflicted with cultural expectations, market wages were paid. Thus, while women's wages were justified by appeals to religion and women's roles in the family, these justifications do not seem to have prevented women from earning high wages when the demand for their services was high.

Definition 5: Wages are set by market forces but justified by custom.

It is possible that wages were governed by market forces, but understood and justified by custom and gender ideology. Most people do not understand how economic forces set prices, and tell other stories about how prices are determined. When gasoline prices rise, conspiracy theories emerge.⁷¹ Increase in gasoline prices prompt Congressional investigations. In a 2004 poll, 77 percent of Californians thought that high gasoline prices were due to the greed of the oil

⁶⁹ Pamela Sharpe, "Literally Spinsters: A New Interpretation of Local Economy and Demography in Colyton in the Seventeenth and Eighteenth Centuries," *Economic History Review*, Feb. 1991, vol. 44, p. 52.

⁷⁰ Pamela Sharpe, "Literally Spinsters: A New Interpretation of Local Economy and Demography in Colyton in the Seventeenth and Eighteenth Centuries," *Economic History Review*, Feb. 1991, vol. 44, p. 49, 55.

⁷¹ In 2000, Congress asked the Federal Trade Commission to investigate whether high gasoline prices were caused by illegal price-fixing. See the "Interim Report of the Federal Trade Commission, Midwest Gasoline Price Investigation," July 28, 2000, <http://www.ftc.gov/os/2000/gasprice.htm>.

companies, and only 14 percent thought that the high prices were due to “legitimate changes in market conditions.”⁷² Similarly, individuals who did not understand market forces sought alternative explanations of women’s lower wages. Sonya Rose suggests that wages must have been set by custom because, when asked, employers could only justify women’s wages by appealing to what women usually earn.

Industrialists evidently paid women a customary wage rate based on their gender. A study of women’s work and wages in Birmingham in 1906 reported that ‘employers can usually give no other reasons for the actual wage than the fact that such and such a figure is what women usually get in Birmingham.’⁷³

However, wages may be set by the market even if employers do not understand how the market works. In fact, the competitive models suggests that employers should be price takers, paying the going rate for labor. One of the strengths of the market system is that it works even if the individual decision-makers have very little information. I may not understand why the price of milk is \$2.94 per gallon, but that does not prevent it from being a market price. Buyers of milk do not need to know why the current price is \$2.94 – that’s one of the greatest strengths of the capitalist system. The fact that these employers could not explain how wages were determined does not contradict the claim that they were market wages.

If people do not understand how market forces work, they can be expected to appeal to other factors to explain the levels of wages. Women’s wages were explained in terms of custom, or in terms of their domestic role. For example, James Mitchell, reporting on the wages of factory workers in 1834, noted the fact that women’s wages were lower than men’s wages, and commented:

Some persons feel much regret at seeing the wages of females so low, in some cases full grown women averaging under 6s., and comparatively few more than 8s., but perhaps

⁷² Field Poll #2117, <http://field.com/fieldpollonline/subscribers/>.

⁷³ Sonya Rose, “Gender Antagonism and Class Conflict: Exclusionary Strategies of Male Trade Unionists in Nineteenth-Century Britain,” *Social History*, May 1988, vol. 13, p. 197.

such persons are wrong; and nature effects her own purposes more wisely and more effectually than could be done by the wisest of men. The low price of female labour makes it the most profitable as well as the most agreeable occupation for a female to superintend her own domestic establishment, and her low wages do not tempt her to abandon the care of her own children. Nature thereby provides that her designs shall not be disappointed.⁷⁴

Mitchell clearly was seeking some explanation of what struck him as gross inequality. He did not have access to economic explanations of the wage gap, and he justified women's lower wages as a means to encourage them to pursue domestic duties. However, that does not mean he was correct in his assessment. Even if custom or ideology were invoked to justify the wage gap, that does not mean that custom or ideology were necessarily the *cause* of the wage gap. While I would agree that women's wages were customary in the sense that they were justified by appeals to ideology and understood by contemporaries in these terms, I do not believe that ideology really determined the level of women's wages.

I do not believe that women's wages were inflexible, unresponsive to supply and demand, or set lower than women's productivity. I do believe that contemporaries understood women's lower wages through the lens of gender ideology rather than through the lens of economic models. However, individuals do not always understand the true causes of phenomenon they observe. If the Greeks, observing lightning, explained it as a thunderbolt thrown by Zeus, that is part of their culture, but it doesn't mean that the lightning really did come from Zeus. Similarly, nineteenth century Britain could interpret women's lower wages as the result of their biological inferiority or dependency on men, without those being the real cause of the low wages. I conclude that both the level of wages and changes in wages over time were the result of market forces, thus that women's wages should be called market wages, even if contemporaries did not understand them that way.

⁷⁴ "Report from Dr. James Mitchell to the Central Board of Commissioners, respecting the Returns made from the Factories, and the Results obtained from them," P.P. 1834 (167) XIX, p. 39.

Figure One
Female Summer Wages

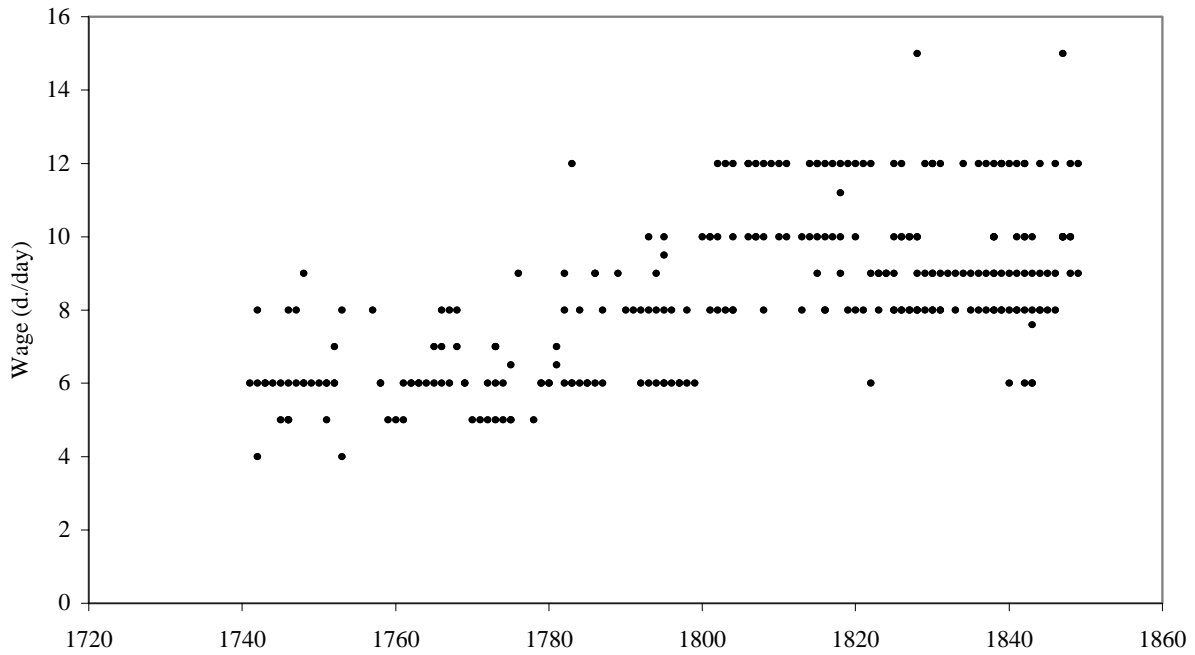


Table One
Descriptive Statistics, Wage Sample

	Mean	Min	Max	N
Male Winter Wage	17.9	8.0	30.0	288
Male Summer Wage	18.7	9.0	32.0	282
Female Winter Wage	7.8	4.0	15.0	253
Female Summer Wage	8.4	4.0	15.0	275
Cottage Industry	3.2	0.1	34.0	311

Table Two
Determinants of Wages and Employment

	Male Wage	Female Wage	Female Workdays as Percent of Total
Constant	2.393* (0.054)	1.845* (0.061)	13.272* (4.545)
Home Counties	0.230* (0.035)	0.253* (0.040)	-9.087 (4.859)
South West	-0.124* (0.029)	-0.008 (0.033)	7.705 (4.440)
West Midlands	0.085* (0.028)	0.046 (0.031)	3.438 (4.083)
North	0.155* (0.029)	0.130* (0.032)	16.058* (4.693)
Industrial Northwest	-0.032 (0.061)	-0.122 (0.068)	1.080 (13.765)
Industrial North x 19 th Century	0.166* (0.076)	0.450* (0.085)	-8.247 (14.412)
Cottage Industry	0.002 (0.002)	0.007* (0.002)	-0.417* (0.207)
Isolated Wage Quote	-0.032 (0.025)	-0.009 (0.027)	
Tenant			2.249 (3.615)
Time Trend			-0.037 (0.048)
1793-1815			0.529 (3.283)
Dummies for Quinquennia	Yes	Yes	No
R ²	0.837	0.702	
No. of Farms	88	88	68
No. of Observations	282	275	204

Dependent variables in the wage equations are the natural log of the summer wage. Standard errors in parentheses. * = significant at the 5% level. The excluded region is Hunt's region 3, the Southeast. Each observation is weighted by 1/(number of observations from that farm). Employment equation estimated by Tobit.

Table Three
Effects of Cottage Industry on Female Agricultural Wages and Employment

	Female Summer Wage	Female Workdays as Percent of Total
Bedford	11.0	2.8
Norfolk	8.7	10.1

Wages and employment are levels predicted from the regressions in Table 2.

In Bedford, employment in the lace, straw, and gloves industries employed 34 percent of women in 1851, while in Norfolk these industries employed only 0.5 percent of women.

Table Four
Effects of Industrialization on Female Agricultural Wages and Employment

	Female Summer Wage	Female Workdays as Percent of Total
Lancashire 1770	6.0	13.3
Lancashire 1830	13.1	4.6
Norfolk 1770	6.2	12.2
Norfolk 1830	8.7	10.1

Wages and employment are levels predicted from the regressions in Table 2.