Greater land size but also Inequality? English Parliamentary Enclosure and the Gender Pay Gap in Agriculture 1750-1850

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Abstract:

Belonging to a strand of literature on women's status during the Industrial Revolution, this project empirically investigates how parliamentary enclosure affected the English gender pay gap in agriculture in 1750-1850. Drawing data on women's and men's pay in agriculture from credible secondary sources, it examines the causal relationship between the gender pay ratio and changes in the proportion of land enclosed. Overall, parliamentary enclosure negatively impacted the demand for female labour and thus women's relative pay in agriculture. Women's work in dairy and arable farming was disrupted by farmers' preferences for grain growing and seasonal male labour force employed in large enclosed farms. The enclosure of common land also eroded an important source of women's income. This is particularly true for arable counties in the southeast. In some places, such as counties that underwent less intense wartime enclosure and high-wage northern counties, enclosure possibly revived some demand for female labour on the newly enclosed farms and helped narrow the gender pay gap after the French Wars. Nevertheless, alternative explanations do exist, such as changes in crop combinations. These potential positive effects were too small to reverse the general downward trend of the gender pay ratio and women's, especially wives' increasing dependence on the male breadwinner. Meanwhile, it is worth noting that the negative effects were also small in magnitude. This suggests the main driver of a widened gender pay gap in agriculture lay in other contemporaneous socioeconomic changes.

1. Introduction

Despite distinct occupational experiences, English families shifted towards the male breadwinner model during the Industrial Revolution. [1] Women were

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[1] The different experiences of families in different occupations during the transition to the male breadwinner household can be seen in: Sara Horrell and Jane Humphries, "The Origins and Expansion of the Male Breadwinner Family: The Case of Nineteenth-Century Britain," *International Review of Social History* 42, no. S5 (September 1997): 25–64,

marginalised from market work, becoming increasingly specialised in domestic obligations. For the agricultural labour market, gender inequality has been extensively explored from the angle of participation.[2] Not much work explicitly focuses on the pay gap, but female relative earnings in agriculture persisted at one-third to two-thirds in 1750-1850.[3] Meanwhile, agricultural households who often struggled at the poverty line underwent frequent socioeconomic changes, the most influential one on their well-being perhaps being parliamentary enclosure.[4] Thus, this project investigates how parliamentary enclosure affected the gender pay gap in agriculture and finds a small overall negative impact. In the short term, it reduced demand for female labour and enlarged the gender pay gap by disrupting women's work in dairy, shifting arable employment towards greater seasonality with a preference for men and eroding female income generated from the commons. From the French Wars, expanding need for manual labour in the newly enclosed large farms might enhance women's relative position in some places, but these potential positive effects were small compared with the general trend of women's marginalisation. The small magnitude of effects was also reflected in its comparison with the impacts of other contemporaneous socioeconomic changes.

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https://doi.org/10.1017/S0020859000114786.

[2] For example, Sharpe (1999) gives a review on the changes in the amount and type of works available to women. Pamela Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution: Expansion or Contraction?" The Agricultural History Review 47, no. 2 (1999): 161–81, https://www.jstor.org/stable/40275570

[3] Maxine Berg, "What Difference Did Women's Work Make to the Industrial Revolution?," *History Workshop*, no. 35 (1993): 22–44, https://www.jstor.org/stable/4289205; Pamela Sharpe, "Continuity and Change: Women's History and Economic History in Britain," *The Economic History Review* 48, no. 2 (1995): 353–69, https://doi.org/10.2307/2598407.

[4] For example, the enclosure of common land, an important production resource with which women and children contributed to the family well-being, had adversely influenced the nutritional intake of agricultural households and consequently their stature. Sara Horrell and Deborah Oxley, "Bringing Home the Bacon? Regional Nutrition, Stature, and Gender in the Industrial Revolution," *The Economic History Review* 65, no. 4 (2012): 1354–79, http://www.jstor.org/stable/23271693.

This project fits into the literature on women's labour market position during the Industrial Revolution, with a particular focus on agriculture.[5] The first marginal contribution of this project lies in its summary of the demand-side changes in women's agricultural work in 1750-1850 from three perspectives: dairy employment, amounts and types of arable employment and the exploitation of commons. The summary also considers regional heterogeneity and distinguishes long-term effects from short-term ones, a crucial point when approaching this area stressed by previous research.[6] Secondly, it empirically tests my hypothesis with county-level data on pay and land enclosed after confirming its representativeness in doing so. Based on the conclusions of research on days worked per year, it addresses possible bias induced by working days assumptions, confirming the robustness of conclusion. Finally, by finding a minor effect on the agricultural gender pay gap, this project also emphasises the necessity to look beyond enclosure for other structural and institutional changes that decreased female relative earnings in agriculture. For example, when researching living standards during the Industrial Revolution, overgeneralisation need to be replaced by detailed examinations of industrial-specific experiences, not only because of between-industrial heterogeneity but also inter-industrial interdependence, like that between agriculture, proto-industry and the textile industry. Concerning debates about the customary versus market nature of the premodern gender pay gap, this project suggests market factors, especially demand, played a crucial role in women's employment. But microeconomic factors underpinning farmers' hiring decision-making were still unclear.

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[5] For example, Janet Thomas, "Women and Capitalism: Oppression or Emancipation? A Review Article," *Comparative Studies in Society and History* 30, no. 3 (July 1988): 534–49, https://doi.org/10.1017/S001041750001536X.

[6] Sara Horrell and Jane Humphries, "Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865," *The Economic History Review* 48, no. 1 (1995): 96, https://doi.org/10.2307/2597872.

The remainder of the project extends as follows. Section 2 reviews the literature on the agricultural labour market in 1750-1850 to raise a hypothesis – parliamentary enclosure enlarged the gender pay gap in general. Section 3 discusses the representativeness of the data used to test the hypothesis. Section 4 presents empirical results. Section 5 concludes.

2. Literature Review

From 1730 to 1850, the English parliament passed 5,265 acts to enclose 6,794,429 acres of open fields, common land and wastes.[7] This was prompted by landowners to consolidate land, expand production and extract higher rents amid increasing grain prices after 1750 and during the French Wars.[8] Expanding population also generated upscaling demand for food.[9] After intense enclosure of land in the 1760s-80s and 1795-1813, the former open field system of crop rotation on stripped fields combined with cultivating and grazing on the commons was displaced by large farmers' individual landholding and their exclusive control over production.[10] Changes in production methods and farm size also transformed labour organisation for the families of smallholders, cottagers and squatters.[11] Before, the rural workforce was built on a family basis.[12] The husband, wife and children contributed to the family pocket with waged labour and the exploitation of the common land.[13] Later, the organisation of labour shifted further from

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[7] Robert Allen, "Agriculture during the Industrial Revolution, 1700–1850," in *The Cambridge Economic History of Modern Britain: Volume 1: Industrialisation, 1700–1860*, ed. Paul Johnson and Roderick Floud, vol. 1 (Cambridge: Cambridge University Press, 2004), 100, https://doi.org/10.1017/CHOL9780521820363.005.

[8] Ibid, 98-99.

[9] Ivy Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850* (London: Routledge, 1930), 27.

[10] M. E. (Michael Edward) Turner, *English Parliamentary Enclosure. Its Historical Geography and Economic History*, Studies in Historical Geography (Folkstone: Dawson, 1980), 69; Allen, "Agriculture during the Industrial Revolution, 1700–1850," 99.

[11] The average farm size increased from 65 acres in 1700 to 100 in the north and 150 in the south in 1800. Allen, "Agriculture during the Industrial Revolution, 1700–1850," 100.

[12] Ibid, 105-6.

[13] Ibid, 106.

previous self-sufficiency towards erratic employment in a capitalist manner which better fitted with the seasonality of mass agriculture production in consolidated farms.[14]

To determine how men employed in agriculture were affected by these changes, the labour market consequences, labour demand and supply, must be distinguished from those caused by land expropriation. Cottagers and squatters could indeed worsen off from the latter considering their scarcity of resources and the small size of allotments.[15] Possibly because of so, the received twentieth-century view on male labourers influenced by enclosure was persistent agricultural unemployment forced them to become wage-dependent workers in agriculture.[16] However, recent literature tends to suggest there was no decline or even a slight increase in male agricultural demand. The theoretical basis for this view is Chambers (1953) that increased production scale and the consequent new labour organisation and cultivation methods required more manual labour.[17] Based on censuses and Arthur Young's tour in England, Allen (2004) estimates that the number of men employed in English and Welsh agriculture went from 612 thousand to 643 thousand to 985 thousand between 1750, 1800 and 1850.[18]

[14] Ibid, 106.

[15] Jane Humphries, "Enclosures, Common Rights, and Women: The Proletarianization of Families in the Late Eighteenth and Early Nineteenth Centuries," *The Journal of Economic History* 50, no. 1 (1990): 17–42, http://www.jstor.org/stable/2123436.

[16] For example, Snell (1985) argues increasing employment instability strengthened the seasonality of labour demand and exacerbated unemployment. Allen, "Agriculture during the Industrial Revolution, 1700–1850," 101; K. D. M. Snell, *Annals of the Labouring Poor: Social Change and Agrarian England, 1660–1900*, Cambridge Studies in Population, Economy and Society in Past Time (Cambridge: Cambridge University Press, 1985), 1–14, https://doi.org/10.1017/CBO9780511599446.

[17] J. D. Chambers, "Enclosure and Labour Supply in the Industrial Revolution," *The Economic History Review* 5, no. 3 (1953): 319–43, https://doi.org/10.2307/2591811.

[18] Although according to Higgs (1987, 1995) English censuses underestimated female employment by dismissing their work as secondary, there is no evidence they are unreliable evidence for men's employment. Edward Higgs, "Women, Occupations and Work in the Nineteenth Century Censuses," *History Workshop*, no. 23 (1987): 59–80, https://www.jstor.org/stable/4288748; Edward Higgs, "Occupational Censuses and the Agricultural Workforce in Victorian England and Wales," *The Economic History Review* 48, no. 4 (1995): 700–716, https://doi.org/10.2307/2598131; Allen, "Agriculture during the Industrial Revolution, 1700–1850," 105.

Similar trends are also detected by Wrigley (1985, 1986) and Deane and Cole (1969).[19]

Nevertheless, the gender pay gap suggests women's work in agriculture did not necessarily share the same trend, neither under the influence of enclosure nor throughout 1750 to 1850. Burnette's (2004) reconstruction of female agricultural day labourers' wages based on farm accounts shows the English female-to-male pay ratio decreased from 0.60 in 1740-1750 to 0.46 in 1845-1850, except for some northwest counties.[20] During the process, the gender pay ratio had ebbs and flows, but the trend was downward in general.[21] 1760-75, 1785-1815 and 1831-1845 were periods of enlarging gender pay gap.[22] The first two roughly coincided with the apex of parliamentary enclosure. Similarly, from rural poor relief examinations, Snell (1981) finds in east England, female farm servants' pay decreased in 1770-90, with an opposite trend for male servants.[23] From 1800 to 1815, men's wages rose faster, leading to a greater gender pay gap.[24] The decline in the relative earnings of women in agriculture is also reflected in the wage series for unskilled women, as they were an important component of this group. According to Humphries and Weisdorf (2015), the earnings of unskilled women in

[19] E. Anthony Wrigley, "Urban Growth and Agricultural Change: England and the Continent in the Early Modern Period," *The Journal of Interdisciplinary History* 15, no. 4 (1985): 683–728, https://doi.org/10.2307/204276; E. A. (Edward Anthony) Wrigley, "Men on the Land and Men in the Countryside: Employment in Agriculture in Early Nineteenth-Century England," in *The World We Have Gained : Histories of Population and Social Structure : Essays Presented to Peter Laslett on His Seventieth Birthday*, by Lloyd Bonfield et al. (Oxford: Blackwell, 1986), 259-336; Phyllis. Deane and W. A. (William Alan) Cole, *British Economic Growth,1688-1959: Trends and Structure.*, 2nd ed., University of Cambridge. Department of Applied Economics. Monographs; 8 (Cambridge U.P, 1967), 142–43.
[20] Joyce Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," *The Economic History Review* 57, no. 4 (2004): 672, https://doi.org/10.1111/j.1468-0289.2004.00292.x.
[21] It fluctuated between 0.4 and 0.5 after the 1770s. Ibid, 672.
[22] Ibid, 672.
[23] K. D. M. Snell, "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," *The Economic History Review* 34, no. 3 (1981): 407–37, https://doi.org/10.2307/2595881.
[24] Ibid, 416.

the day-pay casual market had been drifting away from their male counterparts since 1750.[25]

Before linking changes in the gender pay gap with parliamentary enclosure, it is necessary to review theories of the determination of premodern gender pay gap, which could be very different from that in modern times. Nowadays, within a certain occupation, the gender pay gap consists of characteristic differences in human capital, persisting child penalty, and discrimination against women.[26] During the Industrial Revolution, agriculture was not skill-intensive, nor was public education well-developed. Thus, farmers used different standards from modern employers during hiring.

Burnette (1996, 1997, 2004, 2007, 2008) argues the gender pay gap in English agriculture during 1750-1850 reflected lower female productivity because of strength differences and women's time allocated to unpaid childcare and housework.[27] She supports her view with the productivity gap in slave cotton

[25] Jane Humphries and Jacob Weisdorf, "The Wages of Women in England, 1260–1850," *The Journal of Economic History* 75, no. 2 (June 2015): 428, https://doi.org/10.1017/S0022050715000662.

[26] The following articles are two examples revealing the sources of the gender pay gap in the 20th and 21st centuries. The first focuses on the convergence of characteristic differences and the persistence of wage penalty resulting from childbirth. The second paper suggests discrimination against women originates from the deviation from male behaviour code (because of childbirth and work interruption) in the workplace. Claudia Goldin, "A Grand Gender Convergence: Its Last Chapter," *The American Economic Review* 104, no. 4 (2014): 1091–1119, http://www.jstor.org/stable/42920734; Marianne Bertrand, Claudia Goldin, and Lawrence F. Katz, "Dynamics of the Gender Gap for Young Professionals in the Financial and Corporate Sectors," *American Economic Journal: Applied Economics* 2, no. 3 (July 2010): 228–55, https://doi.org/10.1257/app.2.3.228.

[27] Joyce Burnette, "Testing for Occupational Crowding in Eighteenth-Century British Agriculture," *Explorations in Economic History* 33, no. 3 (July 1, 1996): 319–45, https://doi.org/10.1006/exeh.1996.0018; Joyce Burnette, "An Investigation of the Female–Male Wage Gap During the Industrial Revolution in Britain," *The Economic History Review* 50, no. 2 (1997): 257–81, https://doi.org/10.1111/1468-0289.00054; Joyce Burnette, "Married with Children: The Family Status of Female Day-Labourers at Two South-Western Farms," *The Agricultural History Review* 55, no. 1 (2007): 75–94, https://www.jstor.org/stable/40276129; Joyce Burnette, *Gender, Work and Wages in Industrial Revolution Britain*, Cambridge Studies in Economic History - Second Series (Cambridge: Cambridge University Press, 2008), 72–135, https://doi.org/10.1017/CBO9780511495779; Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 675–76.

picking.[28] But the magnitude of the productivity gap was called into question. Also drawing evidence from slaves in cotton picking, Rhode and Olmstead (2018) suggest women and men did equal shares of work with a mere 7%-11% difference in daily picking rates.[29] On the other hand, many scholars argue women's lower earnings contained a large customary element. Sharpe (1999) and Scholliers and Schwarz (2006) argue women's wages tended to be sticky at a certain level, often 6d. to 8d.[30] Rose (1986), Valenze (1995), and Simonton (1998) attribute the stickiness of female wages to long-existing discrimination against women as supplementary earners dependent on male breadwinners.[31] Beyond ideology, custom could determine the gender pay gap by the types of tasks performed by men and women. For example, in Home Counties, generally, men did ground work and women tended the plants.[32]

Two contrasting views are not necessarily beyond reconciliation in that both supply and demand for female labour could be inelastic compared with those for men. On the supply side, because of motherhood responsibility and housework, women had a higher reservation wage.[33] On the demand side, farmers were

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[28] According to Goldin and Sokoloff (1984) and Craig and Field-Hendrey (1993), female productivity was about 0.6 of male productivity. Claudia Goldin and Kenneth Sokoloff, "The Relative Productivity Hypothesis of Industrialization: The American Case, 1820 to 1850," *The Quarterly Journal of Economics* 99, no. 3 (1984): 461–87, https://doi.org/10.2307/1885960; Lee A. Craig and Elizabeth B. Field-Hendrey, "Industrialization and the Earnings Gap: Regional and Sectoral Tests of the Goldin-Sokoloff Hypothesis," *Explorations in Economic History* 30, no. 1 (January 1, 1993): 60–80, https://doi.org/10.1006/exeh.1993.1003.

[29] Paul W. Rhode and Alan L. Olmstead, "Slave Productivity in Cotton Picking," 2018, 22, https://economics.yale.edu/sites/default/files/slave_productivity_in_cotton_picking_adans.pdf.

[30] Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 161–81; Peter Scholliers and Leonard Schwarz, *Experiencing Wages: Social and Cultural Aspects of Wage Forms in Europe since 1500, Experiencing Wages*, 1st ed., vol. 4, International Studies in Social History (New York, NY: Berghahn Books, 2006), 9.

[31] Sonya O. Rose, "'Gender at Work':1 Sex, Class and Industrial Capitalism," *History Workshop Journal* 21, no. 1 (March 1, 1986): 95, https://doi.org/10.1093/hwj/21.1.113; Deborah Valenze, *The First Industrial Woman*, OUP Catalogue (Oxford University Press, 1995), 117; Deborah. Simonton, *A History of European Women's Work: 1700 to the Present.*, 1st ed. (London: Taylor & Francis Group, 1998), 35.

[32] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 90; Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 90, 171–72.

[33] This has received support from various empirical studies even in a contemporary setting. An example of economics review: Robert McClelland and Shannon Mok, "A Review of Recent

probably not as willing to hire women as men, assuming women had inferior strength, childcare made them undedicated workers, or they were not independent earners. If so, regardless of the relative contribution of systematic discrimination and the real productivity gap behind farmers' decision-making, they preferred to hire more male workers when wages decreased a certain amount. Therefore, women's wages responded to changes in supply and demand for female labour, but not in a drastic way without major economic shocks.

Table 1. Work Opportunities Available to Women after Parliamentary Enclosure

Pastoral employment	Dairy opportunities declined South arable: gave way to corn growing and grazing; fewer farm servants (dairymaids) Pastoral: some farm servants (dairymaids) replaced by dairymen
Arable employment	Amount: irregular labour favoured men Types of farm casual works: Southeast – exclusion from harvest work; specialist crop cultivation replaced by corn growing Before: harvest and reaping, weeding, haymaking, ploughing, threshing, thatching, hop growing, fruit production… After: weeding, haymaking, stone picking, hoeing turnips Other regions – no significant changes in types of work available
Common land	Lost income from livestock raising, by-product making (eggs, dairy products, manure), fuel gathering and gleaning

Sources: Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 40–42; Snell, "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," 429; Allen, "Agriculture during the Industrial Revolution, 1700–1850," 106; Sharpe, "Time and Wages of West Country Workfolks in the Seventeenth and Eighteenth Centuries," 66–68; Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 169; Humphries, "Enclosures, Common Rights, and Women",17-42; King, "Customary Rights and Women's Earnings", 461-476; Neeson, *Commoners : Common Right, Enclosure and Social Change in England, 1700-1820,* 1-52.

Research on Labor Supply Elasticities," October 1, 2012, 1, https://ecommons.cornell.edu/handle/1813/77792.

Existing literature suggests enclosure could lead to a higher gender pay gap in agriculture by reducing the demand for women's labour. Table 1 summarises a consensus that in the short run, female labour demand suffered. Firstly, opportunities for women declined along with the waning emphasis on husbandry with which they were often associated. In southern arable counties, dairy work gave way to more profitable corn growing and grazing.[34] Fewer dairymaids were hired by farmers to cut rising board and lodging costs.[35] In pastoral counties, women's opportunities continued, but Pinchbeck (1930) suggests dairymaids were at least to some extent, substituted by a new class of men employed in husbandry – dairymen.[36]

Secondly, from the perspective of the amount of arable employment available, grain production on large enclosed land preferred seasonal male labour.[37] Married female day labourers were crowded out of the casual day labour market by the competing male workforce who lost their common rights and were favoured by farmers.[38] Based on Oakes' farm accounts from 1770 to 1835, Burnette (1999) suggests male day labourers were employed all year round while women casual

[34] Ann Kussmaul, *Servants in Husbandry in Early Modern England*, Interdisciplinary Perspectives on Modern History (Cambridge: Cambridge University Press, 1981), 97–119, https://doi.org/10.1017/CBO9780511896002; Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 40–42; "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," 429; Allen, "Agriculture during the Industrial Revolution, 1700–1850," 106.
[35] Nicola Verdon, *Rural Women Workers in Nineteenth-Century England: Gender, Work and Wages*, *Rural Women Workers in Nineteenth-Century England: Gender, Work and Wages* (Woodbridge, Suffolk, UK; Boydell Press, 2002), 79;
[36] Howkins (1994), Long (1999) and Mutch (1991) suggest female servants' employment continued in the north. Alun Howkins, "Peasants, Servants and Labourers: The Marginal Workforce in British Agriculture, c 1870-1914," *The Agricultural History Review* 42, no. 1 (1994): 58, https://www.jstor.org/stable/40275001; Jane Long, *Conversations in Cold Rooms: Women, Work, and Poverty in Nineteenth-Century Northumberland*, Royal Historical Society Studies in History. New Series (London: Royal Historical Society, 1999), 88; A. Mutch, "The 'Farming Ladder' In North Lancashire, 1840–1914: Myth or Reality?" *Northern History* 27, no. 1 (January 1, 1991): 162–83, https://doi.org/10.1179/007817291790175763; Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 40–42.
[37] Allen, "Agriculture during the Industrial Revolution, 1700–1850," 106; Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 27–52; Verdon, *Rural Women Workers in Nineteenth-Century England : Gender, Work and Wages*, 88.
[38] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 27–42.

workers only worked during the short hay-harvest season. [39] Women's marginalisation in irregular hiring and high turnovers following enclosure is also highlighted by Pinchbeck (1930), Humphries (1990), Sharpe (1995), and Allen (2004).[40]

On the level of types of work in the fields, research focusing on East Angelia demonstrates women's retreat from harvest work and specialist crop farming. Snell (1981) finds women's previous engagement in harvest shifted to weeding and haymaking.[41] Sharpe's (1996, 1999) study on Essex indicates hop growing, which used to be primarily women's work, gradually gave way to grain production that favoured men, a process started in the late eighteenth century and could be worsened by enclosure.[42] But Reay (1996) argues specialist crop growing was still an important component of female employment in Kent.[43] While in the southwest, midlands and the north, Marshall's review, as well as regional studies by Miller (1984), Bouquet (1985), Gielgud (1992), Burnette (1999), Speechley (1999) and Verdon (2002), show no significant changes in types of female arable work.[44]

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[39] Joyce Burnette, "Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution," *The Journal of Economic History* 59, no. 1 (March 1999): 48–52, https://doi.org/10.1017/S0022050700022282.

[40] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 27–42; Humphries, "Enclosures, Common Rights, and Women",17-42; Sharpe, "Time and Wages of West Country Workfolks in the Seventeenth and Eighteenth Centuries," 66–68; Allen, "Agriculture during the Industrial Revolution, 1700–1850," 106.

[41] Snell, "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," 429.

[42] Pamela. Sharpe, *Adapting to Capitalism: Working Women in the English Economy, 1700-1850.* (Basingstoke: Macmillan, 1996), 71-100; Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 169-71.

[43] Barry Reay, *Microhistories: Demography, Society, and Culture in Rural England, 1800-1930*, Cambridge Studies in Population, Economy, and Society in Past Time; 30 (London: Cambridge University press, 1996), 109–12.

[44] Burnette, "Labourers at the Oakes," 55–56; Verdon, *Rural Women Workers in Nineteenth-Century England : Gender, Work and Wages*, 124; Celia Miller, "The Hidden Workforce: Female Field Workers in Gloucestershire, 1870-1901," *Southern History* 6 (1984): 139–55;: *The Farm Household in Nineteenth and Twentieth Century Devon : Mary Bouquet.* (Norwich: Geo, 1985), 40,44; Judy Gielgud, "Nineteenth Century Farm Women in Northumberland and Cumbria: The Neglected Workforce" (Ph.D., England, University of Sussex (United Kingdom)), 155–58, accessed January 29, 2023, https://www.proquest.com/docview/301451974?pq-origsite=primo; Helen Victoria Speechley, "Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870." (Ph.D., University of Exeter, 1999), 64, https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.267210.

In addition, as the main exploiter of common land, women lost a crucial source of income when they were enclosed. One was monetary income gained from stock raising and by-products making. Humphries' (1990) valuation using the average annual prices of cow, dairy products and manure suggests they equalled half of male labourers' annual earnings.[45] Although often in a nonmonetary form, women also contributed to family wellbeing significantly by gleaning and the fuel they gathered.[46] According to Sharpe (1999), gleaning could generate one-fourth of the family income.[47] The harmful consequences of the erosion of common rights for women are also suggested by King (1991) and Neeson (1993).[48]

Whether enclosure increased the demand for female labour later has some debates. Pinchbeck (1930) suggests large-scale production and the intensive cultivation of new crops, turnips and potatoes, created expanding demand and even a rising class of female day labourers.[49] Sharpe (1996, 1999), Reay (1996), Verdon (2002) and Burnette (2004) defied this revival of demand as a national phenomenon. In the southeast, the pessimist scene of female labour demand continued. [50] Meanwhile, the revival could occur outside the southeast, as is argued by Miller (1984), Bouquet (1985), Gielgud (1992), Burnette (1999), Speechley (1999) and

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[45] Humphries, "Enclosures, Common Rights, and Women," 31.

[46] Ibid, 34-35.

[47] Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 176.

[48] Peter King, "Customary Rights and Women's Earnings: The Importance of Gleaning to the Rural Labouring Poor, 1750-1850," *The Economic History Review* 44, no. 3 (1991): 461–76, https://doi.org/10.2307/2597539; J. M. Neeson, *Commoners: Common Right, Enclosure and Social Change in England, 1700-1820*, Past and Present Publications (Cambridge: Cambridge University Press, 1993), 1-52.

[49] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 53-66.

[50] Sharpe, *Adapting to Capitalism : Working Women in the English Economy, 1700-1850.*, 71-100; Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 165; Barry Reay, *Microhistories : Demography, Society, and Culture in Rural England, 1800-1930*, Cambridge Studies in Population, Economy, and Society in Past Time ; 30 (London: Cambridge University press, 1996), 109–12 ; Verdon, *Rural Women Workers in Nineteenth-Century England : Gender, Work and Wages*, 124; Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 686.

Verdon (2002) based on studies in Gloucester, Devon, Northumberland, Somerset, and Yorkshire.[51]

But to what extent would these positive changes (if any) narrow the gender pay gap? During 1750-1850, female labour had been in persistent surplus. The assumed male breadwinner could not support his family with his earnings alone, so most wives would feel it necessary to support their families with causal labour.[52] No matter whether women's participation was out of the demand to consume more during an era of flourishing family economy in the 18th century (although it is argued by Allen and Weisdorf (2011) to be not likely for rural families) or forced to do so in the 19th century amid the transition to the breadwinner-homemaker household, the stable willingness for women to supply their labour would offset the positive effects of demand expansion in terms of pay.[53] Even when female relative wages encountered favouring demand conditions, they could lose to their male counterparts due to women's weaker bargaining power. Therefore, it is likely that enclosure produced an overall negative effect on the gender pay gap.[54]

However, factors affecting the gender pay gap extended beyond enclosure considering 1750-1850 was a period of the transition from a family economy towards breadwinner-homemaker households. Gender division of labour was strengthened in work outside the home, increasing female specialisation in home

[51] Miller, "The Hidden Workforce: Female Field Workers in Gloucestershire, 1870-1901," 139–55; Gielgud, "Nineteenth Century Farm Women in Northumberland and Cumbria," 155–58; Burnette, "Labourers at the Oakes," 55–56; Speechley, "Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870.," 64; Verdon, *Rural Women Workers in Nineteenth-Century England: Gender, Work and Wages*, 124.
[52] Sara Horrell, Jane Humphries, and Jacob Weisdorf, "Family Standards of Living Over the Long Run, England 1280–1850," *Past & Present* 250, no. 1 (February 1, 2021): 132, https://doi.org/10.1093/pastj/gtaa005; Sara Horrell and Jane Humphries, "Old Questions, New Data, and Alternative Perspectives: Families' Living Standards in the Industrial Revolution," *The Journal of Economic History* 52, no. 4 (December 1992): 858, https://doi.org/10.1017/S0022050700011931.
[53] R. C. Allen and J. L. Weisdorf, "Was There an 'industrious Revolution' before the Industrial Revolution? An Empirical Exercise for England, c. 1300—1830," *The Economic History Review* 64, no. 3 (2011): 719, https://www.jstor.org/stable/41262475.
[54] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 53-66.

production.[55] The first confounder is regional differences in wages, employment opportunities and agricultural specialisation. For one thing, northern to the Severn-Wash line, wages were higher because industry competed with agriculture for labour.[56] For agricultural women workers in Bedford and Buckingham, their wages benefited from the competing cottage industry.[57] For another, different agricultural production by county generated different demands for women and different experiences during enclosure. One difference was the arable/pastoral specialisation, the latter guaranteed women more opportunities.[58] Also, the unique bondage system provided relatively stable employment for women.[59] As a result, we might expect a smaller gender pay gap in northern and pastoral counties.

Another important structural change leading to the decline in female labour demand lay in spinning. For rural families, both proto-industry and agriculture were women's sources of income, the former could even outweigh the latter in significance.[60] For women (especially wives) unemployed in proto-industry, their first makeshift was agriculture given a relatively lower concentration of skills and their previous experiences as servants.[61] The spillover from industry to agriculture is pointed out by Pinchbeck (1930), Allen (1988) and Sharpe (1999).[62]

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[55] Jan De Vries, *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present* (Cambridge: Cambridge University Press, 2008), 186–88, 201.

[56] E. H. Hunt, "Industrialization and Regional Inequality: Wages in Britain, 1760–1914," *The Journal of Economic History* 46, no. 4 (December 1986): 935–66, https://doi.org/10.1017/S0022050700050658; E. H. (Edward H.) Hunt, *Regional Wage Variations in Britain 1850-1914*, (Oxford: Clarendon Press, 1973), 1-60.

[57] Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 668.

[58] Snell, "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," 422.

[59] The bondage system, the yearly hiring of female bondagers by hinds in Northumberland and Durham due to low population density. Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 65-66.

[60] Ibid, 54.

[61] Ibid, 54.

[62] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 54; Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 171-72; Robert C. Allen, "The Growth of Labor Productivity in Early Modern English Agriculture," *Explorations in Economic History* 25, no. 2 (April 1, 1988): 120, https://doi.org/10.1016/0014-4983(88)90013-7.

Although it has been suggested the loss of opportunities and transition to male breadwinner families during the Industrial Revolution were not supply-driven, the constant substitution of women by spinning machines could release more labour supply into agriculture, suppress female pay at a low level and persist the gender pay gap.[63]

Besides technological innovation in textiles, Collins (1969), Roberts (1979, 2004), Snell (1981) and Burnette (2004) argue the upgrade of harvest technique from scythe to sickle caused the decline in female labour demand.[64] The latter required more upper-body strength thus favouring men's involvement in harvest, possibly contributing to a wider gender pay gap.[65] This is rejected by Sharpe (1999) that both tools were alternately used, and the substitution of scythe for sickle was a slow process that lasted for over a century.[66] Burnette (1999) also suggests this did not happen in Oakes where scythe had never been in use for harvest due to its specialisation in hay production.[67] Thus, regional heterogeneity in this process suggests the changes in farming tools might not have a uniform effect on the gender pay gap across England.

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[63] Horrell and Humphries, "Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865," 101, 113.; Jane Humphries and Carmen Sarasúa, "Off the Record: Reconstructing Women's Labor Force Participation in the European Past," *Feminist Economics* 18, no. 4 (October 1, 2012): 39, https://doi.org/10.1080/13545701.2012.746465; Burnette, "An Investigation of the Female–Male Wage Gap During the Industrial Revolution in Britain," 278; Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 429.

[64] E. J. T. Collins, "Harvest Technology and Labour Supply in Britain, 1790-18701," *The Economic History Review* 22, no. 3 (1969): 453–73, https://doi.org/10.1111/j.1468-0289.1969.tb00183.x; Michael Roberts, "Sickles and Scythes: Women's Work and Men's Work at Harvest Time," *History Workshop*, no. 7 (1979): 3–28, https://www.jstor.org/stable/4288220; Michael Roberts, "Sickles and Scythes Revisited," in *Women, Work and Wages in England, 1600-1850*, by Penelope Lane, Neil Raven, and K. D. M. Snell (Woodbridge, Suffolk, UK ; Boydell Press, 2004), 68–101; Snell, "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," 425; Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 204.

[65] Snell, "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860," 425.

[66] Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 170–72.

[67] Burnette, "Labourers at the Oakes," 59.

Lastly, before the stipulation of the poor law, female labour was economised by farmers who employed men with low rates to be supplemented by the poor law allowance.[68] Its stipulation in 1834 might generate new demand for women's labour, as suggested by Pinchbeck (1930), Gielgud (1992) and Burnette (2004).[69] The passage of the new poor law could reduce the gender pay gap, but when the old poor law was still in effect, male wages were suppressed at a low level, so the gap with the wages of women still in employment might decrease. Also, men could benefit more from the amendment of the poor law. Countervailing forces indicate the effects of the poor law on the gender pay gap might be indeterminate. To sum up, parliamentary enclosure might produce an overall negative effect on the gender pay gap, but considering the stickiness of women's pay and other economic changes, the impact could be small.

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[68] George R. Boyer, *An Economic History of the English Poor Law, 1750-1850, An Economic History of the English Poor Law, 1750-1850* (Cambridge: Cambridge University Press, 1990), 85.
[69] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 85–86; Gielgud, "Nineteenth Century Farm Women in Northumberland and Cumbria," 388; Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 686.

3. Data

<u>Table 2. Variables</u>

Variables	Description	mean	sd	min	max
GPR (%)	Dependent variable, the gender pay gap, measured by the female-to-male pay ratio by time (1750-70, 1771-95, 1796-1824, 1824-33, 1833-37, 1838-45 and 1846-50) and by county	40.13	15.96	9.797	120
Δ%Enclosed (%)	Independent variable, changes in the proportion of land enclosed by time (1750-70, 1771-95, 1796-1824, 1824-33, 1833-37, 1838-45 and 1846-50) and by county	21.61	15.92	1.498	56.95
Regional dummy: North	Counties in the south of the Severn-Wash line – 0[a] Counties in the north of the Severn-Wash line – 1	0.404	0.493	0	1
Arable	Counties specialised in arable farming – 0 [b] Counties specialised in pastoral farming – 1	0.550	0.500	0	1
Time dummy:					
T0	1750-1770, reference period, dropped				
T1	1771-1795, T1 = 1				
T2	1796-1824, T2 = 1				
T3	1825-1850, T3 = 1				

Sources: The gender pay ratio, see texts. Proportion of land enclosed, see texts. Agricultural specialisation by county, Klein et al., "Agricultural Land Use," 65–70.

Notes: a. Counties south of the Severn-Wash line: east, southeast and southwest of England.

b. Arable counties: east and southeast England.

Variables used in the empirical analysis are listed in Table 2. Regional dummies North and Arable control the variations of high/low wages and pastoral/arable agricultural specialisation. 1750-1850 is divided into 4 subperiods by time dummies. T0, 1750-70, is the reference period. Before 1770, commons and wastes were more intensely enclosed than arable open fields.[70] Their relative importance

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[70] Turner, *English Parliamentary Enclosure. Its Historical Geography and Economic History*, 68-71.

reversed after 1770 when grain growing became more profitable.[71] T1 and T2 roughly fit the periods when parliamentary enclosure was the most intense, 1760-90 and the French Wars.[72] Meanwhile, conscripted male soldiers could increase the demand for rural female labour in T2.[73] T3 saw the postwar agricultural depression and the stipulation of the poor law.[74]

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[71] Before 1750, the majority of land enclosed by the private sector (landlords, gentries, …) were commons and wastes. Through the whole process of parliamentary enclosure, arable open fields that accounted for 60% of all the land enclosed by parliamentary acts were more important than commons and wastes (25.9%). Even before 1793, the enclosed acreage of open fields by parliamentary acts was larger in the absolute value. Here the emphasis lays on relative importance – the ratio of open fields to commons and wastes was smaller before 1770 than afterwards. Ibid, 68-71.
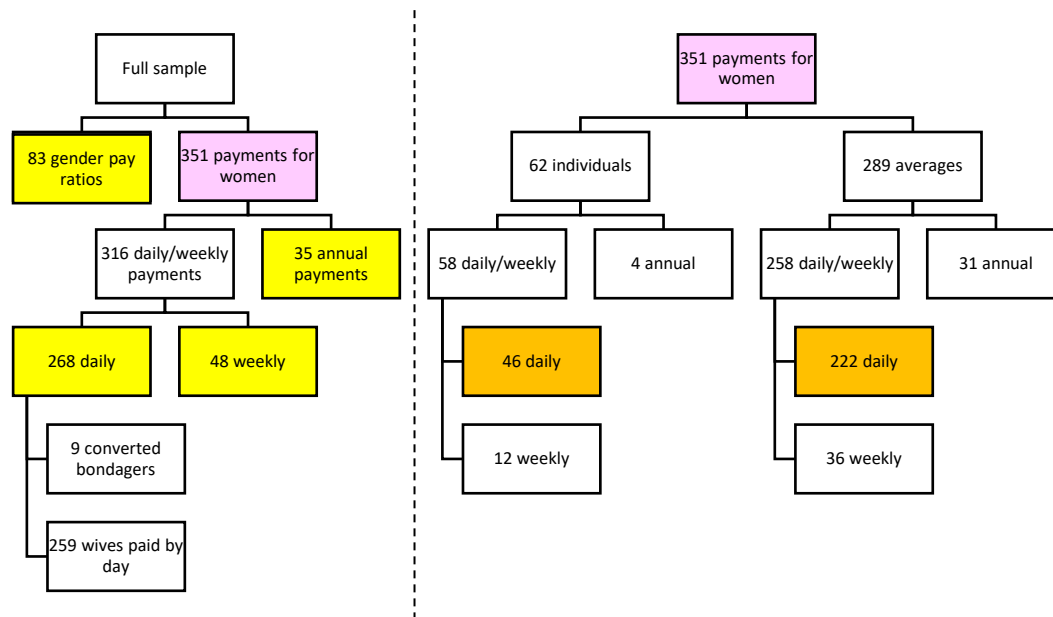
[72] Ibid, 66.

[73] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 53-65.

[74] Ibid, 85–86.

3.1 Dependent Variable

Figure 1. Composition of Raw Dataset

Sources: Burnette, *Gender, Work and Wages in Industrial Revolution Britain*; Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850"; Fussell and Fussell, *The English Countrywoman; a Farmhouse Social History, A.D. 1500-1900*; Eden, *The State of the Poor*; Howell, "The Rural Poor in Eighteenth-Century Wales"; Marshall, *The Review and Abstract of the County Reports to the Board of Agriculture, (Comprizing Those from the Southern and Peninsular Departments)*; Rogers, *A History of Agriculture and Prices in England : ...1259-1793*; Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*; Sharpe, *Adapting to Capitalism : Working Women in the English Economy, 1700-1850.*
Notes: The left figure demonstrates the data I used to calculate the gender pay ratio, the dependent variable used in the regression. The dependent variable is the weighted average of 268 female/male daily payments, 48 female/male weekly payments, 35 female/male annual payments and 83 gender pay ratios (rectangles in yellow) by period and by county. The right figure indicates how I used 268 wives' daily payments out of 351 women's pay to check whether women's pay in my sample matched the historical trend. The average of women's daily pay is used and calculated as the weighted average of those in orange by period and by county. See the appendix for a thorough description of how wives' daily pay and the gender pay ratio were calculated.

351 payments for women and 83 gender pay ratios in agriculture in 37 English counties (Yorkshire is separated into east and west) were gathered from various secondary sources.[75] Many rural married women used seasonal farming activities

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[75] These secondary sources are Marshall (1808-17), Rogers (1866), Eden (1928), Pinchbeck (1930), Fussell (1953), Sharpe (1996), Howell (2000), Verdon (2002), Burnette (2004, 2008), and Lane (2004). These authors collected their data from contemporary writings, Parliamentary

as by-employments for proto-industry works or vice versa, both of them important sources of income. Thus, most payments in my dataset recorded the exact type of income-generating activity in agriculture, such as haymaking, harvesting and weeding to ensure these payments were issued for agriculture.[76] For single women, farm servants should be distinguished from domestic servants. The boundary between them is questioned by Bouquet (1985) and Verdon (2002) that servants classified as domestic in rural households did both domestic and farm work.[77] But this was not likely for town servants, so Snell's (1981) data, some of them acquired from parishes near towns or cities, is not included in my dataset.[78]

Table 3. Men's Annual Working Days in Agriculture

Time	Clark and van der Werf (1998)	Voth (2001)	Allen and Weisdorf (2011)
1750		231	260
1771	280		
1800	Close to 300 days	343	Around 310
1830		276	
1840			Around 310
1867-69	293		

Sources: Clark and Van Der Werf, "Work in Progress?", 838; Voth, "The Longest Years", 1076; Allen and Weisdorf, "Was There an 'industrious Revolution' before the Industrial Revolution?", 719; Klein et al., "Real Wage Rates and GDP per Head",264.

Notes: Voth's (2001) working days are calculated by Allen and Weisdorf (2011) from hours worked per year divided by an assumed working hour of 10 every day.

Based on Bowley (1898) and Hunt (1986), where I obtained data on men's weekly pay in agriculture, women's pay is divided into 7 periods: 1750-70, 1771-95, 1796-

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Papers, farm accounts, the General Views of Agriculture, and rural autobiographies.

[76] Differences in remunerations of these activities did exist. Commonly, harvests were better-paid than activities in other seasons. However, I was unable to control these differences by conferring separate weights to different activities when calculating the gender pay ratio because information on the sources of income was incomplete.

[77] Mary Bouquet, *Family, Servants and Visitors: The Farm Household in Nineteenth and Twentieth Century Devon* (Norwich: Geo, 1985), 1-19; Verdon, *Rural Women Workers in Nineteenth-Century England : Gender, Work and Wages*, 82.

[78] Sharpe, "The Female Labour Market in English Agriculture during the Industrial Revolution," 175.

1824, 1824-33, 1833-37, 1838-45 and 1846-50. As Figure 1 shows, 268 wives' daily pay was used to test the representativeness of data on women's pay. Weekly payments were not considered here but included in the regression after calculating the independent variable because transforming wives' weekly pay into daily based on existing research might introduce bias in a small sample.[79] Appendix A elaborates on how I classified the 268 payments and averaged the orange rectangles in Figure 1. To convert male pay from a weekly basis to daily, I assumed men worked 5 days a week, a figure possibly lower than the real working days and overlooking their changes. A summary of male annual working days in agriculture in Table 3 indicates the real gender pay gap could be smaller than assumed here. Later in the empirical analysis, the 5-days assumption is relaxed by replacing men's working days with 5.57 (thus 290 days a year) in 1771-95 and 6 days thereafter. Table 4 and Figure 2 show temporally, women's daily pay generally moved in parallel with men's. Geographically, women's pay and men's pay were higher in the north. Women's pay in the north and south showed a similar chronological trend except for a rise in northern women's pay in 1746-50. Despite a limited number of observations in this period, this increase is supported by Burnette (2004).[80] Overall, the time trend and geographical distribution of women's pay in my sample corresponded to the literature.

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[79] On the other hand, existing literature does suggest premodern English wives could work 2 days a week. For example, Burnette (1999) finds two individual wives worked 112 and 124 days respectively in Oakes. From family budgets, Horrell and Humphries (1995) find 35% of wives had full-time employment and 25% worked intermittently. Sara Horrell, Jane Humphries, and Jacob Weisdorf, "Beyond the Male Breadwinner: Life-Cycle Living Standards of Intact and Disrupted English Working Families, 1260–1850," *The Economic History Review* 75, no. 2 (2022): 534, https://doi.org/10.1111/ehr.13105, Burnette, "Labourers at the Oakes," 53, Horrell and Humphries, "Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865," 102–3.

[80] Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 672.

Table 4. Women and Men's Average Pay by Day

Time/Region	Women's Average Pay by Day (d.)			Men's Average Pay by Day (d.)		
	South	North	All	South	North	All
1750-70		10.76	10.76	18.32	16.31	17.47
1771-95	7.90	9.46	8.68	18.34	20.85	19.40
1796-1824	8.34	9.92	9.13	17.63	19.74	18.48
1825-33	8.17	10.00	9.085	21.80	21.39	21.64
1834-37	6.50	8.00	7.25	19.00	21.36	19.95
1838-45	10.04	10.35	10.195	20.27	22.63	21.23
1846-50	8.25	12.00	10.125	17.32	18.39	17.75
All	8.67	9.96	9.315	18.95	20.07	19.41

Sources: Women's daily pay, see texts. Men's daily pay, Bowley, "The Statistics of Wages in the United Kingdom During the Last Hundred Years. (Part I.) Agricultural Wages"; Hunt, "Industrialization and Regional Inequality."

Note: The English average of women's pay by day in my sample (the "All" column) is weighed by the number of observations in each county.

Figure 2. Women and Men's Average Pay by Day
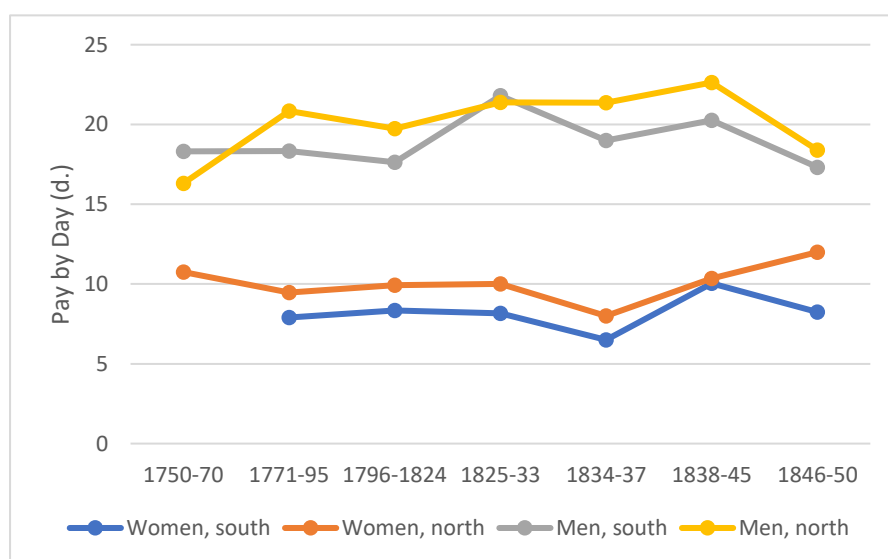
Sources: See texts.

So far, my dataset fails to consider servants' in-kind payments, their board and lodging.[81] This would not, however, threaten the credibility of empirical results

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[81] On a few occasions, some wives in my dataset also received in-kind payments such as meals and drinks in supplement to cash for their labour. However, no change regarding in-kind payments for married women was made because it remains unclear to what extent this was the

because in-kind payments were not considered in Bowley's (1898) and Hunt's (1986) data.[82] On the other hand, previous literature often measures in-kind payments by the yearly cost of a respectability basket.[83] Here, I did so with the yearly cost of a barebone basket considering the value and changes in the contribution of cash to total compensation.[84] Humphries and Weisdorf's (2019) series of men's annual wages indicates cash payments gradually occupied a larger share in male servants' total compensation from around 55% in 1750 to 70% in 1850 with an average share of 65% throughout the period.[85] This fits the historical trend of farmers' increasing reluctance to pay board and lodging due to soaring costs of living and preferences for seasonal labour.[86] The average cash share was 62% for women.[87] Possibly because of limited observations here, if the respectability basket was used, cash only accounted for 43.2% of female servants' total compensation, while using the barebone basket could increase this share to 62.3%.[88]

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common practice. Most payments in my dataset for wives did not specify whether any in-kind payment was included.

[82] This is Hunt's (1986) description of how he dealt with in-kind payments: "The figures for 1867-1870 and 1898 include payments-in-kind; those for earlier dates are not clear on this point and may well underestimate the value of payments-in-kind." Hunt, "Industrialization and Regional Inequality," 966.

[83] For example, Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 406.

[84] This alternative CPI has been previously adopted by Humphries and Weisdorf (2019). When cash-to-total payment was lower than 50%, they replace the respectability basket with the barebone basket to accommodate the idea that cash payments and in-kind compensation were positively correlated. The alternate use of respectability and barebone baskets is to check the robustness of their reconciliation of the diverging trends of day wages and GDP per capita during the post Black Death Golden Age and in the eighteen-century industrious revolution. Jane Humphries and Jacob Weisdorf, "Unreal Wages? Real Income and Economic Growth in England, 1260–1850," *Economic Journal* 129, no. 623 (October 2019): Appendix, 13, https://doi.org/10.1093/ej/uez017.

[85] Ibid, 2875, Appendix, 3, 12. These percentages are listed in the Table B1 of Appendix B.

[86] For example, according to Verdon (2002), boarding wages were paid instead of food in Norfolk and Middlesex. Verdon, *Rural Women Workers in Nineteenth-Century England: Gender, Work and Wages*, 50.

[87] Calculated from the figures in the appendix of Humphries and Weisdorf (2015). As they turned female servants' annual payments into a daily basis assuming they worked 260 days a year in this paper, female servants' daily rates could be smaller than estimated here. Thus, the share of cash in total compensation could be a little larger than 62%. Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 432.

[88] These percentages are listed in the Table B2 of Appendix B.

Table 5. Female Servants' Annual Pay

Time/Region	Female Servants' Annual Pay		
	South	North	All
1750-70		2224.82 (4)	2224.82 (4)
1771-95	1610.52 (4)	1751.82 (10)	1681.17 (14)
1796-1824	2271.52 (6)	2593.09 (10)	2432.30 (16)
1846-50		1646.20 (1)	1646.20 (1)
All	2007.12 (10)	2159.78 (25)	2083.45 (35)

Sources: Female servants' cash payments, see texts. CPI, Allen, "Allen - Research Pages,"[89]; Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 432.

Notes: number of observations in the parentheses. Servants' in-kind payments captured by the yearly cost of a barebone basket. The English average of female servants' annual pay in my sample (the "All" column) is calculated by (south average + north average)/2 to control the uneven distribution of the number of observations.

Female servants' annual pay could be used to further check the representativeness of my wage data. Compared with servants with an average annual income of 2083.45 d. throughout the period, married women who earned 9.315 d./day had to work 220 days to match their single sisters. According to Horrell, Humphries and Weisdorf (2021), the days of full-time jobs available to married women per year was approximately half of those available to men.[90] Thus, although the implied days worked here were not as high as the literature indicates probably because of the small sample size, still it shows it was hard for married women's earnings to match those on annual contracts.

[89] https://www.nuffield.ox.ac.uk/people/sites/allen-research-pages/
[90] Horrell, Humphries, and Weisdorf, "Family Standards of Living Over the Long Run, England 1280–1850," 125–27.

Table 6. Gender Pay Gap Measured by the Gender Pay Ratio

Time/Region	Gender Pay Ratio		
	South	**North**	**All**
1750-70		0.7262 (6)	0.7262 (6)
1771-95	0.4098 (17)	0.3893 (12)	0.3995 (29)
1796-1824	0.3770 (20)	0.3476 (14)	0.3632 (34)
1825-50	0.3740 (28)	0.4043 (12)	0.3892 (40)
All	0.3843 (65)	0.4261 (44)	0.4052 (109)

Sources: See texts.

Notes: Number of observations in the parentheses. The English average of the gender pay ratio in my sample (the "All" column) is calculated by (south average + north average)/2 to control the uneven distribution of the number of observations.

Figure 3. Gender Pay Gap Measured by the Gender Pay Ratio
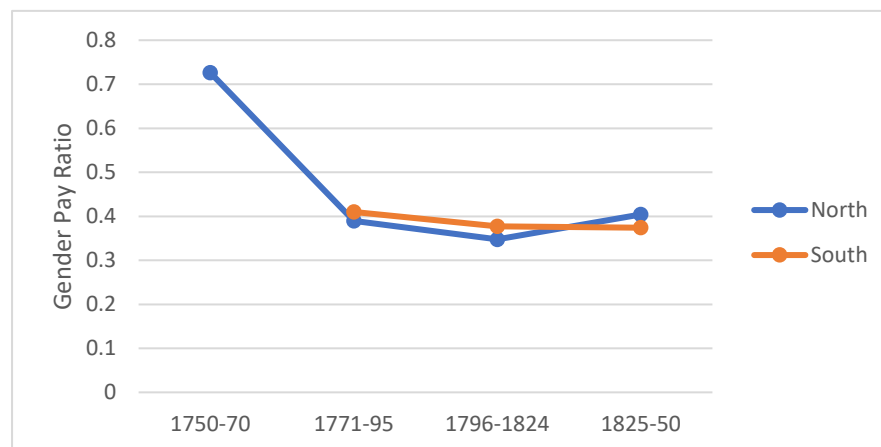
Sources: See texts.

Then, to construct the dependent variable, gender pay ratio, four types of calculation, the yellow rectangles in Figure 1 were used.[91] The first subperiod had a very high figure because of a small number of observations. The figures did not change dramatically after 1770, but their fluctuation roughly matched Burnette's (2004).[92] In all, the time trend and regional distribution of female day wages and gender pay ratio and the pay gap between married and single women suggest my dependent variable sufficiently representative for empirical analysis.

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[91] A detailed description of this process could be seen in Appendix A.
[92] Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 672.

3.2 Independent Variable

Turner (1980) specified the proportion of land enclosed in pre-1793, 1794-1815, 1816-1829 and post-1830. To reclassify its division to match that of the dependent variable, I linear interpolated the proportion of land enclosed at the mid-date of each wage period as the dependent variable.[93] I take 1850 as 100% of the land enclosed for 6 counties that passed enclosure acts in 1846-50 and 1845 for the others.[94] I assumed in 1750 all counties had 0% of land enclosed, biasing the independent variable in the first and second periods upwards since enclosure started well before. This means the commons enclosed before 1750 by the private sector could hardly be captured because of this assumption. Regarding parliamentary enclosure, the bias would not be too large as a small proportion of acts concentrated in periods before 1750. It was not uncommon for a county to pass its first enclosure act in 1730/40 and had no further progress in parliamentary enclosure until 1750.[95]

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[93] That is, 1760, 1783, 1810, 1829, 1835, 1841, and 1848.
[94] The 6 counties were Berkshire, Cambridge, Lincoln, Norfolk, Northampton, and Somerset. Turner, *English Parliamentary Enclosure. Its Historical Geography and Economic History*, 204–7.
[95] For example, Buckingham, Cambridge, Oxford and Norfolk. Ibid, 78-84.

Figure 4. Regional Variations of Parliamentary Enclosure Concentration (Upper: Changes in the Proportion of Land Enclosed; Lower: Numbers of Acts Passed as a Percentage of Total Acts Passed in 1730-1850)
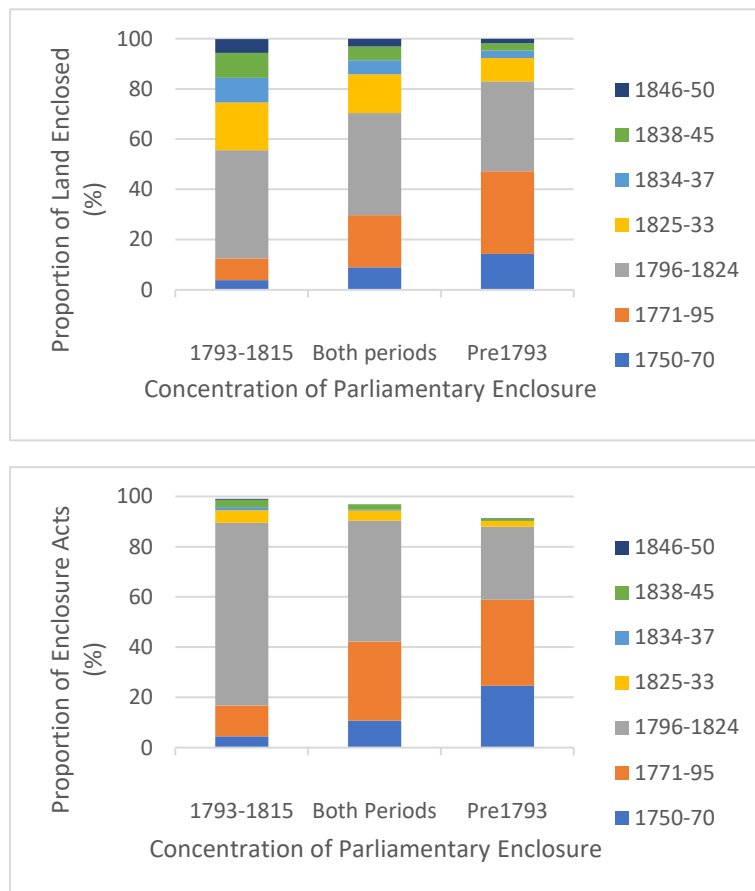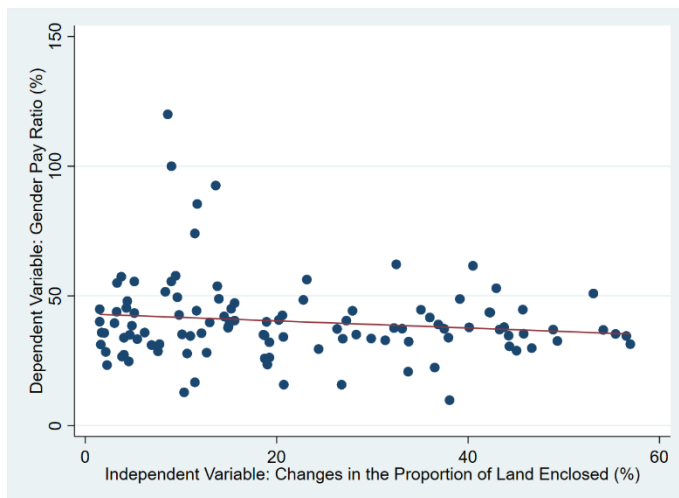

Source: See texts.

Notes: Following Turner (1980), on the x-axis, 38 English counties in my sample are divided into 3 groups according to the relative importance of the period 1793-1815 to pre-1793 in the intensity of enclosure. The upper figure captures changes in the proportion of land enclosed by period and by region. The lower figure captures the passage of enclosure acts (the number of acts passed as a percentage of the total enclosure acts passed between 1730 and 1850) by period and by region: Counties where the majority of enclosure acts were passed during wartime (left): Bedford, Berkshire, Cambridge, Cheshire, Cornwall, Cumberland, Devon, Dorset, Essex, Hertford, Huntingdon, Kent, Lancashire, Middlesex, Norfolk, Shropshire, Suffolk, Surrey, Sussex, Westmoreland;

Counties where a significant share of enclosure acts were passed before 1793 (right): Durham, Leister, Lincoln, Northampton, Northumberland, Warwick, East Yorkshire; Counties where enclosure acts were evenly distributed in periods of pre-1793 and wartime (middle): Buckingham, Derby, Gloucestershire, Hampshire, Oxford, Rutland, Somerset, Wiltshire, Worcester, West Yorkshire.

Turner's (1980) number of acts passed by county and by half-decade from 1730 to 1850 offers another independent variable option. Despite a better fit with the time classification of the dependent variable, it is less ideal than the former specification because a single act could enclose large acres or several acts enclose a few acres. Also, there could be a substantial time lag between the passage of an act and the signing of the award, further prolonged by the redraft of failed bills.[96] The comparison of the two specifications in Figure 4 indicates the amount of land enclosed during 1796-1824 could be overstated by the percentage of acts. Still, the spatial variations of enclosure concentrations in pre-1793, 1793-1815 or in both periods suggested by Turner (1980) held constant however the independent variable is constructed.[97]

Figure 5. Correlation between the Gender Pay Ratio and Changes in the Proportion of Land Enclosed

Sources: See texts.

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[96] The process from passage of an act to the signing of the award could last for 1 to 3 years. Ibid, 66-67.

[97] The notes of Figure 4 show how Turner (1980) divided English counties into 3 groups according to whether parliamentary enclosure was the most intense in pre-1793, 1793-1815 (wartime) or equally intense in both periods. For example, in Durham, Leister, Lincoln, Northampton, Northumberland, Warwick, and East Yorkshire (the right column in Figure 4), the most important period of parliamentary enclosure was 1750-1795, so these two periods accounted for a largest proportion in terms of land enclosed and number of acts passed. This is in sharp contrast to the left column of Figure 4 which refers to counties where enclosure was the most intense in 1793-1815, the wartime. There, both specifications had the largest value in 1796-1824.

Figure 6. Correlation between the Gender Pay Ratio and Changes in the Proportion of Land Enclosed (Potential Outlier Excluded)
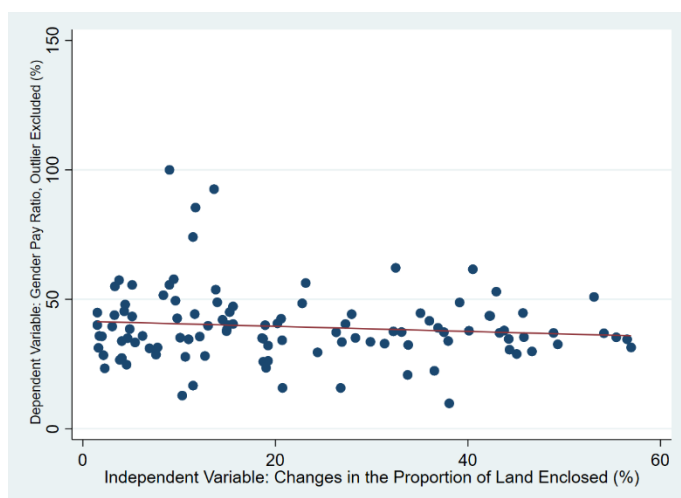
Sources: See texts.
Note: The potential outlier is a Bedford observation in 1771-95 at 1.2.

Figures 5 and 6 display the correlation between the gender pay ratio and enclosure. Figure 6 drops a Bedford observation (1.2) in 1771-1795 in the top 1% of the distribution as a potential outlier. Bedford could indeed have a higher gender pay ratio than others due to its specialisation in proto-industry in competition with agriculture. Meanwhile, under the shock from machinery, the female labour supply released from proto-industry to agriculture could further decline the gender pay ratio. [98] 1771-1795 collided with the widespread application of technological breakthroughs to cotton production.[99] It is therefore uncertain to what extent women workers in proto-industry had been replaced at this stage, thus hard to determine whether women's relative remuneration could be this high. But no matter whether the Bedford observation is an outlier, both graphs show a small negative effect of parliamentary enclosure on the gender pay gap.

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[98] Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 429.

[99] Francesca Bray, "Technological Transitions," in *The Cambridge World History: Volume Undefined: The Construction of a Global World, 1400-1800 CE*, ed. Jerry H. Bentley, Merry E. Wiesner-Hanks, and Sanjay Subrahmanyam, The Cambridge World History (Cambridge: Cambridge University Press, 2015), 107, https://doi.org/10.1017/CBO9781139194594.005; De Vries, *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present*, 138.

4. Results

4.1 Basic Results

Table 7. Regression of the Gender Pay Ratio on Changes in the Proportion of Land Enclosed

Independent Variable	(1)	(2)	(3)	(4)
	Changes in Proportion of Land Enclosed			
Dependent Variable	Gender Pay Ratio			Gender Pay Ratio 99%+ Removed
T1	-32.552***			
	(10.389)			
T2	-36.285***			
	(10.240)			
T3	-34.494***			
	(9.780)			
Δ%Enclosed		-0.136	3.110***	3.206***
		(0.083)	(0.830)	(0.829)
T1×Δ%Enclosed			-3.118***	-3.202***
			(0.881)	(0.881)
T2×Δ%Enclosed			-3.180***	-3.224***
			(0.841)	(0.844)
T3×Δ%Enclosed			-3.285***	-3.209***
			(0.845)	(0.844)
North	-1.767		-1.714	-1.197
	(3.021)		(2.953)	(3.069)
Arable	2.002		1.625	3.432
	(3.240)		(3.484)	(3.080)
Intercept	72.384***	43.080***	39.756***	36.351***
	(10.276)	(3.019)	(4.323)	(2.502)
N	109	109	109	108
R^2	0.254	0.018	0.262	0.356

Sources: See texts.

Notes: Standard errors clustered on the county level in parentheses. Reference period (T0), 1750-70. T1, 1771-95. T2, 1796-1824. T3, 1825-50. Dependent variable, gender pay ratio in column (1) to (3); gender pay ratio with an observation above the 99% percentile excluded as an outlier in column (4). Men's working days are assumed as 5 days a week throughout 1750-1850. Independent variable, changes in the proportion of land enclosed (Δ%Enclosed). Dummy variable North refers to counties northern to the Severn-Wash line if it equals 1. Dummy variable Arable refers to counties specialised in arable farming if it equals 0. Significance, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7 shows the causality between enclosure and the gender pay ratio. Column (1) again confirms the representativeness of my data. Regionally, northern and pastoral counties had a relatively equal income distribution because of higher demand for women's labour. Temporally, compared with the reference period, 1771-95 (T1), 1796-1824 (T2) and 1825-1850 (T3) all displayed an enlarged pay gap in agriculture. While changes in the proportion of land enclosed (Δ%Enclosed) alone had an insignificant negative impact on the gender pay ratio, interacting it with time dummies makes the coefficients statistically significant. This proves the hypothesis that enclosure overall negatively affected the gender pay gap in 1750-1850. Take the English average as a concrete example, during 1750-1824, Δ%Enclosed increased by 31.05%, leading to a 2.17% decrease in the gender pay ratio.[100] Thus, among the total decline in the gender pay ratio by 36.4 percentage points, 6% was contributed by enclosure. The remaining 94% should be ascribed to other factors. The exclusion of the outlier lowers the variation of the dependent variable in 1771-95, rendering the absolute value of enclosure's effect smaller, but the results in column (4) generally resemble column (3). The positive coefficient in T0 possibly supports women's comparative advantage in pastoral work that allowed them to be better paid during the consolidation of commons and wastes. This coincides with the view that after the Black Death, a larger land/labour ratio shifted agricultural production towards pastoral farming (corn to horn), providing women with more opportunities.[101]

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[100] Here, 31.05% means a decrease in the absolute value from 72.61% to 38.39% in the gender pay ratio (see Table 7) between T0 and T2, rather than a temporal change calculated by (72.61-38.39)/72.61×100%.

[101] This is the view of Voigtländer and Voth (2013) and Van Zanden, Carmichael and De Moor (2021). Nico Voigtländer and Hans-Joachim Voth, "How the West 'Invented' Fertility Restriction," *American Economic Review* 103, no. 6 (October 2013): 2227–64, https://doi.org/10.1257/aer.103.6.2227; J. L. Van Zanden, Sarah G. Carmichael, and Tine De Moor, *Capital Women: The European Marriage Pattern, Female Empowerment and Economic Development in Western Europe 1300-1800*, Oxford Scholarship Online (New York, NY: Oxford University Press, 2019), 1–20.

Note that the effect is minor, as is reflected in the small slopes of the fitted lines in the scatter plots.[102] In no period could an increase by one standard deviation (15.92) in Δ%Enclosed produce a decrease larger than 17.5% of the standard deviation (15.96) in the gender pay ratio. This is not surprising as changes in the dependent variable itself could not be counted as dramatic. In fact, as is shown in column (1), time dummies containing various economic changes in 1750-1850 only drove down the dependent variable by two standard deviations from 1750-70 to 1771-95, 1796-1824 and 1825-50. Taken together, the basic results lean towards a negative yet small effect of enclosure on the gender pay gap.

Regarding potential endogeneity problems, simultaneity is unlikely because enclosure was hardly propelled by an enlarged gender pay gap. Grain prices may be an omitted variable since potential profits stimulated the demand for mass production and enclosure. Although men with stronger bargaining power could benefit more from increasing wheat prices, this was unlikely unless it was for extremely highly paid male servants who would take advantage of soaring in-kind payments when grain prices increased dramatically. However, this was not likely to happen when enclosure decreased the demand for live-in annual labour. Measurement error could indeed exist considering the assumption that men worked 5 days a week. If the actual working days of men were higher in 1771-1850, the real gender pay gap would be smaller than suspected. Thus, Table 8 could bias the effect of enclosure downwards from 1750-1770 to 1771-1795 and upwards in other periods.

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[102] Here small modifies the absolute value of the slopes.

4.2 Robustness Check

Table 8. Regression of the Gender Pay Ratio on Changes in the Proportion of Land Enclosed (5-days Working Days Assumption Loosened)

Independent Variable / Dependent Variable	(1) Land Enclosed	(2) Land Enclosed 99%+ Removed	(3) Acts	(4) Acts Lagged
Δ%Enclosed	3.183***	3.276***		
	(0.600)	(0.589)		
T1×Δ%Enclosed	-3.316***	-3.397***		
	(0.595)	(0.588)		
T2×Δ%Enclosed	-3.259***	-3.302***		
	(0.591)	(0.588)		
T3×Δ%Enclosed	-3.316***	-3.243***		
	(0.597)	(0.592)		
%Acts			-0.121**	
			(0.059)	
%Acts Lagged				-0.079
				(0.093)
T1			-33.596***	-33.210***
			(9.264)	(9.964)
T2			-30.746***	-32.238***
			(9.543)	(9.687)
T3			-33.495***	-32.735***
			(9.241)	(10.195)
North	-3.684	-3.187	-4.237	-4.058
	(3.530)	(3.675)	(3.436)	(3.267)
Arable	2.234	3.972	2.679	2.548
	(3.888)	(3.622)	(3.476)	(3.510)
Intercept	43.933***	40.659***	77.637***	76.541***
	(4.406)	(2.673)	(9.700)	(10.578)
N	109	108	109	109
R^2	0.262	0.343	0.225	0.215

Sources: See texts.

Notes: Standard errors clustered on the county level in parentheses. Reference period (T0), 1750-70. T1, 1771-95. T2, 1796-1824. T3, 1825-50. Dependent variable, gender pay ratio in column (1), (3), (4); potential outlier excluded in column (2) Men's working days are assumed as 5 days a week before 1770; 5.57 days a week in 1771-1795; 6 days a week thereafter. Independent variable, changes in the proportion of land enclosed (Δ%Enclosed) in column (1), (2); changes in the proportion of enclosure acts passed between 1750-1850 in column (3); changes in the proportion of enclosure acts passed between 1750-1850 lagged by one half-decade in column (4). Dummy variable North refers to counties northern to the Severn-Wash line if it equals to 1. Dummy variable Arable refers to counties specialised in arable farming if it equals to 0. Significance, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

This subsection loosens the assumption that male agricultural workers worked invariantly 5 days a week according to existing research's conclusions on working days. When substituting men's days worked with 5.57 in 1771-95 and 6 days thereafter, the results resemble columns (3) and (4) in Table 7. Although the proportion of enclosure acts launched during certain periods is less ideal, it can be used to check the robustness of results deduced from Δ%Enclosed. Here, the interaction terms between time periods and Δ%Enclosed here are replaced with time dummies. This is because interacting the proportion of enclosure acts passed in each time period with time dummies causes multicollinearity due to a high concentration of 0 in the amounts of acts, especially in periods outside the peaks of enclosure, 1765-1780 and 1795-1813.[103] The coarseness of this alternative specification warns against placing too much importance on column (3). Therefore, the negative sign of %Acts during 1750-1850 was a rough confirmation of the previous finding. Considering the potential lag between an act and the implementation of enclosure in reality. Following Turner's (1980) approach, I then adopted a lag of one half-decade for each period when constructing the alternative independent variable.[104] For instance, %Acts for the time period 1750-70 would be the number of enclosure acts passed in 1755-74 as a percentage of the aggregate amounts of acts in 1730-1850. This lagged alternative identification also supports a negative overall influence of enclosure.

[103] Turner, *English Parliamentary Enclosure. Its Historical Geography and Economic History*, 68–69.
[104] Ibid, 63.

4.3 Magnitude and Sign of Coefficients

Table 9. Magnitude and Sign of Coefficients

	(1) 5-days Assumption Kept	(2) 5-days Assumption Removed
Outlier Kept	Time | Coefficients	Time | Coefficients
	0->1: -0.008	0->1: -0.133
	0->2: -0.07	0->2: -0.076
	0->3: -0.175	0->3: -0.133
	1->2: -0.062	1->2: 0.057
	2->3: -0.105	2->3: -0.057
Outlier Removed	Time | Coefficients	Time | Coefficients
	0->1: 0.004	0->1: -0.121
	0->2: -0.018	0->2: -0.026
	0->3: -0.003	0->3: 0.033
	1->2: -0.022	1->2: 0.095
	2->3: -0.007	2->3: 0.154

Sources: See texts.

Notes: 0, 1750-1770; 1, 1771-1795; 2, 1796-1824; 3, 1825-1850. Dependent variable, gender pay ratio. Independent variable, changes in the proportion of land enclosed. The outlier is a Bedford observation above the 99% percentile.

Table 10. Contribution of the Proportion of Land Enclosed to the Gender Pay Ratio

Time	(1) 5-days, Outlier	(2) 5-days, OutlierX	(3) 5-daysX, Outlier	(4) 5-daysX, OutlierX
0->1	0.1%	-0.1%	2.5%	2.2%
0->2	6.0%	1.5%	7.2%	2.3%
0->3	0.0%	0.0%	0.0%	0.0%
1->2	42.0%	44.2%	-76.3%	-73.7%
2->3	121.5%	8.1%	52.5%	-77.9%

Sources: See texts.

Notes: 0, 1750-1770; 1, 1771-1795; 2, 1796-1824; 3, 1825-1850. Dependent variable, gender pay ratio. Independent variable, changes in the proportion of land enclosed. The outlier is a Bedford observation above the 99% percentile.

While the above results suggest an overall negative effect of enclosure on the gender pay gap during the whole period of interest, the magnitude and sign of coefficients could unveil its effects in further detail. Table 9 summarises the

magnitude and sign of Δ%Enclosed under different assumptions. Table 10 puts these coefficients' influence in a real setting with English averages of changes in the proportion of land enclosed and the gender pay ratio in my sample. From the perspective of the magnitude of coefficients, Table 10 indicates the effect was small. From 1750-70 to 1771-95, 1796-1824 and 1825-1850, enclosure only produced an effect of less than 7.2%. The enlargement in the gender pay gap was predominantly caused by other contemporaneous economic changes.

Although the major reason behind the expanded gender pay gap in agriculture extends beyond the focus of this project, it might be that women workers occupying a weaker position in the labour market generally suffered more than their male counterparts from shrinking labour demand in economic downturns. For example, the postwar agricultural depression, and the "hungry forties".[105] Or, the enlarging gender pay gap in agriculture partially driven by enclosure reflected some inter-industrial dynamics. The shrink in demand for female spinners encountered enclosure, worsening the surplus of female labour and contributing to a larger pay gap. If so, this again supports the transition to the male breadwinner household was not a voluntary choice made by wives motivated by husbands' income effect, particularly for wives in the lower class. Instead, it was involuntary marginalisation due to structural or institutional changes in labour demand.

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[105] Horrell and Humphries, "Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865," 100.

Table 11. Gender Pay Ratio and Changes in Proportion of Land Enclosed by Region in 1771-95 and 1796-1824

Concentration of Parliamentary Enclosure	Gender Pay Ratio			Changes in Proportion of Land Enclosed (%)		
	Pre1793	1793-1815	Both periods	Pre1793	1793-1815	Both periods
T1 (1771-95)	0.4057	0.4245	0.4147	30.43	8.73	21.18
T2 (1796-1824)	0.4510	0.3664	0.4362	36.50	43.46	40.75

Sources: See texts.

Notes: the regional differences in the temporal intensity (concentration) of parliamentary enclosure could be seen in the notes of Figure 4.

Table 12. Reconciling Signs of Between-period Coefficients with Interactions

5-days Assumption Interaction	(1) Loosened 1796-1824 and Wartime Enclosure	(2) Kept	(3) Loosened
		Post-1824 and North	
Δ%Enclosed	3.266***	3.317***	3.360***
	(0.594)	(0.868)	(0.605)
T2×Δ%Enclosed	-3.251***	-3.369***	-3.421***
	(0.587)	(0.878)	(0.598)
T3×Δ%Enclosed	-3.387***	-3.621***	-3.603***
	(0.594)	(0.905)	(0.616)
T2×Δ%Enclosed×War	-0.140		
	(0.104)		
T3×Δ%Enclosed×North		0.811**	0.692**
		(0.333)	(0.305)
N	109	109	109
R^2	0.271	0.280	0.274

Sources: See texts.

Notes: Standard errors clustered on the county level in parentheses. Reference period (T0), 1750-70. T1, 1771-95. T2, 1796-1824. T3, 1825-50. Dependent variable, gender pay ratio with men's working days assumed as 5 days a week throughout 1750-1850 in column (2); men's working days adjusted in columns (1) and (3). Independent variable, changes in the proportion of land enclosed (Δ%Enclosed). Dummy variable War refers to counties where enclosure acts concentrated in wartime (1794-1813) if it equals to 1. Dummy variable North refers to counties northern to the Severn-Wash line if it equals 1. Dummy variable Arable refers to counties specialised in arable farming if it equals 0. T1×Δ%Enclosed, North and Arable dummies and the intercept were left out, see Table C1 for the complete results. Significance, $^* p < 0.1$, $^{**} p < 0.05$, $^{***} p < 0.01$.

Turning to the between-period changes in the gender pay ratio, a major difference between column (1)-(2) and column (3)-(4) in Table 10 is the shift in the sign of coefficients from 1771-95 to 1796-1824 generated by the removal of the 5-days assumption. Possibly, it implies the shrinkage and expansion female labour demand caused by enclosure and the shortage of male labour force coexisted during wartime. Table 11 divides the sample by the relative importance of wartime in the whole process of parliamentary enclosure. From T1 to T2, counties with intense wartime enclosure witnessed a decreasing gender pay ratio. While counties with less intense changes in the proportion of land enclosed underwent a converse trend. Table 12 interacts a War dummy indicating counties where parliamentary enclosure concentrated in wartime with T2 and Δ%Enclosed. An insignificant coefficient (potentially due to the small sample size) hints the possibility that the positive coefficient of Δ%Enclosed between T1 and T2 is contributed by counties with a relatively slower pace of enclosure during wartime compared with other periods.[106] There, women's pay suffered less from enclosure while benefiting more from demand expansion in the already enclosed fields. But still, the minor positive effects did not change the downward trend of the gender pay ratio, even between T1 and T2.[107]

Meanwhile, the positive signs of the three coefficients when removing the 5-days assumption and potential outlier make them stand out from the others in Table 9. Despite the uncertainty of whether excluding the Bedford observation is sensible, by the literal meaning of these coefficients, enclosure seemed to contribute to gender equality in the agricultural labour market after 1824. Table 12 also provides tentative explanations for this by interacting Δ%Enclosed with 1825-50

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[106] However, it is not possible to use the rate of change, namely the differential coefficient of the proportion of land enclosed here to proxy the decelerated pace of enclosure in some counties because of the linear interpolation that gives period 0 and 1 an independent variable of an identical value.

[107] In my sample, when the assumption of 5-days working days is removed, the English average of the gender pay ratio in T1 (1771-95) and T2 (1796-1824) was 0.4164 and 0.3976 respectively.

and the North dummy. From 1796-1824 to 1825-50, when men's days worked were adjusted with a closer distance to reality in column (3), enclosure produced variations in the gender pay ratio in the north and south by -0.18 and 0.51 respectively. Under the assumption of men worked 5 days a week, the effects of enclosure on the gender pay ratio was -0.25 percentage points in the south in contrast to 0.56 percentage points in the north. This might be a small-scale revival of demand in high-wage counties coincided with the stipulation of the poor law as Pinchbeck (1930) suggests, amid competing industries and food demand from neighbouring industrial cities.[108] Still, we need to be cautious that these positive consequences were not necessarily brought by enclosure, although large farms did require female labour. Burnette's (1999) investigation into Oakes farms in Sheffield suggests diversified production from grain-dominated to various cereals and livestock brought back opportunities for women in the 1830s.[109] More importantly, enclosure was predominately detrimental to women's relative income and seemed to have relatively small impacts compared to the general socioeconomic trend. The possible minor positive effects were soon eclipsed by married women's increasing marginalisation in the labour market after the Industrial Revolution.

5. Conclusion and Discussion

In conclusion, based on existing literature on demand changes for female labour, I find parliamentary enclosure generally tended to widen the gender pay gap in agriculture. Women's agricultural employment in dairy work generally gave way to more profitable grain production, particularly in the southeastern counties specialising in arable farming. As farm sizes grew, arable employment shifted towards irregular and male-favouring. Women also lost earnings from the

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[108] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 53–55; Burnette, "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850," 686; Hunt, "Industrialization and Regional Inequality," 949.
[109] Burnette, "Labourers at the Oakes," 44.

exploitation of commons. In contrast, enclosure did not pose a similar contraction in labour demand for men. Consequently, enclosure contributed to a wider gender pay gap in agriculture. There might be some revival of demand for female labour and thus a smaller gender pay gap during wartime and in the north after 1824, but the general trend was a more unequal distribution of pay in the agricultural labour market. On the other hand, generally, enclosure's effect seemed to be small. This propels us to think about factors leading to a larger gender pay gap in agriculture beyond enclosure.

What cannot be revealed by the tables is what propelled the farmers to economise on their demand for female labour. Apart from the path dependency of gender division of labour that women were employed in dairy and men in the fields, men were preferred before women in the same task. Was it because of weaker productivity in outwork or gender bias? This project could not materialise productivity by incorporating piece rate or hours worked into the study, both of which, according to Burnette (1996), reflected gendered productivity.[110] But historical evidence shows in the 1840s, women and men in gangs worked similar hours.[111] Productivity differences did exist because women could not escape from motherhood responsibility even today. With new research suggesting the efficiency gap in slaves' cotton picking was not as large as previously deemed and inferior female strength challenged by early modern records of women undertaking heavy works in construction sites, however, the productivity gap and rational decision-making might not completely explain farmers' choice to hire fewer female labourers.[112] At least the existence of discriminatory labour market institutions, from those regulating female servants' wages in the medieval to the

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[110] Burnette, "An Investigation of the Female–Male Wage Gap During the Industrial Revolution in Britain," 22.

[111] Verdon, *Rural Women Workers in Nineteenth-Century England: Gender, Work and Wages*, 107–14, 126.

[112] Rhode and Olmstead, "Slave Productivity in Cotton Picking," 22; Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 409.

Mine Regulation Act in 1842, suggests the persistence of systematic discrimination treating women as secondary earners dependent on male breadwinners. [113] The determination of premodern gender pay gap remains unresolved. Insights might be offered by more precise control of tasks undertaken, age and hours in the future, although individual-level data is indeed absent.[114]

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[113] Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 423; Jane Humphries, "Protective Legislation, the Capitalist State, and Working Class Men: The Case of the 1842 Mines Regulation Act," *Feminist Review*, no. 7 (1981): 1–33, https://doi.org/10.2307/1394757.

[114] Usually, the determination of the gender pay gap is resolved by decomposing it into explained individual characteristics and unexplained discrimination based on individual-level survey data. Although hardly could such ideal datasets exist in history, we might make our specification clearer by a closer examination of farm accounts.

Appendices

Appendix A: Calculation of the Dependent Variable

Table A1. Number of Observations of Women's Pay and Scattered Gender Pay Ratios in the Raw Dataset

	Women's Pay			Scattered Ratios		
Time/Region	South	North	All	South	North	All
1750-70		31	31		6	6
1771-95	39	60	99	13	16	29
1796-1824	67	40	107	18	15	33
1825-33	11	3	14	1	1	2
1834-37	6	1	7			
1838-45	58	28	86	6	4	10
1846-50	5	2	7		1	1
All	186	165	351	38	43	81

Sources: See texts.

Of the 351 payments, 35 were for single servants on annual contracts and 316 for wives employed in the day casual market. For those wives, 259 payments were recorded daily while 48 were recorded weekly. Although bondagers were often the hind's sister or daughter and rarely his wife who were paid yearly or half yearly at a lower daily rate than common independent day labourers, 9 bondagers in my dataset are grouped with the 259 wives whose pay was recorded daily by deducing their working days from two Northumberland farm books in Pinchbeck (1930) and one Eden's observation.[115] The information is extracted from Pinchbeck (1930). In the Northumberland farm books, 8 bondagers worked throughout the year, 16 worked 5/6 of the year, 12 worked in the summer and Eden's observation worked 121.5 days. Assuming a full working year of 300 days for bondagers, an average bondager worked 225 days yearly, based on which I converted their yearly pay into day payments. Pinchbeck, Women Workers and the Industrial Revolution, 1750-1850, My raw dataset is made up of 289 average payments and 62 individual payments. Of the 289 average figures, 258 were wives' payments (bondagers included), 222 of which were recorded on a daily basis. Of the 62 individual payments, 58 of them were made for wives (bondagers included). 46 of 58 were daily payments. Some pieces of individual payments contained multiple employees. The mean of 268 women's daily pay by period and county is then calculated according to the weights of averages and individuals.

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[115] Pinchbeck, *Women Workers and the Industrial Revolution, 1750-1850*, 94.

The dependent variable, gender pay ratio by period and by county is drawn from the following four parts, as is shown in the yellow rectangles in Figure 1 (left). Firstly, 268 married women's daily payments were divided by male daily pay under the assumption of a 5-days working week. Then, the remaining 48 weekly payments for married women were divided pay by men's weekly pay directly. Thirdly, 35 servants' annual payments were divided by 52 before dividing them by men's weekly pay unless female servants' working weeks were specified. For example, a female servant in east Yorkshire worked 1.5 years for £5 in 1769. Together with 83 scattered independent wage ratios, I averaged them based on their weights in the raw dataset by period and county.

Table A2. English Average Gender Pay Ratio under Different Assumptions

Time	(1) 5-days, OutlierX	(2) 5-daysX, Outlier	(3) 5-daysX, OutlierX
1750-70	0.7262	0.7262	0.7262
1771-95	0.3748	0.4164	0.4061
1796-1824	0.3623	0.3976	0.3736
1825-50	0.3892	0.4314	0.4351

Sources: See texts.

Notes: 0, 1750-1770; 1, 1771-1795; 2, 1796-1824; 3, 1825-1850. The outlier is a Bedford observation above the 99% percentile. Men's working days assumed as 5 days throughout 1750-1850 in Column (1). Men's working days assumed as 5 days a week before 1770; 5.57 days a week in 1771-1795; 6 days a week thereafter in columns (2)-(3).

Appendix B: Servants' in-kind payments

Table B1. Cash Share in Servants' Annual Compensation

	Cash Share in Annual Compensation	
Time	Women	Men
1750-60	62%	57%
1760-70	61%	56%
1770-80	59%	62%
1780-90	61%	65%
1790-1800	57%	60%
1800-10	56%	65%
1810-20	58%	66%
1820-30	67%	72%
1830-40	65%	74%
1840-50	72%	74%
Average	62%	65%

Sources: Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 432; Humphries and Weisdorf, "Unreal Wages?," Appendix, 3, 12.

Table B2. Cash Share in Female Servants' Annual Compensation in my Sample Using Different Baskets

Basket	Respectability		Barebone	
Time	CPI/day (d.)	Cash Share	CPI/day (d.)	Cash Share
1750-70	3.154	55.1%	1.460	72.2%
1771-95	3.742	43.1%	1.823	60.7%
1796-1824	5.797	41.0%	2.438	61.5%
1838-45	4.939	34.8%	1.880	58.3%
Average	4.408	43.2%	1.900	62.3%

Sources: CPI, Allen, "Allen - Research Pages,"[116]; Humphries and Weisdorf, "The Wages of Women in England, 1260–1850," 432; Amounts of female servants' cash payments, see texts.

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[116] https://www.nuffield.ox.ac.uk/people/sites/allen-research-pages/

Table C1. Reconciling Signs of Between-period Coefficients with Interactions

5-days Assumption Interaction	(1) Loosened	(2) Kept	(3) Loosened
	1796-1824 and Wartime Enclosure	Post-1824 and North	
T1×Δ%Enclosed	-3.374***	-3.271***	-3.446***
	(0.588)	(0.910)	(0.597)
North	-4.221	-4.168	-5.780
	(3.460)	(3.198)	(3.779)
Arable	1.692	1.475	2.106
	(3.882)	(3.504)	(3.903)
Intercept	44.078***	40.025***	44.163***
	(4.448)	(4.370)	(4.468)
N	109	109	109
R^2	0.271	0.280	0.274

Sources: See texts.

Notes: Standard errors clustered on the county level in parentheses. Reference period (T0), 1750-70. T1, 1771-95. T2, 1796-1824. T3, 1825-50. Dependent variable, gender pay ratio with men's working days assumed as 5 days a week in column (2); gender pay ratio with men's working days assumed as 5 days a week before 1770; 5.57 days a week in 1771-1795; 6 days a week thereafter in column (1) and (3). Independent variable, changes in the proportion of land enclosed (Δ%Enclosed). Dummy variable War refers to counties where enclosure acts concentrated in wartime (1794-1813) if it equals to 1. Dummy variable North refers to counties northern to the Severn-Wash line if it equals 1. Dummy variable Arable refers to counties specialised in arable farming if it equals 0. Significance, $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

References

Allen, R. C., and J. L. Weisdorf. "Was There an 'industrious Revolution' before the Industrial Revolution? An Empirical Exercise for England, c. 1300—1830." *The Economic History Review* 64, no. 3 (2011): 715–29. https://www.jstor.org/stable/41262475.

Allen, Robert C. "Allen - Research Pages." Nuffield College Oxford University. Accessed July 9, 2023. https://www.nuffield.ox.ac.uk/people/sites/allen-research-pages/. (last accessed: 09 July 2023)

Allen, Robert. "Agriculture during the Industrial Revolution, 1700–1850." In *The Cambridge Economic History of Modern Britain: Volume 1: Industrialisation, 1700–1860*, edited by Paul Johnson and Roderick Floud, 1:96–116. Cambridge: Cambridge University Press, 2004. https://doi.org/10.1017/CHOL9780521820363.005.

Allen, Robert C. "The Growth of Labor Productivity in Early Modern English Agriculture." *Explorations in Economic History* 25, no. 2 (April 1, 1988): 117–46. https://doi.org/10.1016/0014-4983(88)90013-7.

Berg, Maxine. "What Difference Did Women's Work Make to the Industrial Revolution?" *History Workshop*, no. 35 (1993): 22–44. https://www.jstor.org/stable/4289205.

Bertrand, Marianne, Claudia Goldin, and Lawrence F. Katz. "Dynamics of the Gender Gap for Young Professionals in the Financial and Corporate Sectors." *American Economic Journal: Applied Economics* 2, no. 3 (July 2010): 228–55. https://doi.org/10.1257/app.2.3.228.

Bouquet, Mary. *Family, Servants and Visitors: The Farm Household in Nineteenth and Twentieth Century Devon*. Norwich: Geo, 1985.

Bowley, A. L. "The Statistics of Wages in the United Kingdom During the Last Hundred Years. (Part I.) Agricultural Wages." *Journal of the Royal Statistical Society* 61, no. 4 (1898): 702–22. https://www.jstor.org/stable/2979856.

Boyer, George R. *An Economic History of the English Poor Law, 1750-1850. An Economic History of the English Poor Law, 1750-1850*. Cambridge: Cambridge University Press, 1990.

Bray, Francesca. "Technological Transitions." In *The Cambridge World History: Volume Undefined: The Construction of a Global World, 1400-1800 CE*, edited by Jerry H. Bentley, Merry E. Wiesner-Hanks, and Sanjay Subrahmanyam, 76–106. The Cambridge World History. Cambridge: Cambridge University Press, 2015. https://doi.org/10.1017/CBO9781139194594.005.

Burnette, Joyce. "An Investigation of the Female–Male Wage Gap During the Industrial Revolution in Britain." *The Economic History Review* 50, no. 2 (1997): 257–81. https://doi.org/10.1111/1468-0289.00054.

———. *Gender, Work and Wages in Industrial Revolution Britain*. Cambridge Studies in Economic History - Second Series. Cambridge: Cambridge University Press, 2008. https://doi.org/10.1017/CBO9780511495779.

———. *Gender, Work and Wages in Industrial Revolution Britain*, n.d.

———. "Labourers at the Oakes: Changes in the Demand for Female Day-Laborers at a Farm near Sheffield During the Agricultural Revolution." *The Journal of Economic History* 59, no. 1 (March 1999): 41–67. https://doi.org/10.1017/S0022050700022282.

———. "Married with Children: The Family Status of Female Day-Labourers at Two South-Western Farms." *The Agricultural History Review* 55, no. 1 (2007): 75–94. https://www.jstor.org/stable/40276129.

———. "Testing for Occupational Crowding in Eighteenth-Century British Agriculture." *Explorations in Economic History* 33, no. 3 (July 1, 1996): 319–45. https://doi.org/10.1006/exeh.1996.0018.

———. "The Wages and Employment of Female Day-Labourers in English Agriculture, 1740–1850." *The Economic History Review* 57, no. 4 (2004): 664–90. https://doi.org/10.1111/j.1468-0289.2004.00292.x.

Chambers, J. D. "Enclosure and Labour Supply in the Industrial Revolution." *The Economic History Review* 5, no. 3 (1953): 319–43. https://doi.org/10.2307/2591811.

Clark, Gregory, and Ysbrand Van Der Werf. "Work in Progress? The Industrious Revolution." *The Journal of Economic History* 58, no. 3 (1998): 830–43. https://www.jstor.org/stable/2566627.

Collins, E. J. T. "Harvest Technology and Labour Supply in Britain, 1790-18701." *The Economic History Review* 22, no. 3 (1969): 453–73. https://doi.org/10.1111/j.1468-0289.1969.tb00183.x.

Craig, Lee A., and Elizabeth B. Field-Hendrey. "Industrialization and the Earnings Gap: Regional and Sectoral Tests of the Goldin-Sokoloff Hypothesis." *Explorations in Economic History* 30, no. 1 (January 1, 1993): 60–80. https://doi.org/10.1006/exeh.1993.1003.

De Vries, Jan. *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present*. Cambridge: Cambridge University Press, 2008.

Deane, Phyllis., and W. A. (William Alan) Cole. *British Economic Growth,1688-1959: Trends and Structure*. 2nd ed. University of Cambridge. Department of Applied Economics. Monographs; 8. Cambridge U.P, 1967.

Eden, Frederick Morton. *The State of the Poor*, 1928.

Fussell, G. E. (George Edwin), and Kathleen R. Fussell. *The English Countrywoman; a Farmhouse Social History, A.D. 1500-1900*. London: A. Melrose, 1953.

Gielgud, Judy. "Nineteenth Century Farm Women in Northumberland and Cumbria: The Neglected Workforce." Ph.D., University of Sussex (United Kingdom). Accessed January 29, 2023. https://www.proquest.com/docview/301451974?pq-origsite=primo.

Goldin, Claudia. "A Grand Gender Convergence: Its Last Chapter." *The American Economic Review* 104, no. 4 (2014): 1091–1119. http://www.jstor.org/stable/42920734.

Goldin, Claudia, and Kenneth Sokoloff. "The Relative Productivity Hypothesis of Industrialization: The American Case, 1820 to 1850." *The Quarterly Journal of Economics* 99, no. 3 (1984): 461–87. https://doi.org/10.2307/1885960.

Higgs, Edward. "Occupational Censuses and the Agricultural Workforce in Victorian England and Wales." *The Economic History Review* 48, no. 4 (1995): 700–716. https://doi.org/10.2307/2598131.

———. "Women, Occupations and Work in the Nineteenth Century Censuses." *History Workshop*, no. 23 (1987): 59–80. https://www.jstor.org/stable/4288748.

Horrell, Sara, and Jane Humphries. "Old Questions, New Data, and Alternative Perspectives: Families' Living Standards in the Industrial Revolution." *The Journal of Economic History* 52, no. 4 (December 1992): 849–80. https://doi.org/10.1017/S0022050700011931.

———. "Women's Labour Force Participation and the Transition to the Male-Breadwinner Family, 1790-1865." *The Economic History Review* 48, no. 1 (1995): 89–117. https://doi.org/10.2307/2597872.

———. "The Origins and Expansion of the Male Breadwinner Family: The Case of Nineteenth-Century Britain." International Review of Social History 42, no. S5 (September 1997): 25–64. https://doi.org/10.1017/S0020859000114786.

Horrell, Sara, Jane Humphries, and Jacob Weisdorf. "Beyond the Male Breadwinner: Life-Cycle Living Standards of Intact and Disrupted English Working Families, 1260–1850." *The Economic History Review* 75, no. 2 (2022): 530–60. https://doi.org/10.1111/ehr.13105.

———. "Family Standards of Living Over the Long Run, England 1280–1850." *Past & Present* 250, no. 1 (February 1, 2021): 87–134. https://doi.org/10.1093/pastj/gtaa005.

Horrell, Sara, and Deborah Oxley. "Bringing Home the Bacon? Regional Nutrition, Stature, and Gender in the Industrial Revolution." The Economic History Review 65, no. 4 (2012): 1354–79. http://www.jstor.org/stable/23271693.

Howell, David W. "The Rural Poor in Eighteenth-Century Wales." *The Rural Poor in Eighteenth-Century Wales*, 2000.

Howkins, Alun. "Peasants, Servants and Labourers: The Marginal Workforce in British Agriculture, c 1870-1914." *The Agricultural History Review* 42, no. 1 (1994): 49–62. https://www.jstor.org/stable/40275001.

Humphries, Jane. "Enclosures, Common Rights, and Women: The Proletarianization of Families in the Late Eighteenth and Early Nineteenth Centuries." *The Journal of Economic History* 50, no. 1 (1990): 17–42. http://www.jstor.org/stable/2123436.

———. "Protective Legislation, the Capitalist State, and Working Class Men: The Case of the 1842 Mines Regulation Act." *Feminist Review*, no. 7 (1981): 1–33. https://doi.org/10.2307/1394757.

Humphries, Jane, and Carmen Sarasúa. "Off the Record: Reconstructing Women's Labor Force Participation in the European Past." *Feminist Economics* 18, no. 4 (October 1, 2012): 39–67. https://doi.org/10.1080/13545701.2012.746465.

Humphries, Jane, and Jacob Weisdorf. "The Wages of Women in England, 1260–1850." *The Journal of Economic History* 75, no. 2 (June 2015): 405–47. https://doi.org/10.1017/S0022050715000662.

———. "Unreal Wages? Real Income and Economic Growth in England, 1260–1850." Economic Journal 129, no. 623 (October 2019): 2867–87. https://doi.org/10.1093/ej/uez017.

Hunt, E. H. "Industrialization and Regional Inequality: Wages in Britain, 1760–1914." *The Journal of Economic History* 46, no. 4 (December 1986): 935–66. https://doi.org/10.1017/S0022050700050658.

Hunt, E. H. *Regional Wage Variations in Britain 1850-1914. Regional Wage Variations in Britain 1850-1914.* Oxford: Clarendon Press, 1973.

King, Peter. "Customary Rights and Women's Earnings: The Importance of Gleaning to the Rural Labouring Poor, 1750-1850." *The Economic History Review* 44, no. 3 (1991): 461–76. https://doi.org/10.2307/2597539.

Klein, Alexander, Bas van Leeuwen, Bruce M. S. Campbell, Mark Overton, and Stephen Broadberry, eds. "Agricultural Land Use." In *British Economic Growth, 1270–1870*, 46–79. Cambridge: Cambridge University Press, 2015. https://doi.org/10.1017/CBO9781107707603.006.

———, eds. "Real Wage Rates and GDP per Head." In *British Economic Growth, 1270–1870*, 247–78. Cambridge: Cambridge University Press, 2015. https://doi.org/10.1017/CBO9781107707603.011.

Kussmaul, Ann. *Servants in Husbandry in Early Modern England.* Interdisciplinary Perspectives on Modern History. Cambridge: Cambridge University Press, 1981. https://doi.org/10.1017/CBO9780511896002.

Long, Jane. *Conversations in Cold Rooms : Women, Work, and Poverty in Nineteenth-Century Northumberland.* Royal Historical Society Studies in History. New Series. London: Royal Historical Society, 1999.

Marshall, William. *The Review and Abstract of the County Reports to the Board of Agriculture, (Comprizing Those from the Southern and Peninsular Departments).* New York: [s.n.], 1968.

McClelland, Robert, and Shannon Mok. "A Review of Recent Research on Labor Supply Elasticities," October 1, 2012. https://ecommons.cornell.edu/handle/1813/77792.

Miller, Celia. "The Hidden Workforce: Female Field Workers in Gloucestershire, 1870-1901." *Southern History* 6 (1984): 139–55.

Mutch, A. "The 'Farming Ladder' In North Lancashire, 1840–1914: Myth or Reality?" *Northern History* 27, no. 1 (January 1, 1991): 162–83. https://doi.org/10.1179/007817291790175763.

Neeson, J. M. *Commoners : Common Right, Enclosure and Social Change in England, 1700-1820.* Past and Present Publications. Cambridge: Cambridge

University Press, 1993.

Pinchbeck, Ivy. *Women Workers and the Industrial Revolution, 1750-1850*. London: Routledge, 1930.

Reay, Barry. *Microhistories : Demography, Society, and Culture in Rural England, 1800-1930*. Cambridge Studies in Population, Economy, and Society in Past Time ; 30. London: Cambridge University press, 1996.

———. *The Last Rising of the Agricultural Labourers : Rural Life and Protest in Nineteenth-Century Englands. The Last Rising of the Agricultural Labourers : Ruralk Life and Protest in Nineteenth-Century Englands*. Oxford: Clarendon, 1990.

Rhode, Paul W., and Alan L. Olmstead. "Slave Productivity in Cotton Picking," 2018. https://economics.yale.edu/sites/default/files/slave_productivity_in_cotton_picking_adans.pdf.

Roberts, Michael. "Sickles and Scythes Revisited." In *Women, Work and Wages in England, 1600-1850*, by Penelope Lane, Neil Raven, and K. D. M. Snell. Woodbridge, Suffolk, UK ; Boydell Press, 2004.

———. "Sickles and Scythes: Women's Work and Men's Work at Harvest Time." *History Workshop*, no. 7 (1979): 3–28. https://www.jstor.org/stable/4288220.

Rogers, James Edwin Thorold. *A History of Agriculture and Prices in England : ...1259-1793*. Oxford: Clarendon Pr, 1866.

Rose, Sonya O. "'Gender at Work':1 Sex, Class and Industrial Capitalism." *History Workshop Journal* 21, no. 1 (March 1, 1986): 113–32. https://doi.org/10.1093/hwj/21.1.113.

Scholliers, Peter, and Leonard Schwarz. *Experiencing Wages: Social and Cultural Aspects of Wage Forms in Europe since 1500. Experiencing Wages*. 1st ed. Vol. 4. International Studies in Social History. New York, NY: Berghahn Books, 2006.

Sharpe, Pamela. *Adapting to Capitalism : Working Women in the English Economy, 1700-1850*. Basingstoke: Macmillan, 1996.

Sharpe, Pamela. "Continuity and Change: Women's History and Economic History in Britain." *The Economic History Review* 48, no. 2 (1995): 353–69. https://doi.org/10.2307/2598407.

———. "The Female Labour Market in English Agriculture during the Industrial Revolution: Expansion or Contraction?" *The Agricultural History Review* 47, no. 2 (1999): 161–81. https://www.jstor.org/stable/40275570.

———. "Time and Wages of West Country Workfolks in the Seventeenth and Eighteenth Centuries." *Local Population Studies* 55 (1995): 66–68. http://www.localpopulationstudies.org.uk/PDF/LPS55/LPS55.pdf.

Simonton, Deborah. *A History of European Women's Work : 1700 to the Present*. 1st ed. London: Taylor & Francis Group, 1998.

Snell, K. D. M. "Agricultural Seasonal Unemployment, the Standard of Living, and Women's Work in the South and East, 1690-1860." *The Economic History Review* 34, no. 3 (1981): 407–37. https://doi.org/10.2307/2595881.

———. *Annals of the Labouring Poor: Social Change and Agrarian England, 1660–1900*. Cambridge Studies in Population, Economy and Society in Past Time. Cambridge: Cambridge University Press, 1985. https://doi.org/10.1017/CBO9780511599446.

Speechley, Helen Victoria. "Female and Child Agricultural Day Labourers in Somerset, c. 1685-1870." Ph.D., University of Exeter, 1999. https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.267210.

Thomas, Janet. "Women and Capitalism: Oppression or Emancipation? A Review Article." Comparative Studies in Society and History 30, no. 3 (July 1988): 534–49. https://doi.org/10.1017/S001041750001536X.

Turner, M. E. (Michael Edward). *English Parliamentary Enclosure. Its Historical Geography and Economic History*. Studies in Historical Geography. Folkstone: Dawson, 1980.

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

Verdon, Nicola. *Rural Women Workers in Nineteenth-Century England : Gender, Work and Wages. Rural Women Workers in Nineteenth-Century England : Gender, Work and Wages*. Woodbridge, Suffolk, UK ; Boydell Press, 2002.

Voth, Hans-Joachim. "The Longest Years: New Estimates of Labor Input in England, 1760–1830." *The Journal of Economic History* 61, no. 4 (December 2001): 1065–82. https://doi.org/10.1017/S0022050701042085.

Wrigley, E. A. (Edward Anthony). "Men on the Land and Men in the Countryside: Employment in Agriculture in Early Nighteen-Century England." In *The World We Have Gained : Histories of Population and Social Structure : Essays Presented to Peter Laslett on His Seventieth Birthday*, by Lloyd Bonfield, Richard Michael Smith, Keith Wrightson, and Peter Laslett. Oxford: Blackwell, 1986.

Wrigley, E. Anthony. "Urban Growth and Agricultural Change: England and the Continent in the Early Modern Period." *The Journal of Interdisciplinary History* 15, no. 4 (1985): 683–728. https://doi.org/10.2307/204276.