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Putting women back into the early modern economy: Work, occupations, and economic development

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Abstract

A dataset of just under 10,000 work tasks gleaned from court depositions that records women's as well as men's work, and unpaid as well as paid activities, prompts a reassessment of the transformation of the early modern economy and women's role within it. Rather than sectoral change in production activities with a growth of manufacturing at the expense of agriculture, the evidence suggests that work tasks changed little over time despite occupational specialization increasing. Women's labour force participation is shown to contribute 44 per cent of work in the economy, rather than 30 per cent as in previous estimates. This is partly because of the importance of commercialized housework and care work, which has been largely overlooked in existing models of the early modern economy. Turning to waged work, findings confirm that men's and women's participation in paid agricultural work were linked, with women being employed in greater numbers when men were not available. However, these trends had a strong relationship with access to land, a factor that has been neglected in comparison with demographic trends and the cost of consumables. The organization of work was transformed in the seventeenth century as

the number of completely landless households increased rapidly.

KEYWORDS
early modern, England, gender, labour force participation, occupations, work

Following the pioneering work of Alice Clark and Ivy Pinchbeck in the early twentieth century,[1] the history of women's work entered a renaissance in the 1980s and 1990s as studies proliferated.[2] However, this research, which was often based on local or regional studies with limited quantification, was largely ignored by mainstream economic history. Attitudes to the history of women's work began to shift in the early twenty-first century when a number of important studies gave women an integral role in economic change. Jan de Vries highlighted women's role as workers and consumers in the 'Industrious Revolution'; Tine de Moor and Jan Luiten van Zanden argued that it was women's work that underpinned the emergence of the 'European Marriage Pattern' and ultimately the success of north-west Europe's early modern economies; while Stephen Broadberry and co-authors integrated women's work into their estimates of British gross domestic product (GDP) for 1270–1870.[3] Yet none of these studies rested on quantified evidence of women's work activities in the early modern economy, relying instead on suggestive arguments and estimates.[4]

The research presented here introduces a new body of evidence that offers an alternative way of viewing the early modern economy: a database of work tasks drawn from court documents that aims to imitate a time-use study.[5] It provides evidence of women's as well as men's work, and unpaid as well as paid work. The work task dataset was devised to put women back into the early modern economy, but the findings suggest that rather than simply adding evidence of women's work to our existing knowledge of men's work, more radical revisions are needed. The evidence is drawn from England between 1500 and 1700, but the trends discussed have parallels in other parts of north-west Europe, while the methodology has a much wider application to other pre-industrial but commercialized economies based on small-scale agriculture.

The work task data prompt a reconsideration of some fundamental assumptions about the early modern economy itself. These assumptions include the idea that male occupational titles offer a clear indication of the type of work men undertook; that women's labour force participation was significantly lower than men's; that the relationship between wages and the price of a basket of consumables allows workers' standards of living to be tracked across the five centuries before 1750; and that women's labour force participation increased and decreased primarily in response to demographic change. All of these assumptions, it is argued here, are problematic and possibly mistaken.

[1] Clark, *Working life*; Pinchbeck, *Women workers*.

[2] For example, Charles and Duffin ed., *Women and work*; Prior ed., *Women in English society*; Wiesner, *Working women*; Hill, *Women, work and sexual politics*; Earle, 'Female labour market'; Bennett, *Ale, beer and brewsters*; Sharpe, *Adapting to capitalism*; Simonton, *History of European women's work*; Wunder, *He is the sun*.

[3] de Vries, *Industrious revolution*; de Moor and van Zanden, 'Girl power'; Broadberry et al., *British economic growth*.

[4] For another important response to this issue see Macleod, Shepard and Ågren ed., *The whole economy*.

[5] This builds on similar methodologies used in Ogilvie, *A bitter living* and Ågren ed., *Making a living*.

To explain why this is the case, after introducing the work task dataset, the paper is structured around three issues, each of which relates to a particular approach to the early modern economy. The first asks: what is an occupation? Evidence of male occupational titles has been used to map structural change across the early modern period, highlighting a particularly rapid transformation in the seventeenth century, when the proportion of men with agricultural occupations declined from around 65 per cent to less than 50 per cent and secondary sector occupations increased in importance.[6] But what are occupations? Our data provides evidence of the types of work tasks that men with different occupational titles, such as husbandmen, artisans, labourers, and servants, actually undertook. The overall profile of work tasks within the economy as a whole changes little over time despite changes in occupational titles, indicating that occupations do not necessarily reveal structural economic change.

The second issue is the extent of women's labour force participation. Economic historians have progressed from ignoring women's work to trying to estimate women's contribution to the economy. But to do so it is necessary to know which areas of the economy women worked in and, to make comparisons with modern data, to estimate the extent of women's labour force participation. It has been assumed that women did more manufacturing than men, but also that much of their time was taken up with unproductive housework and care work.[7] The new evidence presented here challenges both these assumptions.

The final issue is the nature of waged work in the rural economy. This section discusses the availability of different types of waged work for women, and the relationship between men's and women's wage earning and between wage earning and landholding. This requires a careful look at men's work as well as women's. Long-run wage series stretching from the thirteenth to the nineteenth centuries offer an illusion that we understand participation in the labour market,[8] but without evidence of the extent women and men worked for wages, and in which parts of the economy, estimates of annual real wages mean little and discussions of the interaction between demographic change and women's work remain speculative. To investigate these issues, new evidence from wage accounts dating from 1480 to 1680 is used alongside the work task dataset.

Each of these issues prompts a fundamental reassessment of the transformation of the early modern economy and women's role within it. Rather than sectoral change in production activities with a growth of manufacturing at the expense of agriculture, the evidence suggests that economic activities changed little over time despite occupational specialization increasing. Women's labour force participation has been grossly underestimated, along with the importance of commercialized housework and care work. Men's and women's participation in paid agricultural work were linked, with women being employed in greater numbers when men were not available. However, these trends had a strong relationship with access to land, a factor that has been neglected in comparison to demographic trends. England's rural economy was transformed in the seventeenth century as the number of completely landless households increased rapidly. In this context, many women were pushed out of agricultural work, turning instead to other areas of the economy. It seems likely that petty commerce and paid housework and care work were just as important as spinning in offering alternative earning opportunities for women.[9]

[6] Wallis, Colson, and Chilosi, 'Structural change', pp. 863–4.

[7] For example Broadberry et al., *British economic growth*, pp. 346–8.

[8] Such as Humphries and Weisdorf, 'Wages of women' and Clark, 'The long march'.

[9] For an emphasis on spinning, see Muldrew, '"Th'ancient distaff"'; Humphries and Schneider, 'Spinning the industrial revolution'.

TABLE 1 The work task dataset.

Source of data		Number of work tasks	%
Type of court			
	Quarter sessions	5454	56.5
	Church court	3110	32.2
	Coroners' reports	1086	11.3
Region			
	South-west	4506	46.7
	North	2410	25.0
	East	2734	28.3
Period			
	1500–49	457	4.7
	1550–99	2455	25.4
	1600–49	3261	33.8
	1650–1700	3477	36.0
Total		9650	99.9

Source: Work task database.

I | THE WORK TASK DATA

The work task database contains details of just under 10,000 work tasks that were recorded in witness statements from three different courts: the quarter sessions (county-level criminal courts), church courts (regulating moral behaviour, church property, and the probate system) and coroners' reports into accidental death (see table 1). The work tasks include work undertaken by women and men and paid and unpaid work. They date from 1500 to 1700, although most are from after 1550. The current dataset builds on our earlier study of south-west England[10] by adding work tasks from northern and eastern England (figure 1).[11] Evidence is drawn from 1918 different parishes, roughly 20 per cent of total English parishes.

The quantified unit in the data presented here is the work task. Each work task is a specific work activity carried out by a specific person. Our definition of work follows Reid's third-party criterion, which states that any activity that could be substituted with purchased goods or services should be defined as work.[12] This means that work does not equate to labour force participation, the main conceptualization of work used by economists. Following the definition set out by the UN for calculating gross national product (GNP), labour force participation includes not only paid and income generating work, but also subsistence agriculture and manufacturing. However, it excludes housework and care work provided within the family unit (subsistence services).[13] This

[10] Whittle and Hailwood, 'Gender division'.

[11] More details about the methodology and dataset can be found in Whittle et al., *Experience of work*, and the project website: https://formsoflabour.exeter.ac.uk/methods-and-sources/.

[12] Reid, *Economics of household production*, p. 11.

[13] UN, *System for national accounts*, paragraph 1.42 (the production boundary). For a discussion on the UN's SNA and revisions made in 1993 and 2008 and the idea of 'subsistence services', see Whittle, 'Critique of approaches', pp. 55–9, 67–70.

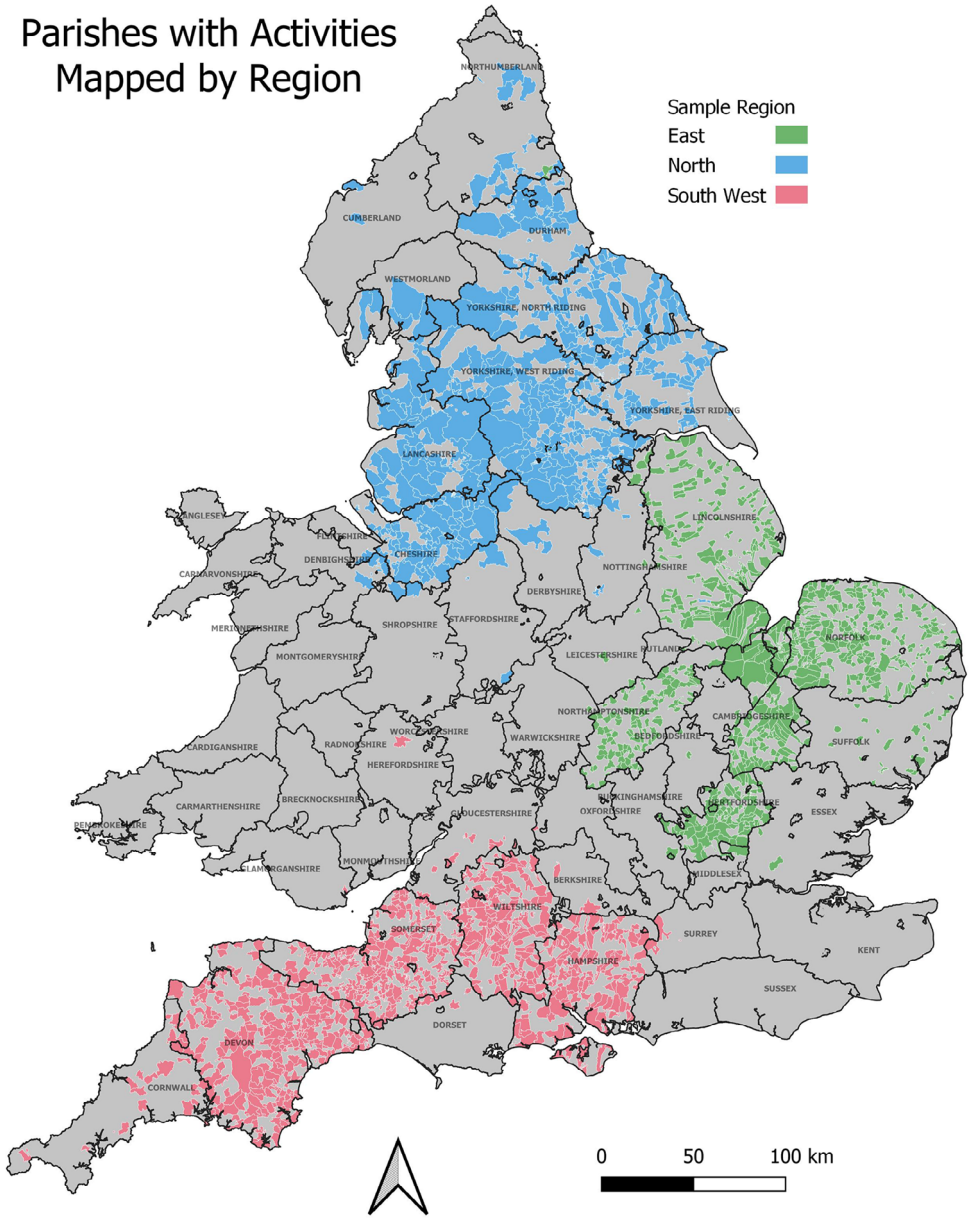

FIGURE 1 Parishes with activities mapped by region. [Colour figure can be viewed at wileyonlinelibrary.com]

type of work is included in the work task dataset but can be filtered out, as discussed in section III.

The crimes and disputes that formed the main focus of the witness statements were not recorded as work tasks in the database. Many of these fit the definition of work but their inclusion would have skewed the dataset. Nonetheless, the types of cases heard in the courts did have an impact on the work tasks recorded. The courts dealt with a wide variety of cases, not simply what we might consider 'crimes', but also, for instance, accidental death, tithe disputes, and

TABLE 2 Distribution of work tasks by category and gender.

Category	Number of work tasks	By men	By women	By women (%)	By women (adjusted, %)
Agriculture and land	2635	2162	473	18.0	36.2
Care work	564	196	368	65.2	82.9
Commerce	2115	1559	556	26.3	48.0
Crafts and construction	942	736	206	21.9	42.0
Food processing	607	476	131	21.6	41.6
Housework	748	225	523	69.9	85.8
Management	645	473	172	26.7	48.5
Transport	1237	1029	208	16.8	34.4
Other	157	108	49	31.2	54.0
Total	9650	6964	2686	27.8	50.0

Notes: Women's work tasks are multiplied by 2.59 in the adjusted column on the assumption women carried out at least 50% of total work tasks.
Source: Work task database.

paternity cases related to illegitimate births. Some work tasks were more closely related to court cases than others, and thus work tasks were labelled within the database as 'integral', 'related', or 'incidental' accordingly.[14] This allows work tasks closely related to cases to be excluded from certain types of analysis.

The data are presented in two main ways, referred to as 'distributions' and 'repertoires'. Distributions display the types of work tasks recorded within a region or category and are particularly useful for showing the gender division of labour. Table 2 shows the distribution by category of work task, demonstrating that women carried out a significant proportion of work tasks in all categories. However, although the database records a large number of work tasks carried out by women, women's work is under-represented in the raw data, making up only 28 per cent of work tasks. As we record all types of work, taken at face value this would indicate women had more leisure time than men. Instead, we demonstrate that the over-representation of men's work tasks is a consequence of the courts' preference for male witnesses, and of male witnesses' preference for describing men's work.[15] Given that modern time-use studies from all parts of the world show that women do as much or slightly more work than men,[16] we apply a multiplier of 2.59 to women's work tasks, on the basis of the conservative assumption that women carried out at least 50 per cent of total work tasks.

Work repertoires show the range of tasks carried out by particular types of people: table 3 compares the work repertoires of men and women. The inclusion of integral work tasks (those closely related to court cases) over-represents certain categories of work (particularly commerce – in connection to theft cases) therefore we exclude them from work repertoires

[14] Whittle and Hailwood, 'Gender division', p. 14.

[15] Whittle and Hailwood, 'Gender division', pp. 11–13.

[16] In wealthy industrialized non-Catholic countries, total work time for men and women is typically equal; in predominantly agricultural developing countries it is typical for women to do somewhat more: see UN, *Human development report 1995*, 88, 93; Burda, Hamermesh and Weil 'Total work and gender'. There are few historical studies, although Mancini shows women did 10% more work than men in rural 1930s Italy: 'Breadwinner, bread maker', p. 11; and Collins develops the work task methodology to estimate women did 54% of total work in England 1700–1850, 'Time-use and gender'.

TABLE 3 Work task repertoires, by gender.

Category	Male work repertoire (*n*)	Female work repertoire (*n*)	Male work repertoire (%)	Female work repertoire (%)
Agriculture and land	1910	411	38.5	20.2
Care work	180	357	3.6	17.6
Commerce	739	272	14.9	13.4
Crafts and construction	605	157	12.2	7.7
Food processing	214	80	4.3	3.9
Housework	142	464	2.9	22.8
Management	347	98	7.0	4.8
Transport	753	156	15.2	7.7
Other	72	36	1.5	1.8
Total	4962	2031	100.1	99.9

Notes: Incidental and related work tasks only.
Source: Work task database.

TABLE 4 Work tasks and employment relations.

Employment relations	Number	%
Explicitly paid	497	5.2
Servant	708	7.3
'For another' (terms unspecified)	2191	22.7
Not 'for another' or no evidence	6254	64.8
Total	9650	100.0

Source: Work task database.

where possible. Work repertoires are as close as we can get to average time-use budgets using this type of data. They show that women did more housework and care work than men, but participation in commerce was almost equal between the genders. Women did less agricultural work than men, but agriculture nonetheless made up a fifth of women's work repertoires.

The court records only occasionally record relations of employment providing evidence that a worker was paid to undertake a task. However, they quite often contain information showing that a task was carried out for someone else. This is recorded in the database as work 'for another'. Table 4 shows different types of work tasks 'for another', distinguishing between those with clear evidence of payment; undertaken by a servant; or undertaken for someone who was a non-relative, but with no further details. Much of the work which was 'not for another' would have been unpaid; however, the 'not for another' category also includes tasks where no information was given, some of which would have been paid.

The work task data has a broad geographical and social spread.[17] Labourers and servants are well represented, as are workers at all stages of the lifecycle.[18] The work task data reveal

[17] Office-holding duties, which are heavily over-represented in the court records are excluded, thus legal professionals and the clergy are under-recorded.

[18] For further discussion, see Whittle et al., *Experience of work*, ch. 2.

TABLE 5 Estimates of the proportion of men working in different sectors, 1522–1710 (%).

Author	Date	Primary	Secondary	Tertiary
Broadberry et al.	1522	64.7	16.5	18.8
Wallis, Colson, and Chilosi	1580–99	66	22	12
Keibek	1601	64.6	28.0	7.4
Broadberry et al.	1688	46.0	32.3	21.7
Wallis, Colson, and Chilosi	1680–99	43	31	26
Keibek	1701	46.8	41.7	11.5
Shaw-Taylor and Wrigley	*c*. 1710	50.8	37.2	12.0

Sources: Broadberry et al., *British economic growth*, pp. 350, 353; Wallis, Colson and Chilosi, 'Structural change', p. 872; Keibek, 'Male occupational structure', p. 152; Shaw-Taylor and Wrigley, 'Occupational structure', p. 59.

parts of the early modern economy which have previously been shrouded in uncertainty. Unlike wage data, they record unpaid as well as paid work and, unlike occupational data, they record women's work and allow occupations to be broken down into their constituent tasks.

II | OCCUPATIONS, BY-EMPLOYMENT, AND STRUCTURAL CHANGE

As Patrick Wallis et al. state in their recent article, 'structural transformation is a key indicator of economic development', and occupations have been used as a key indicator of structural transformation.[19] Over the last 10 years a series of important publications have revised interpretations of economic change in early modern England by using evidence of male occupational titles.[20] Studies of structural transformation use the PST system of classification devised by researchers at CAMPOP to divide occupations into the three sectors of the economy: the primary sector consisting largely of agriculture, the secondary sector of crafts and manufacturing and the tertiary sector of service occupations including transport, retail, and administration.[21] In an economy that does not import or export large quantities of food, a decline in the proportion of the population employed in agriculture and increase in secondary and tertiary sector employment indicates both that agriculture is becoming more productive (feeding more people per agricultural worker), and that other sectors are expanding to provide more diversified employment (industrialization), and thus clear evidence of economic development. A key finding of these studies is that by 1700 the proportion of men employed in the primary sector had already fallen below 50 per cent, down from 60–70 per cent in 1522 or 1600, as shown in table 5. Most of the change seems to have taken place in the seventeenth century.[22] These studies have substantially revised our understanding of the timing of economic change, stressing the degree to which industrialization occurred before the industrial revolution, beginning in the seventeenth rather than the eighteenth century.

[19] Wallis, Colson and Chilosi, 'Structural change', p. 862.

[20] Broadberry, Campbell, and van Leeuwen, 'When did Britain industrialise'; Shaw-Taylor and Wrigley, 'Occupational structure'; Broadberry et al., *British economic growth*; Keibek, 'Male occupational structure'; Wallis, Colson, and Chilosi, 'Structural change'.

[21] Wrigley, 'The PST system'; https://www.campop.geog.cam.ac.uk/research/occupations/datasets/coding/.

[22] Wallis, Colson, and Chilosi, 'Structural change', p. 864.

TABLE 6 Work task data classified by sector.

(a) Occupational data from the court sample compared with Keibek's from probate inventories and Wallis, Colson, and Chilosi's from wills

Sector	Male occupations 1500–1700 (*n*)	Male occupations 1500–1700 (%)	Keibek, 1641 (%)	Wallis, Colson and Chilosi 1620–39 (%)
Primary	1515	55.8	57.0	59
Secondary	893	32.9	34.1	25
Tertiary	305	11.2	9.0	17
Total	2713	99.9	100.1	101

(b) Work tasks by sector

Sector	All work tasks (*n*)	All work tasks (%)	By men (%)	By women (%)
Primary	3077	31.5	41.6	21.3
Secondary	1239	12.7	14.2	11.2
Tertiary	5461	55.9	44.2	67.5
Total	9777	100.1	100.0	100.0

Notes: Work tasks were placed into sectors according to category and subcategory. Primary is agriculture and land + threshing, dairying and mining; secondary is crafts and construction + food processing minus threshing, dairying and mining; tertiary is all other categories. Integral work tasks are excluded. The number of women's work tasks has been adjusted to account for underrecording.

Source: Work task database. Male occupations 1500–1700 from work task database; Keibek, 'Male occupational structure', p. 152; Wallis, Colson and Chilosi, 'Structural change', p. 872.

Evidence of male occupations has been gleaned variously from taxation records, probate records, parish registers, and social listings, none of which are complete in their geographical or social coverage, even for adult men. However, if these issues are put to one side, four significant problems remain with using occupational titles to measure structural change. First, they relate only to men; second, conclusions rely on the assumption that occupational titles accurately reflect the work a person undertook; third, occupations are assumed to sit within particular sectors of the economy, rather than spanning multiple sectors; and fourth, assumptions have to be made about the sectors in which labourers and servants worked, as their occupational titles denote employment relations rather than work activities.

Evidence of occupations was collected alongside the work task data from the court records. As with other types of sources, court records quite commonly record men's occupations, but women's only rarely. Part (a) of Table 6 shows our occupational data for men, which dates largely from the 1550 to 1700 period, placed into the three different sectors according to CAMPOP's guidelines, and compares them with Sebastiaan Keibek's occupational data from probate inventories for a mid-point in the work task dataset, as well as data from Wallis et al.[23] The findings are very similar, and differences can largely be explained by the work task data being spread across a longer period and excluding London. In contrast, part (b) of table 6 places the work task data into the three sectors using the same rules: this presents a very different picture. When we look at work tasks rather than occupations, it is the tertiary sector that dominates. This is particularly the case for women's work. The proportion of primary and secondary sector tasks are lower.

[23] Keibek, 'Male occupational structure', p. 152; 1641 was the mid-point in terms of the quantity of occupational data in the work task database.

TABLE 7 Male work repertoires by occupation.

Category	Gentry	Professions	Artisans	Yeomen	Husbandmen	Labourers	Servants
Agriculture and land	25.0	14.5	13.1	35.8	46.9	36.5	42.2
Care work	9.7	40.2	1.6	5.1	2.1	2.5	2.2
Commerce	18.1	13.7	28.8	29.8	18.9	14.2	7.2
Crafts and construction	1.4	0.9	27.4	5.1	5.4	9.6	7.6
Food processing	2.8	0.0	8.3	1.9	6.4	9.3	10.1
Housework	5.6	3.4	1.8	1.4	1.7	2.0	5.2
Management	22.2	16.2	6.7	10.2	4.7	4.7	5.2
Transport	9.7	5.1	11.3	8.8	13.1	20.0	18.9
Other	5.6	6.0	1.0	1.9	0.7	1.0	1.3
Total (%)	100.1	100.0	100.0	100.0	99.9	99.8	99.9
Total work tasks	72	117	1267	215	829	591	445

Notes: Artisans are those practising apprenticed crafts involving the production and processing of goods; professions are medical and clerical. Commercial trades, agricultural trades, transport, and apprentices not shown. Total work tasks show the number of work tasks used to calculate the repertoire.
Source: Work task database.

Why does the work task data present such a different picture to occupational data? Three main reasons can be identified, each corresponding to weaknesses in the occupational data. Firstly, the work tasks record women's work as well as men's work. Women's work was slanted towards the tertiary sector due to heavy involvement in housework, care work, and commerce, which were the most common categories of women's work alongside agriculture (as shown by table 3). Secondly, the work task data divide occupations into their constituent tasks. Occupations actually involved work tasks in different sectors. For instance, both farmers and craftsmen were also engaged in tertiary sector activities, such as transport and marketing, to sell their goods. Thirdly, many people undertook work which was not related to their primary occupation – they were by-employed or engaged in multi-employment[24] – thus occupations do not reveal the full range of work tasks carried out within the economy.

Women's work is discussed in the next section. This section concentrates on the other two points: by-employment and cross-sectoral work. The work task data allow for the reconstruction of the types of work that men with different occupations undertook. Table 7 shows that occupational titles did bear some relationship to work tasks: yeomen and husbandmen, along with servants and labourers, did the highest proportion of agricultural tasks; artisans did the highest proportion of tasks in the crafts and construction category; and the gentry and professions did the highest proportion of management tasks. More subtly, it is evident that yeomen, who were wealthy farmers, were more engaged in commerce than husbandmen, who farmed on a smaller scale.[25] However, the table also shows that men with a range of occupational titles engaged in agriculture, which made 13 per cent or more of work tasks for all the occupations.[26] Involvement

[24] On the concept of multi-employment, see Lindström, Fiebranz, and Rydén, 'Diversity of work', pp. 34–52.

[25] On wealth differences between yeomen and husbandmen see Shepard, *Accounting for oneself*, p. 74; Overton et al., *Production and consumption*, pp. 148, 188.

[26] We were careful only to record activities which were almost certainly carried out by the person themselves; vague statements about farming land or keeping livestock were not recorded as work tasks, as they often relate to management rather than participation agriculture.

in commerce was also widespread. Every occupational category apart from male servants engaged significantly in commercial activity, defined here as buying and selling, travelling to market or working in a shop or stall. In contrast, work in the secondary sector (the food processing and crafts and construction categories) was more occupationally specific and dominated by artisans.[27]

The significance of by-employment and multi-employment has been downplayed in recent studies of occupational structure. It has been argued that if farming households engaged in craft production, and craft households engaged in farming, 'flows between sectors occurred in both directions, with only a relatively small net effect'.[28] This seems rather over-optimistic. Our data show that craft production made up around 5 per cent of the work repertoires of farmers (yeomen and husbandmen), but agriculture made up more than twice that proportion (13 per cent) of craftsmen's repertoires. As discussed below, amongst the poorer crafts the agricultural proportion was even higher at 14–25 per cent. This suggests that by-employments do not cancel each other out, and the increase of craft occupations overstates the move away from agriculture and thus any increase in agricultural productivity and industrialization.

On a more sophisticated level, Keibek and Shaw-Taylor argued that reliance on evidence from probate inventories has led to an over-estimation of the prevalence of by-employment in early modern England.[29] From Thirsk onwards, many historians have used probate inventories to show that craft and trade occupations were combined with agriculture, and moderately prosperous rural households often combined multiple occupations.[30] Probate inventories are biased towards the middling section of society and largely fail to record the household economies of the poorest 40 per cent.[31] Given that the wealth recorded in inventories consists largely of moveable goods (including crops and livestock) and multiple production activities required more goods particularly if they involved agriculture, inventories have an inherent bias towards recording by-employed households. When inventories do occasionally survive for poorer households, they are much less likely to show evidence of by-employment, and thus Keibek and Shaw-Taylor argue that poorer individuals were less likely to be by-employed.[32] This conclusion, however, overlooks important aspects of how the household economies of the less wealthy were organized. It is precisely a lack of goods that made some households poor, so it is not surprising that inventories with low values did not contain material evidence of multiple work activities. But relative poverty also led people to seek work wherever they could find it. In an economy of makeshifts, people pieced together a living from activities that did not require material wealth: working for wages, working with equipment they did not own, and foraging or gleaning.[33] As a consequence, we should not expect probate inventories to offer a full record of the work activities of labouring households. The spread of work activities undertaken by labourers shown in table 7 was just as diverse as that of yeomen.

This conclusion is reinforced by examining the work activities of men with low-income craft occupations, who were likely to have been relatively poor (table 8).[34] The numbers we are dealing

[27] The artisan category includes craftsmen, cloth workers, and food processors (brewers, bakers, butchers).

[28] Broadberry, Campbell, and van Leeuwen, 'When did Britain industrialise', pp. 21–2; see also Wallis, Colson, and Chilosi, 'Structural change', who suggest this issue has been 'largely laid to rest', p. 877.

[29] Keibek and Shaw-Taylor, 'Early modern rural by-employments'.

[30] Thirsk, 'Industries in the countryside'; Overton et al., *Production and consumption*, pp. 65–83.

[31] Overton et al., *Production and consumption*, p. 26.

[32] Keibek and Shaw-Taylor, 'Early modern rural by-employments', p. 278.

[33] Hindle, *On the parish*, pp. 15–48; Healey, *First century of welfare*, esp. pp. 20–22.

[34] For the wealth of these occupations in relation to yeomen, husbandmen and labourers see Shepard, *Accounting for oneself*, p. 74.

TABLE 8 Work repertoires of low-income male artisans.

Category	Weavers	Tailors	Shoemakers	Carpenters
Agriculture and land	23 (18%)	23 (20%)	14 (25%)	15 (14%)
Care work	2	6	0	2
Commerce	29 (22%)	12 (10%)	16 (28%)	14 (13%)
Crafts and construction	29 (22%)	43 (37%)	11 (19%)	57 (53%)
Food processing	9	1	0	5
Housework	3	2	3	3
Management	10	12	7	7
Transport	23	11	7	5
Other	3 (3 begging)	5 (4 begging)	0	0
Total work tasks	131	115	58	108
Tasks related to craft	49 (37.4%)	57 (49.6%)	22 (37.9%)	66 (61.1%)

Notes: Tasks related to craft show counts of all those work tasks that involved aspects of the man's craft including tasks categorized as, for example, commerce, transport, or management.
Source: Work task database.

with are quite small here, but the findings are nonetheless significant. The table shows not only how many work tasks fell into the usual main categories, but also the number of tasks that could be seen as related to their occupation in any way. For instance, for weavers, this includes transporting and selling yarn and cloth as well as weaving. Men with these occupations all undertook work in other areas, such as agriculture. In fact, the findings suggest that the lower the income from the primary occupation, the more likely participation was in other activities: thus weavers and shoemakers did less work in their primary occupation than carpenters, who were somewhat better off. This reinforces the conclusion that occupational titles overstate secondary sector work in relation to agriculture, something that makes intuitive sense: occupational titles existed to distinguish people in a mostly rural society. Even part-time work in a craft was a notable distinguishing feature, in a way that part-time involvement in agriculture was not.

But the most important corrective offered by the work task data is the extent of tertiary sector work. Occupational titles relating to tertiary occupations were rare before 1700 unless servants are placed in the tertiary sector. The PST classification places servants in husbandry in the primary sector, but following the modern System of National Accounts (SNA), places other unspecified and domestic servants in the tertiary sector. For example, the 1993 SNA assumes 'domestic servants, cooks, gardeners, chauffeurs etc.' are employees paid by purely domestic households to provide domestic services.[35] Yet in the early modern economy, servants were employed by productive households to engage in household business, such as agriculture, craft production, and commerce, as well as undertaking housework and care work. This makes the application of modern definitions to data from before 1800 by studies such as *British economic growth* very problematic.[36] As servants are rarely described as servants in husbandry in the types of sources used to collect evidence of occupational titles, they are largely placed in the tertiary sector in studies of occupational change. Data presented below (table 16) show that 60 per cent of male servants' work tasks and 34 per cent of female servants' work tasks fell outside the tertiary sector. The work task data record a

[35] UN, *System of National Accounts* (1993), pp. 164, 267.

[36] Broadberry et al., *British economic growth*, pp. 346–50.

large tertiary sector not because 'servant' was a common occupational title, but because all types of workers engaged in substantial quantities of tertiary sector work: for instance, 55.3 per cent of yeomen's work tasks fell into this sector (table 7).

The comparison between work tasks and occupations prompts a radical revision of how we envisage economic change in the early modern period. Rather than seeing a significant decline in numbers employed in agriculture, a rapid rise in manufacturing, and a slow rise in a smaller proportion of tertiary employment, economic change seems to have consisted of 'shuffling the pack' of work tasks into different occupations. Tertiary sector tasks were already prevalent, and the proportion of agricultural tasks changed little over time. The change in occupational titles is real: more men were being given, and identifying themselves with, specialist occupations in the seventeenth century. Rather than significant sectoral shifts in the actual work tasks taking place, what seems to have occurred was Adam Smith's increased division of labour: the reorganization of work tasks into more specialist occupations.[37] This meant that the work tasks remained the same, but the balance of occupational titles changed over time. The increase in specialist occupations almost certainly raised productivity to some extent. However, it nonetheless took place in a society that remained predominantly rural, and in which most households retained some involvement in agriculture as owners of land or livestock, users of common rights, or agricultural wage workers.

III | WOMEN'S WORK TASKS AND LABOUR FORCE PARTICIPATION

The biggest gap in recent reconstructions of England's early modern economy has been the lack of knowledge about women's work. This has two main elements: the first is knowledge about the sectoral distribution of women's work; the second is the extent of women's labour force participation – that is, the amount of work women contributed to the economy according to the modern definitions used to calculate GNP. These are closely related to each other, and to a third issue: the nature of the tertiary or service sector. In their ground-breaking book, *British economic growth*, Broadberry et al. bravely try to estimate women's proportional and sectoral contribution to the English economy between 1270 and 1870, without (they admit) actually having much data. Using the record of women's work in the 1851 census, they suggest women contributed 30 per cent of the labour in the economy (compared with men's 70 per cent). They derive a sectoral distribution of women's work in 1522 from fragmentary occupational data for 1381, and the sectoral distribution in 1700 from early nineteenth-century data.[38]

Table 9 shows their estimates for women's and men's work combined in 1522 and 1700 compared with the work task data. The work task data are shown first unfiltered, and then filtered to include only work 'for another' and exclude all housework and care work. The filtering process aims to reconstruct most economic historians' idea of labour force participation. Comparing our unfiltered data with that in *British economic growth* shows few similarities, due to our much higher proportion of service sector work for men and especially women. However, if we filter the work tasks to include only work 'for another', and to exclude all housework and care work, our figures are not dissimilar to the *British economic growth* estimate for 1522, although our data largely relate to the 1550–1700 period.

[37] Adam Smith, *Wealth of nations*, book 1, ch. 1.

[38] Broadberry et al., *British economic growth*, pp. 345–55; Broadberry, Campbell, and van Leeuwen, 'When did Britain industrialise', pp. 17–20.

TABLE 9 Sectoral distribution of work including women's work.

Sector	Work tasks 1500–1700	Work tasks 1500–1700 (filtered)	BEG 1522 estimate	BEG 1688 estimate
Primary	31.5	52.7	55.6	38.9
Secondary	12.7	23.4	23.5	34.0
Tertiary	55.9	23.9	20.9	27.2
Total	100.1	100.0	100.0	100.1

Notes: Filtered work tasks include only work 'for another' and excludes all housework and care work. BEG, Broadberry et al., *British economic growth*.

Sources: Work task database; Broadberry et al., *British economic growth*, pp. 350, 353.

We do not advocate removing all housework and care work from the conception of the economy, however. Even if we are interested in labour force participation rather than work more generally, it is important to include housework and care work because much of this work was commercialized in early modern England. Together these two categories make up 40 per cent of women's work repertoire, in comparison with 6.5 per cent of men's, a significant gendered difference. The lazy assumption is that this was due to women's work caring for their own families, dominated by married women's cooking, cleaning, and childcare. This assumption is mistaken. Table 10 shows that housework made up a larger proportion of never-married women's work repertoire than that of married women. In contrast, the importance of care work increased as women moved through the lifecycle. A similar pattern can be seen by looking at women's work repertoires by age. Examination of the care work category shows that it was dominated by healthcare rather than childcare (table 11).

Most important of all, the proportion of care work and housework done 'for another' was not low, as we would expect if it was mostly work done within the family, but high in comparison with other types of work (table 12). Care work has the highest proportion of 'for another' work tasks, while the proportion of housework done 'for another' is above average, at a similar level to agriculture. Nor was the overall proportion of 'for another' work done by women significantly different from that done by men, as discussed below. To recap, 'for another' is work that was explicitly paid, undertaken by a servant, or done for someone outside the immediate family. The proportion of care work done 'for another' is high partly because it was almost always clear from the description of the work task who it was being carried out for, but also because this was rarely work within the family. It was often skilled healthcare, predominantly undertaken by women, that formed the grassroots of medical provision. The expectation that women should provide medicine and healthcare at the level of the household is explicit in early modern advice books, and evident from elite women's household papers.[39] The extent to which these services were provided by ordinary women and beyond the household has been overlooked.[40]

When Broadberry et al. survey the nature of the tertiary sector in early modern England in *British economic growth*, they follow Deane and Cole's approach by considering government services, trade and transport, financial services, housing, and paid domestic services.[41] Healthcare is not included. Like many areas of the economy, such as food processing and clothing

[39] For example, Markham, *The English housewife*. See also Stobart, *Household medicine*.

[40] Although see Shepard, 'Care'.

[41] Broadberry et al., *British economic growth*, pp. 159–77.

TABLE 10 Female work repertoires.

(a) By marital status			
Category	**Never married**	**Married**	**Widowed**
Agriculture and land	22.8	15.3	13.3
Care work	8.0	12.7	23.0
Commerce	17.7	24.1	25.2
Crafts and construction	7.8	7.6	7.4
Food processing	3.8	5.4	6.3
Housework	23.6	18.3	10.7
Management	3.8	8.6	5.6
Transport	11.5	6.9	6.3
Other	1.1	1.0	2.2
Total	100.1	99.9	100.0

(b) By age, years				
Category	**0–14**	**15–24**	**25–44**	**45+**
Agriculture and land	25.0	24.5	20.2	20.5
Care work	6.8	8.5	21.2	37.7
Commerce	0.0	8.5	13.0	6.0
Crafts and construction	0.0	17.0	13.0	5.3
Food processing	2.3	1.1	1.6	0.7
Housework	59.1	29.8	14.5	17.9
Management	0.0	1.1	5.2	5.3
Transport	4.5	7.4	7.8	5.3
Other	2.3	2.1	3.6	1.3
Total	100.0	100.0	100.1	100.0

Source: Work task database.

TABLE 11 Types of care work tasks, by gender.

Subcategory	Number	% of care work	% by women
Childcare	124	22.0	92.3
Education	25	4.4	39.3
Healthcare	211	37.4	74.9
Midwifery	124	22.0	97.7
Other care	80	14.2	62.1
Total/average	564	100.0	82.9

Source: Work task database.

production, healthcare tends only to become visible to historians when it is undertaken in large establishments or by men with specific occupations. In the present-day British economy, 14 per cent of the workforce is employed in health and social work.[42] Our finding that 5 per cent of work

[42] ONS EMP13, Oct-Dec 2022: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryemp13.

TABLE 12 The proportion of work 'for another'.

Category	% of tasks 'for another'	% of women's tasks 'for another'
Agriculture and land	45.6	40.0
Care work	78.2	75.8
Commerce	5.7	6.7
Crafts and construction	53.5	38.3
Food processing	31.1	32.1
Housework	43.7	48.0
Management	13.0	9.9
Transport	38.3	35.6
Other	35.0	14.3

Source: Work task database.

tasks in early modern England were concerned with healthcare and midwifery, 85 per cent of which was carried out by women,[43] and 78 per cent of which took place outside a family context 'for another', is not outlandish. Instead, it shines a spotlight on a previously ignored sector of the economy.

Housework was also often commercialized. It included paid work by servants, paid piece work undertaken by mostly married women, for instance, taking in laundry or cooking meals for other households, and the commercial provision of alcohol, food, and lodgings in alehouses, inns, and other establishments. Thus, while housework and care work are filtered out from table 9 to make the results match existing estimates of England's economic structure, this is not an accurate reflection of women's labour force participation or the nature of the tertiary sector, which included large quantities of paid and commercial housework and care work. Cooking, cleaning, and childcare for one's own family were a relatively small part of married women's work repertoire. We can be more precise about this: housework and care work made up 31 per cent of married women's work repertoires. However, 26 per cent of housework and 77 per cent of care work was done 'for another', meaning that at most, only 17 per cent of married women's work repertoires consisted of this type of unpaid service tasks for their own families.

If we take work activities as a whole and calculate labour force participation rates by subtracting care work and housework tasks that were not 'for another' from the total, then 75.8 per cent of women's work and 97.5 per cent of men's work was labour force participation. This gives a male/female split in work in the economy of 56/44 per cent rather than the 70/30 per cent split suggested by mid-nineteenth-century census figures and adopted in *British Economic Growth*. That said, I still resist the definition of labour force participation as deliberately prejudicial to women's economic contribution – why should subsistence services be excluded when subsistence agriculture is counted? It is important to note that when we compare the overall extent to which women's and men's work tasks were undertaken 'for another' in the work task database, the incidence is almost identical (but slightly higher for women) at 36 per cent, compared with 35 per cent for men.

[43] In modern UK, the proportion is 75%: data source as previous footnote.

IV | PAID WORK AND ACCESS TO LAND

Having explored the nature of occupations and the extent of women's labour force participation, we now turn to examine women's waged work and its relationship to men's work. This section concentrates particularly on rural England, which was still home to more than 80 per cent of the country's population in 1700.[44] It draws evidence from a sample of wage accounts, compares wages with the cost of land rather than a basket of consumables, and discusses how changes in waged work can be related to the evidence of work tasks. The argument is that although wage accounts provide evidence of women's paid work as agricultural labourers, they offer us a very partial view of women's wage-earning, and that wage-earning was one strategy among many of making a living in this period. In terms of change over time, access to land is a powerful but neglected factor in how forms of labour, for both women and men, were altered during the early modern period, particularly during the seventeenth century.

The creation of a series of women's wages by Humphries and Weisdorf was a great step forward in our knowledge of women's work.[45] However, much more research is needed to understand what opportunities women had to earn wages and how these interacted with other ways of making a living. The emphasis on wage series in narratives of England's long-term preindustrial development encourages the economy to be seen in a particular way.[46] Most obviously it prioritizes wage-earning above other ways of making a living. However, it also tends to foreground Malthusian explanations of change over time because changes in real wages are driven by population change via grain prices in the era before 1700. Reliance on demographic explanations is particularly the case for women's wage work. For instance, de Moor and van Zanden argue that women's workforce participation increased after the Black Death in response to higher real wages, a consequence of post-plague demographic decline.[47] Yet it is conceptually problematic to imagine women entering and leaving the paid workforce in response to real wage levels underpinned by population change. If this were the case, we need to consider what women did when they left the workforce, particularly as the periods when real wages were low were precisely the times when women's wages were most needed by women and their families in order to survive.

How did women work for wages in early modern England? In 14 year-long samples from gentry wage accounts from rural England, dating from 1480 to 1680, which recorded more than 20,000 days of unskilled labour paid by the day, it is shown that 29 per cent of the days worked were undertaken by women.[48] While some women were paid for spinning, helping craftsmen, cleaning houses, and doing laundry, 85 per cent of this work was agricultural. It was also highly seasonal: 73 per cent took place between July and September, mostly in the hay and corn harvests, and only 6 per cent in the winter between January and March. It is therefore also unsurprising to find that for most women this was supplementary activity – it could not have been their main way of earning a living. The mean average number of days worked per year by women in these sets of accounts was 18, and the mode just 2. Out of 296 individual labouring women

[44] Wrigley, *People, cities, wealth*, p. 170.

[45] Humphries and Weisdorf, 'Wages of women'.

[46] For example, Allen, 'The great divergence'; Clark, 'The long march'. For a critique of wage series: Hatcher and Stephenson, *Seven centuries*.

[47] de Moor and van Zanden, *'Girl power'*, p. 11.

[48] For a more detailed discussion of these data, see Whittle and Jiang, 'Equal and unequal pay'.

TABLE 13 The paid workforce on selected large farms in sample years, showing days worked.

Place and year	Male day labour	Female day labour	Male servants[a]	Female servants[a]	Total days	Days by women (%)	Days by servants (%)
Stebbing, Essex 1483	267	142.5	3000 (10)	300 (1)	3709.5	11.9	89.0
Kynaston, Heref. 1612	473.5	10	2100 (7)	1200 (4)	3783.5	32.0	87.2
Hunstanton, Norf. 1613/14	426	79.5	1800 (6)	1260 (4.2)	3565.5	37.6	85.8
Ashton, Som. 1632	1276.6	367.5	2400 (8)	300 (1)	4344.1	15.4	62.2
Payhembury, Devon 1644/5	1263.5	183	1200 (4)	1350 (4.5)	3996.5	38.4	63.8
Eaton, Norf. 1665/6	1559	139.5	858 (2.9)	–	2556.5	5.5	33.6

Note: [a]Number of servants employed shown in brackets; fractions indicate employment for part of the year only. Servants are assumed to have worked 300 days a year.

Sources: British Library (BL) accompt roll for Porter's Hall manor, BL Add. Roll 66051 (Stebbing); BL, Coke Papers (series II), vol. VII, Add.69874 (Kynaston); Norfolk Record Office, Le Strange Collection, household accounts, LEST P6 (Hunstanton); Bristol Archives, accounts of Thomas Smyth of Ashton Court, AC/36074/72 & AC/36074/74 (Ashton); Gray ed., 'John Willoughby of Leyhill' (Payhembury); Hickley ed., 'John Aldrich of Eaton' (Eaton).

recorded, only 15 were employed for 60 or more days a year, and the maximum number of days worked was 135.[49] This demonstrates that while women were a significant proportion of the day labouring workforce in agriculture, particularly in the harvest months, working as an agricultural day labourer was very rarely a viable full-time occupation for women in early modern England.

This was, in part, because when employers wanted full-time wage workers, they employed servants on annual contracts.[50] Table 13 shows a breakdown of the labour force from six sets of wage accounts.[51] It compares the number of days' work provided by women and men and by servants and labourers. Each servant is estimated to have worked 300 days when employed for a year (6 days a week for 50 weeks). This assumption based on the nature of servant contracts and labour law that assumed servants would be available to work at any time once employed, and on time-use evidence from the work task database which shows servants did as much work on Saturdays as weekdays, but somewhat less on Sundays.[52] In every case except the farm at Eaton in Norfolk in 1665, servants provided significantly more work days than casual labourers. Servants were the core labour force, while labourers were mostly supplementary. While the four farms from the early seventeenth century had male day labourers they employed regularly, these men did not work every week and often not more than 4 days a week. This was because these many of these labourers had their own landholdings.

The male labourers who did the most work each year for these estates were often also tenants of their employers. Robert Bidden, the most regularly employed labourer at Hunstanton, had a

[49] It is possible these women undertook wage labour on other farms, but the pattern of employment recorded in the accounts of large farms, with women mostly employed at peak times, makes it unlikely that employment elsewhere was sufficient to create full- or even half-time paid employment in agriculture.

[50] Kussmaul, *Servants in husbandry*; Whittle, 'Introduction'; Whittle, 'A different pattern'.

[51] As the employment of servants and labourers tend to be recorded in separate accounts, and detailed wage accounts for day labour are not numerous, full data of this type are rare for this period.

[52] See Whittle, 'Attitudes to wage labour', p. 51; Whittle et al., *Experience of work*, ch. 4. This differs from Humphries and Weisdorf, who assume a 250-day working year in 'Wages of women' and 'Unreal wages'.

TABLE 14 Work task repertoires of female and male servants.

Category	Female servants	Male servants
Agriculture and land	21.6	42.2
Care work	8.9	2.2
Commerce	8.2	7.2
Crafts and construction	6.9	7.6
Food processing	5.5	10.1
Housework	37.5	5.2
Management	2.7	5.2
Transport	7.6	18.9
Other	1.0	1.3
Total	99.9	99.9

Source: Work task database.

10-acre leasehold farm;[53] Thomas Walker, who earned between £9 and £10 a year at Kynaston in Herefordshire from his wage labour, was also a tenant,[54] as was Robin Setchfield, the carter at Ashton, who earned £6 11s from 190 days labour in 1632.[55] Servants were thus employed because this was the most reliable way of securing full-time workers, while labourers typically came from local tenant families. Labourers provided a supplementary workforce and juggled paid work with work on their own farms. Female day labourers were often the wives and daughters of these men. In the accounts studied, 49 per cent of women were described as 'wife' and 18 per cent were described as 'daughter' or 'maid'.[56] Of the others, 4 per cent were widows, and the remaining 29 per cent were described only by their names and may have been single or married.[57] In contrast, the female servants recorded in these households were all single and probably relatively young.[58] Female servants were a significant part of the workforce on many farms. At Kynaston, Hunstanton, and Payhembury, female servants provided more days of labour than male labourers.

The work task data provide information about the average work repertoires of male and female servants (table 14). Both did a broad range of tasks. Male servants' work centred on agriculture, transport, and food processing (which includes threshing). Female servants did housework and agriculture, and their remaining tasks were spread quite evenly across all the other categories apart from management. Thus, female servants were useful precisely because of the flexibility of their work patterns. Table 15 compares the agricultural work done by female servants with that of married women.The most notable difference is that servants did more milking, while married women did more gathering of food (which was mostly gleaning). Ownership of a dairy herd provided a strong incentive to employ more female servants: the twice daily requirement of milking cows from spring to autumn was a pinch-point in the demand for female labour.

[53] Whittle and Griffiths, *Consumption and gender*, pp. 222–3, 231.

[54] British Library, Coke Papers (series II), vol. VII, Add. 69874.

[55] Bristol Archives, accounts of Thomas Smyth of Ashton Court, AC/36074/72.

[56] 'Maid' is an ambiguous term used to refer to daughters, young women, and female servants.

[57] Data from 12 year-long samples from accounts: as listed in Whittle and Jiang, 'Equal and unequal pay', tab. 2, excluding Smithills and Gawthorpe.

[58] Mansell, 'Variety of women's experiences', pp. 319–21.

TABLE 15 The agricultural work of female servants and wives compared.

Subcategory	Female servants		Wives	
	n	%	*n*	%
Field work	16	20.5	34	24.6
Animal husbandry	19	24.4	33	23.9
Milking	30	38.5	25	18.1
Gathering food	5	6.4	25	18.1
Other agriculture	8	10.3	21	15.2
Total work tasks	78	100.1	138	99.9

Source: Work task database.

However, we should not imagine female servants only did dairy work. The picture presented by the work task data presented in table 15 contrasts with the caricature of women's agricultural work before 1700 presented by Voigtländer and Voth. They suggest that female servants only worked in livestock husbandry and married women only in arable agriculture, a modelling of the agrarian economy that has already been strongly refuted by Edwards and Ogilvie.[59] Table 15 shows that there was a difference in emphasis rather than a sharp contrast Female servants did 26.9 per cent of their agricultural work in arable agriculture and 62.9 per cent in livestock husbandry, while married women did almost equal proportions in each: 42.7 per cent in arable and 42.0 per cent in livestock farming.[60]

In wage series the value of cash wages is measured against a basket of consumables, to create a real wage. Food accounts for 82 per cent of the costs in the respectability basket constructed by Allen.[61] Yet servants, who provided the majority of days of wage labour in this period, received food and lodgings directly from their employer. Labourers were also often paid with food and drink as well as cash. Out of 14 wage accounts studied for the 1480–1680 period, this was definitely the case in six, unclear in a further four, and in only four sets of accounts was food and drink certainly not provided. Even when wage workers needed to provide their own food, given they often had land themselves, they were not wholly dependent on purchasing food. As Jiang has recently demonstrated in her study of the Shuttleworth accounts from Lancashire 1582–1621, the lifetime living standards of labourers and building craftsmen were determined by their access to land, rather than their wage rates.[62]

Given that servants were working partly to accumulate the resources to set up their own households, and that labourers knew that if they could acquire more land they would gain wealth and independence, we should compare wages not only with the everyday costs of the basket of consumables, but also with the cost of that life-changing investment – land. Table 16 compares servants' wages with the purchase price of copyhold property as recorded in manorial court rolls from Norfolk.[63] It shows that purchasing a cottage smallholding remained

[59] Voigtländer and Voth, 'How the West'; Edwards and Ogilvie, 'Did the Black Death'; Voigtländer and Voth, 'Reply to Edwards and Ogilvie'.

[60] That is, taking field work and gathering food as arable agriculture, and livestock husbandry and milking as livestock husbandry.

[61] Allen, *British industrial revolution*, p. 36.

[62] Jiang, 'Wage labour and living standards', chapter 5.

[63] This table is adapted from Whittle, 'Servants in rural England', p. 103. The cost of land was the price paid between tenants: see Whittle, *Development of agrarian capitalism*, pp. 110–19.

TABLE 16 A comparison of servants' annual cash wages and the price of copyhold land.

(a) Price of copyhold land		
Type of landholding	1450–1520	1560–80
Cottage and 1 acre	£4	£12
Farmhouse and 10 acres	£12	£36
Farmhouse and 40 acres	£35	£105
(b) Servants' annual wages		
Type of servant	1495	1587
Female servant	14s	£1 10s
Male servant	£1 10s	£2
(c) Years' labour needed to purchase land with combined wages		
Type of landholding	1495	1587
Cottage and 1 acre	2.1	3.4
Farmhouse and 10 acres	6.2	10.3
Farmhouse and 40 acres	17.9	30.0

Sources: The price of copyhold land exchanged between tenants is recorded in Norfolk manorial court rolls. These prices are taken from payment agreements in the manors of Blickling, Hevingham, Oulton, Salle Kirkhall, Saxthorpe Loundhall, and Saxthorpe Mickelhall: see Whittle, *Development of agrarian capitalism*, pp. 110–9, 333–5, for further details and document references. Servants' wages from the national 'Act for servants wages' 1495 (11 Hen. VII, *c*. 22) and modal wages in Stiffkey (Norfolk) household accounts 1587: Folger Library, Bacon Box 33-042.

TABLE 17 The price of freehold land, grain, and male agricultural wage compared.

Period	**Leasehold rents**		**Wheat prices**		**Male labourers' wages**	
	d/acre	**Index**	**s/qtr**	**Index**	**d/day**	**Index**
1500–24	5.9	100	6.4	100	4.0	100
1550–74	10.1	171	14.6	228	7.3	183
1600–24	86.5	1466	36.6	572	8.6	215
1650–74	106.8	1810	41.4	646	11.3	283
1700–24	133.0	2254	33.1	517	10.7	268

Note: This table is reproduced from Whittle, 'Land and people', p. 160.
Sources: Leasehold rents from Allen, 'Price of freehold land'. Grain prices from Rogers, *A History of Agriculture* vols. IV and V and Hoskins 'Harvest fluctuations' p. 30. Day wages from Clark, 'The long march'.

within reach of servants who pooled their accumulated wages throughout the period up to the second half of the sixteenth century. A 10-acre holding was a possibility in the late fifteenth century, but slipped beyond reach after the mid-sixteenth century. Larger landholdings were always unattainable for young people without inherited wealth to supplement their saved earnings.

A longer view of the relationship between wages and the cost of land is provided by comparing Allen's series market rents for leasehold land, wheat prices from Rogers and Hoskins, and Clark's series of male agricultural wages (table 17). The purchase price of freehold land was typically expressed as a multiple of the annual market rent, with 20 years' purchase price being typical

in the early seventeenth century.[64] Comparison with the price of customary land shown in the previous table shows that Allen's rent figures are significantly lower, and thus almost certainly underestimate the actual prices paid by farmers and labourers for smaller farm-holdings with dwelling houses. The decline in the value of wages in comparison to wheat is familiar from real wage series, yet the relationship between wages and the cost of land is rarely commented on. Between 1500–24 and 1600–24, while wages increased roughly two-fold and wheat prices were 5.5 times higher, land prices increased 15-fold. The magnitude of the increase in land prices from the late sixteenth century onwards is startling, and as noted above, almost certainly an underestimate. Its repercussions were felt throughout rural society. It pushed the dream of purchasing land beyond the means of wage earners, that is, servants and labourers. It meant that rather than being a life-cycle stage or a part-time occupation, wage earning increasingly became a full-time, life-time condition. The figures in table 17 indicate that this change, a major watershed in English society, took place in the late sixteenth and early seventeenth centuries. Before that date, landholding had been widely distributed amongst the English population, but after the early seventeenth century it was increasingly out of reach.

How can we measure increased landlessness and its flipside, increased dependence on wages? Direct measurements of access to land are almost impossible due to the complexity of land tenure and extent of undocumented subletting.[65] Instead, Shaw-Taylor devised an ingenious method that circumvents landholding records and instead compares the proportion of male farm workers to male farmers in the rural population. For instance, by 1851 there were somewhere between 7 and 13 male agricultural wage workers per farmer in south and east England.[66] At the beginning of the eighteenth century the ratio was lower, but nonetheless stood at 2.8 male wage workers per farmer in the same region.[67] This translates into a male farming population of 26 per cent farmers and 74 per cent wage workers *c*.1700. Using occupational titles from the Norfolk quarter sessions in the sixteenth century (1532–92), the ratio in Norfolk was 0.8 hired workers to each farmer, or 56 per cent farmers and 44 per cent wage workers, that is, farmers still outnumbered wage workers.[68] This was a profoundly different structure to that which came later, particularly as many of those described as labourer in the sixteenth century would have had some access to land.

It is highly likely that increased landlessness led to an increase in the number of days men worked for wages each year. Humphries and Weisdorf measure this by comparing men's annual wage as servants with male day wage rates in rural England between 1260 and 1850. They show that the number of days a male labourer needed to work to earn the same as an annual servant ranged from around 2 days a week in the fifteenth century to 4 days by the mid-seventeenth century, 5 days *c*. 1700, and 6 days or more after *c*. 1780.[69] They argue this shows an 'increase in labour input' and a reduction in leisure, on the basis of an assumption that 'day labourers would work just the number of days at the day rates needed to earn the salary offered to men on annual contracts'.[70] There is no obvious reason why this assumption should hold true. Rather than engaging in leisure, most men

[64] Allen, 'Price of freehold land', p. 34.

[65] Whittle, 'Leasehold tenure'; Barker, 'Emergence of agrarian capitalism'; Rhodes, 'Agrarian capitalism'.

[66] Shaw-Taylor, 'Rise of agrarian capitalism', p. 50.

[67] Shaw-Taylor, 'Rise of agrarian capitalism', p. 53.

[68] Whittle, *Development of agrarian capitalism*, p. 236; Whittle, 'Land and people', p. 163.

[69] Humphries and Weisdorf, 'Unreal wages', p. 2880 (figure 4).

[70] Humphries and Weisdorf, 'Unreal wages', pp. 2870, 2884.

were farming their own land and livestock when not employed for wages. When land was readily and cheaply available, as in the fifteenth century, high wages were necessarily to tempt them to enter waged employment.[71] As landlessness increased, men were more available for waged work and relied more heavily on wage income, but the ready supply of labour pushed wages down. The graph plotted by Humphries and Weisdorf closely mirrors the availability of land for labourers and small tenants. This worsened steadily across the early modern period before finally being extinguished by Parliamentary enclosures after 1750.[72]

Evidence of the changed pattern of labour can be inferred indirectly from changes in the format of surviving wage accounts. Wage accounts for the 1480–1680 period are mostly serendipitous documents, often described as household accounts, that mix payments for labour with other household expenses. Around 1700 systematic accounts of day labour, labelled as 'wage books' or 'labour books', become common.[73] These accounts list multiple men employed throughout the year for daily wages, something that was very rare in the earlier period. The farm accounts for Eaton just outside Norwich, analysed in table 13, are a precursor of this type of account. This farm relied on a regular day labour force, much of which was employed year-round, instead of employing a large workforce of servants. It was also notable in growing turnips as a field crop and employing fewer women.[74]

We have strayed away from discussing women's work because it is necessary to establish the wider context of early modern England in which women made a living. The relationship between the rural population and the land changed significantly between the late sixteenth and early eighteenth centuries. England went from being a country of small farmers, many of whom supplemented their income by working for wages, to a country where landlessness was widespread and almost three-quarters of men engaged in agriculture relied on wage-earning to make a living. This changed the way wage labour was organized and affected women's work as well as men's.

The 14 year-long samples from wage accounts show a significant change over time in women's work. In the seven samples from 1482 to 1600, 39 per cent of days worked by day labourers were undertaken by women. In the seven samples from 1605 to 1674, the proportion was only 17 per cent.[75] The work task data also provide evidence of women moving away from agriculture. Table 18 uses only data from incidental work tasks – those that were unrelated to the court case – which offer the best evidence of change over time. While the overall pattern of work tasks changed very little before and after 1620, there were more significant changes in the gender of workers. The proportion of agricultural work tasks done by women fell from 50 per cent before 1620 to 37 per cent after 1620. This includes women's work on their own land as well as wage labour, so hints at increased landlessness.[76] De Pleijt and van Zanden's finding that the gender pay gap in agricultural labour increased from 1650 onwards suggests a lack of demand for women's paid labour in agriculture.[77] Landlessness thus not only increased men's dependence on daily wage labour in agriculture, but also led to a reduction in women's agricultural day labouring and reduced

[71] Smaller farm sizes also meant less wage labour was needed.

[72] Humphries and Weisdorf, 'Unreal wages' p. 2880 (fig. 4); Turner, *Enclosures*, pp. 18–9.

[73] Turner, Beckett, and Afton, *Farm production*, p. 51.

[74] See Hickley ed., 'John Aldrich of Eaton'.

[75] Whittle and Jiang, 'Equal and unequal pay'.

[76] Incidental work tasks give a higher proportion of women's work in agriculture than the dataset as a whole.

[77] de Pleijt and van Zanden, 'Two worlds', pp. 628, 635.

TABLE 18 Change over time: incidental work tasks before and after 1620.

Category	Number of work tasks		Work repertoires		% by women	
	1500–1619	1620–1700	1500–1619	1620–1700	1500–1619	1620–1700
Agriculture and land	259	336	25.6	26.0	50.0	37.1
Crafts and food processing	206	218	19.6	16.9	41.7	37.4
Care work and housework	179	209	20.1	20.6	77.8	85.8
Commerce and management	247	290	23.2	23.8	39.0	49.6
Transport and other	124	164	11.6	12.6	37.0	35.8
Total	1015	1217	100.1	99.9	50.0	50.0

Note: The categories are the same as in previous tables but here have been combined for simplicity. The number of work tasks and work repertoire columns contain combined evidence of both women's and men's work.
Source: Work task database.

TABLE 19 Women's work tasks and day labour compared.

	1. All women's work tasks (%)	2. Women's work tasks 'for another' (%)	3. Female servants' work tasks (%)	4. Women's wage labour by day and task (%)
Agriculture and land	20.2	19.4	22.2	88.8
Crafts and food processing	11.7	12.4	11.1	3.2
Housework and care work	40.4	54.3	45.6	3.4
Commerce, management, transport, and other	27.7	13.9	21.1	4.5
Total	100.0	100.0	100.0	99.9

Notes: The unit of analysis is the work task in cols. 1–3 and days worked in col. 4.
Sources: For cols. 1–3: work task database; for col. 4: 14 year-long samples of rural wage accounts dating from 1483 to 1674, see Whittle and Jiang, 'Equal and unequal pay', table 1.

women's unpaid work in agriculture on their own farms. However, this did not mean women worked less, that they did less paid work, or that they retreated from 'the economy'. Table 19 compares the work task evidence with that from the wage accounts. It shows that the women's work recorded in wage accounts is heavily skewed towards agricultural work. The work task data reveal that women found income-generating work in many other parts of the economy. Housework and care work yielded a great deal of work 'for another', that is, paid work and work outside the household. Even when not working for wages, women's work was deeply embroiled in the commercial economy, for instance, trading goods and undertaking financial management. There was a move out of agriculture, but in this dataset, rather than a growth in craft employment in the textile industry, it is the increased feminization of commerce, as well as housework and care work, that is more significant.

V | CONCLUSIONS

The work task data allow for not only a much more detailed assessment of women's contribution to the economy, but also a reassessment of many aspects of men's work. Approaches to economic history that count male occupations, estimate GDP, and construct wage series each offer particular

perspectives on the early modern economy, providing important insights into change over time, but none of these approaches is perfect. They are based partly on estimates and assumptions that need to be tested. The analysis of work tasks offers a new approach – one that brings its own methodological drawbacks, but also fresh evidence on some knotty pre-existing problems. With this evidence, together with a new dataset of rural day labour from wage accounts, we can view women's work independently from men's of work, and start to see how men's and women's work, and paid and unpaid work, interacted in the early modern economy.

Historians have underestimated women's contribution to the economy. Modern time-use studies show that women on average spend at least equal amounts of time working to men, however, some of this time is engaged in unpaid care work and housework, which is not counted as labour force participation. Previous estimates had proposed that women in preindustrial England did 30 per cent of the workdays in the economy (as labour force participation) compared with men's 70 per cent. The work task data indicate that women's contribution should be revised upwards to at least 44 per cent compared with men's 56 per cent. The underestimation of women's work has also led to an underestimation of commercialized care work. The importance of care work in the early modern economy has largely been overlooked, written off as unpaid work done by women for their own families. The work task data show that while it is correct that care work was mostly done by women, we are wrong to assume that this is mostly child-care and other unpaid family work. Instead, women frequently provided medical care for people outside their family, with care work 'for another' making up 5 per cent of the total work tasks observed, a significant sector of the economy. While women's contribution to agriculture was substantial, wage accounts and work tasks show that women were doing less agricultural work after the early seventeenth century than they had done before. However, this does not mean women were doing less work, or less paid work, over time. Agriculture was only one form of work among many in women's work repertoires.

Work tasks shed light on the meaning of male occupations by demonstrating the work that men with different occupations actually undertook. This shows that economic historians have been overhasty to dismiss the significance of by-employment: participation in agriculture remained important for artisans. Nor do occupational titles reveal the extent to which men were reliant on paid work rather than self-employment. Despite all the research into constructing wage series, we still lack evidence regarding the extent to which men described as 'labourers' worked for wages. This has allowed the radical change that took place over time in access to land to be largely ignored. Yet this was a change that had profound consequences for the way people worked: decreased access to land increased dependence on wage income over time.

Finally, the work task data prompts a new way of looking at economic change in early modern England. When we use the purest form of work task data, incidental work tasks, to examine change over time, they show no significant shifts in economic activities between the sixteenth and seventeenth centuries. There were changes in the division of labour between men and women, but the overall repertoire of work tasks changed little. Given that men's occupational titles did change over time, this suggests that economic change during these centuries was a 'shuffling of the pack' of work tasks into more specialist occupations and increased paid work rather than a structural transformation in basic work activities. Thus, the exercise of putting women back into the early modern economy has not only created new evidence of women's work, but also suggests that some central assumptions about the nature of the economy as a whole need to be revised, giving more prominence to the service sector alongside agriculture and industry, and paying much closer attention to how work was organized.

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