

Mismeasuring Women's Work

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It is commonly claimed that there was a radical shift in women's work during the twentieth century. The most strident terms are used to describe changes in the US. Fernandez (2013, p. 472) claims that "A fundamental change over the last century has been the vast increase in female labor force participation," and Goldin (2021, p. 15) notes that "When more than half of the population's economic role changes, it marks a staggering historical shift." Bianchi (2000, p. 401) calls the change "revolutionary."¹ Women's labor force participation is described as something novel; Greenwood (2018, p. xiv) claims that "Historically speaking, married women did not work outside of the home," and Goldin (2021 p. 47) claims that "When Margaret [Reid] initiated her studies, married women were just beginning to be employed outside their homes."

While the language is usually more moderate, surveys of women's work in Europe also suggest large increases in women's participation over the twentieth century. Hatton and Bailey (2001, p. 87) describe the labor force participation rates of married women as having "a sharp break from an essentially flat trend up to 1931 followed thereafter by a steeply rising trend." Examining claims that the census understated women's participation before 1931, they conclude that "Since the under-enumeration of women's work in the early twentieth century is largely a myth, the subsequent rise in participation rates is not overstated; in fact it may be slightly understated" (p. 87). The Netherlands saw a "spectacular increase in the labor force participation rates of married women – from 5 percent in 1899 to 41 percent in 1990" (Pott-Buter, 1993, p. 191).² Sweden saw an even greater rise, from 3 percent to 79 percent. Over the century married women's participation tripled in Belgium and quadrupled in Germany (Pott-Buter, 1993, p. 200).³

Rising female labor force participation plays an important role in exogenous growth theory. According to this theory, industrialization reduced the importance of physical tasks and increased women's relative wages until "the rise in women's relative wages was sufficient to induce a significant increase in labor force participation, generating a demographic transition" (Galor, 2005, p. 233). Since the opportunity cost of children was higher when women were in the labor force, fertility declined. With fewer children, parents focused more on child quality and human capital increased. As women gained more education, the opportunity cost of children

¹ "The most revolutionary change in the American family in the twentieth century, I would argue, has been the increase in the labor force participation of women, particularly married women with young children."

² Hartog and Theeuwes (1985 p. S236) call the increase in Dutch married women's participation from 2.3 percent in 1947 to 22.1 percent in 1979 "revolutionary."

³ France did not see an increase over the period 1900-1990 because large numbers of married women were counted as employed in agriculture at the beginning of the century. If agriculture is excluded, married women's participation increased two and a half times. Pott-Buter, 1993, p. 201.

increased more, leading to further declines in fertility and increased emphasis on child quality. According to this story, there were a pre-growth period when "women do not participate in the labor force" and only when their wage was sufficiently high were women "induced to join the labor force" (Galor and Weil, 1996, p. 376). Since the process of endogenous growth supposedly started in the late nineteenth century in Europe, this would imply that women's participation increased between then and now.

However, the extent to which women's work now is different from during the nineteenth century has been exaggerated. A number of economic historians have already push back against the narrative that women's market work is a new development. Humphries and Sarasua (2012) argue that apparent increase in women's participation is at least partly due to our reliance on sources that undercount women's work. A number of historians have documented the important role that women played in production before their supposed entry into the labor force. Agren (2017) finds that women broadly participated in the early modern Swedish economy, and that the two-supporter model is a better description of their households than the male breadwinner model. Whittle and Hailwood (2020) demonstrate that in early modern England women's work look much like men's work, and women spent very little time doing unpaid housework. In response to the claim that the participation rates of Dutch women have always been low, Schmidt and van Neederveen Meerkerk (2012) argue that women's participation was increasing during the seventeenth and eighteenth centuries and was actually declining in the later nineteenth century.

In this paper I argue that reliance on labor force participation as the main measure of women's work has led us to exaggerate the change in women's work since the later nineteenth century. As a binary measure, labor force participation fails to acknowledge that women do both paid and unpaid work. Since labor force participation does not capture the multi-faceted nature of women's work, the emphasis on this measure has created a false narrative which imagines women shifting from doing only housework to doing only market work. If we use continuous instead of binary measure to examine women's work, we will find that the time women spend in market work today is not that much higher than in the nineteenth century, and the time they spend in housework is higher, not lower, than in the nineteenth century.

I also argue that we should abandon the phrase "work outside the home." The words we use to describe women's work often obscure the real content of that work. While phrase "work outside the home" is often used to mean paid work, this usage assumes that paid work is always outside the home and unpaid work inside, and assumption that does not match historically reality. Unpaid work was not always domestic work, and much domestic work was paid work. Both paid and unpaid work took place inside the home.

In this paper I will argue that (1) Labor force participation does a poor job of measuring women's work because it is a binary measure and women typically do a wide variety of different tasks; (2) Measured correctly, the shift in women's work over the twentieth century has been smaller than is usually claimed; and (3) We should abandon the term "work outside the home" because, while this term is typically used to distinguish market work from household production, market work often took place inside the home, and non-market production often took place outside the home.

I. Data

To illustrate my points I will refer to a collection of nineteenth-century household accounts collected by Frédéric Le Play and his colleagues and published in multiple volumes under the titles *Les Ouvriers Européens* and *Ouvriers des Deux Mondes*. Le Play (b. 1806) was a professor of metallurgy at the *Ecole des Mines*, and as part of his job visited mines in Russia in the 1830s. As a result of this trip he became interested in collecting data on families, and gathered around him a group of people with similar interests (*Le Société Internationale des Etudes Pratiques d'Economic Sociale*). Historians have mainly used Le Play's household accounts as descriptive examples, and rarely for quantitative analysis.⁴ Wall (1994) uses *Les Ouvriers Européens* to calculate the average number days per year that married women spent in housework, in the family economy, and in employment outside the family economy. Horrell and Humphries (1992) included the English households from *Les Ouvriers Européens* in their data set of household budgets. Burnette (2025) is the most ambitious attempt to use the Le Play accounts for quantitative analysis, using the accounts to argue that male wages do not accurately measure differences in the standard of living across countries.

While they have limitations, the Le Play accounts also offer opportunities. They do a much better job than other sources of including goods and services that did not go through the market. For example, the accounts regularly include activities such as keeping a pig or garden, collecting firewood, and even collecting wild berries. In all parts of the budget Le Play distinguishes between receipts and expenditures that are made in cash (*en argent*) and those that are made in kind (*en nature*). Time spent on housework (*travaux de ménage*), which included cooking, cleaning (*soins de propreté*), child care, and sometimes laundry, was included, though this work was not given any monetary value.⁵

An example of a work account is given in Table 1.⁶ Antoine F. (aged 58), his wife Marie (50), his mother-in-law Anne (70) and his son Etienne (13) lived in the village not far from La Rochelle, France.⁷ They owned a house, stable, garden and vineyard. They owned a pig and rented a cow. Antoine mainly worked as an agricultural laborer, though he also worked on his own land and did some fishing. In addition to housework, Maria cared for the cow and sold the milk, tended the garden, cared for the pig, helped in the vineyard, and did some fishing.

Work time is measured in days of work, which in some cases are explicitly equated with ten hours of work.⁸ The 252 days for work for the 1890 Belgian typographer are explained as 315 days of 8 hours, which is equal to 2520, or 252 days of 10 hours.⁹ Similarly, the Swiss cobbler who worked 3565 hours over 303 days was recorded as working 365.5 days,¹⁰ and the wife of a glover was credited 3 days for spending 30 hours making bread over the course of the year.¹¹ As

⁴ For an example of descriptive use of the accounts, see Tilly and Scott, 1987.

⁵ "Aucun salaire ne peut être attribué à ces travaux." Le Play, *Les Ouvriers Européens*.

⁶ The value each task is given in the original source but is not reported here.

⁷ Le Play, *Les Ouvriers Européens*, vol. 6, ch. 4.

⁸ *Deux Mondes*, 2d series, #84, vol 5 p. 156.

⁹ *Deux Mondes*, 2d series, vol. 3 p. 390.

¹⁰ "303 journées formant 3565 heures" *Deux Mondes*, 2d series, vol. 4, #77.

¹¹ "30 fois par an soit 30 heures equivalent" *Deux Mondes*, 2d series, vol. 1, #55.

a result of defining a day as ten hours, a few workers are listed as working more than 365 days in a year. For example, the head of a family running a laundry worked 355 days in the laundry, plus 21 days in the garden and 2 taking care of the ducks, while his wife worked 360 days in laundry and an additional 12 days on housework.¹² While on the surface this seems mathematically impossible, once we recognize that a day was defined as ten hours of work then we see that it was possible.

Les Ouvriers Européens (1877-79) contains 45 household accounts and *Les Ouvriers des Deux Mondes*, which was published in two series over the period 1857 to 1899, includes 91 complete household accounts. Dropping duplicates and non-European households leaves me with 108 households. These households contained 582 individuals age 5 and over, but only 453 workers and 305 adults age 20 to 64.¹³ I will focus primarily on adults aged 20 to 64, of which there are 162 men and 143 women. Table 2 provides basic descriptive statistics of the sample. The households in this study do not constitute a random sample of the European population, but they do provide detailed information on work from a variety of locations, occupations, and family sizes. Geographically, France is clearly over-represented, with slightly more than half of workers living in France.

While Le Play is the only source I know of containing data on subsistence production and housework, I can compare the money income of families in the Le Play households to that in other budget samples. Table 3 compares the households from Britain and Belgium to broader budget surveys from those countries. Horrell and Humphries (1995) examined a sample of British budgets between 1750 and 1865; I use only those budgets from 1846 to 1865 to compare with the seven British budgets in the Le Play accounts. The Le Play households have a higher percentage of wives with any cash income, but the Le Play accounts include types of work that are often overlooked, such as payment for taking care of a child, assisting in the husband's trade, or the proceeds from selling meat from a pig.¹⁴ Alter (1984) examines budgets from two Belgian surveys. These surveys, though, were limited to one particular family type. The 1853 survey specified that families selected should "consist of a father, mother, and four children whose ages were to be sixteen, twelve, six, and two."¹⁵ The 1891 survey was less restrictive, but "specified only that each family have several children and that the oldest be between sixteen and eighteen years of age."¹⁶ Thus, all of the families in the Belgian surveys had children who were old enough to earn income. This explains why these surveys have lower contributions from the husband, and higher contributions from children, than the Le Play households. While the Le Play households give slightly different averages than the other samples, all of the samples have some

¹² Le Play, *Les Ouvriers Européens*, vol. 5, ch. 8.

¹³ There are two female-headed households, and the rest are headed by a married couple.

¹⁴ While Le Play does not assign any work days to taking care of the child, it seems obvious to me that the income the family received from nursing the child was based on the wife's labor, and I have considered this market work because it was paid. One of the British wives is only engaged in market work because she is paid to care for a three-year-old child.

¹⁵ Alter (1984) p. 258. In addition, each location was requested to include families "at three levels of income: (1) Indigent workers, sustained in part by public charity; (2) Poor workers not receiving public assistance; (3) Well-to-do workers, in a completely independent position."

¹⁶ Alter (1984) p. 259.

biases and it is by no means clear that the Le Play households are any farther from the truth than the other surveys.¹⁷

II. Time Spent in Various Types of Work

Economists have, without convincing justification, ignored household production when calculating GDP (Whittle 2024; Goldin 2021, p. 48; Ferber and Birnbaum, 1980). Usually household production is assumed to be simply housework. Economists generally acknowledge three different types of time use: paid labor, household production, and leisure (Gronau, 1977; Hawrylyshyn, 1977; Mokyr, 2000; Ramey 2009; Greenwood, 2018). Household production is generally assumed to be domestic services such as cooking, cleaning, and childcare,¹⁸ but this assumption is not accurate for the nineteenth-century European, where households produced a wide range of goods and services for their own consumption. Home production included agriculture, manufacturing, and transportation. Goods produced for use rather than the market were primarily agricultural products, textiles, and clothing, though they also included hunting and gathering, and the manufacture of items such as soap and shoes.

Whittle (2019) identifies two different types of unpaid work, housework and subsistence production. This categorization avoids classifying agricultural and manufacturing production as housework. For this paper I will also categorize work into three categories: market work, subsistence production, and housework. In the Le Play accounts, the income from work tasks is categorized as either in cash or in kind, and some types of work were given no value. Unvalued work is generally housework and usually labeled as *travaux de ménage*, but on occasion hunting and shopping are also listed as having no value.¹⁹ I make some adjustments to the accounts to divide work into market work, production for use, and housework.

Market work includes both work for a wage and work producing goods and services that are sold in the market. Generally this is any work where the accounts list the income in the cash column rather than the in-kind column, but I make a couple of adjustments to this categorization.

- The entire value of wage labor is counted as market work. In cases where the worker receives food as part of the wage, the accounts list the food as in-kind income. Since this is still a market transaction rather than production for use, I count the value of the food wage as market income.
- In cases where the output of an activity is partly consumed by the family and partly sold, I calculate the percentage of the output that is sold, and then assign that percentage of days worked in that activity to the market.
- In a few cases the accounts list the value of laundry done at home in the cash column, noted as the amount that would have been paid for the laundry if done outside the house. I count

¹⁷ Horrell and Humphries (1992, p. 853) note that "there is no reason to expect the sample of surviving records to be representative of the relevant population." Their sample also focuses on the poorest households.

¹⁸ Aguiar and Hurst (2007) include the following in non-market work: "time spent on meal preparation and cleanup, doing laundry, ironing, dusting, vacuuming, indoor household cleaning and indoor maintenance" plus "obtaining goods and services . . . home maintenance, outdoor cleaning, vehicle repair, gardening and pet care." (979)

¹⁹ Occasionally days spent at school are recorded and given no value; I do not count these days a work.

laundry done at home as non-market production, because it is production for use by the family.

- A few families earn money from care of foundlings, but no work is ever assigned for taking care of them. In such cases I move a portion of the housework into market work.²⁰

Nonmarket work is split into two types: housework and subsistence production. Housework has been defined in different ways because its content varies over time. Whittle (2019, p. 38) separates care work from housework and defines housework as "cleaning the house and its contents (laundry, washing-up, sweeping, etc.), cooking (in the sense of meal preparation) and collecting water to carry out these activities." Pailhé, Solaz and Stanfors (2019, p. 195) separate childcare from housework, and further divide housework into "core housework" including cooking and cleaning, and "discretionary housework" including "home repairs, gardening, shopping, household administration and care of adult family members." Aguiar and Hurst (2007, p. 979) report time spent in childcare and nonmarket work, where the later includes core market work ("meal preparation and cleanup, doing laundry, ironing, dusting, vacuuming, indoor household cleaning, and indoor design and maintenance") as well as shopping, "home maintenance, outdoor cleaning, vehicle repair, gardening, and pet care." Some of these activities, such as vacuuming, were not relevant for the nineteenth century. I count gardening and animal care as agriculture rather than housework, but otherwise I include any activities that appear in these definitions as housework. Nineteenth-century households engaged in some activities that have largely disappeared from the housework of today's family. Humphries (2024a, p. 323) notes that housework in the past included "water and fuel collection, washing by hand, mending clothes and shoes, replacing candles and trimming lamps." Mending and gathering firewood frequently appear as separate items in the accounts, and I count these activities as housework.²¹

The accounts are not always consistent about which work is valued and which is not. Laundry is sometimes included in *travaux de ménage*, and is sometimes given a value as a separate category; the same is true of baking bread. Some unvalued work, such as hunting and collecting berries, I include in subsistence production rather than housework. I include in housework days spent baking bread, doing laundry, repairing the house or furniture, shopping, mending, and collecting firewood, as well as the broad category of unvalued work called *travaux de ménage*. The Le Play accounts do not separate care work from housework; child care is counted as part of the unvalued *travaux de ménage*.²² Paid domestic services are counted as market work.

Any work that is neither market work nor housework is counted as subsistence production.²³ The majority of this work was agricultural, which is as expected for households that spent the

²⁰ There are three households that earn income from caring for young children. I assign part of the income to food and rent, based on the child's consumption equivalent, and assign the remaining income to the mother's market income, moving part of the housework days to market work.

²¹ However, making new clothing for the family is considered subsistence production rather than housework.

²² The only exceptions to this seem to be where men are engaged in childcare. For example, Girard T., a Parisian water-carrier, spent 20 days on child care (*soins donnés aux enfants*). (*Deux Monde* #17).

²³ To distinguish work from non-work I use the third-party criteria used by Hawrylyshyn (1977, p. 89) and by Whittle (2019, p. 57). While a few accounts include time spent by children at school, study does not count as non-market production because you can't have a third party do it for you.

majority of their incomes on food.²⁴ Textiles and clothing were also commonly produced by the family for its own use. Subsistence production was nearly always goods and not services, though in a few households transportation of goods consumed by the household is part of subsistence production.

Table 2 gives the average days per year for total work and for each of the three types. The first thing to notice is that work was universal among adults.²⁵ Adults worked more than 300 days per year, and women did more work than men, not less. Among all workers women did twelve more days of total work, and among adults aged 20 to 64 women did seven more day of work per year than men. Women did distinctly less market work and more housework than men. Adult men were specialized in market work, spending 78 percent of their work time working for the market and most of the rest on subsistence production. Adult women split their time more evenly; they spent 45 percent of their time in housework, 31 percent in market work, and 24 percent in subsistence production. This division is not the result of some women specializing in housework while others specialized in market work; most women did all three types of work. Only 13 percent of adult women did no market work, 13 percent did no subsistence production, and 7 percent did no housework. Three-fourths of adult women did some work in all three categories.

To demonstrate that market work was widely spread across the population of adult women, Figure 1 graphs the number of market days worked by each adult woman in the sample, with women arranged across the x-axis from the lowest number of market days to the highest number. Note that relatively few women are either entirely specialized in the market, or entirely out of the market. Only 18 of the 143 women had zero days of market work. The 25th-percentile was 18 days, the median was 81 days, and the 75th-percentile was 146 days. Thus the typical woman in the Le Play households spent some days, but less than half of her time, in market work. Figure 2 is a similar graph for housework; women spent more total time in housework than in market work, but we see the same pattern of most women doing some housework, without entirely specializing in housework. The 25th-percentile woman did 80 days of housework, the median woman did 124, and the 75th-percentile woman did 211 days. Subsistence work was also spread broadly across the women in these households, with the 25th-percentile woman doing 20 days of subsistence work, the median woman 50 days, and the 75th-percentile woman 127 days. Thus while housework generally took more of women's time than market work or subsistence work, the typical nineteenth-century European woman was engaged in all three types of work - housework, subsistence production, and market work.

Older and younger individuals did less work than adults. Figure 3 shows the average number of days of wage work, other market work, subsistence production, and housework for ten different demographic groups. The difference between total days of work and 365 days is defined as leisure. Children aged 5 to 12 did the least work; boys averaged 54 days of work and girls 30 days. Elderly women also had substantial amounts of leisure, working on average 135 days per year. Teens and elderly men worked less than adults, but still spent more than half of their time working. Among adults, patterns of work clearly differed by gender. Men did more waged work,

²⁴ Food was on average 55 percent of total household expenditure.

²⁵ Work was not universal among the old and the young. Among children 5 to 12, 67 percent did no work. Twelve percent of teens, and 28 percent of those 65 and old did not work.

and women did more housework. Still, adult men only spent half their time on waged work, and adult women spent slightly less than half of their time in housework.

Days of work also varied by region. Figure 4 shows the average number of days of each type of work for adults in four broad regions. Since I do not have a representative sample I do not expect the results to describe the regional patterns, but the results are unsurprising. British men in the sample did more waged work, and men in the south and east did more subsistence production. While men in the North and the UK did about 300 days per year of market work, men in the South and East did less than 200 days per year. British women did the least total work, averaging only 266 days per year, and they did the least subsistence production. By contrast, women in the East spent half of their time on subsistence production.

Because work patterns varied so much by region and the sample is heavily skewed towards France, the average of the sample is a biased estimate of the overall European average. To address this problem I re-weight the sample averages by population of the country.²⁶ Table 4 shows the re-weighted averages for adults. The effect of re-weighting the sample is to increase the relative importance of Eastern Europe and thus to increase the relative importance of subsistence production relative to market work. The re-weighted average emphasizes the importance of subsistence production: European women spent 36 percent of their time on subsistence production, while European men spent 21 percent of their time on subsistence. Both sexes did considerably more market work, and less subsistence production, in Western Europe than in Eastern Europe.

III. Labor Force Participation

Our ability to understand women's work in the past is hampered by the measures that we use. In particular, our emphasis on labor force participation has led us to exaggerate the how much women's work has changed over the past 200 years. Women's work today is different from that of pre-industrial women (as is men's work), but it would be inaccurate to suggest that women's market work, or the double burden or paid and unpaid work, is new. We have been led astray by our reliance on labor force participation. As a binary measure, labor force participation is unable to measure what portion of women's work is unpaid, or to even acknowledge the possibility that the same woman might do both paid and unpaid work. Labor force participation is not well designed for a world where workers combine many different part-time and temporary activities, so it is not well designed to describe the past.

Many historians have criticized existing measures of women's labor force participation, and usually this criticism focuses on whether participation was accurately measured. Historians have identified large numbers of women who appear in employment records of firms or farms but do not have occupations in the census (Humphries and Sarasua, 2012, pp. 48-9; Verdon, 2002, p. 117). Miller (1984, p. 146) finds specific examples of English women who were paid for farm work but were not listed in the 1871 census as having an occupation. Sarasua (2019, p. 490) notes that the work of Spanish women must be under-recorded because.

²⁶ I use the 1880 populations from Mitchell (1998).

according to householder declarations, no one worked in cheese making, although the region was well known for its cheese and town officials provided the price at which cheese was sold. Nobody worked in honey and wax production, either, even though the county of Alcarria, in Guadalajara, produced honey and war for candles; the country's candles were used in churches in Madrid and throughout central Spain.

Schmidt and van Neederveen Meerkerk (2012) estimate that the labor force participation of nineteenth-century Dutch women was 40 percent higher than recorded in the census. Mancini (2023) concludes that in 1930s 82 percent of rural Italian women worked in agriculture, which is more than four times the rate reported in the census.²⁷

Other researchers have defended the census measures. Hatton and Bailey (2001) note that early twentieth-century surveys of British towns confirm the low participation rates of women recorded in the censuses. Leigh Shaw-Taylor (2007, p. 34) defends the occupational information in the British census by noting that census enumerators only intended to record regular work.

Some of those writing about the deficiencies of the census . . . do not appear to be aware that only 'regular' employment was supposed to be recorded. . . a problem which primarily pertains to irregular work done by married women has been presented as if it pertains to all work done by all adult women.

However, noting that only regular work was recorded doesn't solve the problem; it simply exposes the problem. Women's work was rarely regular, so if we don't record irregular work we don't record women's work. While the censuses did not consider women's part-time and irregular work to be worthy of an occupational title, most of women's market work was part-time and irregular, so such a rule necessarily ignores women's contributions. The real problem is not one of accurately measuring participation rates but is more deeply definitional. We need to go beyond critiquing how well we are measuring women's labor force participation and question whether participation is the right measure.

Labor force participation cannot accurately measure women's work because it is a binary measure. Participation rates require coding each individual as either in the labor force or out, while most women, today and in the past, are engaged in both paid and unpaid work. To demonstrate how poorly labor force participation measures women's activities I will construct labor force participation measure for the women in the Le Play sample and compare those participation rates to their time use. For this exercise I will count only market work as "participation." While scholars have argued that housework should be included when counting work (Whittle, 2024, p. 16; Shepard, 2023, p. 58), this is not what economists mean when they talk about the spectacular change in women's work that supposedly occurred during the twentieth century. They do not image that women were doing nothing at all at the beginning of the century, but see the supposedly vast shift as a movement from unpaid to paid work. Therefore, we need to examine whether labor force participation is a good measure of women's paid work.

Table 5 presents labor force participation rates for adults in the Le Play sample. Column 1 defines individuals as in the labor force if they engage in any market work during the year, and column 2 defines them as in the labor force if they if they are "regularly" employed, which I

²⁷ We see the same pattern in the US: the population census clearly under-reports women's work compared to the Census of Manufactures (Folbre and Able, 1989). Chiswick and Robinson (2021) calculate that the labor force participation rate of free women in the US in 1860 should be 56.6 percent rather than the 15.7 reported in the census.

define as working at least 200 days per year in the market. These two alternative measures of labor force participation are then compared to continuous rather than binary information on work. The third column gives the percent of the year that individuals spent in market work, and the fourth column gives market work as a percentage of total work days.²⁸

Neither labor force participation measure comes anywhere close to accurately describing how women spent their time. If we count all women who did any market work as in the labor force, then we get surprisingly high labor force participation rates; 87 percent of adult women and 86 percent of married women engaged in some market work. These rates exaggerate the extent of women's participation in paid work; adult women spent only 30 percent of their work time, and about a quarter of the year, in market work. At this point one could protest that only regular work should be counted, but if we do so the labor force participation rates undercount women's contributions. Only 15 percent of adult women and 13 percent of married women worked in the market at least 200 days per year. Most of the women who participated in market work did so irregularly, so dropping irregular work results in a participation rate that ignores half of women's market contributions.

The labor force participation measures are also misleading for men, though the errors are smaller than for women. While all adult men in the Le Play sample engaged in at least some market work, they spent on average only 77 percent of their work time on market work. If we require work to be "regular", then only 65 percent of adult men participated in the labor force, a figure which is at odds with the assumption of universal male participation. We could adjust the number of work days required to be in the labor force, but the only way that a labor force participation rate would accurately describe how much time individuals spent in market work is if we got lucky and workers just happened to be distributed in such a way that the percent of individuals we categorize as "employed" happens to match the percent of their time that they spent in paid work. Such a measure, though, would obviously not be robust.

The misleading nature of the labor force participation measure is a conceptual problem with the measure and not simply the result of poor data. The fundamental problem is that a binary measure does not take into account changes in how many hours women work. Stanfors (2014, pp. 527-9) demonstrates that labor force participation is a misleading measure of women's work in the modern Swedish economy. Between 1963 and 2005 women's labor force participation rates increased by 54 percent, from 49.4 percent to 76.1 percent. However, if we calculate the average number of hours worked by women the change over the same period is much smaller; average hours worked per woman increased from 16.4 to 20.1, an increase of only 23 percent. Using participation rates rather than hours of work causes us to overstate the increase in women's work by a factor of 2.3. Another reason that participation rates overstate the increase in women's work is the rise of maternity leaves. Before maternity leaves women who stopped working to take care of a new baby were not counted as employed. Now women on maternity leave are counted as employed even if they are not actually working. In 1992, 84 percent of Swedish women with children under age seven were in the labor force, but only 52 percent of them were "at work" (Nyberg, 1994). The result is that labor force participation rates greatly exaggerate the

²⁸ Market work as a percent of the year is calculated by dividing the number of days each woman spent in market work by 365, or by her total number of work days if that was greater than 365. Since ten hours of work was considered one day, a few individuals worked more than 365 days during the year.

change in women's work over the twentieth century. At the beginning of the century, when the social expectation was that women did not work, irregular work was easily ignored and participation rates understated women's market work. At the end of the century, when social expectation has shifted and women on maternity leave are counted as in the labor force, participation rates overstate women's market work (Nyberg, 1994).

IV. Women's Multiple Tasks

Labor force participation is a worse measure of women's work than it is of men's work because women's work was much more varied. In early modern Europe, both men and women had multiple sources of income (Agren, 2023). By the later nineteenth century, men were more likely to focus on their primary job, while women rarely worked regularly at any one task and divided their time among many different tasks. To illustrate this difference in work concentration, consider Hans and Johanna D. from Norway. Hans spent 347 days on five different tasks, but most of his time (300 days) was spent at his main job as a metalworker. The other 47 days were spent on hunting, fishing, gardening, and maintenance of the house and furniture. Johanna spent 325 days on six different tasks, but she didn't spend more than 120 days on any one task. She spent 120 days on housework, 110 days making wool and linen cloth, 60 days on agricultural day labor, 20 days taking care of the family's cow and pig, 10 days gardening, and 5 days collecting wild berries. Overall Hans's work was much more concentrated than Johanna's work. Clearly Hans was in the labor force, but what about Johanna? Is it more accurate to say that she was in the labor force, since she worked 60 days for wages, or that she was out of the labor force, since she spent more time on housework than any other task?

To demonstrate that this example is representative of the Le Play households, Table 6 presents averages of three different measures of work task diversity by gender and marital status.²⁹ The first is an intuitive measure, the percentage of time spent on the individual most time-consuming task. In our example, Hans spent 86 percent of his time at his metalworking job, while Johanna spent only 37 percent of her time in housework. Table 6 reveals that men's work was more concentrated in one task than women's work. While the average adult man spent 78 percent of his time on one task, the average adult woman spent 60 percent of her time on one task. Sixteen percent of men had only one work task, compared to only six percent of women. While 38 percent of women spent less than half of their work time at their most common task, only 13 percent of men did so. The second column ignores subsistence production and housework, and measures how concentrated market work was. Within market work, women were as focused on one task as men, spending on average 82 percent of their market work time on one task, while men spent 83 percent of their market work time on one task. This suggests that the gender difference in column 1 is due to women's greater participation in subsistence production and housework.

²⁹ I start by combining together some tasks that the accounts list separately. For example, consider the family of Anoine F. presented in Table 1. I combine the vineyard and harvest work that Antoine did for wages. For Maria, I combine the time spent gathering food for the cow with the time spent caring for the cow and selling the milk. I also combine all of the tasks that are considered housework (*travaux de ménage*, making bread, laundry, and mending). All housework tasks are combined. Tasks for arable agriculture are combined, but animal tasks are separate from arable agriculture, and separate by type of animal. I combined some tasks related to the same occupation, such as fishing and washing the boat. Production for sale and for household use are combined, since the output of most farming activities divided between sale and use. Waged work is kept separate from production for sale.

I also calculate a Herfindahl-Hirschman index (HHI) from the percentage of time spent on each task.³⁰ While the HHI was designed to measure the concentration of firms in an industry, it can also measure whether a single task "monopolizes" the individual's time. The HHI measures how concentrated work tasks are; it ranges from 0 to 1, with values closer to 1 indicating more concentration in a single task. The HHI shows a distinctly higher concentration for men than for women. The index for adult men is 44 percent higher than that for adult women, and for married men it is 48 percent higher than for married women. While neither sex specialized in only one work task, men were more specialized than women.

In early modern European households both men and women had multiple sources of income (Agren, 2023). By the nineteenth century, men's work had become more specialized, but women still pursued multiple different tasks. Sarti (2018, p. 191) describes how the multiplicity of women's tasks creates confusion about how to describe women's occupations:

Besides taking care of the vegetable garden and domestic chores, the woman often takes up spinning linen, hemp, cotton and wool etc. on behalf of others in her own home. In these cases, a doubt may arise as to whether she should be classified as a housewife, that is, according to the occupation which by necessity takes up the greater part of her day, or as a gardener or spinner. . . . The professional categories of the censuses were mainly shaped on workers with single, well-defined jobs. Such categories were unsuited to classify those who performed several activities, as was the case for some men and a huge number of women who toiled at many activities.

Since nearly all women engaged in both paid and unpaid work, trying to shoehorn this reality to a binary measure necessarily results in mis-representation of women's work. For example, in 1847 Anna, a 35-year-old wife from Hanover, spent 120 days per year in market work, 110 days in housework, and 97 days in subsistence production.³¹ The concept of labor force participation forces us to describe her inaccurately. Whether we categorize her as in the labor force or out we necessarily ignore a substantial fraction of her contributions. If we count her as employed we are ignoring her 207 days of unpaid work. If we count her as out of the labor force we ignore her 120 days of paid work.

A binary measure which only categorizes people as either in the labor force or out cannot capture the reality of women's work in nineteenth-century Europe. Labor force participation is a particularly bad measure for women, whose work was more varied than that of men. In fact, I suggest that labor force participation is such a bad measure that it has led us to get the story of women's work wrong. Continuous measures, such as the percent of time spent in market work, do a much better job of describing women's work. What happens to the story of women's work over the past 150 years if we use continuous rather than binary measures?

³⁰ The HHI is the sum across tasks of the square of the portion of time spent in that task. For example, if a worker spent exactly half of his time in each of two tasks then the HHI is $0.5^2 + 0.5^2 = 0.25 + 0.25 = 0.5$, while if he has two tasks but spends 90% of his time on one of those tasks the HHI is $0.9^2 + 0.1^2 = 0.81 + 0.01 = 0.82$.

³¹ Anna's market work consisted of 69 days of waged work doing laundry in the homes of her employers, 43 days transporting goods to sell at market, and 8 days transporting hay for farmers. Her production for use consisted of 59 days transporting goods for the use of the family, 30 days making clothing, and 8 days of gardening. (Le Play, *Ouvriers Européens*, vol 2 ch. 3.)

V. How Much Has Women's Work Changed Over Time?

The history of twentieth-century women's work, as it is usually told, involves a vast shift from housework to market work.³² This is not the story that we find in the time-use data. For Western Europe, late twentieth-century women spent only a little more time in market work than did women in the late nineteenth century and time spent in housework increased substantially. This is possible because subsistence production, which used to take a third of women's time, mostly disappeared in Europe. Women in Eastern Europe did see an substantial increase in their market work time, but this came at the expense of leisure as time spent in housework ate up all the gains from declining subsistence production. To characterize change in women's work over the last century as the entry of women into the labor force and a decline in housework is inaccurate.

To demonstrate this claim, I compare the Le Play households to more recent measures of women's time use. Table 7 compares the distribution of work time during the later nineteenth century, from the Le Play accounts, to the distribution of work time in the later twentieth century. Because women's experience in communist countries was so different from those in non-communist countries I separate Western and Eastern Europe. Twentieth-century sources for Russia do not overlap with those from other Eastern European countries, so I also separate Russia from the rest of Eastern Europe. None of the data come from nationally representative samples, so we must be aware that some of the apparent changes in time use may be the result of who was surveyed.

The more recent data distinguish only between market and non-market work and do not separate subsistence production from housework. This raises the question of how we should compare work over time. If we divide work into paid and unpaid work, then we would compare subsistence production plus housework to modern unpaid work. However, if we are interested in production that counts for GDP, we would include both subsistence production and paid work. Whittle (2019, p. 56) notes that the UN's system of national accounts includes subsistence production, but not unpaid housework or care work, in GDP. I will use the term "GDP work" to include both market work and subsistence production.³³

In Western Europe the main difference between the late nineteenth and late twentieth centuries is that households have substituted housework for subsistence production. Subsistence production, which was mainly agriculture and manufacturing, and which used to take a third of women's time, has disappeared. Leisure did not increase, however, because that time has gone largely into housework (including childcare). The market work of the average adult woman increased only six percent, from 18.2 to 19.3 hours per week – hardly a spectacular shift. Time spent on housework and childcare has gone up substantially, from 27 hours per week to 40 hours per week. Total unpaid work (housework plus subsistence production) has barely changed, averaging 40.1 hours in the nineteenth century and in 1985-99.

³² An exception to this narrative is Bianchi (2000), who argues that there was little change in the time US mothers spent in childcare over the twentieth century. Mothers spent an average of 1.2 hours per day caring for family members in both the 1920s and the 1970s (p. 404).

³³ Whittle (2019) uses the term "SNA work", but since the term GDP is more familiar than SNA, I find the term "GDP work" more transparent.

Women's GDP work actually went down over this period, from 31.1 hours per week to 19.3 hours per week, as women shifted from subsistence production to housework and care work. This decline in GDP work seems to follow a long-run trend. Whittle (2024, p. 16) estimates that women in early modern Britain spent 75.8 percent of their time in work activities that count towards GDP. Table 7 suggests that Western European women spent 53.3 percent of their time on GDP work in the late nineteenth century and 32.5 percent in the late twentieth century. Thus the long-run trend over multiple centuries is for women to spend less of their time in GDP work and more of their time on housework, exactly the opposite of the story that is usually told.

Eastern Europe saw much more substantial changes in women's work as the communist regimes of Eastern Europe made a specific effort to move women into paid work. For Eastern Europe without Russia we see a much more substantial increase in market work than in Western Europe, with market hours almost doubling between the later nineteenth century and the 1960s. Eastern European women did more subsistence production than Western European women in the nineteenth century, but the change over time is similar, as subsistence production disappeared but housework ate up most of the extra time. Women's total unpaid work decreased only 1.1 hours per week. The increased hours spent on market work came mainly from these women's leisure hours.

The USSR was one of the pioneers of time-use studies, so we have Russian surveys from the early twentieth century. Table 7 includes time use data from two studies of factory workers and clerical workers in Russian cities. The 1923 and 1930 surveys include a category for "home production, vegetable gardening, crafts for sale, etc." so we have a measure of subsistence production in those years. The difference between the Le Play sample and the 1923 survey may partially be the result of differences in sample composition, since the 1923 survey does not include rural households. Still, we see a pronounced decline in subsistence production between 1923 and 1930 across two similar surveys. Until 1930 the Russian pattern was similar to that elsewhere in Eastern Europe: women's market work increased, and, while subsistence production decreased, the extra time went into housework and women's leisure declined. If we add subsistence production to housework, Russian women were doing more unpaid work in 1930 than were the nineteenth-century Russian households described by Le Play. Fortunately women's housework hours declined substantially between 1930 and 1965, enough that their total hours of work could decrease even while their market hours increased.

Comparing time use in the late nineteenth century and the late twentieth century misses some changes that occurred during the first half of the twentieth century. Figure 5 plots the number of hours that adult women spent in housework and childcare over time. For Western Europe the figure reveals that time spent on housework in the middle of the twentieth century was quite high, higher than either during the late nineteenth century or at the end of the twentieth century. Unfortunately, we have very little data for the early twentieth century. Gershuny (2000, p. 66) concludes that in the 1930s typical UK housewife spent around 47 hours per week on housework, with middle class housewives doing half as much as working-class housewives. Between the 1930s and 1960 the two groups converged, with housework by middle-class housewives increasing substantially and housework by working-class housewives declining slightly. For Eastern Europe we do not observe what happened after 1965, but for Russia housework hours peaked in 1930 and then declined between 1930 and 1960.

While we do not have enough data to determine the exact timing of the increase, we do know *why* time spent on housework increased around the turn of the twentieth century. The increase in unpaid housework resulted from two changes: increased standards of household comfort and cleanliness, and a decrease in paid housework.³⁴ Following the discovery of germs reformers and advertisers worked to convince women that the health of their family depended on the cleanliness of their home (Mokyr, 2000). This campaign was successful enough to increase in the demand for housework as "the perceived marginal product of housework increased sharply in the last third of the nineteenth century" (Mokyr, 2000, p. 3). Another reason for the increase in housework was the decline of paid servants (Ramey 2009 p. 38, Bourke 1993 p. 60). In Western Europe the percentage of the female labor force working as domestic servants fell substantially between 1900 and 1960, as fewer women were willing to take such jobs (Tilly and Scott, 1987, p. 154; Simonton p. 201–6). The decline in servants resulted in the shift of a substantial amount of housework from paid work to unpaid work. While it is possible that fewer total work hours were spent on domestic services, the fraction of the work that was unpaid increased.

The increase in unpaid housework time between the late nineteenth and early twentieth centuries continues a long-run trend. Humphries (2024b) finds that expectations of domestic comfort increased in Britain between 1270 and 1860, increasing the time women spent on cleaning and laundry. Medieval parents spent very little time on childcare; infants were left alone near the fire, and toddlers were left to wander outdoors by themselves (Hanawalt, 1977). What we know about women's time use in the early modern period suggests that women spent even less time on housework than they did in the nineteenth century. In early modern Britain women spent 40 percent of their time on housework and care work, but much of this was paid work by servants, and the majority of the care work was medical services that women performed for people outside of their own household (Whittle 2024). Whittle (2024, p. 16) estimates that, in early modern Britain, married women spent only 17 percent of their work time on unpaid housework and care work for their own families. This is substantially less than the 41 percent that we find in Table 4. In early modern Swedish women spent only eight percent of their time on food and accommodation, and six percent on care work (Lindström, Fiebranz and Rydén, 2017, p. 31). If Swedish women worked a total of 55 hours this would imply that they spent less than eight hours per week on housework, some of which was probably paid work.

The first half of the twentieth century thus seems to have been a time when housework hours were usually high. Bianchi et. al. (2000, p. 218) comment that "the lore regarding mid-twentieth-century housewives, who ironed even the sheets that the family slept on, may indicate that in midcentury there was an overvaluation of housework." This time allocation was not representative of earlier time periods but was in fact historically unusual. The middle of the twentieth century thus seems to have been the historical high point of housework. While housework hours have decreased since 1960, women today spend more time on housework than did pre-industrial women.

If women's housework hours were particularly high at the middle of the twentieth century, were their market hours particularly low? Table 7 demonstrates that a negative relationship between

³⁴ For the US, Cowan (1983) documents an increase in expectations for a greater variety of food and greater frequency of laundry during the 19th century.

the two is not required.³⁵ Goldin (1995) has suggested that women's labor force participation followed a U-shape, but the statistical basis of her claim is the cross-sectional relationship between female labor force participation and GDP per capita for various countries in the 1980s. There is some historical evidence of the declining portion of the U. Horrell and Humphries (1995) find declining labor force participation for English women during the first half of the nineteenth century. In the *New Survey of London Life and Labour (1928-32)*, which collected detailed information on earnings, only one third of all women, and seven percent of married women, worked for pay (Bean 2015).³⁶ Britain, however, may not be representative of Europe as a whole. Humphries and Sarasua (2012, p. 44) suggest that the U-shaped curve may exist in certain situations but "is, partly at least, a statistical mirage." The entire debate, though, is carried out in terms of participation rates and not hours of work. As I argued above, labor force participation rates, even if accurately measured, do not accurately describe women's work.

VI. Work Outside the Home

Historical and contemporary discussion of women's work frequently refer to women who work "outside the home." Here are some examples of the widespread use of this term:

- "The outstanding feature of this rising tide has been the growing number of married women working outside their homes." (Myrdal and Klein, 1968, p. 60)
- "All that has now changed. Wives are working outside the home in what is much less of a man's world than it used to be." (Young and Willmott, 1973, p. 94)
- "In 1920 it was rare to find married women working outside the home; today about 40 percent of them are in the labor force." (Vanek, 1974, p. 118)
- "in the community Anderson studies [Preston] the livelihood of the household depended on married women working out of the home." (Wall, 1983, p. 33)
- "Women, though they worked in the sense of having occupations, often tiring and time-consuming ones, relatively rarely had jobs outside the home." (Laurence, 1996, p. 114)
- "Married women's 'double burden' or 'second shift' began when they started to work outside of the home." (Beaujot, 2000, p. 186)
- "Widespread work for pay outside the home and work in the highest echelons of society would have been unheard of for women of a century ago." (Costa, 2000, p. 101)
- "By attending to the physical and emotional needs of their relatives, they contributed to a positive social environment and enabled men to pursue work outside the home." (McIntosh, 2005, p. 3)
- "Under this domestic regime, it became inappropriate for women to work outside the home." (Van Poppel, Van Dalen, and Walhout, 2009, p. 102)
- "Historically speaking, married women did not work outside of the home. . . . In 1900 only 5 percent of married women worked." (Greenwood, 2018, p. xiv and 45)
- "married women's labor – at least labor outside the house – was usually frowned upon in light of the increasingly pressing domesticity norm" (Boter and Woltjer, 2020, p. 790)
- "Over the course of the entire century, more and more women worked outside the home, and women became an ever-larger percentage of the wage labor force." (Putnam and Garrett, 2020, p. 255)
- "Before the 1940s, married women, even those without children, were not supposed to work outside their homes." (Goldin, 2021, p. 85)
- "Like many women at the time, Caroline did not report an occupation so likely did not work outside the home." (Abranitzky and Boustan, 2022, p. 26)

³⁵ In the early twentieth century Russian women increased both their housework and market work hours.

³⁶ Hatton and Baily (2001) argue that the survey confirms the accuracy of the female participation rates derived from the censuses.

Often the phrase "work outside the home" is a polite way of saying that housework doesn't count as work. Unfortunately the term generally conflates two different issues. Work outside the home might refer to the physical location of the work, or it might mean work for the market rather than work maintaining the household.³⁷ Few researchers specify exactly what they mean by the term because work outside the home is assumed to be paid, and work inside the home is assumed to be unpaid. Neither assumption was true in the nineteenth century. I argue that we should stop using this term because it contains inaccurate assumptions and prevents us from understanding what work women did and where they did it.

Economists typically equate work "in the home" with domestic services. Economic models generally assume only three possible uses of time (market work, household production, and leisure), and household production is assumed to be domestic services (Gronau 1977, Greenwood 2018). This assumption reflects the time use data we have for contemporary families: Aguiar and Hurst (2007) report time spent in market work, nonmarket work, and childcare; nonmarket work includes "meal preparation and cleanup, doing laundry, ironing, dusting vacuuming, indoor housecleaning and indoor design and maintenance," plus "obtaining goods and services" and "home maintenance, outdoor cleaning, vehicle repair, gardening, and pet care." (979). In the past, however, non-market production included a much wider range of tasks, including agriculture and manufacturing.

Much preindustrial work, market or non-market, was centered in the home. For peasant farmers and artisans the workplace and the home were the same place. For example, the home of an English weaver served both domestic and industrial purposes:

My uncle's domicile, like all the others, consisted of one principal room called 'the house'; one the same floor with this was a loom-shop capable of containing four looms, and in the rear of the house on the same floor, were a small kitchen and a buttery. Over the house and the loom-shop were chambers; and over the kitchen and buttery was another small apartment, and a flight of stairs. (Samuel Bamford, "Early Days, 1849," quoted in Tilly and Scott, 1978, p. 12)

Examining urban homes in nineteenth-century England, Barker (2017, p. 170) concludes that "around a third to two-thirds of all internal space was given over predominantly or entirely to business use." The eighteenth century saw an important separation of home and work (Davidoff and Hall, 1986), but even in the later nineteenth century the location of work does not tell us whether the work was market or non-market production.

Table 8 examines the location of paid work, subsistence production, and housework. I classify all tasks by their location. Since I was unsure of whether the household's own fields and barnyard should count as "at home" or "away from home", I categorize work locations into three different categories: in the home, in the households' fields or barnyard, and out of the home. The "fields" category includes only work done on land occupied by the household; any work done in someone else's fields counts as work outside of the home. All work in the fields was agricultural.

While work outside the home tends to be market work, the relationship is not strong enough that we could rely on the location of work to tell us whether it was paid or unpaid. We find work of

³⁷ Whittle (2019, p. 39) noted this problem for the term "domestic work", which might mean housework, work done in the home, or subsistence work.

all types in all locations, with the exception that no housework was done in the fields. Men did just over half of their market work out of the house, but they also did a significant minority of their market work in the house (17%) or in their fields (30%). Men did the majority of their housework in the house, but did one-third of it outside (collecting firewood). Unsurprisingly, the majority of subsistence production took place in the family's fields. Of the work men did outside the house, 93 percent was market work, but it is also true that 81 percent of the work they did inside the house was market work.

While men did most of their market work outside the house, women did almost half of their market work in the house, and only 22 percent out of the house. Most of their housework took place in the home, but two percent of housework (including some laundry) took place outside of the house. Women spent 69 percent of their work time in the house, but only 64 percent of this time was spent on housework; 22 percent of time in their homes was spent on market work.

For both men and women at least one-third of work time was spent in the off-diagonals. Thus we should not assume that all work located in the home was non-market work, or that all work located outside the home was market work. If we do we will mis-measure the time that women and men spent in market activity. While women spent only 9.6 percent of their time out of the house, this does not mean that they spent only 9.6 percent of their time working for the market. In fact they spent 31 percent of their time working for the market. While men spent 17 percent of their time in the house, they only spent three percent of their time on housework. Clearly we should distinguish between unpaid work and work located in the home, as they are not the same thing.

Earlier centuries also saw women and men doing much of their work in their homes. In Germany in 1646-1800, wives worked in a "domestic location" 53 percent of the time, compared to 41 percent for husbands (Ogilvie 2003, p. 147). In sixteenth- and seventeenth-century England, women did 49 percent of their work indoors, compared to 29 percent for men (Whittle and Hailwood, 2020, p. 21). Examining records of accidental deaths in medieval England, Hanawalt (1986, p. 7) finds that only 21 percent of women's deaths were in the house or close (compared to 8 percent for men).

Nor should we assume that domestic services were always unpaid, or only provided by women for their own households (Whittle, 2019 and 2024). Domestic services were very much in the market. Both live-in servants and women working by the day were hired to do housework. Some domestic services were done in a different location; children might be sent out to wet-nurses, and laundry sent out. In the Le Play households we find a number of workers of both genders engaged in domestic services as paid work. One wife took in laundry, and one family ran a laundry, employing all 4 family members full-time plus a hired male servant.³⁸ The wife of the Sheffield carpenter took in a three-year-old child, for which she was paid; Le Play puts the value of this payment at 325 francs, or about 23 percent of the husband's annual earnings.³⁹ Overall 13 percent of the domestic work in the sample was paid.

³⁸ Le Play, 1877, vol 4 ch. 2, and vol. 5 ch. 8.

³⁹ Le Play, 1877, vol. 2 ch. 8.

The ambiguity of the term "work outside the home" is not only historical. The pandemic forced many workers to shift work from the office to their homes, and some of these workers never returned to the office (Barrero, Bloom, and Davis, 2022). In 2021, British workers averaged two days per week of work from home, while workers in France, Austria, and Spain averaged 1.3 days per week (Aksoy et. al., 2022, p. 291). While work-from-home rates are unlikely to remain as high as in 2021, they are also unlikely to return to the pre-pandemic levels. Some amount of working from home is here to stay. Thus today we have many workers of both sexes who do not "work outside the home" but are definitely engaged in paid work in the labor market.

To avoid confusion, we should only use the term "work outside the home" when we actually mean the physical location of the work. We should not assume that women working in their homes were unpaid or that they are engaged in domestic services. We should use the term "market work" or "paid work" when we want to distinguish paid from unpaid work, and we should use the term "work outside" the home to signify the location of work.

VII. Conclusion

I conclude that the twentieth century was not characterized by an unprecedented shift of women's work into the market. Compared to the late nineteenth century, European women today do a bit more market work, but they do less GDP work. They spend more, not less time on unpaid housework than they did in the later nineteenth century. How did we get the story so wrong? One mistake was focusing on a relatively short time horizon. If we only look at the twentieth century the temptation is to see 1900 as typical of the centuries before. Changes since 1950 seem larger and more important if we haven't put them in historical context. It is also tempting to assume that household machinery decreased housework, since the same tasks could be done in less time. Here the mistakes are assuming that the quantity of domestic services people consumed didn't change over time and failing to consider how much domestic labor was purchased in the market (Cowan 1983). Another mistake is to count all work that women did in the home as housework, even if that work was in agriculture or manufacturing, and even if it was paid. As Whittle (2019) notes, we never make this mistake for men's work. Finally, we have been misled by the measure that we use to describe women's work; labor force participation in particular has played an important role in blinding us to the real changes in women's work.

If we wish to measure accurately the historical changes in women's work, we should start by abandoning the terms that are unfit to measure the historical reality. Because women have always engaged in many different types of work we should stop using a binary measure such as labor force participation to measure their work. Instead we should focus on continuous measures such as time use. We should also avoid the term "work outside the home" because it confuses market participation with the location of the work.

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Table 1: Labor Accounts for the family of Antoine F. , 1858

Days per year

	Antoine	Maria	Anne	Etienne
Vineyard work for others	192			
Harvest work	50			
Work on the roads	3			
Work in the family-owned vineyard	36	2		
Cultivation of rented land	18.4			
Care of cow and transportation of milk		88		
Housework (<i>travaux de ménage</i>)		102	25	
Care of a pig		14		
Making bread		12		
Laundry		26		
Mending clothes and linens		20	20	
Fishing	24	9		18
Gardening		7		
Collecting snails	3		3	2
Collecting greens for the cow		30	75	
Total	326.4	310	123	20

Source: Le Play, *Les Ouvriers Européens*, vol. 6, ch. 4.

Table 2: Descriptive Statistics

	All Age 5 and over	All Workers	Male Workers	Female Workers	Men 20-64	Women 20-64
AVERAGE						
Age	27.21 (18.10)	31.70 (16.66)	31.99 (17.38)	31.36 (15.80)	38.96 (12.58)	36.94 (10.47)
Total Days Work	215.69 (139.47)	277.11 (89.14)	271.77 (88.97)	283.34 (89.14)	305.11 (44.38)	311.80 (50.23)
Days Market Work	122.37 (123.72)	157.21 (119.09)	206.05 (114.05)	100.19 (97.78)	238.69 (96.16)	97.48 (87.74)
Days Housework	43.70 (74.03)	56.15 (79.65)	9.56 (17.73)	110.54 (88.87)	8.54 (16.46)	141.52 (85.11)
Days Subsistence Production	49.62 (68.00)	63.75 (71.00)	56.16 (70.24)	72.61 (71.02)	57.87 (71.05)	72.80 (67.79)
PERCENT						
Head of household	18.5	23.7	43.4	1.0	63.0	1.4
Married	42.6	54.7	50.8	59.3	73.5	83.2
France	56.7	58.3	57.0	59.8	55.6	56.6
England	5.8	5.1	4.1	6.2	4.9	6.3
Low Countries	8.2	7.5	8.2	6.7	8.6	7.0
North	6.2	5.3	6.1	4.3	4.9	5.6
South	10.5	11.0	11.1	11.0	11.7	11.2
East	5.0	4.0	4.5	3.3	5.6	4.9
Russia	7.6	8.8	9.0	8.6	8.6	8.4
N	582	453	244	209	162	143

Table 3: Comparisons with other Samples

	Britain		Belgium		
	Le Play	1846-65	Le Play	1853	1891
Percent of wives doing any market work	86	60.5	75	83.7	11.2
Average days of market work by wife, per year	74		61	154	
Husband's contribution to cash income	77.1	79.1	72.0	51.5	65.6
Wife's contribution to cash income	11.9	3.4	11.9	10.1	1.2
Children's contribution to cash income	9.3	16.8	12.0	22.4	31.4
Number of budgets	7	195	8	141	116

Source notes: Data for Britain 1846-65 is from Horrell and Humphries (1995). They present the data in six different categories by husband's occupation, and I have calculated the weighted average. Data for Belgium in 1853 and 1891 is from Alter (1984). Le Play averages are from the data used in this paper.

Table 4: Weighted Averages of Time Use in Late-Nineteenth-Century Europe
Days per Year

	Adult Men				Adult Women			
	Market Work	Production for Use	House -work	Total Work	Market Work	Production for Use	House -work	Total Work
Europe	218.5	61.6	12.3	292.4	69.9	108.5	125.5	303.9
Western Europe	262.0	35.1	7.4	304.4	94.9	67.3	141.8	304.0
Eastern Europe	154.3	100.7	19.6	274.6	33.0	169.3	101.5	303.8

Sources: Le Play, Les Ouvriers Européens and Deux Mondes. Weighted by population for 1880 from B.R. Mitchell, 1998, International Historical Statistics.

Table 5: Comparison of Labor Force Participation Rates and Market Work Time

	Labor Force Participation Rate		Percent of the Year in Market	Market Work as a Percent of All Work
	Any Days	Regular Work		
All Adult Women	87.4	15.4	26.3	30.1
Married Women	85.7	12.6	23.0	26.0
Single Adult Women	95.8	29.2	42.3	50.4
All Adult Men	100.0	65.4	65.2	76.8
Married Men	100.0	71.4	67.5	78.8
Single Adult Men	100.0	48.8	58.6	71.3

Notes: Limited to adults age 20 to 64. Percent of the year is the the number of days of market work as a percent of either 365 or the total number of days worked, whichever is greater. Percent of all work in the market is the number of days of market work divided by the total number of days of work.

Table 6: Measures of Work Diversity

	Percent of Time on Top Task	Percent of Time on Top Market Task	HHI
All Men 20-64	77.9	82.8	0.693
Married Men	79.5	84.4	0.707
Single Men 20-64	73.5	78.3	0.653
Teen Boys	81.0	87.0	0.732
All Women 20-64	59.5	82.0	0.482
Married Women	59.1	82.0	0.477
Single Women 20-64	61.6	82.3	0.511
Teen Girls	66.1	80.9	0.565

Table 7: Changes in Time Use by Adult Women
Hours per week, weighted averages

	Market Work	Subsistence Production	Housework	Total Work
Western Europe				
1844-95	18.2	12.9	27.2	58.3
1960-73	19.6		40.8	60.3
1985-99	19.3		40.1	59.4
Eastern Europe w/o Russia				
1844-95	14.4	23.3	24.4	62.1
1960-73	27.8		46.6	74.4
Russia				
1844-95	2.9	36.3	17.4	56.6
1923, Factory workers	18.7	10.5	55.5	84.7
1930, Factory and clerical wkrs	23.9	3.7	54.4	82.0
1965	37.2		34.3	71.5

Note: Housework includes childcare.

Sources: Averages for Western and Eastern Europe are weighted by country population using data from Mitchell (1998). Nineteenth-century data are from Le Play, *Les Ouvriers Européens* and *Deux Mondes*. Twentieth-century data for all countries except Russia are from Gershuny (2000) Ch. 7. Twentieth-century Russian data is from Zuzanek (1980) and Szalai (1972). Zuzanek (1980, p. 178, 182) reports time spent on "home production, vegetable gardening, crafts for sale, etc." which I count as production for use. The 1923 Russian data are from a survey of factory workers and their families in twelve cities. The 1930 Russian data are from a survey of factory workers and white-collar clerical employees in Moscow and Moscow province which includes 127 employed women and 114 housewives.

Table 8 The Location of Work

A. Adult Men

Days per year (row percent) [column percent]

	Market Work	Subsistence Production	Housework	Total
In the house	42.29 (80.7) [17.7]	4.37 (8.3) [7.5]	5.74 (11.0) [67.2]	52.40 (100.0) [17.2]
Fields/barnyard occupied by household	47.25 (51.1) [19.8]	45.19 (48.9) [78.0]	0.0	92.44 (100.0) [30.3]
Out of the house	149.11 (93.0) [62.6]	8.35 (5.2) [14.4]	2.80 (1.7) [32.8]	160.26 (100.0) [52.5]
Total	238.65 (78.2) [100.0]	57.91 (19.0) [100.0]	8.54 (2.8) [100.0]	305.11 (100.0) [100.0]

B. Adult Women

Days per year (row percent) [column percent]

	Market Work	Subsistence Production	Housework	Total
In the house	46.67 (21.6) [47.9]	30.71 (14.2) [42.0]	138.43 (64.1) [98.1]	215.82 (100.0) [69.2]
Fields/barnyard occupied by household	29.17 (44.3) [29.9]	36.65 (55.7) [50.1]		65.82 (100.0) [21.1]
Out of the house	21.55 (71.7) [22.1]	5.82 (19.4) [8.0]	2.70 (9.0) [1.9]	30.08 (100.0) [9.6]
Total	97.39 (31.2) [100.0]	73.18 (23.5) [100.0]	141.14 (45.3) [100.0]	311.71 (100.0) [100.0]

Figure 1 Days of Market Work for Adult Women

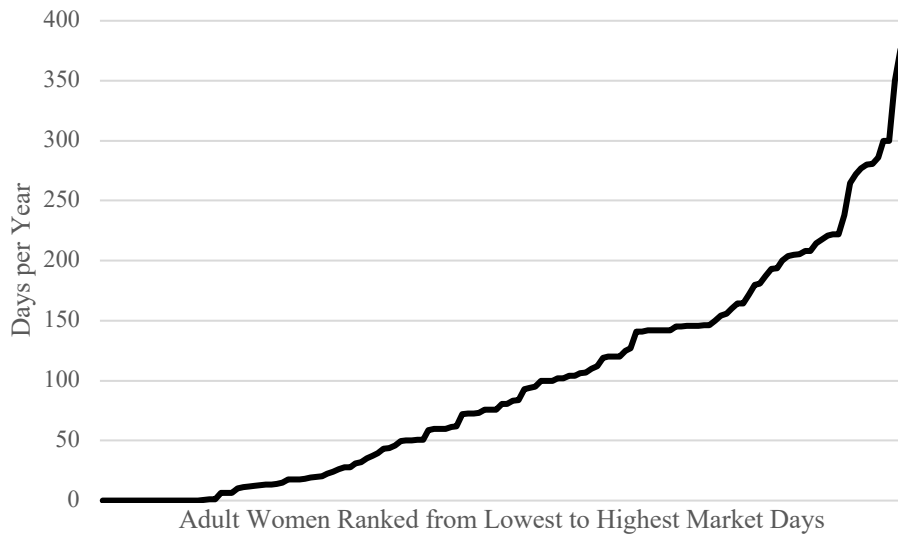


Figure 2 Days of Housework for Adult Women

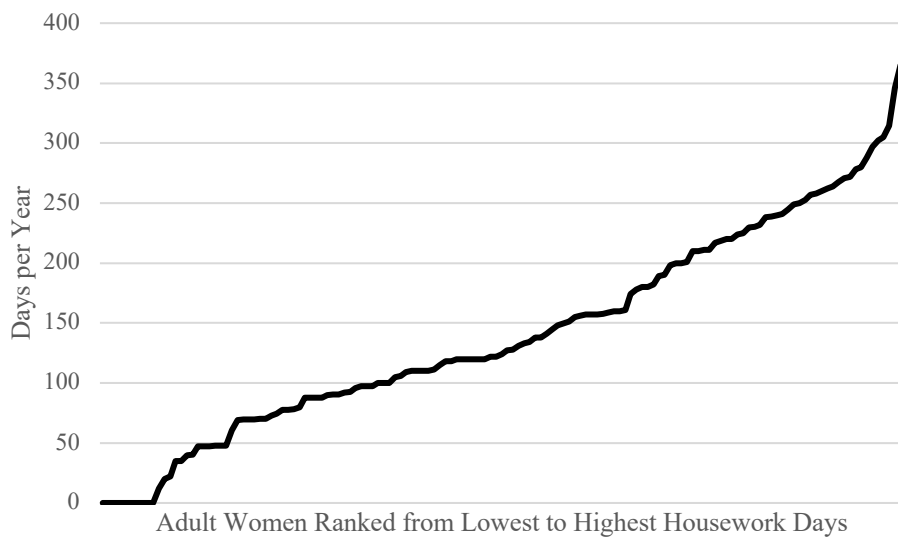


Figure 3: Days Worked per Year by Demographic Group

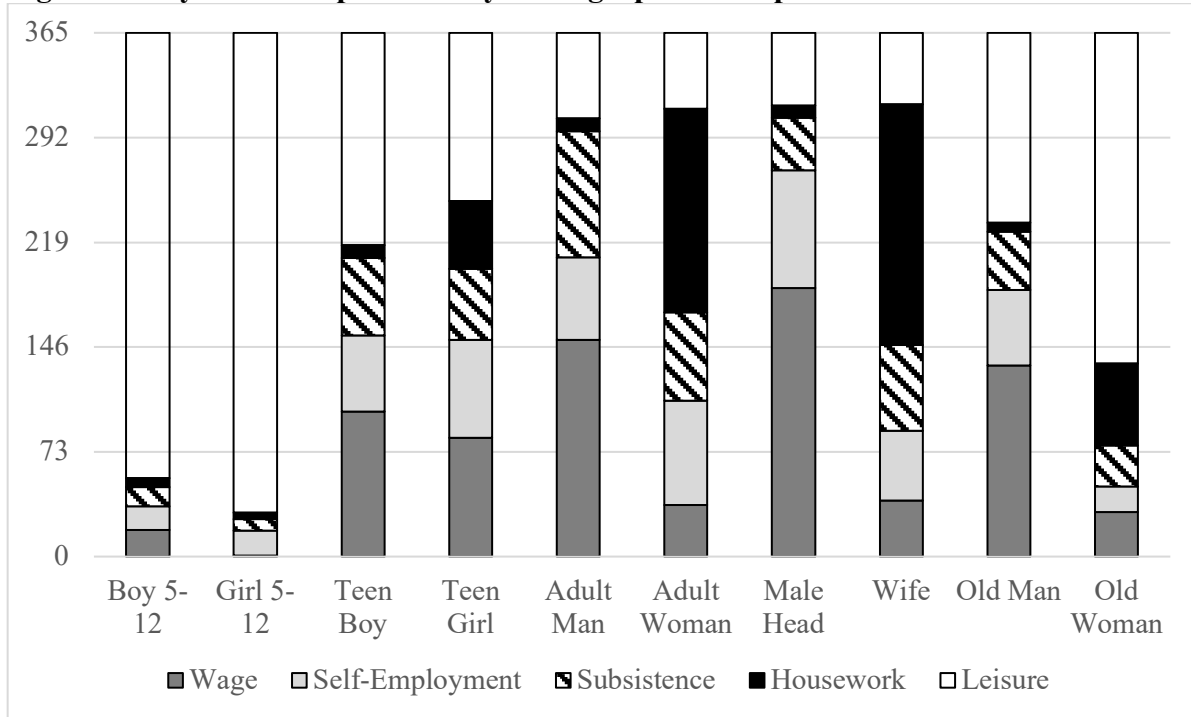


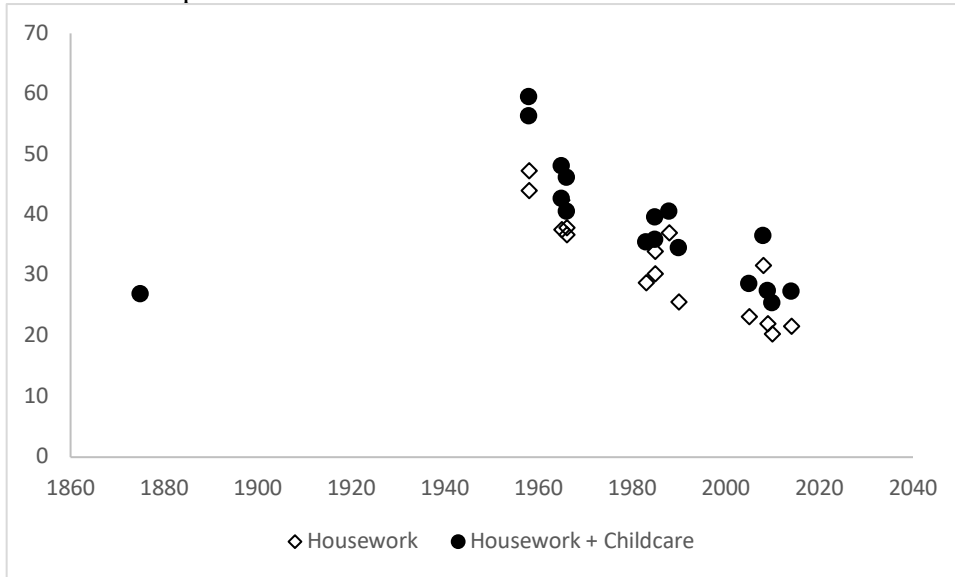
Figure 4 Days Worked per Year by Region



Note: The North includes Scandinavia, the Low Countries, Germany, and France north of Orleans. The East includes Austria, Bulgaria, Hungary, Russia, Slovakia, Slovenia, and Switzerland. The South Spain, Italy, and France south of Orleans.

Figure 5 Weekly Housework Hours for Adult Women

A. Western Europe



Sources: Nineteenth-century data is from Le Play, *Les Ouvriers Européens* and *Deux Mondes*, weighted by population for 1880 from B.R. Mitchell, 1998, *International Historical Statistics*. Twentieth-century data is from Girard (1958); Girard and Bastide (1959); Szalai (1972; Pailhe, Solaz and Stanfors (2021).

B. Eastern Europe

Hours per week, including childcare



Sources: Nineteenth-century data is from Le Play, *Les Ouvriers Européens* and *Deux Mondes*, weighted by population for 1880 from B.R. Mitchell, 1998, *International Historical Statistics*. Data for 1923 and 1930 is from Zuzanek (1980). Data from 1965 is from Szalai (1972).