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9 June 2020

Online at <https://mpra.ub.uni-muenchen.de/102142/>
MPRA Paper No. 102142, posted 15 Sep 2020 14:06 UTC

Breadwinner, bread maker.

Gender division of labor and intrahousehold inequality in 1930s rural Italy

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This draft: June 9, 2020

Abstract

This paper offers a quantitative description of gender segregation in productive roles, and of its consequences on basic dimensions of women's and girls' wellbeing, among rural households in interwar Italy. It uses microdata assembled from a collection of family monographs, which recount the lives, work, and consumption behavior of more than 800 men and women. It finds that, despite the emphasis put by the qualitative literature on non-stereotypical examples of female work, a rigid gender-based division of labor was the rule. An investigation of household nutrition and expenditures does not offer definitive proof of gender bias in intrahousehold resource allocation, in spite of anecdotal evidence. Nevertheless, women commanded a lower share of total household income, while putting in as many or more working hours than men.

JEL codes: D13, J16, N30, N50, Q12

Keywords: gender; intrahousehold inequality; agriculture; Italy; interwar; Fascism.

Acknowledgements: I am grateful to Brian A'Hearn, Maria Luisa Betri, Rosellina Gosi, Giovanni Vecchi, and participants to the 8th EH-Tune Workshop in Siena for their suggestions. I am also thankful to Stefano Chianese and Massimiliano Spina for their guidance in navigating the sources that are at the basis of this work. The usual disclaimer applies.

1 Introduction

A classic feminist critique of modernization points to the “marginalizing” effects of economic development on women: during the initial phases of industrialization, structural change alters the gender division of labor, restricting women’s economic opportunities and increasing their dependence on male wages (often cited as a champion of this view is Boserup, 1970). In economic history, the discussion of female marginalization has been most lively in relation to women’s changing status during Britain’s Industrial Revolution (Horrell and Humphries, 1995; Sharpe, 1996), and a related literature has tested the implications of women’s diminished economic independence for their bargaining power within the household, their ability to secure resources for themselves and their daughters, and the most basic dimensions of their wellbeing (Nicholas and Oxley 1993; Horrell and Oxley 1999; 2013; 2016).

When applied to the case of a “latecomer” like Italy, the question of women’s changing economic role and wellbeing calls for a shift in focus. For most of its history, until the Economic Miracle of the 1950s and 1960s, Italy remained relatively backward and primarily agricultural. Evidence from adjusted census figures shows that gender gaps in female labor force participation are relatively small in Italy before World War 2 (Mancini, 2018): the apparent implication that, for most of Italy’s history, gender differentiation in economic roles was low, and that men and women could have been sharing (scarce) resources from similar bargaining positions, must be tempered by stressing that descriptions of women’s marginalization in a pre-industrial economy require more nuanced indicators. Measures like labor force participation and wages lose much of their power in such a context, where virtually all household members contribute some work to the family enterprise, and most labor is not salaried.

This paper offers a first-time quantitative account of the extent of gender inequality in productive roles, and of its potential consequences on basic dimensions of women’s and girls’ wellbeing, among rural households in Italy during the 1930s. This moment in the country’s history is a good starting point for a quantitative study of the gender division of labor in agriculture: Italy had yet to undergo the radical

changes that would transform it into a truly modern economy, and its agriculture at that point can still be considered “traditional” (Federico and Martinelli, 2015), yet at the same time, statistical practice had developed enough to generate a treasure trove of micro-level empirical evidence.

The analysis is based on a micro-dataset describing productive activities, time use, incomes, expenditures, and nutrition of more than 100 rural households – 800 individuals – observed during the 1930s all over the Italian territory. Information is sourced from a collection of family monographs (many of them compiled by the *Istituto Nazionale di Economia Agraria*, Inea), that offer minute descriptions of the lives and work of men, women and children in rural households. The dataset has been compiled and harmonized as part of the Historical Household Budgets Project at the University of Rome Tor Vergata (A’Hearn et al. 2016).

In partial contrast to the qualitative literature (Salvatici, 1999), results on time use, tasks performed and income sources point to a deep gender segregation of production, operating in all modes of agricultural production, from smallholding to sharecropping to day labor. Although farming was hardly an exclusively male job – to some extent, all household members were involved in farm work – women spent most of their time in unremunerated activities that were exclusively their responsibility (home chores, care of dependents, but also own-production of food and non-food items). Because these non-commodified activities generated little or no income, women could command a low share of the household’ resources. An analysis of potential consequences of the gender polarization of productive roles on intrahousehold inequality finds that, although the presence of young girls turns out to be negatively associated with per capita calorie and nutrient intakes, and despite some anecdotal evidence of male favoritism, a formal test of gender bias in expenditure (Deaton, 1989; Deaton et al., 1989) does not deliver conclusive results.

The paper is organized as follows: section 2 describes the sources and data at the basis of the analysis; section 3 presents measures of the gender polarization of productive tasks; section 4 explores gender patterns in household consumption and nutrition, and tests for gender bias in expenditure allocation; section 5 concludes.

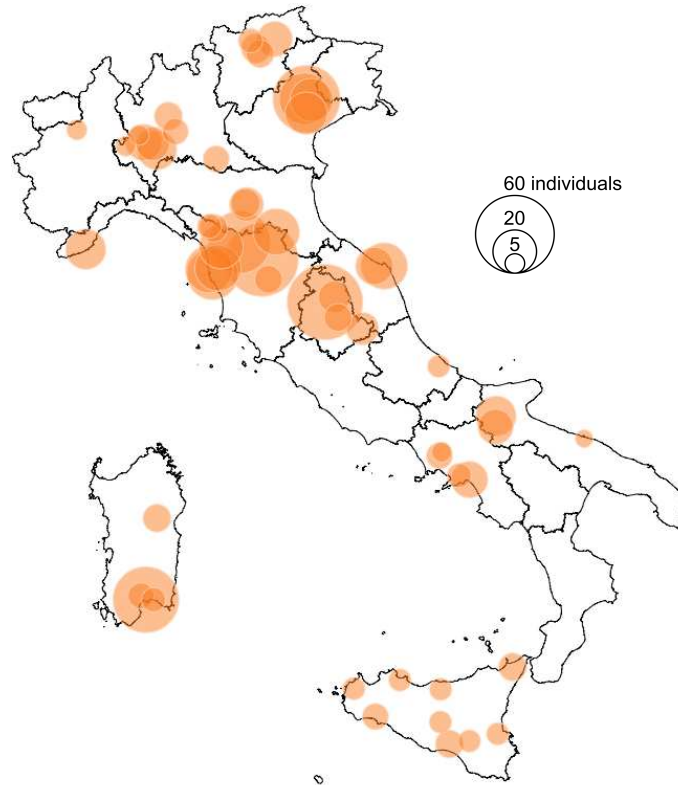
2 Sources and data

The data for this study comes from a collection of sources that contain information about 108 rural households (805 individuals).¹ The sources provide detailed records of household incomes, expenditures, and wealth over the previous year, and information on family members: demographics, education, work activities, time use. In terms of time of observation, the sources are scattered over the years 1928 to 1939, but more than 80% of the data was collected between 1932 and 1934.

There is considerable geographic variation in the sources, although some of Italy's regions are left unrepresented (Venezia-Giulia, Latium, Lucania, Calabria): Figure 1 provides an overview, before the issue of coverage is discussed in more detail below.

¹ For the purposes of this paper, a "rural" household is one where the household head is employed in the agricultural sector. Although current practice determines "rural" status based on criteria like population density and remoteness, the sector of activity of the household head is more frequently used by historical sources. Selecting microdata based on head occupation greatly facilitates comparisons with available historical aggregate indicators (from population censuses, for instance). Adopting this criterion has the consequence of leaving out more "marginal" groups living in rural areas, namely households whose members were not employed. However, these groups are unfortunately very challenging to represent using historical (an even modern) data.

Figure 1 – Geographical distribution of individuals



About 85% of the total number of households come from the ‘Monographs of agricultural families’ (*Monografie di famiglie agricole*) compiled during the 1930s by the National Institute of Agricultural Economics (Istituto Nazionale di Economia Agraria, Inea), a research institute founded in 1924 by the agrarian economist, and under-secretary of the Ministry of Agriculture, Arrigo Serpieri. The Institute’s mission was the collection of information and statistics on agriculture, and the family monographs were compiled with the goal of studying the living conditions of rural families, in the midst of an especially difficult conjuncture. Inea adopted the approach developed by late 19th century French social scientist Frédéric le Play: as in the natural sciences, families were thought of as specimens representing a “type”, a single in-depth portrait fully exhausting the representation of its group of origin. Inea’s interviewers observed families for extended periods of time, and organized observations following a rigid scheme, which encompassed a number of different domains; the result was a limited number of detailed, almost ethnographic portraits

of families, complete with quantitative information (descriptions of customs, mentality, family history, habits, tastes, in addition to the more standard sections on wealth, incomes and expenditures) (Serpieri, 1929). The monographs retained a measure of comparability, because of the common conceptual framework (Chianese and Vecchi, 2017).

The leplayian approach had already left the mainstream at the time, replaced in most other European countries by large-scale surveys and statistical sampling. However, Serpieri remarked, comparing Inea to the recently founded Italian National Statistical Institute (Istat): “[Istat], with the land survey, with various censuses, with the service of annual agricultural statistics, makes a purely statistical contribution. We, of the [Inea], being thoroughly convinced that numbers are very far from exhausting the knowledge of facts (and I personally, being convinced that many of the most interesting and characteristic aspects of rural life are not capable of statistical treatment) are attempting to bring into our studies the sociological and historical point of view” (Serpieri, 1935; cited in Tolaini, 2010)

Inea’s *Monographs of Agricultural Families* remain the core source for this paper, but the sample is augmented with 16 households sourced from other publications (either other projects by Inea, or stand-alone works authored by researchers that share the same methodology). Information from these additional sources is harmonized following the same scheme used for the core monographs. Appendix 1 provides a reference list, and the number of households sourced from each publication.

The relevance of Inea monographs as a source for the study of the economic conditions of farmers in the 1930s has not escaped economic historians. The pioneering work of Somogyi on household budgets and nutrition (Somogyi, 1959), Zamagni’s analysis of the incomes of social classes (Zamagni, 1980), Federico’s work on mercantilization (Federico, 1986; 1987), Vecchi’s long-run reconstruction of the living standards of Italians (Vecchi, 1994; 2017) have all put this data to use, in different ways. None of these contributions has taken a gender angle to the study of living standards. Such an angle is instead adopted by historian Silvia Salvatici, in

her work on peasant women in fascist Italy based on the monographs (Salvatici, 1995; 1999); because of its relevance for the present paper, her research will be examined in more detail in Section 4.

Family monographs are especially valuable for a quantitative analysis of women's work and wellbeing: the almost narrative approach, the amount of detail, the micro-level vantage point that the monographs offer, allow the modern analyst to build indicators based on "raw" observations, without having to rely exclusively on official statistics, which, because of their aggregate nature, are filtered through the stereotypical categorizations of women's role in the family and workforce prevailing at the time (population censuses are a prime example of these distortions: Mancini, 2018). The quotation marks around the notion of "raw" observations are obligatory, as the influence of the fascist ruralist ideology certainly shows through in the monographs as well. Inea's work was shaped by "the recognition that peasant farming and peasant families were to remain at the core of agricultural modernization", which hinged on the dedication and initiative of peasant smallholders (D'Onofrio, 2017). The idealized image of the industrious peasant family, both a keeper of traditions and, somewhat paradoxically, a savvy administrator of its small fortune, unafraid of modern innovations, went hand in hand with the *massaia rurale*, the ideal farmer's wife: dedicated, obedient, efficient in all tasks that were exclusively feminine – including mothering as many children as possible (Salvatici, 1999; Willson, 1997, 2002). Ruralism informed the viewpoints of Arrigo Serpieri, Ugo Giusti (who coordinated the actual implementation of the study), and reverberated all the way to the authors of each monograph. But there is enough factual information (plain descriptions of household and individual characteristics, minutely detailed records of incomes and expenditures), to allow an informed modern observer to filter out, for the most part, ideological and cultural biases, as shown by the repeated academic use of this material.

Another major drawback of the monographs, and a direct downside to the amount of detail that makes them so precious, is representativeness. The leplayian approach relies on "expert choice" sampling (Chianese and Vecchi, 2017: 508), which by its own design incorporates a degree of arbitrariness; it is also bound to deliver limited

coverage, precisely because of the laborious process required for recording each “data point”. A viable strategy to tackle these issues is post-stratification (Holt and Smith, 1979; Lohr, 1999). Here, the sample is divided into 2 by 3 cells (strata): by macro-area (North and Center; South and Islands) and by occupational category of the head of household (farmers-owners, or *conduttori*; leaseholders and sharecroppers, or *fittavoli* and *mezzadri*; day laborers, fixed contract laborers, and other professions, or *giornalieri* and *salariati fissi*). Sample totals are then reweighted to match actual population counts for the corresponding strata, sourced from the 1931 population census. Table 1 provides a breakdown of the sample of rural households by stratification cells, and the distribution of individuals in the sample and in the target population.

Table 1 – Coverage by post-stratification cells

Number of individuals in microdata sample				
	Farmers-owners	Leaseholders and sharecroppers	Day/fixed contract laborers, others	Total
North/Center	147	386	82	615
South/Islands	67	58	65	190
Italy	214	444	147	805
Distribution of individuals in microdata sample (%)				
	Farmers-owners	Leaseholders and sharecroppers	Day/fixed contract laborers, others	Total
North/Center	18.3	48.0	10.2	76.4
South/Islands	8.3	7.2	8.1	23.6
Italy	26.6	55.2	18.3	100.0
Distribution of individuals in population (%)				
	Farmers-owners	Leaseholders and sharecroppers	Day/fixed contract laborers, others	Total
North/Center	25.0	21.9	14.7	61.6
South/Islands	13.4	9.9	15.1	38.4
Italy	38.4	31.7	29.9	100.0

Note: Distribution of individuals in the population from the 1931 population census.

The sample is skewed towards the North and Center of Italy, while the South is underrepresented (as mentioned at the beginning of this section, Venezia-Giulia, Latium, Lucania, and Calabria are not represented). Among occupational categories, there is an overrepresentation of sharecroppers (this is due to the large number of Tuscan *mezzadri* included in Inea monographs) and an underrepresentation of wage workers (especially day laborers, or *avventizi*). Of course, post-stratification weights do not solve potential lack of representativeness *within* cells (for instance, regional under-coverage, or the fact that some occupational categories, like owners of “micro-plots”, were decidedly underrepresented by Inea: Federico, 1986: 164). However, no other source provides as varied a depiction of the different realities of rural Italy in the interwar period, and post-stratification resolves the unevenness of the sample along two of the most relevant dimensions of the composition of the population. All statistics presented in the rest of the paper are weighted by the post-stratification weights obtained via the procedure outlined above.²

² The average expansion factor we obtain is about 24,000. For comparison, the corresponding figure for the earliest available wave of the Bank of Italy’s Survey of Household Income and Wealth, in 1977, was about 6,000 (currently, it is around 4,000).

3 The gender division of labor in interwar rural Italy

Social historians who studied the lives and work of women in rural families in the interwar years agree that the image of the ideal peasant family featured in fascist propaganda – sustained by a male breadwinner, nurtured by a dedicated housewife – does not hold up to scrutiny. It is argued that the division of labor in rural families was far less rigid, and women’s work far more common and more similar to that of men, than what either the fascist agrarian rhetoric or the picture emerging from population censuses may have let on.³ The turmoil that the interwar period brought upon Italy had particularly violent effects on agriculture: the agrarian crisis, sparked by overproduction in the mid-1920s and exacerbated by the great depression between 1929 and 1934, interacted with fascist agricultural policies (the “Battle for Grain”, the “Integrated Land Reclamation” program, other protectionist and autarchic legislation); the prices of most agricultural goods fell dramatically, with grave repercussions on agricultural incomes and living conditions (Cohen, 1978; Toniolo, 1980; Nutzenadel, 2001; 2006). These events are believed to have pushed more women into the labor force: families had to make up for lost income, and maximize the family’s available labor input (Salvatici, 1995; 1999). Yet, this emphasis on women’s contribution to the household’s budget is often accompanied by an admission that the stereotype of their domesticity and subordination was grounded in reality.

Our knowledge of women’s work in the interwar period is caught between the two sides of this dichotomy – the domestic and the economic sphere, bread making and breadwinning – and while, to some extent, both were surely at play in women’s lived experience, it is not clear whether one of the two prevailed. In particular, the study

³ For example, despite the limited space devoted to farming women in De Grazia’s pivotal work on ‘How fascism ruled women’, the author comments on the sheer heaviness of women’s workload in rural families, “no matter how they were classified by the census” (De Grazia 1992; 182); Willson’s research on the fascist women’s organization of the ‘rural housewives’ (*massaie rurali*) opens with the remark that the economic role of women has been underestimated, and that “women’s work was essential to interwar agriculture” (Willson, 2002: 17); and one of Salvatici’s main conclusions is that women’s involvement in productive activities in rural contexts is at odds with notions of the “traditional” family, where men monopolize the breadwinning role (Salvatici, 1999: 223-224).

by Salvatici (1999) composes a picture of women's work by stringing together examples selected from Inea's monographs, and purposefully avoids reducing the complexity of women's roles within the family and the economy. But an interest in the degree of economic independence and command over resources that women could enjoy within the household justifies an attempt to resolve the ambiguity. In this section, women's experience as depicted in family monographs is approached within a cliometric framework, and reduced to some of its measurable dimensions – those that are most telling of the distribution of labor and income across genders. The advantages of a quantitative approach are not limited to its allowing for a more clear-cut understanding of women's work in interwar rural Italy; the availability of objective measures is a precondition for any interpretation of this specific time and place in comparative perspective, both over time, as a way of understanding the persistence and change of women's roles in Italy's history, and across countries.

The conceptual framework used to interpret productive activities in the discussion that follows is not standard, and needs to be illustrated. The modern standard concept of labor is based on the notion of a labor *market*: any activity that produces non-marketed goods and services is put in the generic category of *inactivity*. This definition is ill-suited to a pre-industrial context (to *any* context, some argue: Fenoaltea, 2018), and to the purposes of this paper. As an alternative, we borrow from the framework put forth by the Global Collaboratory on the History of Labour Relations (1500-2000), a project based at the International Institute of Social History (IISH), that has devised a taxonomy of activities meant to fit a variety of social and historical contexts (Hofmeester et al., 2016). The classification of activities is based on the intended recipient of production, and is comprised of four main categories:

- 1) Commodified work. Labor provided for the market, *i.e.* on the basis of market exchange in which the worker's time or the product of the work are sold. This includes both self-employed and wage workers.
- 2) Reciprocal work. Labor provided for other members of the same household and/or community. This includes the production of goods and services for the household's own consumption (*e.g.* domestic manufacturing, farm subsistence production, care of dependent family members, cooking, cleaning, etc.).

- 3) Tributary work. Labor provided for the polity (the state or a feudal/religious authority): this category describes coerced labor relations (slavery and other forms of servitude) that produce goods and services outside of market exchange.
- 4) Non-work. Activities outside of 1-3.

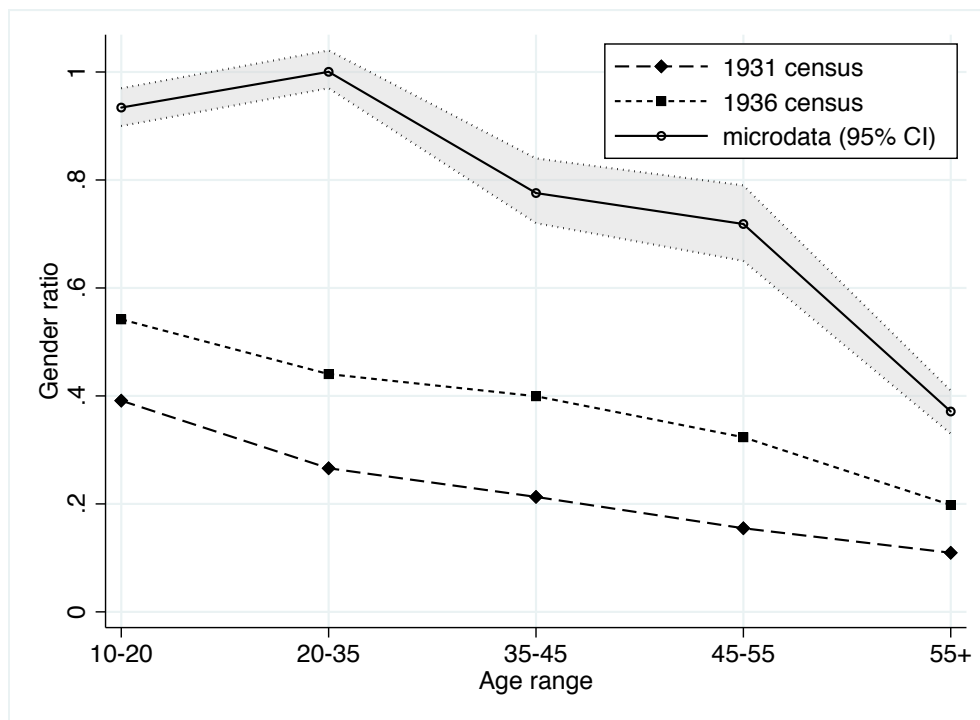
The IISH taxonomy maintains the distinction between work intended for the market and other activities, that is so prominent for the modern definition of work. This distinction remains useful in this more general framework: what sets commodified work apart is the fact that it is remunerated, and ability to generate income is relevant for the questions tackled here. What the taxonomy adds to the conventional definition of work is the ability to give a better description of all that is *not* commodified work, drawing a line between reciprocal work and non-work (tributary work is not relevant in this particular historical context), and avoiding erasure of productive activities that would not be seen as work in a standard framework.

We first focus on gender differences in commodified work (which will also be called employment, for brevity). A comparison of employment rates according to censuses and to (a preliminary version of) the microdata sample used for this paper is in Mancini (2018). Here, the comparison is taken one step further, as we consider age profiles of men's and women's employment rates. The impact of marriage on a woman's employment is an indication of the prevalence of her role as a wife and mother, of the rigidity of a gender-based division of productive tasks.

Figure 2 plots gender ratios (the ratio of the number of employed females to that of employed males) in agriculture by age groups, comparing the 1931 and 1936 population censuses to the microdata sample at hand. One caveat is that the definition of employment cannot be made entirely consistent across these different sources: the censuses count people by their declared occupation at the moment of the interview (occupations are then labelled as involving commodified work or not), while family members in the microdata sample have been labelled as "employed" whenever the information available made it clear that they performed any type of commodified work during the interview year. Because it encompasses the whole year, the latter definition is likely to yield higher estimates for employment. However, it should be

noted that the census does not provide an “instantaneous” measure, as would be the case for modern labor force surveys, but rather, one that is based on “habitual” work status (someone’s declared occupation), therefore comparing it with microdata-based employment rates is not a stretch.

Figure 2 – Gender ratios of (commodified) employment in agriculture, by age



Note: Gender ratios are defined as the ratio between the number of employed females and the number of employed males, in each age range.

In terms of levels, the 1931 census is consistently lowest, putting the size of the female workforce in agriculture at 20% of its male counterpart on average. 1931 figures were known even among contemporary commentators to be skewed, and to severely undercount the number of female workers, especially of married women (Patriarca, 1998). According to the 1936 census, the overall proportion of female workers is almost double that measured by the 1931 census, with the average gender ratio at about 40%. Microdata delivers a considerably higher ratio: it is estimated at

around 75% for whole population, which implies a much more widespread involvement of women in agricultural work. More importantly, censuses and microdata are at odds in regards to the age profile of gender ratios. Both censuses show sharp declines of the gender ratio between the 10-20 and 20-35 age ranges, indicating that women of marriage and childbearing age tend to exit the workforce; gender ratios then continue declining for older age groups. According to microdata, gender ratios actually *increase* slightly for the 20-35 range, reaching parity with men, before declining quickly. Consequently, evidence from microdata seems to contradict the rigid gender-based division of productive roles depicted by the censuses: not only were women highly involved in commodified work, but marriage did not reduce their involvement, at least in the aggregate. Instead, women started to drop out at higher rates than men as they got older. This is consistent with strong income effects: in this context, when women are in the 20-35 range, the presence of young children puts a strain on the household's budget and presumably pushes all working-age members into some kind of income-generating activity. These patterns are also consistent with traditional norms attributing to the eldest woman in the household the role of *massaia*, and the primary responsibility over domestic tasks.⁴

However, the information available in the microdata sample allows for a more nuanced description of the gender division of tasks, that brings into the picture both gender ratios in terms of hours, rather than just in terms of headcounts, and gender differences in reciprocal work.

Population censuses are silent on hours worked, while the 1930 Census of Agriculture offers some clues. Provisional results on the agricultural workforce (final figures were never published, because of an interruption of financial backing) include the number of female and male agricultural workers for which agriculture constitutes a “main” or “secondary” occupation. Although the exact definition of these categories is not specified (Istat, 1931), they have been interpreted as an

⁴ Depictions of traditional hierarchies are recurrent in monographs of smallholding and sharecropping families. The household head, usually the eldest man, was the *capoccia* (*massaro, reggitore, vergaro*), ultimate authority figure over the family and administrator of the work on the farm; the *massaia* (*reggitrice, vergara*), was his spouse and mirror image within the domestic world (Salvatici 1999: 31).

approximation of “permanent” versus “temporary” work (part-time workers would be listed as dependents or homemakers as a main “occupation”, and as agricultural workers as a secondary occupation) (Federico and Martinelli, 2015). According to these figures, reproduced in Table 2, about 50% of all females employed in agriculture were recorded as temporarily employed, versus 16% of men.

Table 2 – 1930 Census of Agriculture: temporary workers as a share of all workers, by gender (%)

	Women	Men
North	57.5	19.9
Center	47.9	14.5
South	38.1	12.4
Islands	63.2	14.7
Italy	51.3	16.6

Source: Figures from the 1930 Census of Agriculture reconstructed in Federico and Martinelli (2015).

The broad-strokes picture that emerges from these numbers is that of a far less intense involvement of women in commodified work, relative to men. But there is no clear indication of the size of this difference in intensity; uneven application of definitions like “main” and “secondary” occupation across genders seems likely; and there is no indication of the variation of work intensity with individual and household characteristics.

For 408 out of 586 working-age (10 years and older) men and women, family monographs provide an indication of hours worked by gender. Information is usually presented in a table detailing, at the very least, the number of annual hours worked “on the farm” (*nel podere*) and/or “for an employer” (*per terzi*). For 296 out of these 408 adults, the table also reports the number of annual hours of “domestic work” (*per faccende domestiche*).⁵ Descriptions of the routines and habits of household members help in understanding the meaning of these labels. The first two can rather safely be described as commodified work: either the work is performed in exchange for a salary, or, if the worker owns or rents land and is therefore self-employed, the

⁵ In a few cases, the breakdown of activities is finer, or the detail of time use over the months of the year is provided, but unfortunately these are exceptions.

production of marketable goods is always the main goal, even when the household ultimately consumes part of its own production. The third category of work, which is labelled “domestic”, fits less cleanly into the IISH taxonomy. It certainly includes reciprocal work, namely the upkeep of the family home, meal preparation, care of dependents: it is clear from some of the descriptions that these chores required considerable time and effort. But in many cases, activities like raising small farm animals (typically chickens) and tending to a vegetable garden are also considered “domestic work”, because of their proximity to the home and because they were usually carried out by women and children. Goods produced as a result of these activities were both for own consumption and for sale: while monetary revenues are duly recorded in the household’s budget, it is virtually impossible to separate the amount of time spent in these activities from the time dedicated to “pure” reciprocal work.⁶ Other productive activities carried out in the home, like textile manufacturing, are usually recorded separately when they generate an income. In conclusion, categorizing all “domestic work” as reciprocal is imprecise. Because little can be done to remedy the approximation in a systematic way, and because results, although imperfect, remain informative, the definition of reciprocal work is still applied to the whole “domestic” aggregate.⁷

Table 3 shows sample averages of annual hours of work, by gender and by type of work, together with corresponding gender ratios (average female hours/average male hours). The sum of commodified and reciprocal hours of work is also reported.

⁶ For a family of tenants in Menfi, Sicily, the time use table reports the following breakdown for “domestic work” (tending to animals takes about 15% of time spent in total, although in this case all production is consumed by the family):

Activity (hours per year)	Bastiana (age 37)	Angela (age 75)	Angelina (age 10)
Housekeeping, sowing	360	360	180
Tending to chicken	180	0	180
Cooking meals	360	360	0
Bread making	260	52	52
Laundry	104	52	52
Total	1,264	824	464

⁷ This section also includes an analysis of individual incomes: because revenues from “domestic work” are always included in the household’s budget, if the erroneous inclusion of profitable activities in the reciprocal work category produced a misleading picture of women’s economic activities, the discrepancy should be caught.

The first row of Table 3, which shows averages for the whole sample, tells a straightforward story: women contribute, on average, less than half as many hours of commodified work as men. The average for men, 2,374 hours per year, amounts to almost 300 8-hour days per year, which leaves little space for anything else. It follows that women contribute about *fourteen times* as many hours of reciprocal work as men, given that men's average contribution is almost null. These results evoke the modern image of the "double shift": women split their time between commodified and reciprocal work, while men focus almost exclusively on the former. The gender difference in hours of total work (commodified plus reciprocal) is worth a comment: on average, when no distinction is drawn between the target of production, women spend about 10% more time working than men. Interestingly enough, modern-day Italy is the only exception to the "iso-work" regularity (in most developed countries, on average, men and women tend to do the same amount of total work if one counts home production) in Burda et al. (2007), with women working more than men.

Table 3 – Average annual hours of work, by type of work and by gender

	Commodified work (1)			Reciprocal work (2)			Total work (1+2)			N obs
	F	M	Gender ratio	F	M	Gender ratio	F	M	Gender ratio	
All	1,065	2,374	0.4	1,573	113	13.9	2,638	2,487	1.1	296
Occupation of hh head										
Farmers-owners	1,152	2,357	0.5	1,776	243	7.3	2,928	2,599	1.1	88
Leaseholders/sharecroppers	961	2,097	0.5	1,386	14	96.3	2,346	2,111	1.1	180
Day/fixed contract laborers	743	1,995	0.4	1,546	24	64.1	2,290	2,019	1.1	28
Age groups										
10-20	981	1,447	0.7	752	18	41.1	1,733	1,465	1.2	76
20-30	1,106	2,421	0.5	1,636	332	4.9	2,742	2,753	1.0	49
30-40	933	2,392	0.4	1,886	3	710.1	2,819	2,395	1.2	51
40-50	844	2,776	0.3	2,196	24	90.9	3,040	2,800	1.1	36
50+	360	2,298	0.2	2,073	349	5.9	2,433	2,647	0.9	54

Note: Gender ratios computed as F/M. Hours of commodified work can be computed using a larger sample (408 individuals), for which, however, there is no information on reciprocal work; results do not vary significantly with respect to the ones based on the restricted sample, shown here. The total number of observations for the age group breakdown is smaller yet, because a few time budgets indicate hours worked as aggregates for all women and for all men in the household: these observations cannot be used for a breakdown by individual characteristics.

The next section of the table breaks down the sample by occupation of the household head, to explore different patterns of gendered work based on land contract: it has been noted that smallholders and sharecroppers, especially under conditions of economic hardship, tend to maximize labor input from family members, including women, to avoid having to resort to additional hired workers (Salvatici, 1999). Somewhat surprisingly, this phenomenon is not visible here.

Finally, results by age groups can be compared with the patterns emerging from Figure 1, only now the variable of interest is hours, rather than the number of workers. Women's average hours of commodified work increase at marriage and childbearing age, but so do men's, more than proportionally, so that ultimately, the gender ratio decreases. Then, women's commodified work drops dramatically while men's remains stable. The conclusion is opposite to the one emerging from Figure 1: women prioritize reciprocal work when they reach marriage age, while men do not, an indicator of a division of tasks based on male breadwinning.

The overall takeaway for Table 3 is that evidence from microdata implies a strong gender-based segregation of productive tasks, connected to a female penalty: women spend the majority of their time doing tasks that, while generating value, do not generate monetary income, and are therefore of less *perceived* value to other household members. Men, on the other hand, perform virtually no reciprocal work. Moreover, there is an indication that women plainly spend more of their total time working.

The different extent to which men and women can claim ownership of incomes that are the direct fruit of their labor is a more direct indicator of gender differences in access to resources. Comparing wages is an obvious first step. Unfortunately, the microdata sample analyzed here contains few examples of people who receive salaries (30 females and 60 males). Based on this, it is hard to draw general conclusions. Sample averages of wages received put women's remuneration at 0.73 Lire per hour, and men's at 1.65. Because the descriptions of salaried work available in monographs are often generic, it is unclear whether women carry out tasks that pay less, or whether their pay on a given job is simply lower than men's: either way,

the limited evidence from the microdata sample suggests that women working for a salary in agriculture end up bringing in lower incomes. External sources that may be better suited for these comparisons, such as Istat's *Bollettino di Statistica Agraria*, confirm that the gap between male and female salaries was standard (Istat, 1931). The infamous "Serpieri coefficient", a sort of equivalence scale used to convert the labor supply of household members in agriculture into "adult male equivalents", which found widespread use in sharecropping contracts and is regularly applied in Inea's monographs, valued a woman's work to be worth 60% as much as a man's (Serpieri, 1929). Again, it is difficult to determine whether the difference in value was merely perceived or justified by differences in tasks and productivity, but the outcome is the same: women's commodified work received lower remuneration (in the case of the "Serpieri coefficient", it was a theoretical valuation rather than an actual monetary revenue).

There are more income receipts, besides wages, that we are able to link to specific household members (for instance, revenues from individual enterprises, including domestic manufacturing). However, in farm-owning and sharecropping families – the bulk of the sample and of the general farming population – individual income sources account for a null or small share of total household incomes, given that most revenues come from the sale of agricultural production. To get a sense of the share of household income that women could be able to claim, of the resources in their direct command, some assumptions are needed.

Table 4 shows the average share of household income accruing to women, under three scenarios assuming different "sharing rules" for all income receipts that are not directly linked to any one individual (collective income, for short). The different scenarios define the shares of collective income that each (adult) household member is able to command, on top of their own individual income receipts. Scenario 1 is as follows: all household members that do any amount of commodified work during the year can claim the same share of collective income, regardless of their actual work input or productivity. This is probably unrealistic, but is meant to be a benchmark where there is little gender imbalance in income generation. Scenario 2 accounts for individual labor input: household members can claim a share of

collective income that is proportional to the hours of commodified work they put in. This scenario assumes that productivity is the same for all household members: the value of a unit of labor time is unchanged by the nature of the work or the characteristics of the worker. Finally, scenario 3 attempts to also account for gender differences in productivity: it works as Scenario 2 does, only now there is a gender-specific remuneration for each hour of commodified work, equal to the sample average wage by gender. This means that women’s commodified work “is worth” about half as much as men’s.⁸

Table 4 – Women's share of total household income (%)

	Average	[95% Conf.	Interval]
Scenario 1: equal labor input and productivity (N = 584)			
Farmers-owners	46.0	44.5	47.5
Leaseholders/sharecroppers	41.8	40.5	43.0
Day laborers	25.5	22.8	28.2
Others	39.9	35.3	44.6
All	42.3	41.2	43.3
Scenario 2: equal labor productivity (N = 440)			
Farmers-owners	26.6	24.6	28.5
Leaseholders/sharecroppers	28.7	27.4	30.0
Day laborers	22.5	19.8	25.2
Others	29.9	25.7	34.0
All	27.8	26.6	28.9
Scenario 3: labor productivity set to average wage by gender (N = 440)			
Farmers-owners	21.4	20.0	22.8
Leaseholders/sharecroppers	23.7	22.8	24.6
Day laborers	21.5	19.0	24.0
Others	24.9	21.6	28.2
All	21.2	20.4	22.0

Note: Sample sizes in scenarios 2 and 3 are smaller, because hours worked are not available for all individuals included in scenario 1. Results are unchanged when the sample for scenario 1 is restricted.

⁸ Gender differences in market wages are likely to arise from productivity differences as well as from discrimination, in turn due to the negative effects of gender ideology (Burnette, 2008). Here, market wages are used to generate a notional within-household distribution of non-wage incomes.

Naturally, the results of this exercise cannot be taken as more than suggestive, but they give a sense of the different positions women may have found themselves in, depending on the weight given to their contribution to the family's budget. The average income share accruing to women is about 40% according to scenario 1: despite the assumption of an essentially egalitarian rule, men command a higher share of household income. If we consider the gender division of labor in terms of hours worked, the female income share drops to about 30% (scenario 2) or 20% (scenario 3), a close fit for the share observed under all three scenarios in households where the head is a day laborer, and individual revenues make up most of the household income. Based on this experiment, it seems fair to say that, although we cannot observe who actually made decisions on how to allocate resources, if we assume that whoever earned the income had more authority over how it was spent, the distribution of remunerated and unremunerated tasks among female and male members of rural families likely produced significant gender differences in claims over total household income, empowering men far more than women.

4 Inside the household: gender differences in resource allocation

One of the relevant implications of the distribution of productive tasks by gender is its impact on the decision-making processes that govern a household's consumption behavior. The so-called "unitary model", which posits that the household maximizes a single utility function under a single budget constraint, has long been challenged by the notion of a bargaining process involving household members, who each behave according to their separate preferences and constraints, and who negotiate from different positions of relative strength (Browning et al., 2011 and Donni and Chiappori, 2011 both offer reviews of this literature). In such a context, insofar as the capacity to generate income improves one's bargaining position within the household, non-contributing members – mostly women – may see their access and control over resources diminished; the influence of larger-scale cultural norms that further weaken women's position by prescribing "domesticity", devaluing home

production as non-work, and severely limiting women's outside options (like leaving the household), can only exacerbate the situation.

Under conditions of scarcity, gender imbalances in bargaining power can lead to a deterioration of the most basic dimensions of wellbeing: a growing mass of empirical evidence from today's developing countries has linked women's and girls' health, nutrition, education, and even mortality outcomes to women's employment prospects and control over resources (*e.g.* Sen, 1990; Hoddinot and Haddad, 1995; Quisumbing and Maluccio, 2000; Quian, 2008; Jensen, 2010). This line of inquiry has been followed in economic history, in the context of the debate over the effects of industrialization on the living standards of women and children, unveiling evidence of similar patterns in the European past (Moehling, 2005; Horrell, Meredith and Oxley 2009; Horrell and Oxley 1999; 2013; 2016).⁹

This section investigates gender patterns in nutritional outcomes and household consumption among our sample of rural families, and performs an empirical test for gender bias in expenditure allocation. That such a phenomenon could manifest in rural interwar Italy is plausible, given indirect evidence. In 1948, the Doxa Institute – a private research-oriented polling company – conducted the first large-scale survey on the incomes and expenditures of Italian families. In commenting the results emerging from one of the questions (“Which food items do you think are scarce in your household?” – women turned out to report a lack of meat much more frequently than men did), Pierpaolo Luzzatto Fegiz, the founder of Doxa, remarked that “in our country, and especially among farmers and manufacturing workers, all family members give up food so that at least the main breadwinner can be well fed. Bearing the brunt of this situation are chiefly women, who certainly do not work less than men”¹⁰ (Luzzatto Fegiz, 1949: 112).

⁹ Some critical voices: Harris (1998; 2008), Lynch (2011), Saaritsa (2017).

¹⁰ “Nel nostro paese, e specialmente nelle famiglie di agricoltori e di operai, tutti i membri della famiglia si sacrificano affinché almeno il lavoratore principale possa avere un vitto abbondante e sostanzioso. Le vittime di questa situazione sono soprattutto le donne, che certo non lavorano meno dei maschi”.

The writers of Inea's family monographs usually painted what reads like a rosy picture of family relations in the households they analyzed; but in a few cases we find remarks like this: "The birth of a daughter is not too welcome among our farmers, because women must be raised, fed, sent to school, and when they are grown they bring their labor, and utility, to someone else's home when they marry".¹¹ In Spain, a country in many ways comparable to Italy, the analysis of doctor reports ("medical topographies") from various cities between 1850 and 1930, as well as other accounts by contemporary commentators, brought up examples of women eating less and lower quality foods than men, well into the first half of the 20th century (Borderias et al., 2010: 185). These accounts mirror similar anecdotes that have surfaced earlier in the European past.¹²

It should be acknowledged, however, that female disadvantage does not in fact manifest in measures of basic dimensions of wellbeing during the 1930s. Unexplained excess female mortality among infants and children has been documented in late 18th- and 19th-century Spain, going in parallel with other Southern European countries, including Italy; these patterns all but dissipate at the turn of the 20th century (Beltràn Tapia and Martínez, 2017; Pinnelli and Mancini, 1997). Available information on the average heights of 9-year-old children also does not indicate abnormal gender differences for 1930s Italy (Harris et al., 2009: 66). These results alone do not disprove that there were gender differences in access to resources in interwar Italy, but rather, they imply that any neglect of female needs that may have occurred did not translate into inequalities in mortality and heights (not at the national level, that is – we cannot exclude that they may have existed among rural households). One reason for this is that the overall improvement in living conditions over time relaxes certain constraints for poor families: conditions

¹¹ "La nascita dei figli femmine non è troppo gradita ai nostri contadini, perché la donna bisogna allevarla, mantenerla, mandarla a scuola, e quando è ragazza va a portare fuori di casa la sua attività e utilità prendendo marito." (*Monografie di Famiglie Agricole*, Vol. VI, p. 24).

¹² For instance, Harris et al. (2009: 2-3) cites a government inspector in mid-19th century rural England, who stated that male laborers '[eat] meat or bacon almost daily', whilst their wives and children 'may eat it but once a week'; it also points to Klasen (1998: 446) claiming that in Germany 'several authors discuss [early-19th century] reports about women receiving lowest priority in food allocation, with the survival of women often being considered less important than the survival and well-being of livestock'.

of scarcity exacerbate both the existence of gender bias in access to resources – a richer household is not faced with the choice of supporting only some of its members – and its harsher health consequences – even when gender bias occurs, female deprivation is not severe enough to affect mortality and growth (Rose, 1999; Duflo, 2012).

In order to substantiate the hypothesis of gender bias in resource allocation within households in our sample, it is important to evaluate their living standards. The interwar period, and especially the early 1930s, was a time of crisis for Italian agriculture, during which the incomes and living standards of rural households deteriorated severely (Cohen, 1979; Nutzenadel, 2001; 2006). However, Federico (1987: 889) believes that the conditions of households described by Inea's monographs may have been relatively good overall, although he recognizes that more empirical evidence would be needed to substantiate the claim.

Table 5 compares the poverty headcounts in the rural sample with published national estimates for 1931, based on national absolute poverty lines computed for the same year (Amendola and Vecchi, 2017).¹³ One caveat is that poverty lines computed for the whole country are based on national prices and consumption patterns, and there is good reason to believe that both vary considerably between urban and rural areas (as for modern developing countries: Ravallion and Bidani, 1994). A poverty line tailored to rural Italy would presumably be lower than the national line. That said, 14% of rural households in our sample could not afford the (national average) value of a minimum energy requirement – almost the same proportion observed in Italy as a whole – while close to 50% of them were poor when we add the value of a non-food allowance. Estimates obtained by type of land tenure must be taken with a grain of salt, given the small size of the groups, but they indicate that poverty is concentrated among *mezzadri*, or sharecroppers – which is consistent with reports of sharecroppers being hit hardest by the falling prices of agricultural products between the 1920s and 1930s (Salvatici, 1999).

¹³ In 2010 prices, the total poverty line for 1931 is estimated to be 1,071.9 EUR per capita, per year, while the food poverty line is 688.5 EUR per capita, per year (Amendola and Vecchi, 2017).

Table 5 – Poverty headcounts, Italy and rural households (1931)

Population	Food poverty line	Total poverty line
Italy	14.5	29.7
Rural households (N=106)	12.7	48.7
Conduuttori (N=33)	6.3	33.3
Fittavoli/mezzadri (N=45)	25.6	74.8
Giornalieri/other (N=28)	11.3	48.2

We can get more insight into the living standards of these households by analyzing their nutrition. The budgets report item-by-item cash expenditures and in-kind consumption, which can be used to compute calorie and nutrient intakes.¹⁴

Table 6 shows summary statistics for calorie and nutrient intake, food budget shares and calorie costs (panel A), as well as the composition of the diet and the total expenditure for food (panels B and C). The average calorie intake in our sample of rural households is 2,935 kcal per person per day, which exceeds the national average energy requirement of 2,150 kcal per person per day computed for the same year (Sorrentino and Vecchi, 2017). This is consistent with results obtained for Italy between its unification, in 1861, and 1911, showing that “the average Italian was sufficiently nourished as from the beginning of the Kingdom of Italy” (Vecchi and Coppola, 2006: 460). Still, about 20% of households fail to reach the minimum energy requirement. It is also important to keep in mind that for the rural population, the physical activity level – one of the parameters that go into the calculation of energy requirements – is more strenuous than the national average. Therefore, an average energy requirement of 2,150 daily calories is likely to be too low for the population we are considering: 20% may well be a lower bound for the share of undernourished households. Moreover, the average diet tends to be poor in terms of quality: it relies heavily on carbohydrates (mostly from wheat), and is poor of fats,

¹⁴ This involves transforming each reported quantity of food consumed into grams, and classifying each food item using a standard code associated to a vector of calorie and nutrient values per 1 edible gram. Some assumptions must be made in the process: Appendix 2 goes into detail.

relative to recommended nutritional standards.¹⁵ With increasing total expenditure, households tend to increase consumption of fats, dairy and eggs, and to consume meat of greater quality, as well as more alcohol and “luxury” items like sugar, coffee and spices (which are included in category “other”).

Table 6 – Nutrition in rural households, 1930s

Panel A: Summary statistics (sample means)						
Quantiles of PCE	Kcal/ person/day	Gr protein/ person/day	Gr carbs/ person/day	Gr fat/ person/day	Food budget share	Cost of 1000 kcal (2010 EUR)
1	2,123	65.4	372.1	32.9	70.8	1.21
2	2,673	74.6	421.3	48.6	67.3	1.41
3	3,065	91.0	496.4	70.3	66.5	1.35
4	3,915	111.7	591.1	82.4	61.1	1.45
All	2,935	85.5	469.3	58.4	66.5	1.35

Panel B: Shares of total calorie intake								
Quantiles of PCE	Grains	Meat and fish	Dairy and eggs	Fats	Fruits and veg	Alcohol	Other	Total
1	72.2	2.0	3.7	7.9	9.7	3.7	2.2	100.0
2	62.8	4.0	4.1	8.2	9.8	7.0	5.1	100.0
3	61.1	4.2	6.8	10.2	10.6	4.7	3.1	100.0
4	58.5	3.8	6.1	9.5	9.0	7.9	7.8	100.0

Panel C: Shares of total food expenditure								
Quantiles of PCE	Grains	Meat and fish	Dairy and eggs	Fats	Fruits and veg	Alcohol	Other	Total
1	56.2	8.5	9.0	7.5	8.3	5.5	7.0	100.0
2	40.7	14.2	9.9	7.1	6.9	9.1	12.8	100.0
3	36.9	14.0	13.5	9.8	9.5	7.4	10.2	100.0
4	35.7	14.3	13.5	7.8	9.0	9.4	13.8	100.0

Note: Computations based on 104 households.

Overall, the picture painted by statistics shown in tables 5 and 6 is one of hardship: conditions of severe deprivation were faced by at least 1/5 of households, most likely sharecroppers, and the majority of families, while not desperately poor, were certainly not well-off.

¹⁵ In terms of composition of the diet, the WHO recommends that proteins should account for 8 to 12 percent of total calorie intake, fats for 15 to 35 percent, and carbohydrates for 45 to 65 percent (Sorrentino and Vecchi, 2017). In the rural sample, these shares are 13, 9 and 76 percent.

It is not unlikely, therefore, that favoritism in allocating resources within the household might arise in such a scenario. This phenomenon is exceptionally difficult to ascertain empirically, even with modern data. Consumption is virtually always reported in the aggregate, that is, for the household as a whole, and not at the individual level, which makes it challenging to determine who is getting what. A more fundamental difficulty is that even in the absence of any discrimination, women and girls may simply have different needs and tastes than men and boys, so one is faced with the problem of determining whether observed differences arise from gender bias or from gender-specific preferences.

In a series of papers, Deaton and coauthors (Deaton 1988, 1989; Deaton et al. 1989; Subramanian and Deaton 1991) have devised and tested an ingenious method to work around these difficulties. The underlying idea is that the addition of a child to a household will make it poorer, and force it to reduce expenditures in some goods to make room for new consumption needs. If one can define a class of goods that are only consumed by adults (typically tobacco, alcohol, and such), then the reallocation of expenditure away from adult goods and toward “general purpose” goods observed in connection to the presence of a young child provides an indirect estimate of the “cost” of the child. If the decision-makers in the household spend less on girls – for instance, if girls are given less or cheaper food – then, all else equal, we should observe a smaller reduction in adult goods expenditure when a girl is present, rather than a boy.

This methodology sets a high bar for demonstrating gender bias. First, it is demanding for historical data: it needs detailed information on both food and non-food expenditures, as well as family composition in terms of gender and age, so sample size is an issue. More importantly, Engel curve-based methods have been tested on a variety of countries using modern data, but have rarely yielded strong results on gender bias, even in cases where male favoritism manifested in other indicators and in anecdotal evidence (Horrell and Oxley, 1999; Case and Deaton, 2003; Duflo, 2012; Zimmermann, 2012). I nonetheless perform the exercise here, in order to produce results that are comparable with this literature.

The relationship between household composition (namely, gender and age of household members) and household consumption can be described by empirical Engel curves, estimated via OLS (the specification follows Deaton, 1989; Deaton et al., 1989):

$$w_i = \alpha_i + \beta_i \ln(x/n) + \eta_i \ln n + \sum_{r=1}^{R-1} \gamma_{ir}(n_r/n) + \delta_i z + \varepsilon_i \quad (1)$$

where w is the budget share of good i , x is total household expenditure, n is household size, z is a vector of controls (in this case, occupation of household head, macro-area, and year). The demographic effects on expenditure patterns are captured by the ratios n_r/n : n_r is the number of household members of type r , where “types” are relevant demographic categories (in this case, female and male adults and children), so that the ratios represent the shares of adult males, or females, and so on, out of the total number of household members.

The test for discrimination is based on “outlay equivalent ratios”, or π -ratios, which indicate the change in total household expenditure (outlay) that would be needed to generate the same variation in adult good expenditure as the addition to the household of a person belonging to a certain category. The π -ratio for good i and demographic group r is as follows:

$$\pi_{ir} = \frac{\partial(x_i)/\partial n_r}{\partial(x_i)/\partial x} \cdot \frac{n}{x} \quad (2)$$

The numerator of the first fraction is the effect that an additional household member of type r has on the amount that the household spends on good i ; the denominator is the effect of an additional unit of total household expenditure on the amount spent on good i – in other words, an income effect. The outlay equivalent is then expressed as a share of per capita household expenditure, x/n . In practice, the π -ratios can be computed as functions of the coefficients estimated for equation 1.¹⁶

¹⁶ $\pi_{ir} = \frac{\eta_i - \beta_i + \gamma_{ir} - \sum_{r=1}^{R-1} \gamma_{ir}(n_r/n)}{\beta_i + w_i}$. Estimated regression coefficients are replaced into the expression, and n_r/n and w_i are evaluated at the sample means of the data.

For children, the estimated π -ratios are influenced by two opposing effects. On the one hand, the presence of an additional child in the household – one more mouth to feed – implies that there are less resources to go around for each household member. This is akin to an income effect, and has a negative impact on π -ratios. On the other hand, additional children have needs of their own for at least certain goods, and, to the extent that these needs are met, some π -ratios will reflect increased consumption. This is akin to a substitution effect, and has a positive impact on π -ratios (Deaton, 1988).

“Adult goods” are defined as commodities for which the addition of a child to the household only produces the first of the two effects, *i.e.* the same effect as a reduction of the total budget. This makes it possible use them to infer gender bias: if π -ratios are more negative for boys than for girls, it means that the household has displaced more resources away from adult goods and toward the child when they have a boy rather than a girl. Whether or not a particular good can convincingly be qualified as “adult” must be tested. If expenditure on one candidate adult good is regressed on total expenditure on all adult goods, and on controls for the number of children (of either gender), the coefficients on the latter variables should be zero, because expenditure in adult goods should depend on the presence of children only through income effects.¹⁷ This can be tested via a simple t- or F-test.

Candidate adult goods are displayed in Table 7, together with descriptive statistics (the size of the sample of households that report detailed enough data to assess their consumption of a given good in column 1, the percentage of these households that consume a positive amount of the good in column 2, the average budget share of that good among families consuming it in column 3), and the results of the test (columns 4 to 7).

¹⁷ The high correlation between expenditure in one adult good (the dependent variable) and total adult good expenditure (one of the regressors) is often a problem, given that the list of adult goods is usually small. This is avoided using 2SLS: total adult expenditure used in the second stage is the predicted value from a first-stage regression of total adult expenditure on total household expenditure, the number of household members in each demographic category, and controls (in this case, occupation of head, macro-area, year).

Table 7 – Descriptive statistics and F-tests for candidate adult goods

Item	N	Consumers (%)	W for consumers (%)	Exclusion restrictions children (0-14)		Exclusion restrictions adults (15+)	
				F-stat	P-value	F-stat	P-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alcohol	104	99.0	5.1	1.40	0.24	0.15	0.70
Clothing	104	100.0	10.0	0.00	0.96	0.09	0.77
Coffee	102	67.6	1.7	0.14	0.71	4.83	0.03
Recreation	103	86.4	3.4	6.82	0.01	0.05	0.82
Religious donations	91	61.5	0.6	0.04	0.84	2.49	0.12
Salt, spices, condiments	100	98.0	1.6	1.28	0.26	0.69	0.41
Tobacco	94	64.9	3.2	1.17	0.28	4.94	0.03

Note: Column 1 reports the number of households that have detailed enough information to establish how much was spent on a given item. Column 2 indicates which proportion of those households consume a positive amount of the item. Column 3 reports the average amount spent on the item by households consuming it, as a share of the total budget. Columns 4 to 6 report F-statistics and p-values for tests determining whether coefficients on the number of children or adults are zero in the empirical Engel curves.

All candidate goods pass the test, except recreation. However, expenditure in some of the goods does not appear to be affected by the number of adults, either – with the exception of coffee, tobacco and (somewhat) religious donations.

Table 8 shows the estimated adult π -ratios together with p-values of an F-test for equality of the coefficients for different genders in the empirical Engel curves.

Table 8 – Outlay equivalent ratios

Item	Age range	π ratio females	π ratio males	P-value
All adult goods	0-4	0.06	0.48	0.54
	5-14	0.02	-0.41	0.07
	15 plus	-0.31	0.23	
Alcohol	0-4	-0.17	0.97	0.06
	5-14	-0.04	-0.17	0.75
	15 plus	-0.47	0.40	
Clothing	0-4	0.24	1.01	0.63
	5-14	-0.33	-0.49	0.72
	15 plus	-0.34	0.41	
Coffee	0-4	-0.29	-0.69	0.55
	5-14	0.63	-0.11	0.27
	15 plus	-0.74	-0.82	
Salt, spices and other condiments	0-4	-1.05	-0.43	0.66
	5-14	0.38	-0.05	0.61
	15 plus	1.70	-0.81	
Religious donations	0-4	-0.05	-1.21	0.71
	5-14	-0.72	-0.91	0.92
	15 plus	1.96	-1.83	
Tobacco	0-4	1.28	-1.38	0.19
	5-14	0.98	-0.97	0.05
	15 plus	-0.24	1.51	

Looking at the results for all adult goods combined (first three rows of table 8), one notices the positive π -ratios for younger children, which defeat expectations, given the “adult” nature of the items considered. This is an issue that comes up in the literature (Case and Deaton, 2003), but has not been clearly linked to defects of the data or the method. For 5- to 14-year-olds, there is an indication of a pro-boy bias, as the male π -ratio is negative, the female one is close to zero, and the difference is significant. Adult goods in general are positively associated with adult men. Regarding the single goods, results for children under 5 are somewhat mixed, with both pro-boy patterns (coffee, religious donations, tobacco) and pro-girl patterns (alcohol, clothing, condiments) emerging, but no significant differences. For older children, the pro-boy pattern is generalized, although positive π -ratios show up in some cases, including for the only other difference that comes out as significant, tobacco (the presence of girls would *increase* tobacco expenditure, while boys are

associated with less of it). Overall, the evidence for pro-boy gender bias is tenuous, in line with results obtained by other studies. If anything, a bias would show up for older children, but not for babies.

More evidence on gender consumption patterns can be gathered by delving deeper into nutritional outcomes, and their association with family composition. This simple approach does not deliver a rigorous test for gender bias, given that food is consumed by all household members, each of which arguably has different needs and preferences. However, it is a way of looking for patterns that are consistent with the few indications delivered by the Engel curve approach.

Table 9 shows results of a regression of daily kilocalorie and macro-nutrient intake on total household expenditure, and the number of household members in each of six age-gender categories, plus controls.

Table 9 – Gender patterns in calorie and macronutrient intake

	Kcalories	Protein	Carbohydrates	Fats
Total hh expenditure	0.907***	0.0268***	0.0659	0.0352***
Age 0-4				
Number of males	551.1	16.06	97.69	42.88
Number of females	761.8	28.28	153.1	-13.92
Age 5-14				
Number of males	2722.2***	63.05***	531.3***	37.39
Number of females	1182.4*	54.41**	205.7*	26.7
Age 15+				
Number of males	2802.5***	54.51*	487.8***	45.06
Number of females	3249.5***	88.97***	626.1***	32.8
Macro-area (excl: South-Islands)				
North-Center	-1228.1	-97.35*	-105.9	26.47
Hhh occupation (excl: Conduttori)				
Fittavoli-mezzadri	-1064	-17.13	-6.332	-28
Giornalieri-fissi	-1417.5	-44.61	-304.4	58
Year (excl: 1931)				
1928	-1820.3	-118.4	-125.8	53.06
1929	7221.6	-186.5	191.5	-44.49
1930	242.6	-34.25	-197.8	-134
1932	-930.6	-82.26	-202.5	-188.3*
1933	-1660.4	-110.5	-301.1	-90.8
1934	2677.6	29.08	824.3*	-40.71
1935	-490.8	-14.21	71.75	-28.79
1936	-3089.6	-56.44	-178.7	-89.58
1937	4571.7	83.76	1707.9**	-119.3
Constant	-3095.9	27.82	-563.7	-82.83
N	105	105	105	105
R-sq	0.897	0.838	0.857	0.762

* p<0.05, ** p<0.01, *** p<0.001

Note: All dependent variables are daily amounts, macro-nutrients are expressed in grams. Patterns are similar if age ranges are defined differently: see Appendix 3.

Results are consistent with the indication that there are no gender patterns related to the presence of younger children: none of the coefficients for the number of children under 5 are significant. There is also consistency with the fact that 5- to 14-year-old girls may receive less: calorie and macro-nutrient intakes all increase less when an additional girl is present, and F-tests for significance of the difference between male and female coefficients in the 5-14 age range reject equality for calories and carbohydrates, although not for protein. As for adults, the pattern is reversed: adult women are associated with a higher calorie and macro-nutrient intake (except for

fats). This is easier to understand if we consider that the additional calories are not necessarily consumed by the household members to which the increase is associated, and, especially in the case of adults, people might have preference on other household members' consumption.

The experiment attempted here is ambitious: it borrows analytical tools that development economists have applied to modern living standard measurement surveys and takes them to historical data. There are hints to a penalty for young girls in terms of resource allocation in the interwar period, but the evidence is not clear-cut enough to claim with certainty that girls were being penalized with respect to boys in the most basic dimensions of wellbeing. There are several plausible explanations for such an outcome, the first one being that Engel curve-based methods to detect gender patterns in expenditure allocation are too demanding – especially with a limited sample size – to be effective in revealing gender bias, even when it exists.

5 Conclusions

“Women’s work was both marginal and irreplaceable” (Fuller, 1662; cited in Sharpe, 1996). This quote, used to characterize early modern and Victorian England, actually resonates as a timeless description of women’s experience, until the very recent past. It certainly rings true for 1930s Italy as well.

The qualitative literature on women’s work in interwar rural Italy has made a point of rebuking this marginality. In an effort to counterbalance the reductive picture of women’s involvement in agricultural work that emerged from the (unadjusted) censuses of the 1930s, and from the fascist “ruralist” ideology, scholars of women’s history (in particular, the seminal work of Salvatici, 1999) have shone a light onto circumstances where women stepped outside of the margins, engaging in the same work as men; also, they have pointed to the great value of the kinds of “feminine” tasks that were perceived as marginal.

This paper approaches the same documental material that is at the basis of this literature, as well as some additional sources, in a new way. On the one hand, it uses a quantitative approach that allows for generalization, instead of perusing a succession of examples that, while informative, remain ultimately isolated from one another. On the other hand, it places the gender division of labor within the framework of intra-household decision making. This prioritizes a specific interpretation of the nature of women’s work: the dichotomy of “marginal and irreplaceable” can be seen as the rift between perceived and actual value of women’s work. In the framework of intra-household resource allocation, it is the former that counts for women’s wellbeing: the value that the market assigns to labor, in the form of income, tilts the balance of power within the household. The breadwinner and the bread maker are equally irreplaceable when it comes to putting food on the table – but one of them is working for free.

Gender ratios constructed using a simple binary indicator of commodified work initially support the conclusions of the qualitative literature: the employment gender ratio even reaches parity among 20- to 35-year-olds in the microdata sample. However, an analysis of hours spent in different activities shows that, indeed, a

strong segregation of productive tasks was in place. Women were indeed involved in commodified work, but 60% of their working hours on average was spent in unremunerated tasks. These activities occupied virtually no amount of men's time. In fact, when no distinctions are made between commodified and reciprocal work, women's total work input (hours of non-leisure time) turns out to be about 10% larger than men's. This divide is reinforced by the fact that women's commodified work was of lesser (market) value than that of men. The determinants of this gap (differences in occupations, differences in productivity, discrimination) are not investigated here, but the outcome alone, whatever its reasons, is relevant for the end result: women's share of total household income was, in all likelihood, significantly lower than men's share (guesstimates place women's share of total income between 20% and 30%).

This paper also investigates potential consequences that the facts established above may have had over basic dimensions of wellbeing. Although an analysis of the effects of household composition on nutritional outcomes shows that the presence of young girls was associated with lower average calorie intakes and a poorer diet, a formal empirical test for gender bias in the allocation of expenditure toward the needs of young children (Deaton 1988, 1989; Deaton et al. 1989; Subramanian and Deaton 1991) does not deliver definitive proof of a pro-male gender bias operating in the microdata sample. This does not exclude that male favoritism may still have occurred: we suspect that limitations of the methodology, and of the database, may be at the roots of the result.

These findings contribute to different strands of literature. First, they offer a counterpoint to the qualitative social history literature. Second, they underscore the need for nuanced indicators of women's work, that go beyond a simple binary, particularly in the context of a pre-industrial production system; looking at labor force participation alone would give an incomplete, or worse, a misleading picture of women's work in rural households in the period considered here. Finally, this paper adds to the long-standing discussion of the impact of economic growth on women's economic role and wellbeing: it focuses on agriculture, which much of the international literature tends to brush aside as the "status quo" overturned by

industrialization, but is actually of primary relevance in the context of a country that made a recent transition to modernity, such as Italy; and it builds a comprehensive picture of the division of labor and its consequences at a pivotal point in the country's history, that is, after a time in which evidence of gender bias in resource allocation does exist (in the form of excess female mortality), and before the Economic Miracle, when gender roles finally experience the effects of structural change. Results presented here are a foundation for future work aimed at drawing a time trend of the extent and consequences of the gender division of labor in Italy.

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Appendices

Appendix 1 – Sources

Reference	Year of data	Region	N of hh
Inea (1931-39). Monografie di Famiglie Agricole	1928-1935	Italia	92
Curato, F. (1936). Monografie di Famiglie Contadine dell'Agro di Lucera (Foggia)	1936	Puglie	4
Curato, F. (1939). Contadini dell'Agro di Troia (Foggia)	1939	Puglie	3
Passino, F. and Sirotti, G. (1935). Inchiesta sulla piccola proprietà coltivatrice formatasi nel dopoguerra: Sardegna	1935	Sardegna	2
Franciosa, L. (1932). Inchiesta sulla piccola proprietà coltivatrice formatasi nel dopoguerra: Abruzzi e Molise	1932	Abruzzi e Molise	1
Passerini, O. (1935). Podere e Famiglia, loro rapporti economici nella colonia parziaria delle Venezie	1934	Tre Venezie	1
Ricchioni, V. (1930). Studi sulla piccola proprietà coltivatrice. L'azienda e la famiglia di un piccolo proprietario autonomo	1930	Puglie	1
Rivarono, O. (1936). Monografia di podere	1936	Piemonte	1
Ronchi, V. (1936). Inchiesta sulla piccola proprietà coltivatrice formatasi nel dopoguerra: Tre Venezie	1935	Tre Venezie	1
Tosi, G. M. (1932). Le condizioni dell'agricoltura e della vita dei rurali nella zona Isola della Provincia di Bergamo	1932	Lombardia	1
Vignati, Z. (1931). Inchiesta sulla piccola proprietà coltivatrice formatasi nel dopoguerra: Umbria	1931	Umbria	1
Total			108

Appendix 2 – Computation of calorie intakes

A detailed list of consumption expenditures referring to a period of one year is available for each household in the dataset. In general, food items consumed by the household are listed together with quantities and corresponding measurement units, unit values, and total expenditures. The monetary value of consumption is usually recorded separately from the value in-kind consumption (for example, production of the family enterprise that is consumed by the household itself, or consumption of salaries received in-kind). The latter is estimated by the interviewer, based on market prices.

The procedure to generate daily per capita calorie and nutrient intakes is as follows:

- 1) All monetary amounts are converted into a common metric (EUR 2010).
- 2) All quantities are converted into grams. Non-standard measurement units (such as ‘numbers’ of a certain item) are assigned a conventional conversion factor (for instance, 60 grams for one egg).
- 3) All food items are classified using a 9-digit version of the UN COICOP taxonomy. Attached to each COICOP is a coefficient indicating the edible part of each food, as a percentage per gram of whole product. This coefficient turns out to be especially crucial in the case of unprocessed grains (yet to be turned to flour), which appear quite often in consumption budgets. These “extraction ratios” for grains are taken from FAO’s Food Balance Sheets Handbook.
- 4) While the value of consumption is always reported, 15% of observations in the database omit quantities. Missing quantities for a given item are imputed using median unit values for the same item, preferably within the province of residence of the household; if that is unavailable, the regional median is used; finally, the national median is used if a suitable unit value still has not been found.
- 5) Nutritional values per 1 edible gram are assigned to each COICOP. Values are taken from the Italian CREA, if available, and from USDA as an alternative.
- 6) Nutritional values are multiplied by edible quantities in grams, for each item, to obtain calories and macro-nutrients corresponding to each item.

- 7) One last step concerns foods that are reported as aggregates. For homogeneous food aggregates (e.g. “vegetables”), nutritional values are imputed using medians from households that indicate those same expenditures in detail. For heterogeneous food aggregates (e.g. “eggs and cheese”, “pasta and rice”, prepared meals consumed outside the home, etc.), we compute the average unit cost of one calorie in each household, then divide the expenditure in the heterogeneous aggregate by that unit cost, and obtain an estimate of consumed calories. Heterogeneous aggregates are 2.1% of the total number of observations.
- 8) All calorie and nutrient intakes are summed up by household, then divided by 365 to obtain a daily amount; this is divided by the number of household members, to obtain daily intake per capita.

Appendix 3 – Gender patterns in calorie and macronutrient intake,
alternative age group specification

	Kcalories	Protein	Carbo- hydrates	Fats
Total hh expenditure	0.883***	0.0264***	0.0609	0.0353***
Age 0-10				
Males	1921.5***	38.20**	349.2***	37.40*
Females	805.4	49.99**	171.8*	13.31
Age 11+				
Males	3085.4***	68.21***	579.6***	47.11*
Females	2432.2***	67.68***	442.0***	27.1
Macro-area (excl: South-Islands)				
North	-777.7	-99.15**	-52.21	30.42
Hhh occupation (excl: Conduttori)				
Fittavoli-mezzadri	-1011.5	-11.27	17.6	-28.08
Giornalieri-fissi	-1931.3	-52.26	-406.3	63.1
Year (excl: 1931)				
1928	-2965.8	-152.8*	-385.1	47.69
1929	5929.2	-234	-111.7	-46.54
1930	-650.1	-51.97	-387.5	-133.8
1932	-1807.6	-98.03	-346.6	-197.8**
1933	-2438.3	-127.2	-454.3	-88.53
1934	1654.8	11.18	651.7	-56.2
1935	-1280	-36.91	-87.48	-41.76
1936	-3501.1	-56.14	-236.3	-90.05
1937	1505.1	-1.521	978.6	-119.3
Constant	-1461.4	59.49	-254.7	-76.63
N	105	105	105	105
R-sq	0.89	0.83	0.84	0.76

* p<0.05, ** p<0.01, *** p<0.001

F-tests for significance of the difference among coefficients for males and females of the same age range are not significant.