

Women's work and structural change: occupational structure in eighteenth-century Spain[†]

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This article uses the declarations of householders in the Cadaster of Ensenada (1750–5) to calculate labour participation rates for women and men from 22 localities in inland Spain. The article establishes the actual levels of women's market activity, which are much higher than commonly assumed. This unique source also makes it possible to analyse the region's occupational structure. Due to the labour-intensive character of manufacturing work, the abundant supply of cheap labour, the diffusion of cottage industries, and the demand for commodities from internal and colonial markets, a large portion of the region's population worked in manufactures in the eighteenth century. This finding challenges standard interpretations of the Spanish economy at this time as mostly agricultural, which rely on sources that exclude women workers. Most workers in the manufacturing sector were women, and their market activity was concentrated in textile manufacturing. Once women are included in the analyses, the industrial share of employment follows a U-shaped trajectory from the eighteenth century to the twentieth century. The article concludes that the standard interpretation of structural change, based solely on empirical evidence for male workers, gives a misleading picture of when, where, why, and how structural change occurred.

In 1877, the first year of Spain's national census, the share of the labour force in industry was 14.4 per cent, while agriculture's share was 66.1 per cent. According to census data, agriculture's share of the labour force would not fall below 50 per cent until 1930. The implied evolution of employment shares has been used by economic historians to underpin an account of the Spanish economy before modern industrial growth as characterized by the persistence of a large, low-productivity agricultural sector in which the low incomes of the mass of poor farmers and agricultural day labourers accounted for the country's low internal demand. According to standard interpretations of economic growth and modernization, the share of agricultural employment can indeed be used as an indicator of economic backwardness. However, as any historian of women's work knows, nineteenth-century censuses often overlooked and certainly undercounted

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women's work. The grand narrative of growth and structural change in Spain relies on structural decompositions of the male labour force alone.

This article uses a uniquely rich source, the declarations of householders in the Cadaster of Ensenada (1750–5), to calculate participation rates for women and men from 22 localities in the Spanish region of La Mancha. These computations make it possible to show that women's participation was much higher than previously thought and to estimate women and men's respective shares of the labour force. The evidence also reveals that women's activity was concentrated in non-agricultural occupations, particularly textile manufacturing. As a result, this study revises the conventional account of Spanish structural change to suggest the earlier development of manufacturing employment—an expansion that was not, however, consolidated. This precocious 'girl-powered' expansion of manufacturing failed to be sustained into the modern era.

I

The problem for historians interested in women's participation rates has always been lack of data.

The impact of women's labour and wages has not been considered in the construction of indices of economic change because long runs of quantitative data on occupations, labour-force participation and wages are not generally available. Women were rarely recorded in the eighteenth century official statistics, legal records or wage books in terms other than widow or spinsters.¹

Some economic historians have begun working to identify historical sources that allow for the calculation of women's participation rates, but most of these participation rates for women are limited to particular localities or particular occupational groups.²

The Ensenada Cadaster was a general survey of property, carried out with the aim of modernizing and unifying the fiscal system of the Kingdom of Castile (about three-quarters of modern Spain). Conducted between 1750 and 1755,

the intention of the Cadaster designed by minister Ensenada was to verify *everything about everyone*, without exception, in such a way that the grand cadastral enquiry would pave the way to a single tax (*única contribución*) on each taxpayer, a tax in the form of a percentage, the same for all, of each person's wealth in land and buildings and of his fixed or stable income.³

As another historian observes, 'The thousands of volumes of the catastro de Ensenada containing detailed information on the ownership of property throughout

¹ Berg, 'Women's work', p. 23.

² Horrell and Humphries, 'Women's labour force participation'; Schmidt and van Nederveen Meerkerk, 'Reconsidering'; Field and Erickson, 'Prospects'.

³ Camarero Bullón, *Cadastre*, p. 6. The exceptional value of this source is explained by the fact that 'it was performed with a high degree of methodological rigour, over an enormous territory, with objectives reaching far beyond the purely cadastral scope . . . [I]t constitutes a paradigmatic example of what government rulers expected to achieve with a cadastre'; *ibid.*, pp. 3–4.

Castile are today one of the most remarkable sources anywhere of information on the society and economy of a preindustrial state'.⁴

The Cadaster was organized into three stages. In the first stage of the survey, town council members and local experts responded to a list of 40 questions, which formed the *Interrogatorio*, or Interrogation. Some of these questions referred to the number and types of workers in each town. This part of the survey resulted in a document known as the *Respuestas generales*, or General Answers, which provided an overview of the nearly 15,000 villages, towns, and cities that made up the Crown of Castile. In the second stage, called the *Memoriales* (Memorials), all householders were asked to declare their household property and income: land, cattle, houses, rents, and wages. They also had to declare their name, civil status, class, profession, and age, as well as key facts about others living in the household, including spouse, dependent children, stepchildren, domestic and farm servants, officials, and apprentices. In the third stage, a series of summary books based on the *Memoriales* were prepared. The *Libros de cabezas de casa*, or Householders Books, listed separately the families of laymen and individuals in the ecclesiastical estate, including the names and ages of all household members, as well as the occupations of male householders. Books were also prepared detailing the area's 'real estate' and property, including everything from land, houses, wine cellars, and mills to cattle, mortgages, and salaries. Finally, clerks in the royal court summarized this quantitative information into statements for each province.

Householders' declarations in the *Memoriales* 'constitute the Cadaster's fundamental document, *the axis that rules the work*, in the words of one of its directors'.⁵ Households consisted of householders and any direct dependents who lived in the same house (domestic servants included). Co-residents were not necessarily part of same household; other married men living under the same roof (for instance, a married son or brother) had to present their own declarations. Similarly, a widow with children who lived with her parents had to present her own declaration.

Most householders did not declare the occupations of their wives or children. They were not asked to do so, since any subsistence wages earned by wives and children would not be taxed. Indeed, when householders did describe family members' occupations, the information was usually omitted from future rounds of Cadaster record-keeping. Nonetheless, in some towns, householders did declare the occupations of their wives and children, and town clerks did record the information. Clerks in these towns also noted the occupations of women who were heads of household. The following declarations come from such towns, which form the database used here.

I belong to the General estate, my trade fuller, married, my family is formed by myself, 46 years old, Ynés López Zamorano, 40 years old. I have four daughters, Agustina, 20, her occupation weaver, Isabel, 13, her occupation spinning, María, 11, her occupation going to sewing school, María Teresa, 2 months.⁶

⁴ Herr, *Rural change*, p. 10.

⁵ Camarero Bullón, *Cadastre*, p. 119.

⁶ Archivo Histórico Provincial de Ciudad Real, Ciudad Real (hereafter AHPCR), Ensenada section, Antonio López Rufián, Campo de Criptana, box 502, declaration 77.

I, Julián Fernández, age 26, married to María Jiménez, 24, my trade esparto grass maker, resident in this town of Villamanrique, have a daughter, and make at said esparto trade with my wife 100 reales per year . . .⁷

(María Romero, widow of Villarrobledo) My trade spinning or stocking weaving, my family is formed by myself of 60 years, I have three daughters, the first one Juana María of 30 years is serving at the house of don Pedro Vonilla, priest of this town, the second, Antonia her trade spinning, the third one Manuela, 20 years, her trade weaver of *albornoces* and other woollen cloths.⁸

In subsequent summary documents, Cadaster officials did not include this information. Female heads of households (widows, single women, and deserted wives) appear in the summaries, but without their occupations, even when that information was recorded in their original declarations.

Although Ensenada's Cadaster is recognized as a classic source for calculating output in eighteenth-century Spain, the few studies that use the survey to calculate participation rates and occupational structure obtain their data from the *Respuestas generales* and *Libros de cabezas de casa*, which include only the occupations of male householders. The research presented here is part of a larger project in which several scholars use householders' declarations in the *Memoriales* to document evidence of women's work. For those towns where householders declared the occupations of family members, it is possible to calculate the participation rates of women and men and therefore to examine the occupational structure of their entire populations.

The accuracy of the Cadaster's data was safeguarded by a series of social filters. At the moment of each declaration, when a householder stated his or her family's occupations, the clerk—or any of the three local witnesses who signed the declaration—could instruct the declarant to change, add, or omit information. This explains why responses follow patterns among the localities (and why so many queries and questions were addressed to the central offices). Doubts and queries were mostly related to information about family members. In some localities, clerks recorded all the information provided by the householders, even informal comments and explanations. In others, where perhaps the fiscal purpose of the declarations was better understood, only taxable activities were recorded. Thus, in some towns, householders stated whether their children went to school; in other towns, householders declared whether their wives and children did unpaid domestic work; while in some towns, such information was missing.

The database currently comprises 44,484 individuals, the population of 22 localities belonging to five provinces of the region of southern Castile (La Mancha). For each individual, the database includes the following information: street of residence, number of household members, name and last names, gender, age, civil status, relation to head of household (for example, spouse, child, grandchild, sister-in-law, parent, parent-in-law, nephew, adopted child, child from foundling hospital, servant), occupation as described by the head of the household, occupation as written in the margin by the clerk, wage or annual income, and miscellaneous observations (for example, absent members, nicknames, reasons for not working,

⁷ Archivo Histórico Provincial de Toledo, Toledo (hereafter AHPT), Ensenada section, Villamanrique del Tajo, declaration 74.

⁸ AHPCR, Ensenada section, María Romero, Villarrobledo, box 605 1^a, declaration 741.

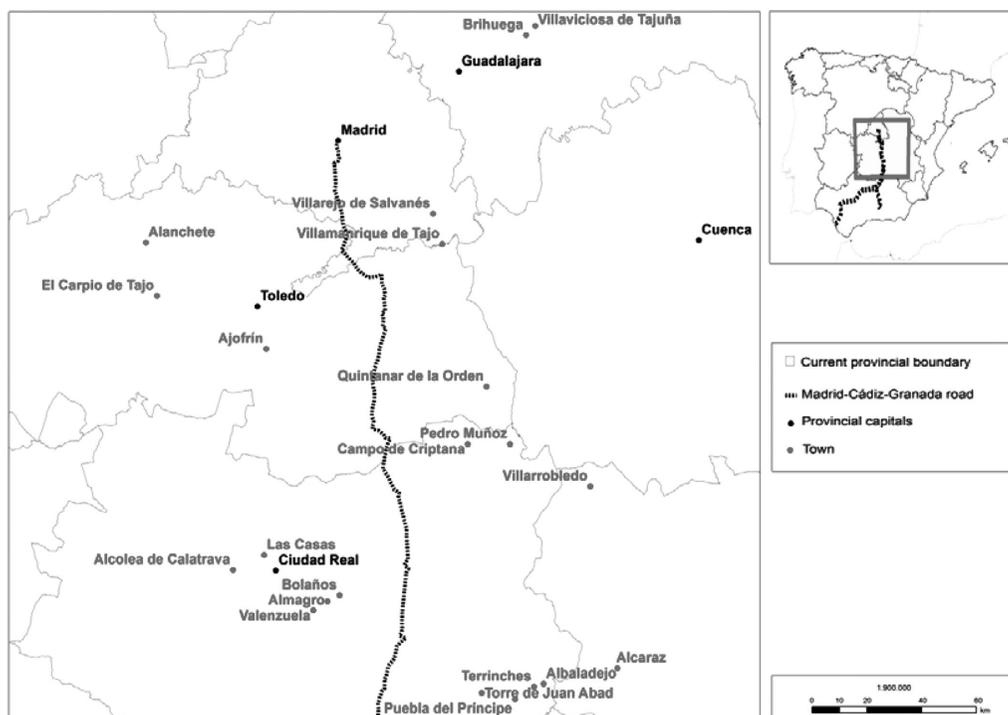


Figure 1. *La Mancha* towns included in database, c. 1750

Sources: See n. 9.

ownership of ‘industrial artefacts’ such as mills, than can throw light on the occupations of household members). Analytical units are the individual and the household. The documentation of the Ensenada Cadaster is kept in the Treasury Section of the Provincial Historical Archives, and copies of the summaries and correspondence are in the Simancas Archive.⁹

The sample includes small villages such as Alanchete, with just 185 people, but also a capital city, Guadalajara, with a population of 5,209, and Almagro, a city of 8,068 that was home to a Jesuit university, convents, a rich commercial and manufacturing life, and several wealthy noble families. To be included in the sample, a locality had to meet the following criterion: at least 15 per cent of householders’ declarations must include information on women’s occupations. Such information could be any description of occupational activity, including non-market activities that are later excluded from the calculation of participation rates (for example, unpaid housework, school attendance, begging, living in convents). A town can thus be included in the database even if it has a low participation rate for women. For instance, in Pedro Muñoz only 38.1 per cent of householders declared

⁹ Archivo Histórico Provincial de Albacete, Albacete (hereafter AHPA), Ensenada section; AHPCR, Ensenada section; Archivo Histórico Provincial de Guadalajara, Guadalajara, Ensenada section; AHPT, Ensenada section; Archivo General de Simancas, Simancas, Dirección General de Rentas, primera remesa, Comprobaciones del Catastro de Ensenada, legajos 1350, 1390, and 1786; Secretaría y Superintendencia de Hacienda (SSH), legajos 759–85, 791.

an activity. As a result, as table 1 shows, in this locality the men's participation rate was five points lower than the regional men's rate, while the women's rate was almost 20 points below the regional women's rate. Such distortions were probably caused by householders not declaring certain activities. Nonetheless, even the localities with low participation rates are included in the sample.

To calculate participation rates, that is, the labour force as a percentage of all working-age individuals, we need to find both 'denominators' and 'numerators'. As table 1 shows, of the 44,484 individuals of all ages in the sample, we have some description of activity for 24,196 people, or 54.4 per cent of the total population. We know the activities of 15,452 men in the sample (70.4 per cent of the male population) and of 8,744 women (38.8 per cent of all women). If we only take into account working-age individuals (10–60 years old), the percentages increase to 91.1 for men and 46.9 for women.

Not all of the 24,196 individuals for which we have some description of activity can be classified as workers. Individuals have been defined as workers (and hence included in participation rates) if they were gainfully employed, that is, producing for the market, either as paid workers or as unpaid workers in family businesses or family farms. Individuals defined as non-working are students, poor people living on alms, sick or handicapped individuals unable to work (unless they declared a market activity as well, even if it was seasonal or irregular), monks and nuns living in convents (except those identified with an occupation, such as cook, or teacher in convents that admitted students), and members of the nobility. Here, then, are the numerator and the denominator needed to calculate participation rates: workers / workers + non-workers of working age.

The main group excluded from participation rates (that is, excluded from the numerator but included in the denominator) encompasses those people who were occupied in tasks for family consumption. Housework was often described in general terms (for example, 'things needed at home', 'does the housework'), but sometimes specific ones—cooking, washing clothes, sewing, cleaning, feeding and minding children, and, in the case of boys and girls, carrying water and firewood. Excluding these individuals from the calculation of participation rates does not imply that their unpaid housework was not valuable, or that it failed to contribute to the family's well-being, but rather recognizes the fundamental difference between work that allowed a person to live on it, and even sustain his or her family, and work that did not. Workers are defined by the social relationship under which a given task was performed, and not by the task itself.

The fiscal purpose of the Cadaster often makes it possible to distinguish domestic work for the market from domestic work for family consumption. Householders were asked to declare which activities provided them with a taxable income. Boys and girls typically collected firewood for their families' consumption. However, when the same task was done for the market, the clerk noted '*para vender*', to sell, in the margin.

Still, whether a woman's work was for the market or for her household is sometimes unclear. Expressions such as 'dedicated to womanly occupations' and 'works with her hands' usually refer to textile work, but there is no way of knowing whether the goods produced by these women were destined for the marketplace or for family consumption. Opting for a conservative definition, this study classifies such descriptions as unpaid household work. Given the tax-focused nature of the

Table 1. *Unpaid work, paid work, and participation rates in sample towns (%)*

Province	Town	Population	Women			Men				
			Activity described	(A) Unpaid work (%)	(B) Market work (%)	Participation rate (age 10–60)	Activity described	(A) Unpaid work (%)	(B) Market work (%)	Participation rate (age 10–60)
Albacete	Alcaraz	3,087	634	14.4	25.8	34.0	1,220	10.0	64.8	90.8
	Villarrobledo	2,991	929	31.0	25.6	36.2	1,063	5.0	60.9	85.4
Ciudad Real	Albaledejo	804	186	27.7	19.6	24.1	321	12.6	62.2	88.0
	Alcolea de Calatrava	774	175	4.3	37.8	51.6	267	7.5	60.5	84.8
	Almagro	8,068	964	3.1	18.8	23.5	2,591	7.7	56.4	80.6
	Bolaños	1,288	240	8.2	29.0	38.6	443	4.2	61.6	87.2
	Campo de Criptana	4,241	1,121	23.7	26.8	35.3	1,461	7.7	60.8	81.7
	Las Casas	238	54	2.7	45.0	65.3	78	2.4	58.3	88.9
	Pedro Muñoz	2,213	178	1.9	9.4	12.4	666	1.8	56.7	78.2
	Puebla del Principe	347	67	25.7	10.8	14.5	144	11.1	66.7	89.6
Terminches	Terrinches	585	223	34.3	41.5	55.1	240	12.8	66.9	87.3
	Torre de Juan Abad	872	255	0.7	15.1	19.9	294	1.1	64.6	87.0
Valenzuela de Calatrava	Valenzuela de Calatrava	425	70	5.7	25.9	33.6	145	8.0	60.1	86.1
	Brihuega	3,280	754	7.7	35.5	47.4	1,160	7.9	62.1	84.4
	Guadalajara	5,209	771	5.5	20.1	27.1	1,759	10.1	56.7	81.5
	Villaviciosa	194	29	7.5	22.5	28.8	80	20.2	46.5	91.8
Madrid	Villamanrique	161	46	0.0	59.7	82.7	48	2.4	54.8	84.6
	Villarejo de Salvanés	2,055	406	7.0	29.6	41.4	765	12.1	57.0	81.0
Toledo	Ajofrín	3,308	382	2.2	19.6	25.3	1,111	4.1	60.9	82.4
	Alanchete	185	31	8.2	20.6	28.2	77	12.5	72.7	92.5
	El Carpio	1,388	241	12.0	19.2	23.5	551	11.3	61.7	83.5
	Quintanar	2,771	988	28.8	39.0	55.1	998	10.3	61.5	87.3
Total		44,484	8,744	11.4	24.4	32.3	15,452	7.9	59.8	83.6

Notes: Activity described: no. of individuals of all ages declaring any kind of activity, including unpaid or paid work, attending school, no work, and so on.
A: Unpaid work: men or women of all ages declaring doing unpaid work as % of all men or women in the locality.
B: Market work: men or women of all ages declaring doing paid work as % of all men or women in the locality.

Participation rate: men or women aged 10 to 60 declaring doing paid work as % of all men or women aged 10 to 60. See online app. S1 for additional data.

Sources: See n. 9.

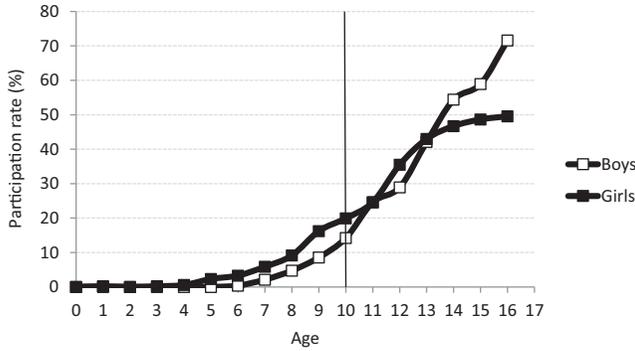


Figure 2. *Participation rates of children*

Source: Sarasúa, ‘¿Activos desde cuándo?’.

Cadaster, income-generating work would probably have been identified, although, as will be shown, under-recording of women’s work certainly occurred.

A further limiting factor for the denominators in participation rates is working age, which has been limited here to 10–60 years.¹⁰ Figure 2 shows the percentage of girls and boys under the age of 16 who were engaged in market work, according to their fathers’ declarations. Although some children under eight (mostly girls) made a living as domestic servants, helpers in textile jobs, or apprentices, most working children under 10 performed unpaid tasks for their own households, carrying water or firewood, or minding children. Working age has thus been defined as beginning at 10 years.¹¹ Sixty years has been defined as the upper limit of working age because at that age most men and women declared they were no longer able to work. The small number of people who worked past the age of 60 was mostly women working in textile manufactures.

Finally, it has been assumed that both men and women workers worked roughly full time. This assumption avoids ‘double-counting’ the negative influence of unpaid domestic work on women’s participation, since women working in the home but not producing for the market are already excluded from the definition of worker. Also, substantial historical evidence indicates that the notion of women’s work as mainly irregular, seasonal, or part-time is fundamentally an ideological construct, causing women workers to be systematically under-recorded in censuses and statistics. It is worth noting that a portion of working men also had an uneven attachment to the labour force. The *Memoriales* provide many examples of seasonal and structural unemployment and the associated irregularity of much of men’s work. Sixty-year-old Manuel Siruela declared, ‘My occupation is to bring in a

¹⁰ The results presented in this article are part of two research projects directed by me and involving several researchers who have developed a common methodology: ‘Reconstrucción de la tasa de actividad femenina española, 1750-1980’ (HAR2009-11709) and ‘Salarios, actividad de las mujeres y niveles de vida, 1750-1950’ (HAR2013-47277-C2-1-P), both financed by the Spanish Ministerio de Economía y Competitividad.

¹¹ In England, ‘The rise in child participation rates in the late eighteenth and early nineteenth centuries was associated (necessarily) with younger working, and, if “very young” working meant working before the age of 10, this was far from rare. In the cohorts that lived through this period, the sons of miners, factory workers, outworkers, casual workers and soldiers all on average started work below age 10’; Humphries, *Childhood*, p. 367. On the working age of children in Spain, see Sarasúa, ‘El acceso’; eadem, ‘¿Activos desde cuándo?’.

bundle of wood, to guard a vineyard sometimes'.¹² Twenty-eight-year-old Ignazio Zárate stated, 'My occupation is working in the fields when they call me'.¹³ These declarations do not suggest continuous year-round employment, yet both men appeared in the Cadaster as agricultural workers. Many men did unpaid work as well, as will be seen below. In short, 'while it is true that some women worked irregularly, at peak seasons, or at home partly for family consumption, many men worked on the same basis ... [M]en's participation rates of near 100 percent are just as much historical and ideological constructs as are women's depressed rates'.¹⁴

II

Table 1 shows women and men's participation rates. It should first be noted that 7.9 per cent of men and 11.4 of women were occupied in non-market activities. Many householders described women and children as doing non-market work: domestic labour, childcare, and so on. As this information was not going to have any fiscal impact, most localities did not include it. Other localities did, and although this work has not been included in the calculation of participation rates, it provides important information about the content of housework. For example, Ángela Horganero, a widowed breadmaker, had seven children, of which the two youngest, Catalina, 9, and Josefa, 6, 'occupy themselves in sweeping and scrubbing, given their young age'.¹⁵ Bernardo Díaz, shoemaker, declares that his wife, María, 41, is occupied in 'taking care of the house and the needed sewing, clothes washing, and what women customarily do'.¹⁶ Differences in unpaid work among localities reflect clerks' decisions about what activities should be recorded. In a large town such as Guadalajara, clerks were surely more aware of the fiscal purpose of the survey, and therefore did not bother to record unpaid work by men or women.

Men's participation rates varied from 78.2 per cent to 92.5 per cent. The largest localities had lower rates (Almagro with 80.6 per cent, and Guadalajara with 81.5 per cent) because of their higher degree of social differentiation. Non-working members of the nobility, beggars, and monks were concentrated in these cities.

For the entire region, women's participation rate was 32.3 per cent.¹⁷ Differences in participation rates among localities are much larger for women than for men, ranging from 12.4 per cent in Pedro Muñoz to 82.7 per cent in Villamanrique. While these large differences could theoretically reflect different employment opportunities for women, the lower rates are mostly due to the way women's work was recorded, or rather unrecorded. In all localities, but particularly in those with lower rates for women, women's market work was apparently under-recorded. The Cadaster's own documents imply that women's participation in market work

¹² AHPCR, Ensenada section, Manuel Siruela, Almagro, box 476, declaration 96.

¹³ AHPCR, Ensenada section, Ignazio Zárate, Almagro, box 476, declaration 324.

¹⁴ Humphries and Sarasúa, 'Off the record', p. 8.

¹⁵ AHPCR, Ensenada section, Ángela Horganero, Campo de Criptana, box 502, declaration 135.

¹⁶ AHPCR, Ensenada section, Bernardo Díaz, Campo de Criptana, box 502, declaration 154.

¹⁷ Women's participation in the US was 38.5% in 1970. In Spain, where the series starts with the population census of 1877, this rate was reached in 2001.

Table 2. *Activity descriptions and participation rates, by civil status*

		<i>Activity described</i>	<i>Participation rate</i>
Men	Single	81.0	67.8
	Married	99.6	97.0
	Widowed	98.1	91.6
Women	Single	63.6	50.3
	Married	29.5	14.5
	Widowed	64.0	46.6

Sources: See n. 9.

was higher than that shown by the survey's clerks. Ajofrín, in Toledo, was a prosperous production centre for woollen fabrics in the eighteenth century, with a population of 3,308 in 1753. Located next to the Tajo River, Ajofrín produced brown woollen habits for Franciscan monks and uniforms for the royal army. According to householders' declarations, 82.4 per cent of men but only 25.3 per cent of women were gainfully employed. Yet when the town council responded to a Cadaster question concerning how many poor people lived in town, they responded, 'Only eight, as everybody is devoted to the work of wool, particularly women, even the eldest ones'.¹⁸ In other words, a large number of working women in Ajofrín do not appear in the 'numerator' of the town's participation rate simply because their occupations were not declared or recorded. The participation rate of women in Ajofrín was probably similar to that of men, rather than the figure of 25 per cent that comes from their husbands' declarations.

Further evidence of the under-reporting of women's paid work comes from the relative absence of occupations in which women were most likely employed, such as clothes washers, teachers in sewing schools, and wet-nurses. Furthermore, according to householder declarations, no one worked in cheese making, although the region was well known for its cheeses 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 wax for candles; the county's candles were used in churches in Madrid and throughout central Spain; and many householders declared that they owned beehives. Finally, many of women's 'housework' activities, such as raising domestic animals to be sold in the market, constituted the production of market goods, but were not recorded as such.

For any group, the greater the number of individuals whose occupations were described the greater the probability that any paid work was mentioned. Women's market work was under-recorded because women were usually defined by their civil status rather than by their occupation. Table 2 show the percentages of occupations declared, by gender and civil status. Married men systematically described their occupations, since that was how they defined themselves, and their participation rate was 97 per cent. Only 29.5 per cent of married women were given an occupational title (of which about half were described as doing housework) and

¹⁸ Ministerio de Cultura, 'Catastro de Ensenada', <http://pares.mcu.es/Catastro>, Ajofrín, *Respuestas generales*, question 36.

their participation rate was 14.5 per cent. Although this tendency to not declare women's occupations affected widows and single women, married women were the most affected.¹⁹

Married women who worked on family farms or in family businesses were very rarely mentioned as workers by their husbands. In Alcaraz, where women's participation rate was 34 per cent, the town council declared, 'There are twenty women bread makers occupied in baking and selling bread'.²⁰ However, from householders' declarations, only six can be identified. Husbands declared their own occupations and mentioned that they owned ovens, failing to note who worked those ovens. In Villamanrique, the only town where women's participation rate is almost identical to men's, women were described as gainfully occupied only indirectly. The men of Villamanrique stated that they were farmers or esparto grass workers (esparto fibres were used to produce baskets for agriculture, trade, and mining, as well as cords and espadrilles), but failed to declare occupations for their wives. Only at the end of the document, when the men reported their annual income for non-agricultural activities, did they make statements that revealed the true situation: 'I make, together with my wife [or daughters or children], this amount'. Wives who laboured in esparto product manufacturing also went without declared occupations.²¹

Householders' declarations in the *Memoriales* also make it possible to analyse the region's occupational structure. Occupations have been classified according to Wrigley and Shaw-Taylor's Primary-Secondary-Tertiary (PST) codification scheme.²² The two main methodological problems for classifying historical occupations—determining the sector in which day labourers should be placed, and how to classify by-employment—are minimized in the Ensenada Cadaster. Since householders' declarations were intended to identify sources of income, survey officials clarified each individual's principal occupation, sometimes writing an occupation in the margin that differed from the one declared by the householder. In the case of day labourers, the term '*jornalero*' is used in the Cadaster only for individuals working in agriculture. Day labourers working in non-agricultural occupations are identified by their trades, which is how they defined themselves. For instance, Juan Herrera, married, 24, of Ajofrín, stated, 'I have no goods other than what I earn to eat, and my trade is carder, and the day I do not card I have nothing to eat'. Many *jornaleros* declared that they owned or rented plots of land. These men probably only worked as day labourers during peak seasons—harvest, olive picking, and grape collection. (The seasonality of the work of agricultural day labourers was well known by the government, which assessed income tax on 120 working days per year for *jornaleros* of all provinces.) The fluid boundary between day labour and farming for these men has no impact on sector distribution, since both types of activity were in the primary sector.

¹⁹ Field and Erickson, 'Prospects'.

²⁰ Ministerio de Cultura, 'Catastro de Ensenada', <http://pares.mcu.es/Catastro>, Ajofrín, *Respuestas generales*, question 33.

²¹ AHPT, Ensenada section, Juan Herrera, Ajofrín, p. 324. The under-recording of women's work, particularly married women's work, has been documented elsewhere. In Turin, for example, the 1802 Napoleonic census showed a participation rate for women of 33.3%, yet according to the registers of the Ospedale di Carità, the city's main charitable institution, 63.2% of women had paid occupations; Zucca Micheletto, 'Reconsidering', p. 211.

²² Shaw-Taylor and Wrigley, 'Occupational structure'; Wrigley, 'PST system'.

By-employment has recently been described as less widespread than traditionally thought.²³ In La Mancha, by-employment was an efficient response to the high seasonality of labour demand in agriculture. It was also a way to make assets profitable. Farmers or day labourers who owned (or, more likely, rented) a donkey or mule could work in transportation during the winter. However, few individuals declared two occupations, and even fewer worked in two economic sectors. Most of those with two occupations stated that they were farmers and day labourers. All of these have been classified by their main occupation, as identified in the Cadaster. Most by-employment occurred within the household, as in the case of farmers who also declared themselves to be bakers (when in fact their wives and children were most likely the ones working in the bakery). In the case of women, paid occupations were usually combined with unpaid domestic work, which greatly reduced the possibility of by-employment. Again, such by-employment has little impact on sector distribution, as most cases refer to the manufacture of two textiles and so do not cross the PST boundaries.

Table 3 shows the two main occupations declared by men and women in each of the 22 towns. With few exceptions, the pattern is clear: men's main occupations were in the primary sector (farmer, day labourer, shepherd), while women's main occupations were unpaid domestic work and textile manufacturing. One exception was the capital city of Guadalajara, where a royal factory producing woollen clothing employed mostly men. Other exceptions were two small towns where most people were occupied in *esparto* working, and Villaviciosa, a small town with a large monastery.

The economy of the region was based on agriculture and sheep breeding. Landownership structure varied greatly by locality, as did the quality of soils and yields. Areas of small family farms coexisted with large estates and great sheep herds owned by a few noble families and monastic orders. The main crops were cereals, grapes, and olives, although commercial crops such as saffron, fruits, legumes, vegetables, dye plants, and sumac (a tanning plant, used to transform skins into leather) were expanding. A large portion of the land was devoted to pasture. In 1750, the region ranked second in number of sheep (after northern Castile), with nearly four million head out of the 18.7 million head in the kingdom.²⁴ Exports of merino wool enriched members of the *Mesta*, an association of sheep owners (mostly members of the nobility and religious orders) who had been granted huge estates during the Reconquest. The main sheep owner in Almagro, the largest locality in the study region, was the count of Valparaíso, Fernando VI's Secretary of Treasury when the Cadaster was compiled. His flock numbered 12,000. The second-largest sheep owner was the Jesuits.

This economy shaped the region's occupational structure and, in particular, the prevalence of transhumant pastoralism. In the entire sample of 22 towns, there were 761 shepherds, amounting to 9.6 per cent of those occupied in the primary sector. In Almagro, 105 men stated that they were shepherds, that is, about 8 per cent of the men working in the city's primary sector. In some towns, sheep-herding

²³ Keibek, 'By-employments'. With evidence from probate inventories cross-linked with parish registers, Keibek concludes that in England only 20–30% of the manufacturers' households engaged substantially in agricultural activities. However, probate inventories never include yarn, and often do not count spinning wheels and distaffs as they were too cheap, so the percentage could be higher. I thank Jane Humphries for pointing this out to me.

²⁴ García Sanz, 'Competitivos en lanas', p. 401.

was more important. For example, El Carpio had 104 shepherds, or 30.4 per cent of the men in the primary sector. Shepherds worked in teams, with head shepherds, or *mayorales*, taking their sons and male relatives to work with them. (Transhumant sheep-herding was a male occupation, requiring absences from town from spring to early winter.) Most shepherds owned small flocks themselves. Sheep were part of their annual wages, and they were allowed to mix their stock with the main herd. Shepherds were also paid with wool. In order to spend this in-kind wage, the wool first had to be spun, which was the work of wives and daughters—another example of market work that was not declared by householders.

A key factor that shaped the region's economy was its proximity to Madrid. In the eighteenth century, La Mancha was the royal court's main provider of wheat, meat, coal, timber, and textiles, as well as transportation and domestic services. 'The impact of Madrid as it grew from 125,000 to 200,000 during the eighteenth century was inevitably a major factor in shaping the long-range commercial activity in Castile'.²⁵ This helps explain the region's economic dynamism and burgeoning cottage industry, although easy access to the main roads to Cádiz, the first colonial seaport, and other Andalusian cities also benefited the region.

Urbanization has been seen as encouraging 'an increasing division of labour within the country, growing specialization, and the shift of many activities from non-market oriented pursuit within the family or the village to specialized market-oriented business firms'.²⁶ Table 4 shows that occupational structure only partially correlates with the size of locality. In some of the larger localities, including two cities with over 5,000 inhabitants, the share of the population occupied in agriculture was greater than the regional average, much like the 'agro-towns' of southern Spain. In the largest locality in the sample, Almagro, the population occupied in the primary sector made up 45.9 per cent of the total population. However, the primary sector of the capital Guadalajara comprised only 18.7 per cent of the total population, a reflection of the city's royal wool factory and well-developed service sector, including civil servants. At the same time, because of their vibrant cottage industries, some of the smallest localities had relatively large manufacturing populations. For example, 64.4 per cent of Villamanrique's population (161 people) were employed in manufacturing, and 39.7 per cent of Las Casas's population (238 people) were similarly engaged. Such localities specialized in the production of specific manufactures that employed most or all members of a family.

The two most important factors underlying differences in occupational distribution were gender segregation and marital status. Overall, the primary sector occupied 60.0 per cent of working-age men, but only 2.9 per cent of working-age women. Occupations included in this sector are farmers, day labourers, market gardeners, shepherds, and farm servants. Men's primary-sector employment was lower in three towns with important manufacturing centres: Guadalajara (25 per cent), Ajofrín (36 per cent), and Brihuega (38 per cent).

Women's presence in the primary sector ranges from none in some localities to 35.3 per cent in Villaviciosa. In Pedro Muñoz, where flax cultivation was important, 18.4 per cent of working women were occupied in the primary sector. In general,

²⁵ Ringrose, *Madrid and the Spanish economy*, p. 306 (quotation); Nieto Sánchez, 'Redes comerciales madrileñas'.

²⁶ Kuznets, *Modern economic growth*, p. 271.

Table 4. *Size of towns and occupational structure by sector (% of total labour force)*

Town	Population	Men			Women		
		Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
Villamanrique del Tajo	161	45.5	40.9	13.6	2.3	88.4	9.3
Alanchete	185	88.7	1.6	9.7	0.0	50.0	50.0
Villaviciosa	194	91.1	0.0	8.9	35.3	29.4	35.3
Las Casas	238	94.4	1.4	4.2	0.0	95.9	4.1
Puebla del Príncipe	347	86.6	3.6	9.8	0.0	52.9	47.1
Valenzuela	425	91.1	4.8	4.0	3.9	74.5	21.6
Terrinches	585	88.5	5.7	5.7	0.0	89.5	10.5
Alcolea de Calatrava	774	85.3	6.9	7.8	9.9	80.1	9.9
Albaladejo	804	84.3	7.4	8.3	1.5	70.8	27.7
Torre de Juan Abad	872	80.8	9.2	10.0	5.1	61.0	33.9
Bolaños	1,288	89.9	4.4	5.7	8.6	80.9	10.5
El Carpio	1,388	76.6	13.3	10.1	2.5	47.1	50.4
Villarejo de Salvanés	2,055	52.6	33.6	13.8	4.0	67.4	28.6
Pedro Muñoz	2,213	79.4	12.9	7.7	18.4	44.9	36.7
Quintanar	2,771	61.7	12.2	26.1	0.0	90.4	9.6
Villarrobledo	2,991	73.4	15.2	11.4	0.8	70.6	28.6
Alcaraz	3,087	59.9	21.2	18.9	2.9	60.1	37.0
Brihuega	3,280	38.3	42.5	19.2	4.1	60.4	35.5
Ajofrín	3,308	35.9	45.1	18.9	3.6	44.8	51.6
Campo de Criptana	4,241	73.3	13.7	13.0	1.7	75.0	23.3
Guadalajara	5,209	25.1	54.7	20.2	1.4	27.0	71.6
Almagro	8,068	61.4	15.7	22.8	1.3	53.0	45.7
Total	44,484	60.0	23.6	16.4	2.9	62.8	34.4

Sources: See n. 9.

women and girls worked in the fields in a limited number of situations: as labourers in family orchards (*hortelanas*); exceptionally, as day labourers; and as widow farmers (*labradoras*, probably landowners). Most women did work in the fields during harvests. Women were not occupied in transhumant sheep-herding, but they did take care of the animals as unpaid domestic family work, and were widely employed in making cheese.

The secondary sector occupied 23.6 per cent of working men and 62.8 per cent of working women. The unusually high share of men in industry is explained by the region's two royal factories, which employed mostly men.

The service sector occupied 16.4 per cent of working men and 34.4 per cent of working women. As table 5 shows, domestic service was the main occupation for women and men in this sector, employing 84.4 per cent of women and 17.8 per cent of men in the sector. For women, domestic service correlated with the size of the town population and with the number of priest-headed households. Male domestic servants were mainly errand boys who worked outdoors, carrying water and collecting firewood. For men, service occupations were more diversified: 11.4 per cent of those in the sector were mule drivers, 9.7 per cent were priests or held other clerical offices, and 4 per cent were dealers in wool and woollen products (many owned their own workshops). Mule driving was a service sector job for men of all occupations, particularly farmers, who used the winter months and their access to beasts of burden to transport goods around the region, thus enabling towns to develop as centres of production that could supply Madrid

Table 5. *Employment of men and women in secondary and tertiary sectors (as % of employment in each sector)*

<i>Secondary</i>	<i>Total</i>	<i>Men</i>	<i>%</i>	<i>Women</i>	<i>%</i>
Textile manufactures (wool, worsted, linen, coarse fabric, lace)	3,885	1,477	48.1	2,408	69.5
Clothing manufactures and accessories (stockings, hosiery)	832	197	6.4	635	18.3
Food industry (milling, baking)	481	284	9.2	197	5.7
Rope, cord, esparto production	382	183	6.0	199	5.7
Other subsectors	957	932	30.3	25	0.8
Total	6,537	3,073	100.0	3,464	100.0
<i>Tertiary</i>	<i>Total</i>	<i>Men</i>	<i>%</i>	<i>Women</i>	<i>%</i>
Domestic service	1,959	394	17.8	1,565	84.4
Mule driving/transport	253	253	11.4	0	0.0
Religious service	215	215	9.7	0	0.0
Trade in wool and woollen products	114	89	4.0	25	1.3
Other subsectors	1,528	1,263	57.0	265	14.3
Total	4,069	2,214	100.0	1,855	100.0

Sources: See n. 9.

with foodstuffs, consumption goods, and building materials. Finally, some in the service sector had commercial enterprises, often family businesses. Householders who declared ownership of a shop or market stall typically failed to mention their wives' occupations. However, if these women became widowed, they would then appear in Cadaster records as shopkeepers or traders.

III

'The trade that people from La Mancha carry out, within the court, of stockings, bonnets, knitted socks, girdles and garters is from their mills. The merchant associations do not agree with this freedom'.²⁷ Here Larruga describes a significant development in the eighteenth century: in the streets of Madrid, itinerant vendors and peddlers were selling textile goods made by the women of their home towns. This new way of commercializing consumption goods created conflict with powerful merchant associations, which had long enjoyed monopoly privileges. As frequent lenders to the king, merchants in these associations had gained important rights, such as the vendor's obligation to be a member of the guild and to have an open shop in the capital. As Larruga points out, the manufactured items being sold on the streets of Madrid had been fabricated in mills in La Mancha.

The importance of these manufactures has gone largely unnoticed in the scholarly literature. Historical analysis based solely on the Cadaster's *Respuestas generales*, or on the summaries prepared by the councils, usually describes a manufacturing sector that was static or even stagnant, employing a small portion of the labour force, mostly members of the declining guilds. Describing the

²⁷ Larruga, *Memorias*, vol. XVII, p. 259.

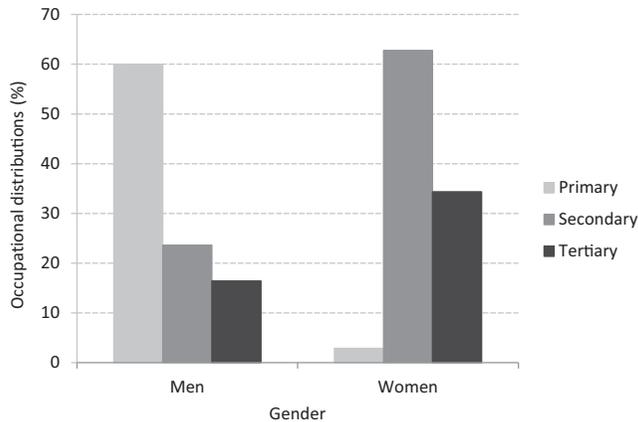


Figure 3. *Occupational distribution of women and men*

Sources: See n. 9.

region's manufacturing sector, one historian writes, 'with the exceptions of Royal manufactories and what has been termed "urban concentrated industry", [it consisted] mostly of artisan activities'.²⁸ This sort of analysis has contributed to an overly simplified description of the inland Spanish economy in the eighteenth century, an economy characterized by 'the lack of articulation of the internal market, industrial production reduced to crafts providing local markets, while the large urban markets are provided with imported goods'.²⁹ According to this view, the royal factories of Guadalajara and Brihuega were costly attempts by the state to compensate for a lack of private initiative, and were destined for failure because they were unable to build on an existing industrial foundation.³⁰

A very different picture emerges from the *Memoriales*. We learn that the region had important textile, shoe and leather, and food industries. Its towns produced a variety of manufactured goods, with a high degree of local specialization: certain towns were entirely dedicated to the production of one particular good. Thousands of workers were employed in manufacturing, which was supported by active merchant capital. Commercial networks transported these industrial goods to Madrid, to the national market, and to Cádiz, where they were shipped to the colonies. This history has been submerged in the archives, out of sight, or simply ignored because these manufactured goods were not produced by the guilds, but rather by a dynamic putting-out system that was developed and controlled by local and city merchants. This putting-out system largely employed women and girls. Only by including women and children's work, recorded in the householders' declarations in the *Memoriales*, is it possible to make this manufacturing sector visible.

An example illustrates how a limited examination of the historical sources can lead to a misleading economic conclusion. Using only the *Respuestas Generales*, that is, data about men's occupations, the secondary sector of Almagro appears to

²⁸ Braña, *Almagro 1751*, p. 12.

²⁹ Fontana, *La quiebra*, p. 59.

³⁰ Benaül, 'Especialización', p. 201.



Figure 4. *A Manchego peddler of 'stockings and socks'*

Source: From the series *Gritos de Madrid*, by Miguel Gamborino (1760–1828), published by the Imprenta Real in 1817. Colección Eduardo Salas, Madrid.

comprise 17.2 per cent of the labour force.³¹ However, if women's work, recorded in the *Memoriales*, is included, the picture becomes more nuanced. In fact, at the time of the Cadaster, about 25 per cent of Almagro's labour force was employed in the secondary sector, with lace makers accounting for 33 per cent of all women declaring an occupation.

As table 5 shows, textiles were the main industry in the manufacturing sector, employing 48 per cent of the men and 70 per cent of the women who worked in the sector. The region had several characteristics that favoured the development of textile manufactures. There was an abundance of raw materials: high-quality wool, silk, flax, hemp, and esparto grass (which thrived even in the worst soils). Access to rivers helped account for the large number of fulling mills in the region. Proximity to Madrid, and to road connections with Madrid, Seville, and Cádiz, were surely decisive factors.

³¹ Braña, *Almagro 1751*, p. 120.

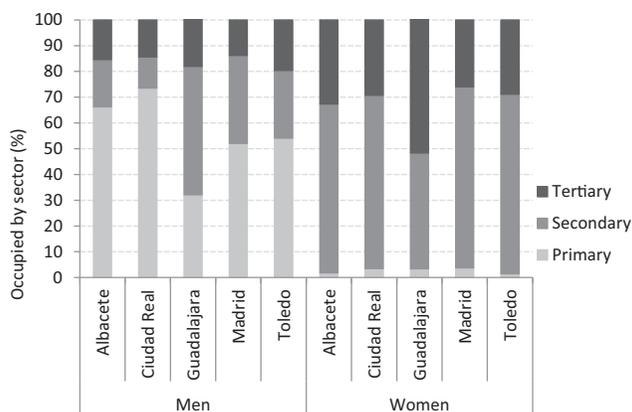


Figure 5. Sectoral distribution of the labour force, by province

Sources: See n. 9.

The region developed a complex industrial structure. A network of putting-out households produced semi-finished goods (yarn, worsted thread) for factories and finished goods (lace, stockings, garters) for urban markets. Urban workshops specialized in woollen cloth of medium quality. Diego Mingote, from Alcaraz, explained how his workshop worked:

I make wash cloths and woollen cloths and in this enterprise I handle up to 1,500 *reales*; I rent a wide loom to weave them; and I have a young man and an apprentice for the business; and to make the wool I have a young man and a carder; and I keep them all occupied eight months a year, and pay them for their work in correspondence to what they produce, whether in weaving, combing, or carding the wool, and with the profits that are left I maintain myself and my family.³²

The two royal factories (in Guadalajara and Brihuega) produced high-quality woollen cloth and employed large numbers of workers. More than 500 men and only four women worked in the Guadalajara factory, which also kept 29 men and 53 women working at home. The Brihuega factory opened later and employed 126 men and 110 women, all in the factory. Both factories also employed thousands of spinners who lived up to 200 kilometres away.³³ As figure 5 shows, men's employment in manufacturing was exceptionally high in the province of Guadalajara, where both factories were located. For women, the opposite was true: manufactures were the main source of employment in every province except Guadalajara, where services predominated.

La Mancha's textile manufactures were extensively described by contemporary observers. In the following passage, Larruga describes a La Mancha town for which, unfortunately, the Cadaster's *Memoriales* have not been preserved:

[T]he Parish Priest stated that the women in Santa Cruz de Mudela are very industrious, and most of them are employed in various spinning and textile manufactures of wool,

³² AHPA, Ensenada section, Diego Mingote, Alcaraz, box 464, declaration 403.

³³ López Barahona, 'Pobreza'; González Enciso, *Estado e industria*; Nieto Sánchez and López Barahona, 'Women's work'.

linen, and hemp, and among these they generally work making fabrics for fine garters and girdles, for which they spin and throw the yarn themselves . . . that the number of textile looms with the purpose of manufacturing garters and girdles is probably around fourteen or fifteen; but small textile looms only for garters and fine and ordinary trimmings were innumerable, as a house, even of poor people, that did not have one, two, or more was rare; that it isn't easy to reduce the number of girdles and garters made each year to a single figure, as there isn't a formal mill for them, and they are intercalated with other manufactures . . . orders resulting from their proven good quality are barely fulfilled; that fine spun goods are also made in their own homes, and that some women stand out for the fineness and delicacy of their yarn, throwing them on a distaff, although they also use spinning wheels for less delicate work; and that these, just like the looms for garters and girdles, are constructed in the same town; that there aren't any idle people, because the locals are very dedicated to work and to the promotion of industry in the noted branches.³⁴

Since this manufacturing was mostly done within rural households by women, who are not recorded in the *Respuestas generales*, scholars have overlooked it. When they have noticed it, they have assumed that domestic production was for family consumption. A closer look confirms that these women were in fact working for the market. An important piece of evidence comes from the royal factories, which employed a large percentage of these women as spinners, their names appearing in the factory records. Spinners who did not work for the royal factories provided raw material (yarn) for textile manufacturing that was not yet mechanized. Besides wool, linen, and hemp (silk spinning was widespread in Toledo), women spun 'weft with the lathe and worsted thread with the wheel',³⁵ wove wool, hemp, and linen; and made various types of woollen cloth (such as *alborno* and *sayal*).

The kind of finished goods produced by women also indicates that their work was intended for the market. Many of these goods were aimed, directly or indirectly, at middle-class consumers: stockings, lace, scarves, bonnets, knitted socks, girdles, garters, bedspreads, ribbons, and edgings. These articles were not part of the sturdy attire used by poor peasants.

The high degree of manufacturing specialization is another sign of market production. Of the women in Quintanar who were occupied in textile manufacture, 40 per cent made bedcovers (195 out of a total of 496). In Villarrobledo, 26 per cent of the women in textiles were hosiery makers (69 women out of a total of 266). In Almagro, 79 per cent of the women in textiles were lace makers (308 out of 390), and in Valenzuela, the lace makers comprised 93 per cent of the women in textiles (39 out of 42). In Villamanrique, almost every family was occupied in collecting esparto grass and manufacturing goods with esparto fibres. It was not a lucrative occupation, for most householders in Villamanrique declared low incomes. The person with the highest income was Isabel Vara, a widow, who stated, 'My two sons [aged 30 and 24] work as labourers half the year, and the rest of the time in the esparto business, with my daughters, who assist them, and myself'.³⁶

Some individuals' declarations show that they worked by order (piecework). For instance, the occupation of Josefa Coronado was 'to weave bedcovers for others',

³⁴ Larruga, *Memorias*, vol. XVII, pp. 268–9.

³⁵ AHPA, Ensenada section, Eugenia Gregoria López, Alcaraz, box 465, declaration 634.

³⁶ AHPT, Ensenada section, Isabel Vara, Villamanrique del Tajo, declaration 51.

while that of María Isabel Muñoz was to 'take care of my house and weave bedcovers for others'.³⁷ Many householders made it quite clear that their goods were for the market, and that income from sales was crucial for sustaining their families:

spinning and other women's work to gain for our food (Alcolea)³⁸
 sewing for selling (Campo de Criptana)³⁹
 making stockings and weaving, upon which I maintain myself (Las Casas)⁴⁰
 living upon my poor work (Albaladejo)⁴¹
 sewing, spinning and other womanly works to maintain myself (Puebla del Príncipe)⁴²
 making stockings for our living (Villarrobledo)⁴³

Manufactured items had to be sold, and that meant taking them to market. It was men who were occupied in transporting and dealing the goods. While an *encajera* was a woman who made lace, an *encajero* was a man who dealt in lace. Some of these dealers were also involved in mule driving, an activity that grew alongside the manufacturing sector. In Quintanar, where women wove bedcovers, men such as Diego Gómez declared themselves a 'day labourer [and] making a few trips to sell bedcovers'.⁴⁴ Alfonso Ortiz stated that he was a 'mule driver to sell bedcovers and peas'.⁴⁵ Some drivers made medium-distance trips to places such as Madrid and Guadalajara; others made long-distance trips to places such as Granada, Seville, Portugal, and Cádiz. Men's work as mule drivers and cart drivers was the other face of textile manufacturing. For some men, the occupation was year-round, but for many more it was a seasonal activity. Antonio Pérez, from Almagro, was occupied in 'transporting the laces of others to Cádiz, being paid for my work'.⁴⁶ Juan Serrano stated, 'my job is taking laces of others to Andalucía to make some money'.⁴⁷ Francisco Serrano declared that he was a 'farmer and also wholesale merchant who makes some trips to the kingdom of Portugal with mules for working the land and other services'.⁴⁸ According to the town council, Serrano's trade was in 'leather soles, cocoa, mules and other goods'.⁴⁹ Antonio Espadas stated, 'my occupation is making some trips to Portugal and other places with Francisco Guerra, gaining my wage as a poor labourer'.⁵⁰

In Villarejo de Salvanés, 10 mule drivers made one or more trips each month. In the winter months, some farmers took up mule driving. Villarejo's mule drivers traded rope that had been bought or made by their families. Gabriel Camarmas travelled to Palencia, in northern Castile, 'taking woollen cloths of this land, soap

³⁷ AHPT, Ensenada section, Josefa Coronado, Quintanar, box 566, declaration 147; María Isabel Muñoz, Quintanar, box 566, declaration 177b.

³⁸ AHPCR, Ensenada section, Alfonsa Puentes, Alcolea de Calatrava, declaration 164.

³⁹ AHPCR, Ensenada section, Rufina Martínez Ramos, Campo de Criptana, box 503, declaration 585.

⁴⁰ AHPCR, Ensenada section, Sebastiana Talavera, Las Casas, box 458, declaration 29.

⁴¹ AHPCR, Ensenada section, Josefa Simona López, Albaladejo, declaration 65.

⁴² AHPCR, Ensenada section, Manuela González, Puebla del Príncipe, box 563, declaration 57.

⁴³ AHPCR, Ensenada section, María Alfonsa Calero, Villarrobledo, box 605 1^a, household 186.

⁴⁴ AHPCR, Ensenada section, Diego Gómez, Quintanar, box 566, declaration 209.

⁴⁵ AHPCR, Ensenada section, Alfonso Ortiz, Quintanar, box 566 bis, declaration 85.

⁴⁶ AHPCR, Ensenada section, Antonio Pérez, Almagro, box 480, declaration 317.

⁴⁷ AHPCR, Ensenada section, Juan Serrano, Almagro, box 477, declaration 1291.

⁴⁸ AHPCR, Ensenada section, Francisco Serrano, Almagro, box 480 bis, declaration 285.

⁴⁹ Ministerio de Cultura, 'Catastro de Ensenada', <http://pares.mcu.es/Catastro>, Almagro, *Respuestas generales*.

⁵⁰ AHPCR, Ensenada section, Antonio Espadas, Almagro, box 478, declaration 677.

and rope'.⁵¹ Francisco Coteño made trips with loads of clothes to Madrid and other places, and Manuel Calero also made 'trips with rope'.⁵² The town, which had hemp spinners but no wool spinners, specialized in rope making for the royal palace. Commercial ties with the royal court were not always beneficial. Francisco García, who with Victoria Martínez had won an annual contract to produce rope for the courts, lamented, 'having taken a large shipment of rope to the royal palace of El Pardo for His Majesty's account, I was paid only half the 500 *reales* I was entitled to'.⁵³

Shoe making was also important in the region, particularly in Brihuega, which specialized in the fabrication of *abarcas*, a cheap type of leather sandal worn by shepherds and rural workers. Other localities specialized in the manufacture of goods made with esparto grass.

Women's specialization in textile manufactures is also reflected in the different ways that girls and boys were schooled: 3.2 per cent of girls and 7.4 per cent boys under the age of 12 attended school. There is surely some under-recording here, since householders were not asked to declare their children's status in relation to school. All of the students older than 12, including those attending a university, were male. However, the main difference between boys' and girls' educational experience was not in school attendance but in curriculum. Boys were taught to read, write, count, and perform simple mathematical calculations. Girls attended lace schools, sewing schools, and spinning schools. They were not taught how to read or write. As the first population census in 1860 shows, women's literacy rate in the region was below the (already low) rate of 11.9 for Spain. This was not the result of a complete lack of interest in the education of daughters. Some families did invest in their daughters' education, since girls' schools were private. However, when parents decided to spend their hard-earned money on their daughters' education, their choices suggest that a textile trade was the best investment.⁵⁴

Saito found high labour participation rates for women in England in the 1780s, particularly for married women. In Cardington, for example, women's participation rate was 82 per cent. In at least some localities, then, eighteenth-century participation rates were higher than rates calculated for the 1850s, and also higher than current rates. The high rates were the result, he argued, of the 'combined effect of poverty and opportunity provided by the cottage industry'.⁵⁵ Both reasons summarize supply and demand factors that accounted for women's concentration in manufactures, particularly textiles, across Europe in the eighteenth century. Both factors were at work in La Mancha, but other factors also played a role. In national and colonial markets, an expanding urban middle class was eager to purchase fashionable goods at cheap prices, creating growing demand for textiles, whose production was not mechanized and was thus labour-intensive. The guild system, which employed men almost exclusively, could not meet the rising demand. As in much of the rest of Europe, merchants found a cheap, skilled

⁵¹ AHPT, Ensenada section, Gabriel Camarmas, Villarejo de Salvanés, box 849 (no page numbers, alphabetical order).

⁵² AHPT, Ensenada section, Manuel Calero and Francisco Coteño, Villarejo de Salvanés, box 849 (no page numbers, alphabetical order).

⁵³ AHPT, Ensenada section, Francisco García Bernardino, Villarejo de Salvanés, box 850, p. 1079.

⁵⁴ Sarasúa, 'El acceso', p. 2013.

⁵⁵ Saito, 'Who worked when?', p. 27.

workforce in the countryside (women and girls) which faced few entrance barriers, since textiles were traditionally women's work. Improvements in transport systems, even if modest, allowed for the expansion of commercial networks. Increasing land rents and other financial and fiscal burdens on peasant households also helped push rural women and girls into non-agricultural occupations.

IV

In the words of Berg, 'It is now apparent that the eighteenth-century economy was much more industrial than once thought'.⁵⁶ The impact of taking women's work into account goes beyond correcting participation rates and sectoral structure of the labour force, to modify the existing narrative of structural change.

The share of the labour force that is occupied in agriculture plays a central role in standard interpretations of economic growth and modernization. Ever since Kuznets's classic study of economic growth in 1966, modernization has been described as the process by which societies move from rural to urban, and production and employment from agricultural to industrial.⁵⁷ According to this view, shares of agricultural employment can be used as an indicator of economic backwardness. Furthermore, the dynamics of regional inequalities can be described by using the share of agricultural labourers (A) in the total workforce (L) as a proxy for per capita income. 'Regional income per capita and the A/L share revealed highly significant inverse correlations similar to the results of the Chenery-Kuznets-Clark international cross-sectional studies'.⁵⁸ However, the 'total labour force in agriculture' has traditionally meant the total *male* labour force in agriculture.

The standard narrative of structural change assumes a numerator (the number of workers in a sector) that develops in relation to a stable denominator (total labour force)—but the steady development of this ratio, a cornerstone of the work of Kuznets and other development economists and economic historians, is an artefact that depends on the exclusion of women from the labour force. Women's labour supply was highly elastic, so in order to understand structural changes in employment, the numerator *and the denominator* need to be calculated. To explain why agricultural labour moved into manufactures and services, most historians point to increases in labour productivity.⁵⁹ However, if women are included in the picture, it quickly becomes apparent that productivity increases were not necessary. Manufacturing output could grow steadily by increasing the *number* of workers, and indeed, Spanish agriculture in the eighteenth century developed extensively, with only limited productivity increases.⁶⁰ Increasing non-agricultural employment reflected the entrance of new workers into the labour force, rather than a transfer of agricultural workers. Further, the manufacturing sector developed without 'mass application of technological innovations'.⁶¹ The

⁵⁶ Berg, 'Women's work', p. 23.

⁵⁷ Kuznets, *Modern economic growth*.

⁵⁸ Williamson, 'Regional inequality', p. 32.

⁵⁹ '... agricultural productivity growth released labour, and guilds did not prevent it from taking work in industry'; Ogilvie, 'European economy', p. 118. See also Broadberry, Campbell, and van Leeuwen, 'When did Britain industrialize?'; Broadberry, Campbell, Klein, Overton, and van Leeuwen, *British economic growth*.

⁶⁰ Sánchez Salazar, *Extensión de cultivos*.

⁶¹ Kuznets, *Modern economic growth*, p. 250.

economic actors of La Mancha were responsible for organizational innovations (the rise of scale economies), product innovations, commercial innovations (contacts with new markets), and increases in the volume of capital, all of which helped spur manufacturing employment. However, to our knowledge these actors did not implement technological innovations. Manufacturing would not be mechanized for another century.

By documenting the extent of women's market work in a region of pre-industrial Europe, women's concentration in non-agricultural occupations, and the thriving manufacturing and service sectors in rural towns, this article has shown that the structural change leading to the expansion of a manufacturing sector could occur without productivity increases in agriculture causing the 'release' of workers to non-agricultural sectors. In the case of eighteenth-century La Mancha, widespread employment in manufactures was surely behind the 'significant demographic and agrarian growth' identified by historians, but it coexisted at the same time with extensive poverty.⁶² Indeed, many hand spinners declared that they and their children were also beggars. Rising demand for manufactured items led to an expansion of the labour supply, but without any increase in wages or boost in labour productivity.⁶³

Structural change had not only an impact on sectoral distribution, but in the case of women, on participation itself. In the words of Horrell and Humphries, 'The argument that the decline in participation was caused not by supply shifts (changes in the reservation wage) but by changes in demand associated with structural and/or institutional changes still runs'.⁶⁴

When women are included in the employment structure of La Mancha, the shortcomings of traditional historical analysis become evident. If employment structure is derived only from men's occupations, the region appears heavily agrarian. If the whole labour force, including women, is considered, the region's agrarian and manufacturing sectors have roughly comparable weight. Somewhat more than two-fifths of the labour force was occupied in agriculture, while more than a third of the labour force was occupied in manufacturing.

Figure 6 compares the share of La Mancha's labour force in manufacturing in the eighteenth century with that computed from national Spanish censuses a century later. When Cadaster officials surveyed the kingdom's economy, La Mancha's manufacturing share of employment was (at least, given the under-recording of women's work) about 35 per cent, while agriculture's share was well below 50 per cent. Other researchers, using the same methodology and the same mid-eighteenth-century source for other locations, have arrived at similar or higher participation rates, also shown in figure 6.⁶⁵

In 1877, the first year of the national census, industry's share of the labour force was a mere 14.4 per cent, while agriculture's share was 66.1 per cent. According

⁶² Llopis and Sánchez Salazar, 'Crisis of 1803–1805', p. 297. The number of baptisms increased by 13.4% between 1740 and 1780 in the region.

⁶³ In England, 'meeting the rising home and foreign demand for British cloth required an expansion of the labour supply, but growth was achieved . . . without a corresponding increase in wages; nor is there any evidence of increased productivity of labour or physical capital'; Humphries and Schneider, 'Spinning the industrial revolution'.

⁶⁴ Horrell and Humphries, 'Women's labour force participation', p. 113.

⁶⁵ For northern Castile: Hernández, 'Women's labor participation rates'; for Laujar, in Granada: Garrido-González, 'La tasa'.

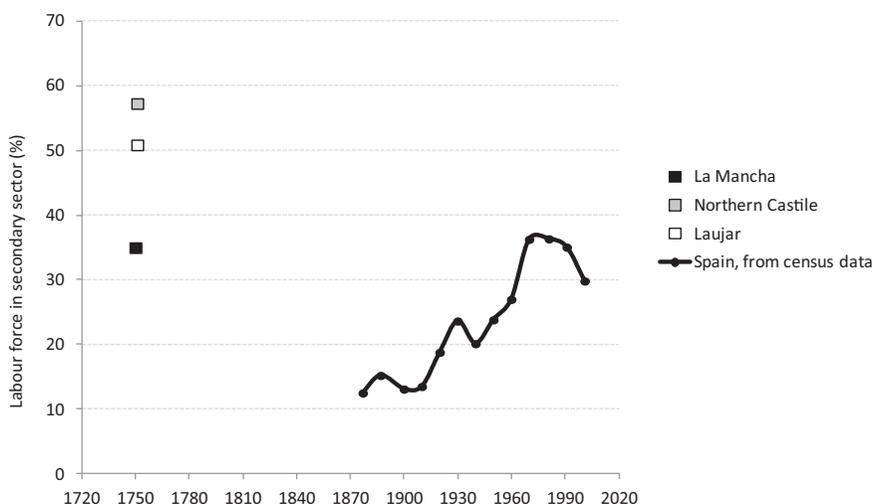


Figure 6. *Share of labour force in the secondary sector, Spain, 1750–2010*

Sources: For Northern Castile, Hernández, 'Women's labor participation rates'; for Lujar, Garrido-González, 'La tasa'; for La Mancha, see text.

to census data, agriculture's share of the labour force would not drop below 50 per cent until 1930.

Data on the eighteenth-century occupational structure cannot tell us about its later historical evolution. Structural change is about long-term economic growth and in order to produce an alternative account data on later benchmark years would be necessary. However, our data on the eighteenth century do tell us that the starting point of this account is wrong.

Standard interpretations of Spanish economic development are based on these census numbers. For Nadal, 'the role of the agrarian sector as a brake on industrial development cannot be denied'. Indeed, Nadal concludes that 'slowness in the expulsion of the [agrarian] workforce' was key in accounting for the failure of nineteenth-century industrialization.⁶⁶ For Tortella, 'The primary sector ... occupied a high and almost constant share of the Spanish labour force, approximately two-thirds, from the beginning to the end of the nineteenth century ... It is clear that the existence of such a large agricultural sector was holding back the Spanish economy in many ways'.⁶⁷

This is consistent with what has been found elsewhere in Europe. While women worked in the fields during peak seasons, their primary occupations lay in textile manufacture. Urbanization, income growth, and growing markets for consumption goods led to demand for manufacturing labour that was satisfied mostly by women and girls, who were preferred because they were cheaper than men. In seventeenth-century Bohemia, non-agricultural activity varied positively with, among other factors, the number of women who were heads of households.⁶⁸ In England,

⁶⁶ Nadal, *El fracaso*, p. 230.

⁶⁷ Tortella, *Development*, p. 8.

⁶⁸ Klein and Ogilvie, 'Occupational structure'.

spinning was a large source of employment for rural women and children in the eighteenth century, thanks to ever-growing internal and external demand for the country's textile products.

'Taking wool, linen, and hemp spinning together, the potential employment by 1770 could have been in the order of 1,500,000 married women. If we were to add to this figure of 100,000 women employed in hand-knitting stockings, this would have provided employment for about 75 per cent of *all* women over the age of 14 in the country. Of course, some proportion of this would have been done by younger children, so total employment would have been less'.⁶⁹

In the European pre-industrial economy, women were much more concentrated than men in non-agricultural occupations. So, taking women into account will inevitably—and profoundly—modify the mainstream vision of the period's employment structure.

Recent literature on economic growth is making an effort to introduce women's work into its calculations. In England, the sectoral distribution of the labour force in the mid-eighteenth century, including men and women, is assumed to be 36.8 per cent in agriculture, 33.9 per cent in industry, and 29.3 per cent in services. The impact of women's work seems to have been limited: agriculture goes from 43.0 per cent (males) to 36.8, industry from 32.3 (males) to 33.9, and services from 24.7 (males) to 29.3. The reason for this limited impact is that women's participation is assumed to have been 30 per cent. In fact, it is assumed 'to have been a constant 30 per cent before the mid-nineteenth century', since the middle ages.⁷⁰ The 70/30 ratio is justified with the argument that women were in charge of unpaid work, and as a consequence their commitment to paid work would have been much less than men's. Women's participation rates, which were lower than men's in the eighteenth century, like today, already reflected the economic impact of men's social exemption from doing (and women's social obligation to do) unpaid work. In mid-eighteenth-century La Mancha, 22.4 per cent of working-age women were identified by their husbands, fathers, or themselves as doing only unpaid domestic work. Women working for the market did some unpaid work as well, but there is no reason to conclude that they were not full-time workers. On the contrary, their lower wages surely obliged them to work harder and longer hours, particularly female heads of households, of whom we have seen several examples. On the other hand, as argued in the earlier part of this article, many working men had a discontinuous and seasonal attachment to the labour force as well, without their numbers being adjusted. Also, many of them did unpaid work as well. In short, the 70/30 ratio is a misleading approach to calculating the impact of women's work on occupational structure.

This study's conclusions on Spain are consistent with recent literature showing that in many European regions non-agricultural employment followed a U-shaped curve, with the share of industrial workers higher in the eighteenth than in the

⁶⁹ Muldrew, "'Th'ancient distaff'", pp. 519–20 (quotation); Humphries and Schneider, 'Spinning the industrial revolution'.

⁷⁰ Broadberry et al., *British economic growth*, p. 355, following Shaw-Taylor, 'Occupational structure'.

nineteenth century, mostly because of women's work in labour-intensive, low-productivity textile manufactures.⁷¹

In line with Berg's characterization of the eighteenth century as being much more industrial than once thought, the proto-industrial literature has documented since the 1980s that manufactures were central to pre-modern European economies. Yet standard interpretations of economic modernization still assign the vast majority of workers to the primary sector before industrialization. Data to sustain this mainstream account come from sources that focus on the occupations of men. Most women, and particularly married women, are regarded as non-workers and thus disappear from the history books. Their occupations do not matter.

The distribution of the labour force between agricultural and non-agricultural employment—for Kuznets the best example of 'the rapidity of structural shifts in modern times'—followed more than one path.⁷² Kuznets thought that the development trajectory was slow, steady, and one-way. It took 'centuries for the share of the agricultural sector in the labour force to decline to 50 per cent in any sizable country'.⁷³ Yet in many European regions, the share of *non-agricultural* employment seems to have followed a U-shaped curve, starting high in the preindustrial era, declining in the nineteenth century, and finally climbing again in the twentieth century (until the de-industrialization processes that began in the 1970s). What Gullickson described for the Caux French region applies to many other European regions. In France, by 1850 the cottage textile industry in the region of Caux 'was about to collapse . . . The Caux became more purely agrarian and much more sparsely populated than it had been in at least a century and a half . . . Weaving families who did not move found themselves forced into agricultural day labouring'.⁷⁴ To put it another way, as has been written for the Netherlands, 'modern economic growth in the period between 1800 and 1930 was not a linear process of labour and economic activity moving from agriculture to industry first and then to services'.⁷⁵

La Mancha failed to industrialize in the nineteenth century. The invasion of the Napoleonic army in 1808, and the subsequent war (1808–14), led to the widespread destruction of sheep flocks and infrastructure, abandonment of agricultural lands, inflation, and severe demographic crisis. National and international commercial networks were disrupted, causing a huge rise in the price of imports, particularly wheat and foodstuffs in general, and aggravating endogenous problems. Later in the century, as agricultural property was disentailed, the share of the labour force in agriculture grew rather than shrank. When spinning and the production of lace, ribbons, bonnets, socks, girdles, and garters was eventually mechanized, thousands of women and girls lost their jobs. Manufacturing employment fell across the country, even in the regions that industrialized. Women found fewer employment opportunities in the countryside,

⁷¹ 'In the Caux, an analysis of the sexual division of labour, or more precisely, of women's employment, is the key to understanding both the economic importance of the textile industry and the impact of its expansion, transformation, and contraction . . . many more women than men were employed in the cottage industry in the eighteenth century'; Gullickson, *Spinners and weavers*, p. 199.

⁷² Kuznets, *Modern economic growth*, p. 249.

⁷³ *Ibid.*

⁷⁴ Gullickson, *Spinners and weavers*, p. 195.

⁷⁵ de Jong and Stelder, 'Economic modernization', p. 3.

and many eventually moved to the cities to work in domestic service.⁷⁶ Only by considering women workers is it possible to understand when, where, why, and how this structural change happened.

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Footnote references

- Benaül, J. M., 'Especialización y adaptación al mercado en la industria textil lanera, 1750–1913', in J. Nadal and J. Catalán, eds., *La cara oculta de la industrialización española. La modernización de los sectores no líderes* (Madrid, 1994), pp. 199–223.
- Berg, M., 'What difference did women's work make to the industrial revolution?', *History Workshop Journal*, 35 (1993), pp. 22–44.
- Braña, F. J., *Almagro, 1751: según las Respuestas Generales del Catastro de Ensenada* (Madrid, 1994).
- Broadberry, S., Campbell, B. M. S., Klein, A., Overton, M., and van Leeuwen, B., *British economic growth, 1270–1870* (Cambridge, 2015).
- Broadberry, S., Campbell, B. M. S., and van Leeuwen, B., 'When did Britain industrialise? The sectoral distribution of the labour force and labour productivity in Britain, 1381–1851', *Explorations in Economic History*, 50 (2013), pp. 16–27.
- Camarero Bullón, C., 'The Cadastre in eighteenth century Spain', in *125th anniversary of the International Federation of Surveyors* (Paris, 2003), pp. 1–20.
- Field, J. and Erickson, A., 'Prospects and preliminary work on female occupational structure in England from 1500 to the national census', Cambridge Group for the History of Population and Social Structure, Occupations Project paper 18 (2009).
- Fontana, J., *La quiebra de la monarquía absoluta, 1814–1820: la crisis del Antiguo Regimen en España* (Barcelona, 1978).
- García Sanz, Á., 'Competitivos en lanas, pero no en paños: lana para la exportación y lana para los telares nacionales en la España del Antiguo Régimen', *Revista de Historia Económica*, 12 (1994), pp. 397–434.
- Garrido-González, L., 'La tasa de actividad femenina en el siglo XVIII en dos municipios andaluces: Laujar de Andarax (Almería) y Úbeda (Jaén)', *Investigaciones de Historia Económica*, 12, 3 (2015), pp. 144–53.
- González Enciso, A., *Estado e industria en el siglo XVIII. La fábrica de Guadalajara* (Madrid, 1980).
- Gullickson, G. L., *Spinners and weavers of Auffay: rural industry and the sexual division of labor in a French village, 1750–1850* (Cambridge, 1986).
- Hernández, R., 'Women's labor participation rates in the kingdom of Castilla in the eighteenth century', *Feminist Economics*, 19, 4 (2013), pp. 181–99.
- Herr, R., *Rural change and royal finances in Spain at the end of the Old Regime* (Berkeley, Calif., 1989).
- Horrell, S. and Humphries, J., 'Women's labour force participation and the transition to the male-breadwinner family, 1790–1865', *Economic History Review*, XLVIII (1995), pp. 89–117.
- Humphries, J., *Childhood and child labour in the British industrial revolution* (Cambridge, 2010).
- Humphries, J. and Sarasúa, C., 'Off the record: reconstructing women's labor force participation in the European past', *Feminist Economics*, 18, 4 (2012), pp. 39–67.
- Humphries, J. and Schneider, B., 'Spinning the industrial revolution', *Economic History Review* (forthcoming), 10.1111/ehr.12693.
- de Jong, H. and Stelder, D., 'Economic modernization and occupational structure in the Netherlands 1800–1930', paper presented at European Social Science History Conference, Valencia (30 March–2 April 2016).
- Keibek, S. A. J., 'By-employments in early modern England and their significance for estimating historical male occupational structures', Cambridge working papers in economic and social history, 29 (2017).
- Klein, A. and Ogilvie, S., 'Occupational structure in the Czech lands under the second serfdom', *Economic History Review*, 69 (2016), pp. 493–521.
- Kuznets, S., *Modern economic growth: rate, structure and spread* (1966).
- Kuznets, S., 'Modern economic growth: findings and reflections', *American Economic Review*, 63 (1973), pp. 247–58.
- Larruga, E., *Memorias políticas y económicas sobre los frutos, comercio, fábricas y minas de España*, 25 vols. (Madrid, 1792).

⁷⁶ Sarasua, *Criados, nodrizas y amos*.

- Llopis, E. and Sánchez Salazar, F., 'The crisis of 1803–1805 in the two Castiles: foodstuff, mortality and institutional collapse', *Revista de Historia Económica (Journal of Iberian and Latin American Economic History)*, 34 (2016), pp. 295–322.
- López Barahona, V., 'Pobreza, trabajo y control social: las hilanderas de las Reales Fábricas de Guadalajara (1780–1800)', in S. Castillo and P. Oliver, co-ordinators, *Actas del V Congreso de Historia Social de España. Las figuras del desorden: heterodoxos, proscritos y marginados* (Madrid, 2006).
- Muldrew, C., "'Th'ancient distaff" and "whirling spindle": measuring the contribution of spinning to household earnings and the national economy in England, 1550–1770', *Economic History Review*, 65 (2012), pp. 498–526.
- Nadal, J., *El fracaso de la revolución industrial en España, 1814–1913* (Barcelona, 1975).
- Nieto Sánchez, J. A., 'Redes comerciales madrileñas e industria textil castellano-manchega en la primera mitad del siglo XVIII', in J. Hernando Ortego, J. M. López García, and J. A. Nieto Sánchez, eds., *La historia como arma de reflexión. Estudios en homenaje al profesor Santos Madrazo* (Madrid, 2012), pp. 215–28.
- Nieto Sánchez, J. A. and López Barahona, V., 'Women's work and proto-industrialization: Madrid and New Castile (1750–1850)', in B. Blondé, M. Galandé, and E. Vanhaute, eds., *Labour and labour markets between town and countryside (middle ages–19th century)* (Turnhout, 2001), pp. 254–66.
- Ogilvie, S., 'The European economy in the eighteenth century', in T. C. W. Blanning, ed., *The eighteenth century. Europe 1688–1815* (Oxford, 2000), pp. 91–130.
- Ringrose, D., *Madrid and the Spanish economy, 1560–1850* (Berkeley, Calif., 1983).
- Saito, O., 'Who worked when: lifetime profiles of labour force participation in Cardington and Corfe Castle in the late eighteenth and mid-nineteenth centuries', *Local Population Studies*, 22 (1979), pp. 14–29.
- Sánchez Salazar, F., *Extensión de cultivos en España en el siglo XVIII: roturas y repartos de tierras concejiles* (Madrid, 1988).
- Sarasúa, C., *Criados, nodrizas y amos. El servicio doméstico en la formación del mercado de trabajo madrileño, 1758–1868* (Madrid, 1994).
- Sarasúa, C., 'El acceso de niñas y niños a los recursos educativos en la España rural del siglo XIX', in J. M. Martínez Carrión, ed., *El nivel de vida en la España rural, siglos XVIII–XX* (Alicante, 2002), pp. 549–609.
- Sarasúa, C., '¿Activos desde cuándo? La edad de acceso al mercado de trabajo en la España del siglo XVIII', in J. M. Borrás, ed., *Tres siglos de trabajo infantil en España* (Barcelona, 2013), pp. 61–80.
- Schmidt, A. and van Nederveen Meerkerk, E., 'Reconsidering the "first male-breadwinner economy": women's labor force participation in the Netherlands, 1600–1900', *Feminist Economics*, 18, 4 (2012), pp. 69–96.
- Shaw-Taylor, L. and Wrigley, E. A., 'Occupational structure and population change', in R. Floud, J. Humphries, and P. Johnson, eds., *The Cambridge economic history of modern Britain, I: 1700–1870* (4th edn., Cambridge, 2014), pp. 53–88.
- Tortella, G., *The development of modern Spain: an economic history of the nineteenth and twentieth centuries*, trans. by V. J. Herr (Cambridge, Mass., 2000).
- Williamson, J. G., 'Regional inequality and the process of national development: a description of the patterns', *Economic Development and Cultural Change*, 13, pt. 4:2 (1965), pp. 1–84.
- Wrigley, E. A., 'The PST system of classifying occupations' (2010), <http://www.campop.geog.cam.ac.uk/research/projects/occupations/britain19c/papers/paper1.pdf> (accessed on 18 Feb. 2017).
- Zucca Micheletto, B., 'Reconsidering women's labor force participation rates in eighteenth-century Turin', *Feminist Economics*, 19, 4 (2013), pp. 200–23.

Supporting information

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S1. Additional data for table 1