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**Historical gender discrimination does
not explain comparative Western
European development: evidence from
Portugal, 1300-1900**

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Rodrigues

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JEL Classification: N13, N33, J16

Keywords: Historical gender discrimination, gender wage gap, Culture, Social norms, Comparative development, the Little Divergence, European Marriage Pattern

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**HISTORICAL GENDER DISCRIMINATION DOES NOT EXPLAIN
COMPARATIVE WESTERN EUROPEAN DEVELOPMENT:
EVIDENCE FROM PORTUGAL, 1300-1900¹**

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Gender discrimination has been pointed out as a determining factor behind the long-run divergence in incomes of Southern vis-à-vis Northwestern Europe. In this paper, we show that there is no evidence that women in Portugal were historically more discriminated against than those of other parts of Western Europe, including England and the Netherlands. We rely on a new dataset of thousands of observations from archival sources covering six centuries, and we complement it with a qualitative discussion of comparative social norms. Compared with Northwestern Europe, women in Portugal faced similar gender wage gaps, married at similar ages, and did not face more restrictions to labor market participation. Consequently, other factors must be responsible for the Little Divergence of Western European incomes.

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1. Introduction

In November 1786, the male nurses of the Royal Hospital of Coimbra requested a pay rise. They argued that their job required a high level of physical effort and that their pay was inferior to what the female nurses earned, even though the latter worked less and did lighter tasks (Lopes, 2001, p. 650). In this paper, we show that although the experience of these men cannot be considered representative of Portugal’s history – commonly, men did earn more than women – observable gender wage gap differences can be largely explained by compensating differentials and different productivity levels. While gender discrimination did exist in Portugal, its extent was similar to that of elsewhere in Western Europe, including England or the Netherlands: there were similar restrictions on labor market participation, gender wage gaps, and marriage ages.² This reflected the fact that social norms were also identical: marriage was monogamous, exogamous, based on consensus and neo-locality, and women could own property and have a share in inheritance to the same degree as women in many parts of Europe. Portugal had all the characteristics that Carmichael et al. (2016) have argued as defining the European Marriage Pattern (henceforth, EMP). Hence, we argue that social norms related to gender discrimination were not determining factors explaining the income divergence of Portugal vis-à-vis Northwestern European countries, including England and the Netherlands, unlike what much recent literature suggests.³

Our motivation for studying this matter concerns the effort to understand the causes that explain the divergence in incomes within Europe, which began in the early modern period (Broadberry, 2013). A prominent “Girl Power” hypothesis suggests that the different social practices in Southwestern Europe relative to the Low Countries or England are to blame for the inability of the former region to grow during the early modern period.⁴ Moor and Zanden (2010) argue that the EMP based on consensus and neo-locality as two core principles did not manifest itself in the former countries to the same

² The primary way women were discriminated against concerned the range of professions they could take. The most skilled and best-paid jobs, such as lawyers and doctors, were not accessible for them. Nonetheless, this was also the case in Northwestern Europe.

³ According to Zanden et al. (2019, p. 223), “the EMP is a marriage system based on consensus and neolocality, and [...] the basic features of the EMP [...] are the result of these underlying institutions.” Examples of scholars who have recently argued that Northwestern Europe was the core EMP region and considerably less discriminatory of women relative to Spain and Portugal include Moor and Zanden (2010), Bateman (2019, pp. 40–47), Zanden et al. (2019, p. 236) and Pleijt and Zanden (2021). See also Henrich (2020, p. 332).

⁴ Portugal’s cultural and geographic features are both Atlantic and Mediterranean. The same is true of Spain.

extent as in the latter; these constituted the core EMP areas, where females have had a greater degree of agency since the Middle Ages. As a result of this supposedly higher agency level, historical fertility levels were low and human capital formation higher than elsewhere (Moor and Zanden, 2010).

The same literature argues that women in the European South suffered from a greater extent of gender discrimination. According to Pleijt and Zanden (2021), for example, in Southwestern Europe, women were paid according to social norms and were not allowed participation in the market economy to the same extent as in Northwestern Europe. The position of women in the Netherlands, measured by the wage gap, is deemed to have been especially favorable, even in comparison with England but especially in comparison with Southern and Eastern Europe.⁵ In a recent paper, Drelichman and González Agudo (2020) reject this view for Toledo, at least for 1550-1650. Their evidence is suggestive, but their data only covers one city, one job (nurses), and 100 years. Consequently, Pleijt and Zanden (2021) argue that the Drelichman-Agudo finding that female compensation varied between 70 and 100% of male levels with fluctuations linked to relative labor scarcity is not representative because it refers exclusively to annual wages of women employed by hospitals and hence only covers a semi-skilled segment of the labor market.

Our evidence, instead, concerns Portugal and covers the whole country over several centuries and a wide variety of professions. Overall, our evidence aligns with Drelichman and González Agudo's (2020) conclusions for Spain. We divide our discussion into two primary forms of labor market discrimination: gender wage gaps and restrictions to market participation. Considering each of these matters in turn, we reject different social norms and gender discrimination as credible explanations for the income divergence of Portugal vis-à-vis Northwestern Europe. Together, the evidence implies that the Little Divergence in Western European incomes was caused by other factors.⁶

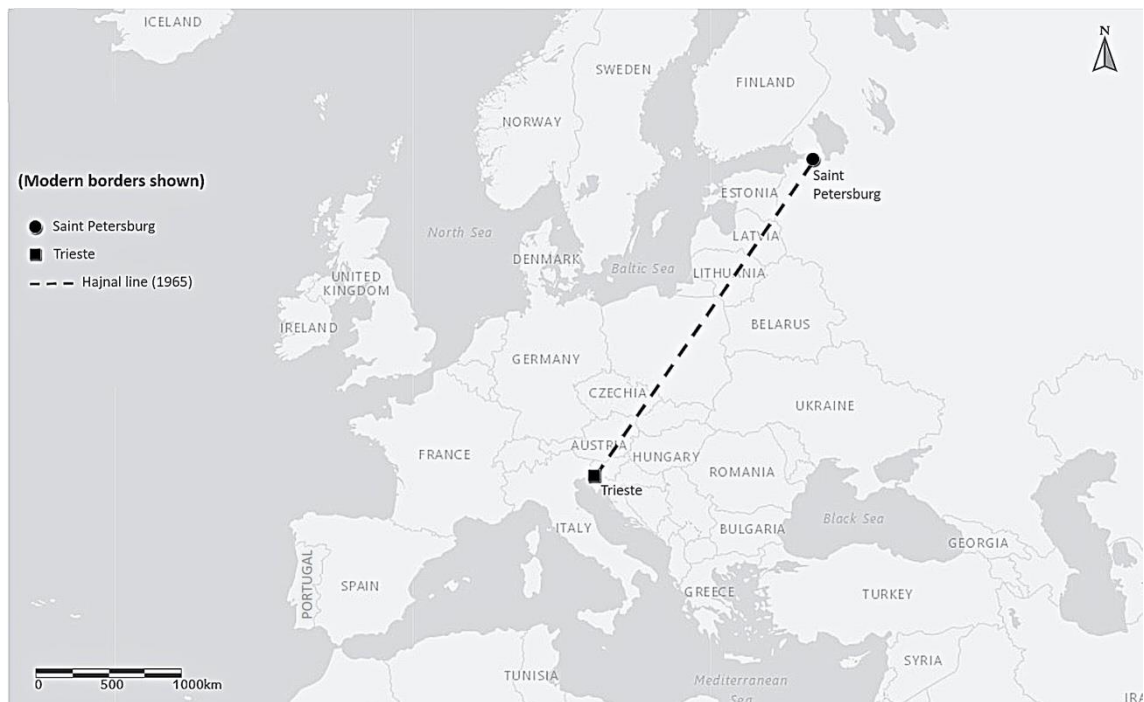
⁵ See Moor and Zanden (2010); Zanden (2011); Zanden et al. (2019, p. 223); Pleijt and Zanden (2021). In turn, Bateman (2019, p. 37) argues that it was in Britain that women had the most freedom. While this paper questions these viewpoints from a Southwestern European perspective, we note that the comparative evidence for Central and Eastern Europe is also mixed at best (Dennison and Ogilvie, 2014; Szołtysek, 2015). The same is true for Sweden (Molinder and Pihl, 2021). In addition, there is evidence for premodern England that fertility practices varied considerably by social status (de la Croix et al. 2019).

⁶ An alternative hypothesis has been put forward in the specific case of early modern Iberia – Spain and Portugal. The cause of their long-term decline would lie in a resource-curse process due to the rich endowment of precious metals in the Americas causing Dutch Disease, state capture and the worsening of the quality of institutions (Drelichman 2005a, 2005b; Henriques and Palma, 2019; Palma 2019; Kedrosky and Palma 2021).

2. Historical background

Since Hajnal (1965), a vast literature has argued that the EMP characterized Western European fertility choices since at least the Middle Ages. This body of practices and social norms implied, for example, that women married in their mid-to-late twenties, considerably later than was the case elsewhere, including in Asia. As initially put forward, Hajnal's EMP ran from Trieste to St. Petersburg (Figure 1).

Figure 1. The original Hajnal line

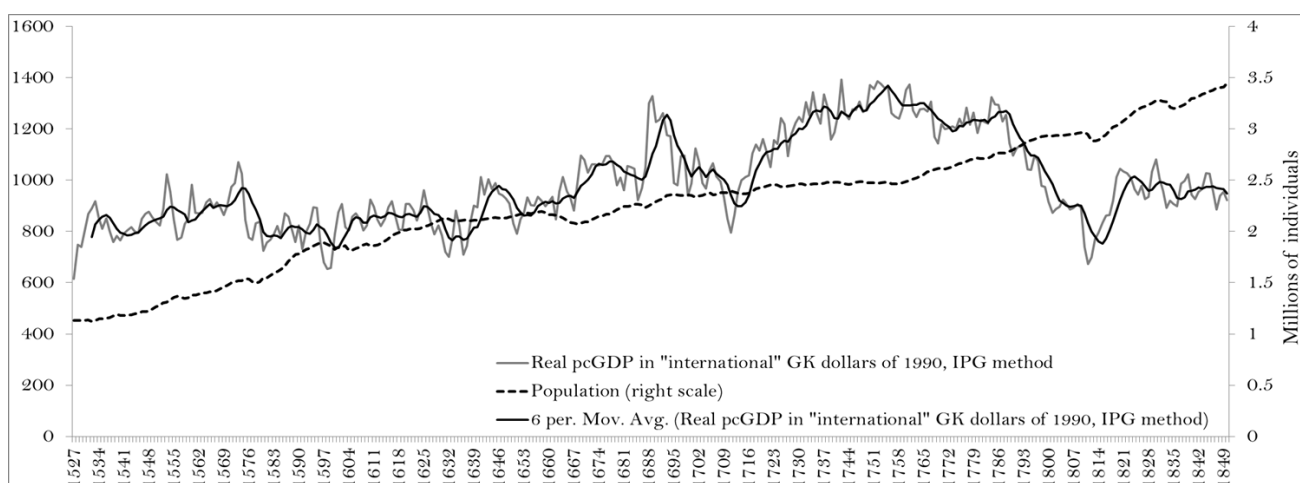


In several recent articles and books, Zanden and co-authors have argued that the EMP did not apply to Southwestern Europe, at least not to the same extent as in other European countries such as the Netherlands and England. According to the “Girl Power” hypothesis, the fact that the EMP did not apply – or was, at least, weaker – in Southwestern Europe had consequences for women’s labor market participation and fertility choices. The underlying institutional and cultural reasons that explain these different practices are hence deemed to explain the ultimate failure of economic growth to take off in Portugal, Spain, and Italy.

Insofar as the case of Portugal is concerned, one immediate problem with the “Girl Power” hypothesis is that this country had a comparatively good economic performance until the mid-eighteenth century. Costa et al. (2015) and Palma and Reis (2019)

estimated Portuguese real wages and GDP since the sixteenth century. As Figure 2 shows, per capita economic performance, was good until the 1750s, when per capita growth ended.⁷ It was only from the 1780s that a persistent decline began, and clear differences in per capita economic growth rates relative to the best-performing countries then began to take place. This poor level of performance continued into the nineteenth century. These facts raise several questions. Foremost, why did the Portuguese decline happen, and what explains the timing? It could not have been solely due to the empire's decline, since by the second half of the eighteenth-century intercontinental trade was at its peak (Costa et al., 2015).⁸ In this paper, rather than exploring the actual causes, we aim to show that whatever the reason, it was not related to a differential incidence of the EMP.

Figure 2. Portugal's GDP per capita and population, 1527-1850



Sources and notes: Palma and Reis (2019) for GDP per capita. IPG stands for the inter-productivity gap, the baseline methodology used in this paper. For population, Palma et al. (2020).

In a state-of-the-art summary, Grafe (2015) raises four unsettled issues regarding the dynamics of Western Europe's early modern economies. These raise doubts about several established claims in the literature which are relevant to our present discussion. The first questions the "dogma of a largely stagnant early modern European economy" (Grafe, 2015, p. 280). Indeed, Portugal experienced significant bouts of expansion driven

⁷ Portugal's economic experience until the 1750s is remarkable considering the statement by Broadberry et al. (2015, p. 212) that in Britain, "[In the period 1780-1830] for the first time the Kuznets condition of simultaneous growth of both GDP per head and population was being met."

⁸ In fact, the empire's focus on mining having had negative economic and institutional consequences for the motherland seems more likely (Abad and Palma, 2021).

by technical and organizational change in this era. The second questions Western European countries’ adherence to the canonical Malthusian model – particularly during spells when per capita income deviated persistently from a subsistence level. Here, too, Portugal does not fit the pattern, since the country went through long spells of per capita income growth co-existing with population growth, a phenomenon which suggests modernization (Kuznets, 1966, pp. 34–85; Broadberry et al., 2015, p. 3).

Table 1. Average annual per capita real growth (%)

	1500-1550	1500-1600	1500-1650	1500-1700	1500-1750	1500-1800
England	-0.05	0.00	-0.11	0.19	0.18	0.22
France	-0.31	-0.06	-0.05	0.03	0.02	0.00
Germany	-0.31	-0.16	-0.09	-0.08	0.00	0.01
Holland	0.43	0.61	0.41	0.19	0.19	0.19
Italy	-0.14	-0.12	-0.06	-0.02	0.00	-0.04
Poland	0.20	0.09	-0.03	0.02	0.05	-0.01
Portugal	0.61	0.25	0.20	0.24	0.32	0.13
Spain	0.75	0.15	-0.07	0.07	0.06	0.05
Sweden	-0.12	-0.34	-0.16	0.06	-0.05	-0.08

Sources: For England, Broadberry et al. (2015); for France, Ridolfi and Nuvolari (2021); for Germany, Pfister (2022); for Holland, Zanden and Leeuwen (2012); for Italy, Malanima (2011); for Poland, Malinowski and Zanden (2017); for Portugal, Palma and Reis (2019); for Spain, Prados de la Escosura et al. (2021); for Sweden, Krantz (2017) and Schon and Krantz (2012).

Notes: Annualized growth rates were calculated using the familiar compound growth formula. As per the available data, Portugal’s data start in 1527. Modern borders are used except for England, where they correspond to England until 1700, Great Britain afterward, and Italy, where they fit North and Central Italy.

The third issue raised by Grafe confronts the conventional vision of the geography of a Little Divergence during which early modern European growth was “restricted to the North Sea region ... while per capita income in the rest of Western Europe was constant at best” (Zanden, 2009, p. 5). Indeed, the data that we now have tells a different story: the timing of Portuguese divergence from the Western European core only took place relatively late, from the second half of the eighteenth century. Table 1 shows no visible differences in growth rates between Portugal and the Netherlands or England until the mid-seventeenth century. Finally, the fourth issue raised by Grafe focuses on the notion of a “premodern intensive growth” process. In this process, divergence from the

stagnation equilibrium occurs in sequential sources of growth, with occasional reversals. The latter indeed happened in Portugal, particularly from the second half of the eighteenth century, when Broadberry's (2013) notion of a European Little Divergence does manifest itself for Portugal.

Overall, we can see that the evidence about the growth rates of the European countries in Table 1 does not support the claim by Baten and Pleijt (2018, pp. 23-24) that “the Low Countries and England witnessed almost continuous growth between the 14th and the 18th century, whereas in other parts of the continent [Italy, Portugal, Spain, Germany, Sweden, and Poland] real incomes went down or stagnated.” Iberian economic performance was comparable to that of Northwestern Europe until late, which raises doubts about the validity of the EMP to be a key causal mechanism behind the Little Divergence. The EMP was supposedly in operation since the Middle Ages, and there is no apparent latent process via which its consequences could only be felt centuries later – and in some countries more than others. More importantly, the EMP or its absence should have had consequences for people's behavior in ways that we do not observe empirically.

In this article, we show that there was nothing special about the Netherlands or England regarding relevant social norms of this kind. Portugal was a Western European country that followed the same marriage patterns as elsewhere. We show that gender discrimination was not than in England or the Netherlands, and inheritance laws were relatively more favorable. Not surprisingly then, and unlike what much of the literature claims, women in Portugal married late – around the age of 25.⁹ This was similar to the average age for England or the Netherlands, and certainly much higher than the claims often made in the literature that it was common for women in Southern Europe to marry in their teens (Moor and Zanden, 2010, pp. 17–18; Zanden et al., 2019, p. 55; Bateman, 2019, p. 44). Even within a country as small as Portugal, there was regional variation. As we show below, the average marriage age could be as high as 28 years in the northern part of the country, by far the most populous part (Palma et al., 2020).¹⁰ The situation was similar in Spain (Rowland, 1989, p. 513).

⁹ The meta-study by Dennison and Ogilvie (2014, p. 654) similarly finds the average female age at first marriage to be 25 in Portugal, based on 34 observations.

¹⁰ The higher marriage age in the North of Portugal may be related to land property distribution and persisted into the later nineteenth century (Rowland, 1984, p. 28). In Minho, inheritance practices

3. Measuring historical gender discrimination in Portugal, 1300-1900

We now consider Portuguese gender wage gaps in detail. We find that women earned no less than two-thirds of what men did for jobs that required physical strength. This was in proportion to their approximate physical strength difference since physiological studies show that women have, on average, only up to two-thirds of the physical strength of men (Rasch, 1990; Burnette, 2008, p. 141). We also consider the comparative extent of women's market participation on the extensive margin, i.e., the percentage of women who worked for wages and in terms of the range of jobs available to them. There is no evidence that such rates were lower in early modern Portugal than in England or the Netherlands.

3.1. Gender wage gaps: daily wages

A straightforward form of assessing job discrimination is to measure the gender wage gap: the extent to which women were paid less to do the same job. There is no obvious way to make these comparisons because even when the tasks were the same, defining what "the same job" means is not straightforward. As we expect wages to be related to productivity, it is not surprising that men earned more for agricultural work done by both genders since grain agriculture requires considerable upper-body strength, which men have an advantage in providing (Baten et al., 2017).

For our discussion of daily wages, we focus on unskilled workers. We observe female and male workers' wages and take all evidence from the same source, place, institution, and year. Contrary to Pleijt and Zanden (2021), our observations refer to wages paid to women and men for identical occupations and by the same employer.¹¹ To ensure comparability, the occupations we consider are as follows. For agriculture: harvesting grain, grapes, and olives; weeding; carrying baskets or buckets of grapes, water, manure, wood, or ashes; working in the vineyards.¹² Outside of agriculture, our unskilled occupations correspond to helpers, domestic servants, laundresses, and sweepers. We have focused

benefited women, again contradicting what is commonly claimed to be true even for Europe as a whole (Bateman, 2019, p. 41).

¹¹ The evidence for Spain from these authors, for example, mixes laundresses with unskilled male labor professions, which could have considerable physical strength requirements. Although we feel this is a preferable methodological choice as it ensures comparability, our results are similar if we pool all unskilled workers together and only sort them by gender.

¹² This included, for example, pruning and clearing vineyards from lopped branches (*podar*).

on modal wages, as is standard in the literature, and our geographical coverage includes a variety of locations in Portugal.¹³

Figure 3 shows the gender wage gap for daily unskilled workers, 1300-1910. We have taken these data from primary sources listed in full in the Appendix, mainly composed of the account books of institutions such as monasteries and hospitals. Women earned between two-thirds and 80% of men's wages doing the same jobs for the same employers.¹⁴ The wage gap was systematically larger for agricultural jobs than service jobs. The range stayed approximately stable over the centuries, and the gap in the agricultural jobs corresponded to women's lower physical strength and consequently lower productivity in these types of jobs.¹⁵ As mentioned, women have, on average, up to two-thirds of the physical strength of men, implying lower productivity levels in many agricultural jobs (Boserup 2015).¹⁶ The wage gap tended to be larger for agricultural jobs that required physical strength, such as mowing or weeding (*ceifar, mondar*), compared to those where the main force came from oxen or horses pulling agricultural instruments as harrowing (*gradar*). In our sample, the average gap is around 0.6 in the former two jobs but only 0.8 for the latter. Additionally, we do not consider agricultural jobs related to the production of olive oil because these men and women performed different tasks: men thrashed the trees (*vareja*) while women hand-picked the olives (*apanha*). This division of labor implies that men did the heavier work, and indeed had we compared these different jobs across genders, the average gap would be large (0.4). As mentioned, in contrast with agricultural jobs, the gender wage gaps were smaller – and often non-existent – in service jobs, where physical strength did not matter for productivity.

Hence, we do not find any evidence of discrimination in these gender wage gaps.¹⁷ While less systematic data is available for the service sector, that which exists suggests that the wage gap was smaller than in agriculture. For example, in the city of Coimbra,

¹³ The locations covered by our data are as follows. In the North: Barcelos, Braga, Guimarães, Lamego, Ponte de Lima, Porto, Torre de Moncorvo, Valença, Viana do Castelo. In the Centre: Aveiro, Coimbra, Caldas da Rainha, Tomar. In the South: Alfeite, Carregado, Évora, Lisboa, Queluz, Salvaterra de Magos, Setúbal, Sintra, Vila Viçosa. We show these locations in a map in Appendix A.

¹⁴ The wage gap that we find is considerably smaller than if women had earned half of the male wage, as claimed by Zanden et al. (2019, pp. 223-224) and Pleijt and Zanden (2021).

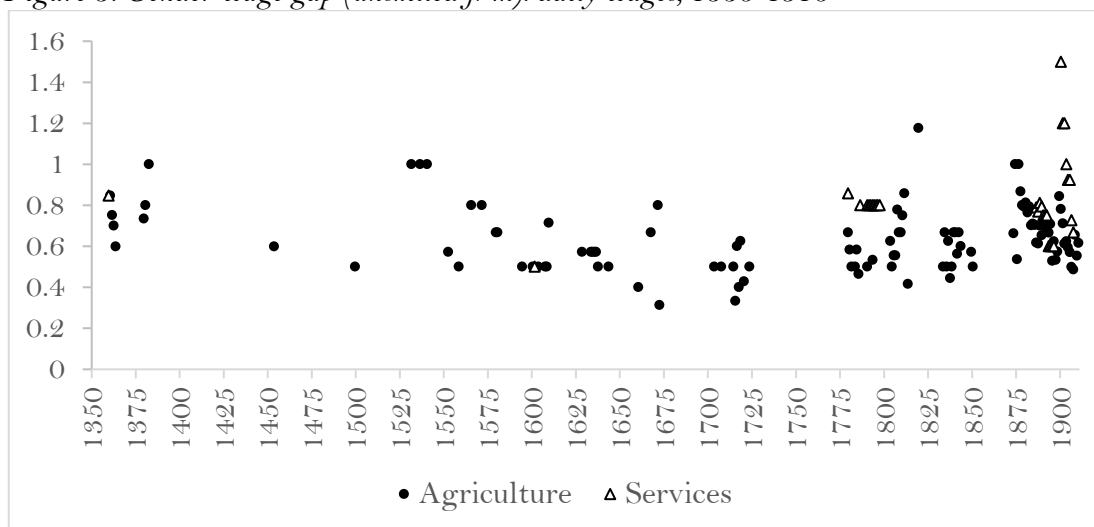
¹⁵ Women also do not require as much food consumption as men; this was particularly relevant when most people were poor and a large part of even a respectability basket was spent on food (Allen 2001).

¹⁶ As men had about 50% more physical strength, a wage premium of 50% (i.e., women earning 2/3 of the wages of men doing the same jobs) was to be expected for wages to be in line with productivity in jobs that required the application of physical force.

¹⁷ This figure takes the methodologically conservative option of only showing gender ratios for the same profession each year.

between 1790 and 1797, the wage gap was only 0.8 for servants (Lopes, 2012, pp. 154-155). The same continued to be true almost a century later for palace servants during 1886-1892 (The PWR, n.d.). By the early twentieth century, women and men earned similar wages for these jobs (The PWR, n.d.) several observations for 1900-1907).

Figure 3. Gender wage gap (unskilled f/m): daily wages, 1350-1910



Sources: primary and secondary sources are listed in Appendix B.

Notes: All the observations in this figure refer to the same (agricultural) occupation, in the same region and the same employer, for any given year. These observations refer to wages paid without in-kind benefits (mentioned in the sources as *seco* or *sem ração*). The trendline is a second-order polynomial.

3.2. Gender wage gaps: annual wages

Annual wages were paid quarterly.¹⁸ We now focus on the gender wage gap for unskilled and skilled workers paid at this frequency. We start with the case of unskilled workers. We then focus on nurses, the only profession for which semi-skilled salaries are systematically available for both genders.¹⁹

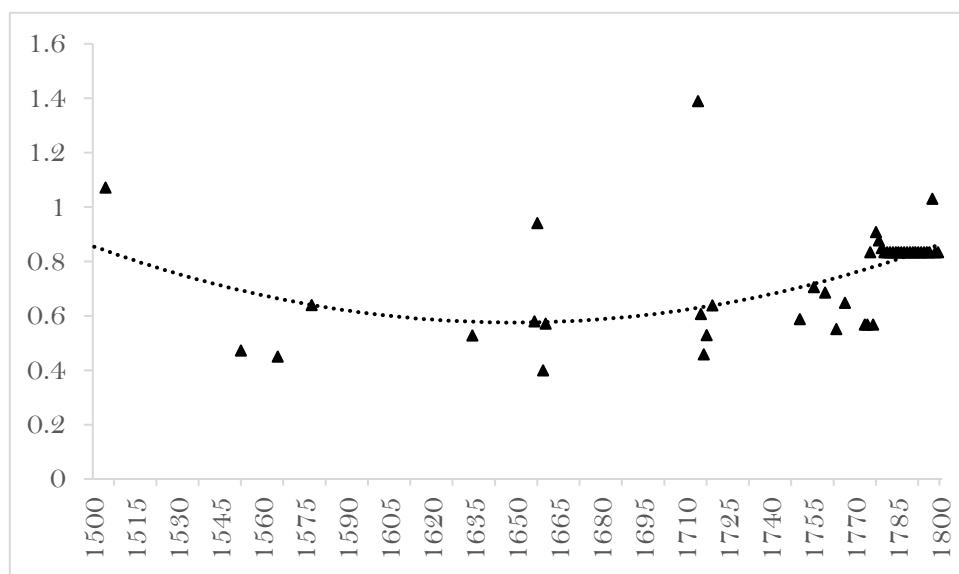
¹⁸ There are other frequencies (weekly, monthly) of payment, but these appear in the sources much less often than either annual or daily payments.

¹⁹ Drelichman and González Agudo (2020) consider it a “non-gendered low-skill occupation.” We classify it as semi-skilled since the wages for nurses were systematically about 50% higher than the unskilled female wages for the same years. Male nurses’ wages were close to those of other semi-skilled professions, such as weavers and candle-makers. Nursing is also a low/medium-skill occupation according to the standard international classification known as HISCLASS (Leeuwen and Maas, 2011). For example, Humphries and Weisdorf (2015, p. 410) also classify nurses as having a skill component above unskilled workers. Drelichman and González-Agudo (2020) report that Tavera’s hospital (Toledo) was unhappy with the unskilled girls that they hired for low wages, which suggests that nurses had additional skills.

Unskilled workers on annual wages

We first consider the case of unskilled workers paid on an annual basis. While most unskilled workers were hired for the day, we also found several observations of workers paid yearly wages. In Figure 4, we can see that women earned about two-thirds of what men did during most periods, which is in line with what we previously found with the daily data.

Figure 4. Gender wage gap (unskilled f/m): annual wages, 1500-1800



Sources: primary and secondary sources are listed in Appendix B.

Notes: we deleted three outliers (both above and below the trendline) due to uncertainty about the exact nature of the jobs. The trendline is a second-order polynomial. Most of the data in this figure corresponds to services such as nurse helpers, servants, or laundresses.

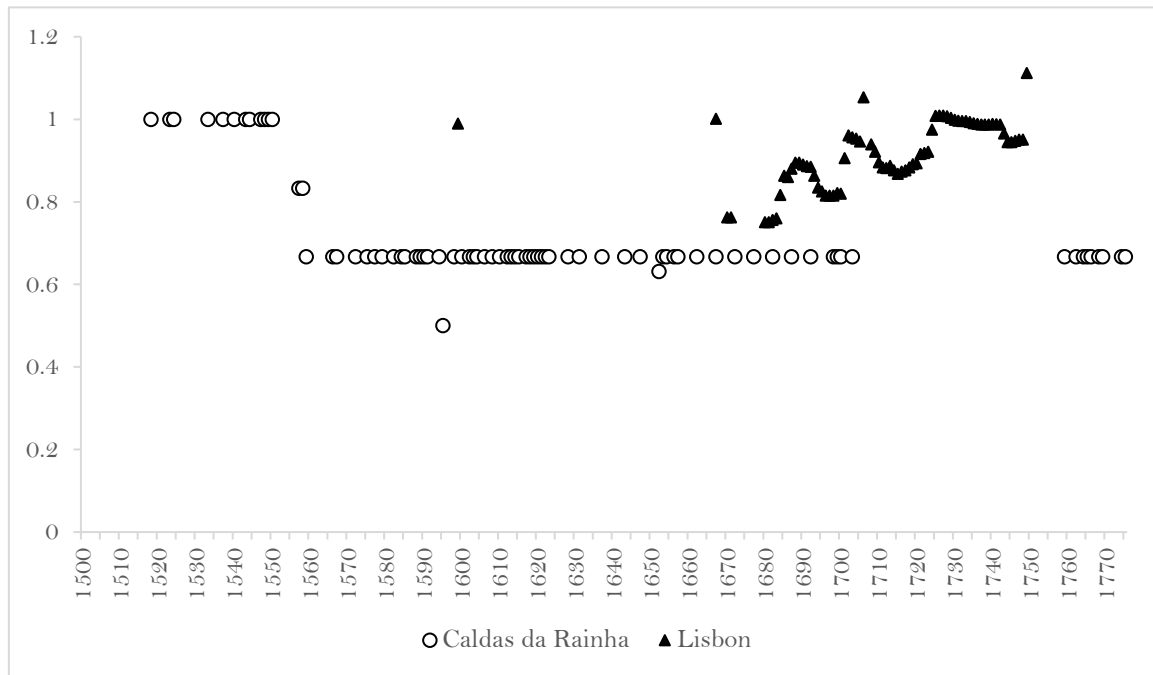
Semi-skilled workers: the case of nurses

In the case of nurses, our data and methodology are as follows. We have annual wages of female and male nurses.²⁰ They correspond to the same source for the same institution in the same place and year. The evidence we collected comes from the largest hospitals in the realm: *Hospital Real de Todos-os-Santos* (Lisbon) and *Hospital de Nossa Senhora do*

²⁰ We focus on the case of nurses treating fevers. We do not include the much fewer data points for nurses who treated syphilis.

Pópulo (Caldas da Rainha).²¹ Most of our data have been collected from archival sources and are available here for the first time. When included in the sources, we collected the value of money wages and added the monetary value of in-kind compensations such as food or clothing.²² Figure 5 shows the results. We again find that women earned about two-thirds of men’s wages, as had also been the case with the unskilled workers paid daily and those paid annually.

Figure 5. Gender wage gap (semi-skilled f/m): nursing annual wages, 1500-1775



Sources: for Lisbon, *The PWR data files* (n.d.); for Caldas da Rainha, ADLRA, Fundo do Hospital das Caldas da Rainha, Livros de receitas e despesas (1518-1774), DEP. VI-3-B-1-DEP. VI-6-A-5. Note: payment includes the monetary value of in-kind compensation (clothing and food). Information about the monetary wages for men, the value of clothing given to men, and the value of food given to women, are sometimes missing in the source. When this was the case, we assumed that the same ratio for the corresponding category applied, using the information from nearby years. The value of clothing given to women is always missing, and we assumed that it was 2/3 of the value given to men.

²¹ The nurses’ main tasks included caring for the sick and cleaning the wards. Hospitals’ statutes often mention that male nurses were expected to have writing and reading skills to understand the physicians’ prescriptions (Rodrigues, 2013, vol. I, p. 322). Although hospitals often (though not always) hired couples in their corresponding female and male wards, they did not form a team, as their quarterly payments were registered separately in the institutional account books.

²² When lodging in the hospital was included, we ignored it due to the difficulty of measuring its value. This biases the evidence in the favor of larger wage gaps, because proportionally, its value was higher to women, who had the lower overall wage. We also have concrete examples such as *Hospital de Nossa Senhora do Pópulo* of situations where compensation was via a salary alone, without any extras given.

3.3. Understanding wage premia

While raw labor jobs did not require skills, the same was not true for the other professions we have considered. As is well-known in labor economics, wages reflect productivity and embedded human capital in competitive markets.²³ We now show that men frequently did jobs subject to a compensating differential; hence it is not surprising that they were paid more.

As mentioned, some jobs could be done by both genders, while others were considered gender-specific. Our sources include many more professions beyond those we have so far considered. Men had access to a wider variety of jobs, but many had negative characteristics of one kind or another. Many male-only jobs had a negative social stigma, disagreeable features, or were dangerous. It is well known in labor economics that there is a compensating differential paid to jobs with such characteristics (Carpenter et al., 2017). There is no reason to believe that it was different in the past. For example, carrying manure or even night soil (*carregar esterco*) was repugnant; being a guard or in the army could be dangerous; digging required much physical effort. For such jobs, the fact that a male premium existed relative to female wages of comparable skill does not necessarily reflect discrimination. Even in today's world, only a small percentage of women choose to be masons, bricklayers, or garbage collectors, jobs which labor economists have measured to have a premium over others of comparable skill levels due to compensating differentials. As late as 2010, "conventional human capital variables taken together explained little of the gender wage gap, while gender differences in occupation and industry continued to be important" (Blau and Kahn, 2017, p. 789).

Pleijt and Zanden (2021) freely mix men and women performing different tasks and readily admit that often men in their sample did more physically demanding jobs than women did. By contrast, we have classified the jobs from our sources in four dimensions expected to have a compensating differential: repugnant, dangerous, requiring high physical effort, or none of the above (Table 2). We assign a wage category to each job and show the number of observations that suggest how frequently that profession appears in our sources for each gender. The evidence shows that men more regularly did

²³ Hence, Portugal did not commonly have serfs or limitations to labor movements after 1300 (Henriques 2017, p. 28). From the fifteenth to the mid-nineteenth century, however, a small number of slaves of African origin worked on domestic service or other unskilled professions. We do not consider them in our analysis here.

jobs subject to a compensating differential for each wage category.²⁴ Note that to avoid heterogeneity effects driving our results, we do not use all these professions in the earlier results in this paper, focusing solely on comparing women and men doing identical occupations.

Table 2. Gender-specific occupations with compensating differentials indicated

Occupation	Gender	Repugnant	Danger	Physical	Wage category	Observations
Gardener	M	No	No	Yes	Unskilled annual	21
Sheep shepherd	M	No	No	No	Unskilled annual	14
Ox-driver	M	No	No	Yes	Unskilled annual	11
Chicken minder	F	No	No	No	Unskilled annual	3
Cleaner	F	No	No	No	Unskilled daily	166
Day laborer	M	No	No	Yes	Unskilled daily	73
Pruning vines	M	No	No	No	Unskilled daily	43
Staking vineyards	M	No	No	Yes	Unskilled daily	24
Vineyard guard	M	No	Yes	No	Unskilled daily	14
Cutting firewood	M	No	No	Yes	Unskilled daily	13
To second dress maize/vines	M	No	No	Yes	Unskilled daily	10
Selecting grain	F	No	No	No	Unskilled daily	4
Cleaning wine barrels	F	No	No	No	Unskilled daily	3
Oil press assistant	F	No	No	Yes	Unskilled daily	3

Sources: Appendix B.

Note: This table shows all occupations for which we have at least three observations. We give the complete list in Appendix F1 and F2.

4. Comparative quantitative evidence

We now move to the discussion of the comparative evidence in the context of the current historical consensus about Southwestern Europe. There were dimensions of life in which Portuguese women were discriminated against – but this was also true in England or the Netherlands. Hence, the focus of our comparative discussion concerns whether they were more discriminated against in Portugal.

4.1. Comparative daily data

We now compare the data for Portugal with the international evidence. Figure 6 shows the gender wage gap for unskilled workers.²⁵ We include data for services and

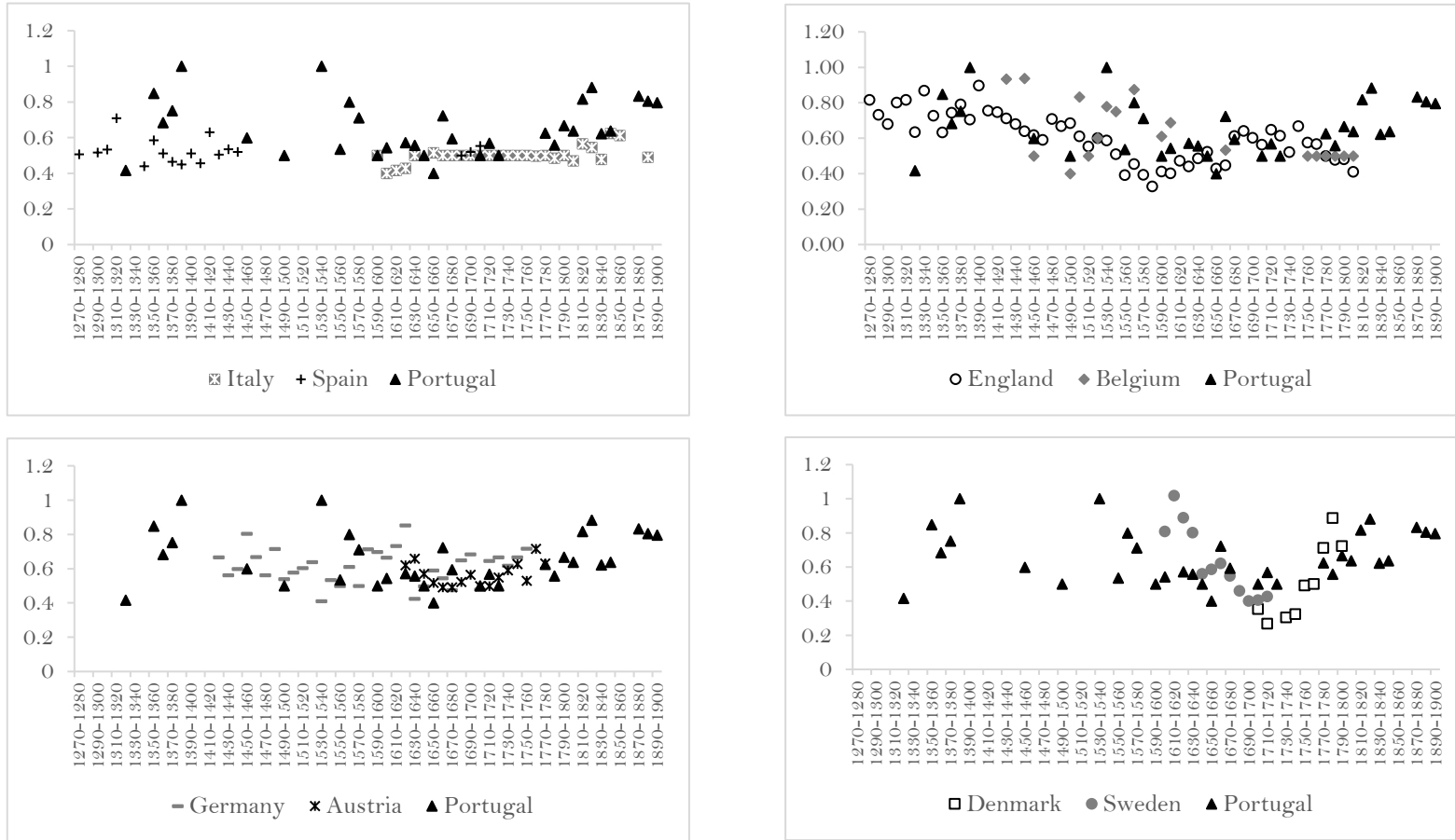
²⁴ For a related argument, see Burnette (2008).

²⁵ We do not have systematic data for the Netherlands, but the available evidence suggests that the overall picture was not different: “The differences in salary between the Utrecht orphan father and orphan mother were large. The salary of the orphan mother was sometimes two-thirds, half or even a third of the orphan father’s salary” (Schmidt, 2008, p. 50).

agriculture to ensure comparability with the studies using data for other countries. The evidence shows that in Portugal – or Spain and Italy – women were not more discriminated against than elsewhere. In the case of Italy, we completed the Pleijt and Zanden (2020) gender wage gaps with additional observations for the nineteenth century. The evidence also indicates that women of the south of Europe faced lower wage gaps than in Sweden or Denmark. The evidence also shows no visible trend in the Southwestern European gender gaps, unlike in England, where the gaps increased over time.²⁶

²⁶ In the case of Italy, the gap does also rise by the 1880s – as a result of industrialization.

Figure 6. Comparative gender wage gap (unskilled f/m): daily wages, 1271-1900

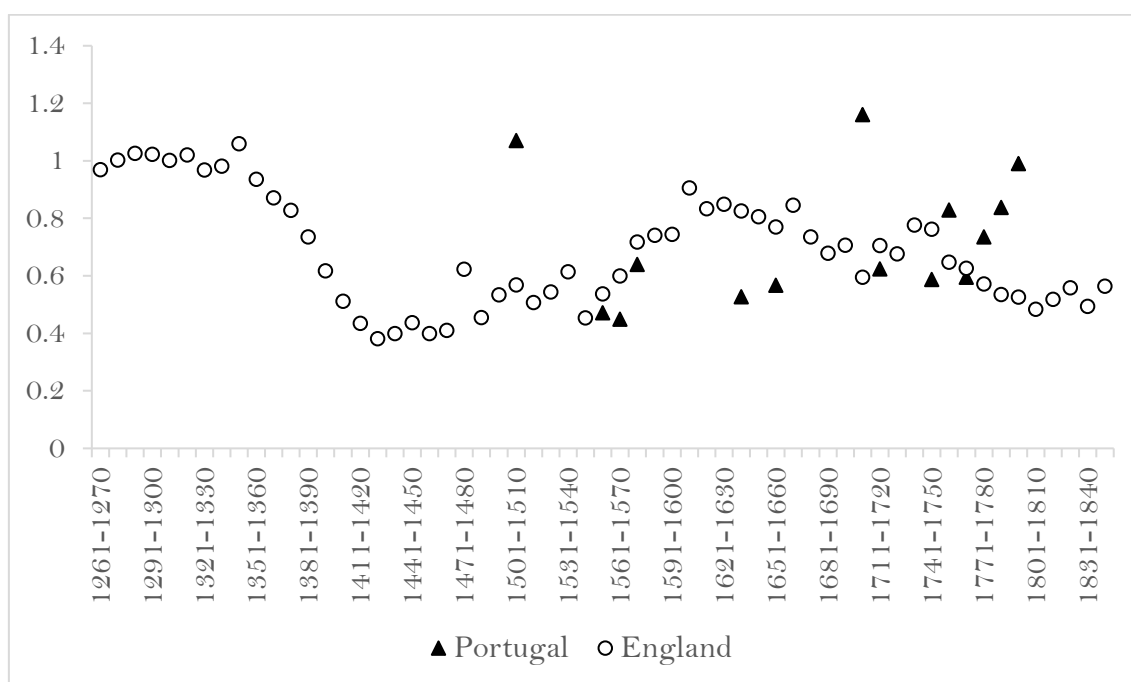


Sources: for Portugal, agricultural and service wages as in Figure 3; for England, Humphries and Weisdorf (2015); for Denmark, Jensen et al. (2019); for Italy, Pleijt and Zanden (2021) for 1590-1800, Melacrinis (2021), which concerns south Italy, for 1802-1859 and Strangio (2021) which concerns a tobacco factory, for 1881. For all others, Pleijt and Zanden (2021).

4.2. Comparative annual data

We now compare our data for individuals with annual wages with the case of England – the only country for which data at this frequency are available. We begin with the case of unskilled individuals (Figure 7). The figure confirms what we found before: the situation in Portugal was similar to that of England. In the latter country, women became initially worse off with the process of industrialization from the eighteenth century because it led to the technological substitution of traditionally female professions such as spinners and the rise of the male breadwinner family (Horrell and Humphries, 1995, 1997; Humphries and Weisdorf, 2015). Delayed industrialization in Portugal is hence responsible for the smaller wage gaps compared with England from that period onward.

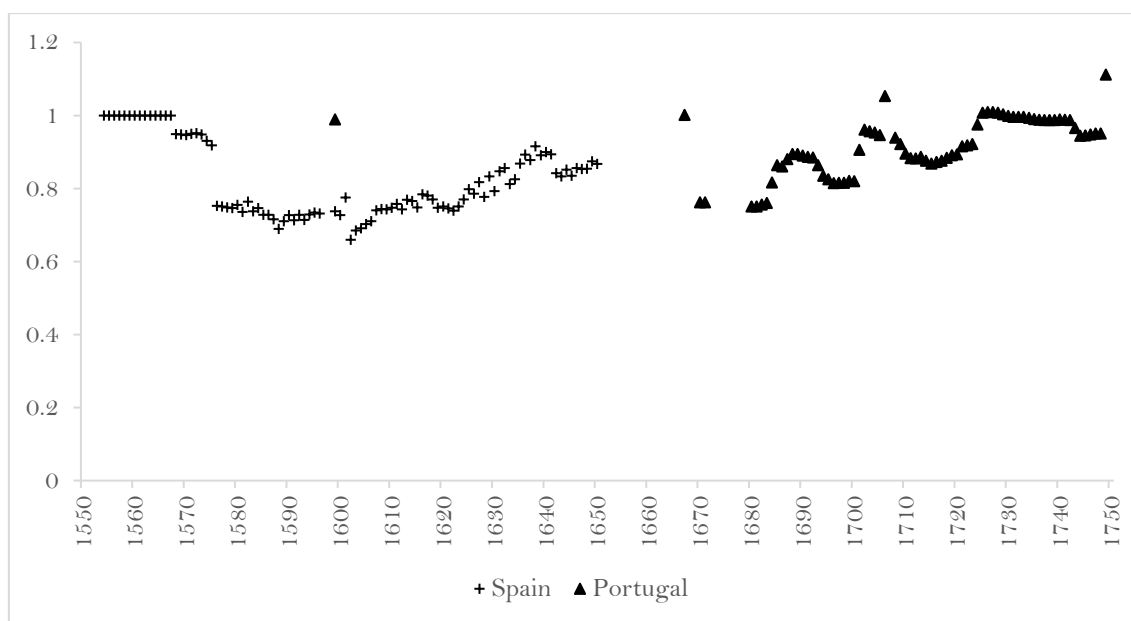
Figure 7. Comparative gender wage gap (unskilled f/m, annual wages): 1261-1850



Sources: for England, Humphries and Weisdorf (2015, 2019); for Portugal: see text.

Finally, in Figure 8, we repeat the exercise for semi-skilled workers (nurses), for which data for a more comprehensive set of results is available. Once again, we find that wage gaps in Portugal were similar to those in other Western European locations.

Figure 8. Comparative gender wage gap (nursing f/m, annual wages): 1550-1749



Sources: for Spain (Toledo), Drelichman and González Agudo (2020); for Portugal, same as in Figure 5.

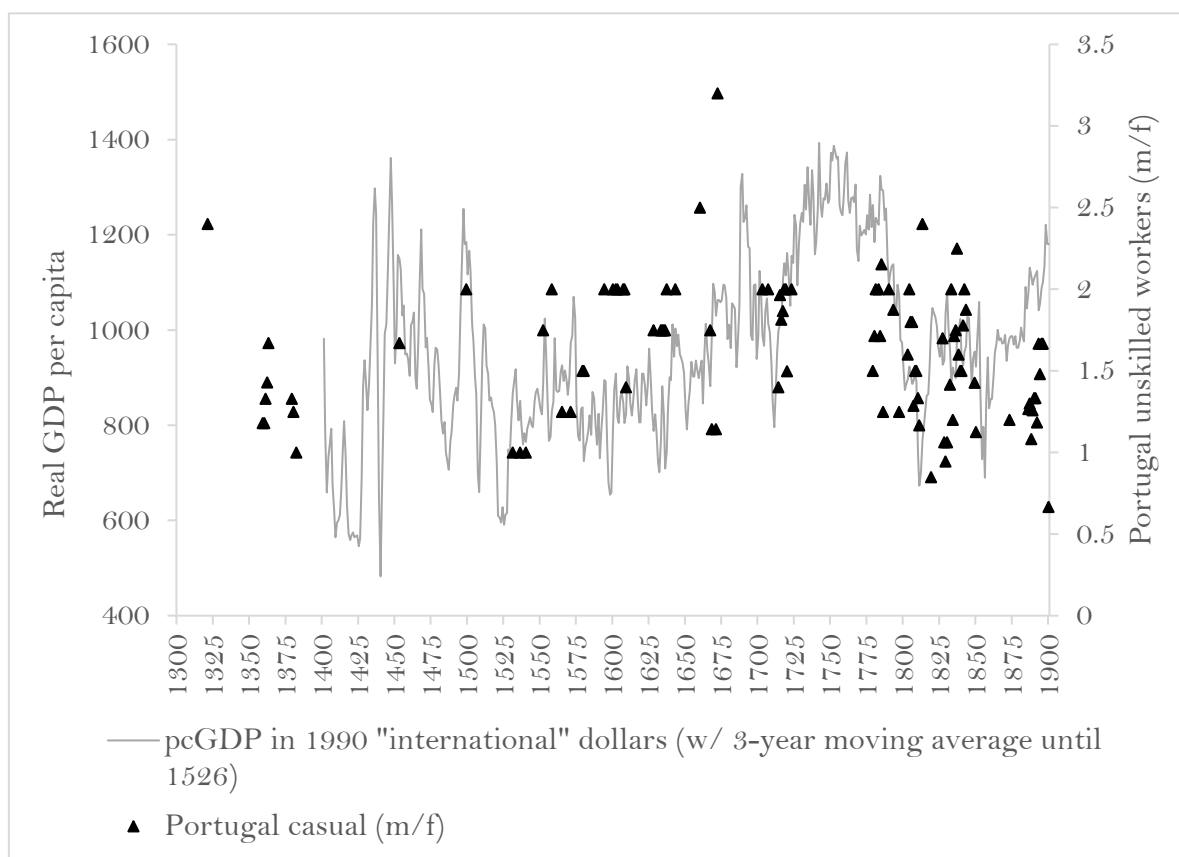
4.3. Social norms and pro-cyclicality of the labor market

The “Girl Power” literature argues that social norms determined women’s pay in Southwestern Europe, unlike in Northwestern Europe. According to this literature, in the former region, women’s wages were fixed at half of the level of males and did not vary with market activity, as was allegedly the case exclusively in Northwestern Europe (e.g., Moor and Zanden, 2010; Zanden et al., 2019). Pleijt and Zanden (2021, pp. 11-12) write that “our focus is on identifying the presence or absence of long-run shifts in the gender wage ratio across different countries. We expect that in places where wage ratios are fixed by custom, the ratio will be stable; where market forces dominate, shifts in the ratio are expected.” We have already shown that women in Southwestern Europe earned considerably more than half of what men did. We now show that the gap in this region also varied with market forces.

In Figure 9, we plot the daily unskilled gender wage gap and compare it with the long-term evolution of Portugal’s real GDP per capita. In the figure, we show the inverse of the gender wage gap, that is, we show the wages of males over those of females. The reason for this switch is that this makes it easier to see our result. While the wage gap was trendless in the long run, it co-moved positively with incomes over the centuries: men gained the most from economic expansions. Hence, we do not support the claims

that female payments were set by custom in Southwestern Europe nor that women gained the most in relative terms during economic booms.

Figure 9. Gender wage gap of unskilled workers paid daily, and real GDP per capita in constant prices (1990 Geary-Khamis “international” dollars), 1300-1900



Sources: GDP per head in constant prices from Palma and Reis (2019) and Henriques et al. (2020); gender gaps from the present paper.

5. Further comparative evidence

We now provide a comparative discussion of the qualitative evidence on restrictions to labor market participation for women. According to the “Girl Power” literature, the desire to access dowries was the mechanism leading Southern Europe to early marriage associated with low female agency, market participation, and investment in human capital, as well as high fertility. We now show that women in Portugal did not marry younger than elsewhere in Western Europe, and numeracy levels were similar until the mid-eighteenth century. Additionally, they inherited a share of their parent’s wealth to the same extent as their male siblings did. They also did not participate less in the

market.²⁷ Finally, in widowhood, they could be heads of household to the same extent as elsewhere in Western Europe.

5.1. Marital property regimes and inheritance practices

Moor and Zanden (2010) claim that early marriage was encouraged in Southwestern Europe because the bulk of the daughter's share of the inheritance was transferred to her at the start of her marriage (the dowry). According to these authors, the dowry was not as common in Northwestern Europe: "If a woman had a right to her parent's inheritance without having to marry, there was no financial incentive for an early marriage ... in areas with partible inheritance, where women were certain about their share of their parent's estate, women could afford to wait before marrying ... they used this time to accumulate extra resources in order to make themselves more attractive as a potential marriage partner" (Moor and Zanden, 2010, p. 9).²⁸ In Portugal, marriage was not a decisive condition for daughters to receive family patrimony, and partly as a result, women did not marry early, as we will now show. As far as human capital is concerned, Stolz et al. (2013, p. 562) show that as late as the 1730s, Portugal's numeracy was similar to that of the most advanced parts of Europe.

The "Girl Power" literature put forward the hypothesis that inheritance practices or, at least, the relative access to land may have conditioned the matrimonial market and household formation. According to this literature, women in the South of Europe were twice discriminated against when inheriting because they were at a disadvantage compared to brothers when accessing their parents' estate, and they had no right over the conjugal patrimony. Early marriage was also suggested to be a means to access the family patrimony in the form of a dowry. The "Girl Power" literature argues that by contrast to the situation in Southern Europe, marriage could be postponed in Northwestern Europe, where women are assumed to have been sure about the share they would inherit from their parents.

Evidence for Portugal shows that women were not discriminated against relative to their male siblings when inheriting from their parents. Women did not need to marry to have access to inheritance from their parents, as they could be given family assets at

²⁷ As previously mentioned, the primary way women were discriminated against concerned the range of professions they were allowed to take. The same situation also occurred in Northwestern Europe, including the North Sea area, and no evidence exists that it did so to a lower degree than elsewhere in Western Europe.

²⁸ See also Carmichael et al. (2016, p. 200).

any moment in life via endowments. If they married, women were not excluded from inheritances, nor were they entirely powerless regarding their spouses' patrimony.²⁹ According to the Portuguese Law (*Ordenações*), the default Portuguese marital system was joint ownership (*casamento por carta de ametade*), whereby husband and wife shared the same rights over the assets acquired before and during the marriage (*Ordenações Filipinas*, 1965 [1603], Book IV, Title XCIV).

Marriages could include dowries (*arras/dote*) – but did not have to. When family members (not necessarily parents) gave one to the bride, it was not transferable and always remained separate from the husband's assets (Sá, 1986, p. 92). Although this aimed at legally protecting women, it did not apply to assets acquired after wedlock, joint ownership. As mentioned, they also received those promised to them on marriage (*arras*) plus half of all assets acquired after wedlock. Although husbands were responsible for managing the couple's and the wife's assets during the marriage, women had agency regarding the conjugal estate. For instance, husbands needed explicit and formal permission from their spouses to alienate or mortgage the couple's estate; otherwise, the contract was invalid (*Ordenações Filipinas*, 1965 [1603], Book IV, Title XLVIII).

In practice, dowries constituted an anticipation of the daughter's rightful share of her parents' inheritance (*legítima*).³⁰ Once receiving the dowry, women had no further rights to claim the family estate. However, after their parents' death, they could challenge in court the fairness of the sharing of assets if they felt impaired relative to other heirs. When successful, the assets comprehended in the dowry returned to the pool of the family's patrimony (*monte*) to be equally divided anew between all heirs (*Ordenações Filipinas*, 1965 [1603], Book IV, Title XCVI, §17; Title XCVII). There is much evidence that these laws (which were similar in Castile) were enforced (Durães, 2000).

5.2. Marriage and labor market participation

Zanden et al. (2019, pp. 223–224) argue that not only were the gender wage gaps in the North Sea area lower than in the South but also that the rates of women's participation in the labor force were higher there than elsewhere in Western Europe due to different

²⁹ Relatedly, they were not powerless regarding changes in the net wealth of their parents. Given that married women inherited earlier than their brothers did, women could and successfully did demand, via court of law, additional compensation in cases where the patrimony had grown (Durães, 2000).

³⁰ Family assets were divided into three parts. Two-thirds (*legítima*) were equally distributed amongst the legitimate heirs after all debts had been paid. The remaining third (*terço*) could be assigned to whom ever the testator wished – either descendants or religious/charitable institutions.

social norms. We now show that this was also not the case. We consider, in turn, the cases of single women, married women, and widows, as well as property regimes and inheritance practices. Portuguese women participated in the labor market to a similar degree as elsewhere. Finally, while Zanden et al. (2019) and Pleijt and Zanden (2021) argue that social norms determined female salaries in the South of Europe, we show that they were determined by market forces, as was elsewhere in Western Europe.

Marriage “was not an obstacle to the participation of Portuguese women in the economy of mid-eighteenth-century Portugal, rather the opposite, as marriage seems to have provided women with the resources needed to work in the tertiary sector, more often than not in commercial activities as self-employed” (Silva and Carvalhal, 2020, p. 2). According to the same authors, more than half of the women who were heads of the household worked for the market, most self-employed; hence, the situation was similar to what other authors found for the Netherlands between 1600 and 1900 (Schmidt and Nederveen Meerkerk, 2012).

According to the “Girl Power” literature, women in the South of Europe married earlier than in the North, so the EMP only developed in the latter regions of Europe (Moor and Zanden, 2010, pp. 7–8).³¹ This is not what we find. In Portugal, women married late (Table 3).³² Mean age at first marriage was mid-twenties for women, and late twenties for men, figures that are similar to those of Northwestern Europe.³³ Furthermore, marriage ages did not fall during Portugal’s positive growth performance period during parts of the early modern period, as Zanden (2011) and Carmichael et al. (2016) would have predicted (Figure 10).

³¹ Carmichael et al. (2016, p. 199) argue that the Dennison and Ogilvie (2014) evidence about first the age of marriage is based on only a few observations, though their evidence about what they generalize to be representative of Southwestern European social norms is extrapolated from limited evidence from a single region of Italy (p.55). By contrast, our evidence in the present paper is much more systematic and should leave no doubt that the age at which Portugal’s women married is firmly consistent with the existence of the EMP in this region.

³² Table 3 is an abridged version of Appendix E. As we show in the Appendix, other regions of Portugal were similar in this regard. Note that the situation was similar in Spain, where only about a quarter of women under 25 was married (Casey, 1999, p. 27).

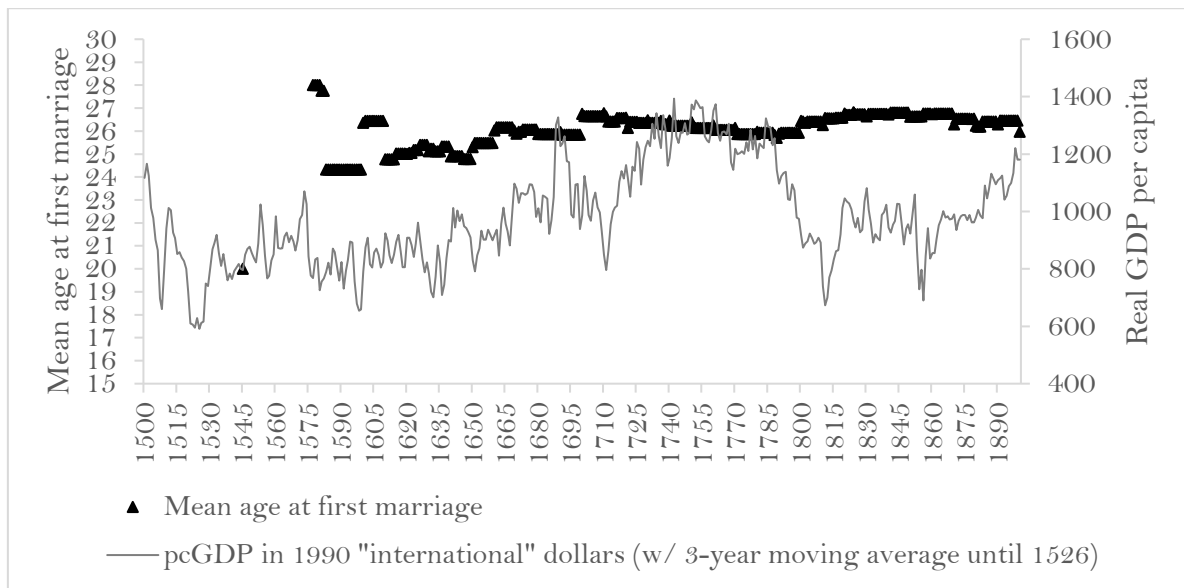
³³ While the mean age at first marriage for men was comparatively uniform in Portugal, the mean age for women unveils regional variations, with late marriages in the North (above 24 years) and early ones in the South (below 23 years). The high female celibacy (above c. 10%) was another critical feature of the EMP. Empirical studies on nuptiality for Portugal show a high rate of unmarried women and men (more predominant in the North), which also did not differ from the Northwestern European standards (Rodrigues, 2008, pp. 392–394). The situation was again similar in Spain, where celibacy rates were also above 10% for the country, and 20% in Galicia (Casey, 1999, p. 28).

Table 3. Historical marriage ages for women in Portugal

Year	Region	Location	Population share	Women	Men
1601-1700	North	Cardanha	32.4 - 31.0	26.9	-
1701-1800	North	Cardanha	31.0 - 34.0	28.3	-
1650-1709	Center	Eixo	28.4 - 31.6	27.2	25.9
1710-1749	Center	Eixo	31.8 - 35.2	27.4	29.6
1750-1799	Center	Eixo	35.4 - 33.9	27.3	27.5
1800-1860	Center	Eixo	34.0 - 25.0	28.9	29.7
1680-1699	South	Selmes	16.2 - 17.4	20.4	24.9
1700-1749	South	Selmes	17.8 - 13.6	22.3	26.5
1750-1799	South	Selmes	13.7 - 14.1	22.1	26.6

Sources: for Cardanha, Rowland (1989, p. 513); for Eixo, Ferreira (2005, pp. 310, 312); for Selmes, Santos and Lopes (2017, p. 69).

Figure 10. Mean age of first marriage and real GDP per capita in constant prices (1990 Geary-Khamis "international" dollars), 1500-1910



Sources: GDP per head in constant prices from Palma and Reis (2019) and Henriques et al. (2020); mean age at first marriage, see Appendix E.

Note: Information on the age at first marriage only began to be collected systematically after the Council of Trent (1545-1563).

5.3. Post-marriage labor market participation and widowhood

Moor and Zanden (2010, p. 10) argue that in the southern system, social norms “prevented women from becoming active in the labor market (after marriage) because it remained uncertain whether they would ever benefit from their efforts after the death of their husbands.” In fact, in Portugal, all family assets continued to belong to the woman and children if the husband died.³⁴ Hence, the Moor-Zanden mechanism cannot be at work. Upon their husbands’ death, widows became head of household – even if there were adult male descendants in the household – and had rights over the conjugal patrimony, receiving half of all marital assets (*meação*).³⁵ The other half of the assets was distributed among the deceased’s heirs. Therefore, upon their husband’s death, widows received the assets they had brought into the marriage (dowry). Table 4 shows that the percentage of women as heads of household in Portugal was similar (and close to the higher bound) to elsewhere in Europe.

Table 4. Percentage of women as Heads of Household

Location	Year	Percentage
Portugal (country-wide)	1765	14
Portugal (Porto)	1698	9.1
Portugal (Vila do Conde)	1643	43
Bohemia (rural)	1654	3.2
Netherlands (urban)	1750	3 - 24
Western Europe (global)	1750	10 - 15

Source: Carvalhal (2021), relying on Klein and Ogilvie (2016) for Bohemia 1654 and country-specific figures: Silva and Carvalhal (2020) for Portugal, corresponding to the 1765 average (from a range of 2.9 to 21.5%); Polónia (1999) for Portugal (Vila do Conde) 1643 and Porto 1698; Schmidt and Nederveen Meerkerk (2012) for the Netherlands 1750.

It was also common for women to manage businesses, especially during widowhood (see, for example, Lopes 2020). They commonly appear in court cases as defendants or

³⁴ The same authors argue that early motherhood would have prevented women from being as active in the labor market as women in Northwestern Europe. However, as we have seen, women in Portugal married just as late as in the Netherlands or England.

³⁵ From the other half, one-third (*terço*) could be given via the will to any party, including the widow, chosen in advance by the deceased. The remaining two-thirds (of the half, known as *Legítima*) were given to the children. The same situation existed in Holland (Schmidt, 2007). In Portugal, however, daughters were commonly preferred over sons (Durães, 2009). In the North of Portugal, parents could (and often did) favor firstborn daughters at the expense of male sons, attributing them the land-lease estate or the *terço*, the third part of the inheritance they could freely assign to whomever they wanted. When writing their wills, they often favored daughters because they believed daughters would assure their old age better than their daughters-in-law (Durães, 2009).

plaintiffs. They also independently provided large quantities of credit to the market: in eighteenth-century Lisbon, they provided a large share of the credit volume, even compared with attorneys or merchants (Costa et al., 2018, p. 91).

It is incorrect to write that “In southern Europe, vulnerable members of society were helped by the family or by individual charities, while in northern societies this was largely accomplished through public and private institutions” (Moor and Zanden, 2010, p. 26). In fact, there was an extensive charity network in Portugal known as Houses of Mercy (*Misericórdias*). More than 200 such institutions existed at the end of the sixteenth century, increasing to 300 by 1800 (Paiva, 2013, pp. 517–524). They were financially autonomous and administratively independent from each other and the Church and the Crown. They managed hospitals, prisons, and orphanages. They also offered dowries to single women in need to marry and took care of those who remained celibate into old age. Their size was enormous: in 1770, the House of Mercy of Lisbon had revenues three times larger than those of the Inquisition of Lisbon (Rodrigues, 2019; Lopes, 2021, p. 665).

5.4. Celibacy rates and degree of consensus

Our criticism of the “Girl Power” literature is related to Dennison and Ogilvie (2016; 2014). These authors argue that England and the Netherlands had the EMP while the European South did not, but that the existence of the EMP (at least as traditionally defined) did not matter for growth because there were parts of Western Europe that had it without important consequences for growth. Still, they argue it was not present in Italy (not even Northern Italy) or Spain (Dennison and Ogilvie, 2016, pp. 208–210).³⁶ They focus on three critical demographic indicators: female age at first marriage, female lifetime celibacy rates, and neo-local family structure (Dennison and Ogilvie 2014, pp. 652–672). In turn, Carmichael et al. (2016) argue that the most important criteria were consensus in marriage and neo-locality. However, according to these criteria, Portugal had the EMP. As we will show in detail in the next section, marriage ages were high, and there was also a neo-local household structure in most of the country. Finally,

³⁶ Multiple sources for early modern and nineteenth-century Italy confirm that the typical age of first marriage for women ranged between 22 and 26 years old, regardless of the period or region (Levi 1976, Da Molin 1995, Ge Rondi 2007, Bertocchi and Bozzano 2019, Rossi 2020). Italian women hence tended to marry considerably later than their teens, in contradiction to the claims of the girl power literature (Moor and Zanden, 2010, pp. 17–18; Zanden et al., 2019, p. 55; Bateman, 2019, p. 44). The marriage age of Italian women from the late Middle Ages onward also contrasts with the typical first marriage ages of 15–19 for females during ancient Rome (Beard 2015, p. 312).

celibacy rates were similar to elsewhere in Western Europe: the same average of 15% to 25% (Kowaleski, 1999, p. 46; Zanden et al., 2019, p. 39), applied, as we show in Table 5.³⁷ Portugal had a high level of celibacy, unlike what is claimed by Zanden et al. (2019, pp. 39, 55).

Table 5. Celibacy rates in Portugal

Year	Region	Location	Female	Male
1623-1749	North	Alvito (S. Pedro)	49.0	37.0
1750-1849	North	Alvito (S. Pedro)	45.0	29.0
1850-1939	North	Alvito (S. Pedro)	33.0	24.0
Prior 1650	Center	Eixo	10.6	13.3
1650-1709	Center	Eixo	12.4	5.7
1710-1749	Center	Eixo	19.1	9.5
1750-1799	Center	Eixo	27.9	14.8
1800-1860	Center	Eixo	36.4	14.4
1802	South	Avis	39.0	40.0
1802	South	Elvas	20.0	34.0
1802	South	Portalegre	16.0	11.0
1802	South	Vila Viçosa	14.0	15.0

Sources: for Alvito (S. Pedro), Juncal (2004, p. 100); for Eixo, Ferreira (2005, p. 350); for Avis, Elvas, Portalegre, and Vila Viçosa, Sousa (1979, p. 269).

Finally, we lack comparative figures on the degree of consensus. But the same is true for the “Girl Power” literature. That literature claims that consensus was more common in Northwestern Europe but without comparative quantitative evidence (Carmichael et al., 2016; Zanden et al., 2019; Pleijt and Zanden, 2021). All the extant information suggests that the social norms of Western European societies were not fundamentally different from each other.

5.5. The comparative degree of female labor market participation

The social norms that regulated the family position of women in Portugal ensured that they participated commonly in the labor market. The earliest comparative data concerns the second half of the nineteenth century, but it suggests that women’s participation in the labor market was not far behind that of the Netherlands; while in Italy, it was well ahead into the twentieth century (Table 6).

³⁷ Table 5 presents an abridged version of the information in Appendix D.

Table 6. Percentage of female labor force participation

	1861	1890	1900	1910
Australia	-	-	31.5	27.2
Belgium	-	40.8	40.1	41.2
Canada	-	13.4	14.0	16.5
Denmark	-	-	43.0	40.0
Finland	-	-	25.5	45.3
France	-	-	48.2	51.5
Germany	-	-	-	-
Ireland	-	-	-	30.7
Italy	50.0	-	49.4	43.1
The Netherlands	27.1	25.4	27.5	-
Norway	-	35.5	32.9	34.3
Portugal	21.5	36.8	27.6	27.8
Spain	-	-	21.5	14.7
Sweden	-	27.6	34.2	31.2
UK	38.2	40.0	36.4	36.6
USA	-	18.6	20.4	22.8

Sources: for Portugal, Reis (2005, p. 123), and the figure for 1861 corresponds to 1862; for Italy, the figure corresponds excludes the Latium and the Venetian provinces, and is from Ministero dell'agricoltura, commercio ed industria (1864); for the UK the 1861 figure corresponds to England and Wales and comes from Parliamentary papers, 1861 census, vol. II, parts I-II, population tables, occupations, p. 1863. All the other figures are from Olivetti (2013, pp. 41, 44) and Mitchell (1975, pp. 153-165).

5.6. Discussion

A final source of discrimination concerns the extent to which women were blocked from specific (desirable) jobs and participation in the political process. While it is undoubtedly true that many white-collar jobs were not accessible for women in Portugal, this was equally the case in the Netherlands and England, where no examples of female lawyers existed until the early twentieth century, for example. Admission of women to universities was uncommon before then. No systematic comparative evidence is available concerning the extent to which the same range of jobs was open to women in the European South compared to Northwestern Europe. Hence, there is no concrete evidence that the South discriminated more.³⁸ The first woman to be allowed to vote in Portuguese

³⁸ Zanden et al. (2019), for instance, do not provide any evidence of this kind.

national elections, Carolina Beatriz Ângelo, did so in 1911 after a judge ruled that excluding her for being a woman would be “absurd and wicked” (Silva, 2013, p. 58). This happened earlier than in either England (1918) or the Netherlands (1919), even though it did not become a permanent right immediately. Portuguese women were gradually allowed to vote over the twentieth century – during part of which the country was under a dictatorship, and the vote was meaningless – but the delay was not uncommon, even by Western European standards: French women were granted suffrage only as late as 1944.

Our discussion has been focused on the case of Portugal, but much of what we covered is representative of Iberian norms more generally. Elliott (2006, p. 158) writes, “both law and custom in Castile favored women in ways that the English common law did not. Daughters inherited equally with sons a mandatory share of the estate known as the *legítima*, and widows took back on the deaths of their husbands not only their dowries, and the sum known as the arras [...] which the husband promised on marriage, but also half of the property gains made jointly by the spouses. In the control and division of assets, therefore, the peninsular society possessed a tradition of equity between the sexes.”³⁹

By and large, we find no evidence supporting the claim by Moor and Zanden (2010, p. 9) that women had little time for resource accumulation due to receiving only part of their parent’s estate on marriage in Southwestern Europe. All the characteristics that they or Carmichael et al. (2016) argue were specific to Northwestern Europe – consensual marriage, neo-locality, and a high share of celibacy – were also present in Portugal.⁴⁰

6. Conclusion

We have found that women were not more discriminated against in Portugal than anywhere else in Western Europe. This finding raises questions about any causal link

³⁹ Casey (1999, pp. 28–29) writes that “It was a characteristic of Spanish, and particularly, Castilian, law and, custom to favor women. The Castilian tradition had been that girls inherited equally with boys. Even in the Crown of Aragon [...], the medieval system favored division of at least part of the patrimony.” One cause for this egalitarianism among heirs was the post-Reconquest frontier nature of the economy. This factor was less relevant in areas of Spain, such as Aragon and Navarre (Casey, 1999, p. 198).

⁴⁰ Even in a country as small as Portugal, practices were not uniform, however. In the South, neo-locality was the norm. There were high female celibacy rates and a late average marriage age in the North, but neo-locality co-existed with an alternative and more complex family structure in which several generations of related family members co-habited together (Durães, 1995, p. 70).

between industrialization and social norms varying within Western Europe. The evidence points to women's rights followed, rather than causing, economic development. Portugal's early modern marriage regime was characterized by the two key EMP features as defined by Zanden et al. (2019) – consensus and neo-locality – to the degree similar to that of the North Sea region. Accordingly, the evidence does not support the view that “in southern Europe [...] the EMP was not characteristic or was much less prevalent” (Zanden et al., 2019, p. 160). Women in Portugal also married late, and gender wage gaps were similar to the North Sea region: unskilled women earned about two-thirds of male wages. We additionally find that women's labor market participation or property rights were not weaker in Portugal than elsewhere in Western Europe.

For the last few centuries, women have had more freedom in Western Europe and its offshoots than has been the case in other parts of the world (Zanden et al., 2017; Bateman, 2019, pp. 39–50). The comparatively high level of agency that females have experienced in Western Europe is a valid candidate to be part of the set of conditions associated with this region's economic success and offshoots. However, despite different cultural norms, the direction of causation remains to be proven. The comparative evidence shows that in England, industrialization was associated with the worsening of the labor conditions for women (Horrell and Humphries, 1995; Humphries and Weisdorf, 2015). What we have argued in the present paper is that by comparison with the first-order cultural differences of Western Europe vis-à-vis other regions of the world such as India or China, any discrepancies related to the female agency which existed within Western Europe must have been of no importance for our understanding of development outcomes. In this, we differ from what is argued in the “Girl Power” literature; our detailed case study of Portugal instead supports the evidence for Spain put forward by Drellichman and González Agudo (2020).

Our paper supports the viewpoint that the sources of comparative European early modern economic growth performances reside in causes unrelated to different EMP practices (Dennison and Ogilvie 2016). All Western Europe was broadly similar concerning female agency. This implies that an explanation of the growing income inequality between European countries during the early modern period, especially from the mid-seventeenth century onward – the Little Divergence – must be found elsewhere.

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APPENDICES (for online publication only)

Appendix A: Map of Portugal with the location of our sources indicated



Appendix B: Sources for daily and annual wages in Portugal

Archival sources

Arquivo Distrital de Braga (ADB)

Fundo Monástico Conventual

Benedictinos

- São Salvador de Ganfei (Valença), Livro dos gastos, liv. 6
- Santa Maria Miranda (Arcos de Valdevez), Livro dos gastos, livs. 23, 25
- São Romão do Neiva, Livro dos gastos, liv. 116, 116A, 117
- Santa Ana (Viana do Castelo), Livro da receita e despesa, liv. 46, 46A, 47, 48, 91
- Mosteiro de Tibães, Livro do gasto deste mosteiro, n.º 656
- Mosteiro de Tibães, Livro dos salários e soldadas, n.º 443, 444
- Mosteiro de Tibães, Livro do gasto deste mosteiro, n.º 655, 657

Cónegos regrantes

- Mosteiro de Santa Maria, Vila Nova de Muia (Ponte de Lima), liv. CR188

Franciscanos

- Convento de Nossa Senhora dos Remédios (Braga), liv. F239, F242, F27, F277

Fundo da Santa Casa da Misericórdia de Braga

- Livro da despesa do tesoureiro, n.º 657
- Livro da despesa do mordomo, n.º 679, 680, 681

Arquivo Distrital de Leiria (ADLRA)

Fundo do Real Hospital das Caldas da Rainha

- Livro de receitas e despesas (1518-1774), DEP. VI-3-B-1, DEP. VI-3-B-2, DEP. VI-3-B-3, DEP. VI-3-B-4, DEP. VI-3-B-5, DEP. VI-3-B-6, DEP. VI-3-B-7, DEP. VI-3-B-8, DEP. VI-3-C-1, DEP. VI-3-C-2, DEP. VI-3-C-3, DEP. VI-3-C-4, DEP. VI-3-C-5, DEP. VI-3-C-6, DEP. VI-3-C-7, DEP. VI-3-C-8, DEP. VI-3-C-9, DEP. VI-3-D-1, DEP. VI-3-D-2, DEP. VI-3-D-3, DEP. VI-3-D-4, DEP. VI-3-D-5, DEP. VI-3-D-6, DEP. VI-3-D-7, DEP. VI-3-D-8, DEP. VI-4-A-1, DEP. VI-4-A-2, DEP. VI-4-A-3,

DEP. VI-4-A-4, DEP. VI-4-A-5, DEP. VI-4-A-6, DEP. VI-4-A-7, DEP. VI-4-A-8, DEP. VI-4-A-9, DEP. VI-4-B-1, DEP. VI-4-B-2, DEP. VI-4-B-3, DEP. VI-4-B-3, DEP. VI-4-B-4, DEP. VI-4-B-5, DEP. VI-4-B-6, DEP. VI-4-B-7, DEP. VI-4-B-8, DEP. VI-4-B-9, DEP. VI-4-C-1, DEP. VI-4-C-2, DEP. VI-4-C-3, DEP. VI-4-C-4, DEP. VI-4-C-5, DEP. VI-4-C-6, DEP. VI-4-C-7, DEP. VI-4-C-8, DEP. VI-4-C-9, DEP. VI-4-D-1, DEP. VI-4-D-2, DEP. VI-4-D-3, DEP. VI-4-D-4, DEP. VI-4-D-5, DEP. VI-4-D-6, DEP. VI-4-D-7, DEP. VI-4-D-8, DEP. VI-4-D-9, DEP. VI-4-D-10, DEP. VI-4-D-11, DEP. VI-4-D-12, DEP. VI-5-A-1, DEP. VI-5-A-2, DEP. VI-5-A-3, DEP. VI-5-A-4, DEP. VI-5-A-5, DEP. VI-5-A-6, DEP. VI-5-A-7, DEP. VI-5-A-8, DEP. VI-5-A-9, DEP. VI-5-A-10, DEP. VI-5-A-11, DEP. VI-5-A-12, DEP. VI-5-B-1, DEP. VI-5-B-2, DEP. VI-5-B-3, DEP. VI-5-B-4, DEP. VI-5-B-5, DEP. VI-5-B-6, DEP. VI-5-B-7, DEP. VI-5-B-8, DEP. VI-5-B-9, DEP. VI-5-B-10, DEP. VI-5-B-11, DEP. VI-5-B-12, DEP. VI-5-B-13, DEP. VI-5-C-1, DEP. VI-5-C-2, DEP. VI-5-C-3, DEP. VI-5-C-4, DEP. VI-5-C-5, DEP. VI-5-C-6, DEP. VI-5-C-7, DEP. VI-5-C-8, DEP. VI-5-C-9, DEP. VI-5-C-10, DEP. VI-5-C-11, DEP. VI-5-C-12, DEP. VI-5-C-13, DEP. VI-5-D-1, DEP. VI-5-D-2, DEP. VI-5-D-3, DEP. VI-5-D-4, DEP. VI-5-D-5, DEP. VI-5-D-6, DEP. VI-5-D-7, DEP. VI-5-D-8, DEP. VI-5-D-9, DEP. VI-5-D-10, DEP. VI-5-D-11, DEP. VI-5-D-12, DEP. VI-5-D-13, DEP. VI-6-A-1, DEP. VI-6-A-2, DEP. VI-6-A-3, DEP. VI-6-A-4, DEP. VI-6-A-5.

Arquivo Histórico Alfredo Pimenta (AHAP)

Recolhimento de Torre de Moncorvo (1696), DSCO5156

Arquivo Histórico do Hospital Termal das Caldas da Rainha (AHTCR)

Livro de receitas e despesas (1520-1521, 1542-1543, 1547-1548), Inv. 235, 577, 236

Biblioteca Nacional de Portugal (BNP)

Livro de Despesa de uma Casa da Companhia de Jesus (Porto) (1714-1721), cod-4512. Available at <http://purl.pt/33934>

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Appendix C: Sources for celibacy rates and mean ages at first marriage for women and men in Portugal

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Appendix D: Celibacy rates in Portugal

Year	Region	Location	Female	Male	Source
1750-1779	Azores	Ribeiras do Pico	14.3	-	Amorim, 2001, p. 16
1780-1809	Azores	Ribeiras do Pico	17.2	-	Amorim, 2001, p. 16
1800-1849	Azores	Ribeiras do Pico	15.7	11.1	Amorim, 2001, p. 15
1810-1839	Azores	Ribeiras do Pico	24.9	-	Amorim, 2001, p. 16
1840-1869	Azores	Ribeiras do Pico	30.3	-	Amorim, 2001, p. 16
1850-1899	Azores	Ribeiras do Pico	17.9	7.1	Amorim, 2001, p. 15
1870-1899	Azores	Ribeiras do Pico	16.4		Amorim, 2001, p. 16
1900-1949	Azores	Ribeiras do Pico	29.2	10.5	Amorim, 2001, p. 15
1950-1999	Azores	Ribeiras do Pico	14.5	11.5	Amorim, 2001, p. 15
Before 1800	Azores	Ribeiras do Pico	11.0	8.8	Amorim, 2001, p. 15
1750-1779	Azores	Sul do Pico	19.2	-	Amorim, 2001, p. 16
1780-1809	Azores	Sul do Pico	17.1	-	Amorim, 2001, p. 16
1810-1839	Azores	Sul do Pico	33.3	-	Amorim, 2001, p. 16
1840-1869	Azores	Sul do Pico	38.4	-	Amorim, 2001, p. 16
1870-1899	Azores	Sul do Pico	19.3	-	Amorim, 2001, p. 16
1802	Center	Aveiro	33.0	30.0	Sousa, 1979, p. 269
1878 (census)	Center	Beira Alta	22.2	14.1	Rowland, 1989, p. 533
1878 (census)	Center	Beira Baixa	14.2	10.1	Rowland, 1989, p. 533
1878 (census)	Center	Beira Litoral	22.4	11.8	Rowland, 1989, p. 533
1650-1709	Center	Eixo	12.4	5.7	Ferreira, 2005, p. 350
1710-1749	Center	Eixo	19.1	9.5	Ferreira, 2005, p. 350
1750-1799	Center	Eixo	27.9	14.8	Ferreira, 2005, p. 350
1800-1860	Center	Eixo	36.4	14.4	Ferreira, 2005, p. 350
Before 1650	Center	Eixo	10.6	13.3	Ferreira, 2005, p. 350
1670-1719	Center	Ericeira	10.2	9.4	Reis, 2003, p. 35
1720-1819	Center	Ericeira	6.7	9.2	Reis, 2003, p. 35
1820-1855	Center	Ericeira	6.8	3.7	Reis, 2003, p. 35
1802	Center	Leiria	21.0	11.0	Sousa, 1979, p. 269
1878 (census)	Center	Lisboa	17.5	16.0	Rowland, 1989, p. 533
1802	Center	Ourém	17.0	15.0	Sousa, 1979, p. 269
1623-1749	North	Alvito (S. Pedro)	49.0	37.0	Juncal, 2004, p. 100
1750-1849	North	Alvito (S. Pedro)	45.0	29.0	Juncal, 2004, p. 100
1850-1939	North	Alvito (S. Pedro)	33.0	24.0	Juncal, 2004, p. 100
1680-1779	North	Aveleda (Braga)	23.9	14.5	Fernandes, 2015, p. 37
1780-1829	North	Aveleda (Braga)	25.0	16.3	Fernandes, 2015, p. 37

1802	North	Barcelos	47.0	44.0	Sousa, 1979, p. 269
1802	North	Braga	42.0	30.0	Sousa, 1979, p. 269
1802	North	Bragança	34.0	28.0	Sousa, 1979, p. 269
1680-1709	North	Calvão (Vila Real)	45.0	36.1	Faustino, 1998, p. 112
1710-1739	North	Calvão (Vila Real)	36.2	10.2	Faustino, 1998, p. 112
1740-1775	North	Calvão (Vila Real)	14.5	10.0	Faustino, 1998, p. 112
1650-1761	North	Cardanha	13.0	11.0	Fernandes, 2015, p. 37
1802	North	Castelo Branco	18.0	5.0	Sousa, 1979, p. 269
1695-1749	North	Cervães (Vila Verde)	27.7	20.5	Juncal, 2004, p. 100
1750-1809	North	Cervães (Vila Verde)	27.2	12.6	Juncal, 2004, p. 100
1780-1829	North	Chaves	18.3	11.1	Faustino, 2014, p. 133
1650-1719	North	Cortegaça	12.6	12.9	Gomes, 1998, p. 43
1720-1779	North	Cortegaça	18.9	9.2	Gomes, 1998, p. 43
1780-1839	North	Cortegaça	16.1	12.6	Gomes, 1998, p. 43
1840-1899	North	Cortegaça	12.5	2.2	Gomes, 1998, p. 43
1710-1779	North	Facha (Ponte de Lima)	41.5	18.6	Juncal, 2004, p. 100
1780-1839	North	Facha (Ponte de Lima)	41.9	21.6	Juncal, 2004, p. 100
1840-1999	North	Facha (Ponte de Lima)	40.6	12.8	Juncal, 2004, p. 100
1852-1929	North	Famalicão	14.9	5.1	Leite, 2014, p. 106
1930-1960	North	Famalicão	10.1	4.9	Leite, 2014, p. 106
1700-1749	North	Gotinhães	9.6	18.4	Fernandes, 2015, p. 37
1750-1799	North	Gotinhães	9.5	37.0	Fernandes, 2015, p. 37
1802	North	Guimarães	31.0	18.0	Sousa, 1979, p. 269
18 th -early 19 th centuries	North	Guimarães (rural parish)	11.0	05/jul	Amorim, 2013, p. 92
18 th -early 19 th centuries	North	Guimarães (urban parish)	30.0	21.0	Amorim, 2013, p. 92
1802	North	Lamego	27.0	21.0	Sousa, 1979, p. 269
1700-1749	North	Meadela	14.6	8.3	Solé, 2001, p. 146
1750-1799	North	Meadela	20.0	4.7	Solé, 2001, p. 146
1800-1849	North	Meadela	15.6	2.1	Solé, 2001, p. 146
1878 (census)	North	Minho	27.7	13.6	Rowland, 1989, p. 533
1802	North	Miranda	31.0	35.0	Sousa, 1979, p. 269
1802	North	Moncorvo	25.0	16.0	Sousa, 1979, p. 269
1730-1779	North	Mouquim	24.2	17.2	Juncal, 2004, p. 100
1800-1859	North	Mouquim	27.2	16.6	Juncal, 2004, p. 100
1656-1849	North	Palaçoulo	7.4	6.7	Raposo, 2000, p. 83
1850-1910	North	Palaçoulo	7.5	9.1	Raposo, 2000, p. 83
1802	North	Penafiel	32.0	20.0	Sousa, 1979, p. 269
1802	North	Pinhel	30.0	30.0	Sousa, 1979, p. 269

1650-1760	North	Poiares	13.5	11.5	Fernandes, 2015, p. 37
1802	North	Porto	37.0	22.0	Sousa, 1979, p. 269
1580-1699	North	Priscos (Braga)	33.8	24.2	Fernandes, 2015, p. 37
1700-1820	North	Priscos (Braga)	37.9	22.3	Fernandes, 2015, p. 37
18 th century	North	Rebordãos	10.7	13.2	Fernandes, 2015, p. 37
1623-1799	North	Santa Tecla	15.3	2.2	Carvalho, 1999, pp. 45, 48
1800-1919	North	Santa Tecla	23.3	4.4	Carvalho, 1999, pp. 45, 48
1920-1959	North	Santa Tecla	12.8	11.3	Carvalho, 1999, pp. 45, 48
1960-1991	North	Santa Tecla	4.5	11.2	Carvalho, 1999, pp. 45, 48
1630-1799	North	Santiago de Antas (Famalicão)	29.0	14.2	Juncal, 2004, p. 100
1800-1849	North	Santiago de Antas (Famalicão)	27.8	25.0	Juncal, 2004, p. 100
1850-1879	North	Santiago de Antas (Famalicão)	32.8	4.3	Juncal, 2004, p. 100
1880-1909	North	Santiago de Antas (Famalicão)	38.7	11.1	Juncal, 2004, p. 100
1700-1749	North	Santiago de Romarigães (Viana)	17.6	16.1	Santos, 1999, pp. 145-146
1750-1799	North	Santiago de Romarigães (Viana)	25.9	12.9	Santos, 1999, pp. 145-146
1800-1849	North	Santiago de Romarigães (Viana)	21.5	13.5	Santos, 1999, pp. 145-146
1660-1739	North	Santo André (Barcelinhos)	43.2	27.6	Faria, 1998, pp. 70, 88
1740-1799	North	Santo André (Barcelinhos)	33.7	20.4	Faria, 1998, pp. 70, 88
1800-1839	North	Santo André (Barcelinhos)	37.3	18.8	Faria, 1998, pp. 70, 88
1600-1759	North	São João das Caldas (Vizela)	12.0	4.0	Ferreira, 2001, p. 79
1760-1910	North	São João das Caldas (Vizela)	24.0	7.0	Ferreira, 2001, p. 79
1660-1709	North	São Martinho de Avidos	30.4	0.0	Leite, 2001, p. 120
1710-1809	North	São Martinho de Avidos	15.1	3.0	Leite, 2001, p. 120
1810-1879	North	São Martinho de Avidos	17.0	13.5	Leite, 2001, p. 120
1880-1945	North	São Martinho de Avidos	20.0	14.7	Leite, 2001, p. 120
1651-1700	North	São Tiago de Ronfe	42.3	23.4	Scott, 1999, pp. 200, 205
1701-1750	North	São Tiago de Ronfe	26.0	11.8	Scott, 1999, pp. 200, 205
1751-1800	North	São Tiago de Ronfe	31.7	15.2	Scott, 1999, pp. 200, 205
1801-1850	North	São Tiago de Ronfe	35.5	14.0	Scott, 1999, pp. 200, 205
1851-1900	North	São Tiago de Ronfe	10.3	4.2	Scott, 1999, pp. 200, 205
1802	North	Trancoso	17.0	12.0	Sousa, 1979, p. 269
1878 (census)	North	Trás-os-Montes	23.1	18.8	Rowland, 1989, p. 533
1802	North	Valença	24.0	11.0	Sousa, 1979, p. 269
1802	North	Viana	37.0	12.0	Sousa, 1979, p. 269
1660-1699	North	Vila Praia de Âncora	23.1	8.3	Rego, 2013, p. 96
1700-1749	North	Vila Praia de Âncora	46.0	11.6	Rego, 2013, p. 96
1750-1799	North	Vila Praia de Âncora	35.8	14.4	Rego, 2013, p. 96
1800-1869	North	Vila Praia de Âncora	42.9	14.9	Rego, 2013, p. 96

1802	North	Vila Real	44.0	41.0	Sousa, 1979, p. 269
1878 (census)	South	Alentejo	13.7	15.3	Rowland, 1989, p. 533
1878 (census)	South	Algarve	9.9	7.8	Rowland, 1989, p. 533
1802	South	Avis	39.0	40.0	Sousa, 1979, p. 269
1802	South	Elvas	20.0	34.0	Sousa, 1979, p. 269
1802	South	Portalegre	16.0	11.0	Sousa, 1979, p. 269
1802	South	Vila Viçosa	14.0	15.0	Sousa, 1979, p. 269

Appendix E: Historical marriage ages for women in Portugal

Year	Region	Location	F	F (N obs)	M	M (N obs)	Source
1770-1779	Azores	Ribeiras do Pico	26.3	56	29.4	56	Amorim, 2001, p. 13
1780-1789	Azores	Ribeiras do Pico	25.4	68	27.2	61	Amorim, 2001, p. 13
1790-1799	Azores	Ribeiras do Pico	26.6	76	29.7	65	Amorim, 2001, p. 13
1800-1809	Azores	Ribeiras do Pico	27.3	66	29.1	62	Amorim, 2001, p. 13
1810-1819	Azores	Ribeiras do Pico	26.5	98	28.9	82	Amorim, 2001, p. 13
1820-1829	Azores	Ribeiras do Pico	27.0	119	28.2	99	Amorim, 2001, p. 13
1830-1839	Azores	Ribeiras do Pico	24.3	107	27.0	93	Amorim, 2001, p. 13
1840-1849	Azores	Ribeiras do Pico	26.8	112	28.6	92	Amorim, 2001, p. 13
1850-1859	Azores	Ribeiras do Pico	26.5	97	28.3	93	Amorim, 2001, p. 13
1860-1869	Azores	Ribeiras do Pico	28.0	105	30.4	83	Amorim, 2001, p. 13
1870-1879	Azores	Ribeiras do Pico	27.3	101	29.3	86	Amorim, 2001, p. 13
1880-1889	Azores	Ribeiras do Pico	27.7	89	29.9	72	Amorim, 2001, p. 13
1890-1899	Azores	Ribeiras do Pico	25.6	118	27.6	103	Amorim, 2001, p. 13
1900-1909	Azores	Ribeiras do Pico	24.5	110	28.1	106	Amorim, 2001, p. 13
1910-1919	Azores	Ribeiras do Pico	23.6	83	29.1	68	Amorim, 2001, p. 13
1920-1929	Azores	Ribeiras do Pico	23.2	111	28.9	94	Amorim, 2001, p. 13
1930-1939	Azores	Ribeiras do Pico	24.0	107	26.7	92	Amorim, 2001, p. 13
1940-1949	Azores	Ribeiras do Pico	23.7	114	28.0	76	Amorim, 2001, p. 13
1950-1959	Azores	Ribeiras do Pico	23.1	118	28.0	90	Amorim, 2001, p. 13
1960-1969	Azores	Ribeiras do Pico	22.3	97	27.3	60	Amorim, 2001, p. 13
1970-1979	Azores	Ribeiras do Pico	21.2	67	25.6	43	Amorim, 2001, p. 13
1980-1989	Azores	Ribeiras do Pico	20.7	30	27.2	20	Amorim, 2001, p. 13
1680-1749	Azores	S. Mateus do Pico	25.1	-	-	-	Amorim 2004, 165
1750-99	Azores	S. Mateus do Pico	26.2	-	-	-	Amorim 2004, 165
1802	Center	Aveiro	23.0	-	26.0	-	Sousa, 1979, p. 269
1878	Center	Aveiro	27.2	-	-	-	Leite, 2012, p. 67
1878 (census)	Center	Beira Alta	26.9	-	29.1	-	Rowland, 1989, p. 533
1878 (census)	Center	Beira Baixa	25.5	-	28.5	-	Rowland, 1989, p. 533
1878 (census)	Center	Beira Litoral	27.4	-	28.6	-	Rowland, 1989, p. 533
1802	Center	Castelo Branco	26.0	-	31.0	-	Sousa, 1979, p. 269
1878	Center	Castelo Branco	25.3	-	-	-	Leite, 2012, p. 67
1878	Center	Coimbra	27.5	-	-	-	Leite, 2012, p. 67
1789	Center	Coruche	20.6	-	-	-	Rowland, 1989, p. 513
1680-1749	Center	Couto do Mosteiro	28.2	-	-	-	Amorim 2004, 165
1750-99	Center	Couto do Mosteiro	28.2	-	-	-	Amorim 2004, 165

1650-1709	Center	Eixo	27.2	233	25.9	223	Ferreira, 2005, pp. 310, 312
1710-1749	Center	Eixo	27.4	266	29.6	152	Ferreira, 2005, pp. 310, 312
1750-1799	Center	Eixo	27.3	319	27.5	246	Ferreira, 2005, pp. 310, 312
1800-1860	Center	Eixo	28.9	326	29.7	308	Ferreira, 2005, pp. 310, 312
Until 1650	Center	Eixo	24.5	94	26.2	33	Ferreira, 2005, pp. 310, 312
1670-1719	Center	Ericeira	26.0	227	28.4	178	Reis, 2003, p. 27
1720-1819	Center	Ericeira	23.7	1057	26.5	902	Reis, 2003, p. 27
1820-1855	Center	Ericeira	25.0	518	27.9	485	Reis, 2003, p. 27
1650-1709	Center	Fermentelos	26.7	19	28.5	21	Ferreira, 2005, pp. 310, 312
1710-1749	Center	Fermentelos	26.8	148	29.1	131	Ferreira, 2005, pp. 310, 312
1750-1799	Center	Fermentelos	27.8	239	29.4	188	Ferreira, 2005, pp. 310, 312
1800-1860	Center	Fermentelos	28.2	239	29.9	222	Ferreira, 2005, pp. 310, 312
1878	Center	Guarda	26.0	-	-	-	Leite, 2012, p. 67
1802	Center	Lamego	27.0	-	29.0	-	Sousa, 1979, p. 269
1802	Center	Leiria	24.0	-	28.0	-	Sousa, 1979, p. 269
1878	Center	Leiria	27.6	-	-	-	Leite, 2012, p. 67
1878	Center	Lisboa	27.1	-	-	-	Leite, 2012, p. 67
1878 (census)	Center	Lisboa	26.7	-	30.6	-	Rowland, 1989, p. 533
1650-1709	Center	Nariz	23.2	33	24.1	32	Ferreira, 2005, pp. 310, 312
1710-1749	Center	Nariz	27.8	62	29.1	81	Ferreira, 2005, pp. 310, 312
1750-1799	Center	Nariz	27.8	160	27.3	122	Ferreira, 2005, pp. 310, 312
1800-1860	Center	Nariz	29.1	173	30.6	132	Ferreira, 2005, pp. 310, 312
1650-1709	Center	Oliveirinha	27.0	307	26.3	221	Ferreira, 2005, pp. 310, 312
1710-1749	Center	Oliveirinha	27.9	384	28.7	277	Ferreira, 2005, pp. 310, 312
1750-1799	Center	Oliveirinha	27.3	417	28.4	317	Ferreira, 2005, pp. 310, 312
1800-1860	Center	Oliveirinha	28.5	460	29.0	373	Ferreira, 2005, pp. 310, 312
Until 1650	Center	Oliveirinha	24.5	70	24.7	43	Ferreira, 2005, pp. 310, 312
1802	Center	Ourém	27.0	-	28.0	-	Sousa, 1979, p. 269
1802	Center	Portalegre	23.0	-	25.0	-	Sousa, 1979, p. 269
1650-1709	Center	Requeixo	23.5	147	24.2	174	Ferreira, 2005, pp. 310, 312
1710-1749	Center	Requeixo	29.2	227	30.2	246	Ferreira, 2005, pp. 310, 312
1750-1799	Center	Requeixo	28.6	578	28.0	421	Ferreira, 2005, pp. 310, 312
1800-1860	Center	Requeixo	29.7	484	30.2	413	Ferreira, 2005, pp. 310, 312
1878	Center	Santarém	26.9	-	-	-	Leite, 2012, p. 67
1701-1715	Center	Soure	22.7	-	21.9	-	Pais, 2010, p. 40
1716-1725	Center	Soure	25.6	-	26.1	-	Pais, 2010, p. 40
1726-1735	Center	Soure	24.9	-	26.9	-	Pais, 2010, p. 40
1650-1699	Center	Torres Vedras (zona urbana)	25.1	153	25.7	66	Santos, 2013, p. 214

1700-1749	Center	Torres Vedras (zona urbana)	25.6	396	28.1	202	Santos, 2013, p. 214
1750-1799	Center	Torres Vedras (zona urbana)	25.7	340	28.4	214	Santos, 2013, p. 214
1878	Center	Viseu	27.3	-	-	-	Leite, 2012, p. 67
1802	North	Barcelos	26.0	-	26.0	-	Sousa, 1979, p. 269
1673-1749	North	Belinho (Braga)	27.8	-	-	-	Scott, 1999, p. 198
1750-1824	North	Belinho (Braga)	27.8	-	-	-	Scott, 1999, p. 198
1890-1910	North	Belinho (Braga)	26.6	-	-	-	Scott, 1999, p. 198
1802	North	Braga	24.0	-	27.0	-	Sousa, 1979, p. 269
1878	North	Braga	27.5	-	-	-	Leite, 2012, p. 67
1802	North	Bragança	27.0	-	31.0	-	Sousa, 1979, p. 269
1878	North	Bragança	26.5	-	-	-	Leite, 2012, p. 67
1730-1739	North	Calvão (Vila Real)	27.8	11	24.9	8	Faustino, 1998, p. 87
1740-1749	North	Calvão (Vila Real)	29.5	19	25.1	9	Faustino, 1998, p. 87
1750-1759	North	Calvão (Vila Real)	32.0	23	30.4	16	Faustino, 1998, p. 87
1760-1769	North	Calvão (Vila Real)	31.9	21	29.4	14	Faustino, 1998, p. 87
1770-1779	North	Calvão (Vila Real)	28.3	25	29.9	20	Faustino, 1998, p. 87
1780-1789	North	Calvão (Vila Real)	27.6	25	30.8	12	Faustino, 1998, p. 87
1790-1799	North	Calvão (Vila Real)	25.4	20	28.4	16	Faustino, 1998, p. 87
1800-1809	North	Calvão (Vila Real)	24.6	38	27.6	32	Faustino, 1998, p. 87
1810-1819	North	Calvão (Vila Real)	24.8	24	26.5	21	Faustino, 1998, p. 87
1820-1829	North	Calvão (Vila Real)	23.9	18	30.1	17	Faustino, 1998, p. 87
1830-1839	North	Calvão (Vila Real)	25.1	34	30.8	32	Faustino, 1998, p. 87
1840-1849	North	Calvão (Vila Real)	27.0	39	26.3	35	Faustino, 1998, p. 87
1850-1859	North	Calvão (Vila Real)	25.3	41	28.4	38	Faustino, 1998, p. 87
1601-1700	North	Cardanha	26.9	-	-	-	Rowland, 1989, p. 513
1701-1800	North	Cardanha	28.3	-	-	-	Rowland, 1989, p. 513
1881-1882	North	Cedofeita (Porto)	23.5	-	24.2	-	Scott, 1999, p. 199
1780-1789	North	Chaves	22.6	123	25.6	53	Faustino, 2014, p. 104
1790-1799	North	Chaves	21.9	118	25.4	51	Faustino, 2014, p. 104
1800-1809	North	Chaves	23.5	109	26.5	63	Faustino, 2014, p. 104
1810-1819	North	Chaves	24.4	122	26.5	72	Faustino, 2014, p. 104
1820-1829	North	Chaves	23.2	133	27.8	53	Faustino, 2014, p. 104
1583-1639	North	Cortegaça	24.8	-	25.9	-	Gomes, 1998, p. 25
1640-1659	North	Cortegaça	21.9	-	22.6	-	Gomes, 1998, p. 25
1660-1679	North	Cortegaça	25.5	-	25.6	-	Gomes, 1998, p. 25
1680-1699	North	Cortegaça	26.2	-	27.3	-	Gomes, 1998, p. 25
1700-1709	North	Cortegaça	30.7	-	25.4	-	Gomes, 1998, p. 25
1710-1719	North	Cortegaça	20.1	-	27.1	-	Gomes, 1998, p. 25

1720-1729	North	Cortegaça	28.4	-	27.8	-	Gomes, 1998, p. 25
1730-1739	North	Cortegaça	27.8	-	27.1	-	Gomes, 1998, p. 25
1740-1749	North	Cortegaça	27.4	-	28.2	-	Gomes, 1998, p. 25
1750-1759	North	Cortegaça	27.0	-	27.7	-	Gomes, 1998, p. 25
1760-1769	North	Cortegaça	28.0	-	27.9	-	Gomes, 1998, p. 25
1770-1779	North	Cortegaça	27.9	-	29.2	-	Gomes, 1998, p. 25
1780-1789	North	Cortegaça	27.7	-	26.9	-	Gomes, 1998, p. 25
1790-1799	North	Cortegaça	26.5	-	27.6	-	Gomes, 1998, p. 25
1800-1809	North	Cortegaça	26.1	-	26.8	-	Gomes, 1998, p. 25
1810-819	North	Cortegaça	24.6	-	28.0	-	Gomes, 1998, p. 25
1820-1829	North	Cortegaça	26.2	-	26.8	-	Gomes, 1998, p. 25
1830-1839	North	Cortegaça	26.5	-	26.2	-	Gomes, 1998, p. 25
1840-1849	North	Cortegaça	23.7	-	24.8	-	Gomes, 1998, p. 25
1850-1859	North	Cortegaça	22.4	-	23.1	-	Gomes, 1998, p. 25
1860-1869	North	Cortegaça	21.7	-	22.7	-	Gomes, 1998, p. 25
1870-1879	North	Cortegaça	22.4	-	23.9	-	Gomes, 1998, p. 25
1880-1889	North	Cortegaça	22.2	-	24.5	-	Gomes, 1998, p. 25
1890-1899	North	Cortegaça	23.1	-	24.6	-	Gomes, 1998, p. 25
1900-1909	North	Cortegaça	24.5	-	25.9	-	Gomes, 1998, p. 25
1910-1919	North	Cortegaça	25.9	-	26.3	-	Gomes, 1998, p. 25
1920-1925	North	Cortegaça	24.4	-	26.8	-	Gomes, 1998, p. 25
1860-1900	North	Couto (Viana)	28.8	-	29.6	-	Scott, 1999, p. 198
1670-1815	North	Famalicão	26.0	315	25.0	213	Leite, 2014, p. 92
1752-1929	North	Famalicão	24.8	1043	26.1	841	Leite, 2014, p. 92
1930-1960	North	Famalicão	24.8	609	26.4	552	Leite, 2014, p. 92
1802	North	Guimarães	25.0	-	28.0	-	Sousa, 1979, p. 269
1650-1699	North	Guimarães (urban area)	24.8	121	24.2	86	Santos, 2013, p. 214
1700-1749	North	Guimarães (urban area)	26.9	169	28.0	117	Santos, 2013, p. 214
1750-1799	North	Guimarães (urban area)	23.7	221	25.8	162	Santos, 2013, p. 214
1670-1699	North	Guimarães (rural area)	26.8	77	28.5	34	Amorim, 2013, p. 95
1700-1719	North	Guimarães (rural area)	29.2	86	28.8	43	Amorim, 2013, p. 95
1720-1739	North	Guimarães (rural area)	25.9	110	27.9	78	Amorim, 2013, p. 95
1740-1759	North	Guimarães (rural area)	27.7	120	26.9	83	Amorim, 2013, p. 95
1760-1779	North	Guimarães (rural area)	25.6	155	26.5	84	Amorim, 2013, p. 95
1780-1799	North	Guimarães (rural area)	25.1	171	25.0	114	Amorim, 2013, p. 95
1800-1819	North	Guimarães (rural area)	24.5	151	25.5	105	Amorim, 2013, p. 95
1820-1839	North	Guimarães (rural area)	24.4	144	27.7	92	Amorim, 2013, p. 95
1840-1859	North	Guimarães (rural area)	25.0	130	27.5	86	Amorim, 2013, p. 95

1860-1879	North	Guimarães (rural area)	25.2	195	27.9	155	Amorim, 2013, p. 95
1880-1899	North	Guimarães (rural área)	24.0	233	25.3	174	Amorim, 2013, p. 95
1900-1910	North	Guimarães (zona rural)	24.5	195	25.3	158	Amorim, 2013, p. 95
1670-1699	North	Guimarães (rural area)	24.8	241	25.6	166	Amorim, 2013, p. 95
1700-1719	North	Guimarães (rural area)	24.6	294	26.1	185	Amorim, 2013, p. 95
1720-1739	North	Guimarães (rural area)	24.9	250	26.4	135	Amorim, 2013, p. 95
1740-1759	North	Guimarães (rural area)	26.3	247	26.2	125	Amorim, 2013, p. 95
1760-1779	North	Guimarães (rural area)	24.8	312	25.8	187	Amorim, 2013, p. 95
1780-1799	North	Guimarães (rural area)	23.1	291	24.6	245	Amorim, 2013, p. 95
1800-1819	North	Guimarães (rural area)	23.1	405	25.5	262	Amorim, 2013, p. 95
1820-1839	North	Guimarães (rural area)	24.4	316	26.6	197	Amorim, 2013, p. 95
1840-1859	North	Guimarães (rural area)	25.6	283	27.6	159	Amorim, 2013, p. 95
1860-1879	North	Guimarães (rural area)	25.1	279	26.4	175	Amorim, 2013, p. 95
1880-1899	North	Guimarães (rural area)	24.7	279	25.7	205	Amorim, 2013, p. 95
1900-1910	North	Guimarães (rural area)	23.3	163	25.7	118	Amorim, 2013, p. 95
1633-1659	North	Lordelo (Braga)	24.0	-	-	-	Scott, 1999, p. 198
1700-1749	North	Lordelo (Braga)	27.1	-	-	-	Scott, 1999, p. 198
1750-1799	North	Lordelo (Braga)	27.1	-	-	-	Scott, 1999, p. 198
1850-1879	North	Lordelo (Braga)	26.9	-	-	-	Scott, 1999, p. 198
1880-1910	North	Lordelo (Braga)	26.8	-	-	-	Scott, 1999, p. 198
17 th century	North	Lordelo (Braga)	28.3	-	-	-	Scott, 1999, p. 198
1878 (census)	North	Minho	27.0	-	27.8	-	Rowland, 1989, p. 533
1802	North	Miranda	25.0	-	27.0	-	Sousa, 1979, p. 269
1802	North	Moncorvo	28.0	-	29.0	-	Sousa, 1979, p. 269
1750-1759	North	Mosteiro (Braga)	28.0	27	26.1	13	Brandão, 1994, pp. 215-216
1760-1769	North	Mosteiro (Braga)	26.6	33	29.1	16	Brandão, 1994, pp. 215-216
1770-1779	North	Mosteiro (Braga)	28.5	34	32.1	25	Brandão, 1994, pp. 215-216
1780-1789	North	Mosteiro (Braga)	27.7	42	29.0	17	Brandão, 1994, pp. 215-216
1790-1799	North	Mosteiro (Braga)	26.1	35	29.1	15	Brandão, 1994, pp. 215-216
1800-1809	North	Mosteiro (Braga)	24.4	24	27.0	19	Brandão, 1994, pp. 215-216
1810-1819	North	Mosteiro (Braga)	26.5	47	27.6	25	Brandão, 1994, pp. 215-216
1820-1829	North	Mosteiro (Braga)	28.2	44	28.3	29	Brandão, 1994, pp. 215-216
1830-1839	North	Mosteiro (Braga)	28.0	39	29.3	25	Brandão, 1994, pp. 215-216
1840-1849	North	Mosteiro (Braga)	28.0	41	28.8	29	Brandão, 1994, pp. 215-216
1850-1859	North	Mosteiro (Braga)	27.3	51	30.0	26	Brandão, 1994, pp. 215-216
1860-1869	North	Mosteiro (Braga)	28.5	59	32.5	23	Brandão, 1994, pp. 215-216
1870-1879	North	Mosteiro (Braga)	27.3	54	29.8	28	Brandão, 1994, pp. 215-216
1880-1889	North	Mosteiro (Braga)	26.4	45	27.5	22	Brandão, 1994, pp. 215-216

1890-1899	North	Mosteiro (Braga)	28.9	28	30.4	20	Brandão, 1994, pp. 215-216
1880-1900	North	Paço (Viana)	26.3	-	27.2	-	Scott, 1999, p. 198
1710-1749	North	Palaçoulo	25.0	114	26.3	39	Raposo, 2000, p. 65
1750-1819	North	Palaçoulo	26.0	110	30.5	58	Raposo, 2000, p. 65
1820-1900	North	Palaçoulo	26.4	210	28.3	158	Raposo, 2000, p. 65
1802	North	Penafiel	25.0	-	26.0	-	Sousa, 1979, p. 269
1802	North	Pinhel	28.0	-	26.0	-	Sousa, 1979, p. 269
1680-1749	North	Poiares	24.6	-	-	-	Amorim 2004, 165
1750-99	North	Poiares	24.6	-	-	-	Amorim 2004, 165
1802	North	Porto	26.0	-	27.0	-	Sousa, 1979, p. 269
1878	North	Porto	25.8	-	-	-	Leite, 2012, p. 67
1630-1699	North	Priscos (Braga)	25.4	83	25.3	48	Fernandes, 2015, p. 32
1700-1820	North	Priscos (Braga)	26.3	202	28.2	97	Fernandes, 2015, p. 32
1610-1700	North	Rebordãos	22.4	-	-	-	Rowland, 1989, p. 513
1721-1800	North	Rebordãos	26.4	-	-	-	Rowland, 1989, p. 513
1680-1749	North	Ronfe	27.6	-	-	-	Amorim 2004, 165
1750-99	North	Ronfe	26.8	-	-	-	Amorim 2004, 165
1700-1749	North	Santa Eulália (Viana)	26.7	-	25.6	-	Scott, 1999, p. 198
1750-1799	North	Santa Eulália (Viana)	28.2	-	28.1	-	Scott, 1999, p. 198
1800-1849	North	Santa Eulália (Viana)	27.3	-	27.6	-	Scott, 1999, p. 198
1850-1899	North	Santa Eulália (Viana)	29.3	-	30.5	-	Scott, 1999, p. 198
1581-1779	North	Santiago de Antas (Famalicão)	27.5	247	28.0	54	Juncal, 2004, p. 77
1780-1829	North	Santiago de Antas (Famalicão)	27.4	97	27.5	66	Juncal, 2004, p. 77
1830-1859	North	Santiago de Antas (Famalicão)	27.2	130	27.3	120	Juncal, 2004, p. 77
1690-1699	North	Santiago de Romarigães (Viana)	25.2	-	-	23.3	Santos, 1999, p. 129
1700-1709	North	Santiago de Romarigães (Viana)	25.1	-	-	22.0	Santos, 1999, p. 129
1710-1719	North	Santiago de Romarigães (Viana)	30.0	-	-	22.8	Santos, 1999, p. 129
1720-1729	North	Santiago de Romarigães (Viana)	29.8	-	-	24.2	Santos, 1999, p. 129
1730-1739	North	Santiago de Romarigães (Viana)	29.7	-	-	22.2	Santos, 1999, p. 129
1740-1749	North	Santiago de Romarigães (Viana)	26.7	-	-	23.6	Santos, 1999, p. 129
1750-1759	North	Santiago de Romarigães (Viana)	25.9	-	-	24.6	Santos, 1999, p. 129
1760-1769	North	Santiago de Romarigães (Viana)	28.4	-	-	28.6	Santos, 1999, p. 129
1770-1779	North	Santiago de Romarigães (Viana)	27.3	-	-	30.0	Santos, 1999, p. 129
1780-1789	North	Santiago de Romarigães (Viana)	26.4	-	-	24.6	Santos, 1999, p. 129
1790-1799	North	Santiago de Romarigães (Viana)	27.3	-	-	25.2	Santos, 1999, p. 129
1800-1809	North	Santiago de Romarigães (Viana)	24.8	-	-	21.0	Santos, 1999, p. 129

1810-1819	North	Santiago de Romarigães (Viana)	25.5	-	-	22.2	Santos, 1999, p. 129
1820-1829	North	Santiago de Romarigães (Viana)	29.0	-	-	22.7	Santos, 1999, p. 129
1830-1839	North	Santiago de Romarigães (Viana)	28.9	-	-	27.8	Santos, 1999, p. 129
1840-1849	North	Santiago de Romarigães (Viana)	35.1	-	-	28.3	Santos, 1999, p. 129
1620-1659	North	Santo André (Barcelinhos)	24.7	36	25.7	17	Faria, 1998, p. 70
1660-1739	North	Santo André (Barcelinhos)	26.7	181	27.4	87	Faria, 1998, pp. 70, 88
1740-1799	North	Santo André (Barcelinhos)	24.9	112	25.7	56	Faria, 1998, pp. 70, 88
1800-1839	North	Santo André (Barcelinhos)	28.5	74	31.1	66	Faria, 1998, pp. 70, 88
1840-1859	North	Santo André (Barcelinhos)	25.4	61	26.4	35	Faria, 1998, p. 70
1650	North	São João das Caldas (Vizela)	25.9	-	26.1	-	Ferreira, 2001, p. 135
1660	North	São João das Caldas (Vizela)	23.8	-	23.3	-	Ferreira, 2001, p. 135
1670	North	São João das Caldas (Vizela)	24.3	-	22.8	-	Ferreira, 2001, p. 135
1680	North	São João das Caldas (Vizela)	25.8	-	23.5	-	Ferreira, 2001, p. 135
1690	North	São João das Caldas (Vizela)	28.3	-	26.2	-	Ferreira, 2001, p. 135
1700	North	São João das Caldas (Vizela)	30.5	-	26.8	-	Ferreira, 2001, p. 135
1710	North	São João das Caldas (Vizela)	29.4	-	27.5	-	Ferreira, 2001, p. 135
1720	North	São João das Caldas (Vizela)	29.7	-	28.2	-	Ferreira, 2001, p. 135
1730	North	São João das Caldas (Vizela)	28.7	-	27.3	-	Ferreira, 2001, p. 135
1740	North	São João das Caldas (Vizela)	30.8	-	24.8	-	Ferreira, 2001, p. 135
1750	North	São João das Caldas (Vizela)	30.0	-	24.5	-	Ferreira, 2001, p. 135
1760	North	São João das Caldas (Vizela)	30.4	-	26.1	-	Ferreira, 2001, p. 135
1770	North	São João das Caldas (Vizela)	27.9	-	27.9	-	Ferreira, 2001, p. 135
1780	North	São João das Caldas (Vizela)	27.0	-	27.8	-	Ferreira, 2001, p. 135
1790	North	São João das Caldas (Vizela)	25.1	-	27.0	-	Ferreira, 2001, p. 135

1800	North	São João das Caldas (Vizela)	24.4	-	25.8	-	Ferreira, 2001, p. 135
1810	North	São João das Caldas (Vizela)	24.8	-	24.8	-	Ferreira, 2001, p. 135
1820	North	São João das Caldas (Vizela)	25.0	-	24.6	-	Ferreira, 2001, p. 135
1830	North	São João das Caldas (Vizela)	25.2	-	25.1	-	Ferreira, 2001, p. 135
1840	North	São João das Caldas (Vizela)	25.6	-	26.5	-	Ferreira, 2001, p. 135
1850	North	São João das Caldas (Vizela)	25.0	-	26.6	-	Ferreira, 2001, p. 135
1860	North	São João das Caldas (Vizela)	24.2	-	27.5	-	Ferreira, 2001, p. 135
1870	North	São João das Caldas (Vizela)	23.6	-	26.7	-	Ferreira, 2001, p. 135
1880	North	São João das Caldas (Vizela)	23.9	-	28.1	-	Ferreira, 2001, p. 135
1890	North	São João das Caldas (Vizela)	24.0	-	26.4	-	Ferreira, 2001, p. 135
1900	North	São João das Caldas (Vizela)	24.7	-	27.6	-	Ferreira, 2001, p. 135
1660-1711	North	São Martinho de Avidos	30.1	44	31.0	8	Leite, 2001, p. 105
1712-1811	North	São Martinho de Avidos	26.1	92	29.1	48	Leite, 2001, p. 105
1812-1881	North	São Martinho de Avidos	25.8	140	27.5	84	Leite, 2001, p. 105
1882-1911	North	São Martinho de Avidos	25.7	79	27.8	49	Leite, 2001, p. 105
1912-1945	North	São Martinho de Avidos	25.2	177	26.4	171	Leite, 2001, p. 105
1583-1614	North	São Nicolau (Porto)	17.0	428	-	428	Osswald, 2008, p. 356
1615-1620	North	São Nicolau (Porto)	18.8	197	20.7	197	Osswald, 2008, p. 356
1621-1625	North	São Nicolau (Porto)	19.2	159	19.4	159	Osswald, 2008, p. 356
1626-1630	North	São Nicolau (Porto)	21.4	154	23.1	154	Osswald, 2008, p. 356
1631-1635	North	São Nicolau (Porto)	22.6	142	23.9	142	Osswald, 2008, p. 356
1636-1640	North	São Nicolau (Porto)	25.0	153	22.9	153	Osswald, 2008, p. 356
1641-1645	North	São Nicolau (Porto)	25.1	168	25.0	168	Osswald, 2008, p. 356
1646-1650	North	São Nicolau (Porto)	23.8	143	24.6	143	Osswald, 2008, p. 356
1651-1700	North	São Tiago de Ronfe	27.1	53	30.5	33	Scott, 1999, pp. 200, 205
1701-1750	North	São Tiago de Ronfe	27.5	108	27.4	65	Scott, 1999, pp. 200, 205
1751-1800	North	São Tiago de Ronfe	27.2	163	28.3	113	Scott, 1999, pp. 200, 205
1801-1850	North	São Tiago de Ronfe	29.1	138	27.4	101	Scott, 1999, pp. 200, 205

1851-1900	North	São Tiago de Ronfe	27.7	121	27.0	129	Scott, 1999, pp. 200, 205
1901-1930	North	São Tiago de Ronfe	26.1	120	27.9	111	Scott, 1999, pp. 200, 205
1802	North	Trancoso	27.0	-	28.0	-	Sousa, 1979, p. 269
1878 (census)	North	Trás-os-Montes	27.1	-	29.6	-	Rowland, 1989, p. 533
1577-1719	North	Unhão (Porto)	28.0	-	-	-	Scott, 1999, p. 199
1720-1799	North	Unhão (Porto)	25.7	-	-	-	Scott, 1999, p. 199
1800-1849	North	Unhão (Porto)	26.3	-	-	-	Scott, 1999, p. 199
1850-1910	North	Unhão (Porto)	26.0	-	-	-	Scott, 1999, p. 199
1802	North	Valença	28.0	-	29.0	-	Sousa, 1979, p. 269
1802	North	Viana	26.0	-	26.0	-	Sousa, 1979, p. 269
1878	North	Viana do Castelo	28.7	-	-	-	Leite, 2012, p. 67
1660-1699	North	Vila Praia de Âncora	24.3	207	23.2	147	Rego, 2013, p. 81
1700-1749	North	Vila Praia de Âncora	27.7	206	26.3	166	Rego, 2013, p. 81
1750-1799	North	Vila Praia de Âncora	27.3	197	26.1	132	Rego, 2013, p. 81
1800-1869	North	Vila Praia de Âncora	28.9	298	29.5	266	Rego, 2013, p. 81
1802	North	Vila Real	29.0	-	28.0	-	Sousa, 1979, p. 269
1878	North	Vila Real	27.3	-	-	-	Leite, 2012, p. 67
1878 (census)	South	Alentejo	24.6	-	28.9	-	Rowland, 1989, p. 533
1878 (census)	South	Algarve	24.4	-	27.9	-	Rowland, 1989, p. 533
1802	South	Avis	19.0	-	24.0	-	Sousa, 1979, p. 269
1878	South	Beja	24.2	-	-	-	Leite, 2012, p. 67
1737-99	South	Conceição de Tavira	23.8	-	25.8	-	Moreira and Veiga, p. 59
1620-1699	South	Divor (Évora; rural parish)	21.8	64	27.6	37	Santos and Lopes, 2017, p. 69
1700-1749	South	Divor (Évora; rural parish)	23.4	43	30.3	19	Santos and Lopes, 2017, p. 69
1750-1799	South	Divor (Évora; rural parish)	24.1	41	27.1	27	Santos and Lopes, 2017, p. 69
1802	South	Elvas	22.0	-	31.0	-	Sousa, 1979, p. 269
1878	South	Évora	25.1	-	-	-	Leite, 2012, p. 67
1878	South	Faro	24.5	-	-	-	Leite, 2012, p. 67
1545	South	Moncarapacho	20.0 (median)	-	-	-	Rowland, 1989, p. 513
1878	South	Portalegre	24.7	-	-	-	Leite, 2012, p. 67
1788	South	Salvaterra de Magos (Santarém)	23.7	-	29.2	-	Rowland, 1989, p. 513; Scott, 1999, p. 199
1721	South	Santa Luzia (Beja)	21.2	-	26.9	-	Rowland, 1989, p. 513; Scott, 1999, p. 199
1680-1699	South	Santo Antão (Évora; urban parish)	23.3	82	25.1	41	Santos and Lopes, 2017, p. 69
1700-1749	South	Santo Antão (Évora; urban parish)	22.8	204	26.5	117	Santos and Lopes, 2017, p. 69
1750-1799	South	Santo Antão	23.9	254	27.2	170	

(Évora; urban parish)							Santos and Lopes, 2017, p. 69
1680-1699	South	Selmes (Beja; rural parish)	20.4	22	24.9	17	Santos and Lopes, 2017, p. 69
1700-1749	South	Selmes (Beja; rural parish)	22.3	119	26.5	66	Santos and Lopes, 2017, p. 69
1750-1799	South	Selmes (Beja; rural parish)	22.1	190	26.6	134	Santos and Lopes, 2017, p. 69
1802	South	Vila Viçosa	23.0	-	29.0	-	Sousa, 1979, p. 269
1600-1609		Meadela	34.5	4	32.5	1	Solé, 2001, p. 104
1610-1619		Meadela	26.8	3	29.5	3	Solé, 2001, p. 104
1620-1629		Meadela	30.2	15	28.3	10	Solé, 2001, p. 104
1630-1639		Meadela	27.1	12	21.2	7	Solé, 2001, p. 104
1640-1649		Meadela	28.3	22	26.0	8	Solé, 2001, p. 104
1650-1659		Meadela	30.4	18	22.6	10	Solé, 2001, p. 104
1660-1669		Meadela	28.7	21	27.4	7	Solé, 2001, p. 104
1670-1679		Meadela	27.9	13	27.1	15	Solé, 2001, p. 104
1680-1689		Meadela	25.8	21	27.6	12	Solé, 2001, p. 104
1690-1699		Meadela	25.4	22	21.9	5	Solé, 2001, p. 104
1700-1709		Meadela	25.7	20	22.7	13	Solé, 2001, p. 104
1710-1719		Meadela	25.0	20	24.4	12	Solé, 2001, p. 104
1720-1729		Meadela	25.9	16	25.8	19	Solé, 2001, p. 104
1730-1739		Meadela	26.3	21	29.3	6	Solé, 2001, p. 104
1740-1749		Meadela	26.7	9	24.2	10	Solé, 2001, p. 104
1750-1759		Meadela	24.6	20	25.8	12	Solé, 2001, p. 104
1760-1769		Meadela	23.4	14	25.4	8	Solé, 2001, p. 104
1770-1779		Meadela	28.1	19	23.8	8	Solé, 2001, p. 104
1780-1789		Meadela	26.0	20	25.2	20	Solé, 2001, p. 104
1790-1799		Meadela	27.8	22	27.2	12	Solé, 2001, p. 104
1623-1799		Santa Tecla	26.3	288	27.2	168	Carvalho, 1999, pp. 45, 48
1800-1919		Santa Tecla	25.4	370	27.9	240	Carvalho, 1999, pp. 45, 48
1920-1959		Santa Tecla	24.6	231	28.2	207	Carvalho, 1999, pp. 45, 48
1960-1991		Santa Tecla	23.4	249	25.5	265	Carvalho, 1999, pp. 45, 48

Appendix F: Classification of occupations

F1: Unskilled daily

Occupation	Gender	Repugnant	Danger	Physical	Wage category	Observations
Breaking stones	M	No	No	Yes	Unskilled daily	1
Cabbage-seller	F	No	No	No	Unskilled daily	1
Carrying ashes/baskets/grapes/water/wood/wine	M/F	No	No	Yes	Unskilled daily	16
Carrying manure	M/F	Yes	No	Yes	Unskilled daily	4
Charwoman	F	No	No	No	Unskilled daily	166
Cleaning wine barrels	F	No	No	No	Unskilled daily	3
Clearing a vineyard up of lopped branches	M/F	No	No	No	Unskilled daily	19
Clearing maize, wheat	F	No	No	No	Unskilled daily	4
Cook assistant	M	No	No	Yes	Unskilled daily	4
Cutting firewood/wild trees/wood	M	No	No	Yes	Unskilled daily	13
Day laborer	M	No	No	Yes	Unskilled daily	73
Digger	M/F	No	No	Yes	Unskilled daily	63
Ditch maker	M	No	No	Yes	Unskilled daily	1
Farm Laborer	M/F	No	No	Yes	Unskilled daily	11
Fence the vineyards	M	No	No	No	Unskilled daily	9
Gardener	M	No	No	No	Unskilled daily	1
Gathering firewood/maize/maize straw/wood	M	No	No	Yes	Unskilled daily	7
Grape harvest	M/F	No	No	No	Unskilled daily	77
Hoeing/beans/flax/maize	M/F	No	No	Yes	Unskilled daily	16
Husking	M	No	No	No	Unskilled daily	1
Journeyman	M	No	No	Yes	Unskilled daily	2
Kneading lime	M	No	No	No	Unskilled daily	1
Laborer	M	No	No	Yes	Unskilled daily	4
Laundress	M/F	No	No	No	Unskilled daily	15
Nurse assistant	M/F	Yes	No	Yes	Unskilled daily	2
Oil presser assistant	F	No	No	Yes	Unskilled daily	3
Olive journeyman/journeywomen	M/F	No	No	Yes	Unskilled daily	31
Servant	M/F	No	No	Yes	Unskilled daily	116
Pipe cleaner	M	Yes	Yes	No	Unskilled daily	1
Planting olive trees/vineyard	M/F	No	No	Yes	Unskilled daily	12
Ploughman	M	No	No	Yes	Unskilled daily	6
Pruning vines	M	No	No	No	Unskilled daily	43
Reaping barley/corn/rye	M/F	No	No	Yes	Unskilled daily	9
Sawyer	M	No	No	Yes	Unskilled daily	1
Sheep keeper	M	No	No	No	Unskilled daily	1
Sieve	F	No	No	No	Unskilled daily	1
Sowing beans/the garden/wheat	M	No	No	No	Unskilled daily	4

Staking vineyards	M	No	No	Yes	Unskilled daily	24
Steward assistant	M	No	No	No	Unskilled daily	2
Sweeper	M/F	No	No	No	Unskilled daily	23
Taking the grapes to the wine press/the rye and wheat to the threshing floor/the wood to the vineyards	M/F	No	No	Yes	Unskilled daily	4
Laying vines	M	No	No	Yes	Unskilled daily	8
To water the garden	F	No	No	Yes	Unskilled daily	1
Thresher	M/F	No	No	Yes	Unskilled daily	12
Vineyard guard	M	No	Yes	No	Unskilled daily	14
Weeding (maize/vines)	M/F	No	No	Yes	Unskilled daily	18
Wheat harvester	M/F	No	No	Yes	Unskilled daily	4

F2: Unskilled annual

Occupation	Gender	Repugnant	Danger	Physical	Wage category	Observations
Apothecary assistant	M	No	No	No	Unskilled Annual	1
Bell operator	M	No	No	Yes	Unskilled Annual	1
Carrying water	M/F	No	No	Yes	Unskilled Annual	43
Chaplain assistant	M	No	No	No	Unskilled Annual	3
Cattleman	M	No	No	Yes	Unskilled Annual	11
Chicken keeper	F	No	No	No	Unskilled Annual	3
Cleaning man/woman	M/F	No	No	No	Unskilled Annual	8
Cook assistant	M/F	No	No	Yes	Unskilled Annual	7
Doorkeeper	M/F	No	No	No	Unskilled Annual	17
Sheep shepherd	M	No	No	No	Unskilled Annual	14
Farmer	M	No	No	Yes	Unskilled Annual	1
Field guard	M	No	Yes	No	Unskilled Annual	1
Fisherman	M	No	Yes	Yes	Unskilled Annual	3
Gardener	M	No	No	Yes	Unskilled Annual	21
Grave digger	M	Yes	No	Yes	Unskilled Annual	1
Laundress	M/F	No/Yes	No	No	Unskilled Annual	138
Muleteer	M	No	No	No	Unskilled Annual	4
Nurse assistant	M/F	No	No	No	Unskilled Annual	58
Oven man/woman assistant	M	No	No	No	Unskilled Annual	1
Pigeon keeper	M	No	No	No	Unskilled Annual	1
Pipe cleaner	M	Yes	No	Yes	Unskilled Annual	1
Servant	M/F	No	No	Yes	Unskilled Annual	144
Stable boy	M	Yes	No	Yes	Unskilled Annual	3
Surgeon assistant	M	No	No	No	Unskilled Annual	1
Sweeper	M	No	No	No	Unskilled Annual	1

Swineherd	M	No	No	No	Unskilled Annual	7
Turkey keeper	M	No	No	No	Unskilled Annual	3

F3: Skilled Annual

Occupation	Gender	Repugnant	Danger	Physical	Wage category	Observations
Barber	M	No	No	No	Skilled Annual	2
Barber-Surgeon	M	No	No	No	Skilled Annual	52
Blacksmith	M	No	No	Yes	Skilled Annual	2
Bread baker	M/F	No	No	Yes	Skilled Annual	15
Butcher	M	No	No	Yes	Skilled Annual	2
Cook	M/F	No	No	Yes	Skilled Annual	52
Administration/preparation of enemas or clysters	M/F	Yes	No	No	Skilled Annual	5
Farm supervisor	M	No	No	No	Skilled Annual	5
Head manager	M	No	No	No	Skilled Annual	1
Head nurse	M	No	No	No	Skilled Annual	1
Innkeeper for poor	M/F	No	No	No	Skilled Annual	3
Miller	M	No	No	Yes	Skilled Annual	2
Nurse	M/F	No	No	Yes	Skilled Annual	527
Oven man/woman	M	No	Yes	Yes	Skilled Annual	11
Shoemaker	M	No	No	No	Skilled Annual	1
Steward	M	No	No	No	Skilled Annual	3
Tailor	M/F	No	No	No	Skilled Annual	3