

The occupational structure of Spain, 1877-1981

Working Paper

Natalia Mora-Sitja
University of Cambridge
nm371@cam.ac.uk

I. Introduction

Spain's long-run economic growth trajectory in the past two centuries has had major setbacks. Spain fell behind Europe in GDP per capita growth in the nineteenth century, lost even more ground in the interwar period despite being non belligerent in the World Wars, and only managed to catch up in the second half of the twentieth century.¹ Historians mostly agree on this assessment, but there is less consensus on the extent and nature of Spanish economic development in the nineteenth and early twentieth centuries. The traditional view was a pessimistic one: led by Nadal's seminal book on the failure of the industrial revolution in Spain², the economic history of Spain written in the 1970s emphasised the absence of intensive economic growth in nineteenth-century Spain, with the exception of some regional industries – textiles in Catalonia, and iron and steel in the Basque Country – which nonetheless had their growth potential curtailed by the backwardness of the agrarian sector and the accompanying lack of domestic consumer demand for manufactured goods. In the 1980s Prados de la Escosura's reconstruction of macroeconomic series and national accounts led the revisionist, and more optimistic view, with an upward revision of estimates of GDP per capita growth in the nineteenth century and, more importantly, of agricultural productivity.³

Beyond being central to the study of Spanish economic growth, estimates of employment shares across sectors in Spain have also been the object of examination itself, frequently as an ancillary tool to demographic enquiries.⁴ Erdozain and Mikelarena provided long-run figures for employment in the agrarian sector, including a regional breakdown and a very detailed analysis of

¹ Prados de la Escosura, L., 'Growth and Structural Change in Spain, 1850-2000: A European Perspective', *Revista de Historia Económica/Journal of Iberian and Latin American History*, XXV, 1 (2007), pp.147-82 [p160-1].

² Nadal, J., *El fracaso de la revolución industrial en España, 1814-1913* (1975)

³ Prados de la Escosura, L., *De imperio a nación. Crecimiento y atraso económico en España (1780-1930)* (1988)

⁴ Sáez, A., *Población y actividad económica en España* (1975); Pérez Moreda, V., 'Población y economía en la España de los siglos XIX y XX', in Anes, G. (coord.), *Historia económica de España: siglos XIX y XX* (1999), pp.7-62

the reliability of the censuses, but left the secondary and tertiary sectors out of their analysis.⁵ The *Estadísticas Históricas de España*, a reference for historical data on Spain, covered all economic sectors, but excluded female employment in agriculture altogether.⁶ Prados de la Escosura has led the revision of structural change figures in *El progreso económico de España (1850-2000)* and subsequent work, so his estimates will be an important basis for discussion in this paper, which adopts a different approach.⁷

I will revisit the construction of structural change estimates by emphasising the problems of the sources, providing a detailed breakdown of employment in different economic activities, and relating changes in the occupational structure to long-run growth patterns. To do the latter, capturing all phases of industrialisation in Spain, the data should ideally cover the period from the early nineteenth to the late twentieth centuries. Such a perspective would allow analysis of the early industrialization attempt of 1830-1860, a classical period of growth based on the development of the textile industry; the growth associated with electrification and massive public works of the 1920s; and finally the long decade of extremely rapid growth in the 1960s after the 1959 Stabilisation Plan which contained a set of reforms that liberalised the capital and trade markets and integrated Spain with the international economy. However, this paper will instead only cover the period from 1877 onwards, when occupational data in the censuses become routine and some degree of homogeneity in the sources allows comparisons over time.

II. Methodology: The Population Censuses and their pitfalls

The most consistent sources of information for occupational structure are the Population Censuses. There are two censuses for the eighteenth-century, in 1787 and 1797, which already provided information about sex, age, and occupation. However, it is not until 1860 that we find the first proper nominative survey of the Spanish population carried out for purely statistical purposes. The 1787 Census, known as Floridablanca's Census, provided a breakdown by 23 'classes' –in its own terminology. However, aside from reporting these for only around a quarter of the Spanish population, there was a heavy bias within those 'classes' towards a feudal conception of society, with nearly half of them falling under the broader category of 'clergy' – including 'domestic servants in religious institutions' – or others being 'nobility' and 'students' –

⁵ Erdozain Azpilicueta, P., and Mikelarena Peña, F., 'Las cifras de activos agrarios de los censos de población españoles del periodo 1877-1991. Un análisis crítico', *Boletín de la Asociación de Demografía Histórica*, XVII, I (1999), pp. 89-113.

⁶ Nicolau, R., 'Población, salud y actividad', in A. Carreras and X. Tafunell (eds), *Estadísticas Históricas de España (siglos XIX y XX)* (2005), pp.77-154.

⁷ Prados de la Escosura, L., *El progreso económico de España (1850-2000)* (2003), revised and expanded in Prados de la Escosura, L., *Spanish economic growth, 1850-2015* (2017).

both excluded from the labour force. In the remaining categories, while some are of value to decipher economic activity – these included lawyers, manufacturers, artisans, or farmers –, ‘labourers’ were by far the most numerous group – 35% of the reported active population. The limited coverage of the data on occupations in the 1787 Census, and the absence of female enumeration, hinder any attempts to estimate meaningfully and comprehensively occupational structure from this source.⁸ Similar problems run through subsequent censuses – from Godoy’s in 1797 to the Population Census of 1860 – and it is not until 1877 that the Census offered an occupational classification which can be directly compared to that of future censuses and those in other countries.

This paper uses the information contained in the Population Censuses of 1877 to 1981 to identify the distribution of the male and female labour forces across different economic sectors, using the PSTI classification system (see Appendix 2 for a full tabulation of the data). The rest of this section discusses the most important methodological problems stemming from the historical data, and how I have addressed them in order to construct the new estimates which form the basis for the rest of the paper.

II.i. Classification systems

The recording and classification of the occupations in the Censuses was not homogeneous, and using the census data presents significant difficulties. The early censuses asked respondents what their activity or occupation was. For certain occupations, such as liberal professions, there was a considerable amount of detail, while other collectives such as domestic servants or labourers appeared under general headings, which in some cases –particularly for labourers- led to uncertainty as to in which economic sector they worked.⁹ While the open question about ‘activity’ led to vague and varied individual responses,¹⁰ the reporting of the data summaries followed an industrial classification scheme, and grouped workers under economic sectors.

The 1900 census was the first to address systematically these classification problems by adopting the classification devised by Jacques Bertillon (with 91 categories) approved by the

⁸ Pérez Moreda, V., ‘La estadística demográfica en el gobierno de la España ilustrada: recuerdo y elogio del Censo de Floridablanca’, *Revista Índice*, 43 (2010), pp 8-17.

⁹ Gil Ibáñez, S., ‘Un intento de homogenización de las clasificaciones profesionales en España (1860-1930)’, *Revista Internacional de Sociología* 25 (1978): 7-40.

¹⁰ Pérez Moreda, V., ‘En defensa del censo de Godoy. Observaciones previas al estudio de la población activa española de finales del siglo XVIII’, in G. Anes, L. A. Rojo and P. Tedde (eds), *Historia económica y pensamiento social* (1983)

International Statistical Institute in 1893.¹¹ Bertillon's was the first and only attempt in the nineteenth century at establishing an international classification of occupations that could be adopted by many nations. Bertillon's classification contained many subdivisions: 4 categories, 12 general divisions, 61 groups of related occupations, further subdivided into 207 subsectors, and comprising as many as 500 occupations¹². It was adopted by several countries at the turn of the century: other than Spain, it was also adopted before 1910 by Chile, Mexico, Venezuela, Egypt, and Brazil. Bertillon's scheme broadly framed the Spanish Censuses up to 1950, though with some improvements derived from the expansion of occupational categories -the 1930 census, for example, had 129 occupational groups. From 1950 onwards the classification of the active population started following modern criteria, specifying both the type of work undertaken and the economic sector within which it took place, defined as the product or service offered by the employer.¹³ The summary data for 1950, however, still follows an occupational classification scheme, where for example managers of factories are classified under managerial professions, and all clerks and accountants are grouped with other desk workers. In short, despite accuracy increasing over time due to more fine-grained classification systems, the Population Censuses in Spain provide data under categories that mostly follow an occupational classification scheme throughout the time period here considered.

II.ii Sectorally-unspecific workers

For some Census years we find a number of groups of workers who were assigned an occupation but were not allocated to an economic sector.¹⁴ The number of these sectorally-unspecific workers was particularly high in the 1900 and 1910 censuses, as can be seen in Table 1, which also reports the weight –in percentage- of such unallocated workers in the total labour force. Although no-one was enumerated in this way in the nineteenth-century censuses, this does not mean that reporting was more accurate before 1900, since for the pre-1900 Censuses there were a large number of individuals for whom there was 'no stated occupation' and who remained unallocated to an economic sector, and this number dropped considerably in 1900 (see Appendix 2). It seems therefore safe to assume that there has been a transfer of workers from one category to another in 1900 and 1910. From then onwards, however, reporting seemed to improve

¹¹ Bertillon, M., 'Classification of Occupations in the Census', *Journal of the American Statistical Association*, 111 (1893), pp.379-415

¹² Edwards, A.M., 'Classification of Occupations: The Classification of Occupations, with Special Reference to the United States and the Proposed New Classification for the Thirteenth Census Report on Occupations', *Publications of the American Statistical Association*, 12, 94 (1911), pp. 618-46 [pp.629-33]

¹³ A. Carreras and X. Tafunell (eds), *Estadísticas Históricas de España (siglos XIX y XX)* (2005), p.105

¹⁴ These correspond to 'day labourers, labourers, peons, pieceworkers' in 1900 and 1910, and appear under 'poorly-specified activities' from 1950 onwards.

considerably, and the total of workers either with no occupation or with one not allocated to a specific sector is down on average to 2% of the labour force, which is a figure unlikely to have much of an effect in the final PSTI distribution.

Table 1. Numbers of workers with a sectorally-unspecific occupation

	1900	1910	1950	1960	1970	1981
Males	580,246 (9.7%)	887,156 (13.9%)	151,806 (1.7%)	254,610 (2.7%)	126,091 (1.3%)	132,947 (1.6%)
Females	30,478 (2.3%)	98,591 (9.7%)	20,145 (1.2%)		30,985 (1.3%)	46,641 (1.9%)
TOTAL	610,724 (8.4%)	985,747 (13.3%)	171,951 (1.6%)	254,610 (2.2%)	157,076 (1.3%)	179,588 (1.7%)

NOTES: Data from the Censuses, see Appendix 2 for detail. Percentages refer to the proportion these workers represent of the labour force (for males, females, and totals respectively).

Previous studies have addressed the question of how to distribute these labourers across sectors, and converged on simply maintaining and applying the weights of the primary, secondary, and tertiary sectors derived from the labour force for which the information is known, and using those weights to proportionately allocate general labourers.¹⁵ Erdozain and Mikelarena have provided some evidence that this might be a sensible strategy¹⁶: their detailed study of the provincial data for the 1910 Census reveals that in unequivocally-agricultural provinces many male workers were classified as “labourers” and can be assumed to be workers in the primary sector, but at the same time as many as 20% of the general labourers were located in non-agricultural provinces like Madrid, Barcelona, or Vizcaya, and could plausibly be workers in the construction sector. Given the difficulty in assuming a specific bias - and the corresponding weights - in the allocation of general labourers, this paper follows the convention of proportionately distributing them across economic sectors, so that this category has a neutral effect on the PSTI distribution.

II.iii Female employment

A third and very important problem in the use of the censuses as an indicator of economic activity is the under-recording of female activity, and much has been written on the

¹⁵ This is the procedure followed by Nicolau, Carreras and Tafunell, and Prados de la Escosura.

¹⁶ Erdozain Azpilicueta, P. and Mikelarena Peña, F., ‘Las cifras de activos agrarios de los censos de población españoles del periodo 1877-1991. Un análisis crítico’, in *Boletín de la Asociación de Demografía Histórica*, XVII (1999), pp. 89-113.

reliability of state statistics to quantify women's work in Spain.¹⁷ One problem is that the criteria used by the National Population Censuses varied over time, often reflecting different models of the sexual division of labour. The 1860 Census was the first in which information was to be provided for individuals, as opposed to families. However, it still stated that only the occupation of the head of the household would be recorded unless other members of the family had a different occupation. The 1877 Census, the first used here, highlights another problem in addition to under-recording: the variety of approaches to and different understanding of how to record women's work, depending on the locality, as well as different biases across industries.¹⁸ Were one to measure or specify a bias in the recording of female labour, this would have to be region –or village- specific, something impossible to do within the confines of this paper. That same census established that the 'profession/occupation' cell could only be left empty for those whose living depended on the head of the household (women, children and the incapacitated), and this had the effect of classifying 83% of the female population under the category 'with no occupation'. By 1900, the majority of women were classified instead under 'family members', a new name for a category that persistently threw a veil over female activity rates by failing to describe women's work.

The Censuses also reveal different conceptions of 'domestic service', which could be seen to reflect contemporary ideas on domesticity. In the 1900 and 1910 Censuses, for example, 'family members' were placed under the broader category of 'domestic service', although 'servants' – understood to be domestic servants who were paid for their services- were also recorded separately in that category. It would be wrong to accept that all those listed under 'family members' were domestic servants, given that in both censuses they were all women and that over half of the female population were classified under that category. It is quite clear instead that the choice of domestic service as a general heading for family members reflected ideas on the activities that women were assumed to do –i.e., household chores.¹⁹ It has been suggested, similarly, that the 1940 Census, the first after the Civil War, already reflected the gender ideology of Francoism, whereby women's place was at home and women's duty was to take care of the

¹⁷ Pérez Fuentes, P., 'El trabajo de las mujeres en la España de los siglos XIX y XX. Consideraciones metodológicas', *Arenal*, 2, 2 (1995), pp.219-45

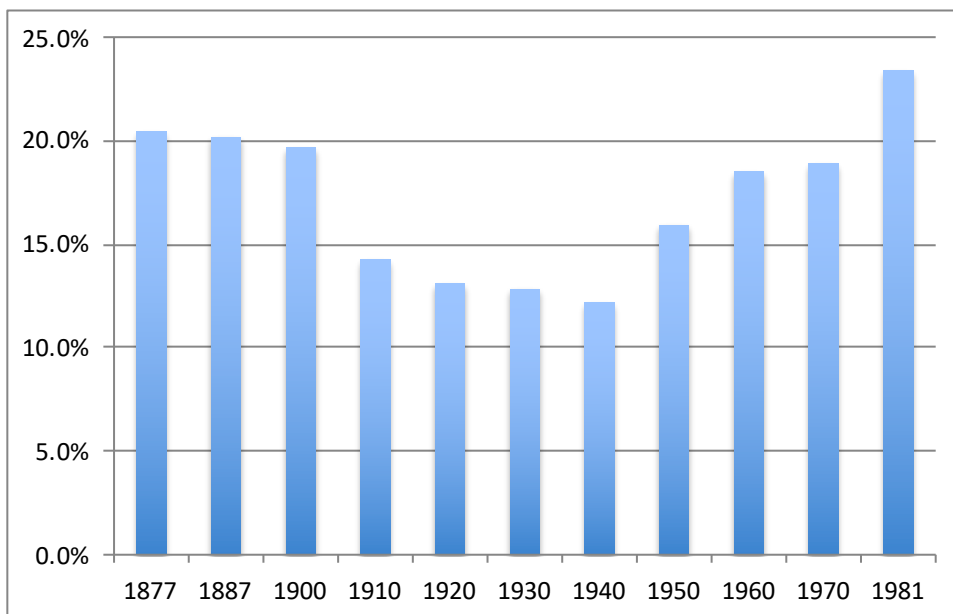
¹⁸ In Seville, 1889, 75% of the workers in the tobacco industry did not declare their occupation in the municipal census (Gálvez, L., 'Breadwinning patterns and family exogenous factors: Workers at the Tobacco Factory of Seville during the industrialization process, 1887-1945', *International Review of Social History*, 42 (1997), pp.87-128); in Barcelona in 1930 only 65% of the workers in the main Telephone company and 40% of industrial workers in La España Industrial declared their occupation (Borderías, C., *Entre Líneas: trabajo e identidad femenina en la España contemporánea. La Compañía Telefónica, 1924-1980s* (1993); Borderías, C., 'La transición de la actividad femenina en el mercado de trabajo barcelonés (1856-1930): teoría social y realidad histórica en el sistema estadístico moderno', in Sarasúa, C., and Gálvez, L. (eds), *¿Privilegios o Eficiencia? Mujeres y hombres en los mercados de trabajo* (2003), pp.241-77.

¹⁹ Pérez-Fuentes, P., 'El trabajo de las mujeres: una mirada desde la historia', in *Lan Harremanak*, 2 (2001), pp.185-209 [p.200].

family. Officially, there were legal restrictions on women’s work: the 1938 *Fuero del Trabajo*, approved by the Nationalist side before the end of the Civil War, forbade married women from working, with the explicit objective of ‘liberating’ them from the workshop and the factory, and not until 1944 was a law passed that allowed married women to work with the permission of their husbands, who could receive their wives’ wages directly if they so wished. Although in practice many married women continued working, they did so unofficially, and the legal framework and cultural practices could have led many working married women to declare their occupation in the municipal register as ‘housewife’ (*sus labores*, which literally translates as ‘her job’), which was then reflected in the aggregate figures of the census as not having a known occupation. The official figures of the censuses in early Francoism - 1940 and 1950- therefore most probably underestimated women’s work, which in reality was much more extensive than reported, especially occasional work in agriculture or participation in the informal economy.²⁰

The most important outcome of the above-mentioned practices was the under-recording of female activity, particularly in the first half of the twentieth century, highlighted in most studies that comment on the reliability of census figures. We need therefore to be careful with any interpretation of the figures on female activity rates when undertaking any analysis of structural change, and indeed correct the biases if need be, as I will argue below.

Figure 1. Women in the labour force as % of total workers



Source: Own elaboration from Population Census data, unadjusted.

²⁰ Married women’s participation rates (percentage who appeared as having an occupation in the Censuses) decreased from 11.3% to 5% between 1900 and 1930, whereas single women’s participation rates went from 14.6% to 11% in the same period. From 1940 to 1960 the Censuses do not provide a breakdown by marital status, so it is not possible to assess the impact of Francoist legislation.

Figure 1 provides information on the percentage of women within the labour force as recorded by the Censuses. As we can see, the overwhelming majority of workers were male. The low female employment rates, even in the more recent estimates, should not come as a surprise: UN and OECD reports for the latter decades, which use the more reliable official statistics available since 1950, have placed Spain's female activity rates amongst the lowest in Europe. There is however an interesting change over time that deserves some attention: the presence of women in the labour force decreased until around 1950 and then increased again in the following decades. This initial decline and subsequent increase of female activity rates with economic development appears also in other countries and time periods, and there is now an established literature analysing the validity, characteristics and causes of what is often termed the U-shape female participation curve hypothesis.²¹ The basic argument is that as industrialisation, proletarianisation and capitalism advance, women – mostly married ones- withdraw from the labour force. From the point of view of economic theory, this is due to an income-effect on the supply side – as incomes grow, women retreat to their household duties- and structural and technological change in the demand side – agricultural technology reduces the demand for female labour. But social factors are also often put forward to explain the gradual decrease of female workers in factories: the stigma on married women's paid work -stemming from a gender discourse that emphasised separate spheres, idolized the domesticity of women, and defended the male breadwinner model-, would explain why many women, if able to choose, did not work. With further economic development –particularly the growth of the service sector and of clerical jobs- and increasing female educational levels, women returned to the paid labour force and hence the increase in activity rates.

The numbers in Figure 1, however, are not sufficient to back up the U-shape hypothesis, because we cannot be certain that the female activity rates stemming from the censuses are an accurate reflection of reality. Instead, they could just be an outcome of the statistical underrecording of women's work stemming from a redefinition of 'useful employment' that began to exclude some traditionally-female jobs or part-time employment, thereby underestimating women's work.²² For example, the 1920 Guide for the Census Enumerators stated that "married women or daughters who, on top of their household duties, help the household head in his industry or work, can register one or the other [household duties or the

²¹ Goldin, C., 'The U-shaped female labor force function in economic development and economic history', in Schultz, T.P. (ed), *Investment in Women's Human Capital and Economic Development* (1995), pp.61-90, analyses both historical data for the United States and cross-sectional country-data for 1985 to establish the U-shaped behaviour of female participation rates. A good overview can also be found in Costa, D.L., 'From Mill Town to Board Room: The Rise of Women's Paid Labor', *The Journal of Economic Perspectives*, 14, 4 (2000), pp.101-22.

²² Pérez Fuentes, P., 'El trabajo de las mujeres en la España de los siglos XIX y XX. Consideraciones metodológicas', *Arenal*, 2, 2 (1995).

occupation] in the column (...) leaving the rest blank, unless they have a wage assigned by the household head, in which case [the occupation] needs to be written in the corresponding column".²³ Given that few women would formally have a wage assigned by their husband or father, and if there was a marginal social stigma associated with working women, most women who worked in family enterprises could easily have gone undetected in the Census. Indeed, both a real withdrawal of women from the labour force and statistical under recording could be at play simultaneously, and have negatively influenced activity rates. But if under-reporting occurred, as most studies seem to suggest, then it is crucial to explore the size and nature of the bias, and particularly, for the purposes of this investigation, whether it affected one economic sector more than another.

To investigate this problem, Table 2 reports the percentage of women employed in each economic sector, as obtained from the raw census data. In the long run, we can observe a remarkable continuity in the percentage of women employed by each sector, with the exception of the major drop in primary sector shares in the early twentieth century, as well as a clear majority of men in all sectors. The tertiary sector is the most feminised sector, with women reaching a third of the labour force in services in the late nineteenth and late twentieth centuries. In the secondary sector, women's presence has been more or less stable (at around 15%). What stands out immediately from the data is the massive drop in the proportion of women employed in the primary sector in 1910, a low figure that continued right through to 1950. The absolute figures might be more revealing: whereas there were 932,958 women in agriculture in 1877, in 1910 only 359,429 were recorded. Up to 1900 the drop may be due to genuine structural change, since male employment in agriculture experienced a similar fall. But when male and female trends show manifestly different behaviour, we have to be suspicious of the recording of women's work. This is what happens after 1900: the official records give a figure of 775,647 women employed in the primary sector in 1900, which dropped to 359,429 in 1910. By 1930, the figure was even lower at 263,511. The equivalent figures for men, meanwhile, steadily increased until 1920, and then dropped in 1930 to 3,777,286, a very similar figure to that for 1900. It is worth observing again that this anomalous drop only appears in the primary sector, and that the 'unspecified category' cannot account for the 'missing women' in agriculture: they simply were not recorded as workers.

²³ Quoted in Campos Luque, C., 'Fuentes y metodología para el análisis del mercado de trabajo desde una perspectiva de género', Paper presented at the Spanish Economic History Congress, Zaragoza, 2001, pp.4-5. [<http://www.unizar.es/eucez/cahe/campos.pdf>, accessed August 2012]

Table 2. Women as percentage of the labour force in each economic sector

	Primary	Secondary	Tertiary
1877	18.5	15.2	32.7
1897	16.9	17.5	38.7
1900	17.0	17.4	32.0
1910	8.5	18.2	30.9
1920	7.1	16.6	27.9
1930	6.5	13.2	26.2
1940	5.5	14.1	24.5
1950	7.9	15.7	32.0
1960	12.4	16.2	30.2
1970	10.6	14.8	29.1
1981	13.8	15.0	33.2

Source: Own elaboration from Population Census data, unadjusted.

The numbers of women employed in agriculture do not seem to be plausible, and might indeed be pointing at some statistical artificiality in the make up of the bottom of the U curve for Spain's female activity rates in the first half of the twentieth century. It is tempting to attribute it to the influence of gender ideology, a cult of domesticity that established that married women ought not to work, and which led either to the positive withdrawal of married women from the labour force or to the concealing of their work in official statistics. As mentioned earlier, married women's activity rates were lower, and decreased faster, than single women's ones. However, in the case of the primary sector, a closer look at the evolution of female employment by marital status does not single out married women: the absolute number of married and single women employed in agriculture decreased by 56% and 54% respectively between 1900 and 1910²⁴, an almost negligible difference, so underreporting is not specific to –or particularly affecting– married women. This is not to say that models of feminine behaviour were not behind the big decline in reported female employment in the primary sector: it is easier to 'confuse' work in the family farm with household activities than not to report work in a factory, for example, hence the likely higher under registration rates in the primary sector.

²⁴ Own calculation from the Population Censuses of 1900 and 1910.

Several historians have highlighted the under-recording of women in agriculture since 1910 until the middle of the century²⁵, and due to the unreliability and inconsistency of the reporting of female work in the primary sector, many have chosen to exclude female workers in agriculture from their calculations of the weight of each economic sector and of structural change.²⁶ This has consequences for the employment distribution estimates that should be acknowledged here: given that, independently of the reliability of the estimates of the female active population in agriculture, most women workers in late nineteenth-century Spain worked in agriculture, excluding these female agricultural workers from the calculations of the sectoral distribution of labour is likely to underestimate the final weight of the primary sector and overestimate the weight of the secondary and tertiary sectors. Let's take, for example, 1877, the year when the reporting of women workers in agriculture was highest and for which figures for female agricultural workers seem to be most widely accepted: the weight of the primary sector taking into account men and women is 70.5%; if we exclude the female agrarian population as suggested, it becomes 66.1%, and the secondary and tertiary sectors go from 13.2% and 16.3% to 15.2% and 18.7% respectively. Moreover, such an exercise renders it impossible to consider the distribution of female employment across sectors. If the female data are unreliable, it would have been better to work exclusively with male data for all sectors.

The approach taken here to female employment shares will therefore be different: the primary sector seems to show the most unreliable estimates of female employment, by showing too big a drop in female agricultural work between 1900 and 1930/40. The proportion of women workers within the secondary and tertiary sectors, by contrast, seem to have experienced much milder variations in those decades, while still following a U-shape that has been accepted as plausible in standard accounts of the evolution of female activity rates during industrialisation, as explained earlier. I will, therefore, correct the figures in the primary sector by assuming that changes in the proportion of women in the agricultural labour force between 1900 and 1950 were equal to the average changes in the proportion of women in the labour forces of the secondary and tertiary sectors.²⁷ The new percentages will translate into a revision –upwards– of the number of women in agriculture, in order to adjust our estimates of structural change in the following section.

²⁵ Espina, A., 'La participación femenina en la actividad económica. El caso español', en Conde, R., *Familia y cambio social en España* (1982).

²⁶ A. Carreras and X. Tafunell (eds), *Estadísticas Históricas de España (siglos XIX y XX)* (2005), p.50; Prados de la Escosura, *El progreso*, p.207.

²⁷ By applying this method to 1900-50, the new estimates of the proportion of women in the labour force of the primary sector for 1910 to 1950 are 15.5%, 13.5%, 13.5% and 16.3%.

II.iii By-employment

When exploring economic activity in the past, it is important to acknowledge that full-time, year-round work was far from the norm, and individuals were likely to engage in seasonal labour tasks and in part-time employment.²⁸ By-employment was crucial to the survival of peasant families, and taking it into account when estimating economic activity may alter our picture of structural change: while people living in the countryside were likely to declare agriculture as their main occupation, it is also highly probable that they were not working full time in the fields, and were instead complementing their income by engaging in some secondary or tertiary sector activities.²⁹ To this we have to add the possibility that many artisans, or small-scale service providers, were also somehow engaged in agricultural activities. Following Saito's notation on by-employment, where F_{ij} refers to the percentage of workers who declare a principal employment in sector i and a subsidiary employment in sector j , the key adjustment we are after is $[F_{PS} + F_{PT} - F_{SP} - F_{TP}]$, or the net flow of labour from the primary to the secondary and tertiary sectors stemming from by-employment activities. There are currently no estimates, or approximations, for these figures. Even if we could converge on an estimate of the percentage of agrarian labour that should instead be allocated to the secondary or tertiary sectors, this would have to change over time, since with the development of agricultural technology and markets, by-employment decreased.³⁰ The only Census that provides information on by-employment is that of 1950, where one of the tables crosstabulates the principal and subsidiary employments of 60,000 workers. Given, however, that the active population that year was of nearly 11 million workers, the by-employment recorded would only have affected 0.5% of the active population, and clearly would not alter our estimates of occupational structure, so any recalibration exercise based on these 1950 Census data would be pointless.

Prados de la Escosura has provided the only structural change estimates that try to take account of this problem.³¹ Prados de la Escosura assumed that the percentage of people employed in agriculture cannot be higher than the proportion of people living in settlements of less than 5,000 inhabitants. Thus, his final estimates of occupational structure impose a cap on the percentage of population employed in the primary sector that equals the percentage of population

²⁸ Domínguez Martín, R., 'Caracterizando al campesinado y a la economía campesina: pluriactividad y dependencia del mercado como nuevos atributos de la campesinidad', *Agricultura y Sociedad* (1966)

²⁹ See Erdozáin Azpilicueta, P. and Mikelarena Peña, F., 'Las cifras de activos agrarios de los censos de población españoles del periodo 1877-1991. Un análisis crítico', in *Boletín de la Asociación de Demografía Histórica*, XVII (1999), pp. 89-113 [pp.97-100] for a discussion of byemployment in Spain.

³⁰ And the importance of agricultural activity within the rural world decreased as well: see Collantes Gutiérrez, F., 'La desagrarización de la sociedad rural española, 1950-1991', in *Historia Agraria*, 42 (2007), pp. 251-76.

³¹ Prados de la Escosura, *El progreso*, pp.208-9. Those figures were later used by Prados de la Escosura, L. and Rosés, Joan R., 'The Sources of Long-Run Growth in Spain, 1850-2000', in *The Journal of Economic History*, 69, 4 (2009), pp.1063-91.

living in rural areas –as defined above. This translates into smaller percentages of the primary sector for the years between 1887 and 1920, with the ‘excess’ agricultural workers proportionately distributed across the secondary and tertiary sectors, as seen below in Table 4 by comparing columns [1] and [2] for the primary sector.³² The rationale behind this adjustment is the following:

“not everyone living in rural areas is employed in agricultural activities, since there is always a proportion –no matter how small- that needs to provide services and manufactured products to the rest of the population. It is frequently suggested that, at least in the South of the peninsula, there were big population agglomerations that were not of an urban nature until the mid-twentieth century, since their inhabitants were still carrying out agricultural activities. It should be added, however, that in those nuclei there was a non-negligible proportion of the working population that provided the rest with services and non-agrarian goods. *I have adopted, therefore, the reasonable conjecture that the population employed in agriculture but resident in urban areas would be compensated by the population resident in rural areas who were employed in industry and services.*”³³

Prados de la Escosura, therefore, seems to be choosing residence as the main criterion to determine occupational activity, identifying urbanisation with structural change. However, the Census data reveals that many urban residents declared agriculture as their principal employment³⁴, and similarly many rural residents declared industry and services as their main sector of employment. So if these groups were to compensate each other, as Prados de la Escosura seems to suggest, the Census data would already suffice to do this, and no adjustments would be necessary. Unless Prados de la Escosura is hinting at the misenumeration of the principal occupations of rural and urban dwellers –not supported by any evidence-, we have to assume that he is instead referring to the need for Census data to be adjusted for by-employment (subsidiary employment, which is not officially declared). Hence, in seeking to revise downwards the share of labour in the primary sector, Prados de la Escosura is assuming by-employment to have affected disproportionately those workers whose principal employment was agriculture; that is, that there was a much higher percentage of time allocated to secondary and tertiary sector activities by males mainly engaged in agricultural work (whether in urban or rural areas), than time allocated to agriculture by males mainly employed in the secondary and tertiary sectors. In Saito’s notation, Prados de la Escosura is stating that $(F_{PS} + F_{PT}) > (F_{SP} + F_{TP})$, or that the Spanish by-

³² The adjustments in the reduction of the share of the primary sector oscillate between a minimum of 1.7% and a maximum of 8%.

³³ Prados de la Escosura, *El Progreso*, pp. 205-6. Translation and italics are mine.

³⁴ For 1900, for example, Mikelarena has estimated that 27 of the 52 provincial capitals –most of them urban centres- had more than 40% of the males declaring agriculture as their main employment: Erdozáin, P. and Mikelarena, F., ‘Algunas consideraciones acerca de la evolución de la población rural en España en el siglo XIX’, *Noticario de Historia Agraria*, 12 (1996), pp. 91-118, p. 94. My own analyses below provides further information on this.

employment pattern was overwhelmingly of the peasant family type. This interpretation of Prados de la Escosura's analysis would seem to be underpinned by some of the premises explicitly stated in subsequent work he undertook with Rosés, in which the authors were trying to obtain an estimate of hours of work per worker in each economic sector, and where byemployment was explicitly mentioned. Prados de la Escosura and Rosés stated there that:

“as the opportunity cost of allocating agricultural labor to alternative occupations during the slack season was minimal, peasants carried out additional non-agricultural activities, such as producing their own implements, clothing and, especially, providing services such as transportation and storing. However, the Spanish population censuses tend to include only information about people's main occupation, and given ‘pluriactivity’ in agricultural EAP [Economically Active Population], non-agricultural occupations performed by peasants tend to be underestimated.”³⁵

Consequently, Prados de la Escosura and Rosés assumed that each worker employed in agriculture worked for 270 days, of which 30 days they allocated to services.³⁶ While this would be revealing byemployment rates –or a transfer from agricultural employment to work in the services (F_{PS})- of 11.11%, the problem is that this adjustment is applied to the number of workers in the primary sector *already* capped by the percentage of population in rural areas. So the assumption on by-employment rates seems to be separate, and on top of, the assumption that the proportion of males in the primary sector cannot be higher than the percentage of the population living in rural areas. Prados de la Escosura estimates the share of employment in the primary sector as follows:

$\% \text{ Primary employment} = \% \text{ pop (males) in rural areas (<5,000 inhab)} + F_{SP} + F_{TP} - F_{PS} - F_{PT}$

While it is clear that urbanisation and structural change go hand in hand, the main problem with the assumption above –and the reason why Prados de la Escosura's adjustments may be questioned- rests on the definition of urban/rural he adopted. First, it can be argued that the cutoff point of 5,000 inhabitants is an artificial boundary, and one that is likely to have changed over time. Second, more consideration could be given to the existence of “urban centres” –as defined by Prados de la Escosura, of over 5,000 inhabitants-, heavily dominated by agricultural activities (i.e. agrotowns), as highlighted by Mikelarena's study discussed above. My own examination of the 1900 census data has identified cities of considerable size which still remain predominantly agricultural: Málaga and Murcia, for example, each had over 100,000 inhabitants and yet 66% and 83% of their respective labour forces worked in agriculture. The

³⁵ Prados de la Escosura, L. and Rosés, J.R., ‘Proximate Causes of Economic Growth in Spain 1850-2000’, *Working Papers in Economic History*, Universidad Carlos III de Madrid (2008), WP 08-12, p.17. This paper spells out in detail the methodology behind their previously-cited published article: Prados de la Escosura, L., and Rosés, J.R., ‘The Sources of Long-Run Growth in Spain, 1850-2000’, *The Journal of Economic History*, 69 (2009), pp.1063-91.

³⁶ Prados de la Escosura and Rosés, ‘Proximate Causes of Economic Growth in Spain 1850-2000’, *Working Papers in Economic History*, Universidad Carlos III de Madrid (2008), WP 08-12, p.18.

existence of agrotowns, and how they might affect our interpretation of urbanisation rates, is acknowledged elsewhere in Prados de la Escosura's work³⁷, where it becomes clear that some specific regions (Andalusia, Murcia, and Valencia) had big urban centres where a clear majority of the population was employed in agriculture. It is difficult, therefore, to equate urban – if this is to be defined by large population settlements - with the secondary sector in Spain, and urbanisation rates as traditionally defined for the nineteenth and twentieth centuries (see Table 3) tell us little about structural change.

Table 3. Share of the population in large settlements

Year	Over 2,000	Over 5,000	Over 10,000
1787	53.27	28.83	19.47
1860	64.62	32.42	23.88
1887	-	-	29.11
1900	72.47	40.54	32.21
1910	74.52	-	35.00
1920	76.80	-	38.69
1930	79.49	51.65	42.86
1940	81.64	-	48.81
1950	83.26	-	52.08
1960	85.48	65.35	56.77
1970	89.01	-	66.49
1980	91.41	-	73.21

SOURCES: A. Carreras and X. Tafunell (eds), *Estadísticas Históricas de España (siglos XIX y XX)* (2005), tables 6.2 and 6.3

When considering the effects of by-employment in Spain, it is not even established that $(F_{PS} + F_{PT}) > (F_{SP} + F_{TP})$. In Germany the opposite seems to be the case: more secondary and tertiary sector workers declared a subsidiary employment in the primary sector than the other way round; and this could well apply to other continental European countries. An examination of the Spanish 1950 Census, the only one that gives accurate information on by-employment, reveals that 0.16% of the labour force (or 16,760 workers) declared a main employment in the primary sector and subsidiary employment in the secondary or tertiary ones, against 0.13% (or 14,116 workers) who worked mainly in the secondary and tertiary sectors but declared a subsidiary

³⁷ See Álvarez Nogal, Carlos, and Prados de la Escosura, Leandro, 'The Decline of Spain (1500-1800): Conjectural Estimates', in *European Review of Economic History* (2007), II, 319-66 [p332].

employment in the primary sector. The difference is too small to significantly alter the structure of the economy as derived from data on principal occupations, although little can be extrapolated from evidence that refers to such a small percentage of the population and from a different time period.

Pending more comprehensive studies on the incidence of by-employment in different areas, I have opted here for not applying Prados de la Escosura's cap on the share of the primary sector, and indeed not applying any adjustment for by-employment. Most of the available works on by-employment in modern Spain deal with the peasant family economy, and provide evidence –based on family budgets, or probate records- on the engagement of many small farmers or agricultural labourers in manufacturing or service activities.³⁸ There is little doubt that those working on the land in nineteenth-century Spain often needed to complement their earnings through other activities; and given the seasonality and low returns of agricultural work, it is plausible that those holding by-employments in non-agricultural activities outnumbered those who took up farming as a subsidiary task. We might be therefore inclined to accept that the net flow of by-employments in Spain was from the farm to the non-farm sectors, but even if so, the size of the net outflow from agriculture is as yet unknown, and hence it seems most prudent not to make any adjustment for by-employment.

III. Estimating labour shares

Table 4 summarises the different available estimates of the occupational structure in Spain since 1877 for authors who have based their calculations on the Population Censuses. Column 1 reports Nicolau's figures, widely used in the literature, which report the Census figures with the only adjustment being to exclude women in agriculture. The most widely accepted estimates now are those of Prados de la Escosura in the second column, whose procedure has been explained above and whose figures differ from Nicolau's because of the adjustment made for the percentage of people employed in agriculture, capping it at the percentage of people living in settlements of under 5,000 inhabitants. My own figures, listed in columns 3 and 4, differ from the previous two in that:

- 1) They count women in agriculture as reported in the censuses (column 3).

³⁸ Erdozain Azpilicueta, P., Mikelarena Peña, F., and Paul Arzak, J.I., 'Campesinado y pluriactividad en la Navarra Cantábrica en la primera mitad del siglo XIX', in *Historia Agraria*, 29 (2003), pp.155-86 offer a survey of previous studies on peasant by-employment as well as new evidence for Navarra; Domínguez-Martín, R., 'Caracterizando al campesinado y a la economía campesina: pluriactividad y dependencia del mercado como nuevos atributos de la campesinidad', in *Agricultura y Sociedad*, 66 (1993), pp.97-135 defends that employment in different sectors is indeed an inherent attribute of the peasantry.

- 2) They reestimate women agricultural workers not recorded in the 1910 to 1950 Censuses, adjusting the figures upwards and assuming that the changes in the percentage of primary sector workers who were women mirrored changes in the secondary and tertiary sector, so that instead of the reported figures of 8.5%, 7.1%, 6.5%, 5.5% and 7.9%, the percentages (and corresponding number of workers) are estimated to be 17.1%, 15.5%, 13.5%, 13.5%, 16.3%. This assumption accepts that there was a U-shaped pattern in women's engagement in agricultural work, but a less pronounced one than that suggested by the Censuses (column 4).
- 3) They do not adjust for by-employment.

Table 4: Share of active population per sector, Spain 1877-1981

YEAR	Primary				Secondary				Tertiary			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
1877	66.1	64.1	70.5	70.5	14.4	16.4	13.2	13.2	19.5	19.5	16.3	16.3
1887	65.3	62.7	69.3	69.3	17.3	18.6	15.9	15.9	17.5	18.7	14.7	14.7
1900	66.3	60.8	68.1	68.1	16.0	18.7	15.0	15.0	17.7	20.6	16.8	16.8
1910	66.0	58.0	65.8	68.0	15.8	19.6	15.0	14.0	18.2	22.5	19.2	18.0
1920	57.2	54.5	58.9	61.2	22.0	23.4	22.0	20.8	20.8	22.2	19.1	18.0
1930	45.5	45.5	47.1	49.1	26.5	26.5	31.2	30.0	28.0	28.0	21.7	20.9
1940	50.5	50.5	51.9	54.1	22.2	22.1	24.0	22.9	27.3	27.4	24.1	23.0
1950	47.6	47.6	49.6	52.0	26.5	26.5	25.5	24.3	25.9	25.9	24.9	23.7
1960	38.8	40.4	41.7	41.7	31.6	27.6	30.0	30.0	29.7	32.0	28.3	28.3
1970	23.3	28.2	24.2	24.2	38.8	32.4	40.2	40.2	37.8	39.5	35.6	35.6
1981	14.5	17.3	16.0	16.0	37.7	32.9	37.0	37.0	47.8	49.9	47.0	47.0

SOURCES:

[1] Nicolau, R., *Estadísticas históricas de España* (1898), p.150. Her estimates exclude women in agriculture and are the basis of –and are nearly identical to– those provided in Carreras, A. and Tafunell, X., *Historia Económica de España* (2003), p.453.

[2] Prados de la Escosura, L., *El progreso* (2003), p. 587. Nicolau's estimates with the additional adjustment of capping the shares in the primary sector by the share of population living in rural areas. The secondary sector figures add up industry and construction, reported separately by Prados de la Escosura.

[3] Own elaboration from Population Censuses data. Includes men and women but there are no adjustments to the Census figures other than a proportionate reallocation of unallocated labourers.

[4] As above, but with revised estimates of women workers in agriculture for 1910-50 (see text).

The most important differences between the various estimates emerge in the primary sector, as expected: the new figures presented here are higher throughout the century covered than Nicolau's and even higher than Prados de la Escosura's. Conversely, the shares of the secondary and particularly the tertiary sectors are lower than the previous estimates. This is the outcome of taking women into account amongst the agrarian population in those years when the primary sector still accounted for the biggest share of the economy (by the late twentieth-century

the different estimates of the primary share converge). We will see how the divergences affect specific decades in a detailed account of the process of structural change in employment.

Table 5: Occupational structure: males and females

	% Primary			% Secondary			% Tertiary		
	Women	Men	All	Women	Men	All	Women	Men	All
1877	64.0	72.2	70.5	9.9	14.1	13.2	26.1	13.7	16.3
1887	58.0	72.2	69.3	13.8	16.5	15.9	28.2	11.3	14.7
1900	59.2	70.3	68.1	13.3	15.4	15.0	27.5	14.2	16.8
1910	58.9	70.2	68.0	12.9	14.3	14.0	28.2	15.5	18.0
1920	52.8	63.1	61.2	19.2	21.1	20.8	28.0	15.8	18.0
1930	41.2	50.6	49.1	24.7	31.1	30.0	34.1	18.4	20.9
1940	45.2	55.8	54.1	20.0	23.5	22.9	34.8	20.7	23.0
1950	42.7	54.3	52.0	19.2	25.6	24.3	38.2	20.1	23.7
1960	27.8	44.8	41.7	26.2	30.9	30.0	46.0	24.3	28.3
1970	13.6	26.7	24.2	31.5	42.2	40.2	54.9	31.1	35.6
1981	9.4	18.0	16.0	23.8	41.0	37.0	66.8	41.0	47.0

SOURCES: Own elaboration from Population Censuses, see text.

Table 5 provides the occupational structure for males, females, and the total population according to my final estimates (columns 4 in table 4) which recalibrate women’s work in agriculture. Several differences by sex arise, as seen in combination with Table 2: women’s relatively low –and declining- involvement in agriculture stands in contrast with their very stable presence in the secondary and tertiary sectors, the latter being the main provider of employment for women after 1930 and a sector in which women made up a third of the labour force throughout most of the period, as seen in Table 2.³⁹ Thus, the economic transformation having the greatest impact on women’s work has been the tertiarization of the economy. Women in services have moved from being mainly employed in domestic service early in the twentieth century to contributing to various professional services and to trade, whilst women’s involvement in the secondary sector was still relatively low in 1981.

IV. Occupational structure and economic growth

Independently of which estimates we take, it is clear that the primary sector dominated the Spanish economy for many decades. Not until the second decade of the twentieth century did it began to lose share in a significant way, and all estimates (see Table 4) agree on 1930 as the first year when the recorded share of people working in agriculture went below the 50% mark. The two decades between 1910 and 1930 were a period of important economic and structural

³⁹ A look into the female occupational structure by marital status (possible for the Censuses of 1900 to 1930) also reveals that whereas the majority of married women were employed in the primary sector, single women were concentrated in the tertiary sector.

transformations: Spanish neutrality during World War I boosted Spanish exports to belligerent countries –whose economies had been disrupted- and to non-belligerent countries –who could not now get supplies formerly imported from countries at war. Mining and the metal industries particularly benefited from the international situation (see the growth of mining and quarrying between 1910 and 1920 in Table 6). In the 1920s, under Primo de Rivera’s dictatorship, the state pursued a very active role in the economy and through massive public spending –which generated a large deficit- engaged in a program of infrastructure building that boosted industries, and particularly public works and the electricity sector. The 1920s also witnessed the first massive wave of rural-urban migration, and an increase in urbanization rates, and could be seen as a classical, although aborted, industrialisation spurt, with the decline of the primary sector mostly explained by the increase of the secondary sector. Structural change up to 1930 is slightly more marked if we take the revised estimates offered here than if we use Prados de la Escosura’s estimates, with Nicolau falling between the two. This stems from the fact that the share of the primary sector at the beginning of the period is much higher when women are taken into account and no cap is imposed on the proportion of agricultural workers.

The decade between 1930 and 1940 masks two very distinct –and crucial- historical periods: the Second Republic (1931-1936) and the Spanish Civil War (1936-9). The troubled five years of the Second Republic coincide with the Great Depression and one could argue that the industrialization process witnessed in the 1920s had already halted by the early 1930s. However, it was the Civil War, and the two decades of autarky under Franco’s regime that followed, that truly hindered any economic development, and, surprisingly for a European country in the postwar period, there was a regression in terms of structural change (with the primary sector gaining share) and a decrease in GDP per capita values. Not until the mid 1950s would Spain reach again the GDP/capita levels of the mid 1930s, which is what led Carreras to characterise the period as “the night of Spanish industrialisation”. Again, while all estimates of occupational structure underscore this interpretation of backwardness, the revised estimates provided here –with a higher share in secondary sector employment in 1930- point at a more dramatic economic decline as a consequence of the Civil War and particularly of autarkic policies under early Francoism.

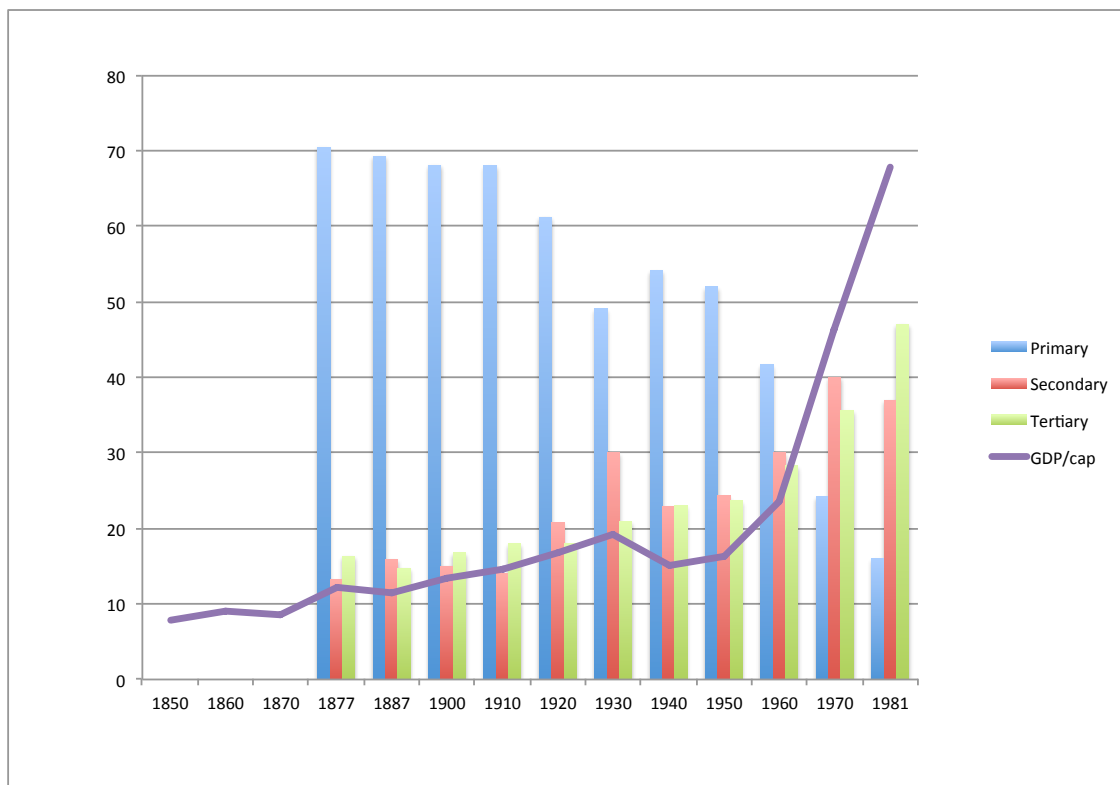
Table 6. Further breakdown by sectors and sex of occupational structure.

MEN												
PST	Sector	1877	1887	1900	1910	1920	1930	1940	1950	1960	1970	1981
PRIMARY SECTOR												
		72.2	72.2	70.3	70.2	63.1	50.6	55.8	54.3	44.8	26.7	18.0
SECONDARY SECTOR												
	Not specified further	14.1	16.5	15.4	14.3	21.1	31.1	23.5	25.6	30.9	42.2	41.0
	Clothing, Footwear, Textiles	13.3	15.6	0.5	0.8	5.5	13.9	6.0	8.2	20.1	0.4	0.0
	Metal products, metal working, machine tools			4.3	4.3	2.8	3.1	2.5	1.4		2.9	3.0
	Building and construction			1.0	1.3	2.5	2.9	3.2	4.4		9.0	7.4
	Mining and quarrying			4.4	2.6	3.2	3.2	3.7	6.4	8.1	12.1	11.2
	Other secondary	0.8	0.9	1.4	1.7	3.2	1.5	1.2	1.9	2.1	1.3	4.5
				3.8	3.7	3.9	6.4	6.9	3.3	0.7	16.5	14.9
TERTIARY SECTOR												
	Dealers and sellers	13.7	11.3	14.2	15.5	15.8	18.4	20.7	20.1	24.3	31.1	41.0
	Services and professions	2.1	3.0	3.0	3.4	5.3	4.7	4.8	6.7	8.3	8.3	12.9
	(of which) domestic service	8.8	6.3	8.7	9.3	7.3	9.9	12.1	8.9	10.5	16.6	20.5
	Transports and communications	1.4	0.8	0.9	0.6	0.7	0.5	0.2	0.0	3.7	0.0	
		2.8	2.1	2.5	2.8	3.2	3.9	3.8	4.5	5.4	6.1	7.6
Participation rate		1.13	1.01	1.09	1.11	1.16	1.05	1.04	1.02	0.99	0.96	0.70
WOMEN												
PST	Sector	1877	1887	1900	1910	1920	1930	1940	1950	1960	1970	1981
PRIMARY SECTOR												
		64.0	58.0	59.2	58.9	52.8	41.2	45.2	42.7	27.8	13.6	9.4
SECONDARY SECTOR												
	Not specified further	9.9	13.8	13.3	12.9	19.2	24.7	20.0	19.2	26.2	31.5	23.8
	Clothing, Footwear, Textiles	9.8	13.7	0.2	0.2	1.7	6.8	2.4	6.8	25.6	0.7	0.0
	Metal products, metal working, machine tools			11.0	11.0	14.3	14.8	14.7	11.7		15.3	9.8
	Building and construction			0.0	0.0	0.5	0.3	0.2	0.1	0.0	3.8	3.2
	Mining and quarrying			0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.9	0.8
	Other secondary	0.0	0.1	0.0	0.0	0.7	0.0	0.0	0.1	0.1	0.1	1.3
				2.0	1.6	1.9	2.7	2.7	0.3	0.1	10.6	8.7
TERTIARY SECTOR												
	Dealers and sellers	26.1	28.2	27.5	28.2	28.0	34.1	34.8	38.2	46.0	54.9	66.8
	Services and professions	1.5	2.0	1.6	1.4	3.9	2.0	3.7	4.7	8.5	14.4	16.7
	(of which) domestic service	24.6	26.1	25.7	26.7	23.8	31.8	30.7	32.7	36.2	38.2	47.5
	Transports and communications	21.5	22.5	20.2	20.7	18.5	23.9	21.3	24.1		17.3	
		0.0	0.1	0.2	0.1	0.2	0.4	0.4	0.8	1.3	2.3	2.6
Participation rate		0.27	0.25	0.23	0.16	0.15	0.15	0.13	0.18	0.21	0.22	0.21
TOTALS												
PST	Sector	1877	1887	1900	1910	1920	1930	1940	1950	1960	1970	1981
PRIMARY SECTOR												
		70.5	69.3	68.1	68.0	61.2	49.1	54.1	52.0	41.7	24.2	16.0
SECONDARY SECTOR												
	Not specified further	13.2	15.9	15.0	14.0	20.8	30.0	22.9	24.3	30.0	40.2	37.0
	Clothing, Footwear, Textiles	12.6	15.2	0.4	0.7	4.8	12.8	5.4	7.9	21.1	0.5	0.0
	Metal products, metal working, machine tools			5.7	5.6	4.9	5.0	4.5	3.5		5.2	4.5
	Building and construction			0.8	1.0	2.2	2.5	2.7	3.5		8.0	6.4
	Mining and quarrying			3.5	2.1	2.6	2.7	3.1	5.2	6.7	10.0	8.8
	Other secondary	0.7	0.7	1.1	1.3	2.8	1.3	1.0	1.6	1.7	1.0	3.8
				3.5	3.3	3.5	5.8	6.2	2.7	0.6	15.4	13.4
TERTIARY SECTOR												
	Dealers and sellers	16.3	14.7	16.8	18.0	18.0	20.9	23.0	23.7	28.3	35.6	47.0
	Services and professions	2.0	2.8	2.8	3.0	5.1	4.2	4.7	6.3	8.4	9.5	13.8
	(of which) domestic service	12.0	10.3	12.1	12.7	10.3	13.4	15.1	13.7	15.3	20.7	26.8
	Transports and communications	5.7	5.7	4.6	4.8	3.8	4.4	3.9	5.0		6.3	
		2.2	1.7	2.0	2.3	2.7	3.3	3.2	3.8	4.6	5.4	6.4
Participation rate		0.68	0.63	0.64	0.61	0.61	0.58	0.56	0.58	0.59	0.58	0.45

NOTES: Own elaboration, Population Censuses. Some subsectors (within textiles and metals) had to be aggregated to allow for consistent reporting of the percentage of workers employed in them. The 'not specified further' row in the secondary sector refers to workers that the Censuses identify within the secondary sector, but for which no information on the subsector they work in was provided. They comprise, for 1877 and 1887, workers in 'arts and crafts' and those in 'factories and mining and those industries stemming from them' ['Artes y oficios' and 'Dedicados a las industrias fabril y minera y a las derivadas de las mismas']; for 1920 those in 'Industry (owners)' and 'Various industries or without classification' ['Industria (patronos) and 'Industrias varias o sin clasificar']; for 1930 and 1940 those in 'Various industries. Miscellaneous' ['Industrias varias. Diversas']; for 1950 'Other skilled workers' and 'Unskilled labourers, excluding those that work in agriculture, mines, and other services' ['Otros trabajadores especializados' and 'Jornaleros no calificados, excluidos los que trabajan en agricultura, minas y otros servicios']; and for 1960 those in 'Factory-based industries' ['Industrias fabriles']. The participation rates report the number of workers (men, women, total) in the labour force (of any age) over the number of 15-64 year-olds in each of the groups. Rates above 100% are therefore explained by the substantial presence in the labour force of old people (over 13% of the active males are over 60 in 1900 and 1910) and to a less extent children (under 12 year olds are just 1% of the active males in 1900 and 1910).

It was after 1950, and particularly in the 1960s (following the Stabilization Plan of 1959, a set of liberalizing measures), that agricultural improvements facilitated the release of labour to the secondary and tertiary sectors, and by 1970 both the secondary and the tertiary sector employed more people than the primary sector. The diversification of the secondary sector by 1970 (see in Table 6 the growth of metal and machine tools industries), and the growth in professional services, are clearly a reflection of the increases in income per capita benefiting a growing middle class and affording educational expansion. This was accompanied by huge internal migration flows, reflected as well in the growth of the building and construction subsector. The 1960s is the true decade of a delayed industrialization process that had kick-started much earlier in the century but had been halted by political developments. It has been known as the period of the “Spanish economic miracle”, a period of over a decade when Spanish GDP per capita growth rates were second only to Japan in the world, at a time when European economies were also experiencing higher than long-term average growth rates.

Figure 2. Occupational distribution and GDP per capita



SOURCES: Percentage of population in each sector, own elaboration from Population Censuses, see procedure detailed in main text. GDP per capita in 1995 pesetas and 1995=100 from Prados de la Escosura, L., *El progreso económico de España (1850-2000)* (2003), table A.11.7.

Figure 2 plots the share of the active population by sector and the evolution of GDP/capita. The parallel (inverse) evolution of economic growth and the share of population employed in the primary sector is evident. The GDP per capita series also underscores the aforementioned decades of backwardness during early Francoism, and highlights the extraordinary period of economic growth in the 1960s, which has to be seen mostly as catch-up growth. Interestingly, while the first phase of industrialization before 1930 was clearly led by the manufacturing sector, the dramatic decline of the primary sector since the mid-1950s was not accompanied first by an increase in the secondary sector and then by the growth of the tertiary sector; instead, industry and services grew nearly in parallel before the service sector clearly took over by 1981.

Historically, the tertiary sector had been relatively large in Spain⁴⁰, but lacked opportunities to expand before 1960:⁴¹ low per capita incomes translated into low demand for the consumption of services, and the Spanish public sector did not follow the path of other western European economies in creating and expanding the welfare state and the services associated with it; instead, the Francoist state froze government expenditures in the 1940s and 1950s.⁴² Meanwhile, firms in the secondary sector had not expanded sufficiently to outsource the services they required. In this sense, the tertiarization of the Spanish economy occurred late compared to that of other European countries, and this was due to economic backwardness relative to Europe. But relative to the process of economic growth, tertiarization arrived early: the service sector grew in the 1940s and 1950s despite the lack of improvement in GDP/capita –and in contrast to the contraction of the secondary sector–, and in the 1960s it was as much a protagonist of structural change as the secondary sector.

The modest growth of services between 1940 and 1960 derived from the growth of sellers and of transport and communications' employees (see Table 6), themselves a sign of the expansion of distribution networks. While initially this could be indicators of a vibrant internal trade, the poor performance of the Spanish economy at the time –with negative per capita GDP growth between 1930 and 1950–, combined with the deeply interventionist nature of the Francoist state in economic exchanges –through rationing and price fixing– might suggest otherwise. The proliferation of sellers could instead be seen as a survival strategy in a bleak labour market, and a means to an autonomous job. It also probably reflects a considerable transfer of labour to the

⁴⁰ Prados de la Escosura estimates the contribution of the tertiary sector to Spain's GDP to have been of at least 40% since the mid-nineteenth century, and suggests that a relatively big service sector originated in the early modern period, as a consequence of the international uncompetitiveness of Spain's manufactured products –a case of Dutch disease (Prados de la Escosura, *El progreso*, p.201-2).

⁴¹ Del Río Gómez, C., 'El sector de los servicios en la moderna evolución de la economía española', *Información Comercial Española: Revista de Economía*, 787 (2000), pp.11-30. (2000)

⁴² Comín, F., 'Sector público y crecimiento económico en la dictadura de Franco', *Ayer*, 21 (1996), pp.163-186

lower ranks of the flourishing black market, one of the most profitable enterprises in early Francoist Spain.⁴³ Those in the distribution networks could and did seize any opportunities for arbitrage.

The growth of the services after 1960 tells a different story: beyond the demand for services generated by the growing manufacturing sector and by the financial and commercial needs of an agricultural sector in transformation, we have to add the huge role that mass tourism played in Spain's economic development in the 1960s. On the back of a growing and wealthier European middle class, Spain capitalised on its assets (beaches and sun) and attracted big flows of European tourists who provided the much needed foreign reserves to expand industrial imports as well as employment for many in the touristic centres, gave a boost to the building sector, and increased the demand for transport and communication networks.⁴⁴

The increasing weight of the service sector by 1981 had slightly less to do with the dynamism of services than with the stagnation and crisis in industry, where the number employed decreased from 4.9 million in 1970 to 3.9 million in 1981.⁴⁵

V. Conclusions

Table 7. GPD per capita, annual average rate of growth

Period	Per capita GPD growth rate
1850-83	1.3
1883-1920	0.6
1920-29	2.8
1929-50	-0.9
1950-58	5.0
1958-74	5.5
1974-84	1.4

SOURCE: Prados de la Escosura, L., *Spanish economic growth, 1850-2015* (2017), p.16

⁴³ The main beneficiaries of the black market, or *estraperlo*, were the Francoist national and local authorities, who made their profits either from bribes or from participating in the black market themselves [Barciela, C. (ed), *Autarquía y mercado negro. El fracaso económico del primer franquismo, 1939-1959* (2003)]. But numerous studies have documented the involvement of small sellers and transport workers in the black economy exchanges: although their share of the profits was small, it still guaranteed a better living than the formal economy, suffocated by the rigid trade regulations of the Francoist state [see for example Terón Torreblanca, C.M., *Consolidación y evolución del franquismo en Málaga, 1943-1959*, PhD Dissertation, Universidad de Málaga (.), p.441-2; Moreno Tello, S., *La clase obrera gaditana (1949-1959). Una historia social a través de las fuentes populares* (2006), pp.43-5]

⁴⁴ In 1959, Spain received 2.8 million foreign tourists. By 1973 it had reached 31.6 million (A. Carreras and X. Tafunell (eds), *Estadísticas Históricas de España (siglos XIX y XX)* (2005), p.642)

⁴⁵ See Appendix 2.

The study of changes in occupational structures in Spain tells the story of very gradual developments until well into the twentieth century, and a sudden and accelerated transformation after 1960. In between, the dark decades of the dictatorship, with its disastrous economic policies, reversed economic gains: improvements in agricultural productivity, industrial growth, and urbanisation, reached a peak in the 1920s, and similar levels were not achieved again until the 1960s. This sudden interruption of the industrialisation process between 1935 and 1950 is one of the distinctive features of the Spanish case, particularly when we take into account that it did not fight in World War II. When we observe substantial changes in the occupational structure, as after 1950, these are dramatic: while more than half of the active population were employed in agriculture in 1950, by 1970 less than a quarter were. These extremely rapid changes in the occupational structure of the economy during those two decades are evidently a sign of catch-up growth, a reminder of the protracted process of convergence of Spain with other European countries. Perhaps due to the fact that it happened so late, but also in line with other case studies that do not follow Petty's law, modern economic growth in Spain was not led by the secondary sector alone, but also and mostly by the tertiary sector, which led the process of convergence with the rest of Europe in the 1950s and 1960s, the decades of true economic modernisation.

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