

# To be or not to be (employed): two decades of fluctuating earnings and income inequality in Spain

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## Abstract

This paper offers a descriptive overview of the evolution of individual earnings and household income inequality in Spain over the last two decades. During this period, there has been a noteworthy increase in the level of education of the working-age population (aged 25–60) along with a rise in female labour force participation. Substantial changes have also occurred in household size and composition, with reductions in marriage and cohabitation, in particular among lower-educated groups. These changes have a direct impact on the distribution of individual earnings and household income and, therefore, the evolution of inequality. Fluctuations in inequality, however, primarily moved with the business cycle. After a period of decreasing inequality during the mid-1990s expansion, the 2008 global financial crisis led to sharp rises in both earnings and income inequality that peaked around 2014. After that, both unemployment and inequality decreased, except for the transitory surge during the COVID-19 pandemic. By 2022, inequality indicators have almost returned to pre-2008 levels.

## KEYWORDS

earnings, education, employment, income, inequality

## JEL CLASSIFICATION

D31, I24, J21, J31

## 1 | INTRODUCTION

The Spanish economy has undergone significant transformations throughout the past century, from a devastating civil war and post-war period to joining the European Union in the 1980s. Since then,

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notable advancements have been observed in the educational attainment of the working population and in female employment, both coming from very low levels. Other significant demographic dynamics occurred during this period, such as an ageing population and a reduction in the number of marriages and children. At the same time, the trajectory of the Spanish economy has been marked by three significant recessions that started in 1991, 2008 and 2020. In between these downturns, there have been periods characterised by long expansions. From the mid-1990s up until the onset of the Great Recession, Spain experienced a noteworthy average annual growth rate of 2.5 per cent in gross domestic product (GDP) per capita at constant prices, surpassing the European average. Nonetheless, these seemingly favourable figures concealed an imbalanced growth that fuelled the real estate bubble. Subsequent to the collapse of the bubble, the global financial crisis in 2008 and the following debt crisis in 2010, the Spanish economy suffered a steep decline until 2013. From 2014, a gradual recovery emerged. Lastly, the downturn caused by the COVID-19 pandemic was of relatively short duration. However, Spain has been among the last advanced economies to regain its pre-2020 economic levels (OECD, 2023). Moreover, structural problems such as one of the highest unemployment rates in Europe, the presence of a dual labour market and a rigid wage determination system have contributed to a volatile labour market during the first two decades of the 21<sup>st</sup> century (see, among others, García-Pérez, Marinescu and Vall-Castello, 2019; Bentolila et al., 2021; Arellano et al., 2022; García-Louzao, Hospido and Ruggieri, 2023).

Income inequality in Spain is among the highest within developed countries. At the same time, Spain is characterised by a moderate degree of wealth inequality associated with relatively more widespread homeownership than in other countries (Anghel et al., 2018).<sup>1</sup> Another Spanish specificity is that earnings and income inequality are strongly countercyclical, boosted by the abrupt fluctuations in employment (Bonhomme and Hospido, 2017).

This paper adopts a descriptive but comprehensive approach to analyse the evolution of inequality in individual earnings and household income in Spain during these last two decades up until 2022. It builds upon the IFS Deaton Review Country Studies,<sup>2</sup> a collaborative effort involving 17 advanced economies, which focuses on data and measurement harmonisation to gain insights into the drivers of economic inequalities across high-income countries.

To understand the changes in earnings inequality, we first describe the main developments on the Spanish labour market, followed by the analysis of the evolution of hourly wages and hours worked. These variables together shape workers' annual earnings, which we discuss later in the paper. Lastly, we delve into the evolution of household incomes and assess the role of the Spanish welfare state in mitigating inequality. Given the important changes in the level of education of the working population and in the female labour force participation, in some parts we extend the analysis by distinguishing by gender and level of education. Finally, it is important to note that this paper focuses on the working-age population (aged 25–60), as income from the labour market is the primary source of income for this age group.

Our paper is closely related to Anghel et al. (2018), which analyses the level of inequality in Spain and its evolution during the last financial crisis and the early stages of the subsequent recovery, primarily from 2006 to 2014. We extend their analysis, by considering a larger period of time, which enables us to identify the main trends in the evolution of inequality. In interpreting the results related to the evolution of inequality, we try to link them to the main developments of the Spanish labour market that have taken place over the last two decades.

The rest of the paper is organised as follows. In Section 2, we present the data sources and variables used in the analysis. In Section 3, we describe the main developments on the Spanish labour market over the last two decades. In Section 4, we analyse individual earnings inequality (hourly wages and annual earnings), and in Section 5 household income inequality. Finally, we conclude in Section 6.

<sup>1</sup> Although the level of wealth inequality is comparatively low, it has increased since 2011, due to the reduction in the percentage of households that own their main home, especially among the youngest (Banco de España, 2023).

<sup>2</sup> See <https://ifs.org.uk/inequality/country-studies/>.

## 2 | DATA SOURCES AND VARIABLES

This paper combines several surveys: the Labour Force Survey (EPA; its acronym is taken from its name in Spanish, *Encuesta de Población Activa*); the Wage Structure Survey (EES; *Encuesta de Estructura Salarial*); and the Life Conditions Survey (ECV; *Encuesta de Condiciones de Vida*).

We consider individuals at working age, from age 25 to 60, in order to ensure the homogeneity of the samples considered in the different surveys.

For analysing employment and the education level, we use the EPA. This survey is available every year since 1976 up until 2023.

The evolution of hourly wage and hours worked is analysed using employee data from the EES. This is available in the following years: 1995, 2002, 2006, 2010, 2014 and 2018. Hourly wage is calculated by dividing the gross monthly wage by hours worked in a normal working week in the firm (taking as reference a week in October), multiplied by 4.35 plus the number of overtime hours worked in that month. Monthly wage includes base wage, overtime pay, the two extra payments (as Spanish wages are generally paid in 14 monthly payments rather than 12) and all pay supplements. To ensure comparability across different years of the EES, we compute hourly wages for employees in firms with at least 10 workers and excluding certain sectors of activity that were not part of the initial survey waves.<sup>3</sup>

To scale up the information to annual earnings, however, the EES assumes that employees work the full year. This assumption tends to overestimate earnings for individuals at the bottom of the distribution and, consequently, underestimates inequality. To solve this limitation, when we analyse the evolution of inequality according to annual earnings, we use data from the ECV. The ECV is available annually from 2004 to 2023 and it provides information on earnings and time worked at both individual and household level.<sup>4</sup> The reference year for earnings is the year before the survey. The ECV includes information on both employed and self-employed workers, does not exclude any sector or type of firm, and reflects total annual labour income without any adjustment to reflect full-time equivalent.

To analyse total income of the households, we use the ECV. Total household income is equivalised using the modified OECD equivalence scale,<sup>5</sup> so figures are a measure of the annual income available per adult household member.

We categorise education levels into three groups: low (ISCED 0–2), medium (ISCED 3–5) and high (ISCED 6–8).

Finally, monetary variables from all sources are adjusted to account for inflation, using the year 2021 as the reference currency year.

## 3 | MAIN DEVELOPMENTS ON THE SPANISH LABOUR MARKET

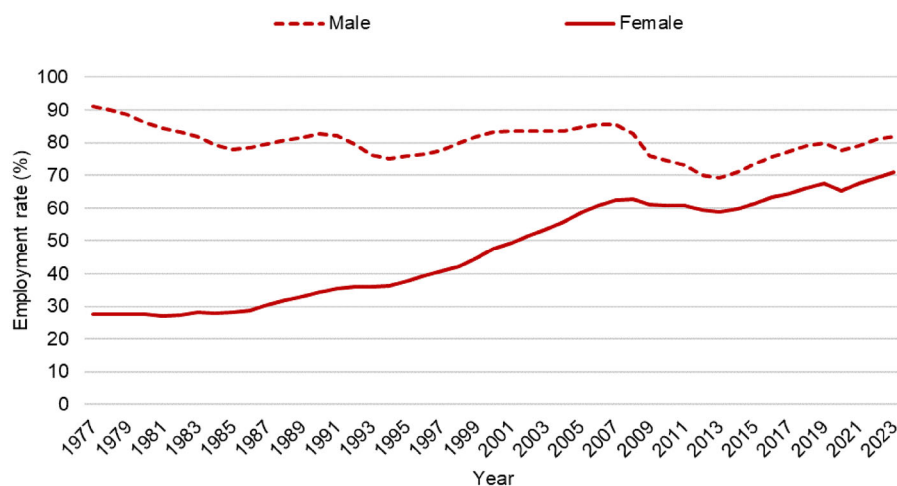
We start our analysis by describing the most important developments in the workforce in Spain over the last two decades. During this period and even today, the Spanish labour market is characterised by two salient features relative to other advanced economies: the structurally high level of unemployment and its marked cyclicity (Dolado, Felgueroso and Jimeno, 2021).

Over the 1977–2023 period, unemployment was on average 14 per cent, reaching peaks as high as 20 per cent in 1994 or 24 per cent in 2013, in the worst moments of each crisis. Also,

<sup>3</sup> These excluded sectors are: Agriculture, hunting and forestry; Fishing; Public administration, social security, and defence; Domestic service and home production; Extra-territorial organisations and bodies; Education; Health and social work; Other community, social and personal service activities.

<sup>4</sup> The European version of the ECV, the European Union Statistics on Income and Living Conditions (EU-SILC), provides comparative statistics on the distribution of income and on social exclusion in Europe.

<sup>5</sup> The OECD equivalence scale assigns a value of 1 to the first household member, 0.5 to each additional adult and 0.3 to each household member under 14 years of age.



**FIGURE 1** Employment rates by gender, over time. *Note:* Sample consists of individuals aged 25–60 who have completed full-time education. *Source:* EPA (Spanish National Institute of Statistics), 1977–2023. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]

except for the expansionary period 2001–08, long-term unemployment usually represents half of the total unemployment.

There are other often-mentioned problems in the Spanish labour market that contribute to this pronounced cyclicity of unemployment, such as the rigid wage determination system, the high temporary rates, the low firm productivity, and the high entry barriers for young workers (Izquierdo, Moral and Urtasun, 2003; Estrada, Izquierdo and Lacuesta, 2009; Barceló et al., 2021; Ramos, Sanromá and Simón, 2022; Adamopoulou, Diez-Catalan and Villanueva, 2024).

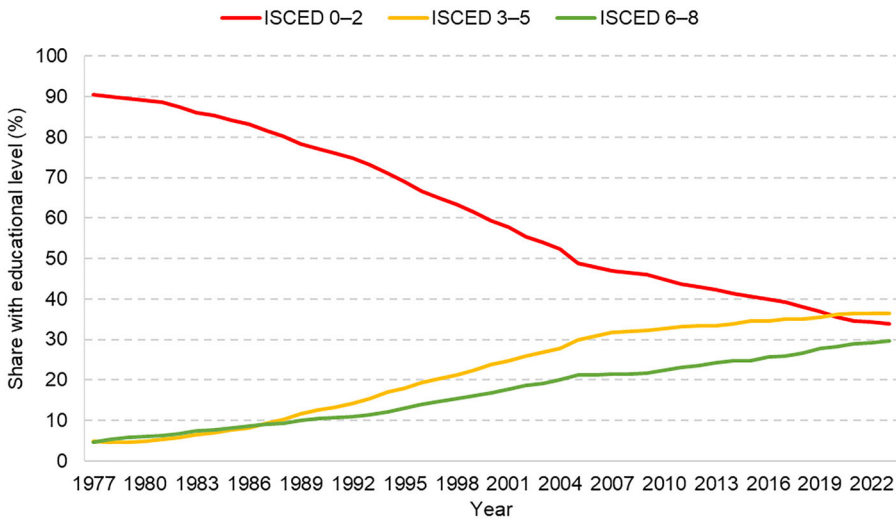
At the same time, the Spanish labour market experienced relevant compositional changes, the two most important being the massive entry of women into the labour market and the increase in the educational level of workers.

The employment rate for women increased spectacularly over this period, from 28 per cent in 1977 to 71 per cent in 2023 (Figure 1). As a consequence of this, the gender gap in employment diminished from 69 per cent in 1977 to 13 per cent in 2023 (Guner, Kaya and Sánchez-Marcos, 2014).

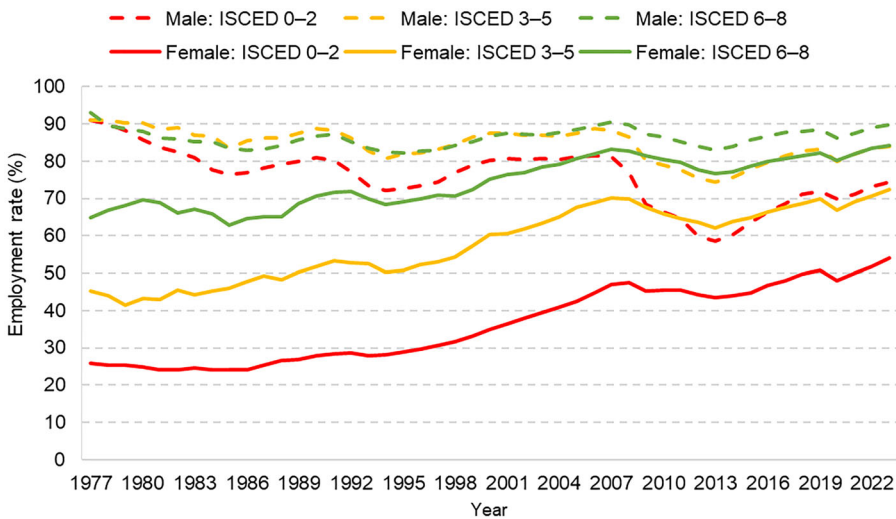
Regarding the education level of the working population, in 1977, 91 per cent of the workers had only completed primary education or less whereas the remaining 9 per cent was equally spread among those with secondary education (4.7 per cent) and those with tertiary education (4.7 per cent). By 2023, 34 per cent of the population had at most primary education, 36.3 per cent secondary education and 29.7 per cent tertiary education (Figure 2).<sup>6</sup>

Although educational attainment has advanced more rapidly for women, they still have systematically lower employment rates than men at all educational levels (Figure 3). Over the period 1977–2023, the average employment rate of tertiary-educated males was 86 per cent versus 74 per cent for females (a difference of 12 percentage points). The gender gap is larger among those with secondary education (85 per cent for males versus 58 per cent for females, a difference of 27 percentage points) and is the highest among those with at most primary education (76 per cent for males versus 36 per cent for females, a difference of 40 percentage points). Over time, gender gaps were generally decreasing until 2013, but since 2014 the trend has halted. The most recent empirical evidence illustrates that the participation of women with children in the labour force remains low compared with that of men, due to the inability of social policies (such as paternity leave, tax

<sup>6</sup> Despite this positive evolution, the Spanish education system continues to have problems such as the high dropout rates during secondary education, especially among men (Felgueroso, Gutiérrez-Domènech and Jiménez-Martín, 2014).



**FIGURE 2** Educational attainment over time. *Note:* Sample consists of individuals aged 25–60 who have completed full-time education. *Source:* EPA (Spanish National Institute of Statistics), 1977–2023. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]



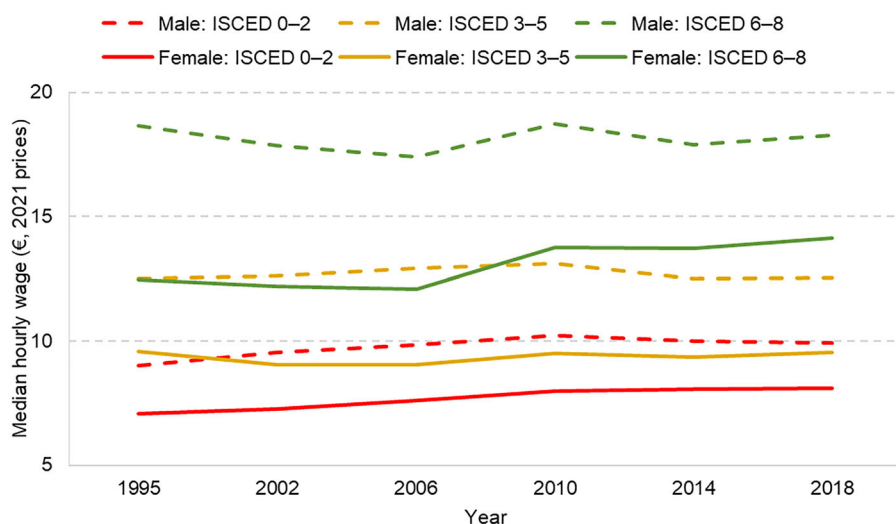
**FIGURE 3** Employment rates by gender and education, over time. *Note:* Sample consists of individuals aged 25–60 who have completed full-time education. *Source:* EPA (Spanish National Institute of Statistics), 1977–2023. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]

incentives or policies family) to fully overcome traditional gender roles (Osuna, 2018; Hupkau and Ruiz-Valenzuela, 2022).

Given these important structural shifts in the composition of the workforce, particularly in terms of gender and education level, we also examine inequality changes within these groups.

#### 4 | INEQUALITY OF HOURLY WAGES AND ANNUAL EARNINGS

We start our analysis by documenting how the developments on the labour market described in Section 3 have affected the evolution of wage and earnings inequality in Spain.



**FIGURE 4** Median real hourly wage among employees by gender and education, over time. *Note:* Sample consists of employees aged 25–60. Wages are in 2021 prices. *Source:* EES (Spanish National Institute of Statistics), 1995, 2002, 2006, 2010, 2014, 2018. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]

According to Anghel et al. (2018), on average, annual earnings constitute 60 per cent of the total annual income for Spanish household members. These are a function of the hourly wages the workers receive and the number of hours they work in a period. Therefore, in order to assess the evolution of earnings inequality, we analyse, first, variations in hourly wages and, second, variations in the number of hours worked.

The median real hourly wage in Spain barely changed from 10.1 euros in 1995 to 10.2 euros in 2018. By gender, over the period 1995–2018, men had a median hourly wage of 11.1 euros versus 8.7 euros for women. This gender gap went from the average hourly wage of women representing 78 per cent of that of men in 1995 to 83 per cent in 2018.<sup>7</sup>

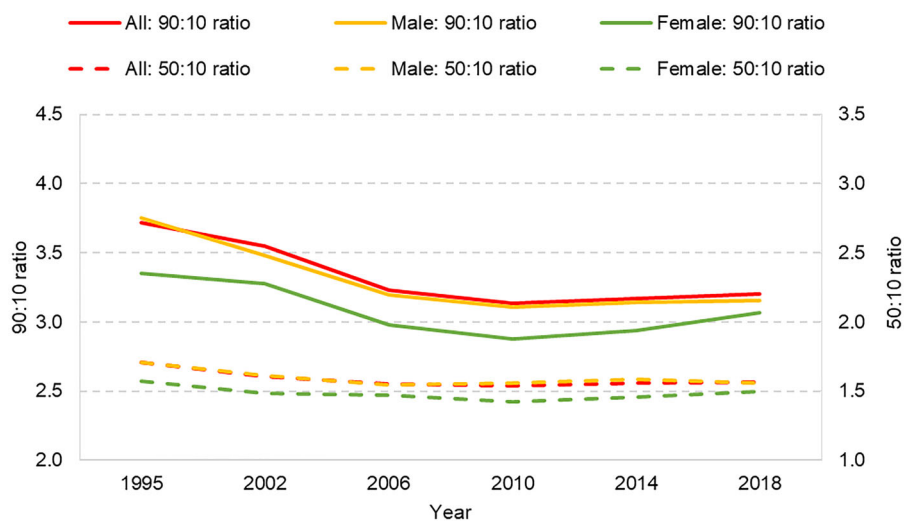
By gender and level of education, Figure 4 illustrates that between 1995 and 2018 the median real hourly wage diminished for men with tertiary education, it remained quite stable for those with secondary education and it increased for those with primary education. For women, however, median real hourly wage increased for the groups with primary and tertiary education, while it stayed stable for those with secondary education. The graph also shows that, for both men and women, the college premium (that is, the ratio of the median hourly wages of the most highly educated relative to the least) diminished over the period, but particularly so from 1995 to 2006.

Figure 5 depicts the evolution of wage inequality measured by the 90:10 and 50:10 percentile ratios. In 1995, individuals in the 90<sup>th</sup> percentile earned 3.7 times more than those of the 10<sup>th</sup> percentile. This ratio decreased to 3.1 in 2014 and then slightly increased to 3.2 in 2018. When we look at the 50:10 ratio, we observe that hourly wage differences are significantly smaller at the low end of the distribution. The evolution of the 50:10 ratio is very similar to that of the 90:10 ratio over the period considered: it decreased from 1.7 in 1995 to 1.6 in 2014 and then it remained stable until 2018.<sup>8</sup>

The literature has proposed the following explanations for, first, the decline in inequality and, second, the stabilisation. During the expansion until 2008, employment increased substantially while, at the same time, Spain experienced a decrease in the college premium among those working (Pijoan-

<sup>7</sup> Interestingly, gender differences in hourly wages increase along the working life: gender wage gaps at age 25 are smaller at every education group than the gap at later ages.

<sup>8</sup> By gender, the graph shows a similar pattern both for men and women. We also obtain similar results when we use instead the Gini index as a measure of inequality. The Gini index decreased from 0.26 in 1995 to 0.24 in 2006, and then increased to 0.26 again in 2018.



**FIGURE 5** 90:10 and 50:10 ratios of hourly wages among employees, overall and by gender, over time. *Note:* Sample consists of employees aged 25–60. *Source:* EES (Spanish National Institute of Statistics), 1995, 2002, 2006, 2010, 2014, 2018. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

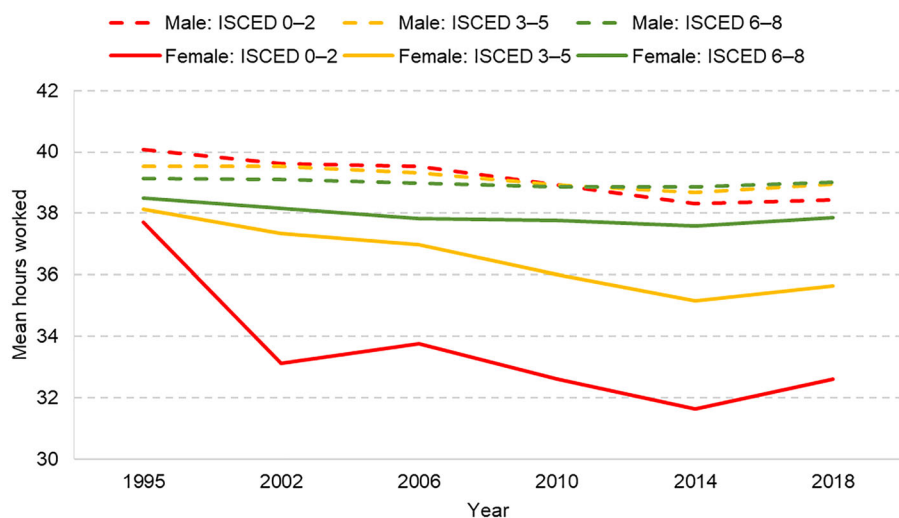
Mas and Sánchez-Marcos, 2010). During the Great Recession, however, the required adjustments were done in terms of reducing the amount of people working and less so in terms of the wages of those that remained employed (Bonhomme and Hospido, 2017), and hence inequality in hourly wages did not increase much.

To further understand the changes in earnings inequality over time, it is thus essential to examine the evolution of hours and days worked. In Spain, there has been a decline in hours worked per week from 39.4 hours in 1995 to 36.8 in 2014. Working hours recovered slightly in 2018 (up to 37.1 hours), but they are still below the 1995 level.

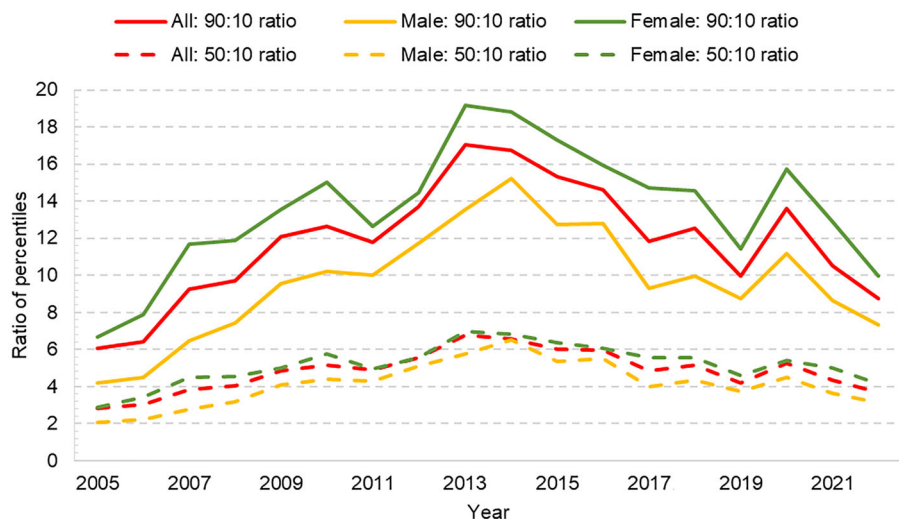
Figure 6 shows that men, regardless of their educational attainment, work on average around 39 hours per week. Only in the case of men with at most primary education do we observe a reduction in their working hours, from 40.1 in 1995 to 38.4 in 2018. For women, in contrast, differences in working hours across education groups and over time are substantial. On average over the period 1995–2018, women with at most primary education worked 33.6 hours per week, those with secondary education 36.5 hours per week and those with tertiary education 37.9 hours per week. From 1995 to 2018, working time among employed women has decreased by 5 hours for primary-educated, 2.5 hours for secondary-educated and 0.6 hours for tertiary-educated. These findings indicate that low-educated women who have low hourly wages also experienced the most significant decrease in their working hours.<sup>9</sup>

Finally, we examine the evolution of annual earnings, which depends on the evolution of both hourly wages and the total amount of hours worked. We have seen that, on average, hourly wages are stagnant and working hours reduced over the period 1995–2018, particularly for women. As a result of such developments, we expect that annual earnings of workers should decline. The data from the ECV, which has information on annual earnings, indicate that indeed the median real annual earnings

<sup>9</sup> The decrease in working hours for women during this period can be explained by the increase in female employment over these years. It is possible that new working women joined the workforce with shorter working hours.



**FIGURE 6** Mean hours worked among employees, by gender and education, over time. *Note:* Sample consists of employees aged 25–60. Hours include paid (but not unpaid) overtime and have been top-coded to 97 hours per week. *Source:* EES (Spanish National Institute of Statistics), 1995, 2002, 2006, 2010, 2014, 2018. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]



**FIGURE 7** 90:10 and 50:10 ratios of gross individual earnings by gender, over time. *Note:* Sample consists of employees and the self-employed aged 25–60. *Source:* ECV (Spanish National Institute of Statistics), 2006–23. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]

declined from 18,100 euros in 2005 to 15,800 euros in 2014. After that, they increased again up to 17,600 euros in 2022, although without yet fully recovering the levels before the Great Recession.<sup>10</sup>

Figure 7 illustrates the evolution of earnings inequality using the 90:10 and 50:10 percentile ratios. Two subperiods stand out in the graph. The first is between 2005 and 2014 when inequality increased

<sup>10</sup> By gender, the evolution has shown only some mild convergence. Figure A.1 in the online Appendix shows that women's median earnings represented 70 per cent of men's median earnings in 2005, and by 2022 the gap was 80 per cent. This slow convergence has also been noticed by Osuna (2018). Despite being more educated than men, women still earn much less.



almost continuously – the 90:10 ratio almost tripled (from 6 to 17) and the 50:10 ratio more than doubled (from 2.8 to 6.7). During this period, Spain experienced a significant decline in employment, particularly among men, along with reduced working hours, especially for women. These effects left many individuals with little or no income from employment, contributing to an increase in inequality. The second period starts after 2014 when inequality begins to decrease, with the exception of the COVID-19 pandemic in 2020 that led to a temporary surge in inequality.<sup>11</sup> We could attribute this decrease in inequality of annual earnings to the increase in employment in this recovery period, given that hours worked did not change much.

When we analyse earnings inequality by gender, we observe higher indicators for women than for men, contrary to what we observe regarding wage inequality (Figure 5). This result is related to the previous finding that men tend to have very similar working hours regardless of their education level, whereas for women there are bigger disparities in terms of working hours and employment, depending on their level of education.

In summary, the evolution of inequality in Spain differs significantly when comparing hourly wages and annual earnings. While hourly wage inequality remained relatively stable (with slight decreases before the financial crisis), annual earnings inequality experienced significant changes from 2005 to 2022. It increased until 2014 and then decreased in the expansion period (with the exception of the year of the pandemic, 2020). Moreover, inequality measures are significantly higher when considering annual earnings rather than hourly wages, which can be attributed to changes in time worked. Anghel et al. (2018) highlight that Spain is one of the countries that exhibits the largest increase in inequality when analysing annual earnings instead of hourly wages, possibly due to the higher prevalence of short-term and short-hour contracts among workers with lower hourly wages.

## 5 | INEQUALITY IN HOUSEHOLD INCOME

In this section we broaden our analysis of inequality, by taking into account the entire household income. In addition to individual wages, we must account for other sources of income such as self-employment earnings, capital income, unemployment benefits, pensions and other (mostly public) transfers.

To gain a deeper understanding of the changes in household income, we begin by analysing changes in household composition over time. These changes play an important role in the distribution of household incomes. The total number of members in a household, the presence of children or the employment status of the members are all variables that contribute to the total income received by a household.

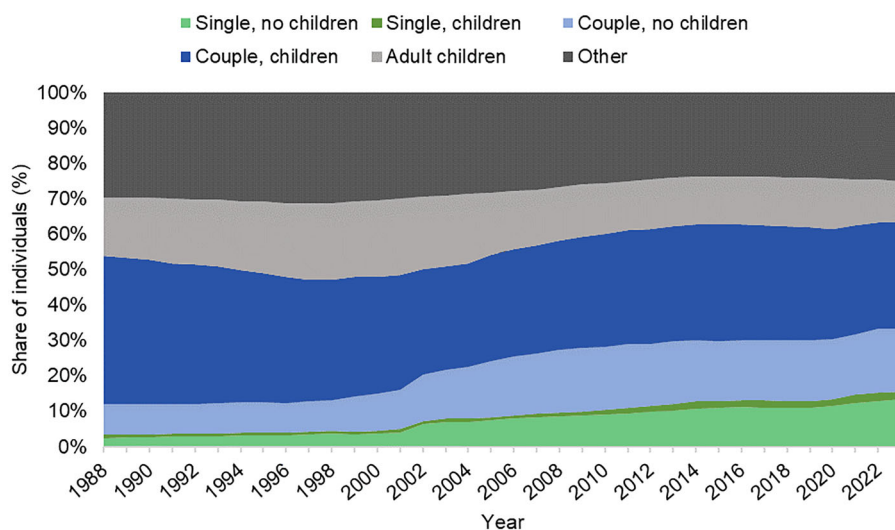
The first salient fact about the composition of Spanish households is the reduction of marriages, from around 80 per cent of the population to less than 60 per cent in 50 years. Part of this decline has been compensated by an increase in cohabitation since the turn of the century. If we consider cohabitation and marriages together, the number of couples living together has decreased more significantly for the least-educated group (from 84 per cent in 1977 to 68 per cent in 2023) than for the tertiary-educated group (74 per cent and 65 per cent, respectively).

The second fact is that, as women's labour force participation increased, the likelihood of having dual earners couples versus single earner is also higher now.

As a result of these shifts, three main changes occurred on the typology of Spanish households (Figure 8): first, a significant decrease in the share of couples with children (from 42 per cent in 1988 to 30 per cent in 2023)<sup>12</sup>; second, a substantial increase in the share of single households without children

<sup>11</sup> If we instead consider the evolution of the Gini coefficient we find a similar pattern: during the period 2005–14 it increased from 0.35 to 0.45, and after 2014 it started to decrease, with the exception of the pandemic in 2020 when it increased again.

<sup>12</sup> During the 2000s, this decrease was partially compensated by the influx of immigrants who had higher fertility. Nevertheless, this effect was short lived.

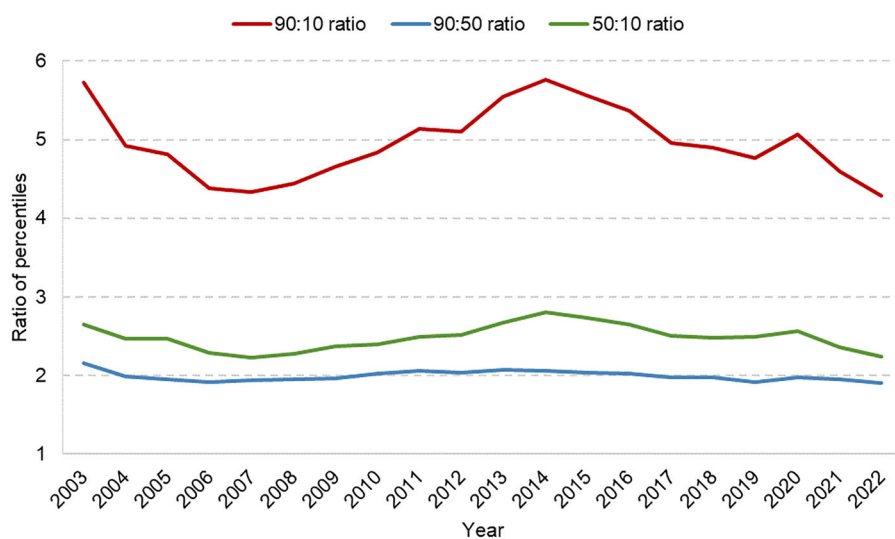


**FIGURE 8** Share of households by different types, over time. *Note:* Sample consists of individuals aged 25–60 who have completed full-time education. ‘Single, no children’ refers to households with one adult and without children; ‘single, children’ refers to households with one adult and children; ‘couple, no children’ refers to households with a couple and no children; ‘couple, children’ refers to households with a couple and children; ‘adult children’ refers to households with parents and adult children. *Source:* EPA (Spanish National Institute of Statistics), 1988–2023. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]

(from 3.7 per cent in 2000 to 13.4 per cent in 2023); and, third, a sizeable number of households (over 20 per cent) composed of parents and adult children. For this latter group, there exists a noticeable gradient by education of the parents with important consequences for inequality: in the case of parents with lower education, this category represents 34 per cent of the total number of households, while in the case of parents with tertiary education, this category represents 16 per cent.

Keeping in mind these compositional changes, next we analyse the evolution of household income and of income inequality. Median real gross household income has not changed substantially since 2005. At that time, it was 18,000 euros, the same level as in the worst moment of the Great Recession. By 2022, median real gross household income was 20,000 euros. The evolution of median disposable income is similar: from 15,000 euros in 2005, and 2014, to 17,000 euros in 2022. When we look at the group of working households, they have twice as much disposable income as non-working households. Similarly there exist large differences by educational level of the household members. Households with tertiary education have almost twice as much disposable income as those with primary education (21,000 euros versus 12,000 euros in 2022).

Figure 9 shows the evolution of the main ratios of household income percentiles in Spain. They show a strong countercyclical pattern. Over the past two decades, we can identify three distinct periods during which inequality closely tracked unemployment. The first period corresponds to a decrease in inequality until 2007. The second period, corresponding to the recession, saw an increase in inequality until 2013. Finally, since 2014, there has been a progressive decline in inequality, altered only by the COVID-19 pandemic. The 90:10 percentile ratio started from a value of 5.7 in 2003 and reached its highest value of 5.8 in 2014, during the financial crisis. Comparing the evolution of the 90:50 and 50:10 ratios, we see that the latter has increased the most. This suggests that inequality at the bottom of the distribution is behind the increase in overall inequality between 2007 and 2014. It is important to note that factors such as the pension system, the increase in top marginal rates between 2012 and 2014 and the increase in household size helped limit the expansion of inequality during the worst moment of the crisis (Anghel et al., 2018). After 2014, the percentile ratios decreased except for the



**FIGURE 9** 90:10 and 50:10 ratios of disposable household income for all households, over time. *Note:* Sample consists of individuals aged 25–60. *Source:* ECV (Spanish National Institute of Statistics), 2004–23. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-8900.12388)]

year of the pandemic, 2020. By 2022, they reached levels similar to those observed before the financial crisis.<sup>13</sup>

Finally, we discuss the redistributive role of the welfare state in mitigating the inequality of household income in Spain (Figure 10).

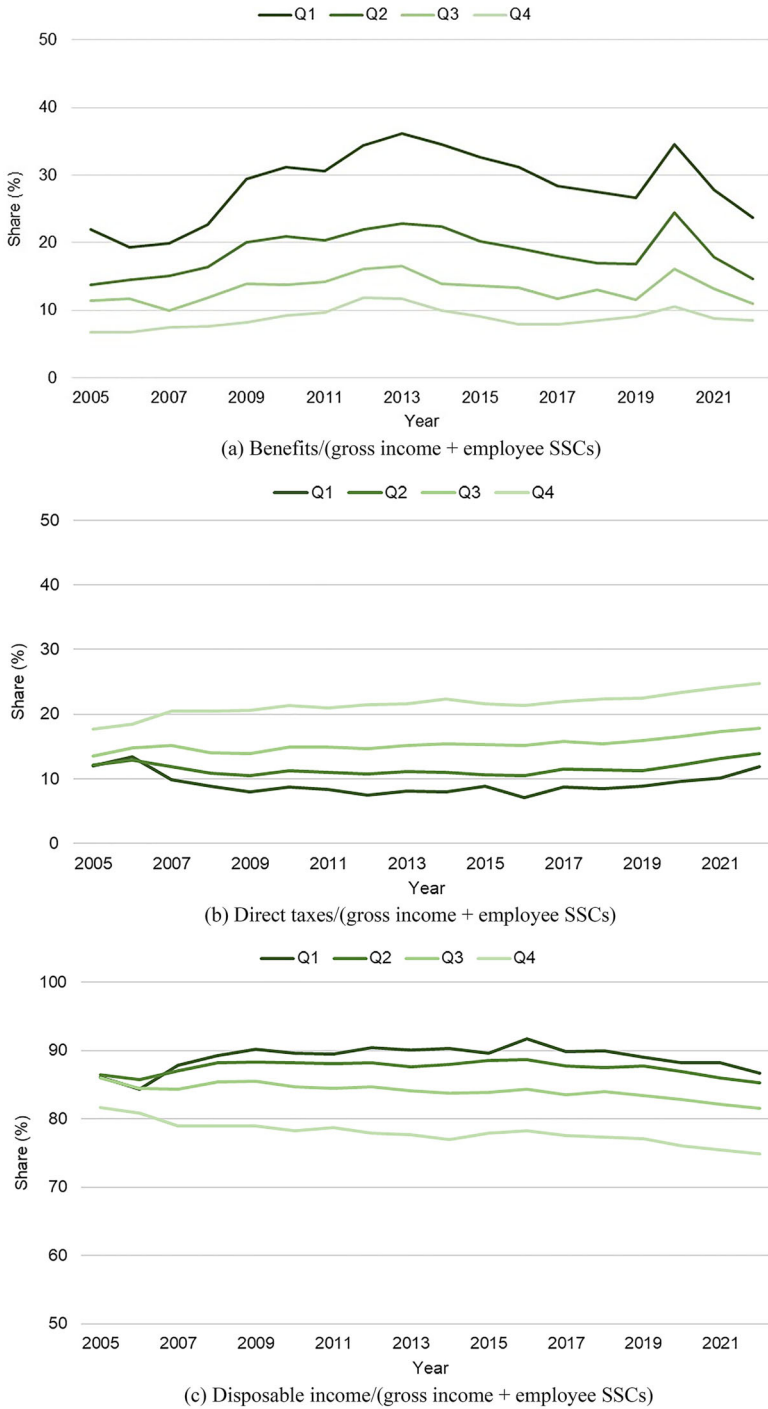
Figure 10(a) shows the proportion of the gross household income that can be attributed to the welfare state's benefits, by quartiles of the income distribution. We can see that in the years of the recessions, in both 2014 and 2020, for the bottom quartile of the income distribution, 35 per cent of the income represented benefits, compared to 10 per cent for the top quartile. Outside the peaks, values stand at around 28 per cent for the bottom quartile and 9 per cent for the top. This increase in the proportion of benefits only for the poorest quartile during recessions suggests that the redistributive character of the welfare state in Spain improves during those episodes.

Figure 10(b) shows the fraction of gross household income that is represented by direct taxes.<sup>14</sup> Over the sample period, the lowest income quartile paid an average of 9 per cent of direct taxes, while the highest income quartile paid 22 per cent. The level of progressivity of these taxes peaked in 2016, with the top quartile paying four times more in direct taxes than the bottom quartile. By 2022, this ratio decreased to around three times, similar to the pre-crisis level in 2007 or 2008.

Figure 10(c) indicates that once both benefits and taxes are considered, household disposable income is around 85 per cent of gross income. In 2022, the variation across quartiles was substantial: the poorest quartile has a disposable income that represents 87 per cent of their gross income, while for the richest quartile the corresponding figure is 75 per cent. The range of that variation has remained above 10 percentage points since 2008.

<sup>13</sup> Figure A.2 in the online Appendix shows several indicators of household income inequality. Notably, during the financial crisis both the Gini coefficient for disposable household income and the relative poverty indicator (the share of households with income below 60 per cent of the median) reached peak values of 0.34 and 23.3 per cent, respectively. The income share held by the top 1 per cent peaked earlier in 2010, rising to 4.8 per cent. As in the case of earnings inequality, we observe a reduction in household inequality since 2013 (with the exception of the pandemic year). In 2022, the Gini coefficient stood at 0.31, the relative poverty indicator was 19.1 per cent and the income share belonging to the top 1 per cent was 3.8 per cent. These values closely resemble the pre-financial crisis levels observed in 2007 and 2008.

<sup>14</sup> The direct taxes considered here are the personal income tax and the wealth tax, also including employee social security contributions.



**FIGURE 10** Welfare state effect on incomes, by quartiles. *Note:* Sample consists of individuals aged 25–60. Individuals with zero or negative earnings are excluded. Benefits include unemployment, old-age, survivor, sickness and disability benefits, education, family, children and housing allowances, and other social exclusion benefits not elsewhere classified. *Source:* ECV (Spanish National Institute of Statistics), 2006–23. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12388)]

## 6 | CONCLUSIONS

During the last two decades, fluctuations in earnings and income inequality have closely followed the business cycle in Spain. During the mid-1990s expansion, we observed a decline in income inequality. The global financial crisis of 2008 had significant repercussions in Spain. Both earnings and income inequality peaked at around 2014. Moreover, the economic downturn affected mostly vulnerable groups with a less stable labour market situation, such as households with lower educational attainment, individuals in non-working households and immigrant households. After the crisis, there was a gradual decrease in inequality. Despite the sharp reversal during the pandemic in 2020, the inequality indicators continued on a downward path in 2021 and 2022. This was mainly a result of the recent growth of activity and employment, and the various initiatives deployed by the authorities (see Banco de España, 2023). By 2022, the inequality indicators have returned to levels similar to those before 2008.

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### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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