

The Impact of Family Issues and Career Development on Gender Gap: Evidence from Spain

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Abstract

This chapter provides descriptive evidence on gender gaps of men and women in Spain, both at pre-market stages of life – university and post-graduate studies, as well as in their labor supply and labor market performance – employment rates, part-time employment and incidence in top occupations. Focusing on highly educated individuals, we explore the trade-offs between family and professional career development. For doing so, we first present new evidence on the different behavior of men and women along their life cycle for different birth cohorts – from those born in 1960 to the youngest cohort born in 1975. And secondly, we estimate and compare the impact of children in labor supply decisions and performance in two different time periods – 1994 and 2008. We finally quantify the contribution of the family to the different gender gaps and address several policy implications of our findings.

Key words: gender gap, family, career development.

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1. Introduction

Among the most important determinants of a countries' competitiveness is its' human capital talent – the skills, education and productivity of their workers. Over time, this competitiveness depends very much on how countries use their human resources. The implications of a shrinking working-age population and the high educational level that women are accomplishing over recent decades¹ make it essential to consider women as fundamental pillars of the workforce. Governments may play an important role in creating the correct legal framework for improving women's education and their participation in the economy. Moreover, it is also imperative that firms invest increasing a suitable working environment where men and women can adequately combine work and family.

Needless to say, women have made huge progress in the workplace, especially in the more industrialized countries. Goldin (2004) describes very effectively the evolution of women in the US labor market in the 20th century. Until the 1920s, working women were basically young and single and worked in factories or as domestic servants. From the 1930s onwards many more went to school and got jobs in offices. In the 1950s many married women entered the labor market and got jobs as secretaries, teachers or nurses. By the 1970s, their daughters saw their mothers working and took it for granted that they would also work. And since the end of the 1980s, women are overtaking men in graduating from college. This revolutionary process, to a greater or lesser degree, has been observed in most industrialized economies.

However, after the educational period, male and female work careers often start to diverge. In addition to gender differences in the educational fields, which clearly condition their future performance in the labor market, and will be analyzed in detail in Chapter 4 and 5 of this report, family issues play a crucial role in understanding these differences. Women must combine employment with home responsibilities to a much larger extent than their male partners and this affects their decisions with respect to their labor supply which directly affects their human capital accumulation, and hence their labor performance in the future. There are many studies exploring the trade-offs between family and career among similarly educated men and women. For instance, Wood, Corcoran, and Courant (1993) find that 40% of the gender gap among American lawyers is explained by children. More recent work by Goldin and Katz (2010), and Bertrand, Goldin and Katz (2011) point to the differences in the intensive margin as the main determinant of the gender gap in male and female careers through the negative effect of children on women's hours worked. Finally, Molina and Montuenga (2009) confirm the existence of a wage penalty for Spanish working-women with children.

¹ See Goldin, Katz and Kuziemko (2006) for an exploratory analysis of the catch-up and reversal in the gender gap in university graduation of American college women.

Our goal in this paper is to focus on highly educated men and women and try to explore the trade-offs between family and work career in a country like Spain, where changes in female behavior in the labor market have been rapid in the very recent years. We compare male and female behavior with respect to labor supply and performance along the life cycle for different birth cohorts to explore the connection between family and work over time. Further, we compare the impact of children on the labor supply decisions and labor market outcomes in two different time periods – 1994 and 2008.

The chapter is organized as follows: In the next section, we provide descriptive evidence on gender gaps in pre-labor markets and labor market outcomes. In section 3 we briefly describe the policy measures implemented in Spain, since mid-nineties, in an attempt to reconcile family and work. Section 4 relates the observed gender gaps in the Spanish Labor Market with family issues. Gender Gaps in Employment Rates, Part-Time Employment Rates and Incidence of Women in Top positions are presented along the life cycle of men and women for different birth cohorts. Section 5 is devoted to estimating and quantifying the impact of children on the career development of men and women (employment rates and part-time employment rates) as well as on their performance in the labor market. Finally, section 6 concludes with a summary of our findings and some policy implications of the results.

2. Descriptive Evidence: Pre-Market and Labor Market Gender Gaps

2.1. Pre-market gender gaps

The individual decision on the quantity and quality of education constitutes the first important human capital investment decision which undoubtedly affects the individual future attachment and performance in the Labor Market. In most developed countries, the participation of women in higher education has increased enormously in the last few decades reaching and surpassing equality with men. There is still a large difference in choice of college majors.

2.1.1. *Gender Gaps in University rates*

Figure 1 depicts the trends in University Graduation Rates in Spain by Gender (2000-2011). These rates are computed as the total number of students who completed their university studies every year divided by the total population at the typical graduation age². Overall Graduation Rates are higher for women and the gap widens significantly over time. In 2000, University Graduation Rates for women were 2.5 times higher than those for men, but by 2011, the ratio has increased to 10 times.

² The typical graduation age is the age at the end of the last academic year of the corresponding level and program when the degree is obtained. The typical age is based on the assumption of full-time attendance in the regular education system without grade repetition. For University graduation in Spain the OECD (see Education at Glance; 2002) establish this collective as the population aged 25-27.

[Insert Figure 1]

This picture is not homogeneous if we disaggregate by field of study. Figure 2 presents the share of women among university graduates by field. Two main features emerge: First the shares are stable over time. Second, women have a spectacularly lower presence in Technical Studies³ (around 28%) relative to others – Health, Social and Experimental Studies.

[Insert Figure 2]

2.1.2. Gender Gaps in Post-Graduate Studies: PhD Programs

Figure 3 presents the PhD Graduation Rates in Spain by gender in the last 10 years. As before, these are ratios of the total number of students who completed their PhD studies every year by the total population at the typical graduation age, which in this case is commonly set from 30 to 34 years. Given the selected population of reference, the percentage of PhD Graduates appears to be small (almost 3% in 2000), but it increases along time reaching 4.5% by 2010. Male PhD Graduation rates are somewhat higher than womens', but the distance has been shrinking with barely no difference by gender in 2010.

[Insert Figure 3]

With respect to the incidence of women in PhD Programs by field of study, the first thing to note is that over-representation of women is not as clear as in University Graduation Rates. If we consider all fields of study together (total), women were around 44% of all students who finished PhD programs, and by 2010 it almost reaches parity. However, as before, enormous differences emerge when comparing PhD graduates in Technical Studies with respect to other majors, in particular, experimental sciences, where in the last decade the relative presence of women in PhD programs has increased from 46% in 2000 to 55% of total graduates ten years later.

[Insert Figure 4]

2.2. Gender gaps in Labor Supply

In this sub-section, we provide evidence of gender differences in Employment Rates⁴, hours of work, and Part-time work.

³ Technical studies group college majors as computer science, engineering or architecture.

⁴ Given that unemployment in Spain has been above 10% in the last two decades, Labor Force Participation Rates and Employment Rates differ to some extent. However, the general features are quite similar. To keep similar indicators as the rest of the chapters, we have used Employment Rates, instead of Labor Force Participation Rates, as one of the indicators of Labor Supply.

2.2.1. Gender Gaps in Employment rates:

Figure 5 presents Employment Rates for all men, all women, as well as college educated men and women (as a percentage of the working age population – 16 to 65 years). The first thing to note is that employment rates have increased for all women, independently of their educational level. Still, employment rates for college women are much higher than for the rest. This education premium in employment rates was much larger for women than for men.

[Insert Figure 5]

Following the precise definitions of the OCDE (Employment Outlook 2010) we compute Gender Gaps in employment rates as the difference between the rates of males and females – the use of this definition makes them comparable to those of other countries. Changes in gender gaps in employment can be better appreciated in figure 6, where we depict overall and College Gender Gaps in employment rates. There has been a clear decrease in gender gaps in employment rates over the last 15 years, and the speed of this decrease is similar considering all men and women than when restricted to individuals with a college education. However, the level of the gap is remarkably different: For college individuals, the gap decreases from around 12% (in 1996) to around 2% (by 2010), whereas if we consider all individuals, the employment rate gap ranges from 27% (1996) to 12% (2010). Therefore, as of 2010, there is an almost negligible gap in employment rates for college individuals whereas this is still of a substantial size for the rest of the population.

[Insert Figure 6]

Increases in women's labor supply are often negatively associated with fertility rates. However, the sharp decline in fertility rates in Spain took place in the mid-seventies. From the late eighties to the present day fertility rates have remained stable in Spain and – at around 1.3 births per mother on average- during the period under consideration (1996-2010). Hence the fall in employment gender gaps is unlikely to be due to changes in fertility rates, but rather to the changes in the way women are able to reconcile family and work.

2.2.2. Gender Gaps in Part-time employment rates:

Figure 7 and 8 present the relative incidence of part-time employment for total and college women overall and by age group respectively. These values are relative to men since they are computed as the number of employed women in part-time work divided by the total number of part-time workers. From figure 7 we observe that the gaps are increasing over time and that the relative incidence is clearly smaller among college workers – although in the last years, both gaps tend to converge, mainly as a result of a more extensive use of part-time employment among college women.

[Insert Figure 7]

Figure 8 shows that total women aged 30-45 is the group with the highest relative presence in part-time jobs (around 85%), closely followed by total women older than 45. The youngest groups of women, both overall and college-educated, shows similar trends, lying almost all the time about 20 pp. below the relatively older ones, what indicates that the gap in part-time rates with respect to young men is of smaller size. More interestingly, from the figure we also observe a clearly distinct behavior of college and total women for the two oldest categories of age. In particular, the relative incidence of college women aged 30-45 in part-time jobs is close to the corresponding total for women in the same age category but it increases relatively more over time. Something similar occurs with the oldest group of college women, with an increasing presence in part-time jobs over the period under consideration, so that the convergence observed in the gaps for total and college workers already observed in figure 7 is mainly driven by the increase in the relative presence of college women older than 30.

[Insert Figure 8]

2.3. Gender Gaps in Labor Market Performance

Next we provide descriptive evidence on gender differences in the labor market performance. A first obvious indicator of such performance is earnings. A second one is the access to top labor market positions – managerial jobs.

2.3.1. Gender Gaps in Annual Earnings

Unfortunately, we do not have time series information with average wages for representative men and women. Instead, information on wages, and therefore gender wage gaps, can be extracted from different waves of Spanish data of the European Earnings Structure Survey – 1995, 2002 and 2006. In addition, for the years with no survey during the period 2004-2009 the Spanish Institute of Statistics updates information⁵ on annual earnings by gender and age for all workers, although information is not reported by different educational levels. Figure 9 provides this information for all workers. For workers younger than 30, the gap is smallest, around 15%, and it is quite stable over time. Gender gaps are highest for oldest men and women – older than 45, where gender gaps reach 35% in 1995 but decrease by 10 pp. as of 2009. For intermediate ages, 30-45, the gender gap is around 24% and it remains quite stable over time.

⁵ These estimates of gross annual earnings are obtained by combining information from the Social Security files and the IRPF reports of the State Agency of Tax Administration, together with the variables occupation and working hours from the Quarterly Labor Cost Survey conducted by INE.

[Insert Figure 9]

For college workers, we only have information for three time periods: 1995, 2002 and 2006 – the three releases of the European Earnings Survey for Spain. Figure 10 presents the gender gaps in annual earnings for different age groups. All we can observe is that the picture is not very different from the one presented above: Gender gaps are smallest among younger workers, but over time there does not seem to change significantly.

[Insert Figure 10]

2.3.2. Gender Gaps in Access To Managerial Jobs

Previous studies have documented a significant gender gap in top managerial jobs. This is particularly apparent for the group of college men and women⁶. This may be, in part, the result of women's preferences for more flexible jobs allowing better reconciliation between work and family life. In part it may also be due to greater difficulty for women to access these top jobs. Figure 11 presents this trend for college male and female workers (as a percentage of employment). The first interesting issue to highlight is that very few workers access these jobs. Top managerial jobs constituted less than 1% of female jobs in 1996 and 1.5 % by 2010. In comparison 2.3% of males were in managerial jobs in 1996, and 3% by 2010.

[Insert Figure 11]

When we look at the relative incidence of women in managerial jobs by age groups, we can see – figure 12, that the relative presence of women is highest among the youngest group, and moreover, it increases with time – from 26% in 1996 to 50% by 2010. Note however that the overall incidence of managers in this group is tiny. With respect to the other age groups, the presence of women is relatively low, although it has increased from 8-12% in 1996 to 15-25% by 2010 (depending on the age group).

[Insert Figure 12]

3. Policy measures undertaken in Spain to reconcile family and work

During the 1990s and 2000s, Spain implemented specific policies to help workers reconcile work and family. The first and most important one was the Law of November, 1998, which concerned a change in the regulation of Part-Time Work. The second one was the Gender Equity Law of 2007. In this section, we present the main features of each of these policies.

⁶ For instance, Mateos, Gimeno and Escot (2011) find a really scarce presence of women on the boards of directors from the top 1000 Spanish companies in 2008 of around 6%.

3.1. November 1998 Law: Regulation of Part-Time Work

Part-time working in Spain was much less widespread than in most other European Union countries. To encourage its use, improve its quality and increase the social welfare protection of part-time workers, major reforms were introduced in November 1998. The reform introduced certain improvements in the regulation of part-time working, including clarification of some rights of workers with part-time contracts, better social welfare protection, the extension and stabilization of relief contracts and greater stability in part-time contracts. The most important changes that the reform introduced were the following:

- The principle of non-discrimination between full-time and part-time workers was affirmed.
- Greater scope was given for partial early retirement and relief contracts, which had been used very little.
- Social Security contributions for additional hours are now included in the calculation of contribution periods for entitlement to Social Security benefits, and in the calculation of the regulatory basic amounts for those benefits.
- Job stability in part-time contracts is reinforced with incentives for indefinite contracts and the changeover from short-term part-time contracts to indefinite ones

3.2. Other policies related to family:

In June 1996, the European Union Directive on parental leave (96/34/EC) came into force. The Directive provides a set of minimum requirements all member states must meet; in particular, each employee (male or female) should be entitled to at least 3 months of parental leave after the birth or adoption of a child. We next summarize the basic regulation of family policies in Spain since the beginning of the nineties.

(i) Maternity Leave:

- New parents in Spain have 16 paid weeks of maternity leave, two paid weeks of paternity leave, up to three years of child-care leave for each parent, and the right to work part-time until their child is 6 years old. Of all of these types of leave, only six weeks of maternity leave is mandatory.
- Spain guarantees 16 weeks of maternity leave. New mothers must take six weeks immediately after childbirth. They may take the remaining 10 weeks before or after giving birth, on either a part-time or full-time basis.

- During maternity leave, mothers receive Social Security payments equal to 100 percent of their usual salary. To qualify for leave and benefit, women must be currently employed, self-employed, or receiving unemployment benefits, and must have made Social Security contributions for at least 180 days in the seven years prior to taking leave, or 360 days in their entire working life.

(ii) *Paternity Leave:*

Until 2007, Spain basically followed the European guidelines with regards to Paternity Leave. However, by 2007, Paternity Leave was enhanced with the New Gender Equity Law, which introduced the following measures:

- New fathers receive two different types of paternity leave. First, they receive two employer-paid days for having a birth in their family, or four days if travel is necessary for the childbirth.
- Second, fathers are entitled to paternity leave of 13 calendar days, paid by Social Security, with benefits and eligibility requirements equal to those that apply to new mothers, described above.
- Finally, as with maternity leave, fathers have the additional guarantees of returning to the same position at their employer and having two 30-minute feeding breaks during the first nine months of their child's life (although if they opt to use these by shortening their workday, they may only reduce it by 30 minutes per day).

(iii) *Childcare Leave:*

Since the Gender Equity Law of 2007, after maternity and paternity leave, parents may both access child-care leave: an unpaid leave of absence that can last until the child's third birthday. Both parents can use this leave simultaneously, unless they are working for the same employer (in which case the employer may object). Some interesting insights regarding childcare leave are described below.

- Child-care leave must be taken in one uninterrupted period, but may be taken on a full-time or part-time basis. To access child-care leave, parents must have at least one year's service at their current employer. If parents take more than one year of child-care leave, employers must only guarantee a similar post upon return.
- If parents wish to extend their leave beyond child-care leave, they may take an additional "voluntary leave of absence", which can last between four months and five years.
- Finally, all parents have the right to request part-time schedules until their child's eighth birthday. In doing so, parents may lower their work schedule to between one-half and seven-eighths of their usual schedule, but the employer is permitted to lower their salary accordingly.

4. Gender Gaps in Labor Supply and Performance in the Labor Market along the life cycle

At this point we focus on the evolution of gender gaps in labor supply and wages over the life cycle of women and men. This allows, on the first hand, to compare gender gaps at different ages, in particular, at pre-maternal and post-maternal ages. If these indicators show that gender gaps enlarge between 30 to 40 years of age, this could be preliminary evidence of the importance of family issues in the professional careers of women versus those of their male counterparts. Second, by comparing gender gaps along the life cycle for different birth cohorts it is possible to assess the changes with respect to family and work balance of the Spanish women. We will focus mainly on the behavior of college-educated women.

4.1. Employment Rates along the life cycle

Making use of the *Spanish Labor Force Surveys* from 1986 to 2011, we construct Employment Rates as the ratio of individuals who are working at the time of the survey relative to the total population. For our analysis, we are restricted to nationals aged between 25 and 60 years. Moreover, in order to assess how these rates evolve for different groups in our sample, we also construct indicators for gender, education – college/non-college, and for different age intervals. Figure 13 presents Life Cycle Employment Rates for college-educated females (y-axis) for seven age groups (x-axis). Each line corresponds to a different cohort. i.e., to women born in different years⁷, and therefore, for each of them it is possible to look at average changes in labor market indicators throughout the life cycle.

[Insert Figure 13]

The figure shows that the employment rate of college educated women increases rapidly with age with no significant “dip” during the child-rearing years⁸. Moreover the more recent cohorts have increased participation at all ages, especially during the parenting years. Figure 14 presents the relative employment rate of college women with respect to men. Traditionally the family has not played any role in the male work decisions. Therefore, if family is basically what makes the difference between male and female decisions in the labor market, the gender gaps may help to see the extent to which family plays a role in female labor supply decisions.

⁷ Given the data availability we can construct 4 different cohorts, five years apart from each other, and thus cover from those born between 1960 and 1975. Moreover, since we have constructed 7 age categories that group 3 years each, the cohort born in 1960 refers to those individuals born between 1959 and 1961 and that are between 25 to 27 years of age in 1986. The same applies for the rest of cohorts.

⁸ The same figure for total instead of college women is available from the authors upon request. It reveals lower rates of employment along the life cycle and a similar concave profile as that of the college only for the two youngest cohorts.

[Insert Figure 14]

The figure reveals that at very young ages, college female employment rates are higher than those of males. However, by the age of 30 – the beginning of maternal age, there is an employment gender gap of 15% for the oldest cohorts and 7% for the youngest one. The gender gap along the life cycle has a U-shape, and by the 40s, the employment gap is reduced, although parity in employment rates is never reached at any older age.

4.2. Part-Time versus Full-Time Jobs along the life cycle

Family issues are very likely to affect not only the extensive concept of labor supply – work or not, but rather, the intensive margin. Given that childcare is very time intensive, it may entail a reduction in hours worked. Part-time versus Full-Time Work indicates, in absence of precise measures of actual hours worked, a usual approximation of time dedicated to work. Figure 15 describes Life Cycle Part-Time Rates (as a % of employment for college women)⁹. Two issues deserve attention: The first one concerns comparison across birth cohorts: Part-Time has been increasingly used by more recent cohorts at all ages. Second, we can also see a slightly increasing pattern with age, especially for the two youngest cohorts.

[Insert Figure 15]

The relative incidence of women in part-time jobs offers a very similar pattern to the absolute one since the incidence for men is almost negligible – Figure 16. For the oldest cohorts, women represent on average around 80% of the total labor force in part-time jobs and this share does not seem to change much along the life cycle. However, for the youngest cohorts – especially for those born in 1975, the relative presence of women is gradually increasing with age, starting with 60% at ages 25-27 and reaching the peak at ages 37-39 with a relative presence of nearly 90%. This again confirms the fact that the youngest generation of women uses part-time employment to a greater extent especially at maternity ages what could be associated with a need of reconciling work and family. Moreover, additional evidence¹⁰ suggests that whereas in 1996 only 15% of college females aged 35-39 declared to work on a part-time basis for family reasons, by 2004 that fraction had doubled and today it reaches 45%. This increase in the last decade could be associated with the 1998 Law of part-time described in the previous section.

[Insert Figure 16]

⁹ We do not provide evidence of part-time rates for total women since the patterns are basically the same. We neither depict part-time rates for males because they are negligible at all ages and for all birth cohorts.

¹⁰ The *Labor Force Survey* includes a question about the main reason for working part-time, so that we can compute the frequency with which college women answer that the reason is the family for each wave and for the different age groups.

4.3. Gender Gaps in the access to Managerial Jobs along the Life-Cycle

In order to complete the descriptive information provided in this section, we describe the incidence of college-educated men and women in managerial jobs and look at possible occupational changes along their life cycles¹¹. Figure 17 presents the incidence of female workers in managerial jobs along the life cycle and for different birth cohorts. As we saw before, the average percentage of women who are top managers is very low. However, a clear increase with age - more pronounced for the youngest cohorts than for the oldest ones, is also observed.

[Insert Figure 17]

Finally, when comparing men and women along the life cycle, we can see – figure 18 that there is a clear decrease in the relative incidence of women in managerial jobs with age, and the pattern is similar across cohorts. Therefore, there seems to be a strong decreasing correlation between relative incidence of women in managerial jobs and age, which somewhat suggests a connection between family and access to managerial jobs.

[Insert Figure 18]

5. The impact of Children on Gender Gaps in Labor Supply and in Labor Performance

In this section we quantify the impact of children in each of the labor market indicators presented above – employment rate, part-time employment rate, wages and probability of getting a managerial job. To do so, we use two micro-data sets: The first one is the first wave (1994) of the Spanish data from the European Household Panel, and the second corresponds to the 2008 wave of the Spanish data of the European Survey of Living Conditions (EUSILC). One of the advantages of using these panels is that their design is the same which makes them highly comparable. Moreover, these panels are the only datasets containing individual information on demographics, labor market indicators and family issues for individuals in Spain. We use these particular waves so as to compare evidence from the mid-nineties with the more recent years– 2008 is the last available wave of the EUSILC¹². In addition, it is interesting to take into account that those college individuals included in the 1994 sample, whose age is between 25 and 45 years of age belong to the two oldest birth cohorts analyzed in section 4 – those born during the 1960s, whereas those included in the 2008 sample are individuals who belong to the two latest cohorts – born in the 1970s.

¹¹ Unfortunately, the scarce data on wages for Spain does not allow us to construct gender wage gaps along the life cycle for different cohorts. Figure 10 already described gender wage gaps at different ages, but we cannot go further in the description of gender wage gaps for Spain along the life cycle.

¹² At the same time, the period under study in this section corresponds basically to the one presented in the descriptive part of the chapter, which facilitates somehow the interpretation of the results and helps relating them to the stylized facts already shown in the previous sections.

5.1. Average Gender Gaps: 1994 versus 2008

Before getting into the estimation of the impact of children on the observed Gender Gaps, it is interesting to look at the raw average gaps for the two periods under consideration. Since our main goal is to detect the extent to which family issues (children) affect these gaps for the highly educated men and women, we have restricted individuals to be between 25-45 years of age, when parenting affects labor choices more strongly¹³ and to those who have achieved the highest level of education (ISCED 5-7). Table 1 presents the average Employment Rates, Part-time employment Rates and Incidence in Managerial Positions (following the corresponding ISCO classification of occupations for each period) for different type of college individuals, in particular, for Total Men and Women, Men and Women without children and Men and Women with children¹⁴. In addition average gender gaps are reported for all individuals and separately depending on the family situation. Finally, the family gap is also included which compares the rates of women with and without children.

[Insert Table 1]

Employment Rates: Table 1 shows a substantial increase in the employment rate of all college-educated women between 1994 and 2008. However, this increase is particularly large among women with children – around 17 percentage points (pp.), whereas for women without children the increase amounts to 11 percentage points. The employment rate of men, to the contrary, is very stable. With respect to gender gaps, these are particularly high among men and women with children (31% in 1994), although by 2008 the gap decreases to less than half – to 14.4%. It is also interesting to observe that the gender gap in the employment rate among men and women with no children disappears by 2008. Finally, comparing women with and without children – family gap, we can observe that it is substantial in 1994 (11%), but decreases to a great extent (5%) by 2008.

Part-time employment Rates: Part-time employment is essentially a Female choice. The incidence of part-time employment among college male workers - fathers or not, is negligible. However, for women with children the increase in the use of part-time employment between 1994 and 2008 is substantial (from 11 to 19%), whereas for women with no children the contrary can be observed – a decrease from 15 to 11%. This first raw evidence clearly suggests that the use of Part-Time Employment and family issues are strongly positively correlated, at least along the 15 years under study. Hence, the gender gap in part-time work increases among men and women with children and decreases among their counterparts without children, but the change is basically driven by female workers. Finally, the family gap increases considerably,

¹³ This is the standard age interval considered by other studies which have analyzed the impact of children on gender issues, see Harkness and Waldfogel (2003), and Moluenga and Molina (2009) among others.

¹⁴ With children refers to having at least one, regardless of the total number of children or their age.

given the more extensive use of part-time work by women with children in 2008 as compared to 1994. This might be in part related to the political measures already described in the third section of the chapter.

Access to Managerial Jobs: The first feature to highlight from the last two columns of Table 1 is that the incidence of college men and women aged 25-45 years working in managerial jobs is very low. For women, particularly if they have children, is null, and for women with no children amounts from 1 to 2 percent. For men, it reached 7% in 1994 but by 2008 it has decreased to half – 3%. Its incidence is higher for men with children than for childless men. Contrary to what we observed with the part-time employment indicator, in this case the gender gaps reflect the evolution of male incidence in these jobs, given that women are barely represented in these occupations, particularly if they have children. This is consistent with the descriptive figures we depicted in section 2, although the percentages there were somewhat higher for both groups, which could be associated with the selected age range of our sample.

In addition to these three indicators, Table 2 presents the descriptive evidence of the most obvious indicator of labor performance in the Job Market – **(Log) Hourly Wages**. When comparing log hourly wages of men without and with children, the first issue to highlight is that fathers earn more than childless men in the two periods, whereas the contrary happens for women. With respect to the gender wage gap, it is slightly higher in 2008 than in 1994 – it rises from 3.2% to 4.5%. In addition, comparing men and women without children, it can be seen that childless women earn more than their male counterparts in 1994 (6% more), but by 2008 the gender gap reverts sign, favoring men in around 5%. When comparing men and women with children, men earn between 5 and 6 percent more in the two periods under consideration. Finally, note that these gender gaps are much lower than those observed for the whole population of men and women – for all educational and age levels.

[Insert Table 2]

5.2. The impact of children on each of the Labor Market Indicators

After presenting the raw gender gaps in the labor market indicators, we proceed to isolate the impact of children from other potential determinants. Tables 3, 4 and 5 present the estimates from discrete choice (Probit) estimations of three outcomes: (i) the Probability of Working versus Non-working, (ii) the Probability of working Part-Time versus Full time, and (iii) Probability of having a managerial job. In all estimations we use the pooled sample of college men and women of 25-45 years of age. The tables display the marginal effects of the variables related with having children, as well as the marginal effect of children for different groups: women with children versus women without children - marginal contribution to the family gap, and women versus men - marginal contribution to the gender gap.

Depending on the specification, controls for age, presence of a working couple, other family income and regional fixed effects are also included. Our final preferred family specification is captured by the variable “**Any child**”. Estimations are done separately for 1994 and for 2008 to compare the impact of having children for the three indicators in the two periods. In the first column of each of the two periods – column [1] - the raw marginal effect of children is displayed – no additional controls included. Columns [2] and [3] report adjusted marginal effects of having children, therefore including the additional set of controls in the estimation. In column [2] we assume exogeneity of the children variable. However, given the potential endogeneity of the decision to have any child for any decision related to the labor market (work, work part-time or work in managerial jobs versus others) we must include a specification where we instrument the children variable, so that we avoid spurious causal interpretations of the impact of interest due to reverse causation in the estimation equation. Conceptually, it is not an easy task in this setting to think of an obvious valid instrument. Following Harkness and Waldfogel (2003) we use as an instrument the fraction of women who have any child by region, age and marital status (married or not). The correlation between this variable and the three labor market indicators is very significant (i.e. with working amounts to 0.65 in 1994 and 0.73 in 2008).

The computational method that we use to calculate the IV estimates for each column [3] is two-stage least-squares (2SLS). In the first stage, *Any Child* is regressed on all of the exogenous control variables by using a probit model, including also the instrument in the equation of interest. After obtaining the predicted values of that equation, in the second stage, the regression of interest is estimated as usual, except that the endogenous variable is replaced with the predicted values from the first stage. From the results of the first stage estimation, we can assure that the instrument is a good predictor of the endogenous variable¹⁵ – Any Child. Unfortunately, the additional requirement for the instrument to be valid (it should be uncorrelated with the error term in each equation of interest) is not testable in exactly identified models as we have here. However, the fact that its correlation with each of the labor market indicators is close to null seems to suggest that the orthogonality condition is not violated.

5.2.1. *The Impact of Children on the Employment Decision*

In 1994, having any child decreases the probability of working for women with respect to men by 22% – coefficient of *Female*Any child* in the third row of the table. By 2008, this differential increases to 26%. However, the total gender gap, which is composed of the specific gender effect plus the children differential effect for women,

¹⁵ To verify that the chosen instrumental variable is not weak we compute the F-statistic against the null that the instrument is irrelevant in the first-stage regression which turns out to be much larger than 10, what ensures that the instrument is a good predictor of the endogenous children variable.

decreases from 28% in 1994 to 24% by 2008. This is because the specific gender effect – coefficient of *Female*, decreases significantly from 1994 to 2008. In addition, when comparing mothers with childless women (family gap), having children decreases the probability of working by 10% in 1994, but interestingly, the impact of children by 2008 is even higher – reduces the probability of working by 17%.

[Insert Table 3]

In summary, the results suggest that in the mid-nineties employment levels of college men and women differ mainly as a result of the specific gender gap, rather than as a result of family reasons. This gap may arise as a result of social norms, which prevent that even college women have a high attachment to the labor market. This is reversed clearly by 2008, where there is no specific gender gap in labor supply, but instead, family issues generate a clear gap in employment between college men and women.

5.2.2. The Impact of children on the Decision of working Part-Time

Table 4 presents the estimations on the impact of children on the Part-Time versus Full-Time choice for those who have decided to remain in the labor force. The most interesting result is that the impact of children in the use of Part-time employment for women with respect to men (coefficient of *female*any child*) is not significant in 1994, but increases substantially by 2008 – to 13%. In addition and consistent with this (given the small incidence of Part-Time work among men, either with or without children), having children does not increase the use of Part-time employment for women in 1994 (which is consistent with a lower part-time employment rates for women with children with respect with women without children observed in table 1) but it does by 2008. If we consider the whole adjusted gender gap in part-time rates i.e., the specific gender plus the family effect, this amounts to 7% in 1994 (which comes basically from the specific gender effect) but rises to 22% by 2008, where the specific female effect is added to the significant family effect.

[Insert Table 4]

In summary, it looks as if by 2008 some women with children who have decided not to quit the labor market decide to use the possibility of Part-Time Work to reconcile family and work¹⁶.

¹⁶ We have not taken into account the possible selection of women into the labor market in this estimation because our aim is not to infer the decision of part-time for all college women, but rather the determinants of this decision for women who have already decided not to quit from the labor market. Our aim is to measure to what extent women with children who have decided not to quit from the labor market decide to go on part-time to facilitate family and work life. The same applies to the estimation of the incidence in managerial jobs, as well as the wage estimations.

5.2.3. *The impact of children on the access to Managerial Jobs*

Table 5 shows that having children decreases the probability of accessing managerial jobs for women with respect to men. However, given the almost negligible incidence of females in these jobs, this is a result of men increasing their access to managerial jobs when they have children, and not as a result of a decrease in female access to them. In addition, and consistently with the observed decrease in the incidence of males in managerial jobs by 2008, the adjusted gender gap in the access to managerial jobs decreases from 10% to 3% when 1994 is compared with 2008. Again, this is because the specific gender gap decreases, but not because of a specific family effect. In summary, we do not find much with respect to the family impact in the access to managerial jobs, partly because the incidence of men, and particularly of women, with and without children in our sample in managerial jobs is negligible.

[Insert Table 5]

5.2.4. *The impact of children on Gender Gaps in Hourly Wages*

Table 6 presents log hourly wage estimations of college male and female workers to estimate the extent to which children affect the observed gaps. We present the impact of children in the average wage gap – column [1] by including the gender indicator, the family variable and the interaction between the two. In column [2] we add the standard controls (age and its square, tenure, part-time employment, industry dummies and regional dummies) but without conditioning on occupation. Column [3] adds controls for occupation¹⁷. Finally, column [4] presents the IV estimation of the latter (more general) specification. Estimations for 1994 and 2008 are presented separately.

[Insert Table 6]

The most interesting issue to highlight is that the impact of the family differs to a great extent when comparing 1994 with respect to 2008. In 1994, there is no significant gender wage gap between childless women and men (coefficient of *Female*). However, children decrease female wages by around 13% when compared to their male counterparts. By 2008, results are just the opposite: The adjusted gender wage gap between childless women and men is significant (9% without conditioning for occupation and 6% conditioning for it) but the impact of children is negligible. This result is very consistent with what we saw in the estimations of the employment probability: As we argued before, in 1994 there is high selection in labor market entrance of college women, which results in average higher wages for them and hence in no gender wage gaps. Hence the whole wage gap is due to the impact of children. By 2008, the wage gap is basically a gender specific gap, and it is not driven by family

¹⁷ The aim for presenting these two specifications separately is to measure the extent to which part of the gender gap in wages is due to the fact that women segregate into low paid occupations.

issues, but to other potential explanations. Among these, we might tentatively mention as possibilities segregation of women in low paid jobs (low paid firms or even lower paid categories within the firm), discrimination, differences in specific skills, etc.

It is also interesting to see the different effect of Part-Time on wages when 1994 is compared with 2008. In 1994, part-time employment's impact is either positive or null, depending on whether we condition for occupation or not. However, by 2008, its impact is clearly negative, which is a more usual result. Given the low incidence of part-time work in 1994, it is likely that workers who made use of it were a very particular sample of workers. Finally, when comparing the impact of children on wages with and without controlling for occupation (2-digit disaggregation of the corresponding ISCO classification for each year) – columns [2] and [3], we find very small differences. This means that gender gaps in wages of college individuals are not driven by segregation of women with children in low paid (broad) occupations to reconcile family and work. Finally, estimations from IV methods are qualitatively identical to those of OLS, although in quantitative terms they are somewhat bigger.

5.3. Contribution of the Family to Average Gender Gaps

To finish the section of the impact of the family on Gender Gaps, we aim to quantify the absolute and relative contribution of children to each of the raw average gaps, based on the estimations presented above. This way of quantifying the impact of interest allows us to measure by how much differences in the labor market indicators between men and women can be explained by differences in their response associated with having children. In the case of wages the contributions are computed by simply multiplying the estimated coefficients of having children by the mean frequency of having children in the sample for men and women respectively. However, given that for Employment Rates, Part-time employment Rates and Incidence of Managerial Jobs the estimated models are non-linear, the absolute contribution of children to the average gap is obtained following Yun (2004), who uses an extension of the Oaxaca Decomposition Method to account for non-linear estimations¹⁸. In practice, to compute the absolute contributions we just need to multiply the estimated coefficient of interest by a proper weight, which in this context is the standard normal probability density function evaluated at the mean predicted characteristics. The relative contribution is the ratio between the absolute contribution and the raw corresponding average gap. The computed contributions are presented in the last row of Tables 3-6 both for the most general specification that includes controls and for the IV estimates when it proceeds.

¹⁸ There are alternative ways of decomposing probit functions, see Even and Macpherson (1990), Nielsen (1998), but the one proposed by Yun (2004) is the most suitable in our setting since the emphasis of our approach relies on decomposing the differences into coefficients effects. However, for comparability purposes, we have also computed the contribution of the family to these three indicators assuming linearity by taking the coefficients from the estimation of a Linear Probability Model instead of a probit.

The first thing we observe is that the relative contribution of the family to the employment gender gap was very small in 1994 but increases to 56% by 2008. However, note that average gender gaps in employment are much higher in 1994 than by 2008. Second, for those women who decide to stay in the labor market, having children contributes to explaining 4% of the gender gap in part-time work use in 1994, but this increases to 9% by 2008. Although the contribution of the family is not very remarkable in the two years, it is interesting to observe that in 15 years it has doubled, whereas the gap has remained quite stable. This means that college women with children are increasingly using part-time jobs to remain in the labor market instead of quitting for childcare issues. Third, family does not contribute to the differential impact of male and female workers in managerial jobs¹⁹.

Finally, whereas average gender wage gaps have doubled in these 15 years, the contribution of the family to it has decreased substantially: having children contributed to explaining 85-100% of the average gender gap in wages in 1994, whereas by 2008, the family does not explain it at all. Therefore, and as we already mentioned, the gender gap in average wages in the mid nineties is mainly a result of family issues, whereas by 2008, the average gap, which is double, has its roots on a specific gender gap not related with family issues, but with other potential explanations, such as discrimination, segregation into different jobs, differences in the acquired skills, etc.

6. Summary, conclusions and Policy Implications

In this paper, we explore the trade-offs between family issues and work career development for highly educated men and women in Spain. Although women reach a higher educational attainment in terms of graduation rates and on average grades with respect to men, male and female work careers often diverge substantially. Part of it may be due to a different choice in the fields of study, as analysed in chapters 4 and 5 of the present book. However, family issues are undoubtedly an important additional potential determinant of this gender divergence. Women must combine employment with home responsibilities to a much larger extent than their male partners and this affects their decisions with regards to their labor supply and hence to their labor performance in the future.

We present evidence of gender gaps in labor supply – employment rates and part-time employment rates, and in labor performance – wages and incidence in managerial jobs along the life cycle and for different cohorts – those born in 1960, 1965, 1970 and 1975. This allows, on the first hand, to compare gender gaps at different ages, in

¹⁹ By comparing these contributions with those coming from the Linear Probability Model estimations the results with the latter are qualitatively unchanged but the magnitude is always much higher (about 3 to 5 times more) what suggests that the contributions following Yun's methodology represent a lower bound, which was expected given that they are Taylor approximations and hence an error is associated to them.

particular, at pre-maternal and post-maternal ages and observe whether these indicators suggest that gender gaps emerge during parenting years – from 30 to 40. Second, by comparing gender gaps along the life cycle for different birth cohorts we can assess changes in the Spanish women (in particular, college women) with regards of their way to combine family and work. In addition to this descriptive evidence we use two micro-datasets to account for the impact of the family, more precisely, we estimate the effect of having any child on the observed gender gaps. The first one is the first wave of the European Household Panel for Spain – 1994, and the other one is the 2008 wave of the European Survey of Living Conditions. Both of them share the design and hence are highly comparable. The use of these two datasets is very convenient because, given that we consider college men and women of 25-45 years of age, the 1994 sample captures men and women born between 1950 and 1970, which on average reflects the behavior exhibited by our two oldest cohorts – 1960s and 1965s. On the other hand, the sample of 2008 captures college men and women who were born between mid-sixties and early eighties and hence basically reflects the behavior of the two youngest ones.

Our findings are consistent with the following insights: First, with respect to gender gaps in the extensive margin of labor supply – employment rates, we observe a very different pattern when comparing the mid-nineties (1994) to recent years (2008): In the former, gender gaps in employment rates are quite substantial even among childless men and women – 11%, which increase to 31% when comparing mothers with fathers. Children account for one tenth of this substantial gap, which tells us that besides children there were several other causes of inequality. However, by 2008, the pattern of gender gaps in employment rates had changed substantially: there was basically no gap between childless men and women, although this rose to 14% between fathers and mothers. Furthermore, children accounted for more than half of this gap. In summary, in the mid nineties employment levels of college men and women differ mainly as a result of the specific gender gap, rather than as a result of family reasons. This gap may arise as a result of social norms, which prevent that even college women have a high attachment to the labor market. This is reversed clearly by 2008, where there is no specific gender gap in labor supply, but instead, family issues generate a clear gap in employment between college men and women.

Second, for those men and women who stay in the labor market - workers, we look at gender gaps in labor supply in the intensive margin – number of hours, proxied by part-time employment rates. The data reveals, consistently with what it has been documented for other countries, that the use of part-time employment is basically a female choice, the use of part-time employment among men is negligible. At this stage, we see interesting differences in the behavior of women with respect to the use of part-time work in the mid-nineties as compared with the more recent years: on the one hand, the use of part-time employment was higher among childless women as compared to mothers (15% versus 11%), which suggests a very small, if any, connection between

family issues and part-time work at that time. This changed by 2008, when the use of part-time employment of women with no children was 10% but it was 18% for mothers. Additionally, children accounted for 4% of the gap in 1994 and 9% of it by 2008. The fact that children accounted only for 9% of the gap even in 2008 suggests that although children is an important determinant for the choice of part-time employment versus full time work, there may be other determinants, among others demand restrictions, which lead some women work on part-time basis. Indeed, the percentage of women who work part-time and report that the main reason for it is children amounts to 40% in 2008, which suggests that under the decision of part-time employment, although children is clearly an important determinant, there may be others, which may come from demand side restrictions.

Third, with respect to the performance in the labor market, we compare hourly wages of those college men and women who stay in the labor market. The first interesting issue we observe is that in the mid-nineties, childless women earned on average 6% more than men, which suggests that these women were a highly selected sample of college females. However, when we compare fathers with mothers, the gap is 7% in favor of men. Furthermore, children account for almost all the gap. By 2008, the pattern is quite different: the gender gap between childless men and women is of the same magnitude than that among fathers and mothers (5% in favor of men) and children do not contribute to explain the gap because the whole of it is explained before family issues play a role. In addition, selection of women into low paid occupations does not help to explain the source of the gap. In sum, the gender gap in average wages in the mid nineties is mainly a result of family issues, whereas by 2008, the average gap, which is double, has its roots on a specific gender gap not related with family issues, but with other potential explanations, such as discrimination, segregation into different jobs, differences in the acquired skills, etc.

Finally, although the descriptive evidence of the life cycle profiles of men and women suggest that female decrease her participation in top managerial jobs with age relative to men, the samples of 1994 and 2008 do not help us to account for the impact of family in this performance gap, given that the incidence of our samples of men and particularly of women into these jobs is negligible.

What are the policy implications of these findings?

As our results reveal, by 2008 childless college women behave very similarly to men in the labor market in terms of their labor supply decisions. Still, men on entrance earn approximately 5% more than their female counterparts, which might be due to differences in the chosen fields of study undertaken by men and women. If this different behavior is due to differences in preferences, there is not much to be done from a policy perspective. Rather, if females do not engage in these studies because they perceive

future discrimination in those occupations as some studies suggest (see The National Academy Press (2007), then there is scope for improvement with respect to trying to encourage women to engage in more technical studies at university degree and PhD levels. We analyzed some of these issues in the policy experiment of Chapter 2.

A second policy implication concerns the use of part-time work for mothers. Although some of them use it to combine family and work, it looks like the use of part-time employment for many mothers is not voluntary. It would be very desirable that the decision of using part-time work would be voluntary for both men and women. However, part-time work should not be the only way to combine family and work for mothers. Going a little bit further, it would be desirable that in addition to the possibility of part-time for those women for whom working part-time may be a first best choice, firms would develop other possible mechanisms to combine family and work and hence allow mothers to participate in the labor market as much as fathers in terms of their intensive margin. This can be achieved by developing flexible timing work schedules and *home-work (tele-trabajo)* not only for mothers, but also for fathers. Only if these mechanisms are widely available for mothers and fathers, we will achieve gender equality and hence allow women with children to achieve work careers similar to their male counterparts if they wish to do so. As we already said in the introduction, a shrinking working-age population and the high educational level that women are accomplishing in the last few decades, make it essential to consider women as fundamental pillars of the workforce. If they are provided with adequate mechanisms to combine family and work society will surely take more advantage of the full application of these highly educated females in the workforce throughout their whole working lives.

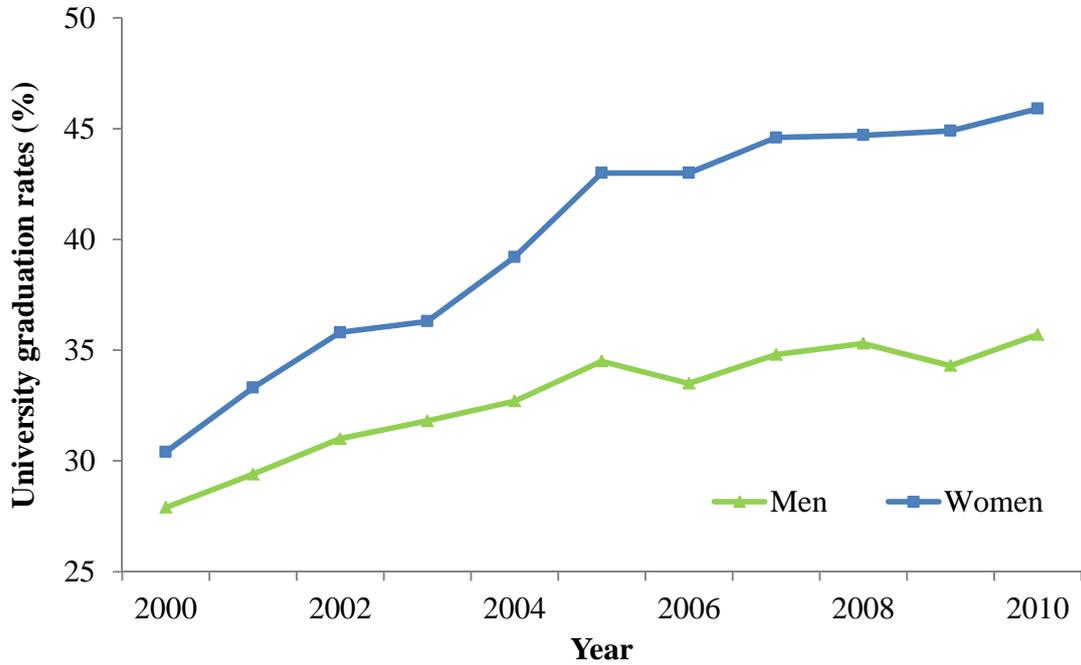
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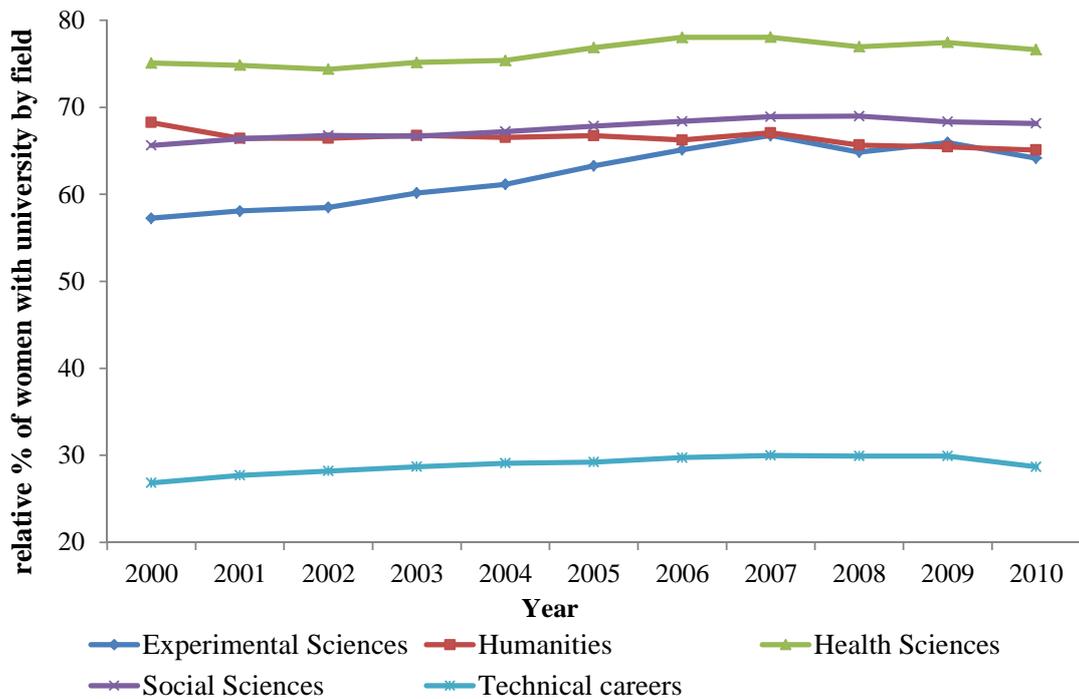
Figures and Tables

Figure 1 – University Graduation Rates in Spain by Gender (2000-2011)



Source: Eurostat

Figure 2 – Relative Presence of Women by College Major



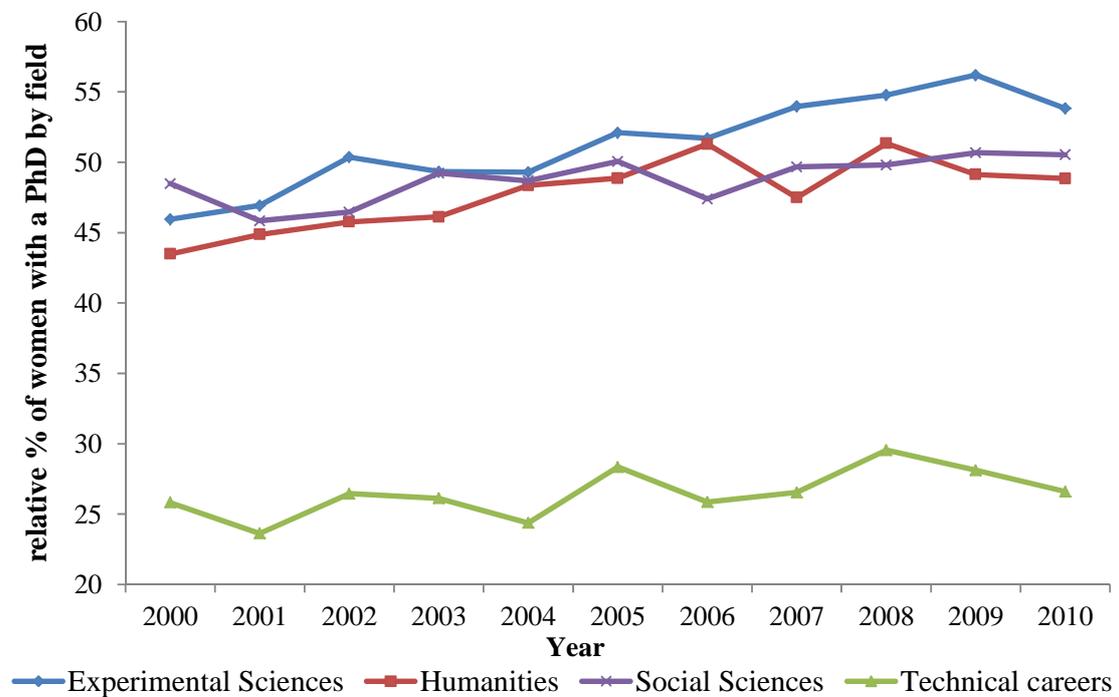
Source: Estadística de la Enseñanza Univeristaria en España (INE)

Figure 3 – PhD Graduation Rates in Spain by Gender (2000-2010)



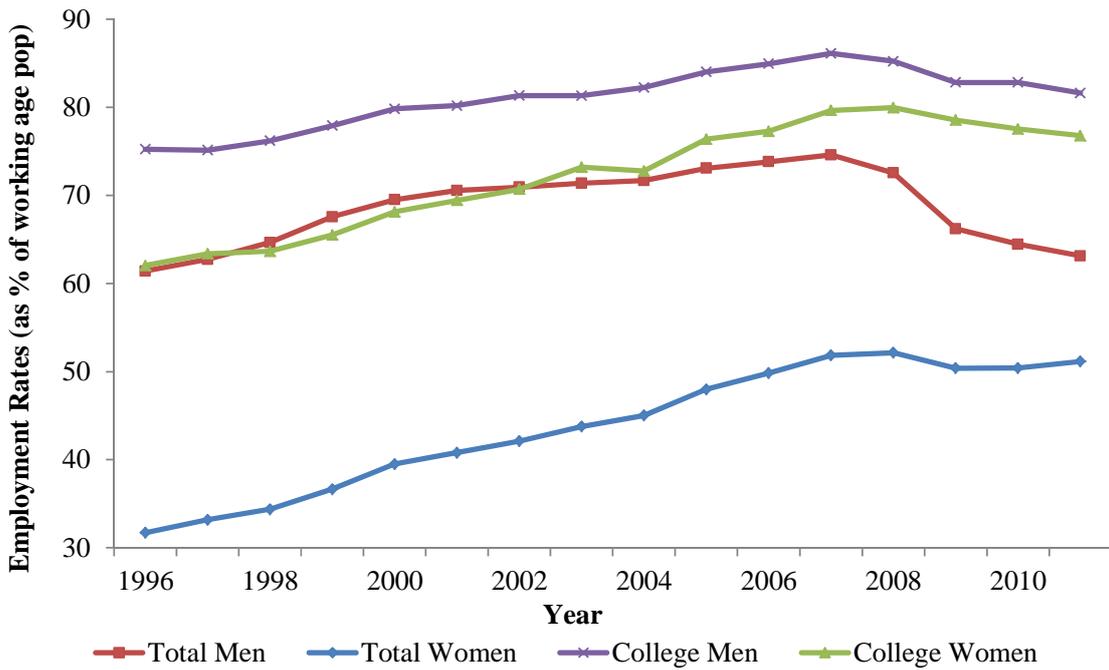
Source: Estadística de la Enseñanza Superior (INE)

Figure 4 – Relative Incidence of Women with PhD by Field of Study



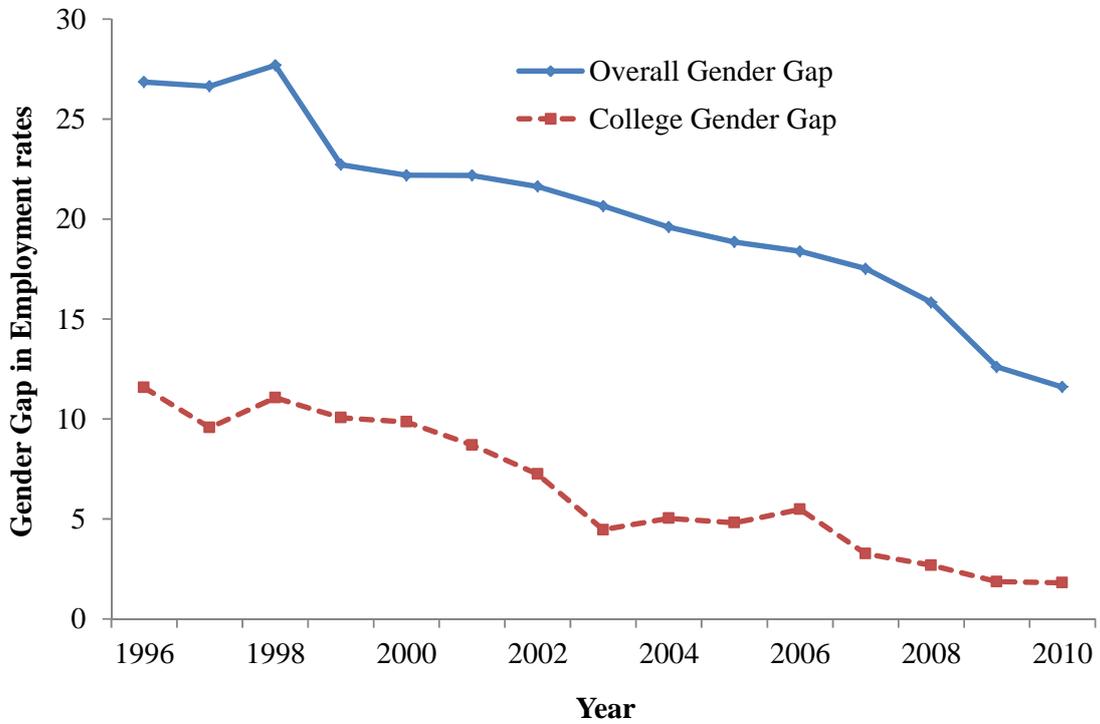
Source: Estadística de la Enseñanza Superior (INE)

Figure 5 – Employment Rates (%) –Overall and College Men and Women



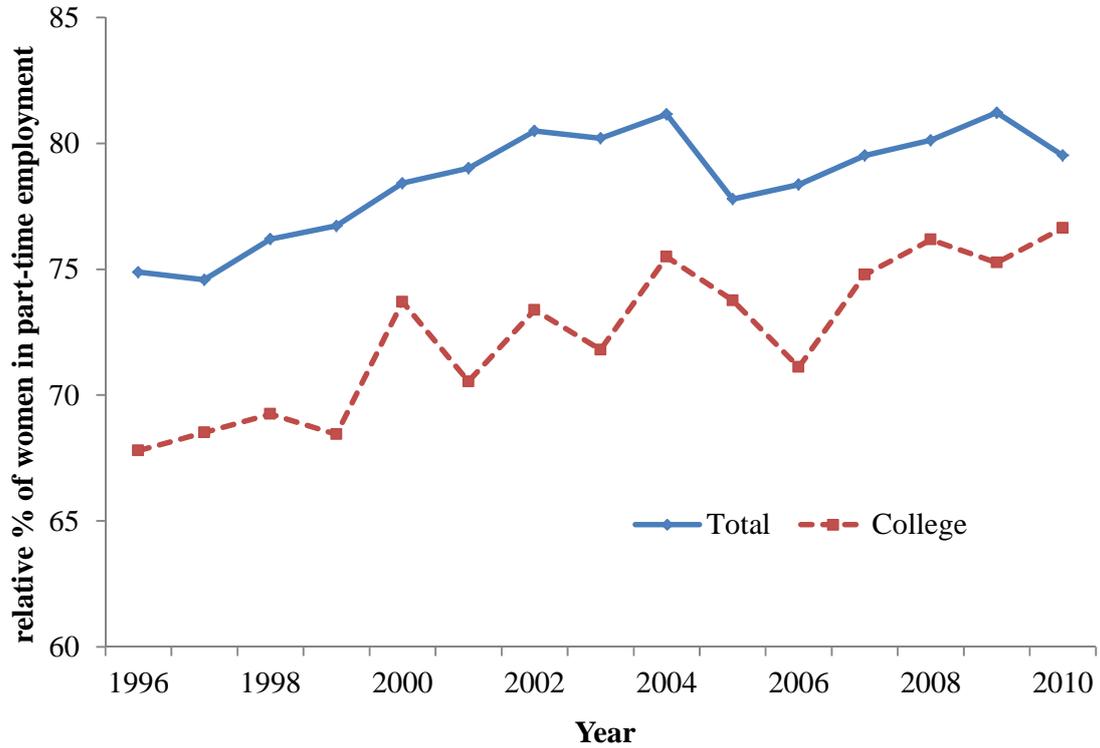
Source: Encuesta de Población Activa (INE) 1996-2011

Figure 6 – Gender Gaps in Employment Rates (1996-2011) – Overall and College Men and Women



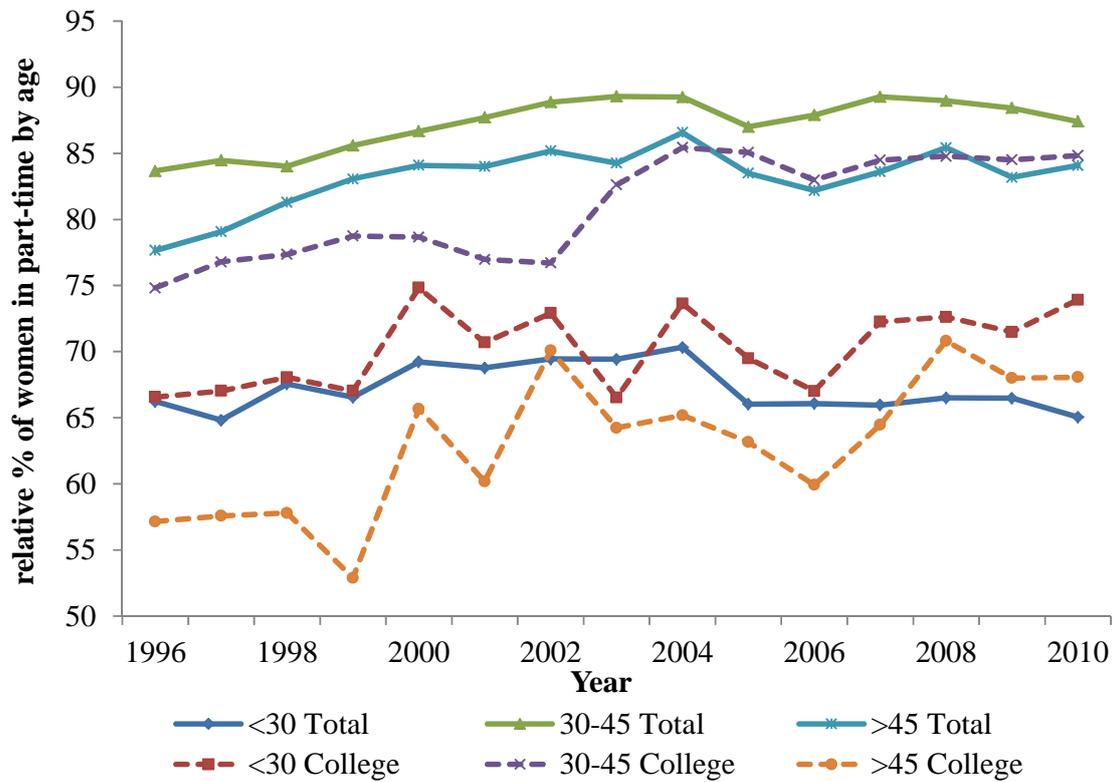
Source: Encuesta de Población Activa (INE) 1996-2011

**Figure 7 – Relative Incidence of Women in Part-Time Employment (1996-2011)
Overall and College Females**



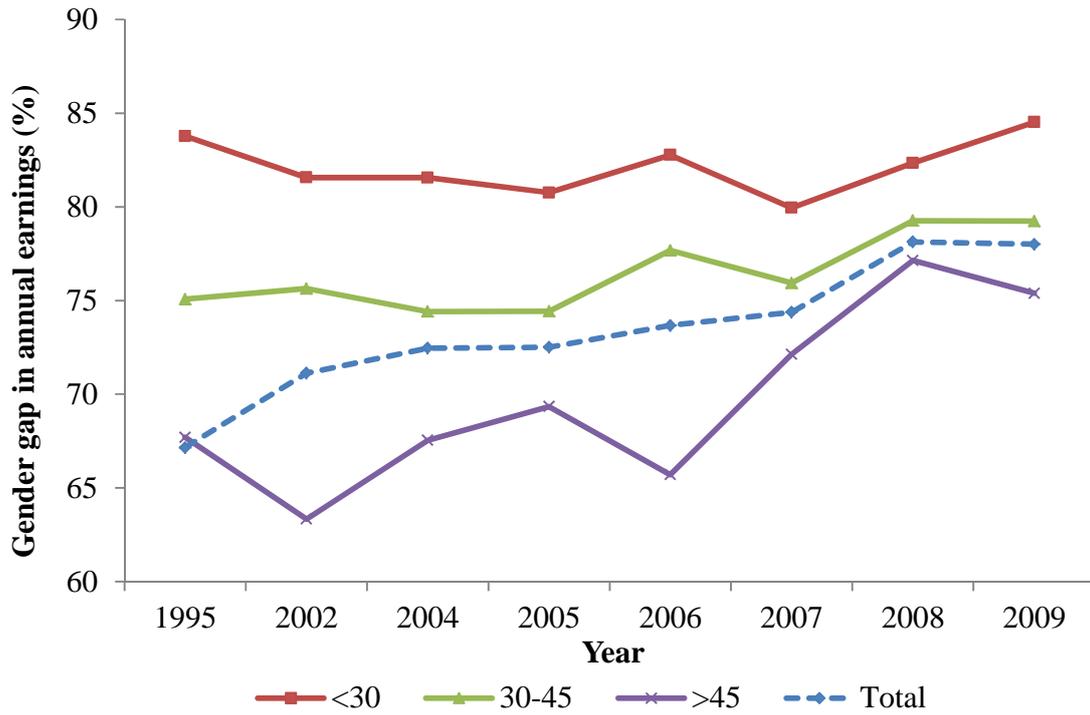
Source: Encuesta de Población Activa (INE) 1996-2011

Figure 8 – Relative Incidence of Females in Part-Time Jobs by Age



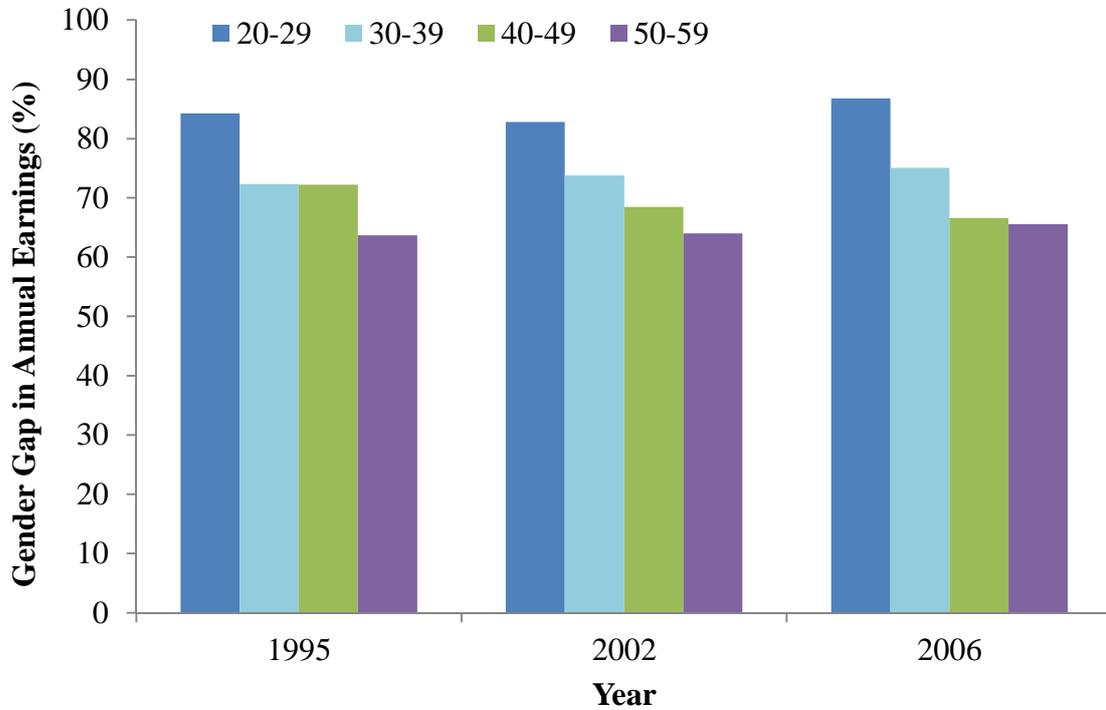
Source: Encuesta de Población Activa (INE) 1996-2011

Figure 9 – Gender Gap in Annual Earnings Total Women/Men (1995-2009)



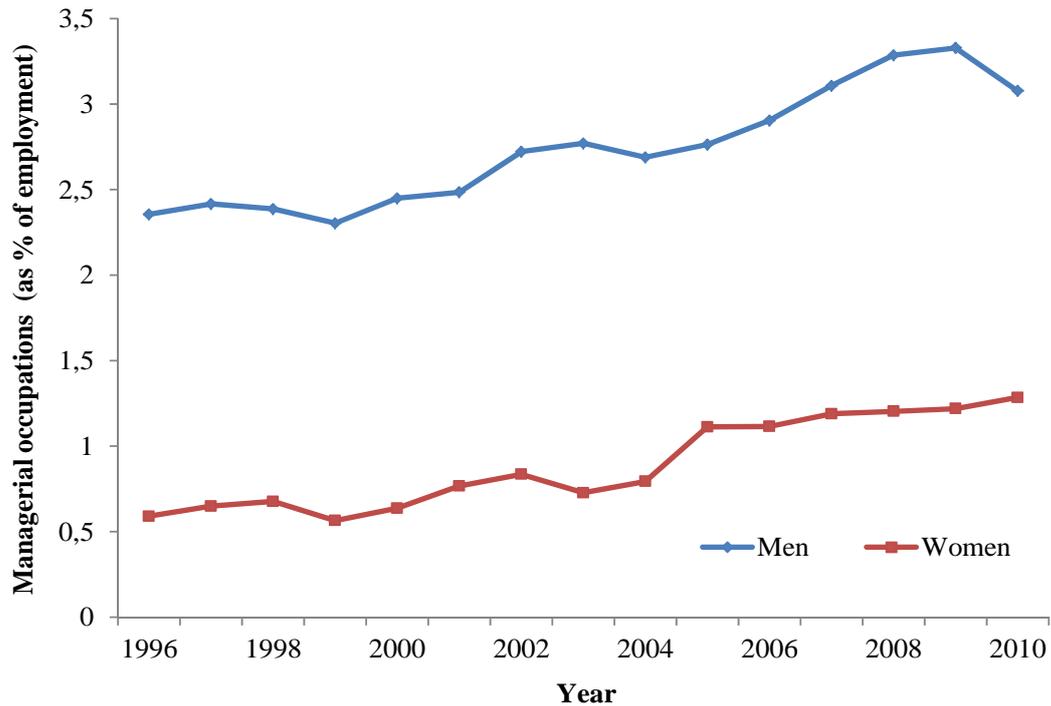
Source: Encuesta de Estructura Salarial (EES) 1995-2009

Figure 10 – Gender Gap in Annual Earnings by Age – College Workers



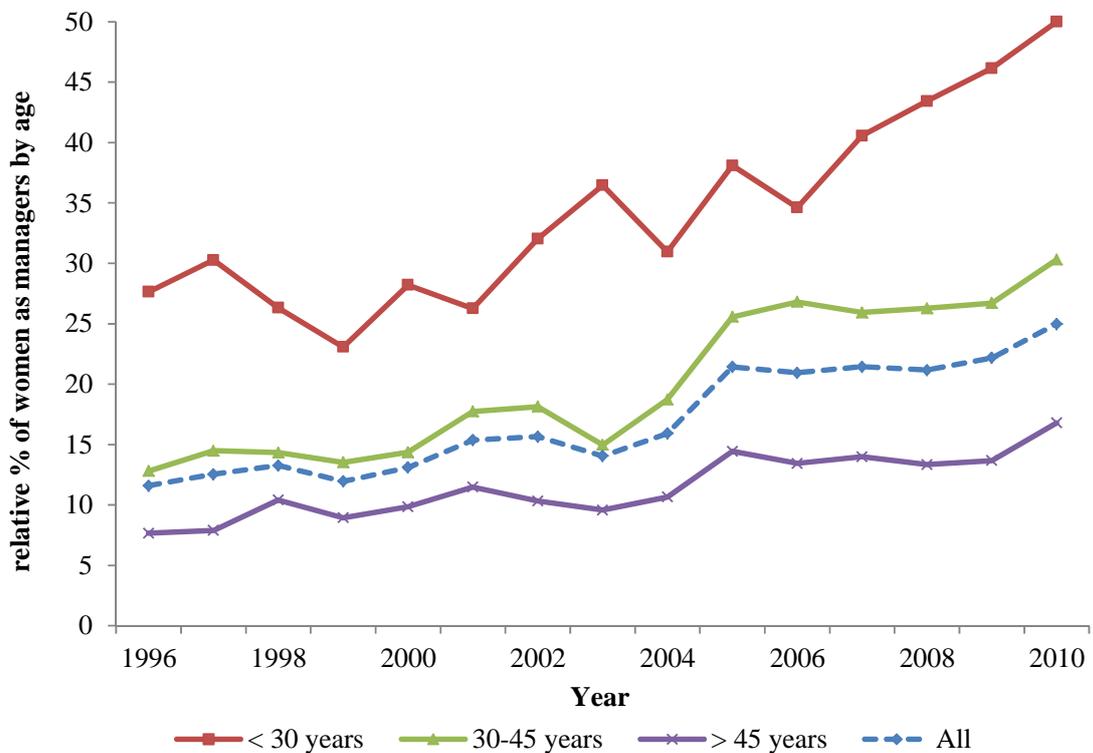
Source: Encuesta de Estructura Salarial (EES) 1995-2006

**Figure 11 – Incidence of Workers in Managerial Occupations (1996-2011)
– College Male and Female Workers**



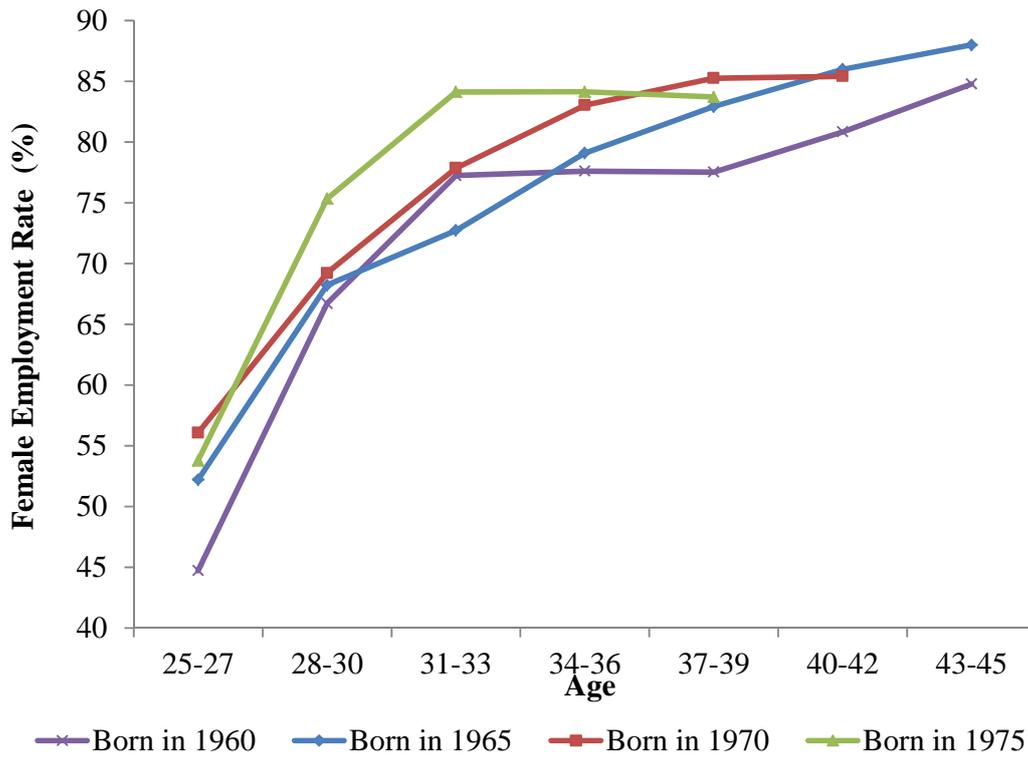
Source: Encuesta de Población Activa (INE) 1996-2011

**Figure 12 – Relative Incidence of Women in Managerial Occupations by Age
- College Workers**



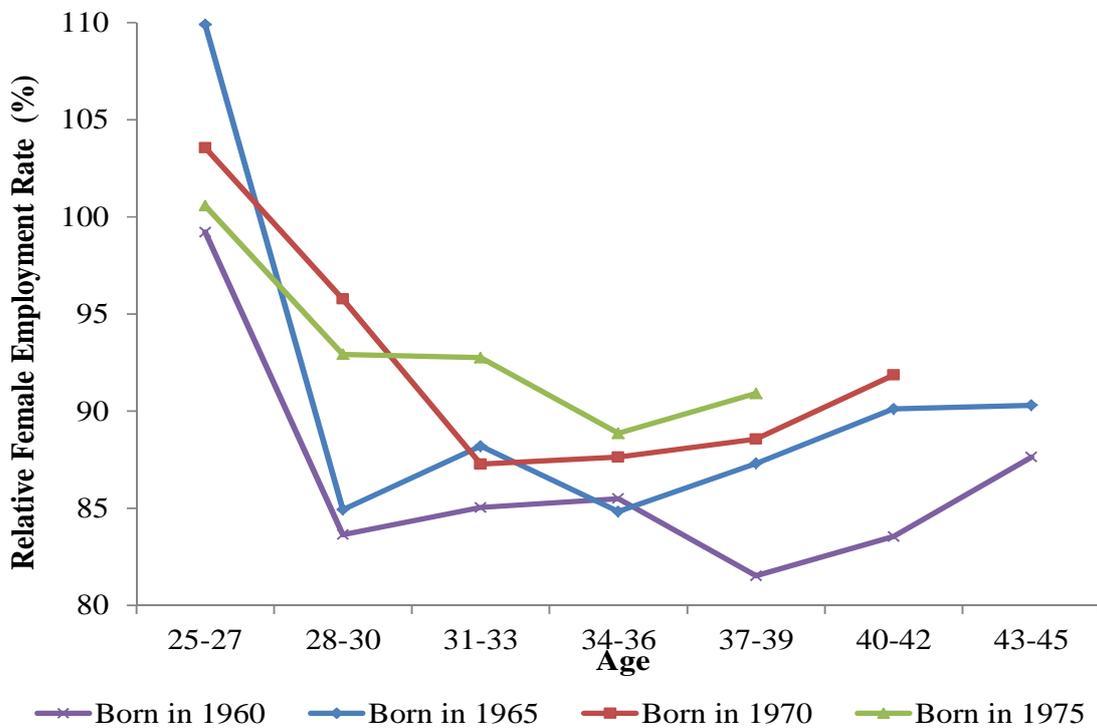
Source: Encuesta de Población Activa (INE)

Figure 13 – Life Cycle Employment Rates (%) – College Women



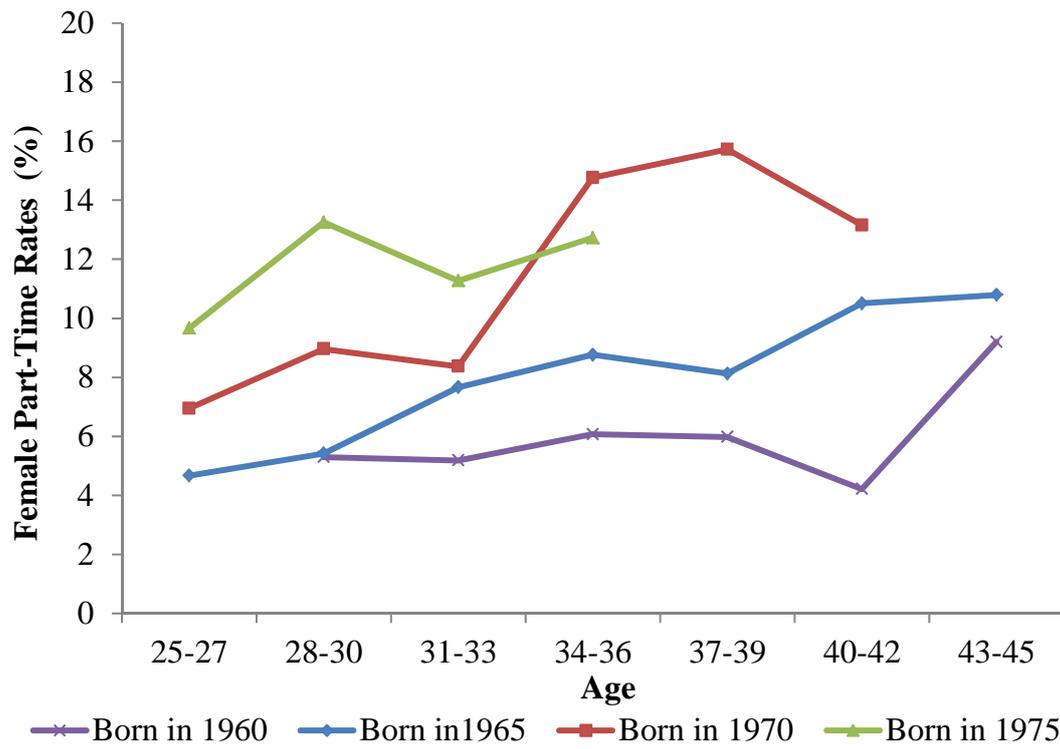
Source: Encuesta de Población Activa (INE) 1986-2011

Figure 14 – Life Cycle Relative Female Employment Rates (%) – College Women/Men



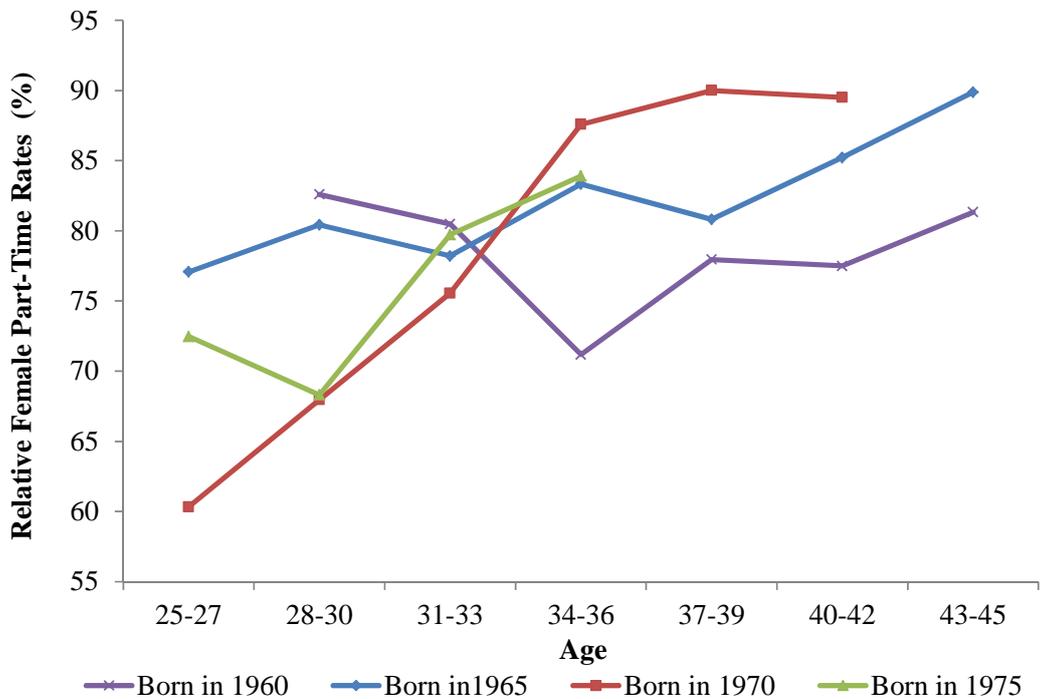
Source: Encuesta de Población Activa (INE) 1986-2011

Figure 15 – Life Cycle Part-Time Rates (as % of employment) – College Women



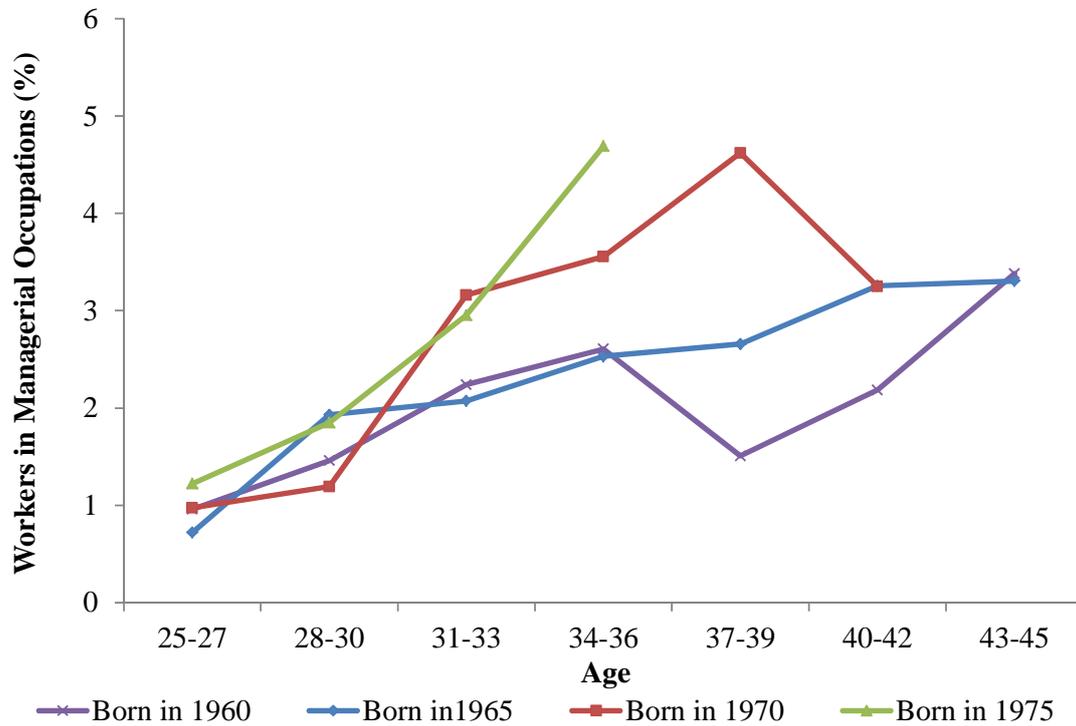
Source: Encuesta de Población Activa (INE) 1989-2011

Figure 16 – Life Cycle Relative Female Part-Time Employment Rates (%) – College Women/Men



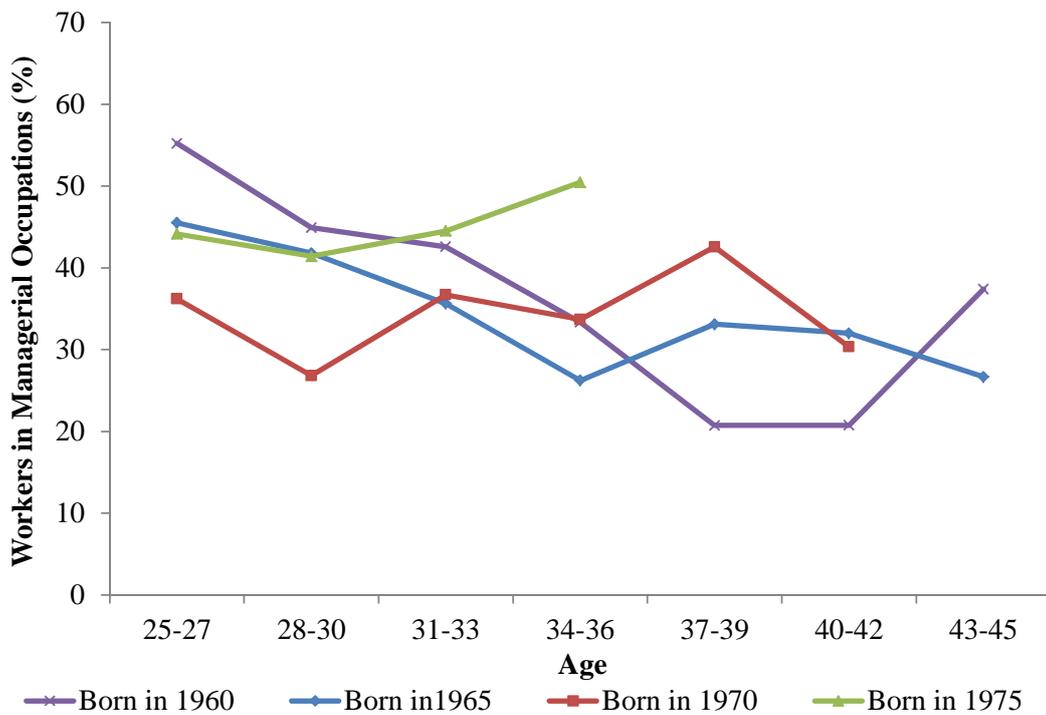
Source: Encuesta de Población Activa (INE) 1989-2011

**Figure 17– Life Cycle Incidence of Women Workers in Managerial Occupations
– College Females**



Source: Encuesta de Población Activa (INE) 1986-2011

**Figure 18 – Life Cycle Relative Incidence of Females Working as Managers
– College Women/Men**



Source: Encuesta de Población Activa (INE) 1986-2011

Table 1. Labor Market Statistics of College Men and Women Age 25-45 in Spain 1994-2008

	Employment Rates		Part-Time Rates		Managers incidence	
	1994	2008	1994	2008	1994	2008
1. All Men	93.12 (25.34)	91.82 (27.41)	2.31 (15.03)	1.84 (13.47)	6.85 (25.30)	3.14 (17.45)
2. All Women	68.52 (46.49)	85.20 (35.52)	12.33 (32.93)	14.45 (35.18)	0.98 (9.91)	0.80 (8.93)
3. Men without children	87.19 (33.54)	88.93 (31.38)	3.04 (17.24)	2.58 (15.86)	4.71 (21.27)	1,39 (11.74)
4. Men with children	95.73 (20.24)	96.72 (17.88)	2.01 (14.06)	0.71 (8.38)	7.76 (26.80)	5.84 (23.48)
5. Women without children	76.07 (42.81)	87.65 (32.91)	15.03 (35.89)	11.06 (31.38)	1.61 (0.66)	1.18 (10.84)
6. Women with children	65.01 (47.76)	82.29 (38.19)	10.86 (31.19)	18.73 (39.04)	0.66 (8.12)	0.50 (7.05)
Gender Gap All (2-1)	-24.60	-6.62	10.02	12.61	-5.87	-2.34
Gender Gap no child (5-3)	-11.12	-1.28	11.99	8.48	-3.10	-0.21
Gender Gap children (6-4)	-30.72	-14.43	8.85	18.02	-7.10	-5.34
Family Gap Women (6-5)	-11.06	-5.36	-4.17	7.67	-0.95	-0.68
No. observations	1033	3452	842	3027	842	3027

Notes: Standard deviations in parenthesis. Rates are computed using individuals' weights.

Source: Household Panels Phogue 1994 and EU-Silk 2008.

Table 2. Log Mean Hourly Wages of College Men and Women Age 25-45 in Spain 1994-2008

	1994			2008		
	All	Without children	With children	All	Without children	With children
1. Men	1.987 (0.678)	1.819 (0.746)	2.056 (0.636)	2.445 (0.448)	2.353 (0.418)	2.591 (0.457)
2. Women	1.923 (0.696)	1.926 (0.719)	1.921 (0.685)	2.334 (0.452)	2.237 (0.444)	2.459 (0.432)
3. Relative Women/Men	96.77%	105.88%	93.43%	95.46%	95.07%	94.91%
Gender Gap (2-1)	-0.064	0.107	-0.135	-0.111	-0.116	-0.132
Gender Gap (3-100%)	-3.22	5.88	-6.57	-4.54	-4.92	-5.09

Source: Household Panels Phogue 1994 and EU-Silk 2008. *Note:* Standard deviations in parenthesis.

Table 3. Probability of Employment – Probit Estimation College Men/Women

	1994			2008		
	[1]	[2]	[3]	[1]	[2]	[3]
1. Female	-0.101** (0.047)	-0.088* (0.047)	-0.065 (0.064)	-0.012 (0.017)	-0.015 (0.017)	0.019 (0.019)
2. Any child	0.138*** (0.046)	0.098* (0.050)	0.116 (0.082)	0.117*** (0.027)	0.073** (0.028)	0.081** (0.045)
3. Female*Any child	-0.214*** (0.058)	-0.192*** (0.059)	-0.221** (0.088)	-0.161*** (0.032)	-0.162*** (0.032)	-0.257*** (0.043)
Adjusted Family Gap						
For Women (2+3)			-0.106* (0.062)			-0.176*** (0.034)
For Men (2)			0.116 (0.082)			0.081** (0.045)
Adjusted Gender Gaps						
Women with any child versus men any child (1+3)			-0.173*** (0.026)			-0.237*** (0.033)
Childless Women versus Childless Men (1)			-0.012 (0.017)			0.019 (0.019)
Control variables	No	Yes	Yes	No	Yes	Yes
Observations	1033	1033	1033	3452	3452	3452
Pseudo R^2	0.1262	0.1484	0.1518	0.0339	0.1023	0.0795
Family contribution to the gender gap (%)		10.08 [-0.025]	11.24 [-0.028]		30.19 [-0.019]	56.20 [-0.035]

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The set of control variables include age, presence of a working spouse/partner, other family income in the household and regional fixed effects. Individual sampling weights are used in the estimations. The presented coefficients are marginal effects from probit models. The computation of the family contribution to the overall gender gap follows the methodology of probit decomposition into coefficient effects developed by Yun (2003). Absolute contributions in brackets.

Table 4. Probability of Working Part-Time vs Full-Time – College Men/Women

	1994			2008		
	[1]	[2]	[3]	[1]	[2]	[3]
1. Female	0.097 ^{***} (0.035)	0.106 ^{***} (0.036)	0.139 ^{**} (0.060)	0.096 ^{***} (0.018)	0.089 ^{***} (0.017)	0.088 ^{***} (0.020)
2. Any child	-0.020 (0.034)	-0.008 (0.043)	0.074 (0.096)	-0.067 ^{**} (0.032)	-0.045 (0.029)	-0.086 ^{**} (0.042)
3. Female*Any child	-0.003 (0.042)	-0.012 (0.045)	-0.060 (0.080)	0.112 ^{***} (0.035)	0.111 ^{***} (0.034)	0.129 ^{***} (0.047)
Adjusted Family Gap						
For Women (2+3)			0.014 (0.065)			0.042* (0.027)
For Men (2)			0.074 (0.096)			-0.086** (0.042)
Adjusted Gender Gaps						
Women with any child versus men any child (1+3)			0.079** (0.033)			0.217*** (0.036)
Childless Women versus childless Men (1)			0.139** (0.060)			0.088*** (0.020)
Control variables	No	Yes	Yes	No	Yes	Yes
Observations	841	750	750	3027	3027	3027
Pseudo R^2	0.0898	0.1079	0.1087	0.1220	0.1502	0.1386
Family contribution to the gender gap		-5.43 [-0.005]	4.10 [0.004]		10.79 [0.014]	8.58 [0.011]

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The set of control variables include age, presence of a working spouse/partner, other family income in the household and regional fixed effects. Individual sampling weights are used in the estimations. The presented coefficients are marginal effects from probit models. Absolute contributions in the last row in brackets.

Table 5. Probability of Working in Managerial Occupations – College Men/Women

	1994			2008		
	[1]	[2]	[3]	[1]	[2]	[3]
1. Female	-0.041 (0.035)	-0.038 (0.034)	-0.007 (0.041)	-0.016* (0.010)	-0.014 (0.008)	-0.007 (0.011)
2. Any child	0.022 (0.019)	0.022 (0.021)	0.044 (0.040)	0.028*** (0.009)	0.018* (0.011)	0.045** (0.017)
3. Female*Any child	-0.051 (0.044)	-0.052 (0.044)	-0.098 (0.058)	-0.014 (0.013)	-0.017 (0.012)	-0.028 (0.017)
Adjusted Family Gap						
For women (2+3)			-0.054 (0.044)			0.016 (0.017)
For men (2)			0.044 (0.040)			0.045** (0.017)
Adjusted Gender Gaps						
Women with any child versus men any child (1+3)			-0.105*** (0.033)			-0.035*** (0.012)
Childless Women versus childless Men (1)			-0.007 (0.041)			-0.007 (0.011)
Control variables	No	Yes	Yes	No	Yes	Yes
Observations	855	855	855	3020	3020	3020
Pseudo R^2	0.0740	0.0918	0.0940	0.0817	0.1458	0.1555
Family contribution to the gender gap		13.93 (-0.008)	25.3 (-0.015)		1,92 (0.000)	-6.71 (0.002)

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The set of control variables include age, presence of a working spouse/partner, other family income in the household and regional fixed effects. Individual sampling weights are used in the estimations. The presented coefficients are marginal effects from probit models. Absolute contributions in the last row in brackets.

Table 6. Log Wage Regressions College Men/Women - Dependent Variable: Log Hourly Wages

	1994				2008			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
Female	0.085 (0.063)	0.066 (0.061)	0.039 (0.052)	0.118 (0.084)	-0.115 ^{***} (0.022)	-0.092 ^{***} (0.021)	-0.066 ^{***} (0.019)	-0.064 ^{***} (0.022)
Any Child	0.189 ^{***} (0.050)	0.010 (0.052)	0.055 (0.044)	0.083 (0.084)	0.116 ^{***} (0.029)	0.099 ^{***} (0.026)	0.056 ^{**} (0.025)	0.228 ^{***} (0.033)
Female*Any Child	-0.209 ^{***} (0.076)	-0.138 ^{**} (0.069)	-0.136 ^{***} (0.062)	-0.232 ^{***} (0.097)	-0.016 (0.034)	-0.004 (0.031)	-0.005 (0.028)	-0.042 (0.038)
Age		0.089 ^{**} (0.043)	0.049 (0.040)	0.058 (0.043)		0.054 ^{**} (0.020)	0.056 ^{***} (0.017)	0.044 ^{***} (0.017)
Age squared		-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)		-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Tenure		0.009 ^{**} (0.004)	0.013 ^{***} (0.003)	0.013 ^{***} (0.003)		0.002 (0.002)	0.006 ^{***} (0.002)	0.006 ^{***} (0.002)
Part-Time		0.145 ^{***} (0.068)	0.045 [*] (0.063)	0.035 (0.063)		-0.151 ^{***} (0.030)	-0.117 ^{***} (0.026)	-0.126 ^{***} (0.026)
Industry dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Regional dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Occupations (4dig)	No	No	Yes	Yes	No	No	Yes	Yes
Observations	828	802	796	793	2602	2537	2533	2533
R ²	0.021	0.1955	0.3917	0.3960	0.0795	0.3132	0.4533	0.4539
Family contribution to the gender gap			85.50 [-0.055]	100 [-0.101]			-16.51 [0.018]	0 [0.065]

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The set of control variables include age, age squared, years of tenure in the actual job, industry dummies, occupations and regional fixed effects. Individual sampling weights are used in the estimations. Absolute contributions in brackets.