

# An economic analysis of the gap between desired and actual fertility: The case of Spain

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**Abstract** Family size is the outcome of sequential decisions influenced both by preferences and by ongoing changes in the environment where a family lives. During the last two decades, the gap between the number of children women prefer and their actual fertility has widened in Spain. The paper uses the 1985 and 1999 Spanish Fertility Surveys to study whether the tightening of the labor market and worsening of economic conditions in Spain during the last 20 years are important determinants of this change. I find that women facing high unemployment rates in their mid-twenties tend to restrict their fertility below their ideal level. Among women in the labor force, the stability of a public sector job lessens the difficulties of balancing employment and family and of achieving preferred fertility. Temporary contracts work in the opposite direction. Findings are robust to the inclusion of controls for within-couple discrepancies in either preferences or religious affiliation.

**Keywords** Fertility · Desired number of children · Unemployment · Short-term contracts · Religion

**JEL classifications** J13 · J2 · J6 · Z13

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## 1. Introduction

Fertility behavior has undergone major changes in Europe in general and in Spain in particular during the last decades. Within a general trend of declining fertility rates in Europe, Spain has experienced the most dramatic fall in birth rates. The Spanish fertility rate dropped from 2.8 in 1975 to 1.15 in 1997, only to recover very lightly to 1.2 in recent years. Although desired fertility also went down in Spain and across Europe generally, it fell at a slower pace than fertility rates (Bongaarts, 2001; Goldstein, Lutz, & Testa, 2003). As a result, the gap between ideal and achieved fertility slowly increased in Spain in the last two decades.

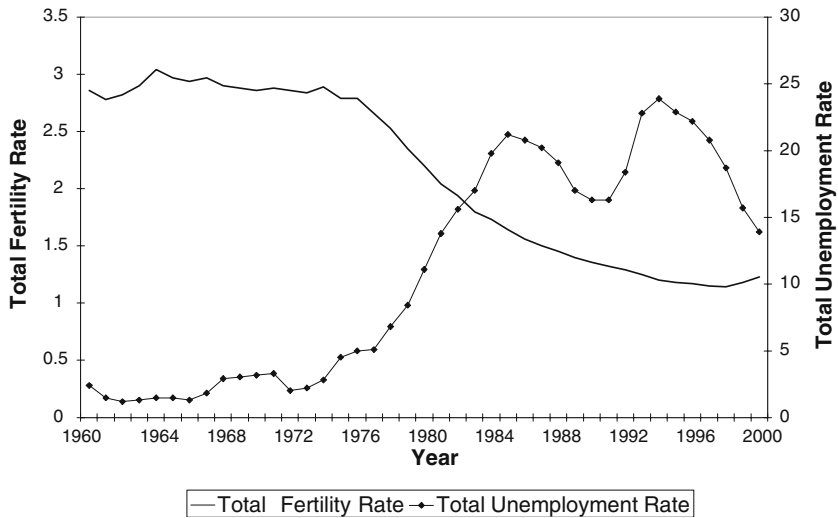
During the same period, the high level of unemployment and its persistence have probably been the most important changes that have affected the lives of young Spaniards. The failure of young couples to obtain stable employment has notably restricted their ability to leave their parents' home, obtain mortgages and, as I argue here, have children. This paper employs the 1985 and 1999 Spanish Fertility Surveys (SFS) to show that the tightening of the labor market and worsening of economic conditions in Spain during the last two decades are important determinants of the gap between the number of children women consider ideal and their actual fertility. Further, the paper tests whether these findings are robust to the inclusion of additional relevant factors. In particular, the paper controls for the effect of within-couple differences in family-size preferences and religious orientation.

The paper is organized as follows. The first section lays down the hypothesis on how aggregate and individual economic and labor conditions, besides preferences and religious composition of couples, can partly explain the gap between preferred and realized fertility. The second section describes the covariates as well as the methodology employed. The third section presents the results both for the 1985 and 1999 Spanish Fertility Surveys.

## 2. The analytical framework

During the last two decades OECD countries have experienced a dramatic fall in total fertility rates to previously unseen levels. Within this general trend, Spain has experienced the largest fall. Figure 1 presents the Spanish total fertility rate that moved from around 3 in 1960 to under 1.3 since the mid 1980s and was still around 1.2 in the year 2000.

Changes in the preferences of couples toward smaller families, larger investments per child and dual-careers are obvious reasons for the extraordinary reduction in the number of children per woman. In the last three decades women have participated more intensively in the labor market and traded-off children for less time-demanding alternatives (Becker, 1981; Butz & Ward, 1979). Female labor force participation rates in the OECD climbed from 41% in 1960 to 64% by the late 1990s. In addition, the secularization of society (Bumpass, 1990) and differential support to women across welfare systems (Adsera, 2004; Gauthier & Hatzius, 1997; Pampel, 2001;) have affected the extent of fertility changes across developed countries. In Southern Europe, lack of access to proper child-care provisions (Del Boca, 2002), and less involvement of men in housework (Bettio & Villa, 1998; De Laat & Sanz, 2005) have exacerbated those changes. Further, employment uncertainty since the mid 1980s has played a central role in the sharp fall in fertility rates and in the postponement of childbearing in all Western Europe and in Southern Europe in particular (Adsera, 2005).



**Fig. 1** Fertility and unemployment in Spain, 1960–2000

Desired fertility has also gone down across Europe during these decades. But it has done so at a slower pace than fertility rates (Bongaarts, 2001). According to the 2001 Eurobarometer the ideal number of children is relatively homogenous for women 20–34 across the European Union, with an average just above replacement level of 2.1, but lower than for those 35–49 whose average stands at 2.3 (Goldstein et al., 2003).<sup>1</sup> Researchers have traditionally pointed to the lack of access to family planning, the characteristics of the unions, and the certainty of initial preferences as the main explanations for the gap between individual reproductive desires and fertility outcomes (Bongaarts, 1990; Schoen, Astone, Kim, Nathanson, & Fields, 1999). Although these reasons are still relevant for Spanish women, I show that the broad economic and institutional environment in which individuals make both work and fertility choices performs as a key factor in explaining any fertility gap.

### 2.1. Reasons cited in the surveys

Before examining the causes of the fertility gap from a strictly theoretical and statistical point of view, I briefly consider the reasons given by surveyed women themselves. In the 1985 and the 1999, Spanish Fertility Surveys women are questioned on their reasons for restricting their fertility and for the presence of a gap between their desired family size and their actual offspring. Adverse economic conditions figure prominently among them. In the 1985 SFS women were asked whether they intended to have more children beyond their actual number and if not, why and under what conditions they would change their minds. As reported in Table 1 less than half of those not intending to have more children had already achieved their ideal number. Among those who had not attained the desired family size, the most cited reasons for restricting fertility were advanced age, concerns about the

<sup>1</sup> Although individual childbearing preferences are known to be reasonable predictors of future births (Freedman, Freedman, & Thornton, 1980; Thomson et al., 1990; Thomson, 1997), they do not fully explain the observed level of fertility (Ryder, 1973; Westoff & Ryder, 1977).

**Table 1** Main reason for restricting fertility and main reason that would revert this decision among women who do not plan to have more children in 1985

	All	Born 1948+
<i>Reasons for restricting fertility</i>		
Achieved desired family size	38.05	43.83
Too old for childbearing	16.92	1.9
Lack of Economic Resources	13.29	16.62
Pessimism about future economic conditions	11.28	15.26
Health problems	7.38	5.83
Afraid child will have health problems	5.39	4.34
Want/need to work outside home	2.29	4.21
Hardships of raising children	2.08	3.12
Spouse unemployed	1.61	2.31
Excessive housework	0.87	1.42
Small house	0.43	0.54
Ongoing studies	0.12	0.27
Lack of child-care centers	0.06	0.14
<i>Reasons that would change your mind</i>		
None	80.6	71.23
Other reasons	6.38	7.8
Improvement in economic conditions	5.73	9.43
Increase in spouse's earnings	4.46	6.78
No need to work outside home	1.18	2.04
Better housing availability	0.65	1.22
Increase in own earnings	0.5	0.68
Part-time	0.28	0.47
More child-care centers	0.12	0.27

*Note:* Percentage citing each reason only among women in the sample used for the estimates

*Source:* 1985 Spanish Fertility Survey

economy, and health problems. Among those in the younger cohorts, women born after 1947, economic constraints and economic pessimism about the future of their children were ranked at the top. An increase in the spouse's income and an improvement in economic conditions were the most cited basis that would encourage these women to have more children.

Economic conditions become more prominent in the 1999 SFS. Table 2 tabulates the proportion of individuals who stated that there was a gap between their preferred fertility and their actual number of children and if so, what was the reason for that gap. Over a third of women reported the existence of a gap between their preferences and their actual fertility (36.6%). Of those, around a third were still open to having more children as they considered their childbearing as not completed. Among the rest, again, age and health problems were prominent on the list. But, most importantly, economic constraints were ranked at the top (26% of all respondents). Need to work outside of the home and unemployment of either the woman or her spouse were also widely cited. This is consistent with a sharp rise in Spanish unemployment since the mid 1980s.

## 2.2. Economic conditions and fertility gap

In Spain, the rise in unemployment and its persistence have been exceptionally severe. As seen in Fig. 1, the Spanish unemployment rate moved up from around 2–3% during the 1960s and early 1970s to 20% by the mid 1980s and stayed at this level throughout the

**Table 2** Proportion with gap between preferred and actual fertility and reasons cited for gap in 1999

<i>Do actual and preferred fertility coincide?</i>	%
Yes	63.42
No	36.58
<i>If not, why?*</i>	% citing
Have not completed family	31.4
Lack of Economic Resources	26.1
Health problems	16.6
Want/Need work outside Home	13.2
Hardships of raising children	9.1
Failure of contraceptive method	8.5
Too old for childbearing	7.7
Unemployment (self/spouse)	5.4
Pregnancy/ Labor hard work	4.9
Small house	4.9
Afraid child will have health problems	4.9
Other	3.2
Too much housework	2.4
Lack of child care centers	2.1
Lack of familiarity with contraceptives	1.9
Child limits freedom for leisure	1.5
Study	0.9

*Note:* It only includes women in the sample used for the estimates. \* Respondents were allowed to give more than one reason for the gap

*Source:* 1999 Spanish Fertility Survey

1990s. Unemployment rates for young women in Spain were close to 40% at several points during the last two decades. The long-term unemployment rate, that is, the proportion of jobless that had been unemployed for more than a year, stayed over 50% throughout the same period.

### 2.2.1. *Persistent unemployment and postponement*

The literature on microanalysis of fertility has long noted that cyclical and short-term unemployment may lead to countercyclical fertility behavior (Butz & Ward, 1979). Women adjust their childbearing plans along the cycle to attain their preferred family size. The associated fall in opportunity costs makes a temporary unemployment spell a good time for childbearing.

However, if unemployment is persistent, the natural response may be just the opposite. Under those circumstances a withdrawal from the labor force (i.e., to bear children) can carry long-term negative income effects (Adsera, 2005). Re-entry into the labor market will be difficult. Thus, women are likely to postpone childbearing until they achieve either a stable position with generous leaves or sufficient experience to easily guarantee landing another job after childbearing. But, as they become mothers at a later age, they are expected to bear fewer children by the end of their fertile life because of both time and fecundity constraints (Boongarts, 2001; Kohler, Billari, & Ortega, 2002). As a result, the gap between ideal and actual number of children should be large for those couples affected by persistent unemployment who are likely to move childbearing to older ages.

### 2.2.2. *Unexpected shocks*

After a long period of stable and low unemployment rates, the increase in Spanish unemployment was particularly acute from 1978 to 1985, as seen in Fig. 1. Women born in the late 1950s and in the early 1960s encountered these unexpected changes as they entered the labor market. By contrast, those cohorts born since the mid 1960s are more likely to have taken into account those changes in the labor markets as they formed their childbearing plans. Thus the disruptive effect of high and persistent unemployment was probably the largest among those cohorts that made their plans without expecting such adverse economic conditions.

### 2.2.3. *Types of labor contracts*

Besides aggregate economic conditions, the characteristics of the job that a woman and her spouse ultimately secure for themselves may affect their ability to fulfill their childbearing plans. The type of position women hold depends both on their own preferences and on the ultimate contract choices available in the market. Those, in turn, are affected by the country's labor regulations and the extent of its public sector.

Clearly, fertility and labor market participation are jointly determined (Browning, 1992; Lehrer & Nerlove, 1986). In the 1985 and in the 1999 surveys, inactive women who stay at home have on average both a larger ideal family size and more offspring than those active in the labor market. Therefore, the gap between desired and achieved fertility should not be larger among the active than among the inactive as long as their employment conditions match those they expected at the time they formed their childbearing plans. As women decide to work, they select themselves into those positions most compatible with their childbearing plans. Any deviations from those plans would indicate the existence of restrictions on the supply of certain types of jobs that these women covet or an underestimation of the difficulties of combining family and work in harsh economic conditions. In general, positions that shelter individuals from the uncertainty of job turnover, such as tenured jobs, should encourage couples who undertake long-term investments, such as children, to move toward their preferred family size. With regard to tenure, fragile short-term contracts and permanent positions in the public sector are at the opposite ends of the distribution.

In 1984, the Spanish government partially reformed the labor market in an attempt to reduce youth unemployment. It allowed non-permanent contracts with temporary subsidies for new hires. By the end of the 1980s, those partial reforms had segmented labor markets by age. While mature workers in Spain continued to hold protected jobs, since 1990, a third of workers were covered by short-term contracts that did not carry the same benefits and severance payments as the traditional permanent contracts (Dolado, Garcia-Serrano, & Jimeno, 2002). Even though the new contractual forms increased turnover in the labor market and somewhat cut down unemployment, they did not provide stable employment for young couples, in turn a pre-condition for securing mortgages and accelerating household formation in Spain. Young women faced a choice of either sticking to their unstable job, trading off childbearing for the hope of employment security, or struggling to re-enter the labor force after childbirth (Adam, 1996). Lack of employment stability among young men contributed further to depressing fertility (Ahn & Mira, 2001; Gutierrez-Domenech, 2002). As a result, I expect that the gap between preferred and achieved fertility should be larger among women in the sample holding non-permanent

contracts than among those with permanent contracts. They are likely to delay their childbearing plans until they obtain a more stable position in the labor market.

Conversely, public sector employment across Europe constitutes a unique form of tenured job that protects the worker from the uncertainty of unemployment risk and is accompanied with generous leave programs. In Spain, it is considered a guarantee to obtaining good financial treatment (i.e., mortgages). Still the modest size of the public sector in Spain rendered those jobs scarce in the late 1980s and 1990s. Under these conditions the gap in fertility should be smaller among public employees than among those employed in the private sector, some of whom may have preferred to obtain public employment.

### 2.3. Preference and religious differences within the couple

In addition to economic constraints, within-couple discrepancies in either preferences or religious affiliation can also lead to unfulfilled childbearing plans. The pathway is similar in both instances.

#### 2.3.1. Preference differences

Children represent “spouse-specific” human capital, capital that decreases in value following marriage dissolution. Discrepancy among spouses on preferred family size may indicate an increased frailty or lower quality of unions. Hence, rational individuals may be less likely to incur union-specific investments. Researchers find that within-couple discrepancy on preferred family size reduces final parity (Freedman et al., 1980; Thomson, 1997). Similarly, I expect the gap between desired and actual fertility to be larger among these couples.

Still, the predictive validity of preferences seems to increase after an adjustment early in the marriage and preferences reported later in a relationship may already embody the result of a bargaining process within the couple (Thornton, Freedman, & Freedman, 1984; Thomson, McDonald, & Bumpass, 1990). Therefore, a preference gap within a couple at the time of the marriage should better explain the gap between women’s desires at the time of marriage and actual fertility than the gap with respect to her preferences expressed later in the marriage.

#### 2.3.2. Religious differences

Similarly, Becker, Landes, and Michael (1977) suggest that the lower stability of inter-faith marriages should reduce the number of births within those marriages (“the marital stability effect”). Lehrer (1996, 2004) notes a second pathway linking inter-faith marriage to low fertility. Spouses’ religious denominations may have conflicting views with regard to family size. How spouses settle those differences (“the bargaining effect”) depending on the particular religious composition of the couple may reinforce the first effect. Lehrer and Chiswick (1993) find a relatively large fragility of intermarriages in the US. Lehrer (1996) and Adsera (2006) find supporting evidence that inter-faith couples restrict their fertility in the US and Spanish data, respectively.

Thus, if, on average, the ideal family size of individuals in inter-faith unions is similar to that of those in homogamous couples, the gap between preferred and achieved fertility should be larger among inter-faith couples than among homogamous unions.

### 3. Data and methodology

To explore the determinants of the gap between preferred and actual fertility I use the 1985 and 1999 Spanish Fertility Survey (SFS), which was administered to women aged 15–49 living in Spain. The surveys follow the guidelines of the Fertility Surveys from the United Nations. One woman was interviewed in each household. The total number of interviews in the 1985 Survey was 8782 and in the 1999 Survey, there were 7749 respondents.

The analyses in this paper are restricted to marital fertility. Consensual unions were rare until recently. Though their prevalence is much higher among the youngest generations, first births within a consensual union only constitute 2.5% of total first births reported in the 1999 SFS.

Women in the 1985 and 1999 SFS report their preferred family size at the time of the interview as well as their complete fertility history. The gap between currently desired and achieved fertility (including current pregnancies) is the variable under analysis. Table 3 presents the distribution of this gap among married women in both surveys. As expected, a majority of women have attained their desired number of children (44.7% in 1985 and 60.5% in 1999). The distribution is more spread in the 1985 SFS than in the 1999 SFS. The proportion of women with more children than their ideal is 15% in the 1985 SFS but only 4.3% in the 1999. Similarly, the proportion of those still short of their desired family size stands at 40% in 1985 and at 35% in 1999. Since the tails of the distribution are very thin, in the analysis I restrict the dependent variable to values containing at least a few individuals. In particular, the dependent variable for the 1985 Survey is restricted to values in the range (−5, 5) and that for the 1999 Survey to values in the range (−3, 5).

The last two columns in Table 3 include the distribution of married women according to number of offspring. The majority of women have two children. The proportion of those with three or more children decreases sharply in the 1999 SFS, as expected from the fall in total fertility observed in Fig. 1.

**Table 3** Fertility gap and number of children born—Married women in 1985 and 1999

	Fertility gap		Number of children	
	1985	1999	1985	1999
<−5	0.23	0		
−5	0.34	0.02		
−4	0.7	0.09		
−3	1.33	0.37		
−2	4.52	1.04		
−1	7.91	2.78		
<b>0</b>	<b>44.69</b>	<b>60.52</b>	<b>6.63</b>	<b>8.21</b>
1	24.75	22.16	19.11	24.9
2	11.01	9.83	37.59	47.77
3	2.8	2.09	21.3	14.4
4	1.09	0.78	8.97	3.08
5	0.3	0.12	3.62	1.13
6	0.17	0.07	1.43	0.32
7	0.11	0.05	0.69	0.12
>7	0.04	0.05	0.67	0.07
Number of observations	5249	4346	5249	4346

*Note:* The fertility gap is calculated by subtracting the total number of children from the current ideal number of children. The number of children born includes current pregnancies



The 1985 SFS also measured preferred family size at the time of marriage for a small sample of women and their husbands (as reported by the wives).<sup>2</sup> With this information, I construct a second dependent variable that measures the gap between the preferred number at the time of marriage and the children born to the couple. I use this variable to see whether some type of adjustment in the preferences occurs over time within a marriage, as that found by previous research (Bankole & Westoff, 1998; Freedman et al., 1980).

Once all the control variables are included, the sample contains 5220 married women for 1985 and 4322 for 1999. Table 4 reports the means of the dependent variables and of the covariates of interest in the sample used. Family size goes down from 2.3 in the 1985 Survey to 1.84 in 1999. Among married women born before 1948, the average number of children was 3.84. The mean gap between the current ideal and the total number of children born to a woman goes up from 0.36 to 0.46 between both surveys. To examine what accounts for the gap, I consider the following variables.

(1) *Age at marriage.*

(2) *Aggregate labor market conditions.* The quarterly unemployment rate at the time the woman turned 24 years old in the province of her residence (one of 38 provinces) is used to proxy her early labor market opportunities (and that of her spouse). The mean provincial unemployment rate sharply moves up from 6% in the 1985 SFS sample (and only 2% among those born before 1948) to 15% in the 1999 SFS. It reaches 20% for those born after 1961.

(3) *Individual employment.* Unfortunately neither of the surveys includes a complete retrospective labor market history of the woman or her spouse, as one ideally would like. Still both provide relevant information on labor market activity. In the 1985 SFS I can control for whether a woman worked after getting married (as did 43% of them) and for how many years.

The 1999 SFS contains information on the current work of both the wife and her husband. Still, since I control for age, education and place of residence of each individual, current employment is a reasonable proxy of the labor activity over their fertile life.<sup>3</sup> I construct a set of dummies to indicate (1) whether individuals work or not, (2) whether their contract is temporary or permanent if employed, and (3) whether they work for the public or the private sector. Around 43% of the women and 90% of the men in the sample currently work. Of those, around 28% of the women and 19% of the men work in the public sector and 21% of the women and 15% of the men have a temporary contract. Among those born after 1961, the proportion of women and men employed under temporary contracts stands, respectively, at 29% and 23%.

(4) *Preference differences.* The 1985 survey provides information on the desired family size at the time of marriage for both the wife and her spouse only for a small sub-sample of individuals. I construct a dummy variable to record the presence of a difference in the desired number of children between spouses. Discrepancy in fertility desires among spouses occurs in 19% of the couples. Women desire either one or two more children than their spouses in 7% and 2.8% of all couples, respectively. Conversely, men desire either one or two more children than their wife's in 5.5% and 1.6% of those couples. Since

<sup>2</sup> Previous research supports the accuracy of wife's reports of husband's fertility preferences (Morgan, 1985, Williams & Thomson, 1985, Goldscheider & Kaufman, 1996).

<sup>3</sup> There are very few transitions from non-work to work among Spanish women during this period. Most labor market transitions occur from work into inactivity (Adam, 1996). Thus this measure may underestimate the number of women who have been in the labor force at some point. Those who have left may have either failed to find a way to combine family and work and have given up struggling to obtain this balance or have weaker preferences for a career as compared to those who decide to stay in the labor market.

**Table 4** Means, 1985 and 1999

	1985	1999
<i>Dependent variables</i>		
Born children	2.30	1.84
Current ideal—born children	0.36	0.46
Ideal at marriage—born children	0.46 <sup>a</sup>	
<i>Aggregate conditions province</i>		
Unemployment rate when wife 24 years	6.06	15.05
<i>Wife's employment</i>		
In Labor Force after marriage	0.46	
Years employed	3.47	
<i>Wife's current employment</i>		
In Labor Force		0.43
Temporary contract		0.09
Public sector job		0.12
<i>Husband's current employment</i>		
In Labor Force		0.90
Temporary contract		0.14
Public sector job		0.17
Different preferences within couple	0.19 <sup>a</sup>	
Ideal wife—ideal husband	0.04 <sup>a</sup>	
Different religion within couple		0.15
Number of observations	5220	4332

*Note:* The number of children includes current pregnancies

<sup>a</sup> Information on spouse's preferences and on preferences at the time of marriage is only available for 1674 and 2143 individuals, respectively, in the 1985 Survey

women tend to have a higher preferred fertility, the mean difference between women's and men's desires is positive and equal to 0.04.

(5) *Religious composition of the couple.* Only the 1999 SFS provides information on the religious affiliation of the spouse. The question is posed about current religious beliefs and no information is available on religious family background. Since the majority of Spaniards have a Catholic upbringing, the main distinction between individuals is religious practice. I consider practicing and non-practicing Catholics as two distinct groups. The alternative categories include those with no affiliation, Muslims, and Protestants. Inter-faith unions amount to 15% of the couples in the 1999 SFS.

(6) *Control variables.* Duration of marriage, out-of-wedlock children, wife's religion, wife's and husband's education at the time of the survey, region of residence as well as size of the city of residence are included in the analyses of both samples.

Additionally, in the 1985 estimates I control for whether either the wife or the husband had more than two siblings and, in the 1999 SFS, for whether the wife was a student. Appendix A includes the means of the control variables. Benchmark values are reported in brackets. Coefficients of the control variables, not reported in the tables, can be obtained from the author.

### 3.1. Methodology

The gap between desired and achieved fertility is first estimated with OLS. Given the discrete nature of the variable and its limited support, I then test the robustness of the results by estimating a Poisson regression of the same specification. Since Poisson models

are only defined for non-negative count data, I construct a new non-negative variable with linear deviations from the dependent variable. Robust errors are included in all estimations. Tables present the marginal effects after the Poisson regression. Further, I estimate Poisson models with and without controlling for exposure, where age is used as a measure of exposure. Both sets of results are presented for each survey. Results of the Poisson specifications are extremely close to those obtained with OLS. The next section includes estimates obtained with both the 1985 and the 1999 Surveys.

Both OLS and Poisson models rely on the assumption that the effects of the relevant covariates are symmetric for both groups, those who overshoot their ideal and those who fell short of attaining their preferred family size. To analyze whether some covariates explain one end of the distribution better than the other, I construct a new dependent variable that takes three different values depending on whether the gap between desired and achieved fertility is negative, zero, or positive. I use this variable to estimate a multinomial logit model. With this exercise I explore whether some of the economic and union-specific variables have an asymmetric effect over the distribution of the dependent variable. Results of the multinomial logit are only presented for the 1999 survey and those for the 1985 survey can be obtained from the author. As shown at the end of the next section, the main findings in the multinomial estimation are consistent with those from OLS and Poisson estimations.

## 4. Results

### 4.1. OLS and poisson estimates

Both OLS and Poisson regression estimates are presented in Tables 5 and 6 for the 1985 SFS and in Table 7 for the 1999 SFS. Results are very similar under both estimation methods. Given the discrete nature of the dependent variable, I choose to include both to show the robustness of the estimates. The dependent variable in Tables 5 and 7 is the difference between a woman's ideal number of children at the time of the interview and her actual family size. In contrast in Table 6 the ideal family size is measured at the time of marriage. Appendix B includes OLS estimates of the number of children within a marriage for each survey. These can be used as a reference and can help interpret the results in the paper.

Not surprisingly, in all specifications in Tables 5–7 the later the wife enters marriage, the more it is likely that she will not achieve her desired family size.

#### 4.1.1. *Aggregate and individual economic conditions*

The quarterly unemployment rate in the province of residence at the time each woman turned 24 years of age enters positively and significantly in all estimates. Thus, the higher the unemployment rate faced by the woman in her mid-twenties, the wider the gap between her desired and her attained fertility. This confirms previous findings that Spaniards postponed and restricted their fertility as a response to a negative income effect due to the country's high and persistent unemployment rate since the early 1980s (Adsera, 2004, 2005; Ahn & Mira, 2001; Gutierrez-Domenech, 2002). In the 1985 SFS the unemployment

**Table 5** Regressions of difference between current ideal and number of children born—1985

	(1)	(2)	(3)	(4)	(5)
<i>Age at marriage</i>	0.056 (9.52)**	0.055 (9.63)**	0.022 (3.82)**	0.044 (4.04)**	0.042 (3.87)**
<i>Aggregate conditions province</i>					
Unemployment rate when wife 24 years	0.022 (4.84)**	0.022 (5.21)**	0.033 (7.57)**	0.018 (2.44)**	0.018 (2.44)**
<i>Wife's employment</i>					
In Labor Force after marriage	0.121 (2.54)**	0.112 (2.42)**	0.132 (2.82)**	0.159 (2.10)**	0.167 (2.22)**
Years employed	0.006 (1.21)	0.006 (1.33)	0.003 (0.59)	0.016 (1.78)*	0.016 (1.75)*
<i>Different preferences within couple</i>				0.51 (0.69)	
<i>Ideal wife—ideal husband</i>					0.154 (3.64)**
Constant	-1.397 (7.34)**				
Number of observations	5220	5220	5220	1673	1673
Adj-R <sup>2</sup>	0.21				

*Note:* OLS estimates in column (1) and marginal effects from Poisson regression in columns (2)–(5). For dummy variables marginal effect after Poisson is for discrete change from 0 to 1. Column (3) model uses age of the woman to control for exposure. Models include controls for wife's religious affiliation, years of marriage, children out-of-wedlock, size of city and region of residence as well as the couple's education. Robust  $z$  statistics in parentheses. \* Significant at 10%; \*\* significant at 5%

**Table 6** Regressions of difference between ideal at time of marriage and number of children born—1985

	(1)	(2)	(3)
<i>Age at marriage</i>	0.057 (5.47)**	0.051 (4.46)**	0.043 (3.93)**
<i>Aggregate conditions province</i>			
Unemployment rate when wife 24 years	0.035 (4.89)**	0.033 (4.39)**	0.032 (4.29)**
<i>Wife's employment</i>			
In Labor Force after marriage	0.015 (0.20)	0.47 (0.63)	0.064 (0.89)
Years employed	0.021 (2.36)**	0.020 (2.08)**	0.020 (2.05)**
<i>Different preferences within couple</i>		0.142 (1.75)*	
<i>Ideal wife—ideal husband</i>			0.417 (9.39)**
Number of observations	2136	1672	1672

*Note:* Marginal effects from Poisson regression. Models include controls for wife's religious affiliation, years of marriage, children out-of-wedlock, size of city and region of residence as well as the couple's education. For dummy variables marginal effect after Poisson is for discrete change from 0 to 1. Robust  $z$  statistics in parentheses. \* significant at 10%, \*\* significant at 5%

rate is not significant for the sample of those born before the early 1950s.<sup>4</sup> These early cohorts faced an average unemployment rate of only 2% during their early working years.

The estimated coefficient of provincial unemployment is smaller in the 1999 SFS (Table 7) than in the 1985 SFS (Tables 5 and 6). Given that the mean unemployment rates faced by women in their youth moves up from 6% in the 1985 SFS to 15% in the 1999 SFS, the implied mean effect of unemployment on the fertility gap ranges from 0.1 to 0.2

<sup>4</sup> Cohort specific results are available from the author.

**Table 7** Regressions of difference between current ideal and number of children born—1999

	(1)	(2)	(3)
<i>Age at marriage</i>	0.020 (4.56)**	0.020 (4.60)**	-0.003 (0.65)
<i>Aggregate conditions province</i>			
Unemployment rate when wife 24 years	0.005 (1.93)*	0.005 (1.94)*	0.0095 (3.95)**
<i>Wife's current employment</i>			
In Labor Force	0.135 (4.07)**	0.134 (4.14)**	0.131 (4.02)**
Temporary contract	0.098 (1.97)**	0.094 (1.98)**	0.104 (2.18)**
Public Sector Job	-0.116 (2.35)**	-0.112 (2.37)**	-0.108 (2.29)**
<i>Husband's current employment</i>			
In Labor Force	0.033 (0.68)	0.035 (0.73)	0.042 (0.86)
Temporary contract	0.022 (0.52)	0.020 (0.49)	0.023 (0.60)
Public sector job	-0.018 (0.49)	-0.018 (0.49)	-0.017 (0.45)
<i>Different religion within couple</i>	0.093 (2.43)**	0.092 (2.46)**	0.092 (2.43)**
Constant	-0.548 (3.28)**		
Number of observations	4332	4332	4332
Adj-R <sup>2</sup>	0.13		

*Note:* OLS estimates in column (1) and marginal effects from Poisson regression in columns (2) and (3). For dummy variables marginal effect after Poisson is for discrete change from 0 to 1. Column (3) model uses age of the woman to control for exposure. Models include controls for wife's religious affiliation, years of marriage, children out-of-wedlock, size of city and region of residence as well as the couple's education. Robust z statistics in parentheses. \* Significant at 10%; \*\* significant at 5%

**Table 8** Simulated gap between current ideal and children born (1999 SFS)

Provincial unemployment rate at wife's 24th birthday	Not in Labor Force	Private sector permanent contract	Public sector permanent contract	Private temporary contract
2%	-0.046	0.088	-0.028	0.186
6%	-0.028	0.107	-0.009	0.205
10%	-0.009	0.125	0.009	0.223
14%	0.009	0.144	0.028	0.242
18%	0.028	0.162	0.047	0.260
22%	0.046	0.181	0.065	0.279
26%	0.065	0.200	0.084	0.297

*Note:* Simulations from estimates in column (1) in Table 5 for individuals living in a small city and married at 23.5 years of age. All other variables are set at the benchmark

in 1985 and from 0.075 to 0.15 in 1999. Table 8 includes simulations of the predicted gap in the 1999 SFS for different unemployment rates. Still, as noted, the 1985 coefficient is not significant when the sample is restricted to women born before the early 1950s. Hence, for the individuals in the 1985 SFS the negative impact of the rise in unemployment is mainly experienced by the latter cohorts in the survey. Further, I use the 1999 SFS to re-estimate the model separately for a grid of cohorts (of multiple sizes). Among all possible combinations, the estimated coefficient of provincial unemployment reaches its maximum of 0.017 for women born between 1957 and 1962. These women were in their early twenties during the period of sharpest increase in Spanish unemployment, before it reached its high plateau (see Fig. 1). This confirms the hypothesis that unexpectedly rapid changes in unemployment, rather than unemployment *per se*, best explain the fertility gap.

With regard to individual labor market conditions, 1985 results are mixed. Table 5 indicates that women who worked after marriage have a larger fertility gap with respect to

their current preferences in family size. The gap with respect to the ideal at the time of marriage increases with the number of years worked (see Table 6).

The 1999 SFS includes information on the current employment of both spouses. None of the coefficients for the characteristics of the husband's job are significant in either Table 7 or in Appendix B.<sup>5</sup> Conversely, all coefficients for women's current employment are significant: employed women are more likely to fall short from their desired family size than those who are inactive. The coefficient for the employment dummy is slightly smaller in column (1) of Table 7 than in Appendix B when family size is analyzed. This indicates that, even if employed women have significantly lower family sizes than women out of the labor force, part of the difference in the size of their offspring results from differences in preferences. Note, however, that among employed women the benchmark woman works in the private sector with a permanent contract. Table 8 simulates the gap between preferred and achieved fertility for different groups of women: out of the labor force, employed in the private sector with either a permanent or a short-term contract, and employed by the public sector with a permanent contract.

The coefficient for short-term contracts is positive and significant in all columns. This indicates that the fertility gap is wider for women with temporary contracts than for those with tenured or permanent positions. As noted, the number of fragile contractual relationships has increased during the last decades in Spain. Thus, this result is particularly relevant for young cohorts.

In all columns of Table 7 the coefficient of women's public sector employment is negative, highly significant, and close in absolute size to the coefficient for employment status. It appears that the gaps between achieved and ideal fertility of women out of the labor force and of those employed in the public sector are rather similar, even though women out of the labor force have the largest families (Appendix B). Further, the fertility gap for public employees is much smaller than that for women employed in the private sector (Table 8). The high stability and benefits of a public sector position, as compared to those of a private sector job, seem to enable women to better adjust their childbearing to their preferred family size.

#### 4.1.2. Preference differences within the couple

Columns (4) in Table 5 and (2) in Table 6 include a dummy to control for the existence of inter-union differences in desired number of children. Columns (5) in Table 5 and (3) in Table 6 include a variable that indicates the actual distance of preferences within the couple. Results confirm the hypotheses laid down in Section 2. In Table 5, when the gap is measured in terms of wife's current ideal, the coefficient of within-couple preference gap is positive but not significant. In contrast in Table 6, when the gap from the ideal number of children at the time of marriage is used instead, the marginal effect is significant. Similarly, the coefficient of the actual preference-gap between spouses is positive and significant for both dependent variables. However, the coefficient in Table 5, where the ideal is measured at the time of the interview, is only a third of the size of the marginal effect in Table 6 where the ideal is defined at time of marriage.

The positive effect in both tables indicates that, on average, when there is disagreement on preferred family size, a woman's offspring is smaller than her ideal. Further, the smaller effect in Table 5 supports results in the literature that indicate, first, that adjustments in

<sup>5</sup> When I estimate the model for women born between 1957 and 1962, the coefficient for the husband's temporary contract is positive and highly significant.

fertility preferences occur early after marriage and, second, that later preferences may already embody inter-spousal disagreements (Freedman et al., 1980; Thomson et al., 1990). Unfortunately, the survey does not provide information on men's current preferences, so this line of inquiry cannot be pursued any further.

As an additional exercise not shown here, I estimate the same model in column (2) of Table 6 by using the gap between the husband's ideal family size at the time of marriage and the actual fertility of the couple as the dependent variable. Inter-union disagreement does not lead to any gap between the husband's desires and ultimate family size, as it is the case for women. Either asymmetries in the bargaining power within the couple in favor of the husband or a higher flexibility in the desires of women as their marriage progresses could account for this finding. In any event, within-couple conflict is more likely to bring the number of children born to the couple closer to the husband's preferred size, which, on average, is lower.<sup>6</sup>

#### 4.1.3. *Religious composition of the couple*

As expected, Table 7 indicates that when the husband's religious affiliation is different from the wife's, the actual number of children in the union is significantly lower than the one the woman prefers. Both a higher expected frailty of those unions and internal bargaining problems are likely pathways to a small family size. Results in Appendix B show that family size is indeed significantly smaller in inter-faith unions than in homogamous couples. Yet in separate estimates I find that women in inter-faith unions do not have a significantly lower desired number of children than those in homogamous unions.

#### 4.1.4. *Control variables*

The number of out-of-wedlock children significantly increases the likelihood of overshooting preferred family size. The gap between desires and actual fertility closes with the duration of marriage. In the 1985 SFS spouses coming from larger families have a lesser tendency to fall short of their preferences. The size of the city of residence is not relevant for the 1985 SFS. However, in the 1999 SFS, the gap between desired and achieved fertility is higher for individuals living in large cities. These families may be relatively more constrained in economic terms given the rapidly rising housing costs in main Spanish cities during the last 15 years (Colom, Martinez, & Moles, 2002).

As expected, the religious denomination of the wife does not play a major role in explaining the disparity between preferred and actual number of children,<sup>7</sup> except for two findings: in the 1985 SFS practicing Catholic women in the older cohorts are short of attaining their preferred family size, and those without religion born after 1961 exceed their preferences. Finally, among educational groups, only women married to men with

<sup>6</sup> Freedman et al. (1980) find that women's preferences tend to adjust to reduce inter-couple difference but that final parity is more likely to adjust downward than upward to meet spouse's ideal. Interestingly, Thomson and Hoem (1998) found that Swedish couples with preference differences had lower childbearing, but both the woman and her spouse were equally likely to prevail in the face of a disagreement.

<sup>7</sup> Even if family size has been shown to vary across religious denominations and to be relatively larger among those with more frequent church attendance (Adsera, 2006; Lehrer, 1996; Mosher & Hendershot, 1984; Williams & Zimmer, 1990), its variation across religious groups should be explained by differences in preferences once other relevant factors are accounted for. As a matter of fact, researchers do not find any systematic discrepancy between the desired number of children and final parity across religions in the United States (Freedman et al., 1980).

**Table 9** Multinomial logit regressions of difference between current ideal and number of children born—1999

	Negative vs. Zero	Positive vs. Zero	Positive vs. Negative
<i>Age at marriage</i>	0.914 (3.15)**	1.043 (3.89)**	1.140 (4.48)**
<i>Aggregate conditions province</i>			
Unemployment rate when wife 24 years	0.964 (2.81)**	1.010 (1.63) <sup>#</sup>	1.048 (3.40)**
<i>Wife's current employment</i>			
In Labor Force	0.755 (1.34)	1.238 (2.54)**	1.640 (2.28)**
Temporary contract	0.459 (1.73)*	1.108 (0.82)	2.414 (1.93)*
Public sector job	1.217 (0.57)	0.763 (2.12)**	0.627 (1.32)
<i>Husband's current employment</i>			
In Labor Force	1.007 (0.03)	1.064 (0.51)	1.057 (0.21)
Temporary contract	0.965 (0.14)	1.090 (0.85)	1.130 (0.46)
Public sector job	1.075 (0.31)	0.978 (0.22)	0.910 (0.39)
<i>Different religion within couple</i>	0.587 (2.07)**	1.130 (1.26)	1.924 (2.47)**
Number of observations	4332	4332	4332

*Note:* Relative risk ratios from multinomial logit model. Dependent variable is negative if the ideal is smaller than the number of children born; zero if both are equal and positive if the ideal is larger than the children born. Estimates include controls for wife's religious affiliation, years of marriage, children out-of-wedlock, size of city and region of residence as well as the couple's education. Robust *z* statistics in parentheses. \* Significant at 10%; \*\* Significant at 5%; <sup>#</sup> Significant at 15%

intermediate levels of education, either high-school or vocational school, display a larger fertility gap than the rest.

Results are robust to controls for family planning, which is widely available in Spain.<sup>8</sup> Only around 12% of women in each sample report never having used any method. Results indicate that, on average, families that have never used any contraceptive method are still significantly far from their desired family size. Absence of family planning is likely to be due either to known infertility or to incomplete fertility, rather than to lack of access. In addition, the 1985 SFS contains information on infertility. Results in the paper are robust to the exclusion of women who are known to be infertile.

#### 4.2. Multinomial logit

Table 9 includes the results of the multinomial logit analysis for the 1999 SFS. The dependent variable separates all possible values of the fertility gap in three categories: negative (if the ideal is smaller than the number of children born); zero (if both are equal) and positive (if the ideal is larger than the children born). Results are presented in relative risk ratios. Findings are consistent with those in Table 7.

<sup>8</sup> Even if the Catholic Church teachings impose a restrictive use of contraception, religious practice among Spanish Catholics has sharply decreased since the onset of democracy in 1975 (Branas-Garza & Neuman, 2004) and adherence to Church recommendations among Catholics worldwide has weakened (Goldscheider & Mosher, 1991). In Table 2, less than 2% among those with a gap between actual and desired family size in the 1999 SFS report lack of familiarity with the use of contraceptives. Widespread availability and use of family planning seems to have contributed to the widening of the gap between desires and achieved fertility in the European Union (Fahey & Speder, 2004).



Women married at older ages are less likely to exceed their preferred family size and also more likely to fall short. As noted in Section 2, motherhood postponement is associated with lower fertility levels due to fecundity and time constraints (Bongaarts, 2001). Differences in religious orientation within the couple act in the same direction. Those in inter-faith unions are less likely to go beyond their ideal family size. Women facing harsh economic conditions in their early twenties are less likely to exceed their preferred size, but the difference in risk between achieving the ideal size and falling short of it is only significant at 15%.

Again, none of the coefficients for the husband's current employment are significant. Employed women tend to fall short of their expectations, particularly those with a temporary contract. However, the combined risk ratio of those employed in the public sector shows that they are almost as likely not to fall short and to attain their preferred family size as those who stay at home. Further, they are significantly less likely to fall short of their ideal than those employed in the private sector.

## 5. Conclusions

Family size is the outcome of sequential decisions influenced both by preferences and by ongoing changes in the environment where a family lives. In this paper I use the 1985 and 1999 Spanish Fertility Surveys to study the determinants of gaps between desired and actual fertility in Spain. Amending current research, which has emphasized the availability of contraceptives, heterogeneity of preferences within the couple, and the religious make-up of the family, I show that economic conditions, and, more specifically, unemployment, are powerful determinants of the gap between preferred and actual fertility.

High and stubborn unemployment in Spain during the last two decades has greatly increased economic uncertainty of young cohorts and resulted in extensive childbearing postponement. Women who became mothers late in life are less likely to attain their intended family size. In this paper I show that fertility of women facing high unemployment rates in their mid-twenties—a proxy for labor market conditions at the onset of a career, is below their preferred level.

Further, I explore what job characteristics may shelter individuals from labor market uncertainty and facilitate the dual role of mother-worker. I find that public sector jobs (stable and with generous leaves) lessen the difficulties women face in balancing employment and family and achieving preferred fertility. The gap between desired and actual fertility of those employed in the public sector is similar in size to that of women not in the labor force and is smaller than the gap for women in the private sector. Further results indicate that temporary contracts intensify women's uncertainty and add to the degree that employment creates obstacles for the fulfillment of women's expected fertility. Finally, within couple discrepancy in either preferences or religious affiliation is shown to depress family-specific investments such as children.

## Appendix A

**Appendix A** Means of control variables, 1985 and 1999 Spanish Fertility Surveys

	1985 SFS	1999 SFS
Age at marriage	23.27	23.65
Children out-of-wedlock	0.04	0.04
Student	n.a.	0.08
<i>Years of marriage</i>		
0–2	0.07	0.06
3–4	0.06	0.07
5–6	0.08	0.07
7–8	0.09	0.08
9–10	0.09	0.08
11–12	0.10	0.08
13–14	0.09	0.08
15 or more	(0.42)	(0.48)
<i>Siblings 3+</i>		
Wife	0.42	n.a.
Husband	0.45	n.a.
<i>Size of city</i>		
Rural	(0.56)	0.17
Small	0.22	0.25
Medium	n.a.	(0.46)
Large	0.22	0.12
<i>Wife's religion</i>		
Non-practicing catholic	(0.36)	(0.49)
Practicing catholic	0.61	0.43
Own beliefs	n.a.	0.03
No religion	0.02	0.03
Other religion	0.01	0.02
<i>Wife's education</i>		
Primary or less	0.65	0.27
(Low secondary)	(0.19)	(0.31)
High school	0.09	0.12
Vocational	n.a.	0.15
College (2 years)	0.05	0.07
College (4 years)	0.02	0.08
<i>Husband's education</i>		
Primary or Less	0.57	0.25
Low Secondary	(0.16)	(0.30)
High School	0.16	0.15
Vocational	n.a.	0.13
College (2 years)	0.05	0.06
College (4 years)	0.05	0.10
<i>Region of residence</i>		
Andalucia	0.11	0.15
Aragon	0.04	0.05
Asturias	0.04	0.04
Cantabria	0.03	0.02
Castilla La Mancha	0.05	0.05
Castilla Leon	0.06	0.07
Catalunya	0.11	0.09

**Appendix A** continued

	1985 SFS	1999 SFS
Extremadura	0.04	0.04
Galicia	0.07	0.07
Baleares	0.04	0.03
Canarias	0.04	0.06
La Rioja	0.03	0.03
Madrid	0.08	0.08
Murcia	0.04	0.05
Navarra	0.04	0.03
Pais Vasco	0.06	0.04
Valencia	0.08	0.07
Ceuta Melilla	(0.03)	(0.03)
Number of observations	5220	4332

*Note:* Benchmark values in parentheses. n.a. the category was not available in the survey. City sizes for the 1985 SFS are rural, small (under 100,000 inhabitants) or large (over 100,000). Categories in the 1999 SFS are: rural (less 10,000), small (10,000–50,000), medium (50,000–500,000) or large (over 500,000)

**Appendix B**

**Appendix B** Number of born children (and current pregnancies) among married women in the 1985 and 1999 Spanish Fertility Surveys

	1985	1999
<i>Age at marriage</i>	–0.062 (11.12)**	–0.039 (9.18)**
<i>Aggregate conditions</i>		
Unemployment rate when wife 24 years	–0.030 (7.73)**	–0.013 (5.61)**
<i>Wife's employment</i>		
In Labor Force after marriage	–0.068 (1.58) <sup>#</sup>	
Years employed	–0.015 (3.22)**	
<i>Wife's current employment</i>		
In Labor Force		–0.152 (4.96)**
Temporary contract		–0.062 (1.37)
Public sector job		0.107 (2.38)**
<i>Husband's current employment</i>		
In Labor Force		–0.002 (0.04)
Temporary contract		–0.027 (0.70)
Public sector job		–0.033 (0.94)
<i>Different religion within couple</i>		–0.070 (1.93)*
Constant	4.520 (25.39)**	3.590 (22.30)**
Number of observations	5220	4332
Adj- $R^2$	0.35	0.33

*Note:* OLS estimates include controls for wife's religious affiliation, out of wedlock children, years of marriage, size of city and region of residence as well as the couple's education

Significance levels: \* less than 10%; \*\* less than 5%; <sup>#</sup> less than 15%

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