Labor Market Institutions and Fertility

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Abstract

The total fertility rate is as low as 1.3 in some high-income countries, and factors behind such low levels are not well understood. We show that uncertainty created by dual labor markets, the coexistence of temporary and open-ended contracts, and the inflexibility of work schedules are crucial to understanding low fertility. We focus on college-educated women and document that temporary contracts are associated with a lower probability of first birth using rich administrative data from the Spanish Social Security records. With Time Use data, we also show that women with children are less likely to work in jobs with split-shift schedules, with a long break in the middle of the day. Split-shift schedules present a concrete example of inflexible work arrangements and fixed time cost of work. We then build a life-cycle model in which married women decide whether to work or not, how many children to have, and when to have them. Reforms that eliminate duality or split-shift schedules increase the completed fertility of college-educated from 1.54 to around 1.7. These reforms also increase women's labor force participation and eliminate the employment gap between mothers and non-mothers. Reforming these labor market institutions and providing childcare subsidies increase fertility to 1.86.

Key Words: Fertility; Labor Market Institutions; Temporary Contracts; Split-Shift Schedules, Childcare Subsidies

JEL Classification: E24, J13, J21, J22

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1 Introduction

The total fertility rate (TFR) has been falling everywhere in the world. It is 1.8 in the US, 1.6 in Germany, and 1.4 in Japan, well below the replacement rate of 2.1 children per woman.[1] The TFR in some European countries, such as Greece, Italy, Portugal, and Spain, is even lower, around 1.3 children, a situation that demographers call lowest-low fertility (Kohler, Billari and Ortega 2002). Yet, the desired number of children by females in these countries is about 2, much higher than the observed TFR.

Population aging, low fertility coupled with high life expectancy, have been associated with a host of economic woes: low interest rates, low economic growth, and growing deficits of social security systems around the world (see, among others, Krueger and Ludwig 2007; Aksoy et al. 2019, and Jones 2019). These concerns make it essential to understand why women choose such low fertility rates.

An extensive empirical literature points to economic uncertainty as a potential culprit. Women's inability to start and establish stable labor market careers delays and lowers fertility. High unemployment is associated with low fertility, both across and within countries (Adsera 2011, Ahn and Mira 2001 and Currie and Schwandt 2014). Job displacements reduce fertility (Del Bono, Weber and Winter-Ebmer 2012, 2015).[2] In many European countries, dual labor markets contribute significantly to economic uncertainty for women in their child-bearing years. In a dual labor market, young workers hold temporary jobs that can last up to a couple of years, and then move to another temporary job until they settle on an open-ended (permanent) contract. Micro evidence shows that temporary jobs reduce fertility (see De La Rica and Iza 2005 for Spain, Auer and Danzer 2016 for Germany, Landaud 2021 for France, and Lopes 2019 for Portugal).[3]

Another factor behind low fertility can be the difficulty to combine work with childbearing. Goldin (2014) emphasizes that labor market inflexibility, measured as requirements to work long and particular hours, reduces the female labor supply and increases the gender wage gap.[4] Evidence from surveys and experiments suggests that women have a stronger preference for greater work flexibility and job stability (Mas and Pallais 2017, Wiswall and Zafar 2018). Commuting costs also matter significantly for women's labor force participation and the types of jobs that they accept (see Petrongolo and Ronchi 2020 for the UK, and Farre, Jofre and Torrecillas 2020 for Spain). One way women can cope with inflexible labor market arrangements is to have fewer children.[5]

[1] See: OECD Family Database, Tables SF2.1.A, SF2.3.B, SF2.2.A, http://www.oecd.org/els/family/database.htm.

[2] Wars, which are marked by heightened economic uncertainty, also lead to postponement of fertility (Vandenbroucke 2014, Chabe-Ferret and Gobbi 2018). During the last two recessions in the US, fertility started to fall several quarters before economic downturns (Buckles, Hungerman, and Lugauer 2020, Coskun and Dalgic 2020).

[3] Fertility and the fraction of women who work with a temporary contract are also negatively correlated across countries (see Figure A1 in Appendix B).

[4] Occupations with long working hours are associated with higher gender wage gaps (Cortes and Pan 2016, 2019). The gender wage gaps are also higher in occupations that require coordinated working hours (Cubas, Juhn and Silos 2019).

[5] Consistent with these arguments, Figure A2 in Appendix B shows that across the OECD countries, higher flexibility (measured as women's ability to adjust their working hours) is associated with higher

In this paper, we study how labor market uncertainty and inflexibility affect the fertility decisions of college-educated women in Spain. Spain is an ideal case to understand the effects of labor market institutions on fertility. It has one of the highest fraction of workers with temporary contracts in Europe. In 2018, about 28% of women worked with a temporary contract. But the incidence is much higher among the young; 72% of women between ages 15 to 24 worked with a temporary contract in 2018.[6] The temporary contracts, which were introduced in 1984 and have a much lower firing cost than permanent contracts, can last up to 2 to 4 year.[7] In practice, temporary contracts are often much shorter, and the conversion rate of temporary contracts to permanent ones is very low, about 6% per year.[8] As a result, a significant fraction of the labor force faces very uncertain labor market prospects as they move from one temporary job to the next one.

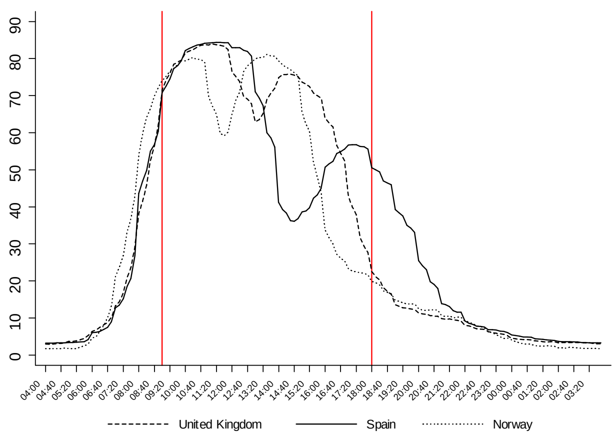

Figure 1. Fraction of People at Work

Source: Harmonized European Time Use Surveys (HETUS) database, www.tus.scb.se (accessed on 8/11/2018).

Note: The sample is restricted to 25-54 years old employees who filled the diary on an ordinary working day. The figure shows the fraction who reports employment as the main activity (main or second job and activities related to employment) at different hours of the day. The vertical lines mark 9am and 6pm.

Furthermore, the organization of workday is unusual in Spain. Many jobs have long lunch breaks that create split-shift work schedules. Figure 1 shows the fraction of employees who are at work during different times of the day in Norway, Spain, and the UK. By 6.00pm, less than 20% of workers are at work in Norway and the UK. In contrast, 50% of them are still at work in Spain. The split-shift schedules, which make combining work and childcare difficult, present a concrete example of inflexible work arrangements and fixed time cost of fertility.

[6] See: OECD Labor Force Statistics, https://stats.oecd.org/Index.aspx?DataSetCode=TEMP_I.

[7] Workers with permanent contracts are entitled to severance pay of 20 days' wages per year of service (up to a maximum of 12 months' wages) in fair dismissals and 45 days' (up to a maximum of 42 months') wages in unfair dismissals. Firing costs for temporary of 8 days' wages per year of service were introduced in 2001 and have gradually increased up to 12 days.

[8] Felgueroso et al. (2018) report that 25% of all existing contracts in 2015 lasted less than a week.

work for women.[9] Available evidence suggests that women are constrained in their work schedules, and there are no compensating wage differentials for having a split-shift schedule (Amuedo-Dorantes and De la Rica 2009). These two features (duality and inflexibility) also capture the academic and public debate on labor market reforms in Spain closely.[10]

The focus on college-educated women is motivated by extensive empirical literature that documents the higher importance of labor market uncertainty and flexibility for highly-educated women. Del Bono, Weber, and Winter-Ebmer (2012, 2015) show that the adverse effect of job displacements on fertility is mainly due to women in skilled occupations. Goldin (2014) also suggests that flexibility is more important for college-educated women at the high-end of the earnings distribution. Consistent with this evidence, Flabbi and Moro (2012), who estimate a search model with an explicit role for working hours flexibility, find that women with a college degree value flexibility more than women with only a high school degree. Hence, we expect labor market uncertainty and flexibility to be of particular importance to college-educated women. Another reason for focusing on college-educated women is the data restrictions. As we discuss in Section 2, while our primary data source (Spanish Social Security records) does a great job capturing the fertility behavior of college-educated women, it underpredicts the completed fertility for less-educated women.

We first use administrative data from the Spanish Social Security Records to study the relationship between temporary contracts and fertility. We show that a childless woman employed with a temporary contract is 28% less likely to have a (first) child than a childless woman with a permanent contract. The impact of temporary contracts on fertility accumulates over the life cycle. A woman who spends more than 50% of her working life with a temporary contract has 1.27 children at age 44, while the same number for a woman who spends less than 50% of her working life with a temporary contract is 1.53. Using data from the Spanish Time Use Survey, we also show that women with children are about 57% less likely to work in jobs with split-shift schedules compared to men or women without children.

Next, we build a life-cycle model in which married women decide whether or not to participate in the labor market, how many children to have, and when to have them. All jobs start as temporary, with a high separation rate, and are stochastically promoted to permanent ones, which have lower separation rates. Jobs can also have a regular or split-shift schedule. The fraction of women who work with a split-shift schedule is endogenous since women can choose not to accept such contracts. Having a child is costly, both in terms of time and money. Each period, women are employed, unemployed, or out of the labor force. As women work, they accumulate human capital, and the accumulation is faster for younger women. On the other hand, women's ability to have children declines by age. As a result, women face a trade-off between establishing their career (having more labor market

[9]In the 2009-2010 Spanish Time Use Survey, about 38% of employees between ages 25 to 44 work with a split-shift schedule, and these arrangements are prevalent across different occupations, industries, and regions (see Table A1 in the Appendix B). For different occupations, for example, the fraction of workers with a split-shift schedule is around or above 30%.

[10]In 2009, a manifesto signed by 100 academic economists called for the elimination of temporary and permanent contracts and the introduction of a single open-ended contract. Since then, there have been different reforms, but the dual labor market structure has not changed fundamentally (see Bentolila, Dolado and Jimeno 2012). Recently, the Deputy Prime Minister of Spain, Carmen Calvo, called for "rationalization" of working hours in Spain and stated that "being a young and working woman and trying to be a mother, with or without a partner, is practically impossible." See: https://bit.ly/3ctCeGL.

experience and obtaining a permanent contract) and risking not having any children.

The model is then used to quantify how labor market uncertainty and inflexibility affect fertility. To this end, we first eliminate labor market duality and move to a single-contract economy. In the benchmark economy, 5.5% of women with a temporary contract become unemployed each quarter, while the rate is only 0.65% for those with a permanent one. If we have a single and low (0.65%) separation rate, fertility increases from 1.54 to 1.70. In the single-contract economy, jobs last longer, and women also enjoy higher and less risky incomes. There is also no reason to wait to obtain a permanent job first and then have a child. Our results show that each channel accounts for about half of the rise in fertility. We also find that in a single-contract economy, women wait to obtain regular-schedule jobs. Almost all mothers work with a regular-schedule job, and split-shift jobs disappear endogenously.

When we eliminate split-shift contracts, the fertility increases to 1.67 children, a rise similar to one we obtain in a single-contract economy. The higher fertility in both experiments comes together with higher labor force participation, particularly for women with children. The negative impact of split-shift schedules on fertility and female labor supply in the benchmark economy is crucial since it is not always easy to relate inflexibility to exiting labor market policies and pinpoint its effects.

Finally, we find that lower childcare cost also has a significant effect on fertility. When we lower the childcare costs by 35%, which would extend an existing 100-Euros-a-month subsidy to working mothers with children below age 3 to all working mothers, the fertility increases to 1.75. Yet, childcare subsidies alone do not significantly increase female labor force participation and employment, as they are not enough to overcome incentives created by the existing labor market institutions. Combining three reforms increases the TFR for college-educated women to 1.86. The employment rate of mothers also increases substantially, from 72% to 94%.

The paper contributes to the structural labor and macro literatures that study the labor force participation and fertility decisions of women.[11] Within this literature, Sommer (2016) emphasizes the importance of income uncertainty (wage shocks). Our focus is on the uncertainty that emerges from labor market transitions. The effect of labor market transitions on fertility was studied by Da Rocha and Fuster (2006), focusing on US-Spain differences in job-finding rates. We disentangle the role of duality from uncertainty and explore the interactions between dual labor markets and flexibility. Another related paper is Lopes (2019), who studies the effects of temporary contracts on fertility in Portugal. She models temporary contracts in greater detail, but her analysis abstracts from labor force participation decisions. Our analysis shows that the entry of women into the labor force is critical to understanding how labor market institutions affect fertility. The effects of childcare costs on female labor supply have been studied, among others, by Attanasio, Low, and Sanchez-Marcos (2008) and Guner, Kaygusuz, and Ventura (2020) for the US, and by Bick (2016) who studies the impact of childcare subsidy expansions on female labor supply and fertility in Germany.[12]

[11] Dynamic models of fertility and labor supply decisions go back to Heckman and Willis (1976) and Heckman and MaCurdy (1980). For recent papers that model joint labor supply and fertility decisions, see, among others, Francesconi (2002), Caucutt, Guner and Knowles (2002), Erosa, Fuster and Restuccia (2010), and Eckstein, Kean and Lifshitz (2019).

[12] Other potential drivers of the low fertility in developed countries have also been considered, such as allocation of household work between husbands and wives (Feyrer, Sacerdote, and Stern 2008; de Laat and

Our second contribution is to introduce labor market flexibility into a life-cycle model of fertility. Del Boca and Sauer (2008) is one of the first papers highlighting the importance of aggregate measures of labor market flexibility and childcare availability for differences in labor force participation and fertility across Italy, Spain, and France. Erosa, Fuster, Kambourov and Rogerson (2021) and Cubas, Chinhui and Silos (2019) show that a substantial fraction of the observed gender wage gap is due to women's occupational choice and labor supply decision. Their analysis, however, abstracts from fertility decisions. Adda, Dustmann and Stevens (2017) build a model with endogenous fertility and occupational choice to study how children affect career choices of women in Germany. In their model, females choose between low-wage-growth occupations that are more child-friendly and high-wage-growth occupations that carry a penalty for career breaks. Our focus is on fertility as a mechanism to cope with inflexibility.

2 Facts

In this section, we document how temporary contracts and split-shift schedules are related to fertility decisions of college-educated married women (those with at least a college degree) in Spain. Our primary data source is the 2005-2010 Continuous Sample of Working Lives (Muestra Continua de Vidas Laborales con Datos Fiscales, MCVL). The MCVL is a 4% random sample of individuals registered to the Spanish Social Security during a reference year. Starting from a reference year, e.g. 2010, and going back, the MCVL traces the social security records of individuals up to their first employment (or up to 1980 for the older cohorts). At any moment, a working-age individual can have a social security record if she is employed or is receiving unemployment benefits.

The unit of observation in the MCVL is an individual labor market spell, which can be employment with a particular contract (a job spell) or unemployment (an unemployment spell). Each spell is characterized by a start date, an end date, and a firm identifier. For each job spell, the MCVL provides information on part-time or full-time status, sector of employment (public or private), industry, occupation, and type of contract (temporary or permanent). It also provides working hours expressed as a percentage of a full-time equivalent job and individual characteristics contained in social security records, such as age and gender. MCVL includes information on basic personal characteristics such as gender, date of birth (which we use to generate age), and nationality. The MCVL can be matched with the municipality records, which provide additional personal characteristics of individuals such as education, detailed place of birth and place of residence, and basic demographic information on household members including gender and date of birth (which we use to generate age of other household members). We infer marital status, the number of children, and new births using information on age and gender of all household members. As such, the sample of individuals, which we refer as married, includes individuals who are legally married or cohabiting.[13] Based on labor market spells, we construct a quarterly panel. The analysis is

Sevilla-Sanz 2011; Doepke and Kindermann 2019), and parental incentives to invest in children's education (Kim, Tertilt and Yum 2019).

[13]In 2010, 35.5% of births in Spain were to unmarried mothers. But only for 1.9% of births, the father's age is missing in birth records, which can be a more accurate indication of single-motherhood. This fraction

restricted to native married women born between 1966Q1 and 1971Q4, who were between 39 to 45 years old in 2010. Further details on the construction of the quarterly panel are provided in Appendix A.

While the MCVL is an excellent data source to capture the relation between temporary contracts and fertility, it also has shortcomings. First, the demographic characteristics of households are obtained by merging the MCVL with the municipal records, and, as a result, information on the number of children is restricted to children at home. We complement the MCVL with the 2018 Spanish Natality (Encuesta de Fecundidad, EF), which provides detailed information on completed fertility, age at first births, and childcare costs. In the EF, we calculate the completed fertility of college-educated women in our cohort who are employed at around age 49.[14] They have 1.60 children (17% are childless, while 21% have only one child). The age at first birth is around 32 years, with only 36% of women having a first birth below age 30. How does the level of fertility from the EF compare with the one we obtain in the MCVL? Women in our MCVL sample who are 44 years old and employed have 1.51 children, which is close to the number we calculate from the EF.

In contrast, the MCVL does a much worse job capturing the fertility rate of women with less than a college education. For native women with less than a high school degree in our cohort, the completed fertility of women employed at age 44 is 1.62 in the EF but only 0.8 in the MCVL. For those who have more than a high school education but without a college degree, the numbers are 1.44 (EF) and 1.1 (MCVL). A possible reason for the gap between the EF and the MCVL for the less educated women is that we do not observe children if they are not co-residents. Since women with less education have children at a younger age, their children are more likely to leave parental home when women are 44 years old.

Second, the MCVL does not provide information on individuals who are out of the labor force. As a result, we use the Spanish Labor Force Survey (Encuesta de Población Activa, EPA) and its rotating panel component (EPA-flujos or EPA-flows) to construct stocks of individuals who are employed, unemployed or out of the labor force, and flows among these labor market states. Third, it is not possible to match wives and husband and construct joint labor market transitions or total household earnings. The EPA does not contain any information on earnings, either. Therefore, we use the European Union Statistics on Income and Living Conditions (EU-SILC) to construct household-level income measures. Finally, we use the Spanish Time Use Survey (STUS) to obtain information on workers with split-shift and regular work schedules. In all datasets, we try to keep our analysis as comparable as possible to the MCVL and provide further details on these datasets and samples in Appendix A.

Two facts emerge from our analysis:

1. Temporary Contracts are Associated with Lower Fertility: We first look at the relationship between temporary contracts and fertility. In the MCVL sample, a childless married woman with a permanent contract today has a 3.4% probability of giving birth in a year. The probability is much lower for a woman with a temporary contract, only 2.3%.

was slightly higher, 2.5%, in 2018. See: The National Statistical Institute, https://bit.ly/2SXzutq.

[14] To maximize the sample size, the calculations in the EF are based on employed women between ages 46 to 52. The mean age in the sample is 49.

In Table 1, we check whether this unconditional gap is robust to controls by reporting the odds ratio estimates from the following model

$$\Pr(y_{it} = 1 | y_{it-1} = 0, e_{ijt-4} = 1, T_{ijt-4}, \mathbf{x}_{it}, \mathbf{z}_{ijt-4}, \varphi_t) = L(\alpha + \beta T_{ijt-4} + \mathbf{x}_{it}\boldsymbol{\theta} + \mathbf{z}_{ijt-4}\boldsymbol{\eta} + \varphi_t), \quad (1)$$

where L is the standard logistic function and the outcome variable y_{it} takes the value of 1 if woman i has a first birth at a specific quarter t, given that she did not have a (first) child in previous quarter ($y_{it-1} = 0$) and was employed in firm j ($e_{ijt-4} = 1$) in the preceding year.[15] The coefficient of interest, β, is on the binary indicator of working with a temporary contract in the preceding year T_{ijt-4}. The vector $\mathbf{x}_{it}$ includes other personal characteristics (at quarter t), age in this specification, and the vector $\mathbf{z}_{ijt-4}$ contains work-related characteristics (in the preceding year), such as firm tenure, full-time employment, an indicator for public sector employment, occupation, and industry.[16] In addition to individual and work-related characteristics, the model also controls for year fixed-effects φ_t.

Table 1. Temporary Contracts and the First Birth Probability

	(1)	(2)	(3)	(4)
$\text{Temporary}_{\mathbf{t-4}}$	0.633***	0.672***	0.661***	0.723***
	(0.031)	(0.035)	(0.053)	(0.059)
Personal characteristics	NO	YES	YES	YES
Work-related characteristics	NO	NO	YES	YES
Year fixed effects	NO	NO	NO	YES
Number of observations	66,286	66,286	37,581	37,581

Notes: (i) Individual level clustered robust standard errors in parentheses. (ii) Personal characteristics include age. Work-related characteristics are firm tenure (in quarters), a binary indicator for public sector, a binary indicator for full-time, occupation dummies (ten social security categories) and NACE one-digit industry dummies (nine categories). All models include a constant term. (iii) *p < 0.1,**p < 0.05, ***p < 0.01.

Table 1 shows the odds ratio estimates. Column 1 presents the results where we only control for the temporary contract indicator. In the next three columns, we gradually add personal and work-related characteristics. In the final column, where we control for all covariates together with year fixed-effects, childless women who are employed with a temporary contract are about 28% less likely to have a (first) child than childless women who are employed with a permanent contract.[17]

[15] Women drop out of the sample if they have a first child. Otherwise, they are in the sample for the following quarter. Each additional quarter is considered an independent observation, but the standard errors are clustered at individual level for the possible intra-group correlations.

[16] We do not restrict the sample to workers in private sector. The fraction of workers with a temporary contract in public sector is quite similar to the one in private. In 2010, in the EPA, about 23% of workers in public sector had a temporary contract.

[17] Lower promotion rates of women might reflect, among other factors, statistical discrimination by employers in the presence of more frequent career interruptions, as in Xiao (2021). Fernandez-Kranz and Rodriguez-Planas (2013) evaluate a 1999 Spanish reform that granted employment protection to workers with children younger than 6 who ask for a shorter workweek due to family responsibilities. They show that the reform lowered women's promotion to permanent contracts.

Table 1 shows that women with temporary contracts are less likely to have children at a point in time. These women might still reach the same completed fertility as those with a permanent contract but have their children later. In Table 2, we show that this is not the case. We split women between ages 25 and 44 into two groups: those who spent less than 50% of their working life with a temporary contract and those who spent 50% or more. We then compare the number of children these women have at different ages. A woman who worked in a temporary contract for more than 50% of her employed life has about 1.27 kids by age 44. The number of children is higher, about 1.53, for women who spend less time employed in temporary contracts. The difference between these two groups opens up early; at age 35, there is a difference of about 0.14 children, and the gap does close as they age.

Table 2. Number of Children by Time Spent on Temporary Contracts, aged 25-44

	$<$50%	$\geq$50%
Married at age 35	1.01	0.87
Married at age 40	1.53	1.37
Married at age 44	1.53	1.27

Notes: We further restrict our sample to women who were employed at least 50% of the time between 1996Q1 and 2010Q4.

2. Mothers are Less Likely to Work in Split-Shift Schedule Jobs: Next, we document the relation between split-shift schedule jobs and fertility. In the STUS 2009-2010, about 26% of mothers in our sample aged 25 to 44 hold a split-shift schedule contract. The fraction is relatively higher for women who do not have children, about 44%. This difference can reflect the extra cost that split-shift schedules entail for women with children. To get a sense of this cost, we calculate the time interval between the first and last times a worker indicates that she is working in a day. This interval is 7.03 hours for women with a standard contract and 8.31 for women with a split-shift contract.[18] For women with split-shift contacts, the longer interval involves breaks, which makes childcare arrangements more difficult. To investigate the association between motherhood and the probability of working with a split-shift schedule, we once again run a logistic regression

$$\Pr(y_i = 1|, F_i, P_i, F_iP_i, \mathbf{x}_i, I_i, \mathbf{z}_i) = L(\alpha + \beta F_i + \gamma P_i + \delta F_iP_i + \mathbf{x}_i\boldsymbol{\theta} + \lambda I_i + \mathbf{z}_i\boldsymbol{\eta}), \quad (2)$$

where outcome variable y_i takes the value of 1 if individual i works with a split-shift schedule and 0 otherwise. The set of predictors include a binary gender indicator (F_i), a binary indicator for presence of own children in the household (P_i) and the interaction between them (F_iP_i). The vector $\mathbf{x}_i$ includes personal characteristics, such as age and region, and I_i is the household income. The vector $\mathbf{z}_i$ contains work-related characteristics, such as full-time employment, temporary contract, occupation, and industry, as well as indicators for

[18]The STUS 2009-2010 time-diaries include information on whether the respondent is working or not within each 15-minute interval (from 6.00am-6.14am to 5.45am-5.59am) within 24 hours.

having a second job and whether the respondent states to have flexible working hours.

Table 3. Motherhood and the Probability of Working with a Split-Shift Schedule

	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.446***	-	0.843	0.746	0.806	1.097
	(0.060)		(0.236)	(0.214)	(0.234)	(0.363)
Parent	-	0.818	1.017	1.182	1.163	1.181
		(0.120)	(0.181)	(0.219)	(0.217)	(0.235)
Female × Parent	-	-	0.431***	0.453**	0.457**	0.428**
			(0.139)	(0.149)	(0.150)	(0.152)
Personal characteristics	NO	NO	NO	YES	YES	YES
Household income	NO	NO	NO	NO	YES	YES
Work-related characteristics	NO	NO	NO	NO	NO	YES
Observations	1,174	1,174	1,174	1,174	1,174	1,174

Notes: (i) Personal characteristics include age and regional dummies (seven categories). Household income is net average monthly household income (four categories <1200 euros, between 1201 and 2000 euros, between 2001 and 3000 euros, and >3000 euros). Work-related characteristics include a binary indicator for full-time employment, National Classification of Occupations (CNO) one-digit occupation dummies (regrouped, five categories), National Classification of Economic Activities (CNAE) one digit industry dummies (regrouped, nine categories), a binary indicator for having a second job, a binary indicator for having flexible working hours, and a binary indicator for having a temporary contract. All models include a constant term. (iii) *p < 0.1,**p < 0.05, ***p < 0.01.

In Table 3, column 1 shows the odds ratio estimates when we only include a gender indicator, while in column 2, we only control for an indicator for the presence of own children in the household (i.e., being a parent). In column 3, we control for both gender and presence of own children, as well as their interaction. The results show that children affect men and women differently. While we do not observe a significant difference between childless men and women in the probability of working with a split-shift job, there is a significant negative impact of children on females but not on males. Mothers are about 57% less likely to work with a split-shift schedule compared to men and women without children. As we move across columns from left to the right, we gradually add personal characteristics, household income, and work-related characteristics, and odds ratio remains significant and similar in magnitude.

3 Model

We next build a life-cycle model where married females make labor force participation, fertility, and savings decisions. The model economy is populated by married households. Each married household consists of two potential earners, a male (m) and a female (f). Individuals are born married and do not experience marital transitions. Husbands and wives age together. Individuals, men or women, differ by their abilities, denoted by a. Abilities of a couple come from a joint distribution, $F(a_f, a_m)$, at the start of life and remain constant afterward. Beyond their innate ability, females are also heterogeneous in their preferences for fertility.

Demographics Model period is a quarter. We focus on the behavior of women between ages 25 ($j = 1$) and 54 ($J = 54 \times 4$). Fertility decisions are uncertain and even if a woman would like to have a child, she may not get pregnant. Fertility opportunities decrease with a woman's age. Let α_j be the probability that an age-j female gets pregnant, conditional on her decision to have a baby.

Once children are born, they age stochastically. There are three age groups for children: less than 2 (babies), between 2 and 14 (children), and 15 or older (young adults). Young adults do not imply any cost. Each period a baby becomes a child with probability $\delta_b = 1/8$. After age 2, children face a probability δ_c of becoming a young adult each period. We set $\delta_c = 1/52$, so on average childhood lasts 13 years and young adulthood starts at age 15. We assume that if a female has a baby, she cannot have another one in that period. We denote by $n_1 \in \{0, 1\}$ the number of babies in the household. The number of children and young adults are denoted by n_2 and n_3, respectively. Let $\mathbf{n} = \{n_1, n_2, n_3\}$ be a vector that indicates number of children in each age group, and $n = n_1 + n_2 + n_3$ be the total number of children in the household.

Let $b \in \{0, 1\}$ indicate whether or not a household decides to have a baby. Then, the number of babies next period is given by

$$n_1' = \begin{cases} 1 \text{ with prob. } \alpha_j \text{ if } n_1 = 0 \text{ and } b = 1 \\ 0 \text{ with prob. } (1 - \alpha_j) \text{ if } n_1 = 0 \text{ and } b = 1 \\ 0 \text{ with prob. } \delta_b \text{ if } n_1 = 1 \\ 1 \text{ with prob. } (1 - \delta_b) \text{ if } n_1 = 1 \end{cases}. \tag{3}$$

Similarly, n_2 evolves according to

$$n_2' = \begin{cases} n_2 + 1 \text{ with prob. } \delta_b(1 - \delta_c) \text{ if } n_1 = 1 \\ n_2 \text{ with prob. } (1 - \delta_b)(1 - \delta_c) \text{ if } n_1 = 1 \\ n_2 \text{ with prob. } (1 - \delta_c) \text{ if } n_1 = 0 \\ n_2 - 1 \text{ with prob. } \delta_c \text{ if } n_1 = 0 \text{ and } n_2 > 0 \end{cases}. \tag{4}$$

Finally, the number of young adults next period reads

$$n_3' = \begin{cases} n_3 \text{ with prob. } (1 - \delta_c) \text{ if } n_2 > 0 \\ n_3 + 1 \text{ with prob. } \delta_c \text{ if } n_2 > 0 \\ n_3 \text{ if } n_2 = 0 \end{cases}. \tag{5}$$

Hence, all households start with $\mathbf{n} = \{0, 0, 0\}$, first move to $\mathbf{n} = \{1, 0, 0\}$ and end up with $\mathbf{n} = \{0, 0, n\}$. We represent this stochastic structure as[19]

$$\mathbf{n}' = \Gamma(\mathbf{n}; b, j). \tag{6}$$

[19] To reduce the number of states and save computational time, when we solve the model, we assume that when a baby arrives in a household, all existing children become babies. Since when a female has a baby,

Preferences Each period, a married female decides whether or not to work, how much to consume, how much to save, and whether or not to have another child. Each female has one unit of time endowment each period. Her preferences are given by

$$u(c, n, \ell, j) = \log\left(\frac{c}{\Omega(n_1 + n_2)}\right) + \gamma_1 \frac{exp(j - \gamma_3)}{1 + exp(j - \gamma_3)} (\overline{n} + n)^{\gamma_2} + \chi \log(\ell), \tag{7}$$

where c is consumption, $\Omega(.)$ is the household equivalence scale, ℓ is leisure, and n is the *total* number of children. In this formulation $\overline{n}$ denotes an exogenously given number of children from which parents get utility, independent of the number of children they have. This is a rather standard feature that allows us to pin down the fraction of childless females.

We also assume that utility that parents get from children is increasing in parents' age, given by $\frac{exp(j-\gamma_3)}{1+exp(j-\gamma_3)}$. This term captures other factors that might push parents to delay their fertility, such as housing or other high fixed-cost investments for households. Females are heterogeneous in γ_3. Some have strong preferences to have children early, while others prefer to wait, which will determine the age distribution at first births in quantitative analysis.

Labor Market - Females A married women can be in one of three labor market states: *working, unemployed or out-of-labor force.* We assume that all jobs are full-time and require l units of time.[20] Each period, with probability ϕ, an unemployed female receives a job offer. If she accepts the offer, she starts working next period. If she rejects the offer, she decides whether to continue to be unemployed or move out of the labor force. Only unemployed workers can get job offers. They have to incur, however, a participation cost in terms of leisure, denoted by ξ. Females who are out of the labor force do not incur this cost, but do not receive job offers. To receive job offers, a female, who is out of the labor force, has to enter first the labor force as unemployed.

There are two types of jobs: temporary and permanent, denoted by indicator $P = 0$ and $P = 1$, respectively. Jobs also differ by the type of work schedule they offer. They can have a split-shift or a regular work schedule, denoted by indicator $S = 1$ and $S = 0$, respectively. Split contracts have a fixed time cost denoted by κ. As a result, total working hours for a split-shift contract is $l + \kappa$, while the worker only receives a wage for l hours. We assume that a fraction ψ of all new job offers (temporary or permanent) have a split-shift schedule.

All new jobs start as temporary. A female with a temporary contract is promoted to a permanent job with probability π and stays with a temporary with $1-\pi$. Each period a job can be destroyed with probability δ_P. Temporary contracts last shorter and have a higher probability of being destroyed, i.e. $\delta_0 > \delta_1$.

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she can't have another one, this assumption implies that in a household there are either only babies or only children. In the model, babies (independent of their number) imply a time cost for mothers, and babies and children (again independent of their number) imply a monetary cost. Hence, this assumption does not affect the cost of fertility.

[20] We abstract from part-time work. While introducing part-time work would be an easy extension, only 22.2% of employed women between ages 25 and 54 worked part time in Spain in 2015. This is lower than several other European counties, e.g., Germany (36.7%) and Italy (32.6%). See: https://stats.oecd.org/Index.aspx?DataSetCode=FTPTC_I.

Females accumulate human capital, h, as they work. Each female starts her life with $h = 1$, and if she works in age j, then her next period human capital is given by

$$\ln(h') = \ln h + \ln(1 + \eta_1 + \eta_2 j). \tag{8}$$

Each extra quarter of work on a job is associated with a η_1 percent growth in wages. The growth rate, however, declines with age if $\eta_2 < 0$. We assume that there is no depreciation associated with not working.

The wage rate of a female depends on her ability, human capital, and contract type, and is given by

$$w_f(a, h, P) = \zeta_P a h, \tag{9}$$

where $\zeta_1 = 1$, and $\zeta_0 < 1$ is the wage penalty for temporary contracts.[21]

Labor Market - Males All males are in the labor force. They do not make any decisions and their labor market status changes exogenously. Males can be in three different labor market states: working with a temporary contract, working with a permanent contract, or unemployed. Let $\lambda_m \in \{0, 1, u\}$ denote these labor market states, and $\pi^m_{x,x'}$, for $x, x' \in \{0, 1, u\}$, be the associated transition probabilities from employment state x to x'.

Wage rate for a male of age-j depends on his ability, and type-of contract and is given by

$$w_m(a, j, P) = a \exp(\omega^P_0 + \omega^P_1 j + \omega^P_2 j^2). \tag{10}$$

Child Care Costs Each period a working female with children has to pay childcare costs.[22] We assume that childcare costs are independent of the number and age of children in the household. We also assume that not all households pay childcare costs. A household can have access to informal childcare (e.g. grandparents), denoted by $g \in \{0, 1\}$. If $g = 1$, a household has access to grandparents (or other relatives) and does not pay any childcare cost. We assume that $g = 1$ for a fraction φ of all households.

The per-child childcare costs also depend on whether a female works with a split-shift or regular contract and are given by

$$D(g, l, S) = \begin{cases} d\left(1 + \frac{\kappa S}{l}\right), & \text{if } g = 0 \\ 0, & \text{if } g = 1 \end{cases}. \tag{11}$$

If a household does not use informal care, then they pay d if $S = 0$ (i.e. the mother works in a regular schedule). If the mother works with a split-shift contract, her childcare costs are given by $d(1 + \frac{\kappa}{l})$, i.e. they are increased by κ/l, the fixed time cost of split-shift contracts.

[21]Note that gender differences in the mean abilities of men (a_m) and women (a_f), are isomorphic to a direct gender penalty, $\zeta_f < 1$, in $w_f(a, h, P) = \zeta_f \zeta_P a h$.

[22]We do not model maternity leave. In Spain, mothers have 16 weeks of maternity leave (see: https://ec.europa.eu/social/main.jsp?catId=1129&langId=en&intPageId=4789). This is little more than a quarter, the model period. We could allow women to keep their current jobs and income without any extra childcare payments for one model period. This would create another state variable, whether women is on leave or not, and the effects are likely to be small.

Besides monetary costs, babies (0 to 2 years old children) also imply a fixed time cost for their mothers, denoted by ι.[23]

Government There is a government that taxes individuals and uses the tax revenue to provide means-tested transfers, unemployment benefits, and to finance government consumption. Let $G(I)$ denote any means-tested transfers from the government to the household where I is the total household income. Let $T(I)$ be the taxes that an individual with income level I pays. We assume that unemployed individuals get a $\theta \in (0,1)$ fraction of average labor income in the economy as unemployment benefits.

4 Household Problem

Let $\boldsymbol{s} = (a_f, a_m, g)$ be the permanent characteristics of a household. Suppose the wife has a type-(P,S) job, her human capital level is h, the labor market status of her husband is λ_m, and household assets are given by k. Then, the problem of an age-j female with a vector of $\mathbf{n}$ children, who is currently employed, is given by

$$\begin{aligned} V_j^w(\boldsymbol{s}, k, \mathbf{n}, P, S, h, \lambda_m) &= \max_{c,k',b} u(c, n, \ell, j) \\ &+\beta(1-\delta_P)EW_{j+1}^o(\boldsymbol{s}, k', \mathbf{n}', P', S, h', \lambda_m' | P, \lambda_m, \mathbf{n}, b) \\ &+\beta\delta_P EW_{j+1}^{no}(\boldsymbol{s}, k', \mathbf{n}', \lambda_m' | \lambda_m, \mathbf{n}, b), \end{aligned}$$

subject to

$$c + k' + D(g,l,S)\mathcal{J}(n_1+n_2) = I_m + I_f + k(1+r) + G(I) - T(I_f + \frac{kr}{2}) - T(I_m + \frac{kr}{2}),$$

$$\ln(h') = \ln h + \ln(1 + \eta_1 + \eta_2 j),$$

where

$$\ell = 1 - l - \iota\mathcal{J}(n_1) - \kappa S,$$

and

$$I_m = \begin{cases} w_m(a, j, \lambda_m) \text{ if } \lambda_m \in \{0,1\} \\ \theta_m \overline{I}_{lab} \text{ if } \lambda_m = u. \end{cases}, \ I_f = \zeta_p a h,$$

where $\mathcal{J}(x)$ is an indicator function with $\mathcal{J}(x) = 1$ if $x > 0$, $\overline{I}_{lab}$ is the average labor income in the economy and $\theta_m \overline{I}_{lab}$ is the unemployment payment for an unemployed husband.

A married female has earnings given by $\zeta_P a h$, which are increasing in her human capital. Given her husband's earnings (I_m), which depend on whether he is employed or unemployed, a married female decides how much to consume (c), how much to save (k'), and whether to have a baby (b). She enjoys $\ell = 1 - l - \iota\mathcal{J}(n_1) - \kappa S$ units of leisure, which reflects her

[23] While fathers' income helps the household to cope with the monetary cost of children, fathers do not share the time cost of children in the model. Childcare time by fathers is very small in Spain (de Laat and Sevilla-Sanz 2011).

labor market hours, child care time for babies (ι), and the fixed cost of work associated with split-shift jobs (κ).

If she does not loose her job, which happens with probability $1-\delta_P$, then the expected value of having the opportunity to work next period is given by

$$EW^o_{j+1}(\boldsymbol{s},k',\mathbf{n}',P',S,h',\lambda'_m|P,\lambda_m,\mathbf{n},b) =$$
$$\sum_{\lambda'_m}\sum_{P'}\sum_{\mathbf{n}'}\max\{V^w_{j+1}(\boldsymbol{s},k',\mathbf{n}',P',S,h',\lambda'_m),V^u_{j+1}(\boldsymbol{s},k',\mathbf{n}',\lambda'_m),V^{np}_{j+1}(\boldsymbol{s},k',\mathbf{n}',\lambda'_m)\}$$
$$\pi^m_{\lambda_m,\lambda'_m}\pi^f_{P,P'}\Gamma(\mathbf{n};b,j),$$

where $\pi^m_{\lambda_m,\lambda'_m}$ is the exogenous transition probabilities on husband's labor market status, $\pi^f_{P,P'}$ is probability of her being promoted from type P to type P' contract, and $\mathbf{n}'=\Gamma(\mathbf{n};b,j)$ are the transition probabilities for the number of children, defined in equation (6).

Similarly, EW^{no}_{j+1} is the expected value for a women who does not have an offer, and hence decides whether to search (be unemployed) or move out of labor market, reads as

$$EW^{no}_{j+1}(\boldsymbol{s},k',\mathbf{n}',\lambda'_m|\lambda_m,\mathbf{n},b) =$$
$$\sum_{\lambda'_m}\sum_{\mathbf{n}'}\max\{V^u_{j+1}(\boldsymbol{s},k',\mathbf{n}',\lambda'_m),V^{np}_{j+1}(\boldsymbol{s},k',\mathbf{n}',\lambda'_m)\}\pi^m_{\lambda_m,\lambda'_m}\Gamma(\mathbf{n};b,j).$$

To save on computational time, we set $V^w_{J+1}(\boldsymbol{s},k,\mathbf{n},P,S,h,\lambda_m)$, the end-of-life value functions as follows: we assume that both the husband and the wife keep their last period's (period $J's$) labor market income for 10 more years (i.e. from ages 55 to 64), at age 65 they retire, and live for 10 more periods. During retirement, they only have asset income. After age 54, they get utility from the number of children they had at age 54 until age 75, but do not incur any cost associated to children (in terms of time, childcare costs or consumption congestion). Hence, after age 54, households solve a simple consumption savings problem with a constant labor income for 10 years, and no labor income for another 10.[24]

4.1 Value Function of Unemployed

An unemployed woman receives unemployment benefits θ_f. The household income is then given by the sum of θ_f and the earnings of the husband. Like a woman who is employed, an unemployed woman decides how much to consume and how much to save and whether to have a new baby. In contrast to a working woman, her human capital remains the same, i.e. $h'=h$. Her problem is given by

$$\begin{aligned} V^u_t(\mathbf{s},k,\mathbf{n},h,\lambda_m) &= \max_{k',b} u(c,n,1-\xi-\iota\mathcal{J}(n_1),j)+\beta\phi EW^o_{j+1}(\boldsymbol{s},k',\mathbf{n}',h'=h,\lambda'_m|\lambda_m,\mathbf{n},b) \\ &\quad +\beta(1-\phi)EW^{no}_{j+1}(\boldsymbol{s},k',\mathbf{n}',h'=h,\lambda_m|\lambda_m,\mathbf{n},d) \end{aligned}$$

subject to

$$c+k'=I_m+I_f+k(1+r)+G(I)-T(I_f+\frac{kr}{2})-T(I_m+\frac{kr}{2}),$$

[24]This approach is common in structural model of life-cycle decisions, see e.g. Eckstein et al. (2019).

where

$$I_f = \theta_f \bar{I}_{lab} \text{ and } I_m = \begin{cases} w_m(a,j,\lambda_m) \text{ if } \lambda_m \in \{0,1\} \\ \theta_m \bar{I}_{lab} \ \text{ if } \lambda_m = u \end{cases}.$$

If she has an opportunity to work, $EW^o_{j+1}(\boldsymbol{s}, k', \mathbf{n}', \lambda'_m)$ captures the expectations over an unconditional distribution over S' (whether her new job has a split-shift or regular schedule) as well as children:

$$\begin{aligned} & EW^o_{j+1}(\boldsymbol{s}, k', \mathbf{n}', h', \lambda'_m|\lambda_m, \mathbf{n}, b) \\ = & \sum_{\lambda'_m}\sum_{S'}\sum_{\mathbf{n}'} \max\{V^w_{j+1}(\boldsymbol{s}, k', \mathbf{n}', 0, S', h', \lambda_m), V^u_{j+1}(\boldsymbol{s}, k', \mathbf{n}', \lambda'_m), V^{np}_{j+1}(\boldsymbol{s}, k', \mathbf{n}', \lambda'_m)\} \\ & \pi^m_{\lambda_m,\lambda'_m}\Phi(S')\Gamma(\mathbf{n}'; b, j), \end{aligned}$$

where $\pi_{\lambda'_m\lambda_m}$ is the exogenous transition probabilities on husband's labor market status, and $\Gamma(\mathbf{n}'; b, j)$ are the transition probabilities for the number of children as defined above. Here $\Phi(S')$ is the distribution of temporary jobs with respect to the work schedules. Note that all jobs start as temporary ($P = 0$).

Similarly, if a female does not have a job offer, her expected value next period is given by

$$\begin{aligned} & EW^{no}_{j+1}(\boldsymbol{s}, k', \mathbf{n}', h', \lambda_m|\lambda_m, \mathbf{n}, b) = \\ & \sum_{\lambda'_m}\sum_{\mathbf{n}'} \max\{V^u_{j+1}(\boldsymbol{s}, k', \mathbf{n}', \lambda'_m), V^{np}_{j+1}(\boldsymbol{s}, k', \mathbf{n}, \lambda'_m)\}\pi^m_{\lambda_m,\lambda'_m}\Gamma(\mathbf{n}; b, j). \end{aligned}$$

4.2 Value Function of Non-participants

Finally, the problem of a j-years old female who is out of labor force is given by

$$V^{np}_t(\boldsymbol{s}, k, \mathbf{n}, h, \lambda_m) = \max_{k',b} u(c, n, 1 - \iota\mathcal{J}(n_1), j) + \beta EW^{no}_{j+1}(\boldsymbol{s}, k', \mathbf{n}', h' = h, \lambda_m|\lambda_m, \mathbf{n}, b)$$

subject to

$$c + k' = I_m + I_f + k(1 + r) + G(I) - T(I_f + \frac{kr}{2}) - T(I_m + \frac{kr}{2}),$$

$$I_f = 0 \text{ and } I_m = \begin{cases} w_m(a,j,\lambda_m) \text{ if } \lambda_m \in \{0,1\} \\ \theta_m \bar{I}_{lab} \text{ if } \lambda_m = u \end{cases},$$

and

$$\begin{aligned} & EW^{no}_{j+1}(\boldsymbol{s}, k', \mathbf{n}', h', \lambda_m|\lambda_m, \mathbf{n}, b) \\ = & \sum_{\lambda'_m}\sum_{\mathbf{n}'} \max\{V^u_{j+1}(\boldsymbol{s}, k', \mathbf{n}', h', \lambda'_m), V^{np}_{j+1}(\boldsymbol{s}, k', \mathbf{n}, h', \lambda'_m)\}\pi^m_{\lambda_m,\lambda'_m}\Gamma(\mathbf{n}; b, j). \end{aligned}$$

5 The Benchmark Economy

To calibrate the benchmark economy, we proceed in two steps. First, we set several parameters to their data counterparts or choose them based on a priori information. These parameters are listed in Table 4. Further details are delegated to Appendix C. Let's start with parameters that are straightforward to determine. In recent decades, the average long-term real interest rates in Spain were around 1.6%, while the average real deposit rates were close to zero. We set $r = 0.8\%$ as an intermediate value. We adopt the modified OECD household equivalence scale and set $\Omega(n) = 1 + 0.5 + 0.3(n_1 + n_2)$, i.e. we assume that the second adult counts 50% of the first adult while each child counts as 30% of the first adult.[25] The average working hours in a standard-time contract, l, is set to 0.4. We take α_j values, which determine the probability that an age-j woman might get pregnant upon trying, from Sommer (2016, Figure 1).[26]

Next, we select the parameters of the wage process for males

$$w_m(a, j, P) = a \exp(\omega_0^P + \omega_1^P j + \omega_2^P j^2), \tag{12}$$

to match the age-earnings profiles in the data. Figure 2 (left panel) shows how log earning for men with temporary and permanent contracts evolve by their age.[27] When males enter the labor market, there is an initial distribution across different labor market states. This initial distribution and the subsequent transitions between temporary and permanent contracts and unemployment, $\pi_{\lambda_m,\lambda'_m}$, are chosen to match the labor market shares along the life-cycle – Figure 2 (right panel). Around 90% of men are employed at the start of the life-cycle, which increases quickly to 95% by age 30. Around half of those employed work with a temporary contract at age 25, and the share declines quickly for older ages. The targets in Figure 2 are based on average outcomes of husbands who are married to women in our sample.

[25] See: http://www.oecd.org/els/soc/OECD-Note-EquivalenceScales.pdf.

[26] Probability of not being able to conceive is 8% at age 20, increases slowly to 23% by age 30, and then rapidly to 57.5% at age 40 and 95% at age 45.

[27] In the simulations, earnings for a husband with a permanent contract is normalized to 1 at age 25 of his wife. As a result, we also transform the data by subtracting from the average log earnings at each age the log(61), where 61 is the average daily earnings of a husband with a permanent contract at the age of 27 (her wife would be 25).

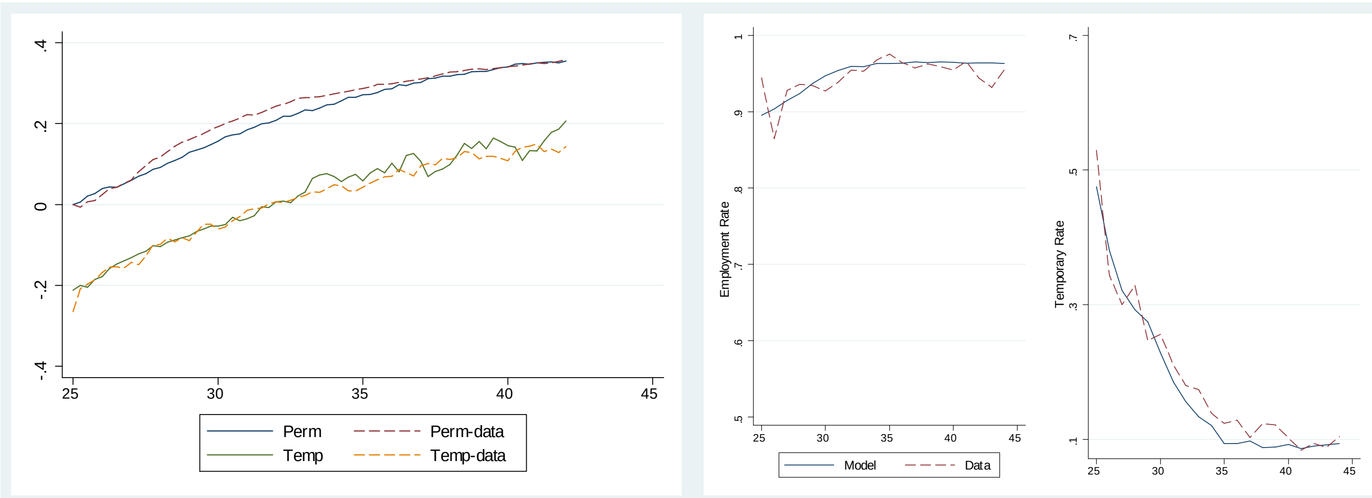

Figure 2. Age-Earnings Profiles (left) and Labor Market Outcomes (right), Males, model vs. data

Notes: Right panel sample includes husbands of 25-44 years old, native, married women with college education born between 1966 and 1971 (from the EPA, 1987-2010). Left panel is based in authors' calculation from the sample of 1964-1969 born, native and married men (from MCVL 2005-2010) weighted by the couple´s education distribution (from the EPA, 1987-2010).

Finally, we turn to taxes and transfers. For θ (unemployment benefits), we calculate the average income of unemployed individuals from unemployment benefits (which might be zero if an unemployed individual does not receive any unemployment insurance) as a fraction of the average labor income using data from the EU-SILC. We find $\theta_f = 0.089$ (about 4300 Euros) and $\theta_m = 0.116$ (about 5300 Euros). We assume that the transfer function $G(I)$ takes the following form

$$\frac{G(I)}{\overline{I}} = \begin{cases} g_0 \text{ if } I = 0 \\ \left[g_1 + g_2(I/\overline{I})\right] \text{ if } I > 0 \end{cases}, \tag{13}$$

where $\overline{I}$ is the mean household income. We estimate g_0, g_1 and g_2 using EU-SILC data on transfer incomes. We find that a household with no income receives a transfer that is about 5% of the mean household income in the economy (about 2400 Euros). The transfers decline as a household gets richer and become zero around 2.4 times the mean household income.

Finally, we assume that $T(I)$ takes the following form

$$T(I) = \begin{cases} 0, \text{ if } I \leq \widetilde{I} \\ I \times \max\{1 - \tau_0(I/\overline{I})^{-\tau_1}, 0\} \text{ if } I > \widetilde{I} \end{cases}, \tag{14}$$

where $\overline{I}$ is the mean household income. Households do not pay any taxes if their income is below a certain threshold $\widetilde{I}$. Beyond $\widetilde{I}$, households face progressive tax schedule. We take estimates of $\tau_0 = 0.904$, $\tau_1 = 0.121$,and $\widetilde{I} = 0.47\overline{I}$ from Garcia-Miralles, Guner, and Ramos (2019). Households whose income is below 47% of the mean household income do not pay taxes. The parameter $1-\tau_0 = 1-0.904 = 0.096$ gives the average tax rate for a household with mean income and parameter τ_1 determines the progressivity of taxes.

Table 4: Parameter Values
(based on a priori information)

Description	Parameters/Values	Comments
Time on Regular Contracts	$l = 0.4$	Standard
Interest Rate (annual)	$r = 0.8\%$	OECD, Bank of Spain
Fecundity	α_j	Sommer (2006)
Male Wage Profiles	$\omega_{0,P}, \omega_{1,P}, \omega_{2,P}$	Figure 2
Male Employment Transitions	$\pi^m_{\lambda_m,\lambda'_m}$	Figure 2
Equivalence of Scale	$\Omega(n) = 1 + 0.5 + 0.3n$	OECD Modified Scale
Unemployment Benefits	$\theta_f = 0.089$, $\theta_m = 0.116$	The EU-SILC
Transfers	$g_0 = 0.049$, $g_1 = 0.031$, $g_2 = -0.01$	The EU-SILC
Taxes	$\tau_0 = 0.904$, $\tau_1 = 0.121$, $\widetilde{I} = 0.47\overline{I}$	Garcia-Miralles et al (2019)

In the second stage, we calibrate remaining 25 parameters to match a set of 25 targets. To this end, we first assume that the ability distribution, $F(a_f, a_m)$, is joint normal with parameters $(\mu_{a_f}, \mu_{a_m}, \sigma_{a_f}, \sigma_{a_m}, \rho)$, where ρ is the correlation coefficient, and normalize $\mu_{a_m} = 1$. For the initial, i.e. age 25, labor market states of females, we assume that a fraction ϕ_{25} of them have an opportunity to work while remaining $1-\phi_{25}$ do not. Given these job opportunities women at age 25 decide whether or not to participate in the labor market and take jobs that they are offered. We organize the moments that we use to discipline the calibrated parameters into three groups: inequality (Table 5), labor market outcomes (Table 6), and fertility (Table 7).

Targets in Table 5 determine the parameters of the ability distribution and female human capital accumulation. Mean female ability, μ_{a_f}, maps into gender wage gap (recall that $\mu_{a_m} = 1$), while σ_{a_f} and σ_{a_m} into variances of male and female earnings. The correlation between earnings of husbands and wives in the data (about 0.44) determines ρ. The parameters η_0, η_1, and ζ_0 generate the observed age log-earnings profiles for women with temporary and permanent contracts in Figure 3 [recall that female human capital accumulation is given by $\ln(h') = \ln h + \ln(1 + \eta_1 + \eta_2 j)$, while female wages are determined as $w_f(a, h, P) = \zeta_P a h$ with $\zeta_0 < \zeta_1 = 1$]. There is a persistent wage gap between temporary and permanent jobs of about 10% in the data (12% in the model). Finally, to calibrate the discount factor, β, we target the median wealth to income ratio for households between ages 35-44.

Table 5: The Model vs. Data – Inequality

	Model	Data	Source
Variance of Wife Log Earnings	0.15	0.21	Table A5
Variance of Husband Log Earnings	0.17	0.21	Table A5
Husband and Wife Earnings Correlation	0.50	0.44	Table A5
Female Wage Growth, 25–35 (permanent)		Figure 3	
Female Wage Growth, 35–52 (permanent)		Figure 3	
Temporary to Permanent Wage Ratio		Figure 3	
Hourly Wage Gender Gap	0.94	0.92	Table A5
Median wealth to income ratio, households, 35-44	2.6	2.6	The EFF

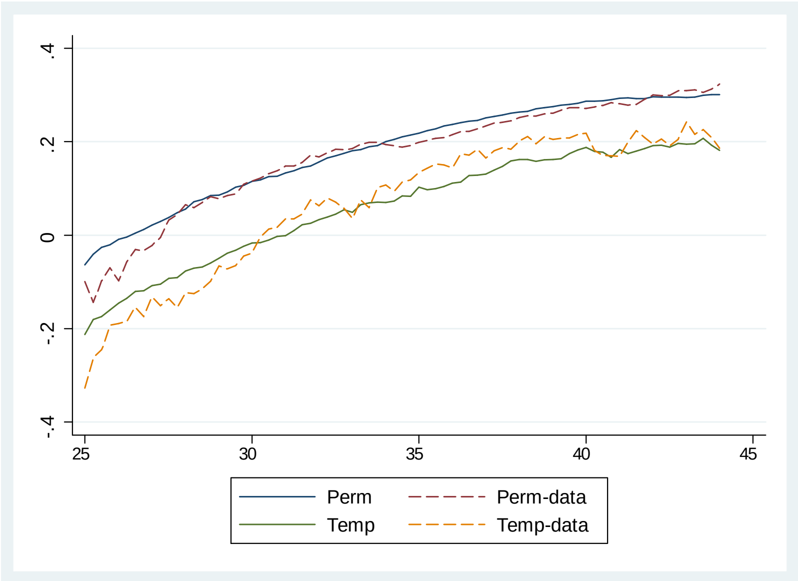

Figure 3. Age-Earnings Profiles, Females, model vs. data

Source: The MCVL, 2005-2010.

Sample: Native, married women with at least a college education born between 1966Q1 and 1971Q4.

The next set of targets pertains to labor market outcomes (Table 6). Again, the mapping between some parameters and targets is straightforward. The parameter ϕ_{25} (fraction of women of age 25 who have an opportunity to work) is calibrated to match the fraction of unemployed women between ages 25 and 27 in the data. In the model economy, a fraction ψ of jobs have split-shift schedules and they have a time cost of κ. These parameters help us to match the fraction of standard (non-split) contracts among mothers and non-mothers. In the benchmark economy 60% of jobs have a regular schedule ($\psi = 0.4$). But the share of mothers with a regular-schedule contract is higher, 71%, since mothers are more likely to decline an offer with a split-shift schedule. Other targets in Table 6 (participation, employment and unemployment decisions among women with or without children) determine the parameters such as the preferences for leisure (χ), goods and time cost of children (d and ι), and the time cost of participation (ξ).

Finally, the fraction of female workers with a temporary contract and transitions from temporary and permanent contracts to unemployment identify the promotion probability (π), and destruction rates for temporary and permanent jobs (δ_0 and δ_1). Each temporary (or permanent) job has an exogenous destruction rate in the model. But the transitions to unemployment, and as a result, job durations, are endogenously determined since they depend on whether women choose to stay unemployed or leave the labor force upon the termination of their jobs. Employed women can also quit and move to unemployment or out-of-the-labor force. In the model, women are less likely to be promoted to a permanent position than men. In the EPA sample, where we can calculate transitions among employment, unemployment and out-of-labor force, and promotions from temporary to permanent contracts, each quarter, about 6.2% of college-educated women are promoted from a temporary to a permanent contract. For married men with a college education, the transition rate is 8.56%, or 2.3 percentage points higher. The difference can be due to selection, if men and women with temporary contracts have different characteristics, such as the sector of employment, occupation, and tenure. In Appendix B, we show that females are 22% less likely to be promoted than men even after controlling for observable characteristics.

Table 6: The Model vs. Data – Labor Market

	Model	Data	Source
Female Unemployment/Population, 25-27	0.20	0.22	Figure 4
Female Unemployment/Population, 25–44	0.08	0.08	Table A4
Fraction Temporary, Female Workers, 25–44	0.27	0.25	Table A4
Trans prob. Temporary to Unemployment, 30–34	5.28	5.37	Table A6
Trans prob. Permanent to Unemployment, 30–34	0.51	0.55	Table A6
Female Employment/Population, 25-44	0.75	0.77	Table A4
Female Employment/Population, 25-44, Non-Mothers	0.79	0.81	Table A4
Female Employment/Population, 25-44, Mothers with Babies	0.69	0.71	Table A4
Fraction of Non-mothers on Standard Contracts	0.56	0.56	Section 2
Fraction of Mothers on Standard Contracts	0.71	0.74	Section 2

The last set of targets pertains to fertility and childcare (Table 7). First, we target the level and timing of fertility: the fraction of women with age at first birth below 30 and 34, the fraction of childless women, and the fraction of women with 1 and 2 or more children. We also report, in parenthesis, the average age at first birth and the completed fertility, outcomes closely associated to these moments. These targets determine parameters that govern how much households value children ($\gamma_1, \gamma_2, \gamma_3$ and $\overline{n}$). In particular, while $\overline{n}$ helps us to match the fraction of childless women, γ_1 and γ_2 determine the level of fertility. The heterogeneity in γ_3, on the other hand, influences mainly the dispersion in the timing of first births.

Second, we target the fraction of household income spent on childcare to pin down d, and the fraction of employed mother with babies who use informal care to discipline φ. Recall that in the model economy, an exogenous φ fraction of households have informal care and do not pay any childcare costs, while others pay a fixed childcare cost. In the bechmark economy, $\varphi = 0.24$ fraction of households have access to informal care. Since informal care lowers childcare costs, in equilibrium informal care use among employed mothers with babies in the model is higher (32%). We calculate the childcare costs from the EF. Median spending on childcare for employed mothers with children (ages 0-14), independent of whether they make any payment, is about 3.5% of household income. The model counterpart is 3.3%. Conditional on positive payments, median yearly spending is about 286 Euros per month in the data.

Table 7: The Model vs. Data – Fertility

	Model	Data	Source
Females, Age at First Births, below 30	0.34	0.36	EF
Females, Age at First Births, below 34	0.75	0.75	EF
(Average Age at First Birth)	31.8	32.0	EF
Fraction childless	0.17	0.17	EF
Fraction with 1 Child	0.17	0.21	EF
Fraction with 2 or More Children	0.65	0.62	EF
(Number of Children)	1.54	1.62	EF
Childcare Costs/Average Household Income	0.033	0.035	EF
Informal Child Care Use, Mothers with Babies, Employed	0.32	0.31	Table A7

Table 8 shows the calibrated parameters. Few parameters in Table 8 can be compared directly with their data counterparts. The calibrated value of $\kappa = 0.138$ implies that fixed time cost of a split-shift job is about 1.98 hours more per day (assuming 100 available hours per week). This is larger than 1.3 hours fixed-cost for split-shift contacts that we calculate from the STUS data in Section 2. As we use this parameter to match the fraction of mothers and non-mothers with split-shift contract, it potentially captures other costs associated with such contracts. The model implies a large value of time cost associated with looking for a job, $\xi = 0.79$, which is necessary to generate the observed employment rate of women and women with children, 81% and 71%, respectively.

Finally, we comment on $\frac{exp(j-\gamma_3)}{1+exp(j-\gamma_3)}$ term in the utility function. In the model economy, γ_3 takes two values. Half of women have $\gamma_3^{high} = 44.7$ and the other half have $\gamma_3^{low} = 29.0$. This is the only source of preference heterogeneity in the model. Given our estimated value for γ_3^{high}, this term is almost zero for a 25-years old woman, and remains very low until she reaches her late 30s. For women with γ_3^{low}, on the other hand, while utility from having children is low at age 25 (the $\frac{exp(j-\gamma_3)}{1+exp(j-\gamma_3)}$ term is about 0.02), it increases quickly to 1 around age 33. As a result, this heterogeneity helps us to push away from very young (25 to 28) ages and allows us to capture the distribution of age at first births.

Table 8: Parameter Values
(Calibrated)

Parameter	Description
Ability Distribution	
$\mu_{a_f} = 0.93, \sigma_{a_f} = 0.436, \sigma_{a_m} = 0.361, \rho = 0.4$	Joint Log Normal Distribution
Preferences	
$\beta = 0.9993$ (quarterly)	Discount Factor
$\gamma_1 = 0.40$, $\gamma_2 = 0.437$, $\overline{n} = 2.41$	Preferences for Children
$\gamma_3^{high} = 44.7$, $\gamma_3^{low} = 29.0, \chi = 0.78$	Preferences for Leisure
Cost of Children	
$d = 0.10$	Childcare Cost
$\varphi = 0.24$	Frac. of Household with Informal Care
$\iota = 0.105$	Time Cost of Babies
Female Wages	
$\eta_1 = 0.02$, $\eta_2 = -0.00045$	Human Capital Accumulation
$\zeta_0 = 0.87$	Temporary Contract Wage Penalty
Labor Market	
$\xi = 0.79$	Time Cost of Participation
$\pi = 0.047$	Promotion Probability
$\phi = 0.23$, $\phi_{25} = 0.5$	Job Finding Rate
$\delta^1 = 0.0065$, $\delta^0 = 0.055$	Job Destruction Rate
$\kappa = 0.138$	Time Cost of Split Jobs
$\psi = 0.40$	Frac. of Split-Schedule Jobs

5.1 Non-Targeted Moments

In this section we present several non-targeted moments from the model and their data counterparts. Figure 4 shows the fraction of employed women with a temporary contract (left panel) and share of women who are unemployed (right panel). Both in the model and in the data, most contracts start as temporary; at around age 25, close to 60% of women work with a temporary contract. Between ages 25 to 44, the fraction of women with a temporary contract is about 25%. The fraction declines smoothly as women age, although by age 40 about 15% of women still work with a temporary contract. The unemployment rate is very high for young women, around 30%. It then falls quickly between ages 25 and 30, and by age 40, about 5% of women are unemployed. Model does an excellent job generating these patterns.

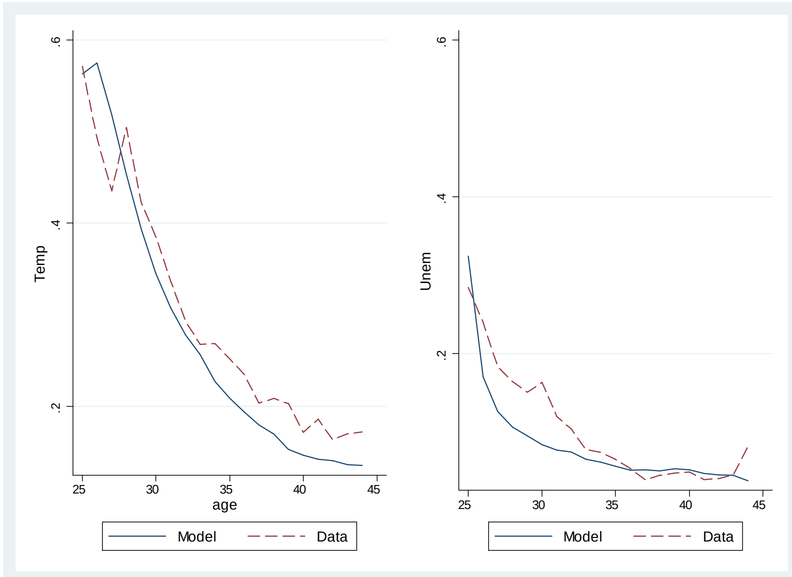

Figure 4. Workers with a Temp. Contract (left), Frac. Unemployed (right), Females, model vs. data

Source: The EPA, 1987-2010.

Sample: Native, married women with at least a college education, born between 1966 and 1971.

Table 9 shows the model's performance on several other dimensions that are not directly targeted in the calibration. First, the model can capture labor market dynamics in the data. In the model, jobs last around 6 quarters (1.5 years), close to what we observe in the data. Second, the model can replicate the positive correlation between female employment and household income. Employment-to-population ratio increases from 40% for households in the bottom tercile of the household income distribution to 90% for those at the top tercile.

Third, we present several additional moments on fertility. Both in the model and the data, fertility is increasing in female earnings and total household income. The fertility gap at age 44 between a woman at the bottom tercile of the earnings distribution and the one at the top is about 0.4, which the model very well captures.

Finally, the model captures the effects of temporary contract on fertility. A childless female who has a temporary contract at $t-4$ (four quarters ago) has a much smaller chance of becoming a mother; 2.4% in the model and 1.8% in the data. Furthermore, these short-run effects have a cumulative impact along the life cycle. A female who spends more than 50% of her working life with a temporary contract has 1.28 children in the model, while one who spends less than 50% of her working life has 1.41 children. Finally, we replicate regression (1) with the simulated data. Our results in Table 1, column 4, indicates that childless women who are employed with a temporary contract are 28% less likely to have a (first) child than childless women who are employed with a permanent contract. The model counterpart is 15%.[28]

[28] There are other features of permanent contracts that make them easier to combine with fertility, such as the possibility of reduced hours with job security (Fernandez-Kranz and Rodriguez-Planas 2013).

Table 9: Non-Targeted Moments – Fertility

	Model	Data	Source
Average Job Tenure, Temporary Contracts	8.38	6.95	MCVL
Employment/Pop., Females, 25-44, hhold inc., 1st tercile	0.48	0.58	Table A8
Employment/Pop., Females, 25-44, hhold inc., 2nd tercile	0.92	0.83	Table A8
Employment/Pop., Females, 25-44, hhold inc., 3rd tercile	0.86	0.93	Table A8
Number of children at 44, female earnings, 1st tercile	1.21	1.35	Table A9
Number of children at 44, female earnings, 2nd tercile	1.41	1.49	Table A9
Number of children at 44, female earnings, 3rd tercile	1.67	1.72	Table A9
Number of children at 44, hhold inc., 1st tercile	1.40	1.43	Table A9
Number of children at 44, hhold inc., 2nd tercile	1.55	1.64	Table A9
Number of children at 44, hhold inc., 3rd tercile	1.68	1.83	Table A9
Average number of children at 44			
on temp. contracts, ages 25-44 $< 50\%$	1.41	1.53	Table 2
on temp. contracts, ages 25-44 $\geq 50\%$	1.28	1.27	Table 2
Impacts of Temporary Contracts on First Births, Odd Ratio	0.85	0.72	Table 1

6 Understanding the Lowest Low Fertility

Why is the fertility rate so low in the benchmark economy? We answer this question by focusing on three factors: labor market duality (temporary vs. permanent jobs), labor market inflexibility (regular vs. split-shift jobs), and childcare costs. We start with the role of duality.

Temporary contracts in the benchmark have a higher separation rate than permanent ones; each quarter 5.5% of women with a temporary contract become unemployed, while the rate is only 0.65% for those with a permanent one. Suppose separation rates are the same for both and equal to the separation rate of permanent contracts, i.e., $\delta_0 = \delta_1 = \delta = 0.65\%$ per month. The results for this *single-contract* economy are shown in Table 10 (column i). The TFR of college-educated women increases from 1.54 to 1.7, an increase of about 0.2 children per woman.[29] Childlessness declines from 17% to 8%, and more women have 2 or more children. On the other hand, the age at first birth does not change much, and if anything, increases slightly.

The higher fertility goes together with higher female labor force participation and employment – the participation rate for women between 25 and 44 increases from 84% to 93%.

[29] In this experiment, we do not eliminate the wage penalty for a temporary contract, i.e. we keep $\zeta_0 = 0.87$. Setting also $\zeta_0 = 0$ has no additional impact on fertility.

The employment rate increases significantly for mothers and mothers with babies, and the employment gap between mothers and mothers with babies disappears. Finally, while more women enter the labor force and have babies, they wait to obtain regular-schedule jobs that are easier to combine with childbearing, so almost all mothers work with a regular-schedule job. Hence, eliminating dual labor markets reduces the prevalence of split-shift jobs endogenously.

There are two forces at play when we move from a dual to a single-contract economy. On the one hand, the labor market is less risky for women. Their jobs now last longer, and they are less likely to keep moving between employment and unemployment. Women also enjoy higher incomes due to lower unemployment and stronger human capital accumulation. On the other hand, there is no reason to wait to obtain a better (permanent) job first and then have a child. All jobs are the same. In column (ii) of Table 10, we try to separate the first effect (higher income with less risk) from the second one (waiting for a better job). We move to a single-contract economy but reduce job stability (by choosing a higher δ) so that the labor force participation is the same as the benchmark economy (84%). This experiment brings back lower income and high risk into a single-contract economy. The fertility still increases. But the rise, from 1.54 to 1.62, is only half of what we get in column (i), i.e., half of the total impact on fertility associated with a single contract comes from lower risk while the other half is due to the waiting effect.[30]

In the model economy, husbands with temporary contracts also face a higher job destruction rate. As a result, households face income uncertainty even if temporary jobs disappear for women. In column (iii) of Table 10, we eliminate duality for husbands, while wives face the same labor market transitions as they do in the benchmark economy. This counterfactual generates a larger share of employed men, 99% vs. 95% in the benchmark. The effects on fertility are, however, minimal. Why is this the case? Two model features make high separations of temporary contracts more critical for women. First, women's human capital grows as they work, making short-lived temporary contracts costly (and more so for young women). Second, each time a woman moves to unemployment, her next job might be a split schedule. Since split-shifts are harder to combine with childbearing (recall that babies already imply a time cost for mothers), they create additional risk.

[30] The analysis abstracts from firms. Yet, one can imagine that firms can react to changes in labor market regulation. In particular, if the government tries to increase the duration of temporary contracts or establish a single one, firms can react, and the economy's job finding or destruction rates may be affected. For an analysis of gender wage and employment gaps within a search and matching framework, see Xiao (2021).

Table 10: Female Labor Force Participation and the Fertility

	BM	(i) Single Contract	(ii) Single Cont. + Higher Separation	(iii) Single Contract for Husbands
Aveg. Age First Birth	31.8	32.1	32.0	31.8
Number of Children	1.54	1.70	1.62	1.59
Fraction childless	0.17	0.08	0.12	0.17
Fraction with 1 kid	0.17	0.24	0.18	0.17
Fraction with ≥2 kids	0.60	0.70	0.69	0.61
Partic/Pop, 25-44	0.84	0.93	0.84	0.81
Emp./Pop., 25-44, Non-mothers	0.79	0.76	0.80	0.77
Emp./Pop., 25-44, Mothers	0.72	0.86	0.71	0.69
Emp./Pop., 25-44, Mothers, with babies	0.69	0.86	0.71	0.66
Regular, 25-44, Non-Mothers	0.55	0.97	0.66	0.58
Regular, 25-44, Mothers	0.72	0.99	0.84	0.73
δ^0 (Separation, temporary)	0.055	0.0065	0.016	0.055
δ^1 (Separation, permanent)	0.0065	0.0065	0.016	0.0065
ψ (Frac. of Regular-Schedule Jobs)	0.60	0.60	0.60	0.60

Next, we study the role of inflexibility associated with split-shift schedules. We eliminate split-shift schedule jobs by setting $\kappa = 0$, which saves about two hours of fixed-cost of work. The results are reported in Table 11 (column i). The TFR increases from 1.54 to 1.67, almost as large as the one we obtain in the single-contact economy. Since inflexibility, like duality, acts as a barrier to employment, labor force participation and employment again increase. The employment gap between mothers and non-mothers, as well as between mothers with and without babies, disappear.

Finally, we lower the childcare cost, d, by 35%. The choice of 35% is motivated by the existing childcare subsidies in Spain. Since 2003, working mothers with a child less than three years old receive 100 Euros per month as a refundable tax credit.[31] The credit is about 35% of monthly spending on childcare by working mothers, 286 Euros, in the Natality Survey (EF). The experiment in column (ii) expands this policy to all working mothers with children, independent of the child's age. Lower childcare costs increase fertility from 1.54 to 1.75. However, the increase in female employment is smaller compared to previous experiments where we eliminated duality or inflexibility.[32] The modest effect on employment

[31] We do not model this policy. The women in our analysis were born in 1967-1971 and had their first child around 31. As a result, most of them did not benefit from it.

[32] The size of the increase is consistent with the evidence provided by Sanchez-Mangas and Sanchez-Marcos (2008) and Azmat and Gonzalez (2010).

reveals that, given the existing institutions (frictions) in the labor market, lower childcare costs are not enough to bring women to the labor market. The lower childcare costs mainly induce women who are already in the labor force to have more children.

In Table 11, we also consider different combinations of these experiments. Eliminating duality and inflexibility together (column ii) does not affect fertility beyond what we obtained when these reforms were considered in isolation. The TFR is now 1.69, the level in the single-contract economy. Since when duality is eliminated, women stay away from split-shift contracts, there is no extra impact. In the benchmark economy, split-shift contracts make high labor market turnover associated with temporary contracts more costly. Even if a woman finds a job quickly, she can end up with a split-shift schedule, making frequent unemployment spells more costly.

Finally, we implement all three reforms together. The increase in fertility is substantial. Combing three changes increases the TFR for college-educated women to 1.86 – a number close to the TFR in France (1.83), the highest in the EU in 2019.

Table 11: Female Labor Force Participation and the Fertility

	BM	(i) All Regular Jobs	(ii) Lower Childcare Costs	(iii) Single Contract + All Regular	(iv) Single Contract + All Regular + Lower Cost
Aveg. Age First Birth	31.8	32.1	32.0	32.1	32.0
Number of Children	1.54	1.67	1.75	1.69	1.86
Fraction childless	0.17	0.08	0.03	0.08	0.01
Fraction with 1 kid	0.17	0.19	0.18	0.17	0.14
Fraction with ≥2 kids	0.60	0.70	0.70	0.75	0.85
Partic/Pop, 25-44	0.84	0.92	0.84	0.97	0.97
Emp./Pop., 25-44, Non-mothers	0.79	0.83	0.80	0.91	0.90
Emp./Pop., 25-44, Mothers	0.72	0.83	0.75	0.93	0.94
Emp./Pop., 25-44, Mothers, with babies	0.69	0.82	0.73	0.93	0.94
Regular, 25-44, Non-Mothers	0.55	1	0.66	1	1
Regular, 25-44, Mothers	0.72	1	0.84	1	1
δ^0 (Separation, temporary)	0.055	0.055	0.055	0.055	0.0065
δ^1 (Separation, permanent)	0.0065	0.0065	0.0065	0.0065	0.0065
ψ (Frac. of Regular-Schedule Jobs)	0.60	1	0.60	1	1
d (Childcare Costs)	0.10	0.10	0.065	0.10	0.065

7 Conclusions

In this paper, we study how labor market institutions affect fertility decisions. In many European countries, there is a divide between temporary jobs with low firing costs and permanent ones with high firing costs. Young workers start their careers with temporary jobs, and only after moving between different temporary jobs, they land in a permanent one. Uncertain income at childbearing ages reduces fertility since children are costly. Childbearing is even more difficult for women who work in inflexible jobs that require long and particular hours.

We build and estimate a model of fertility and labor market choices of women to understand these trade-offs. We focus on college-educated women in Spain. Spain has the highest fraction of workers with temporary contracts in Europe. It also provides a concrete example of inflexible working arrangements for women: split-shift schedules that involve long lunch breaks and very late finishing times.

We then ask whether women would choose to have more children if there were a single contract, no split-shift jobs, and subsidized childcare. We find that reforms that eliminate labor market duality and inflexibility increase fertility significantly; it increases from 1.54 to about 1.7. These reforms reduce the fraction of childless women and substantially increase the number of those who have two or more children. They also eliminate the employment gender gap, as higher fertility goes together with an increase in labor force participation and employment of mothers, making Spain look more like Sweden or Denmark. When coupled with childcare subsidies, these reforms increase the fertility of college-educated women from 1.54 to 1.86.

Three main messages emerge from the analysis. First, the combination of split-shift schedules and temporary jobs make having children particularly difficult. Second, adopting labor market institutions that look closer to other European countries simultaneously delivers higher mothers' employment and higher fertility. Finally, with existing labor market frictions, lower childcare costs alone do not bring more women to the labor market.

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Appendix A: Data

Spanish Social Security Records Our main data source is the 2005-2010 Continuous Sample of Working Lives (Muestra Continua de Vidas Laborales con Datos Fiscales, MCVL). The MCVL is a random sample of 4% of the population of the individuals registered to the Spanish Social Security during the reference year.[33] In a given year, a working age person can have a social security record if he/she is employed or is receiving unemployment benefits. Individuals without a relationship with the social security system at any time during the reference year are not included in that particular MCVL wave. Starting from the reference year and going back, the MCVL records all changes about the labor market history of individuals up to the date of first employment (or up to 1980 for older cohorts).

The unit of observation in the MCVL is an individual labor market spell, which can be employment with a particular contract (a job spell) or unemployment (an unemployment spell).[34] Each spell is characterized by a start date, an end date and a firm identifier. For each job spell, the MCVL provides information on part-time or full-time status, sector of employment (public or private), industry (at the NACE three-digit level), occupation (ten social security occupation categories), type of contract (temporary or permanent), and working hours expressed as a percentage of a full-time equivalent job.[35] The MCVL also contains monthly labor earnings (called the 'contribution basis') at individual-establishment level and the days worked in a particular month. Although the labor earnings are both top and bottom coded, this information allows us to calculate censored earnings for each job that an individual holds in a month.[36]

The MCVL also provides information on individual characteristics contained in social security records, such as age and gender but lacks information on other demographic characteristics such as education or marital status. However, it can be matched with the Continuous Municipal Registry (Padrón Continuo), which contains information on the country of birth, nationality, and educational attainment. The MCVL can also be matched with the Spanish Municipal Registry of Inhabitants (Padrón Municipal de Habitantes), which contains information on the household composition (date of birth and the sex of each individual living in the household). These registries allow us to construct socio-economic variables, such as marital status, number of children and new births. We count a woman as being married if there is a male household member in the household whose age difference with her is between -2 and +10 years.[37] We determine mothers based on the presence of household members

[33] The MCVL does not cover public sector employees who belong to a different social assistance system.

[34] The MCVL also includes information on self-employed. Since our focus on wage and salary earners, they are excluded from the sample.

[35] Part-time/full-time status can be constructed using the working hours expressed as a percentage of a full-time equivalent job. Employers assign workers into one of ten social security occupation categories to proxy the skills required by the job.

[36] In addition to censored earnings, uncensored earnings information is also available from income tax records for any job that was held between 2005 and 2010. However, as we describe later in more detail, we restrict the sample to women born between 1966-1971. As a result, since uncensored earnings are only available when women in our sample are 35 to 44 years old, we use censored earnings in the analysis.

[37] In the EPA, for around 94% of women in our sample, age gap between them and their husbands is between -2 and 10, with a median age difference of 2.

aged 0-16 year old. Since we determine marital and motherhood status of a woman based on her household members and their dates of birth, there is a possibility that a woman, a male, and a child who live in the same household are not related. To minimize this probability, we drop from the sample women who are living in households with more than one potential husband or with another potential mother.[38]

Based on labor market spells, we construct a quarterly panel data set on labor market transitions of women in the MCVL. We start to construct the quarterly panel using the individuals that were registered to social security in 2010. For these individuals we record the complete labor market history contained in this edition going back to their date of first employment (or to 1980 for the older cohorts) and use municipality records for their personal characteristics. For individuals who are not included in 2010, but appear in previous editions, we follow the same procedure. The resulting data set contains information for each individual in each quarter on type of employment contract, sector of employment, industry, occupation, earnings, country of birth, nationality, education, marital status, number of children and new-born children.

Note that constructing a quarterly panel from the individual-spell data requires assigning a single job to each individual in each quarter (the 'main job'). For individuals that only have a unique spell in a quarter, i.e. if they hold a single job or they are unemployment during an entire quarter, this procedure is straightforward. There can also be individuals who hold multiple jobs within a quarter.[39] For such cases, we follow a similar approach to De la Roca and Puga (2017) to determine the main job. In particular, if an individual has more than one spell *with the same firm* in a given quarter (around 10% in each birth-year cohort), we select the main job as that with the longest duration (in days) in that quarter. If these multiple spells are of the same duration in that quarter (less than 1% in each birth-year cohort), we assign the main job as that with the total (not only in that quarter) longest duration (in days). If the total duration of these multiple spells is also the same (less than 0.5% in each birth year-cohort), we record the most recent one as the main job. At this stage, individuals may have more than one spell by quarter if they worked in more than one firm (or spent some time unemployed). For individuals who have more than one spell in a quarter *with multiple firms*, we select the main job as that with the highest labor earnings in that quarter. For individuals who hold at least one job but also experience a spell (or spells) of unemployment in a given quarter, we assign a main job, independent of the duration of unemployment spell, following the same criteria.

After determining the main job for each worker in each quarter, we express the quarterly earnings for the main job in 2000 Euros using quarterly consumer price index. Then, we compute the daily earnings from the main job by dividing the quarterly real earnings by the days worked in that quarter in that job.[40] Finally, we adjust the real daily earnings from the main job by part-time work and calculate the full-time equivalent real daily earnings in

[38] Any other male household member in the household whose age difference with her is between -2 and +10 years is considered as another potential husband. Similarly, any other 1966-1971 born women living in the same household can be another potential mother.

[39] If an individual changes job within a firm in a given quarter, we combine the consecutive employment spells into a single job spell for the purposes of constructing firm tenure, but otherwise treat them as separate spells with different job characteristics.

[40] The MCVL data do not contain information on hours worked to construct hourly wages.

euros for each quarter.[41]

Since the type of contract is a key variable in our analysis and since the MCVL provides reliable information on the type of contract only after 1996, we restrict our sample to job spells from 1996 to 2010. We construct labor market experience and tenure variables, however, using all available information back to 1980. In the sample, there are temporary contracts that continue beyond the legal limit of 3 years (7% of the total temporary spells in our sample). Following Guell and Petrongolo (2007), we censor all temporary durations longer than 14 quarters at 14 quarters.

Our female sample is restricted to native, married women with at least a college education who were born between 1966Q1 and 1971Q4.[42] When we look at male earnings, we focus on married men born between 1964Q1 and 1969Q4 since the median age difference between husbands and wives is about 2 years for this sample of women in the EPA (see below). As per females, we determine the marital status of a male based on his household members and their dates of birth. We count a man as being married if there is a female household member in the household whose age difference with him is between -10 and +2 years and who is old enough to be his potential wife (at least 22 years old). We drop from the sample men who are living in households with more than one potential wife or with another man from the same cohort.

Natality Survey We complement the MCVL with the Spanish Natality Survey, which collects information about fecundity for 14,556 women in Spain that were interviewed in 2018. We restrict the sample to married native women with at least a college education, born between 1967 and 1971. The survey provides data of completed fertility for this group of women and therefore of the distribution of number of children, the distribution of age at first birth and the average number of children depending on female's earnings, among other.

Spanish Labor Force Survey As a rich administrative data source, the MCVL provides an excellent picture of the Spanish labor market dynamics. The MCVL does not contain, however, any information on individuals who are out of the labor force. To be able to calculate the distribution of workers across different labor market states (employment, unemployment, and out-of-the-labor force), we use data from the Spanish Labor Force Survey (Encuesta de Población Activa, EPA) from 1987 to 2010.[43] These surveys are run by the Instituto Nacional de Estadística (INE), the Spanish Statistical Institute, and constitute the Spanish part of Labor Force Statistics of the OECD. Each survey consists of a representative sample of about 60,000 households and provides detailed labor market information of all in-

[41] The MCVL provides information on a part-time coefficient which identifies the working hours of a part-time worker in a company in proportion to the duration of normal working hours of a full-time worker in the same company. This allows us to build a measure of full-time equivalent (FTE) earnings that is what part-time workers could be expected to earn if they worked full-time.

[42] The country of birth and nationality information in the MCVL enables us to distinguish between natives and immigrants. Note that in our sample, women are 25 to 31 years old in 1996 and 39 to 45 years old in 2010. By this way, we ensure that childless women in our sample are unlikely to be mothers after 2010. Among native, married women who were born between 1966Q1 and 1971Q4, 18% are college educated.

[43] Since the particular cohort we are focusing is between 25-44 only in years 1991-2010, we are effectivity using data from the EPA from 1991 to 2010.

dividuals who are older than 16 in each household. When we calculate the EPA statistics, we restrict the sample to heads of households and their partners or spouses, and following the same restriction as in the MCVL sample, focus on married native women with at least college education, born between 1966 and 1971 and their husbands.

Since the second quarter of 1987, the EPA also has a rotating panel dimension (called EPA-flujos or EPA-flows) that follows individuals up to six consecutive quarters. This enables us to calculate quarterly transition rates across the labor market states. We calculate the transition rates across different labor market states using 2000 wave of the EPA-flows. Since in the EPA-flows the age information is available only in 5-year intervals, we have to base the analysis on the 1966-1970 cohort of married women instead of the 1966-1971 cohort that we used in the MCVL.[44] In contrast to the EPA, the EPA-flows do not allow us to link husbands and wives. As a result, since the median age difference between husbands and wives is about 2 years for this cohort in the EPA sample and we only have the age information in 5-year intervals in the EPA-flows, for men, we restrict the sample to the 1966-1970 cohort married men. Finally, since in EPA-flows, we do not have information on nationality, we consider all women instead of only native women.

European Union Statistics on Income and Living Conditions In the MCVL, it is not possible to match wives and husband and construct joint labor market transitions or total household earnings. The EPA does not contain any information on earnings, either. Therefore, we use the European Union Statistics on Income and Living Conditions (the EU-SILC) 2004-2012, to construct household-level income measures. We restrict the sample to heads of households and their spouses and again focus on married native women with at least a college education, born between 1966 and 1971 and their husbands. To calculate earnings, we also restrict the sample to employees with non-missing wage and hours information. We also exploit the information on childcare arrangements that is available in the EU-SILC. For each child under age 12, the EU-SILC reports the number of hours of different forms of childcare, such as center-based care, babysitters or relatives, that a household uses. To calculate childcare statistics, we also restrict the sample to those who reported positive hours of education or childcare use in any of the childcare arrangement categories for at least one 0-12 years old child.[45]

Spanish Time Use Survey Finally, we calculate the fraction of mother and non-mother working with a split-shift contract from the Spanish Time Use Survey (STUS) for 2009-2010. We restrict the sample to native, married, 25-44 years old women with at least a college education, but as the sample size is small, we do not restrict the sample to a particular cohort of women. If a household member reports to be the child (son or daughter) of a female household member in the household roster, we consider that female as a mother. As this only identifies the motherhood status based on cohabiting children, then we use the respondent's answer to the STUS question: "Do you have children under 18 who do

[44] The age is reported in 5 year intervals in EPA-flows, from 16-19 to $60-64$, and one age group for those who are older than 65. Consider 2000 EPA-flows, the 1966-1971 cohort were 29-34 years then. But the only category that overlaps with this groups is 30-34 which correspond to 1966-1970.

[45] The information on the number of hours in childcare in the EU-SILC is collected only from household members not over 12 years old.

not live with you?" to determine mothers who have non-cohabiting children. The split vs. regular work schedule is a question in the STUS, stated as "Do you have a continuous or a split work schedule?". Therefore, the fraction of mothers and non-mothers who work with a split contract is simply the fraction of those who answer that their work schedule is a split one. We only consider employees who filled the diary in an ordinary/usual day in a regular working week and who worked that week.

Appendix B: Additional Tables and Figures

Appendix B1: Cross-Country Evidence

In this Appendix, we present cross-country data on the relation between the share of temporary contracts and TFR (Figure A1) and between flexible work arrangements and TFR (Figure A2).

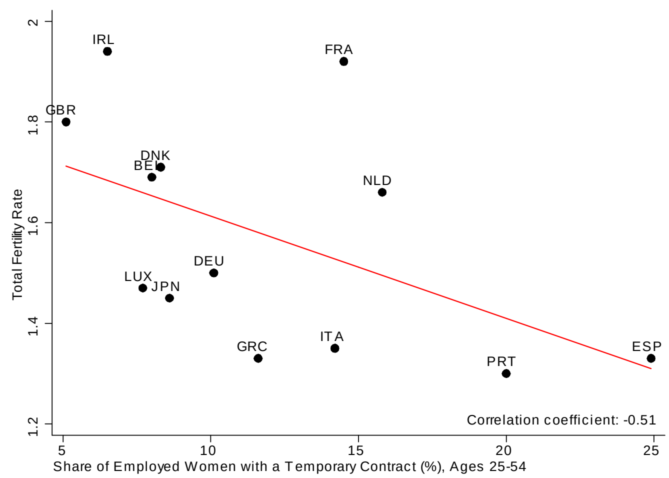

Figure A1. Temporary Contracts and the TFR

Source: OECD Employment Database, https://bit.ly/2AjAnGc (accessed on 04/02/2019) and
OECD Family Database, Table SF2.1 http://www.oecd.org/social/family/database.htm (accessed on 04/02/2019).

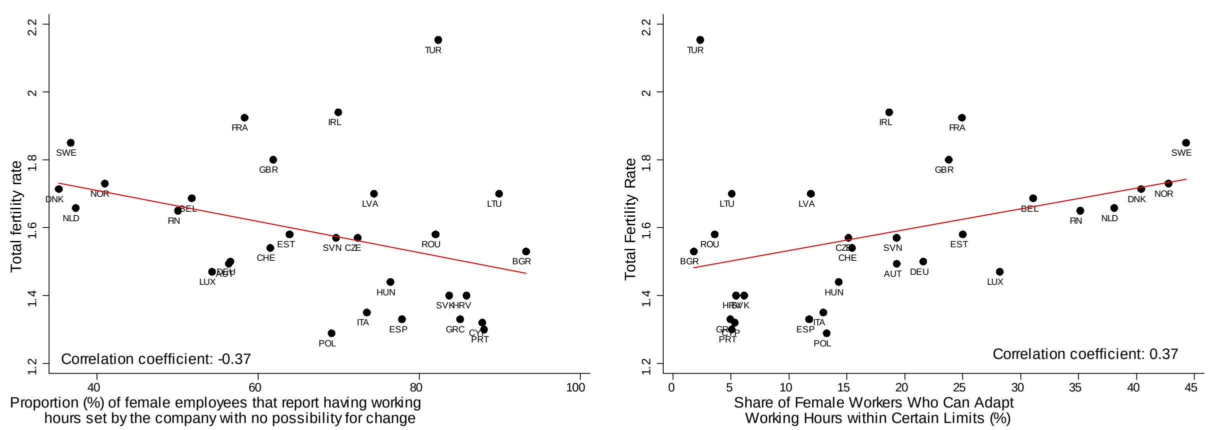

Figure A2. Flexibility and the TFR

Source: OECD Family Database, Tables LMF2.4 Family-friendly workplace practices and
SF2.1 Fertility rates, http://www.oecd.org/social/family/database.htm (accessed on 04/02/2019)

Appendix B2: Split-shift Jobs by Occupation, Industry and Region

Table A1. Incidence of split-shift work schedules by occupation, industry and region

	%
Occupation	
Managers and public administrations	59.46
Professionals and technicians	37.51
Support technicians and professionals	44.41
Clerical support workers	33.33
Service and sales workers	31.54
Skilled agricultural/fishery workers	37.14
Craft and related workers	55.50
Plant/machine operators and assemblers	33.89
Elementary occupations	28.41
Industry	
Agriculture	45.87
Mining and quering	71.43
Manufacturing	44.84
Electricity, gas, water supply	35.14
Construction	70.99
Wholesale and retail trade, repair of motor vehicles	50.97
Hotels and restaurants	43.21
Transport, storage, communication	29.24
Financial intermediation	36.25
Real estate, renting, business activities	49.10
Public administration and defense; compulsory social social security	18.35
Education	35.46
Health and social work	13.29
Other community, social and personal service activities	38.53
Region	
Galicia, Asturias, Cantabria	41.44
Community of Madrid	38.34
Basque Community, Navarre, La Rioja, Aragon	36.42
Catalonia, Valencian Community, Balearic Islands	45.50
Castile and Leon, Castile-La Mancha, Extremadura	36.94
Andalusia, Region of Murcia	28.47
Canary Islands, Ceuta, Melilla	25.42

Source: The STUS, 2009-2010. Sample: 25-54 years old employees.

Appendix B3: Transitions from Temporary to Permanent Contracts

In the EPA sample, where we can calculate transitions among employment, unemployment and out-of-labor force as well as well moves from temporary to permanent contracts, each quarter about 6.2% of college-educated women are promoted from a temporary to a permanent contract. The transition rate is 8.56%, or 2.3 percentage points higher, for married men with a college education. The difference can be due to selection, if men and women with temporary contracts have different characteristics, such as the sector of employment, occupation, and tenure. To check whether the negative association between gender and promotions is robust to such controls, we use the MCVL sample. We focus on childless individuals working with a temporary contract in a given firm in a given quarter and estimate the probability of being promoted to a permanent contract using a logit model. In Table A2, we present the odds ratio estimates for probability of promotion in the next quarter, while in Table A3, we consider the probability of promotion one year after as women who gave births might be on maternity leave and might not get a promotion in just one quarter.

In both tables, columns 1 and 2 present the results when we only control for gender and parenthood, respectively. Being a female and having a child are negatively and significantly associated with promotion probabilities (odds ratios are less than one). However, once we control for gender, having a child does not play a significant role in promotions. In column 3, where we control for gender, the indicator for having a child, and the interaction between them, we find that only gender matters. The odds of being promoted for females is 10% lower than the odds for males, regardless of the period of promotion we consider. As we move across the columns, we gradually add other personal and work-related characteristics. In the most demanding specification (Column 6), where we control for all covariates along with year fixed-effects, the odds of being promoted in the next quarter (one year after) for females is 22% (20%) lower than the odds for males.

Table A2. Gender, First-birth and the Probability of Promotion (in a quarter)

	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.895***	-	0.902**	0.870***	0.865**	0.780***
	(0.040)		(0.040)	(0.039)	(0.055)	(0.054)
First-birth	-	0.772**	0.847	0.848	1.062	1.018
		(0.098)	(0.115)	(0.115)	(0.188)	(0.181)
Female × First-birth	-	-	0.523	0.536	0.585	0.589
			(0.212)	(0.217)	(0.315)	(0.319)
Personal characteristics	NO	NO	NO	YES	YES	YES
Work-related characteristics	NO	NO	NO	NO	YES	YES
Year fixed effects	NO	NO	NO	NO	NO	YES
Number of observations	80,623	80,623	80,623	80,623	44,038	44,038

Source: The MCVL, 2005-2010. Sample: Native, married women with college-education or more born between 1966Q1 and 1971Q4 and native married men born between 1964Q1 and 1969Q4. Sample is further restricted to childless individuals when first observed. Notes: (i) The outcome variable takes the value of one if an individual employed in a firm with a temporary contract in a given quarter is promoted to a permanent contract in the next quarter and zero otherwise. Reported are the odds ratio estimates. (ii) Individual level clustered robust standard errors in parentheses. (iii) $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. (iv) Personal characteristics include age. Work-related characteristics are firm tenure (in quarters), a binary indicator for public sector, a binary indicator for full-time, occupation dummies (ten social security categories) and NACE one-digit industry dummies (nine categories). All models include a constant term.

Table A3. Gender, First-birth and the Probability of Promotion (one year after)

	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.898***	-	0.904**	0.854***	0.866**	0.797***
	(0.042)		(0.043)	(0.041)	(0.061)	(0.062)
First-birth	-	0.833**	0.896	0.906	0.886	0.843
		(0.062)	(0.072)	(0.073)	(0.106)	(0.104)
Female × First-birth	-	-	0.607**	0.630**	0.622	0.651
			(0.133)	(0.138)	(0.215)	(0.225)
Personal characteristics	NO	NO	NO	YES	YES	YES
Work-related characteristics	NO	NO	NO	NO	YES	YES
Year fixed effects	NO	NO	NO	NO	NO	YES
Number of observations	63,527	63,527	63,527	63,527	32,054	32,054

Source: The MCVL, 2005-2010. Sample: Native, married women with college-education or more born between 1966Q1 and 1971Q4 and native married men born between 1964Q1 and 1969Q4. Sample is further restricted to childless individuals when first observed. Notes: (i) The outcome variable takes the value of one if an individual employed in a firm with a temporary contract in a given quarter is promoted to a permanent contract one year after and zero otherwise. Reported are the odds ratio estimates. (ii) Individual level clustered robust standard errors in parentheses. (iii) $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. (iv) Personal characteristics include age. Work-related characteristics are firm tenure (in quarters), a binary indicator for public sector, a binary indicator for full-time, occupation dummies (ten social security categories) and NACE one-digit industry dummies (nine categories). All models include a constant term.

Appendix B4: Moments

Table A4. Distribution across Labor Market States by Motherhood Status, ages 25-44 (%)

	Out of Labor Force	Unemp.	Temp.	Perm.
All women	15.35	7.70	19.30	57.65
Non-mothers	7.73	11.40	26.34	54.53
Mothers	17.72	6.55	17.11	58.62
Mothers of 0-2 years old	22.03	6.68	16.75	54.54

Source: The EPA, 1987-2010. Sample: 25-44 years old married native women with at least a college education born between 1966 and 1971 (only household heads and spouses).

Table A5. Inequality

	All
Average hourly wage of wives	12.97
Average hourly wage of husbands	13.89
Variance of wives' log(hourly wage)	0.207
Variance of husbands' log(hourly wage)	0.214
Correlation between husbands' and wives' log(hourly wage)	0.438

Source: The EU-SILC, 2004-2012. Sample: 25-44 years old married native women with at least a college education born between 1966 and 1971 and their husbands (only household heads and their spouses). Sample is further restricted to employees with non-missing wage and hours information.

Table A6. Quarterly Transition Rates across Labor Market States, aged 30-34

Married women	O_t	U_t	T_t	P_t
O_{t-1}	84.22	10.02	4.69	1.07
U_{t-1}	12.93	73.00	12.17	1.90
T_{t-1}	4.86	5.37	83.38	6.39
P_{t-1}	0.92	0.55	1.10	97.43

	Below College			College and above		
Married men	N_t	T_t	P_t	N_t	T_t	P_t
N_{t-1}	67.17	30.56	2.27	80.00	18.18	1.82
T_{t-1}	8.19	86.42	5.67	5.67	85.57	8.76
P_{t-1}	0.81	2.04	97.15	0.25	0.76	98.98

Source: The EPA-flows, 2000Q1-2000Q4. Sample: Married women with college education or more born between 1966 and 1970 and their potential husbands (married men born between 1966 and 1970). Notes: (i) O: Out of Labor Force, U: Unemployed N: Non-employed, T: Employed with a temporary contract, P: Employed with a permanent contract.
(ii) 1966-1970 cohort is 30-34 years old in 2000.

Table A7. Distribution of Households by the Main Mode of Childcare Arrangement (%)

	Children, 0-2
Education at pre-school	51.21
Childcare at a day-care centre	2.68
Childcare by a professional childcare provider	15.55
Childcare by grandparents/relatives/friends	30.56

Source: The EU-SILC ,2004-2012. Sample: 25-44 years old married native women with at least a college education born between 1966 and 1971 and their husbands (only household heads and their spouses). The sample is further restricted to households who have at least one 0-2 years old child and reported positive hours of education or childcare use in any of the above categories for a 0-2 years old child. Note: The number of hours in education and childcare during a usual week is collected for household members not over 12 years old (age at the date of interview).

Table A8. Employment Rate of Women by Household Gross Income Tercile

Tercile	Employment/Population	Household income (Euros)
1	0.58	23,569.89
2	0.83	44,389.95
3	0.93	76, 362.23

Source: The EU-SILC, 2004-2012. Sample: 25-44 years old married native women with at least a college education born between 1966 and 1971 (only household heads and spouses).

Table A9. Average Number of Children, Married Women

Tercile	Female Earnings[a]	Household Income[b]
1st	1.35	1.43
2nd	1.49	1.64
3rd	1.72	1.83

Source: [a]The MCVL, 2005-2010. [b]The EF, 2018. Sample: Native, married women, with college education or more, born between 1966Q1 and 1971Q4.

Appendix C: Calibration Details

Interest Rate The real interest rates are calculated as the nominal rates minus the CPI-inflation. The data on long-term interest rates and the consumer prices index is taken from the OECD database (https://data.oecd.org/interest/long-term-interest-rates.htm, and https://data.oecd.org/interest/long-term-interest-rates.htm). The data on deposit rates is taken from the monthly Statistical Bulletin of the Bank of Spain. The numbers refer to average values for 2003-2018 period (https://www.bde.es/webbde/en/estadis/infoest/bolest.html).

Age-Earnings Profiles and Labor Market Outcomes for Husbands (Figure 2) The targets for males reflect averages for husbands (with or without a college degree) who are married to college-educated women in our samples. Calculations from the EPA (Figure 2 right panel), where we can observe couples, are for the husbands of women in our sample. In the MCVL, where we have information on earnings, we are not able to match couples (see Data Appendix). Therefore, for age-earning profiles (Figure 2 left panel), we create an average husband using the age-earning profiles of our male sample from the MCVL and weight these profiles by the couple's education distribution from the EPA.

Unemployment Benefits We use pooled data from the EU-SILC from 2004 to 2012. We restrict the sample to married household heads and spouses in which the wife is born between 1966 and 1971, native, with a college education or more, and 25-44 years old. Then, we calculate the average income of unemployed from unemployment insurance (including zeros) as a fraction of the average labor income of the employed, seperately for men and women.

Transfers We use pooled data from the EU-SILC from 2006 to 2012 since information on household income variables, including transfer income, are only available 2006 onward. We restrict the sample to households with one married couple and only consider household heads and spouses. We further restrict wives to be born between 1966 and 1971, native, with college education or more, and 25 to 44 years old. Transfer income includes old-age benefits, survivor' benefits, sickness benefits, disability benefits, education-related allowances, family/children related allowances and housing allowances, and social exclusion not elsewhere classified. Both the transfers and household income are reported as a fraction of the average household income in the sample (about 48,045 Euros).

Labor Market Transitions for Husbands These exogenous transitions are calibrated without running the full model. To reduce the number of parameters, we assume that transitions are same for three age groups, 25-34, 35-44, and 45-54, which are shown in Table A10. Calibrated transitions differ slightly from the ones we observe in the data (e.g. in Table A6) since we are matching labor market shares. We could alternatively take the transitions from the data, which would result in slightly different shares.

Table A10. Labor Market Transitions for Husbands, % (Calibrated)

	Age-25 shares (%)		
	N_t	T_t	P_t
	10.0	46.5	43.5
	Transitions		
	N_t	T_t	P_t
		25-29	
N_{t-1}	85.0	15.00	0.00
T_{t-1}	0.03	87.00	1.00
P_{t-1}	0.00	3.00	97.00
		30-34	
N_{t-1}	80.0	18.0	2.00
T_{t-1}	5.00	86.00	9.00
P_{t-1}	0.00	1.00	99.00
		35-54	
N_{t-1}	61.0	23.0	16.00
T_{t-1}	6.00	70.00	24.00
P_{t-1}	1.00	2.00	97.00

Wealth-to-Income Ratio To compute the wealth-to-income ratio we use the 2014 wave of the Survey of Household Finances (Encuesta Financiera de las Familias or the EFF). The EFF is a survey conducted by the Bank of Spain that collects information on socio-economic characteristics, income, assets, and debt of around 6,000 households in each wave. We restrict the sample to married couples in which the wife has at least a college degree. To access the EFF data: bit.ly/3ij7Ouj.