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Trapped in the care burden: occupational downward mobility of Italian couples after childbirth

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Abstract

How does childbirth impact the career paths of men and women within the same household? To what extent does the unpaid care work related to this event contribute to the downward mobility experienced by women in a highly flexible labour market like Italy? Drawing on feminist and labour market studies, this article examines how caregiving responsibilities, particularly childcare, influence downward employment transitions for men and women in couples, specifically from full-time to part-time, from higher-paid to lower-paid jobs, and from employment to unemployment. The study also employs latent class analysis to map out variations in within-household inequality experienced after childbirth among couples. To achieve this, we utilize a unique survey-administrative linked dataset. The findings highlight significant penalties faced by women, not only immediately after childbirth but persisting for up to three years afterwards. Moreover, the latent class analysis reveals a small proportion of pro-female households compared to egalitarian and pro-male classes.

Keywords: *Gender pay gaps; occupational downward mobility; gender inequalities; motherhood penalty; micro-econometric analyses*

JEL Codes: J13 ; J16 ; E24

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Introduction

While mainstream economics attributes gender employment and wage gaps to differences in time allocation preferences between women and men [Becker, 1981], more radical theoretical contributions emphasize the role of capitalist institutions and their importance in understanding the persistence of gender discrimination in contemporary capitalism [Folbre, 1986, Katz, 1997, Agarwal, 1997]. Caregiving work performed within domestic settings, often undervalued in the market, acts as a barrier to women’s integration into the labour market and frequently results in wage discrimination, exposing women to in-work poverty. Where a male ‘breadwinner’ family model still dominates, women are asked to prioritize domestic and care responsibilities with respect to formal employment further weakening their bargaining power within the household [Miller and Bairoliya, 2022].¹ Additionally, the role played by institutional arrangements should not be ignored. Why do women often opt for part-time work? Is it a genuine choice or a result of societal norms and household power dynamics? As highlighted by Tijdens [2002], a significant body of literature has studied the supply side of the labour market to shed light on why women choose part-time work. Little attention has been devoted to exploring the demand side of the part-time labour market. The creation of part-time jobs is a vital component of firms’ labour utilization strategies, often prompted by fluctuations in workload.

When discussing the combination of patriarchy, a flexible labour market, and stagnating wages, there is probably no better case study than Italy. The Italian traditional patriarchal family structure has been recently studied and thoroughly described by Corsi et al. [2021] and Aloé et al. [2024]. Moreover, the Italian labour market has been gradually reformed since the late 1990s. Such reforms have aimed to increase labour market ‘flexibility’ by introducing temporary and para-subordinated contracts and weakening legal protections against layoffs to facilitate worker entry and exit [Cirillo et al., 2017, Daruich et al., 2023].

Indeed, despite women’s increasing participation in the Italian labour market, their working conditions have not improved and the female employment rate is among the lowest in Europe and

¹Using 2019 data from 33 countries (representing 54% of the global population of working age) the World Economic Forum in the Global gender gap report (2021) shows that the share of time spent by men in unpaid work as a proportion of total work it is 19%, while for women is 55%. On average, the latter spend more than twice as much time on care work as men. This is a gender gap in the time dedicated to unpaid care work that has narrowed very little in over ten years as underlined by the data of the ILO report [Addati et al., 2018], compared to the period 1997-2012.

largely explains the gender gap [Andrew et al., 2021]. The increase in female employment is linked to low-quality and low-paid jobs (see Bavaro, 2022 as well as Bavaro and Raitano, 2024), among which part-time positions play a crucial role in explaining wage inequalities between women and men in Italy [Depalo and Lattanzio, 2024].²

Linking together these broad patterns with feminist contributions on the unequal share of care work within the household [Engers and Stern, 2002], this article aims to study to which extent the unequal distribution of care within the household contributes to shape asymmetric labour trajectories for men and women in the Italian labour market. We empirically investigate how the care burden related to childbirth may affect employment transitions of men and women (partners), increasing probabilities of occupational downward mobility from full-time to part-time jobs and unemployment, and from high-paid to low-paid jobs and unemployment.

Although the relationship between care burden and occupational outcomes has been deeply investigated at the international level [Angelov et al., 2016, Kleven et al., 2019] and also specifically focusing on the Italian case [Casarico and Lattanzio, 2023, Fiori and Gessa, 2023], to our knowledge this is the first article that explores occupational transitions at the household level comparing employment outcomes of mothers and fathers after the birth of their first child taking into account simultaneously individual and family characteristics affecting such transitions. To this purpose, we take advantage of a linked survey-administrative data source, AD-SILC. The application of multinomial logit analyses reveals gender disparities in post-childbirth occupational outcomes, encompassing unemployment, part-time employment, and low-pay positions. As a second step of the empirical analysis, we dig into gender differences inherent in the probability of occupational downward mobility controlling for selection endogeneity. Finally, we propose a clustering exercise at the household level to group households based on their within-couple bargaining power.

The paper is organized as follows. Section 1 reviews the literature. Section 2 includes the data description and the sample selection procedure. In Section 3 we present the empirical strategy. In Section 4, we show the main results. Finally, Section 5 offers concluding remarks.

²According to data from the Italian Labor Force Survey (ISTAT, 2021), around 74% of part-time work is carried out by women and among these, 64.5% have an involuntary part-time job.

1 Literature review and conceptual background

In the last decades the topic of measuring, evaluating and interpreting causes and effects of gender gaps in wages and, more generally, gender inequalities has received a huge interest in the academic community [Olivetti and Petrongolo, 2016, Blau and Kahn, 2017, gol].

The recent seminal works by Kleven and Landais [2017] and Kleven et al. [2019] explain in great detail how the event of childbirth plays a crucial role in shaping wage inequality, particularly when examining life-cycle trajectories. Still, the literature on motherhood and fatherhood has its own history [Waldfogel, 1997, Gutiérrez-Domènech, 2005, Bertrand et al., 2010]. Angelov et al. [2016] using Swedish register data show how the within-couple gap unfolds long time after the birth of the first child (persistent negative gap for women both in terms of income and wages).³ Herrarte et al. [2012] analyse the bivariate choice of having children and leaving the labour market in Spain. Mussida and Sciulli [2023] assess the relationship between childbirth and poverty across European countries.

Even when focusing exclusively on Italy, a significant number of studies have emerged examining the child penalty effect on women’s labour market employment, wages, and the gender gap. We can divide them among those covering a short-term horizon after childbirth [Casadio et al., 2008, Pacelli et al., 2013, Fiori and Gessa, 2023] and those which cover the long-run [Picchio et al., 2021]. Nonetheless, the most comprehensive work is the one by Casarico and Lattanzio [2023].

While most of the aforementioned articles agree on the extent of the gap between male and female partners, there is not a clear agreement on its origin and interpretation. Moreover, many contributions have focused on the motherhood gap, which emerges when comparing the labour market outcomes of mothers with those of non-mothers. The economic costs of unpaid care can take various forms, including loss of employment or opportunities for advancement, restricted job choices, reduced current and future income. Therefore, mothers tend to earn less than other women, even when they do not substantially reduce their hours of paid employment [Joshi, 1998, Waldfogel, 1997, Phipps et al., 2001].

The more ‘mainstream’ view attributes the gender gaps to time use allocation. This approach relates differences in labour market outcomes to differences in preferences (‘they did it, so they must

³The paper by Ejrnaes and Kunze [2013] focuses on labour market dynamics of women after childbirth in Norway, while the more recent Kunze [2020] concentrates on male workers to show how their career is relatively unaffected by the childbirth.

have wanted to do it') as explained by Stigler and Becker [1977]. Other interpretations underline the role of technology in driving the improvements of women conditions within the household and within the job place [Greenwood et al., 2005].

More radical approaches that encompass contributions focusing on the history of patriarchal and capitalist institutions are crucial to interpret the persistent gender pay gap [Folbre, 2021a,b]. In these works, the initial standpoint is that of an 'unequal bargaining power' that is exemplified by the fact that control variables included in models of wage determination are not the result of individual choices, but rather of structural inequalities.

Therefore, the existence of labour market penalties for mothers should be understood as a result of the intersection between, on the one hand, a flexible labour market, which facilitates women's detachment from work - already exposed to vertical and horizontal occupational segregation, and, on the other hand, the unequal power dynamics between partners within the household which bind women to roles in social reproduction.

When it comes to the first point, the literature on the topic is quite ambiguous. Some contributions highlight that flexible labour markets and the availability of part-time schemes may, in principle, facilitate work-life balance i.e. Johnson and Provan [1995], based on the idea that mothers with greater control over the timing and location of their work would be partially shielded from wage penalties. However, empirical support for this thesis, particularly when focusing on the differences between mothers and non-mothers, has been weak. Conversely, a growing number of contributions have shown that a hyper flexible labour market can contribute to weakening women's participation in the workforce. Recently, focusing on the US labour market, Biasi and Sarsons [2021] provide evidence on the negative relationship between a flexible pay increase and the gender wage gap. On the same line, the paper by Kelle et al. [2017] questions whether part-time employment after childbirth is a stepping stone to full-time or not, and shows how this relationship unfolds in Germany depending on living in the Eastern or Western part of the country (in the latter the duration of part-time is longer). The works by Bardasi and Gornick [2008] and Dex and Bukodi [2012] investigate the differences between part-time and full-time female workers. Bardasi and Gornick [2008] conduct a cross-country analysis within the European Union, while Dex and Bukodi [2012] perform a cohort analysis in the United Kingdom to explain long-term career trajectories.

On the second point, labour market penalties linked to care work and, more specifically childbirth, should be framed in a context of unequal distribution of power within the household [Doepke and

Tertilt, 2016] where decisions to provide care can be both intrinsically or extrinsically motivated [England et al., 2012] and are rooted in the social construction of norms and values [Braunstein, 2015]. Motivations for providing care are diverse and extend beyond the traditional love-versus-money dichotomy. While workers may provide paid labour in exchange for income, or unpaid care work to avoid potential sanctions, or in anticipation of future rewards, care work is often driven by ‘intrinsic motivations’ related to trust, identity, and emotions [Folbre, 2012]. Dissecting the nature of these motivations is not an easy task given their intersection with specific structures of households and intrinsically related to social norms. Indeed, households can be characterized by more equal or unequal sharing of resources [Corsi et al., 2016]. Different studies empirically investigate the degree of intra-household income sharing and usually reject the income-pooling assumption. Therefore, when unequal subdivision of resources within the household goes along with childbirth, different scenarios can be detected. In case of income pooling between married or cohabiting parents the motherhood penalty should be buffered by the sharing of resources deriving from the reduction in working hours of the mother. In these cases the literature suggests that while mothers tend to reduce their hours of market work, fathers tend to increase theirs and therefore they also share the costs of forgone earnings. However, the sharing of resources can be influenced by relative bargaining power and indeed lower earnings leave mothers vulnerable to poverty in the event that income pooling comes to an end [Folbre, 2012]. Therefore within-household bargaining power is likely to be influenced by both cultural norms but also by the resources of each member in the household [Blumberg and Coleman, 1989, Attanasio and Lechene, 2002, Bonke and Browning, 2009]. Following this line of reasoning the provision of unpaid care has the potential to further lower women’s bargaining power by reducing caregiver earnings in paid employment [Miller and Bairoliya, 2022]. In addition to wage penalties, the prioritization of care provision by women can lead to their detachment from labour markets, especially in highly flexible labour markets where the availability of part-time positions is more influenced by firms’ staffing strategies than by women’s choices regarding time management.

Building on previous evidence and theories, the following exploration aims to investigate how childbirth affects labour trajectories for women and men within the same couples. This goes beyond comparing labour market penalties for mothers versus non-mothers, focusing specifically on within-household labour outcomes in a highly flexible labour market such as Italy’s.

2 Data, sample selection and descriptive evidence

The empirical analysis has been developed on a survey-administrative integrated micro dataset known as ‘AD-SILC’. The latter is constituted by linking two data sources, a survey source, IT-SILC (2004-17), that is made by the Italian waves of the Survey on Income and Living Conditions produced by Eurostat. The second one is the administrative archive provided by INPS collecting information on working careers and pensions. The merging procedure is conducted through individual tax codes (*‘codici fiscali’*) that are subsequently anonymised. AD-SILC is an unbalanced panel dataset that in its current version comprises the information contained in all SILC waves from 2004 to 2017 and in the INPS archives (for the linked individuals). AD-SILC allows to follow individuals over time and characterize couples with respect to childbirth over time. In our study, work related information (employment, type of contract, wage etc.) is sourced from the administrative component of the dataset, while the rest of demographic information (household composition, education, childbirth etc.) stems from IT-SILC.

With regards to the sample selection description, given our research question, we focus on partners who have at least one offspring in the 2004-17 waves of IT-SILC. We build a sample of female-male couples and study the event of first childbirth in a time span between 1995 and 2016.⁴ We look at couples’ labour market conditions before and after childbirth by exploiting the information on working career provided by AD-SILC. We focus on unemployment, part-time and low-pay states observed in the year before childbirth (reference) and compare them with the same outcomes after childbirth (short, 1 yr, and medium, 3 yrs, transitions). We avoid using information in the year of childbirth because it may be more influenced by parental leave which may bias the low-pay outcomes (while weeks spent on parental leave are counted as working weeks, there is a difference in the income received in place of individual earnings). Unemployment is defined using administrative data, with the unemployed being those who have worked less than 12 weeks in a year. After having identified the main job (highest wage in case of multiple jobs within a year), we can distinguish between full and part-time jobs. The low pay indicator is built using the national yearly threshold calculated for the universe of Italian workers in Bavaro [2022]. Workers whose individual labour earnings are below the threshold are classified as low-paid. In what follows, descriptive evidence from our sample is provided, focusing on the characteristics of couple partners

⁴We are aware of the possible selection into parenthood that may depend on the instability of women’s work status [Modena and Sabatini, 2012].

at childbirth. Table 1 presents the summary statistics related to the sample. The number of female-male couples with their first childbirth in the observed time span equals 11,568, accounting for a total of 21,136 individuals. Panel A shows the individual-level characteristics for the male and female partners. There is a consistent discrepancy between the two groups in all observed dimensions except education. Notably, occupational outcomes reveal significant and wide gaps, with male partners being less unemployed, more likely to be employed full-time, and more likely to have higher-paid positions. Additionally, male partners tend to be the highest earners in Italian couples. Panel B complements the descriptive statistics with household-level averages, including information on the area of residence (with the North part of the country being more represented) and the year of childbirth.

Descriptive evidence on the change in employment status after childbirth is presented in Tables 2 and 3 which display the unconditional employment transitions through transition matrices. Table 2 documents the occupational transition between three states: unemployment, part-time and full-time work. s_{t-1} corresponds to the employment state the year before childbirth (unemployed, U; part-time, PT or full-time, FT), s_{t+1} and s_{t+3} correspond, respectively, to the state one year and three years after childbirth. The transition one year after childbirth is shown in Panel A, while the transition three years after in Panel B.

The bottom-left triangle of the matrices is particularly relevant, since it captures the probability of moving, respectively, from part-time at time $t - 1$ to unemployment $t + 1$, from full-time to part-time and from full-time to unemployment. The probabilities in the bottom-left triangle are higher for the female partner with respect to the male partner and this holds true both one year and three after childbirth, when the gap becomes even wider. This denotes that the already disadvantaged conditions that we highlighted in Table 1 are worsened by the childbirth event. Moreover, the main diagonal indicates the proportion of women and men who remain in the same status. The unemployment condition for women shows significant resilience, with almost 90% of unemployed women remaining unemployed after childbirth.

In Table 3, we analyze transitions among three states: unemployment, low-paid employment, and high-paid employment. Panel A depicts transitions one year after childbirth, while Panel B corresponds to transitions three years afterward. Nonetheless, there remains a significant disparity between female and male partners in terms of the likelihood of experiencing worsened labour market conditions. This discrepancy is evident both one and three years post-childbirth, showing

Table 1: Descriptive statistics

Panel A: Individual level	Male		Female		Difference	
	mean	s.e.	mean	s.e.		t
State before childbirth: Unemployed	0.175	0.38	0.373	0.484	-0.197***	(-34.52)
State before childbirth: Part-time	0.019	0.138	0.088	0.284	-0.069***	(-23.46)
State before childbirth: Full-time	0.805	0.396	0.539	0.498	0.266***	(-44.98)
State before childbirth: Low-paid	0.063	0.242	0.096	0.294	-0.033***	(-9.32)
State before childbirth: High-paid	0.762	0.426	0.532	0.499	0.230***	(-37.79)
Age at childbirth	32.271	4.670	29.408	4.785	2.863***	(46.063)
Education: Low-secondary	0.363	0.481	0.300	0.458	0.063***	(-10.16)
Education: High-secondary	0.479	0.500	0.507	0.500	-0.028***	(-4.26)
Education: Tertiary	0.158	0.365	0.193	0.395	-0.035***	(-6.96)
Private employee	0.627	0.484	0.706	0.456	-0.078***	(-10.73)
Public employee	0.107	0.309	0.141	0.348	-0.035***	(-6.75)
Self-employed	0.266	0.442	0.153	0.360	0.113***	(-18.27)
Highest earner in the couple	0.598	0.490	0.273	0.445	0.325***	(-52.73)
<hr/>						
Panel B: Household level	mean	s.e.				
<hr/>						
Area of living : North	0.486	0.499				
Area of living : Centre	0.233	0.422				
Area of living : South	0.282	0.450				
Year of childbirth: 1995-1999	0.313	0.464				
Year of childbirth: 2000-2003	0.281	0.449				
Year of childbirth: 2004-2007	0.216	0.411				
Year of childbirth: 2008-2011	0.125	0.331				
Year of childbirth: 2012-2016	0.065	0.246				

Notes: No. of observations equals to 11,568 couples and 23,136 individual values.

Source: own elaborations based on AD-SILC.

a troubling trend towards increased disparity over time.

These figures illustrate the magnitude of the issue in both the Italian labour market and the distribution of household work, which is likely to be further exacerbated by childbirth. However, at this stage, we are presenting descriptive evidence; for example, we do not yet evaluate the potential impact of a second child on explaining the decline in women’s conditions three years after the first childbirth. Therefore, in the remainder of this paper, we adopt a more sophisticated analytical approach, which is first outlined in the next section.

Table 2: Occupational status transition matrix

Panel A		Female			Male		
		s_{t+1}			s_{t+1}		
s_{t-1}	U	PT	FT	U	PT	FT	
U	87.82	2.41	9.76	65.91	2.47	31.62	
PT	20.51	67.71	11.78	8.89	45.78	45.33	
FT	13.82	11.19	74.99	4.43	0.82	94.75	
Panel B		s_{t+3}			s_{t+3}		
		U	PT	FT	U	PT	FT
U	80.82	4.62	14.56	52.52	3.75	43.73	
PT	27.58	55.74	16.68	9.33	33.78	56.89	
FT	18.25	19.5	62.26	5.01	1.14	93.85	

Notes: No. of observations equals to 11,568 couples and 23,136 individual values. Figures are expressed in percentage points. Each row of the transition matrix sum up to 100 pp. U stands for unemployed status; PT stands for part-time worker; FT stands for full-time worker. s_{t-1} denotes the status the year before childbirth, s_{t+1} denotes the status one year after childbirth, s_{t+3} denotes the status three years after childbirth.

Source: own elaborations based on AD-SILC.

Table 3: Low-pay status transition matrix

		Female			Male		
Panel A		s_{t+1}			s_{t+1}		
s_{t-1}	U	LP	HP	U	LP	HP	
U	87.82	5.77	6.4	65.91	8.25	25.84	
LP	37.67	32.7	29.63	14.78	38.4	46.82	
HP	10.64	9.69	79.67	3.7	2.34	93.97	
Panel B		s_{t+3}			s_{t+3}		
s_{t-1}	U	LP	HP	U	LP	HP	
U	80.82	7.72	11.46	52.52	10.38	37.1	
LP	39.39	24.48	36.13	14.5	28.04	57.46	
HP	15.99	10.52	73.49	4.34	3.85	91.8	

Notes: No. of observations equals to 11,568 couples and 23,136 individual values. Figures are expressed in percentage points. Each row of the transition matrix sum up to 100 pp. U stands for unemployed status; LP stands for part-time worker; HP stands for full-time worker. s_{t-1} denotes the status the year before childbirth, s_{t+1} denotes the status one year after childbirth, s_{t+3} denotes the status three years after childbirth.

Source: own elaborations based on AD-SILC.

3 Empirical strategy

The empirical strategy unfolds in two steps. As an introductory first step, we examine the relationship between occupational outcomes after childbirth and gender. In line with the previous section, there are two main occupational outcomes (each categorized into three groups): (i) one that combines unemployment with part-time and full-time employment, and (ii) another that includes unemployment alongside low-pay and high-pay employment.

The analysis is conducted using multinomial logit models. The first dependent variable, y_i , identifies three occupational statuses —unemployed ($y_i = UN$), part-time ($y_i = PT$), and full-time employment ($y_i = FT$), with full-time being the reference category. Consequently, with the first multinomial model, we estimate equations in which $y_{i,t+j}$ represents the employment status at time $t + j$ where j can take the alternative values of 1 or 3, corresponding to 1 year or 3 years after childbirth at time t . This leads to the following regression equations:

$$\ln \left(\frac{P(y_{i,t+j} = UN)}{P(y_{i,t+j} = FT)} \right) = \beta_{0,t+j}^{UN} + \beta_{1,t+j}^{UN} \text{Female}_i + \beta_{2,t+j}^{UN} X + \epsilon_{i,t+j}^{UN} \quad (1)$$

$$\ln \left(\frac{P(y_{i,t+j} = \text{PT})}{P(y_{i,t+j} = \text{FT})} \right) = \beta_{0,t+j}^{\text{PT}} + \beta_{1,t+j}^{\text{PT}} \text{Female}_i + \beta_{2,t+j}^{\text{PT}} X + \epsilon_{i,t+j}^{\text{PT}} \quad (2)$$

Where β_1^{UN} is the multinomial logit estimate comparing females to males for unemployment relative to full time and β_1^{PT} is the estimate comparing females to males for part time relative to full time. X is a set of explanatory variables: education (three categories: below secondary; upper secondary, tertiary), geographical area (three categories: North; Centre; South), age of the parent when the first child was born, year of birth of the first child, a dummy variable capturing whether individuals achieved the highest education level later than expected (after 35 years of age for university, after 25 for high-school, after 20 for middle school and after 15 for elementary school), a dummy capturing if another child was born one year after the first. $\epsilon_{i,t+j}^{\text{UN}}$ and $\epsilon_{i,t+j}^{\text{PT}}$ are the error terms.

The same analysis has been replicated using $z_{i,t+j}$ as the dependent variable that identifies three other occupational outcomes at time $t + j$: unemployment ($y_i = \text{UN}$), low-pay ($y_i = \text{LP}$), and higher paid ($y_i = \text{HP}$), with the latter being the reference category. Therefore, the following estimation equations are used:

$$\ln \left(\frac{P(y_{i,t+j} = \text{UN})}{P(y_{i,t+j} = \text{HP})} \right) = \beta_{0,t+j}^{\text{UN}} + \beta_{1,t+j}^{\text{UN}} \text{Female}_i + \beta_{2,t+j}^{\text{UN}} X + \epsilon_{i,t+j}^{\text{UN}} \quad (3)$$

$$\ln \left(\frac{P(y_{i,t+j} = \text{LP})}{P(y_{i,t+j} = \text{HP})} \right) = \beta_{0,t+j}^{\text{LP}} + \beta_{1,t+j}^{\text{LP}} \text{Female}_i + \beta_{2,t+j}^{\text{LP}} X + \epsilon_{i,t+j}^{\text{LP}} \quad (4)$$

Where β_1^{UN} is the multinomial logit estimate comparing females to males for unemployment relative to higher pay, β_1^{LP} is the estimate comparing females to males for low pay relative to full time, and X is the same set of explanatory variables.

The second stage of the empirical strategy involves estimating gender disparities on transitions, more specifically on the probability of experiencing occupational downward mobility. Therefore, we focus on modeling the probability of encountering occupational downward mobility, both one and three years following the birth of the first child at time t comparing the outcomes at $t - 1$ with those at $t + 1$. We define occupational downward mobility across three distinct pathways: firstly, the transition from employment (both full-time and part-time) to unemployment; secondly, the transition from full-time employment to either part-time work or unemployment; and lastly,

the movement from high-pay employment to low-pay employment or unemployment. Since each of these transitions is available, respectively, for individuals who were employed at time $t - 1$; for individuals who were employed full-time at time $t - 1$; and for individuals who were in high-pay employment at time $t - 1$, we face a selection problem. To address this issue we apply a probit model with sample selection [Heckman, 1979, Van de Ven and Van Praag, 1981]. Therefore, for the first transition, from employment to unemployment, we estimate the following system of equations:

$$\begin{cases} E_{i,t-1} = Z'_i \gamma + u_i \\ DM_{i,t+1}^{\text{UN}} = X'_i \beta_{t+j} + \varepsilon_{i,t+j} \end{cases} \quad (5)$$

Where $E_{i,t-1}$ is a dummy variable equal to one if the individual was employed at time $t - 1$, the year of birth of the first child; $DM_{i,t+1}^{\text{UN}}$ is a dummy equal to one if the individual moved from employment to unemployment at $t + j$ (DM stands for downward mobility); Z'_i contains the observable determinants of the latent propensity of being found in employment at time t ; X'_i contains the observable determinants of the dependent variables in the main equation. Moreover, Z'_i should allow identification by an exclusion restriction. In our setting, we impose exclusion restrictions by assuming that achieving the highest education level later than expected solely impacts the selection probability without influencing the transition probabilities. Thus, the set of covariates in the first stage is: gender, education, geographical area, age of the parent when the first child was born, year of birth of the first child, a dummy equal to one if the spouse has the highest earnings within the couple, and a dummy variable capturing whether individuals achieved education later than expected. On the other side, the covariates in the second stage are: gender, education, age of the parent when the first child was born, year of birth of the first child, a dummy equal to one if the spouse has the highest earnings within the couple, and a dummy capturing if another child was born one year after the first.

Then, for the second transition, from full-time employment to either part-time work or unemployment, we estimate the following other system of equations:

$$\begin{cases} \text{FT}_{i,t-1} = Z'_i \gamma + u_i \\ DM_{i,t+j}^{\text{PT}} = X'_i \beta_{t+j} + \varepsilon_{i,t+j} \end{cases} \quad (6)$$

Where $FT_{i,t-1}$ is a dummy variable equal to one if the individual was in full-time employment at time $t - 1$; $DM_{i,t+j}^{PT}$ is a dummy equal to one if the individual shifted from full-time employment to either part-time employment or unemployment at $t + j$; Z'_i contains the observable determinants of the latent propensity of being found in full-time employment at time t .

Lastly, we estimate the following system of equations:

$$\begin{cases} HP_{i,t-1} = Z'_i\gamma + u_{1i} \\ DM_{i,t+j}^{LP} = X'_i\beta_{t+j} + \varepsilon_{i,t+j} \end{cases} \quad (7)$$

Where $HP_{i,t-1}$ is a dummy variable equal to one if the individual was employed in a higher-pay occupation at time $t - 1$; $DM_{i,t+j}^{LP}$ is a dummy equal to one if the individual moved from a higher-pay occupation to either a low-pay status or unemployment at $t + j$; Z'_i contains the observable determinants of the latent propensity of being found in full-time employment at time t .

For the last two systems of equations, we employ the same set of covariates in both the first stage and second stage as we do for the first system. Therefore, the exclusion restriction is maintained by including a dummy variable in the first stage that equals one if the individual achieved education later than expected.

4 Main results

4.1 Multinomial logit models

As detailed in the previous section, we begin by running multinomial logits for each of the two occupational categorizations. In the first the three categories are unemployment, part-time employment and full-time employment, while in the second they are unemployment, low-pay employment, and high-pay employment. Estimates are repeated for occupational outcomes one and three years after childbirth. Alongside gender, our explanatory variables include educational attainment, geographical macro area, the partners' age at childbirth, the calendar year of the first child's birth, a dummy if another child was born one year after the first, and a binary variable indicating late educational achievement.

Table 4 presents the estimated marginal effects focusing on unemployment and part-time em-

ployment, with full-time employment as the baseline category. Analyzing gender disparities in the likelihood of unemployment, the gender dummy variable indicates that women have a 22 percentage point higher probability of experiencing unemployment one year after the birth of their first child, which increases to 25 percentage points three years later. This highlights a significant and persistent gender gap in unemployment probabilities following childbirth. Additionally, women show an 11 percentage point higher probability of engaging in part-time employment one year after their first child's birth, which rises to a 16 percentage point difference three years later.

Regarding the other variables, the results largely align with expectations. Individuals with a tertiary degree experience a roughly 10 percentage point decrease in the probability of unemployment one year after childbirth compared to those with a lower level of education. This advantage further increases three years after the birth of the first child. Additionally, the average marginal effect of residing in the South on unemployment is actually positive both one year and three years post-childbirth. This indicates that individuals from the South face, on average, approximately a 20 percentage points higher probability of unemployment compared to their Northern counterparts during both periods. Moreover, individuals who have their first child at an older age exhibit a lower probability of unemployment.

Regarding part-time employment, one year after childbirth, individuals with an upper secondary degree exhibit a higher probability of part-time employment compared to those with a lower level of education. This pattern persists both one year and three years after the birth of the first child. Interestingly, we also observe that having the first child at an older age increases the probability of part-time employment. Furthermore, our analysis reveals that residing in the South and Center regions has a negative average marginal effect on part-time employment. This indicates a reduced likelihood of engaging in part-time work for individuals living in these areas.

Table 5 displays the average marginal effects for the other categorization which includes unemployment, low pay, and higher pay, with the latter serving as the reference category. The estimated coefficients indicate that women face a higher probability of being low-paid, with an increase of 4 percentage points both one year and three years after childbirth. Similarly, residing in the South and having a second child contribute to an increased likelihood of being in low-pay employment by about 3 percentage points.

Table 4: Marginal Effects after multinomial logit for the occupational status ($y_{i,t+j}$) 1 years and 3 years after childbirth

Unemployed	1 Year After Childbirth		3 Years After Childbirth	
Female Partner	0.222***	(-38.93)	0.257***	(-45.53)
Upper Secondary	-0.088***	(-14.10)	-0.090***	(-14.43)
Tertiary	-0.105***	(-12.47)	-0.145***	(-17.86)
Center	0.053***	(-7.92)	0.046***	(-7.07)
South	0.198***	(-29.63)	0.185***	(-27.99)
Age when childbirth	-0.0173***	(-29.29)	-0.014***	(-23.22)
Late educational achievement	0.050***	(-5.79)	0.038***	(-4.36)
Second Child	0.016	(-1.18)	0.040**	(-3.06)
Employed Part Time	1 Year After Childbirth		3 Years After Childbirth	
Female Partner	0.113***	(-31.97)	0.156***	(-38.84)
Upper Secondary	0.020***	(-5.09)	0.029***	(-6.52)
Tertiary	-0.008	(-1.73)	-0.010	(-1.87)
Center	-0.013**	(-3.02)	-0.020***	(-4.21)
South	-0.040***	(-10.80)	-0.057***	(-13.58)
Age when childbirth	0.002***	(-5.92)	0.002***	(-5.78)
Late educational achievement	-0.001	(-0.27)	-0.013*	(-2.05)
Second Child	-0.016	(-1.77)	-0.015	(-1.43)
N	23,136		23,136	

Notes: The marginal effects derive from multinomial logit models illustrated in Eq. 1 and 2. The reference category is: being employed full-time. The marginal effects of year of birth of the first child are not shown.

Source: own elaborations based on AD-SILC.

Table 5: Marginal Effects after multinomial logit for the occupational status ($z_{i,t+j}$) 1 years and 3 years after childbirth

Unemployed	1 Year After Childbirth		3 Years After Childbirth	
Female Partner	0.222***	(-38.9)	0.257***	(-45.50)
Upper Secondary	-0.089***	(-14.13)	-0.091***	(-14.50)
Tertiary	-0.105***	(-12.36)	-0.144***	(-17.60)
Center	0.053***	(-7.90)	0.046***	(-7.05)
South	0.198***	(-29.55)	0.185***	(-27.91)
Age when childbirth	-0.017***	(-29.26)	-0.014***	(-23.23)
Late educational achievement	0.049***	(-5.75)	0.036***	(-4.23)
Second Child	0.018	(-1.37)	0.040**	(-3.06)
Low Pay	1 Year After Childbirth		3 Years After Childbirth	
Female Partner	0.049***	(-12.8)	0.042***	(-11.13)
Upper Secondary	-0.001*	(-2.19)	0.000	(-0.02)
Tertiary	0.005	(-0.84)	0.006	(-1.02)
Center	0.019***	(-4.20)	0.018***	(-3.92)
South	0.029***	(-6.63)	0.022***	(-5.15)
Age when childbirth	0.000	(-0.08)	-0.001	(-1.29)
Late educational achievement	0.005	(-0.86)	0.011	(-1.95)
Second Child	0.032***	(-4.10)	0.004	(-0.46)
N	23,136		23,136	

Notes: The marginal effects derive from multinomial logit models illustrated in Eq. 3 and 4. The reference category is: being in high-pay employment. The marginal effects of year of birth of the first child are not shown.

Source: own elaborations based on AD-SILC.

4.2 Occupational downward mobility

The second and crucial step of the analysis involves estimating gender differences in the probability of occupational downward mobility. Therefore, the transition to a ‘worse’ employment status has been modelled with three different specifications: i) from employment at $t - 1$ to unemployment at $t + 1$ ($DM_{i,t+1}^{UN}$); ii) from full-time employment at $t - 1$ to either part-time employment and unemployment at $t + 1$ ($DM_{i,t+1}^{PT}$); iii) from high-pay employment at $t - 1$ to low-pay employment or unemployment at $t + 1$ ($DM_{i,t+1}^{LP}$).⁵ Each of these transitions are estimated one and three years after childbirth, using a probit model with sample selection. For each of the three specifications the sample selection is different: for model i) we correct for the probability of being employed, for model ii) we correct for the probability of being full-time employed, for model iii) we correct for the probability of being in high-paid job. In the transition equation we control for gender (our key variable), educational achievement, area of living, age when childbirth, dummy for higher within-couple earnings, dummy for self-employed and dummy for having a second child. In the selection equation we control for gender, educational achievement, area of living, and a dummy that equals one for individuals with late educational achievement that is used as an instrument.

The results are shown, respectively, in Table 6, 7 and 8. We begin by discussing the sample selection correction strategy. The variable on late educational achievement shows significance across all regressions and we observe a statistically significant selection in all regressions except for the first model presented in Column 1 of Table 6. The probability of transitioning from employment to unemployment one and three years after childbirth is provided in Table 6, displaying the related marginal effects. Female partners have a greater probability of transitioning to unemployment compared to male partners, a probability that intensifies when moving from short (1yr) to medium (3yr) time after childbirth (from 7.3 to 10.4 percentage points). In analyzing the probability of transitioning from full-time employment to either part-time work or unemployment, the previously observed disadvantage for female partners is confirmed: one year after childbirth, the probability of downward mobility for women is 21.2 percentage points higher, which escalates to a higher probability of 36.7 percentage points three years later (see Table 7 for details). When considering low-pay as a defining factor in occupational downward mobility, women display 9.5 percentage points higher probability of transitioning from high-pay employment to either low-pay employment

⁵Keep in mind that the time t in this notation corresponds to the year of childbirth, while $t - 1$ and $t + 1$ correspond, respectively, to one year before and after childbirth.

or unemployment one year after childbirth, increasing to a 12.8 percentage points higher probability three years later.

Regarding the other covariates, one interesting finding is that significance, sign and size of the marginal effects are coherent across the three specifications. Residing in the South or the Center increases the probability of experiencing occupational downward mobility. On the other hand, being the partner with the highest remuneration in the couple and having had the first child at an older age decreases the probability of occupational downward mobility. The only slight difference across models is centered around self-employment (whose marginal effect has negative sign in model i) and ii) but it is not significant in model iii)) and, partially, around having a second child.

Indeed, the evidence from the occupational downward mobility may be summarized as follows. The penalties for female partners in terms of a greater probability of downward mobility are striking for all three ‘worse’ employment specifications. Downward mobility tends to rise moving from short to medium term after childbirth for all three ‘worse’ employment specifications. The part-time downward mobility gender penalty is more pronounced than the ones linked to employment and low-pay.⁶

To wrap up the section, we examine the evolution of occupational penalties by childbirth cohort. Figure 1 reports the probability of experiencing occupational downward mobility for female partners compared to male partners in five childbirth cohorts (1995-99, 2000-03; 2004-07; 2008-2011; 2012-2016) and jointly considering the downward mobility in terms of employment ($DM_{i,t+1}^{UN}$), time ($DM_{i,t+1}^{PT}$) and pay ($DM_{i,t+1}^{LP}$). On the left-hand side of the figure we show the mobility one year after childbirth, while on the right-hand side of the figure we show the mobility three years after childbirth.

The first result of this cohort-level analysis confirms the dominance of downward mobility in terms of time compared to the other two outcomes. The size of the gender marginal effects is greater for mobility from full-time employment to part-time employment or unemployment (orange line) than for mobility from employment to unemployment (green line) and for mobility from high-pay employment to low-pay employment or unemployment (blue line). This result holds true throughout the cohorts and both in the short and medium term. The second piece of evidence,

⁶Table B.1 in Appendix B presents the marginal effects of downward occupational mobility in terms of employment, time, and pay for a restricted sample with information on the migration status of individuals (those surveyed in SILC 2010-17). Due to the reduction of observations by more than a third compared to the baseline, we have included this additional table as an appendix. The childbirth penalty for women is strongly confirmed even when accounting for migration status (born in a different country than current residence).

Table 6: Marginal Effects after probit model with sample selection for the transition from employment to unemployment ($DM_{i,t+1}^{UN}$)

Transition Equation	1 Year After Childbirth		3 Years After Childbirth	
Female	0.073***	(-10.45)	0.104***	(-13.71)
Upper Secondary	-0.035***	(-5.85)	-0.040***	(-6.45)
Tertiary	-0.053***	(-7.53)	-0.079***	(-10.35)
Center	0.023***	(-4.52)	0.025***	(-4.52)
South	0.051***	(-5.91)	0.054***	(-6.00)
Age when Childbirth	-0.003***	(-4.34)	-0.002***	(-3.30)
Highest Earnings within Couple	-0.019***	(-4.36)	-0.021***	(-4.66)
Self-employed	-0.008	(-1.56)	-0.012*	(-2.23)
Second Child	-0.000	(-0.03)	0.027**	(-2.61)
Selection Equation	1 Year After Childbirth		3 Years After Childbirth	
Female	-0.140***	(-25.98)	-0.140***	(-26.19)
Upper Secondary	0.067***	(-10.67)	0.067***	(-10.70)
Tertiary	0.047***	(-5.16)	0.048***	(-5.25)
Center	-0.052***	(-7.21)	-0.052***	(-7.22)
South	-0.214***	(-29.73)	-0.214***	(-29.66)
Late educational achievement	-0.068***	(-7.78)	-0.067***	(-7.71)
Rho	0.112		0.433***	
N	23,136		23,136	

Notes: The selection equation conveys information on the probability of being employed. The marginal effects derive from probit model with sample selection illustrated in Eq. 4. The marginal effects of year of birth of the first child are not shown.

Source: own elaborations based on AD-SILC.

Table 7: Marginal Effects after probit model with sample selection for the transition from full-time employment to part-time employment or unemployment ($DM_{i,t+1}^{PT}$)

Transition Equation	1 Year After Childbirth		3 Years After Childbirth	
Female	0.212***	(-7.78)	0.367***	(-13.65)
Upper Secondary	-0.043***	(-4.40)	-0.045***	(-4.77)
Tertiary	-0.081***	(-6.48)	-0.125***	(-10.51)
Center	0.027**	(-3.29)	0.029**	(-3.22)
South	0.078***	(-4.29)	0.094***	(-5.30)
Age when Childbirth	-0.006***	(-3.84)	-0.009***	(-5.12)
Highest Earnings within Couple	-0.017**	(-2.62)	-0.027***	(-3.86)
Self-employed	-0.048***	(-5.90)	-0.077***	(-8.93)
Second Child	-0.020	(-1.15)	0.018	(-1.06)
Selection Equation	1 Year After Childbirth		3 Years After Childbirth	
Female	-0.216***	(-37.12)	-0.216***	(-37.22)
Upper Secondary	0.067***	(-10.10)	0.067***	(-10.12)
Tertiary	0.064***	(-6.95)	0.064***	(-6.90)
Center	-0.047***	(-6.25)	-0.047***	(-6.28)
South	-0.198***	(-26.77)	-0.198***	(-26.87)
Late educational achievement	-0.070***	(-7.54)	-0.070***	(-7.58)
Rho	-0.377***		-0.405***	
N	23,136		23,136	

Notes: The selection equation conveys information on the probability of being employed full-time. The marginal effects derive from probit model with sample selection illustrated in Eq. 5. The marginal effects of year of birth of the first child are not shown.

Source: own elaborations based on AD-SILC.

Table 8: Marginal Effects after probit model with sample selection for the transition from higher-pay employment to low-pay employment or unemployment ($DM_{i,t+1}^{LP}$)

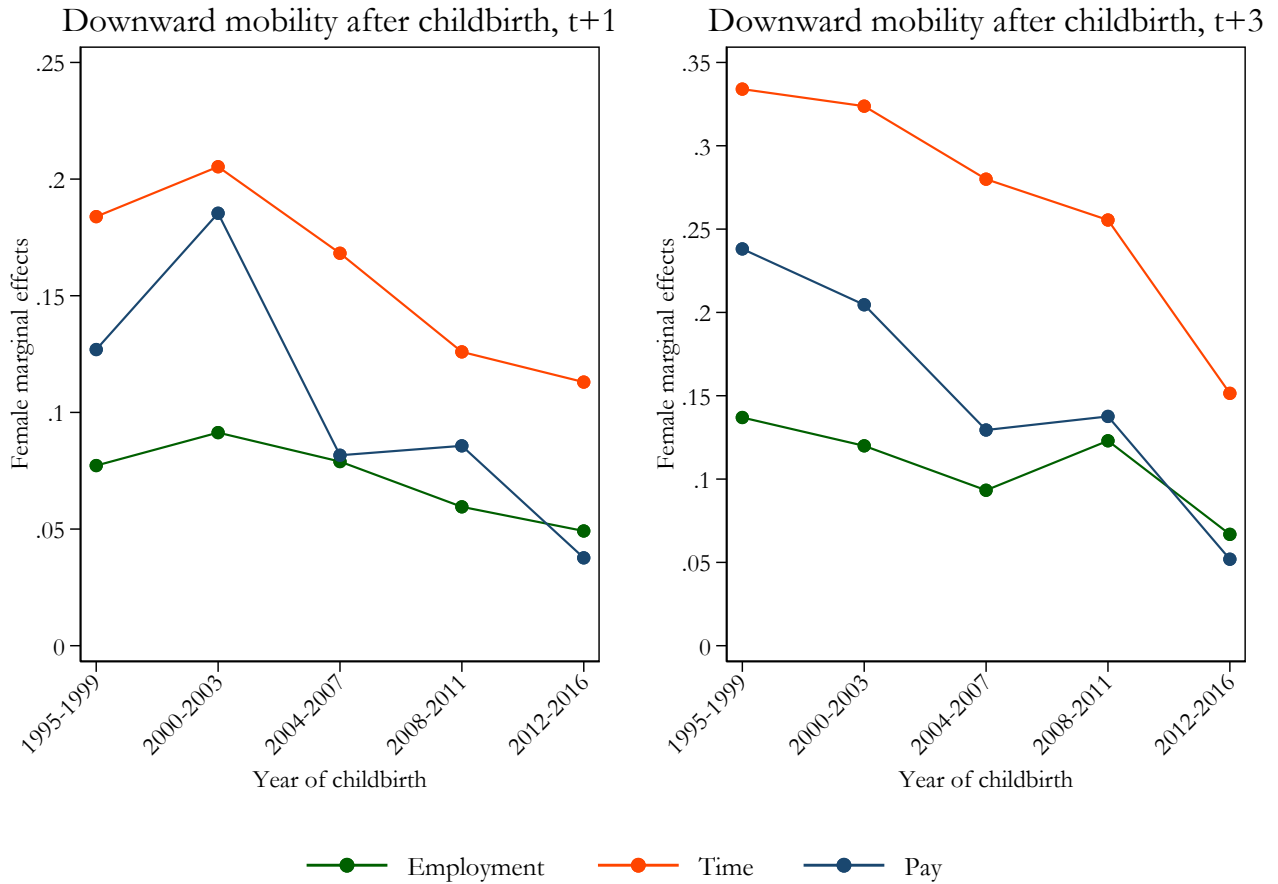
Transition Equation	1 Year After Childbirth		3 Years After Childbirth	
Female	0.095***	(-9.93)	0.128***	(-10.87)
Upper Secondary	-0.029***	(-4.57)	-0.034***	(-4.62)
Tertiary	-0.046***	(-6.18)	-0.072***	(-8.11)
Center	0.019***	(-3.32)	0.021***	(-3.30)
South	0.046***	(-4.29)	0.052***	(-4.26)
Age when childbirth	-0.002**	(-2.77)	-0.002*	(-2.42)
Highest Earnings within Couple	-0.013**	(-2.64)	-0.008	(-1.59)
Self-employed	0.004	(-0.61)	-0.001	(-0.14)
Second Child	0.039***	(-3.67)	0.029*	(-2.52)
Selection Equation	1 Year After Childbirth		3 Years After Childbirth	
Female	-0.172***	(-29.90)	-0.173***	(-30.07)
Upper Secondary	0.086***	(-12.98)	0.086***	(-12.86)
Tertiary	0.047***	(-4.88)	0.046***	(-4.82)
Center	-0.076***	(-9.89)	-0.075***	(-9.81)
South	-0.250***	(-33.39)	-0.250***	(-33.32)
Late educational achievement	-0.069***	(-7.52)	-0.069***	(-7.57)
Rho	0.367**		0.334**	
N	23,136		23,136	

Notes: The selection equation conveys information on the probability of being in high-pay employment. The marginal effects derive from probit model with sample selection illustrated in Eq. 6. The marginal effects of year of birth of the first child are not shown.

Source: own elaborations based on AD-SILC.

which once again confirms what was found in previous empirical analysis, is that the gender gap in downward mobility is generally higher for medium rather than for short term transitions. Overall we observe a reduction in the size of the marginal effects across cohorts, which is consistent across the three measures of occupational downward mobility. However, in the most recent cohort, those who lived first childbirth born between 2012 and 2016, there remains a significant gender gap in downward mobility over time, with marginal effects exceeding 10 percentage points in both short-term and medium-term transitions.

Figure 1: Marginal Effects after probit model with sample selection by childbirth cohort



Notes: The marginal effects derive from probit model with sample selection illustrated in Eq. 6 computed for each childbirth cohort. Source: Authors' elaborations based on AD-SILC.

4.3 Clustering households according to labour transition after childbirth

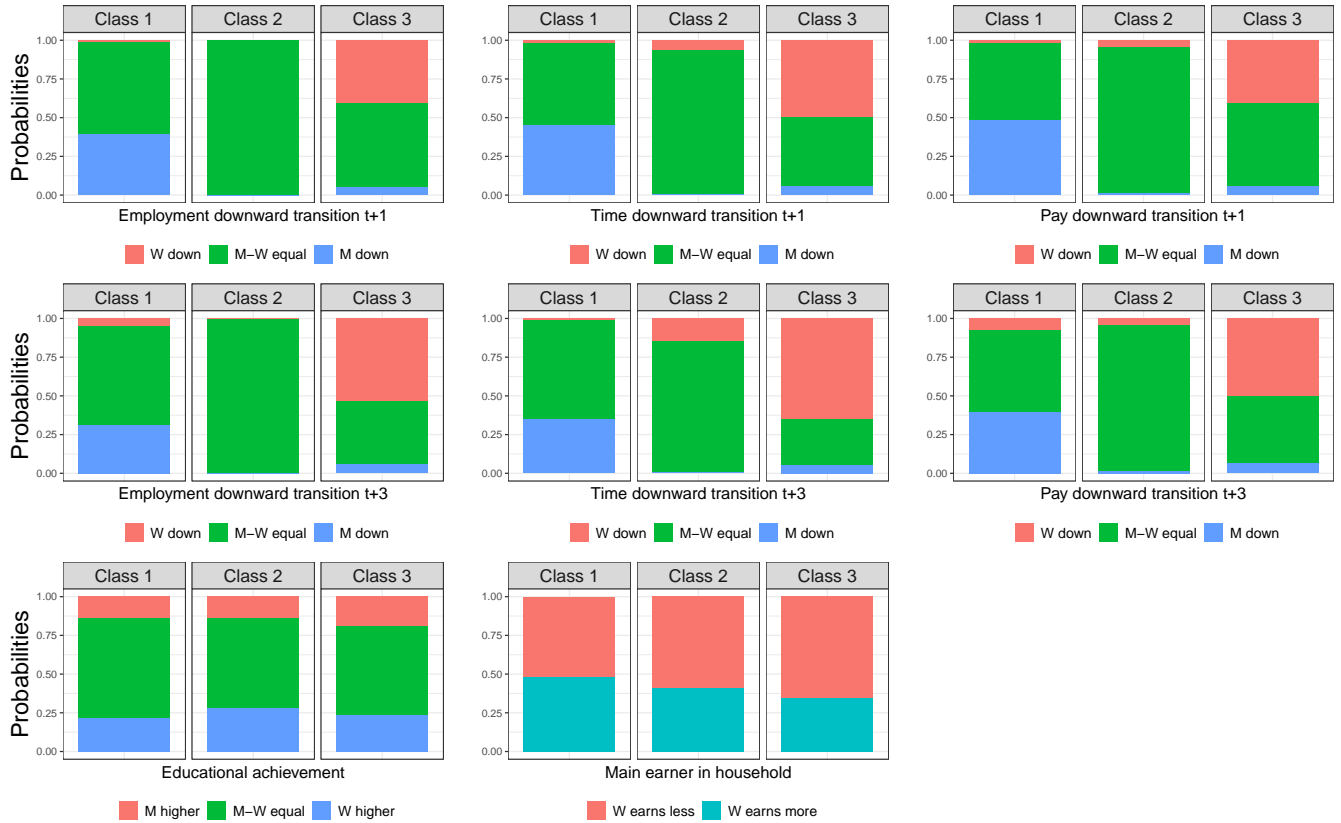
In this final results section, we reinforce our previous individual-level evidence by focusing on households to explore common trends in post-childbirth occupational transitions. In other words, we relate the differences in labour trajectories experienced by men and women to the varying bargaining power of women compared to men, particularly in couples where there is significant heterogeneity in the socioeconomic backgrounds of the partners.

In order to better inspect the labour trajectories of partners and trace an identikit of the couples, we introduce a fourth step in the analysis: a clustering exercise aimed at mapping the households in the survey according to the heterogeneous labour trajectories of the partners after childbirth. The cluster analysis is conducted at the household level and it is restricted to couples whose components were both employed at childbirth. We jointly consider the six dependent variables studied in the previous paragraphs: (i) short-term downward mobility in employment, time and pay ($t + 1$); (ii) medium-term downward mobility in employment, time and pay ($t + 3$). We divide these variables at the household level in three categories: i) households in which only female partners experience downward transition; ii) households in which the male and female partners experience equal transition condition; iii) households in which only male partners experience downward transition. Following the same line of reasoning we include two household variables that capture the within-couple differences in terms of educational achievements as well as labour earnings (who earns more between the partners).

We apply a latent class model with the aforementioned six transition variables plus the two on education and earnings as response variables.⁷ The optimal number of classes is selected with the BIC (Bayesian Information Criterion), according to which there are three groups of households. In Figure 2 we provide the conditional response probabilities of the eight response variables for each of the three classes.

⁷The model is estimated using the R-Package *PoLCA* [Linzer and Lewis, 2011]. We control for the area of living.

Figure 2: Latent class classification: Conditional response probabilities



Notes: W (M) down stands for women (men) transitioning downward. M-W equal stands for partners performing equally. W (M) higher stands for women (men) having higher education. W earns less (more) stands for woman in the couple having higher (lower) labour income with respect to the male partner. Source: Authors' elaborations based on AD-SILC.

We interpret the three-category latent class variable as different levels of within-couple bargaining power (pro female, egalitarian and pro male).

The first class corresponds to a tiny cluster (less than 2% of the households). It is composed of couples where men experience unfavorable labour trajectories both in the short and long run. The mean of household wage is the lowest among the classes, but the median is even worse (33,000 of euros), denoting an unequal and poor class.⁸ Indeed, the very small class size is a sign of how rare are households where men more than women experience a downward mobility. The second class stands out as the most egalitarian since it includes households with the highest probabilities of experiencing the same transition after childbirth, both in short and medium-term, and across the

⁸All the details on cluster composition other than the conditional response probabilities are available in Appendix A (Table A.1).

three dimensions of occupational downward mobility. Over 60% of the households in the sample belong to this group, which also has the highest average household wage (about 70,000 euros per year). The partners of this group tend to have higher educational achievements. Finally, a third class clusters households where women’s bargaining power is lower compared to male partners. In these households, women typically encounter some form of occupational downward mobility both in the short and long run, especially in terms of pay. This last result is coherent with what we found in previous sections: women’s occupational deployment after childbirth is mainly due to the transition from full-time to part-time. These households make up about 30% of the sample. The mean and the median wage of the households in the group is sensibly lower with respect to the previous group.

Finally, one interesting point regards the class composition in terms of educational achievement and earnings. There seems to be substantially no difference between clusters in terms of education, meaning that the within-couple bargaining power is independent on who in the couple reached a higher level of education. On the contrary, households where woman is the main earner show a higher probability of belonging to the first class, the one in which the bargaining power is in favour of women. Notably, a woman’s earnings have a more substantial impact on her bargaining power than her education level. Higher earnings enable women to negotiate more effectively with their partners about sharing unpaid care activities.

5 Conclusions

In this paper we have focused on the higher probability of female partners being in ‘bad’ employment conditions (such as unemployment, part-time, and low-pay positions) after the birth of the first child and on gender disparities in experiencing occupational downward mobility following the birth of the first child. Our analysis, based on the AD-SILC dataset, a unique source of data that combines administrative archives with survey information, has allowed us to determine whether occupational outcomes at a given year (one and three years after childbirth) and the transition to a ‘worse’ job condition are affected by the partner’s gender in the couple. The econometric analysis highlights that female partners one year after childbirth have a higher probability of experiencing unemployment, engaging in part-time employment, and being employed in a low-pay occupation. This probability increases even further when we consider what happens three

years after childbirth. Moreover, when looking at transitions to a “worse” employment status, we estimate remarkable penalties for women across the three different measures of downward mobility (in terms of employment, time and pay). These figures are even worsened when observing the medium term transitions (comparing the outcomes before childbirth to those three years after). Still, the main driver of downward mobility is part-time, since the gender penalties of moving from full-time employment to part-time employment (or unemployment) display the highest values. This suggests that part-time arrangements may play a discriminating role after childbirth, as it is typically the woman who changes her contract. Indeed, although the gender disparities are reducing over cohort of childbirth, their size is still significant in the latest observed period (2012-16), but way lower with respect to the first (1995-1999). The latent class analysis outlines three classes proxying different within-couple bargaining power. It shows how small is the class of pro female households with respect to the egalitarian and pro male classes, with this last one characterized by poorer and less educated partners.

Hence, our results show that the cost of caregiving falls disproportionately on women, resulting in a ‘triple burden’ of market work, home production, and caregiving. These results are even more relevant in cases of hyper flexible labour markets such as the Italian labour market and in places where patriarchal cultural norms are still the norm [Aloé et al., 2024].

In this scenario, to reduce the penalty female partners meet after childbirth by enhancing the bargaining position of caregivers, public policies should compensate or provide for unpaid care Miller and Bairoliya [2022]. However, these policies cannot be gender-neutral. Otherwise, there is a risk of reinforcing or promoting the specialization of caregiving among women, perpetuating gender stereotypes, and weakening women’s individual or collective bargaining power [Folbre, 2018]. From this perspective, a more socially beneficial long-term goal would involve promoting social norms that encourage a more equitable division of care responsibilities across genders. Furthermore, many institutions can provide care services, including families, neighborhoods, the state, the market, and nonprofit organizations. The state should play a central role not just as a provider of care but also as arbiter, enforcer, and regulator of many care responsibilities [Razavi, 2011]. For instance, in the case of Italy, it would be extremely beneficial to extend the duration of mandatory paternity leave for employees (public and private), which currently only grants the working father a mandatory 10-day leave from work. Still from a policy perspective, our analysis highlights that significant downward mobility for women after childbirth occurs through a transition from

full-time to part-time positions. The latter represent an increasing proportion of non-standard work and are likely to expand the pool of in-work poverty for women [Bavaro and Raitano, 2024]. Therefore, labour market reforms aimed at increasing flexibility should be very cautious of their unequal gendered effects. We fully agree with [Miller and Bairoliya, 2022] that flexible labour markets do not necessarily result in a more gender-equitable distribution of caregiving responsibilities. Such policies may enable men to influence intrinsically motivated women to further reduce their labour supply. This concern is particularly relevant in countries where women already have a low bargaining power (in the household and in the labour market), such as Italy.

As expected, the analysis has some caveats and would benefit from incorporating additional dimensions. For instance, despite the uniqueness of the linked survey-administrative dataset, we were not able to fully exploit the characteristics of the workplace where women and men work. We recognize this as a limitation since a lot of heterogeneity in wage setting and personnel policies occurs at the workplace level. Therefore, as a future avenue of research, we aim to explicitly account for all these elements that contribute to shaping labour market transitions of partners and can either alleviate or deepen the care burden in the couple. Moreover, a thorough examination of occupational mobility should not overlook the role of the tasks undertaken by men and women at the workplace level. After childbirth and a period of detachment from work, it is important to investigate to what extent women and men might experience occupational downgrading in their work activities. To date, we have not been able to control for these specific aspects, which would require time-variant data on job tasks.

Aside from these limitations, this paper aimed to contribute to the renewed debate on the crucial role of care in society by highlighting that the current organization of caregiving within households disproportionately affects women's careers. It significantly increases the likelihood of occupational downward mobility for women, through low-paid jobs, part-time and unemployment. This underscores the need for urgent policy interventions and a reevaluation of the social value attributed to caregiving work.

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Appendix A

Table A.1: Clusters characterization

	Class 1	Class 2	Class 3
	Pro female	Equality	Pro male
Class size	0.017	0.660	0.323
Household earnings (mean)	51,212	70,806	53,516
Household earnings (median)	33,684	50,734	38,458
Occ. female partner: Priv. employee	0.617	0.620	0.626
Occ. female partner: Pub. employee	0.139	0.104	0.106
Occ. female partner: Self-employed	0.245	0.276	0.268
Occ. male partner: Priv. employee	0.712	0.656	0.819
Occ. male partner: Pub. employee	0.128	0.180	0.060
Occ. male partner: Self-employed	0.160	0.164	0.121
Educ. female partner: Lower secondary	0.298	0.176	0.320
Educ. female partner: Upper secondary	0.489	0.565	0.534
Educ. female partner: Tertiary	0.213	0.259	0.145
Educ. male partner: Lower secondary	0.330	0.280	0.358
Educ. male partner: Upper secondary	0.500	0.521	0.502
Educ. male partner: Tertiary	0.170	0.199	0.140

Notes: Household earnings are composed as the sum of male and female partners' earnings. *Source:* Authors' elaborations based on AD-SILC.

Appendix B

Table B.1: Marginal Effects after probit model with sample selection, restricted sample with migrant information

Transition	DM ^{UN} _{<i>i,t+1</i>}			DM ^{PT} _{<i>i,t+1</i>}			DM ^{LP} _{<i>i,t+1</i>}		
	1 Yr	3 Yrs	1 Yr	3 Yrs	1 Yr	3 Yrs	1 Yr	3 Yrs	
Female	0.088*** (-7.5)	0.116*** (-9.1)	0.249*** (-7.1)	0.399*** (-11.7)	0.109*** (-6.4)	0.119*** (-9.3)			
Up Sec	-0.036*** (-4.3)	-0.034*** (-3.8)	-0.052*** (-4.2)	-0.039*** (-3.1)	-0.031*** (-3.3)	-0.023*** (-2.7)			
Tertiary	-0.053*** (-5.3)	-0.081*** (-7.3)	-0.092*** (-5.8)	-0.133*** (-9.2)	-0.050*** (-4.5)	-0.066*** (-6.4)			
Center	0.025*** (-3.6)	0.031*** (-4.1)	0.036** (-3.3)	0.052*** (-4.5)	0.017* (-2.2)	0.024** (-3.1)			
South	0.059*** (-4.3)	0.062*** (-4.3)	0.095*** (-3.8)	0.115*** (-3.7)	0.063*** (-3.4)	0.048*** (-3.4)			
Age	-0.004*** (-3.8)	-0.003** (-2.6)	-0.007*** (-3.4)	-0.009*** (-3.6)	-0.003* (-2.5)	-0.002* (-2.4)			
High Retr	-0.010 (-1.7)	-0.015* (-2.4)	-0.007 (-0.9)	-0.018* (-2.0)	-0.006 (-0.9)	0.001 (-0.1)			
Self-empl.	-0.005 (-0.8)	-0.010 (-1.4)	-0.042*** (-4.0)	-0.072*** (-6.7)	0.021* (-2.3)	0.005 (-0.6)			
2nd Child	-0.001 (-0.1)	0.036** (-2.8)	-0.026 (-1.2)	0.030 (-1.5)	0.034* (-2.4)	0.038** (-2.8)			
Migrant	0.030 (-1.8)	0.025 (-1.5)	0.089* (-2.6)	0.111* (-2.5)	0.026 (-1.3)	-0.009 (-0.7)			
Selection									
	1 Yr	3 Yrs	1 Yr	3 Yrs	1 Yr	3 Yrs			
Female	-0.142*** (-21.3)	-0.143*** (-21.4)	-0.219*** (-30.5)	-0.219*** (-30.5)	-0.175*** (-24.6)	-0.175*** (-24.6)			
Up Sec	0.063*** (-8.1)	0.063*** (-8.1)	0.058*** (-7.0)	0.058*** (-7.0)	0.075*** (-9.2)	0.075*** (-9.2)			
Tertiary	0.050*** (-4.7)	0.051*** (-4.7)	0.065*** (-5.9)	0.065*** (-5.8)	0.045*** (-4.0)	0.046*** (-4.0)			
Center	-0.051*** (-6.0)	-0.051*** (-6.1)	-0.045*** (-5.0)	-0.045*** (-5.0)	-0.074*** (-8.2)	-0.074*** (-8.2)			
South	-0.229*** (-26.4)	-0.228*** (-26.2)	-0.213*** (-23.6)	-0.214*** (-23.7)	-0.263*** (-29.2)	-0.262*** (-28.9)			
Migrant	-0.292*** (-25.2)	-0.292*** (-25.2)	-0.286*** (-24.4)	-0.287*** (-24.4)	-0.306*** (-27.0)	-0.305*** (-26.9)			
Late educ.	-0.033** (-3.2)	-0.032** (-3.0)	-0.035** (-3.1)	-0.035** (-3.3)	-0.033** (-3.0)	-0.033** (-3.0)			
Rho	-0.316	0.362*	-0.620***	-0.657***	0.320	0.366*			
N	14,438	14,438	14,438	14,438	14,438	14,438			

Notes: The marginal effects shown here derive from a restricted sample for which we have information on their migration status (those interviewed in SILC 2010-17). The total number of observations declines by more than a third with respect to the baseline. The table contains information on downward occupational mobility in terms of employment, time and pay. Source: own elaborations based on AD-SILC.