

Labour Market Penalties of Mothers: the Role of Reconciliation Policies*

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Abstract

A key issue in increasing women's participation in productive activities is the possibility of achieving a high work-life balance, both in terms of personal wellbeing and in terms of fair career prospects. The crucial event that challenges any level of work-life balance working women achieve is motherhood. We analyse how motherhood affects women's working career, both in terms of participation and in terms of wages, compared to "non-mothers". The country chosen for the analysis is Italy, a paradigmatic example of low participation rate, scant childcare, high wage inequality and a cultural environment that considers childcare a predominantly "female affair".

While most of the literature focuses either on wages or on participation, we consider both dimensions in a country where female participation is low, thus contributing to filling the gap in the literature of studies of this kind referred to southern European countries.

We confirm that the probability of leaving employment significantly increases for new mothers (*career-break job penalty*); however, this is mitigated by higher job quality and human capital endowment, and by childcare accessibility. Crucially, the availability of part-time jobs reduces the probability of mothers moving out of the labour force.

Furthermore, women not leaving employment after becoming mothers face a decrease in wage levels and growth compared to non-mothers, and there are no signs of this gap closing five years after childbirth (*family wage gap*). Again, part-time employment plays a crucial role, as the family wage gap penalty emerges only among women working full-time both before and after childbirth; a part-time job over the whole period or even only after childbirth prevents any wage gap from opening up between such working mothers and non-mothers.

A decisive fact in this context is that in Italy part-time jobs are (scant but) well paid and protected, unlike most other countries.

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I. Introduction

The increase in women's participation in the labour market is a relatively recent phenomenon for most southern European countries. Even if the female participation rate is still much lower than that of males, its increase made it necessary for national and local governments to promote policies and services aimed at making work and family life compatible, following the example of northern European countries. In fact, without social and labour market policies that help reconciliation, the increased participation may produce a decline in the total fertility rate, as has actually happened in many southern European countries.

Italy is a neat example of this. The Italian female participation rate has been increasing significantly since the '70s, although it is still below the European average and far below the Lisbon target. This increased participation has been accompanied by a decline in the total fertility rate, which reached its minimum value of 1.2 in 2000. This is because optional parental leave is poorly paid, part-time job opportunities are still quite limited, and most Italian regions (especially in the south) still lack adequate childcare provision (see Del Boca, 2002; Del Boca and Pasqua, 2004 and 2005; Del Boca *et al.*, 2005 and 2009).

Due to the economic relevance of fertility decline, most of the literature on Italy has analysed the possible relations between women's participation in the labour market and fertility decisions (for a survey see Del Boca and Wetzels, 2007). On the other hand, less attention has been devoted to the consequences of motherhood on the subsequent working career. However, the topic is relevant for better understanding the relationship between family and the labour market and for measuring the full cost of children.

In this paper we analyse how motherhood affects women's position in the labour market. In particular, we concentrate on the exit of mothers from employment and on the wage penalty. The literature, in fact, classifies the effects of motherhood on women's work in two main categories: career break job penalty and downward occupational mobility (also labelled family wage gap)

(Gutierrez-Domenech, 2005a). *Career break job penalty* refers to the permanent or temporary transition of working mothers to non-employment. When mothers do not leave their job, they may experience *downward occupational mobility*, i.e. women with children may be penalized with respect to non-mothers in their career advancements and wages. On top of reasons that spur the Lisbon agreement, both career break job penalty and downward occupational mobility produce a clear loss of human capital for society as a whole if mothers do not work or if they hold occupations below their abilities and knowledge.

We therefore estimate both career break job penalty and family wage gap for Italian women using administrative data drawn from the archives of the Italian Institute for Social Security (INPS) and processed in a public-use file known as the Work Histories Italian Panel (WHIP). WHIP represents a unique source for studying the interaction between motherhood, mothers' participation in the labour market and wages since it contains information on both working career and eventual maternity leave spells.

To estimate the career break job penalty and the family wage gap we compare working mothers to working women who have no children (our benchmark does not include men). We show that (i) the career break job penalty is particularly relevant for Italian mothers, since those who exit the labour market after childbirth hardly ever re-enter; (ii) a wage penalty exists for Italian working mothers, unless they work part-time after childbirth.

This paper is organised as follows: Section 2 presents the relevant literature; in Section 3 we describe the Italian institutional context. In Section 4 we present the data used, in Section 5 our empirical model, while Section 6 contains the results of our estimates. Conclusions are in Section 7.

II. Career break job penalty and family wage gap: literature review

Many studies have been devoted to analysing the effects of maternity on working women, considering both the effects on their career and on wages. Most of these studies refer to the U.S., the U.K., Germany and northern European countries, where female participation in the labour market is

high. In contrast, fewer studies consider southern European countries (with the exception of Spain¹). In what follows we review the relevant literature on career break job penalty and family wage gap.

II.a Career Break Job Penalty

Empirical studies on new mothers' participation in the labour market show that many women exit employment after childbirth, and that most do not re-enter, especially in those countries where women's participation is low. In Italy – and similarly in Spain – women's employment rates decrease from 50% to 40% after childbirth and remain at 42% after 10 years (Gutierrez-Domenech, 2005b). Moreover, Geyer and Steiner (2007), in a cross-country study using the European Panel, show that in Italy the employment rate of women decreases with the number of children more than in other European countries; in addition, the ageing of the children does not increase the employment rate of mothers, showing how difficult it is to re-enter the Italian labour market once it has been left.

The decision to exit the labour market is linked mainly to the level of *human capital*: more skilled women, with better jobs and higher opportunity costs, are less likely to leave (Gustaffson *et al.*, 1996; Dex *et al.*, 1998; Gutierrez-Domenech, 2005b). Pronzato (2009) reports that in Italy 60% of women with primary education are still out of the labour market 48 months after childbirth, while the most educated Italian women re-enter the labour market a few months after childbirth, analogously to highly educated women in the rest of Europe². The results we obtain are consistent with these findings: we find in fact that higher wages are linked to a lower probability of leaving employment after childbirth.

However, human capital only partly explains mothers' employment decisions after childbirth. In fact, where *childcare* services are available, affordable and of good quality (mainly in northern European countries), it is easier for women to reconcile work and family responsibilities

¹ Molina and Montuega (2009) and Fernández-Kranz *et al.* (2010) study the wage penalty for Spanish mothers.

² In Europe only 25% of mothers return to work before the child is one year old, while, as the child ages, large differences emerge among countries: in the U.K. 50% of mothers are already working by the time the child is two years old, while in Ireland this happens only when the child is three years old.

and therefore they stay more attached to the labour market (Gutiérrez-Domènech, 2005b; Pronzato, 2009). Consistently, we estimate that wider childcare services lower the probability of new mothers leaving employment.

Wetzels (2001) compares mothers' labour market behaviour in Germany, the U.K., the Netherlands and Sweden and finds an important relationship between the country's specific policies and the timing of re-entry. Generosity of *parental leave* policies (in particular the length of optional leave and the replacement rate) seems to be crucial in increasing the probability of new mothers re-entering the labour market (Rönsen and Sunström, 1996; Gustaffson *et al.*, 1996; Pronzato, 2009). Saurel-Cubizolles *et al.* (1999) analyse employment decisions after childbirth in France, Italy and Spain and find that in Italy and France, where optional parental leave is longer compared to Spain, around 80% of women return to work, while in Spain only 53% of new mothers return to work.

Desai and Waite (1991) discuss the importance of *job characteristics* in increasing the probability of women re-entering work after childbirth: mothers are more likely to work if the job allows flexibility in hours, if it is safe and physically undemanding. Bratti *et al.* (2005) for Italy show how different job characteristics imply different costs of participation: jobs with reduced or more flexible working time increase the probability of women going to work. A part-time job, therefore, should help mothers stay attached to the labour market during their children's pre-school years. Our results are in line with this argument, estimating a reduced probability of leaving employment while working part-time or working where part-time jobs are more available.

II.b Family Wage Gap

The family wage gap is a common phenomenon that characterizes countries with different institutional contexts. Harkness and Walfogel (2003), in fact, find a negative effect of children on women's wage in all countries they consider³. The wage penalty is largest in the U.K., followed by the other Anglo-American countries, Spain and Germany, while it is smallest in the Nordic

³ They use the LIS (Luxemburg Income Study) and control for earnings-related characteristics. Italy is not included in this comparative study.

countries.

The literature identifies several explanations for the family wage gap (Wetzels, 2007). The first is related to *human capital* depreciation during non-work spells (childbearing and childrearing) for women who re-enter the labour market. Waldfogel (1995) for the U.S. and Joshi *et al.* (1999) for the U.K. show how human capital plays an important part in explaining the wage differential between mothers and non-mothers. In particular, Joshi *et al.* (1999) find no wage penalty for mothers who did not take breaks after childbirth, while Anderson *et al.* (2002) find no penalty for less educated mothers for which human capital accumulation is less relevant. However, Datta Gupta and Smith (2002) for Denmark, and Lalive and Zweimüller (2009) for Austria show that the negative effect of motherhood on women's human capital is only temporary. Albrecht *et al.* (1999) for Sweden find a negative effect of non-work spells but not of maternity leave on women's subsequent wages. Furthermore, they find that the penalty due to a break is different for men than it is for women and therefore the human capital depreciation hypothesis alone cannot explain the family wage gap.

In addition, employers may consider breaks (especially when prolonged beyond the base leave period) or even motherhood, as a *signal* of a lower work commitment, with negative effects on career and wages (Mavromaras and Rudolph, 1997). Or, the lower productivity of mothers compared to non-mothers can be simply assumed by employers (*stigma*) that do not actually observe each worker's productivity (Joshi *et al.*, 1999; Buding and England, 2001).

On the other hand, mothers may actually be *less productive* than non-mothers, due to family responsibilities and increased household production and caring activities, or because of tiredness and the need to "store" energy for their duties at home. As Becker (1991, 1995) argues, this is the consequence of specialization within the family: women are, in fact, still predominantly responsible for domestic work and childcare; therefore, they spend less time participating in leisure activities and more in household tasks; consequently, less energy is left for the paid work. Moreover, they may stay at home when children are ill, and may spend some time at work organizing childcare and

children's activities. This hypothesis is not easily testable using the typical data available to researchers. However, Davies and Pierre (2005) and Molina and Montuega (2009) show that wage penalty increases with the number of children, while Anderson *et al.* (2003) use children's age in their wage equation and show that when children grow up, the negative effect of their presence on the mother's wage is reduced: younger children are increasingly demanding more time and energy from their mothers. Fernández-Kranz *et al.* (2010) for Spain similarly find that mothers' earnings return to their pre-birth levels only after nine years. Phipps *et al.* (2001) test the hypothesis that Canadian women with more onerous unpaid work responsibilities (due in particular to the presence of children) are less productive in their paid work. They consider only full-timers and find that total hours of unpaid work is negatively associated with current earnings.

However, women who want to have children may be more likely to choose jobs with better working conditions *ex-ante*, particularly in relation to the time and place of work. The cost of this choice can be a lower wage and/or less career opportunities for working mothers (Gronau, 1988) even before childbirth. Koreman and Neumark (1992) and Datta Gupta and Smith (2002) find that the family wage gap is due primarily to heterogeneity and self-selection into less demanding/lower paid jobs; on the contrary, Waldfogel (1995, 1997, 1998) finds that controlling for unobserved heterogeneity (fixed effects) does not reduce the estimated penalty in the U.S. and therefore differences in motivation and attitudes alone cannot explain the family wage gap. Consistent with this last result, we estimate that there is no wage gap before childbirth among women highly attached to the labour market⁴, i.e. those who become mothers are not different in terms of their productive characteristics from those who remain childless.

Moreover, new mothers may look for better job conditions *ex-post*: new mothers are more likely to reduce the number of hours worked, to look for a more flexible job or for a job closer to home. Wetzels and Zorlu (2003) emphasize the effect of the selection of less demanding jobs in explaining wage differentials between mothers and non-mothers, while Ejrneas and Kunze (2011)

⁴ As discussed in Section 5.

estimate a 10-20% gap in real wages between mothers and childless women in Germany that arises from firm mobility of unskilled women. Joshi *et al.* (1999) for the U.K. find no pay penalty for mothers within the group of full-time workers or within the group of part-time workers, but mothers who move from full-time to part-time suffer a relevant wage penalty. Similarly, in Walfogel (1997) and in Fernández-Kranz *et al.* (2010) part-time employment is an important component in explaining the family gap in pay. Hence, a part-time job helps mothers stay attached to the labour market, but in many countries part-time jobs are less protected and the pay is lower than in full-time jobs (Ariza *et al.*, 2005; Del Boca *et al.*, 2009) and therefore moving to a part-time job imposes a cost to working mothers in terms of career and hourly wages⁵. On the contrary, we will show that in Italy the opposite result holds: women who work part-time or who move to a part-time job after childbirth face no wage gap with respect to childless women. Decisive is the fact that in Italy, unlike most countries, part-time jobs are (scant but) well paid and protected.

III. Institutional background

The Italian institutional context for the period 1989-2003 (the period we consider in our empirical analysis) is of particular interest, especially in relation to the results we obtain. As already pointed out, Italy has always been characterised by one of the lowest female employment rates in Europe (together with Spain and Greece). The existing literature agrees in concluding that the key reason for the low participation rates in southern European countries is the lack of adequate policies and services that help women to reconcile work and family life (Del Boca and Wetzels, 2007).

Studies on time use show that women perform most of the domestic and care work in Italian households (Burda *et al.*, 2008; Mancini and Pasqua, 2011) even when they have a job. The presence of children further increases the specialisation and therefore the hours devoted to domestic activities for both working and non-working mothers. This specialisation is the result of social and

⁵ See also Newell and Joshi (1986), Dex *et al.* (1998) and Joshi *et al.* (1999), for the U.K.; Ellingsaeter and Rønsen (1996) for Norway. Del Boca *et al.* (2005 and 2009) highlight a positive effect of part-time work on female participation in Italy, but they do not consider wages.

labour market policies designed with the idea that women are the main (when not the only) caregivers in the families. An example of this is the parental leave rules. Italian mothers, after a compulsory and fully-paid maternity leave of five months, can access up to six months of parental leave with pay that is only 30% of the regular salary if the child is under three years of age, and if the child is between three and eight years old such leave will be unpaid. This parental leave was extended to fathers in 2000⁶, but only a negligible portion of fathers utilized the parental leave; in fact, when both parents work, the father usually earns the highest wage and therefore, besides possible cultural obstacles, it is a rational choice that the mother takes the optional leave.

Also, low childcare availability is a serious obstacle to women's work. Table 1 shows the percentage of children in the age range 0-2 who had access to a childcare in 1995 (1995 is the midpoint of our observation period, but that percentage has not increased over time). We can see not only the low percentages, especially compared to figures for other European countries (in France 23% of children had access to childcare in 1995, in Sweden 33% and in Denmark 48%⁷). A relevant regional disparity also emerges: in the southern regions childcare services are almost absent.

[Table 1 here]

The availability of childcare improves substantially for children between three and five years of age. In fact, in this age range in 1995, we had already close to full coverage of the service. However, the hours of opening of the service were (and still are) often incompatible with full-time work, with a similar situation for primary schools as well. Most schools close at 4.30 p.m. and some (especially in the south) did not have a refectory for serving lunch. Moreover, the school summer holidays are traditionally very long in Italy (almost three months), which poses a serious problem for families in which both parents work. Many parents rely on the help of grandparents who became an essential (and free) instrument of reconciliation.

⁶ In the empirical analysis we focus on a sample of working women who became mothers between 1993 and 1997, thus the extension of parental leave to fathers is non-influential for our analysis.

⁷ Source: Del Boca (2002)

In this context, having a part-time job is the only way for many women to stay attached to the labour market after childbirth. In fact, temporary contracts were still scarce in the period we consider in our empirical analysis⁸, and even after they have been liberalized, they do not appear to have been a channel for re-obtaining good employment conditions after leaving the labour market temporarily⁹. However the diffusion of part-time work in Italy occurred only after 2000. In Table 1 we can see that in all regions less than 8% of women worked part-time in 1995. In fact, employers in the private sector are not obliged to accept a worker's demand for reduced working hours¹⁰. Despite its low diffusion, and differently from Anglo-Saxon countries, part-time work in Italy had (and still has) the same protection and the same hourly wage¹¹ as full-time work.

Italy is of particular interest also with respect to the gender wage gap. Traditionally, the Italian wage distribution has been quite compressed and the gender wage gap small compared to most European countries (European Commission 2002). The relevant role the trade unions played since the '70s reduced wage inequality and this helped to keep the gender wage gap quite small. After 1980, however, the power of the trade unions diminished and wage disparities increased, with negative effects on both the gender and family wage gap.

The result of all this is that, despite the higher participation rate of younger cohorts of women achieved in the recent decades, Italy still faces high exit rates of new mothers from employment compared to other countries (Pronzato 2009), due to the wage penalty for mothers, the limited availability of part-time jobs and the lack of childcare services. The link between wage disparities, availability of part-time jobs and employment of new mothers is precisely the focus of our paper.

IV. Data and descriptive statistics

⁸ The use of temporary and flexible contracts in Italy spread only after a labour market rules reform in 1997. In general, flexible and temporary workers receive less protection and lower hourly wages than permanent workers.

⁹ Berton *et al.* (2011).

¹⁰ The situation is different for the public sector; that, however, we do not consider in our empirical analysis.

¹¹ Sometimes even more than full-time work (Ariza *et al.*, 2005).

We use the Work Histories Italian Panel (WHIP) produced thanks to the agreement between the University of Turin and the Italian Social Security Administration (INPS) and made available by LABORatorio Riccardo Revelli. The archive spans the period 1985 to 2003 and randomly draws a 1:90 sample from all Italian Social Security Administration (INPS) archives, i.e. from the population of those who have worked in Italy as employees, have been self employed or have received income support or pension from INPS. The working career of each of these individuals is observed. Only open-ended contracts in the public sector and selected professions (e.g. lawyers) are not observed.¹² In this paper we use the dependent employment section of WHIP, which is a Linked Employer Employee Database. It records the characteristics of the individual (gender, age, place of birth) and her job (e.g. contract, firm size, industry, location), as well as gross weekly wages and the number of full-time equivalent weeks worked during the period, so that comparable gross weekly wages can be computed for full- as well as part-time workers. We focus on the period 1989-2003, as maternity leaves were not fully recorded in the data before 1989.

Statistics on motherhood from WHIP are consistent with the 2002 ISTAT (the Italian Statistical Institute) birth sample survey¹³: in fact, ISTAT surveyed about 175,000 births from women employed in the private sector between 2000 and 2001; WHIP records of women receiving maternity benefits in 2001 correspond to about 180,000 births.

To conduct our empirical analysis, we select women aged between 18 and 45¹⁴ who are recorded to be employed and who have not been on maternity leave for four consecutive years (from $t = -4$ to $t = -1$). Some of them are observed receiving the maternity benefit during the subsequent year ($t = 0$); they are our sample of mothers (call them mothers in $t = 0$). The control group comprises "non-mothers in $t = 0$ "¹⁵. We study the employment status of mothers and non-

¹²Full details on the WHIP archive can be found at www.laboratoriorevelli.it/whip.

¹³This survey is available only for the year 2002.

¹⁴We further selected the sample to include only women aged 23-45, so that potential students working part-time are excluded. The comparison between mothers and non-mothers in this more restrictive setup yields the same results as presented in the text.

¹⁵Notice that we cannot exclude that children were born before $t = -4$; however, as in $t = 0$ they are entering primary school (or even older) and are less likely to affect women's decisions and productivity.

mothers for five years afterward ($t = 1$ to $t = 5$). For a neater analysis, we further restrict the sample of mothers to women not having another child after the end of the first maternity leave¹⁶. As the fertility rate is as low as 1.2, this selection is not expected to be distortive with respect to the average mother in Italy.

To increase sample size, we pool five cohorts¹⁷ of women (about 2,500 non mothers and 500 mothers in each cohort), where $t = 0$ is a year between 1993 and 1997. The five cohorts of mothers comprise different individuals by construction, i.e. it is not possible the same individual belongs to different cohorts. On the contrary, non-mothers can be sampled more than once. In this case, we randomly select which cohort they belong to.

Between $t = 1$ and $t = 5$ both mothers and non-mothers can experience employment and non-employment periods. Figure 1 illustrates the structure of the sample.

[Figure 1 here]

Table 2 details the sample size of the groups. We distinguish three different situations: women without non-employment spells longer than 12 months¹⁸ between $t = 1$ and $t = 5$ (call them “always working”), women who experience a period of long-term unemployment but re-enter employment before $t = 5$ (call them “some unemployment”), women who leave employment between $t = 1$ and $t = 5$ and do not re-enter employment up to $t = 5$ (call them “out for good”). It is immediately clear that once we condition on five years of continuous work, non-mothers almost never leave employment afterward. In fact, 93% of non-mothers always work between $t = 1$ and $t = 5$, compared to only 54% of mothers; 2% of non-mothers exit employment for good after $t = 0$ (30% of mothers) and 5% of non-mothers experience some unemployment after $t = 0$ (16% of mothers).

¹⁶Note that in the database we do not observe the date in which the delivery occurs, but only that the worker receives maternity benefits. The leave can span between years, thus we impose the condition on our subsample of mothers that they not to be on maternity leave again in $t = 3$ to $t = 5$ (in $t = 1$ and $t = 2$ they can have parental leave to look after the first child).

¹⁷Here the word "cohort" refers to the year of birth of the child, i.e. to $t = 0$, not to that of the mother. For non-mothers we use the same word to refer to women in the control group for "mothers in $t = 0$ ".

¹⁸We cut non-employment spells shorter than 12 months, to exclude frictional unemployment (more details below).

[Table 2 here]

Table 3 compares the unconditional probability of moving to part-time after $t = 0$ for mothers and non-mothers: 23% of mothers compared to just 8% of non-mothers make the transition¹⁹.

[Table 3 here]

Hence the statistics reported in these two tables are consistent with the prediction that women reallocate their time after childbirth, and that they are more likely to reduce working hours. Most movements from full- to part-time happen within the same firm (75% for mothers, 40% for non-mothers).

It is important to notice that non-mothers and mothers appear quite similar with respect to observable characteristics (Table 4). Mothers are only slightly younger, employed in slightly smaller firms and earn slightly lower wages. However, comparing non-mothers to the two groups of mothers ("always working" and "not always working") separately, it becomes clear that non-mothers and "always working" mothers are almost indistinguishable at $t = 0$, while "not always working" mothers are different: "not always working" mothers are younger than the other two groups, more frequently blue collar workers, employed in smaller firms and earning lower wages. I.e. women strongly attached to the labour market are similar to each other regardless of motherhood. This descriptive evidence is consistent with the literature pointing to a higher propensity to leave the labour market for mothers with a smaller human capital endowment and holding worse jobs in terms of safety and physical strain.

[Table 4 here]

V Empirical Analysis

We are interested in analyzing the behaviour of women once they become mothers, in

¹⁹Also the probability of moving to part-time, conditional on observable characteristics is significantly different between mothers and non-mothers. Results are not reported, but are available upon request.

particular their employment decisions. We discuss mothers' decisions on hours worked in relationship to the availability of part-time jobs, as well as more standard predictions on participation and wages.

Having a child prompts a reallocation of time that prior to childbirth was allocated only to work and leisure. This will reduce either leisure or work or both, the relative amount depending on individual preferences and on real wages. I.e., the higher the wage, the higher the cost of reducing work instead of leisure. So we expect new mothers to reduce worked hours (moving to part-time jobs or exiting employment), and to reduce them more if they earn lower wages. The cost of substituting mother's time with childcare bought on the market depends on the availability of childcare and on its cost with respect to the wage. The higher the cost of childcare in relation to the wage and the lower its availability, the more likely mothers are to reduce their working hours and increase time dedicated to the child.

The actual or assumed lower productivity of mothers compared to non-mothers due to the increased difficulty reconciling work and family life discussed in the literature review (Section 2) has important implications that can be tested empirically. We select women highly attached to the labour market, so that the career motivation as well as the human capital depreciation explanations for the family wage gap are less relevant; we can hence focus on explanations based on the reduced effort of working mothers and on the tendency of mothers to look for better job conditions that allow them to better reconcile work and family life. In this way, we highlight a role for part-time jobs in Italy that is different from that which emerges in the literature, i.e. we highlight its potential role not only in keeping women with children at work but also in mitigating the "reduced effort" effect of childrearing.

In fact, we can argue that mothers and non-mothers can equally perform a part-time job, as it facilitates the achievement of a good work-life balance and does not hamper the productivity of mothers. On the contrary, when mothers work full-time they are more likely to be offered jobs that do not require big energy investments, and these jobs are typically paid lower wages. This simple

setup highlights the role of part-time jobs. In fact, the shift from full-time to part-time may help women with children to remain employed. Furthermore, if the woman was working part-time before childbirth she has more scope to reallocate non-market time, even leaving worked hours unchanged. In addition, she will expect no wage penalty, in contrast to the situation non-mothers face. On the contrary, full-time new mothers will expect their relative wages to decrease, which will make it less costly (in relative terms) for them to decrease worked hours (even to zero). Hence, we might expect women working part-time before childbirth to leave employment less than women working full-time before childbirth. Notice that, contrary to the existing literature, we expect part-time jobs to preserve unit wages. This hypothesis (confirmed by the data, as discussed in Section 6) might be specific of the Italian institutional environment, where part-time jobs are well protected (Samek Ludovici and Semenza, 2004).

Based on the conceptual framework discussed above, our empirical strategy focuses on the years immediately following childbirth, and it aims both at studying the transitions of women out of employment after childbirth and comparing the wage profiles of mothers and non-mothers continuously working over a period of 10 years. The objective of the exercise is to provide (a) the probability of a career break and (b) a measure of the wage gap conditional on no break²⁰.

We focus on women highly attached to the labour market before maternity, as defined in the data section. This way we can assume maternity as uncorrelated to a working career up to $t = 0$, i.e. no ex-ante job selection of future mothers. In the following paragraph we show that the data supports this hypothesis²¹. However, as a consequence of this selection, we are able to estimate only a lower bound of the career break job penalty – i.e. a lower bound of the increase in the probability of leaving the labour market – with respect to the whole population of women. In fact, it is well

²⁰ A selectivity model as in Ejrnaes and Kunze (2011) would require an exogenous policy change in one of the determinants of the career break that is not present in our observation period.

²¹ See also Beblo *et al.* (2008), even though they do not conduct a proper test.

proven in the literature that the hazard rate of leaving employment decreases as labour market experience increases. As a confirmation, in our sample participation decisions of non-mothers after five years of continuous employment are just negligible (Table 2).

V.a Career break job penalty

We estimate the probability of leaving employment after childbirth, temporarily or permanently, focusing on the role of part-time jobs.

We focus on non-work spells long enough to trigger the depreciation of human capital, as short, frictional unemployment as well as compulsory maternity leaves (five months) are more likely to be inconsequential with respect to career break job penalty (Ruhm, 1998). We control for individual and job characteristics linked to human capital endowment and to job quality, to single out the net effect of motherhood.

In this framework it is not possible to allow for unobserved heterogeneity, as only one episode of maternity/eventual exit is observable for each woman, being on average the distance between siblings above two years, and hence the length of our observation period (five years after the first child) would not allow us to observe participation choices after the second maternity. Furthermore, most Italian women have only one child, and this strategy would exclude them all from the estimates.

The base specification we estimate is:

$$pr(out_i = 1) = F(\lambda M_i + \alpha w_{i,t-1}(1 - M_i) + \alpha_M w_{i,t-1} M_i + z_{i,t-1} \gamma) \quad (1)$$

where $out_i = 1$ if woman i experiences at least 12 consecutive months of non-employment between $t = 1$ and $t = 5$, $out_i = 0$ otherwise (always working). F is the normal distribution, M_i signals that individual i belongs to the group of mothers, w_{t-i} is the full-time equivalent weekly real

wage at $t-1$, and z_{t-1} includes controls for human capital, job characteristics, childcare availability²² and the demand for female workers in the local labour market²³. Notice that before $t = 0$ both future mothers and future non-mothers work an average number of weeks close to the maximum (52 weeks), showing their attachment to the labour market but also preventing us to use the number of weeks worked in the past as an additional source of variability in our model.

Before presenting the results, however, a short discussion is necessary on the assumption we made of exogenous maternity (in a statistical sense). In fact it can be argued that maternity is correlated to working career up to $t = 0$. While this might be true in general, we need to assess whether this is a relevant issue in our sample of women highly attached to the labour market. To test for the endogeneity of maternity we estimate equation (1) instrumenting motherhood with interactions of age and area of birth, so exploiting the cultural differences across Italian regions about motherhood. The Wald test of exogeneity run in the probit framework, as well as the tests for the validity of instruments and the exogeneity hypothesis run in a linear probability specification, support our strategy of modelling maternity as exogenous (Table 5).

[Table 5 here]

Hence, as anticipated in the previous section, in our sample there is no evidence of ex-ante job selection of future mothers.

Table 6 reports the estimated coefficients of the variables of interest for the probability of exiting employment, while Table 7 presents the average probability of exiting for given individual profiles, using the estimates reported in Table 6.

Column (a) in Table 6 reports results referred to equation (1) for women working full-time before $t = 0$. It was already clear from the descriptive analysis of Section 4 that, while non-mothers are strongly attached to employment after four years of continuous work, those who become

²² Childcare availability is measured by the share of the population under three years of age accessing a kindergarten.

²³ Proxied by the regional female employment rate.

mothers are more likely to exit employment for good or at least temporarily²⁴. This is confirmed by the high estimated coefficient for "mothers". Participation is almost not an issue for non-mothers. They basically do not exit, unless they earn high wages (income effect prevailing) or work part-time (lower attachment to the labour market).

[Table 6 here]

The results confirm also that mothers are more likely to exit employment when they are earning lower wages. If we increase the weekly wage earned in $t = -1$ from average wage minus one standard deviation to average wage plus one standard deviation, we see the probability of exiting for mothers decreasing from 48% to 33% (Table 7). The wage is related to both human capital and job quality; the effect on mothers' probability to exit is very large.

[Table 7 here]

Other controls that are included (age, contract and firm size) have the expected impact and in general show that better job conditions mitigate the career break job penalty. Crucially, the availability of childcare reduces the probability of mothers exiting, while it has no effect on the probability of non-mothers exiting. This result highlights once again the importance of childcare services for female labour market attachment.

Let's now consider a mother working full-time and willing to reduce the number of hours she works; this is more likely to occur if part-time jobs are more available in her relevant labour market (within or outside her firm). To focus on the role of part-time jobs on the probability of exiting employment we use two different strategies. First, using the sample of women working full-time up to $t = 0$ ²⁵, we augment equation (1) including a dummy (pt_av_{it-1}) signalling whether there are part-time jobs available in the labour market relevant for individual i ²⁶. We expect the

²⁴We also checked which characteristics help mothers to re-enter employment; it emerges that only mothers leaving larger firms are more likely to re-enter employment compared to mothers leaving smaller firms.

²⁵We are allowed to select sub-samples of women, as the hypothesis of no ex-ante job selection of future mothers is supported by the data, i.e. the selection is not endogenous (see Section 6).

²⁶In the cell defined by individual i 's industry, area and occupation in $t-1$, if part-time jobs held by women are more than

availability of part-time jobs to decrease the probability of exiting employment for mothers only. Second, with the whole sample, we augment equation (1) including a control for mothers working part-time before $t = 0$ (pt_{it-1}) and we expect mothers working part-time before childbirth to leave employment less than mothers working full-time before childbirth.

Column (b) and (c) of Table 6 report the results of the exercise. Notice that the estimates of the other coefficients are unchanged using the whole sample or the full-time women sample, as a further confirmation that we can safely select women working full-time before $t = 0$.

Column (b) shows that the availability of part-time jobs has a negative and significant effect on mothers' exits, while the other coefficients of interest are unchanged. On the contrary, the availability of part-time work is non-influential on the probability of exiting employment for non-mothers. Column (c) shows that holding a part-time job in $t = -1$ significantly increases the probability of exiting in general, while it significantly decreases labour market exits for mothers.

Concluding, our results show that the probability of leaving employment decreases as the wage of mothers increases and as childcare facilities are available and diffused. In addition, our analysis clearly shows that part-time jobs can play a role in preventing mothers from exiting the labour market.

V.b Family wage gap

The key assumption of our approach is that wages of mothers and non-mothers are different after $t = 0$, if and only if they work full-time. To test this hypothesis, we study the wage profiles of mothers and non-mothers continuously employed from $t = -4$ to $t = 5$, allowing for unemployment spells shorter than 12 months only. We follow Jacobson, Lalonde and Sullivan (1993) and estimate

15% of all jobs held by women in the cell, then part-time is "available". This is computed with the whole population of female employees.

$$w_{it} = \alpha_i + \alpha_t + x_{it}\beta + \sum_{k=-2}^5 M_i m_k + \varepsilon_{it} \quad (2)$$

where α_i are individual fixed-effects that take into account unobserved heterogeneity, α_t are time fixed-effects, m_k are average conditional wage differentials between mothers ($M = 1$) and non-mothers ($M = 0$) from two years before maternity to five years afterward. x includes controls for human capital and job characteristics as in Table 4, plus a control for job movers to allow for different wage profiles of women changing jobs. We estimate equation (2) with weekly earnings both in levels and in logs, to test penalty both in money value and in the growth rate. We use the panel dimension of the data and choose a least squares estimator to control for individual fixed effects (it is a generalized difference in differences (DID) estimator). Those who do not become mothers act as the control group, while maternity is the treatment.

The family wage gap in this context cannot be explained either by human capital depreciation, as career breaks are excluded, or by ex-ante sorting into jobs, as non-mothers and always working mothers are very similar groups; crucially, we will also see that conditional weekly earnings of mothers and non-mothers are not significantly different before $t = 0$, which is consistent with our theoretical setup. We are then left with a few possible causes of family wage gap: the ex-post job sorting and the actual or assumed decreased productivity due to increased family burden. To shed some light on the possible different explanations of the family wage gap we use the eventual movement to a part-time job, and we estimate equation (2) with different subsamples:

(a) We compare mothers and non-mothers always working full-time. If mothers experience a wage penalty we will find that $m_k < 0$ for $k > 0$.

(b) We then compare non-mothers working full-time or working part-time to mothers who move to a part-time job after $t = 0$. If no wage penalty occurs to a mother working part-time we will find that $m_k = 0$ for $k > 0$ ²⁷.

²⁷The same holds when comparing mothers and non-mothers always working part-time.

The use of subsamples is allowed as long as the common trend identifying assumption required for a DID estimator holds, conditional on x . As x includes job characteristics (identified by job movers), we have no reason to believe that the assumption is violated.

Table 8, column (a), contains the estimates of the average conditional wage differentials between mothers and non-mothers working full-time (m_k)²⁸. Conditional average wages of future mothers are not significantly different from non-mothers' ones before childbearing, confirming that the two groups are not statistically different before $t = 0$. However, weekly earnings of mothers become significantly lower for $t > 0$, and show no sign of a closing gap after five years (disregarding $t = 0$ to $t = 2$ because of the eventual parental leave that can decrease earnings artificially²⁹). The gap amounts to about 15 euro a week three years after childbirth, with respect to an average weekly wage of 360 euro in $t = -1$. Table 9, column (a), contains the same estimates on log wages. Conditional average wage growth of future mothers is again not significantly different from that of non-mothers before childbearing. It becomes significantly lower afterward: wage growth is about 3% lower three years after childbirth. Hence, we do observe a significant family wage gap in Italy, despite the collective wage bargaining setup, despite selecting women always working, despite controlling for unobserved heterogeneity.

The other columns in the two tables present the results on different subsamples of women, and highlight the role of part-time jobs in mitigating the family wage gap. In particular we compare the weekly earnings of non-mothers working full-time with those of mothers that moved from a full-time job to a part-time one (column b), the weekly earnings of non-mothers working part-time with those of mothers that moved from a full-time job to a part-time one (column c), the weekly earnings of non-mothers and mothers that moved from a full-time job to a part-time one (column d).

²⁸Full-time equivalent gross weekly wages computed on information about worked days. Worked hours are not available in our dataset.

²⁹During the five months of compulsory maternity leave women receive 80% of their salary from social security and 20% from the employer, while during the following six months of optional maternity leave they receive 30% of their salary from social security. Hence, after childbirth we observe an artificial drop in wages since WHIP records only payments made by employers and not by social security.

Columns (b) to (d) prove that mothers moving to part-time jobs do not experience a significant family wage gap in comparison to non-mothers. This holds using full-time non-mothers as the control group as well as part-time non-mothers or non-mothers moving from full- to part-time jobs. We also compared mothers and non-mothers always working part-time (column e) to show that it is not the case that women working part-time do not suffer a penalty, since their wage is lower in the first place.

[Table 8 here]

[Table 9 here]

All the results confirm a family wage gap for Italian women: women unable to reduce hours worked after childbirth have an actual or perceived lower productivity on the job and face a negative wage gap with respect to otherwise similar childless women. On the contrary, women able to reduce hours worked do not decrease their productivity and (relative) wages.

Hence, contrary to the existing literature ex-post job selection can protect instead of hamper mothers' working career: moving to a part-time job reduces the family wage gap, while keeping a full-time job is penalizing in terms of wages.

Three comments are in order. First, women working in the public sector are not in our sample; several "female public sector jobs" are often very similar to part-time jobs (e.g. teachers), thanks to the reduced number of hours worked per week. Had those women formally working full-time and not moving to part-time work after becoming mothers been included in the sample, our results would have been less neat. Second, part-time jobs are especially relevant because of the lack of provision of adequate public childcare that is common all over Italy. And in fact, even our mothers of only one child seldom move back to full-time employment after getting a part-time job: just 10% of those who moved from full- to part-time after $t = 0$ return to a full-time job during the

observation period, i.e. up to when the child is five years old³⁰. Third, it may be argued that the drop in the wage after motherhood is a consequence of the new mother's decreased number of overtime hours. This is not the case as, according to the EWCS (European Working Condition Survey)³¹, 5.3% of mothers and 5.5% of non-mothers work more than 40 hours per week, and therefore no difference emerges by motherhood status.

VI Conclusion

In Italy, mothers are more likely to experience a transition to non-employment in the years after childbirth, compared to their childless counterparts. This transition depends crucially on the level of human capital and on job quality. If we consider that wages are related to both human capital and job quality, their effect on mothers' likelihood of exiting employment is very large. In fact, the probability of mothers exiting decreases from 48% to 33% if we move from average weekly wage minus one standard deviation to average weekly wage plus one standard deviation, *ceteris paribus*.

In addition, Italian women experience a non-negligible wage penalty as mothers. After childbirth, the wages of mothers become significantly lower than wages of non-mothers, and show no sign of a closing the gap after five years. The gap amounts to about 15 euro a week, with respect to an average weekly wage of 360 euro before childbearing (and the average yearly wage growth is about 3% lower).

Finally, it emerges that part-time jobs play a positive role in mitigating these negative events on the labour market in the medium run. The general consensus in the literature is that *part-time jobs* help mothers stay attached to the labour market, but as part-time jobs are less protected and less paid than full-time jobs, these part-time jobs are detrimental in terms of career and hourly wages. Italy stands out because of the higher protection granted to part-time jobs. In fact, we find

³⁰ Part-time jobs can be a trap that mothers cannot leave at will, i.e. it might be difficult to move back from part-time to full-time employment. However, at five years of age children are not at compulsory school yet, hence mothers might still be postponing the attempt to move back to a full-time job.

³¹ Our own calculations.

that women moving to part-time jobs do not experience a slowdown in their career compared to non-mothers in terms of weekly earnings. In addition, and consistent with the literature, we find mothers are less likely to leave the labour market when the availability of part-time jobs is greater, while the availability of part-time jobs is non-influential on the probability of non-mothers exiting employment. However, further research is needed to assess the effect of holding a part-time job in the longer term, beyond four to five years.

Nevertheless, it must be remembered that we search for penalties among those mothers who are less likely to experience them, as we have selected women highly attached to the labour market who have only one child, hence providing a lower bound of the average penalty among the whole population.

Summing up, our results confirm that policies aimed at helping women to reconcile work and family are not only useful in increasing female employment without reducing fertility, but they may also reduce employment penalties after motherhood.

A final remark on the other half of the world. If it is true that part-time jobs are not detrimental for the future working career in the short to medium run, it might be sensible to also provide incentives to fathers to move temporarily to part-time employment, so that both market and non-market activities can be shared more evenly within the couple.

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Tables and figures

FIGURE 1

Sample characteristics

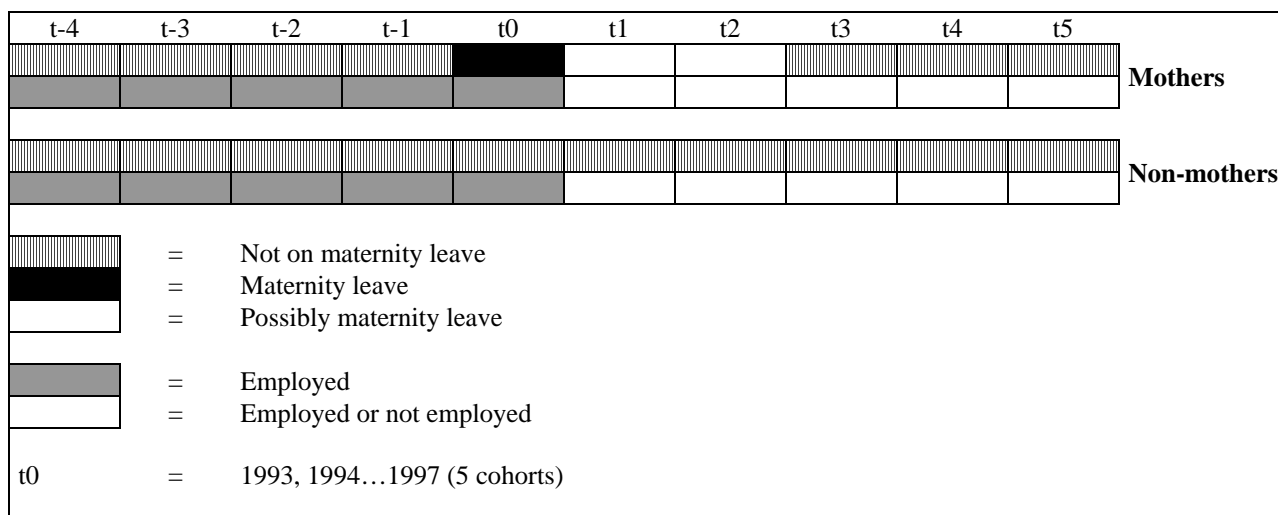


TABLE 1

Childcare availability for children <3 in Italian Region (year 1995)

<i>Region</i>	<i>Area</i>	<i>Childcare availability (% of population <3 years)</i>	<i>Part-time (%)</i>
Piemonte-Valle D'Aosta	North	16.5	5.9
Lombardia	North	13.8	6.8
Trentino	North	11.0	7.8
Veneto and Friuli Venezia Giulia	North	8.6	6.8
Liguria	North	10.1	6.3
Emilia Romagna	Center	28.4	6.6
Toscana	Center	11.7	7.1
Umbria	Center	11.5	6.7
Marche	Center	13.2	5.9
Lazio	Center	10.4	5.6
Abruzzo and Molise	South	4.5	5.6
Campania	South	1.0	4.5
Puglia	South	4.8	6.2
Basilicata	South	5.8	5.7
Calabria	South	1.2	7.3
Sicilia - Sardegna	South	4.0	5.8

Source: Del Boca (2002)

TABLE 2*Motherhood and employment*

	<i>Always working</i>	<i>Some unemployment*</i>	<i>Out for good*</i>	<i>All</i>
Non-mothers	12702	730	264	13696
<i>row %</i>	<i>0.927</i>	<i>0.053</i>	<i>0.019</i>	
Mothers	1261	378	703	2342
<i>row %</i>	<i>0.54</i>	<i>0.16</i>	<i>0.30</i>	
All	13963	1108	967	16038
<i>row %</i>	<i>0.87</i>	<i>0.07</i>	<i>0.06</i>	

Notes: Complete sample

* Some unemployment and out for good after t = 0

TABLE 3*Motherhood and working hours*

	<i>Always ft</i>	<i>Always pt</i>	<i>From ft to pt *</i>	<i>Other combinations †</i>	<i>All</i>
Non-mothers	9,506	923	995	1,278	12,702
<i>Row pct</i>	<i>0.75</i>	<i>0.07</i>	<i>0.08</i>	<i>0.10</i>	
Mothers	766	95	292	108	1,261
<i>Row pct</i>	<i>0.61</i>	<i>0.08</i>	<i>0.23</i>	<i>0.09</i>	
Total	10,272	1,018	1,287	1,386	13,963
<i>Row pct</i>	<i>0.74</i>	<i>0.07</i>	<i>0.09</i>	<i>0.10</i>	

Notes: Always working women

* Only one transition

† Several transitions in both directions

TABLE 4*Sample composition at t = 0*

	Non-mothers		Mothers					
			All		Always working		Not always working	
Age	31.83	(7.31)	29.08	(4.25)	29.65	(4.33)	28.41	(4.07)
Log firm size	3.90	(2.58)	3.45	(2.26)	3.79	(2.38)	3.05	(2.03)
Log wage in t-1	5.89	(0.34)	5.84	(0.31)	5.90	(0.31)	5.78	(0.31)
Contract:								
Part-time	0.14	(0.35)	0.13	(0.33)	0.13	(0.34)	0.12	(0.33)
Atypical contracts	0.03	(0.16)	0.03	(0.17)	0.02	(0.14)	0.04	(0.20)
Apprenticeships	0.03	(0.17)	0.01	(0.11)	0.01	(0.10)	0.01	(0.12)
Blue collar workers	0.44	(0.50)	0.46	(0.50)	0.39	(0.49)	0.54	(0.50)
White collar workers	0.53	(0.50)	0.53	(0.50)	0.59	(0.49)	0.45	(0.50)
Geo. Area:								
Northwest	0.41	(0.49)	0.42	(0.49)	0.46	(0.50)	0.38	(0.48)
Northeast	0.30	(0.46)	0.29	(0.45)	0.28	(0.45)	0.31	(0.46)
Centre	0.19	(0.39)	0.19	(0.39)	0.19	(0.39)	0.18	(0.39)
South	0.10	(0.30)	0.10	(0.30)	0.08	(0.26)	0.13	(0.34)
Industry:								
Energy, gas, water	0.01	(0.10)	0.00	(0.05)	0.00	(0.06)	0.00	(0.03)
Mining and chemical	0.05	(0.21)	0.04	(0.20)	0.05	(0.21)	0.04	(0.20)
Metal work	0.14	(0.35)	0.15	(0.36)	0.18	(0.38)	0.13	(0.34)
Food, textiles and other manufacturing	0.30	(0.46)	0.35	(0.48)	0.31	(0.46)	0.39	(0.49)
Construction	0.02	(0.13)	0.02	(0.14)	0.02	(0.14)	0.02	(0.13)
Trade	0.24	(0.43)	0.24	(0.43)	0.24	(0.42)	0.25	(0.43)
Transport and communication	0.02	(0.16)	0.01	(0.10)	0.01	(0.11)	0.01	(0.09)
Banking and insurance	0.18	(0.38)	0.14	(0.35)	0.16	(0.36)	0.12	(0.33)
Other	0.03	(0.18)	0.04	(0.19)	0.03	(0.18)	0.04	(0.20)

Notes: Mean values and standard deviations in parenthesis

TABLE 5***Tests for exogeneity of maternity***

Test	Value	Model	Instruments
Wald test of exogeneity ($\lambda = 0$)	chi2(1) = 2.65 Prob > chi2 = 0.1035	Probit model with endogenous regressors	age*area of birth
Anderson canon. corr. LR statistic (identification/IV relevance test)	345.823 P-val = 0.0000	IV (2SLS) regression with robust standard errors	age*area of birth
Hansen J statistic (eqn. excluding suspect orthog. conditions)	44.592 P-val = 0.1828	IV (2SLS) regression with robust standard errors	age*area of birth
C statistic (exogeneity/orthogonality of suspect instruments)	2.626 P-val = 0.1051	IV (2SLS) regression with robust standard errors	age*area of birth

TABLE 6***Estimates of the probability of exiting employment***

	(a) β Robust Std. Err.	(b) β Robust Std. Err.	(c) β Robust Std. Err.
Mother	7.595 (0.666)***	7.411 (0.670)***	7.461 (0.626)***
Ln wage * non M	0.478 (0.081)***	0.465 (0.082)***	0.424 (0.071)***
Ln wage * M	-0.563 (0.109)***	-0.525 (0.110)***	-0.588 (0.101)***
Kindergarten availability * non M	-0.003 (0.004)	-0.004 (0.004)	0.000 (0.004)
Kindergarten availability * M	-0.010 (0.006)*	-0.011 (0.006)*	-0.010 (0.005)*
pt_available * non M		0.009 (0.057)	
pt_available * M		-0.170 (0.071)**	
Part-time t_1			0.185 (0.046)***
Part-time t_1 * M			-0.256 (0.092)***
Age at t-1	0.073 (0.025)***	0.073 (0.025)***	0.063 (0.023)***
Age at t-1 ²	-0.125 (0.039)***	-0.125 (0.039)***	-0.110 (0.036)***
Atypical contracts	0.203 (0.086)**	0.206 (0.086)**	0.198 (0.081)**
Apprenticeships	0.106 (0.122)	0.096 (0.126)	0.105 (0.117)
Blue collar workers	0.074 (0.042)*	0.064 (0.043)	0.088 (0.038)**
Log firm size in t-1	-0.035 (0.008)***	-0.035 (0.008)***	-0.022 (0.006)***
Sample	only ft in t-1	only ft in t-1	all
N.obs	13762	13762	15971
Wald chi2	2021.41 ***	2017.65 ***	2241.98 ***

Notes:

Other controls: geography, economic activity, year dummies, regional female employment rate
Robust standard errors in parentheses.

*** Statistically significant at 0.01 level; ** at 0.05 level.; * at 0.10 level

TABLE 7*Predicted probability of exiting employment, three cases*

Benchmark case1: Age=30, firm size=50, average wage, all dummies at zero value	
P(out) for mothers	0.40
P(out) for non-mothers	0.07
Benchmark case2: Age=30, firm size=50, average wage + 1 s.d., all dummies at zero value	
P(out) for mothers	0.33
P(out) for non-mothers	0.09
Benchmark case3: Age=30, firm size=50, average wage - 1 s.d., all dummies at zero value	
P(out) for mothers	0.48
P(out) for non-mothers	0.05

TABLE 8*Estimates of the wage equation: wages in levels*

<i>weekly wage (€)</i>	<i>Sample a</i>		<i>Sample b</i>		<i>Sample c</i>		<i>Sample d</i>		<i>Sample e</i>	
	<i>Coef.</i>	<i>(s.e.)</i>	<i>Coef.</i>	<i>(s.e.)</i>	<i>Coef.</i>	<i>(s.e.)</i>	<i>Coef.</i>	<i>(s.e.)</i>	<i>Coef.</i>	<i>(s.e.)</i>
mt_2	0.01	(2.30)	-0.90	(3.79)	0.23	(6.15)	-3.13	(7.48)	-8.17	(7.92)
mt_1	-3.55	(2.31)	-5.44	(3.79)	-3.24	(6.19)	-9.30	(7.57)	-5.14	(7.96)
mt0	-89.78	(2.31)***	-70.87	(3.79)***	-69.04	(6.23)***	-79.11	(7.65)***	-38.05	(7.99)***
mt1	-66.56	(2.32)***	-3.11	(3.80)	0.004	(6.25)	-13.72	(7.71)	-19.37	(8.02)**
mt2	-21.90	(2.34)***	0.47	(3.83)	6.92	(6.32)	6.46	(7.76)	-5.44	(8.04)
mt3	-14.40	(2.35)***	-2.11	(3.82)	8.21	(6.32)	3.27	(7.82)	3.99	(8.06)
mt4	-13.23	(2.36)***	-6.91	(3.85)	5.51	(6.33)	-11.90	(7.91)	-2.97	(8.08)
mt5	-16.56	(2.38)***	-4.94	(3.83)	-2.68	(6.43)	-5.24	(8.08)	0.73	(8.15)
N.obs	102502		98113		22171		12958		10178	

Notes:

Robust standard errors in parenthesis.

*** Statistically significant at 0.01 level; ** at 0.05 level;

Other controls: as in Table 5 (with the exception of the female employment rate) plus dummy on movers.

Sample a: Mothers and non-mothers always full-time

Sample b: Non-mothers full-time and mothers from full-time to part-time

Sample c: Non-mothers part-time after t = 0 and mothers from full-time to part-time

Sample d: Non-mothers and mothers from full-time to part-time

Sample e: Non-mothers and mothers always part-time

TABLE 9*Estimates of the wage equation: wages in logs*

<i>Log weekly wage</i>	<i>Sample a</i>	<i>Sample b</i>	<i>Sample c</i>	<i>Sample d</i>	<i>Sample e</i>
	<i>Coef. (s.e.)</i>	<i>Coef. (s.e.)</i>	<i>Coef. (s.e.)</i>	<i>Coef. (s.e.)</i>	<i>Coef. (s.e.)</i>
mt_2	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.002 (0.02)	-0.01 (0.02)
mt_1	-0.01 (0.01)***	-0.02 (0.01)	-0.01 (0.01)	-0.02 (0.02)	-0.01 (0.02)
mt0	-0.30 (0.01)***	-0.25 (0.01)***	-0.25 (0.01)***	-0.26 (0.02)***	-0.14 (0.02)***
mt1	-0.21 (0.01)***	-0.11 (0.01)***	-0.10 (0.01)***	-0.12 (0.02)***	-0.07 (0.02)***
mt2	-0.05 (0.01)***	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.02)	-0.01 (0.02)
mt3	-0.03 (0.01)***	-0.01 (0.01)	0.00 (0.01)	0.02 (0.02)	0.00 (0.02)
mt4	-0.03 (0.01)***	-0.02 (0.01)	0.00 (0.02)	-0.03 (0.02)	-0.02 (0.02)
mt5	-0.03 (0.01)***	-0.01 (0.01)	-0.01 (0.02)	-0.03 (0.02)	0.00 (0.02)
N.obs	102502	98113	22171	12958	10178

Notes:

Robust standard errors in parenthesis.

Other controls: as in Table 5 (with the exception of the female employment rate) plus dummy on movers.

*** Statistically significant at 0.01 level; ** at 0.05 level;

Sample a: Mothers and non-mothers always full-time

Sample b: Non-mothers full-time and mothers from full-time to part-time

Sample c: Non-mothers part-time after $t = 0$ and mothers from full-time to part-time

Sample d: Non-mothers and mothers from full-time to part-time

Sample e: Non-mothers and mothers always part-time