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BALANCING WORK AND FAMILY IN ITALY: NEW MOTHERS' EMPLOYMENT DECISIONS AFTER CHILDBIRTH

Piero Casadio* Martina Lo Conte** Andrea Neri *

Abstract

Compared with other European countries, the Italian labour market stands out for the low level of both female participation and fertility. In this paper we focus on the employment patterns of Italian mothers around the time of childbirth. Our hypothesis is that the difficulties involved in reconciling work and family when there are children are among the leading causes of the low female employment rate in Italy. Data from the 2002 Italian Birth Sample Survey show that about 20 per cent of mothers who were working before childbirth, stop working one and a half years after delivery and that about 14 per cent voluntarily decide to resign. The paper analyses the factors that most influence new mothers' unemployment risk after childbirth.

JEL Classification: C2, E24, J13, J22, J23.
Keywords: female employment, childbirth, childcare.

Contents

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1. Introduction[1]

In Europe a crucial policy target is to speed up the trend towards the greater participation of women in the labour market. In spite of equal opportunity legislation and some positive changes in social norms, large gender gaps are still at work. In the long run, the increase of female education will have major positive effects. Meanwhile, we are experiencing a postponement both in the school-to-work transition and in the age at which women have their first child birth. Most notably in Mediterranean countries, very low fertility rates highlight widespread difficulties in reconciling work and family life.

The birth of a child and the age at which children start school, deeply influence female employment patterns. In almost all European countries the employment rate of new mothers shows a U-shaped pattern, with a sharp drop in the first three years after childbirth, and a gradual return to employment, when the youngest child grows up (Fig. A1). Only in Italy does the employment rate continue to decline as the child gets older. Italian mothers who find themselves unable to re-enter the labour market, risk definitive exclusion. A similar scenario emerges, even with respect to Spain and Greece, where labour market attachment is low.

In this paper we study the employment decisions of Italian mothers in the two years after childbirth. Compared with other European countries, the Italian case is particularly interesting, because: i) there are broad territorial disparities in female employment rates; ii) childcare services and tax benefits are minimal; iii) younger workers are increasingly confined to a less protected and low-paid segment of the labour market. Overall, formal and informal family networks often substitute social services and effective labour market flexibilities.

The paper is organised as follows. Section 2 presents a brief review of the applied literature about female employment decisions. Section 3 describes the 2002 Italian Birth Sample Survey (IBSS) data. In Section 4 we discuss the problem of selection and endogeneity. Section 5 studies the determinants of mothers' probability of not working about

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18-21 months after childbirth. We then focus on working mothers, examining the decision to leave their job after delivery. Section 7 presents some concluding remarks.

2. The main determinants of mothers' working status in the literature

Work and fertility decisions depend upon a broad set of factors such as social customs, households' composition, labour market flexibility, individual preferences, childcare costs and availability. Overall the main distinction in Europe is between the more egalitarian "northern and continental" countries, and the "Mediterranean" ones, where a significant gender gap is present in all the relevant social and economic variables. In particular, Mediterranean European countries report low female participation rates, the lowest level of social expenditure for families and children and low fertility rates (Esveldt 2003; Jaumotte 2003; Boeri et al. 2005).

Different social customs[2] strongly influence the division of caring tasks among partners, and therefore the distribution of paid working hours. Especially in Mediterranean countries, mothers work longer hours than fathers, combining paid jobs with unpaid duties. In those countries, the main determinant of a balanced distribution of childcare duties and work between couples is women's human capital. A higher level of female education is associated with higher participation in the labour market and greater work attachment (Gutiérrez-Domènech 2005; Jaumotte 2003). Even in Italy employment rates for women with tertiary education is in line with the European average levels, except for women with more than two children (Eurostat 2005).

Labour market flexibility and regulation matter. In "northern and continental" countries, female part-time employment is appreciated as a way to reconcile work and family life, and not of reflecting job segregation and wage discrimination. Contrariwise, the spread of fixed term contracts could increase female segregation in low–paid positions. In European

[2] In the literature, specific long-term effects on female participation are attributed to religion, social transformations (e.g. the spread of contraceptive methods and time saving consumer durables), and technological changes that have reduced manual jobs. See Boeri et al. 2005, for a review.

Mediterranean countries part-time contracts are not fully attractive for mothers, because of large wage and career disparities (Jaumotte 2006). In those countries the positive effect of part-time arrangements on mothers participation is lessened by the attitude of private employers and the difficulties of returning to full-time jobs. Long or repeated spells of non–employment or under–employment are likely to cause a major loss in mothers' human capital and future wages.

Childcare services matter in terms of availability, costs and hours provided per day. A reduction in the cost should increase the probability of mothers' full-time employment (Jaumotte 2003). Often public structures offer an insufficient number of hours per day; such inefficiency, widespread in Mediterranean countries, could enlarge the negative effects of labour market rigidities on female participation (OECD 2007).

Female participation is also influenced by fiscal policies and childcare subsidies. A gender based taxation could be theoretically efficient; taxing the more elastic labour supply of married women should lead to a more balanced allocation of duties within the family, helping to improve its welfare (Alesina et al. 2007). Actually we are far from such theoretical efficiency; many different fiscal deductions and subsidies are used, with large and country-specific potential inefficiencies.

Italy reports some specific tendencies, especially in the Southern regions, and a general lack of effective policies.[3] The Italian distribution of duties and work between couples is the most unbalanced in Europe.[4] The gap in women's education is large and only recently being narrowed. The Italian labour market is highly segmented and the large number of fixed-term contracts tends to increase female segregation in low–paid positions, provide fewer career opportunities and a higher level of job insecurity (Addabbo 2003; Pacelli et al. 2007). For young workers it is more and more difficult to enter the stable and protected labour market segment. These traits have all contributed to a significant postponement in fertility (Rondinelli et al. 2006), followed by a recent partial recovery, but only in the North of Italy.

[3] See Del Boca (2008) for a comprehensive survey of Italian policies on households, fertility and female employment.

[4] Monti (2007) shows that in many countries men spend more time in paid jobs and women in unpaid duties. In general, the total amount of time spent in paid and unpaid work is similar for men and women (the so called "iso-work"). Only in Italy women work on average 75 minutes more per day, mainly because of household unpaid duties.

Finally, in Italy the first three years after childbirth are crucial, because new mothers not re–entering the labour market in that period are at risk of definitive exclusion. A major role is played by the number of places in public childcare, which is extremely limited for babies below three years, especially in Southern regions (Del Boca 2003; Del Boca and Vuri 2007b)[5]. Moreover, private childcare is quite expensive, while public structures provide opening hours, attracting mostly to non-working, or part-time working mothers. Therefore, in Italy the main safety net for mothers remains the family, not social services. The presence of elderly relatives in the household may play a double role in explaining women's work patterns: they can provide household services such as child–care and domestic help, but they may also require unpaid help, discouraging the work participation of women (Marenzi and Pagani 2003). Finally, the overall effectiveness of Italian fiscal policies in favour of households was recently called into question (Saraceno 2007), because these are mostly based on the cost of housing and because of distortionary effects due to the individual taxation framework.[6]

3. The 2002 Italian Birth Sample Survey data

Italian research into childcare, fertility and female employment faces several information gaps. The ISTAT Multiscopo survey provides a lot of information on the use of childcare services, but not on family income and wages. The ISTAT Labour Force Survey is very accurate with respect to women's working status, but provides no information on household income or wealth. The Bank of Italy Survey of Household Income and Wealth (SHIW) is the most complete micro-survey on the income and wealth of Italian households, but does not collect information about childcare on a regular basis. Some researches combine two different datasets: a) matching the ISTAT Multiscopo with individual income data from SHIW (Del Boca, Locatelli and Vuri 2005; Del Boca and Vuri 2007a); b) matching the

[5] In 2007 the Government presented a major new plan (335 million euros for 2007-2010) to boost childcare services, especially for babies under three. This was the first big intervention after the 1971 law; Del Boca 2008.

[6] See Boeri and Del Boca (2007) for a discussion on the effectiveness of fiscal rebates for childcare expenditure and education expenditure in Italy, similar to the 2003 UK policies; for alternative fiscal measures see Alesina and Ichino (2007) and De Vincenti and Pollastri (2006).

ISTAT Labour Force Survey with individual income data from SHIW, especially to investigate the timing of births and their postponement (Rondinelli et al. 2006 and 2007).

Our analysis uses data from the Italian Birth Sample Survey (IBSS), conducted for the first time in 2002 by the Italian National Statistics Office (ISTAT).[7] The whole sample consists of 50,408 births registered between the second half of 2000 and the first half of 2001, around 10 per cent of the total births in that period. Mothers were interviewed about 18-21 months after delivery using the CATI technique. The questionnaire was designed to collect the main socio-demographic data on the new-born, the delivery and the parents ("short" form). The results presented in the next sections are based on one-third of the sample – about 16,700 mothers – interviewed using a "long" form, which contained additional sections about mothers' working conditions before and after childbirth, the household composition, formal and informal childcare networks and the division of household chores. Some descriptive statistics follow:

Employment before childbirth – Around 60 per cent of the IBSS new mothers were employed before childbirth, when they discovered they were pregnant (tables A2, A3 in the appendix). This percentage is about 9 points higher than the one referred to all women interviewed in the 2001 Labour Force Survey (LFS). In the LFS, the female employment rate was about 47 per cent for women between 15 and 49 years and 51 per cent for those between 20 and 40.[8] The share of mothers working before childbirth was about 75 per cent in the Northern regions, 65 per cent in the Centre and 38 and 43 per cent in the South and Islands respectively. Those percentages far exceed the corresponding ones referred to all women in the 2001 LFS.[9] Moreover, according to the IBSS survey, a higher share of women worked in the public sector (17 per cent as against 14 per cent in the 2001 LFS).

All the above-mentioned differences suggest that a selection process is probably at work, due to the correlation between fertility decisions and the current job status of women.

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[7] The Survey structure and main results are described in Istat (2003, 2004, 2006a, 2006b) and in CNEL (2003).

[8] A significant difference between the two statistics remains, even imposing on LFS data the same age structure of the IBSS.

[9] In particular the share of employed mothers in the IBSS is about 6 percentage points above the LFS one in the Northern regions; 10 percentage points in the Centre and more than 12 percentage points in the South and Islands.

In fact, it seems reasonable to assume that women with a higher degree of job instability prefer to postpone the event of having a baby. In our estimates we will try to control for such a selection process (see the following section).

Changes in working status – About 47 per cent of the IBSS new mothers were employed both before and after childbearing, showing a strong attachment to their job. At the opposite end of the scale, 37 per cent of new mothers were not employed: however, 16 per cent had never worked before, but 21 per cent had had at least one previous working experience. The remaining 16 per cent of new mothers changed their working status: 4 per cent started working after delivery while 12 per cent lost their job in the period around the time of childbirth.

The IBSS drop-out percentage for new mothers far exceeds the one for all women: according to the Labour Force Survey[10], in the period 2001-2002, only about 6 per cent of working women between 20 and 40 shifted to a non-employment status, while in the IBSS about 20 per cent of mothers working at the beginning of their pregnancy, stopped working afterwards. In both surveys, drop-out transitions increase for women in temporary employment or with no contract and for part-time workers (table A4 in the appendix).

In general, the balance resulting from flows of women entering the labour market and flows of women leaving it after childbirth is negative. A positive contribution is provided by part-time contracts: about 27 per cent of full-time mothers shifted to part-time, boosting the share of voluntary part-time from about 6 per cent to about 30 per cent. Part-time contracts probably represent the most attractive alternative to leaving one's job. The opposite transition from part-time to full-time employment after childbirth only happens in less than 1 per cent of cases.

Childcare – Among mothers still working after childbirth, the reconciliation of work and family mainly relies on the help of grandparents. In 55 per cent of households, the elderly provide vital support in caring for children. Many families prefer to trust their own relatives for assurance reasons; moreover, the role played by relatives is particularly

[10] In the LFS, the transitions are only available at a one year distance.

important for its characteristics of low cost associated with high flexibility, features that are not always available in childcare services.

About 20 per cent of mothers utilize childcare services (both public and privately run) and only 10 per cent use babysitters. Some 12 per cent of new mothers are unable to use childcare. The main reason they give (47 per cent of cases) is the lack of available places and limited hours. This is especially true for mothers in the South and Islands. The fairly limited use of private childcare facilities is principally due to the high cost (20 per cent of cases). These costs are particularly high for mothers living in the North.

4. Controlling for selection into motherhood

When studying the new mothers' employment patterns with the IBSS data, the main problem to deal with is the potential "selection into motherhood bias" due to the correlation between fertility and employment decisions. In the IBSS, the employment patterns are observed only for mothers. The unavailability of a control group of women without children could result in biased estimates, if we do not control for the selection process underlying fertility decisions.[11]

A test for selection into motherhood is performed using the Heckman approach (Heckman 1979). For the sake of simplicity, only the results of the tests are reported.

Since the IBSS does not contain information about women without children, a sample of women has been selected from the Bank of Italy SHIW survey. A post-stratification of weights is then performed according to the distributions of the group's age, level of education and geographical area of residence using census data. This technique makes the

[11] In the IBSS data, the sample selection problem could heavily bias the estimates of the new mothers' probability to work 18-21 months after the childbirth. Let's consider, for example, a very extreme situation in which women's working conditions are either fully protected (as in the public sector) or not protected at all (as in the case of a fixed-term contract in a very small private firm). If the degree of protection were the only determinant of having children –total sample selection– only women benefiting from a high degree of job protection would have a significant probability of having a child. As a consequence, the sample would be mainly composed of mothers working in protected sectors and most of them would retain their job after childbirth. Ignoring such a selection process would probably lead to erroneous conclusions (for example, according to the data, the employment protection legislation would barely affect new mothers' employment patterns).

selected sample of women representative of the whole population and, therefore, comparable with the IBSS survey.

In the selection equation the probability of having a child (0-3 years old) is estimated given a set of mothers' characteristics: age, level of education, geographical area, size of town and distance (in hours) from relatives. The "excluded instrument" is the number of mother's siblings which is assumed to be a proxy of mother's preference for children. After controlling for the mentioned covariates, the hypothesis of no selection cannot be rejected at a significant level of 0.78 (table A5 in the appendix).[12]

The correlation between fertility decisions and employment patterns might also result in the endogeneity of the decision of whether or not to have more than one child. For instance, working mothers with one child may decide not to have another child in order to reconcile work and family more easily (they may also have an unobserved low propensity towards large households). Accordingly, if only mothers who have been able to organize their life by reconciling work and family decide to have a second child, in the sample we would observe a positive association between employment probability and the presence of a higher order birth.

In IBSS data this hypothesis is tested, using a bivariate probit model. We jointly model the probability of having more than one child and the employment probability. In the first equation, the "excluded instrumental variable" used is the number of pregnancies the mother had in order to have the last child (including abortions and miscarriages). This variable is a proxy of women's difficulties in having a child and is strictly related to the decision to have more than one child. It can be assumed to be unrelated to employment decisions. More than one test is performed using different response variables (more/less than one child, more/less than two, more/less than three) and they show that also the hypothesis of no endogeneity cannot be rejected (table A6 in the appendix).

[12] A similar result is presented in Bratti, Del Bono and Vuri (2005). In order to test for selection into motherhood, the authors estimate a *probit* model with sample selection, where the selection equation is represented by the decision of having a first child and the main equation is represented by the employment equation. In none of the specifications of their model did they find a significant correlation between the error terms of the employment and fertility equations.

5. Mothers' probability of not working 18-21 months after delivery

In this section we analyse the factors influencing the new mothers' risk of not working 18-21 months after delivery. In the IBSS, the time length of 18-21 months after childbirth is the only available period for studying mothers' employment patterns. However, this period is also the most informative, in view of Italian maternity leave legislation – which covers at most 12 months after delivery – and considering the results of previous studies about women's career interruptions.[13]

The model used is the following *bivariate probit*:

$$Y_{1i} = 1\{X_{1i}\beta_1 + \varepsilon_{1i} \geq 0\}$$
$$Y_{2i} = 1\{X_{2i}\beta_2 + Z_{2i}\gamma + \varepsilon_{2i} \geq 0\}$$

where the error terms have a bivariate normal distribution with a correlation coefficient $\rho \neq 0$.

In the first equation the dependent variable Y_{1i} is a dummy variable indicating whether the woman is inactive/unemployed or not. [14] Previous studies show that the work attachment of unemployed and inactive persons is similar in Italy, especially in the Southern regions (Viviano 2002). We therefore combine the two categories, also because of the small number of unemployed new mothers in the sample.

The first equation explanatory variables are: *mother's individual characteristics*, including age, nationality and level of education; *spouse/live-in partner characteristics* (his employment position and level of education); *composition of the household*, including the presence of grandparents; *mother's working status and attainment before childbirth*, such as

[13]As documented in Solera (2003), Italian women are unlikely to experience a career break more than once in their lives, and this usually occurs in correspondence with the birth of the first child. Moreover, Bratti et al. (2005) analysing the new mothers' employment decisions during the 3-year period following the birth of the first child, found that the probabilities of employment are very similar in each year of observation.

[14]It is worth noting that unlike in the LFS, in the IBSS survey no definition of unemployment is provided to the respondent during the interview. In the Labour Force Survey the definition of unemployment given to the respondent consists in people actively looking for a job in the preceding 60 days and genuinely wishing to start working immediately. This measure could be therefore quite different from the IBSS one.

job position and type of contract (part-time/ full-time, permanent/fixed-term)[15]; *social services indicators* (the share of available places in nursery schools for children under 3 on a regional basis, Istat 2003).

In the second equation the response variable is a dummy indicating whether the child attends a nursery school or not. The reason for the inclusion of this equation is that it enables us to take into account the simultaneity of mother's decisions.[16] The covariates are the same as those included in the first equation plus two variables indicating that, according to those interviewed, socialization and educational methods play a key role in children's development.[17] The results show that there is a strong negative correlation between the use of a nursery school and the probability of not working ($\rho = -0.55$).

The unconditional average probability of not working after delivery is about 49 per cent. As expected, older mothers are more likely to return to work (see Table 1). By contrast, mothers under 24 face greater difficulties: their average probability of not working is about 72 per cent (23 points above average).

The level of education plays an important role too. The higher it is, the lower the probability of not working: on average, a mother with a university degree is about 43 percentage point more likely to work than a mother with compulsory education.

The risk of not working after childbirth is slightly higher for mothers who already have a child under three. This result may reflect the fact that mothers with the youngest over three are likely to have organized a network that enables them to keep working. Therefore the arrival of a new baby has a lower impact on their employment patterns.

The most important effect is due to the mother's employment status before childbirth. An inherited non-working status is very persistent, almost completely persistent for

[15] Initially we also included regional dummy variables and labour market indicators (women's activity and unemployment rates by age) but their effect was captured by women's employment status during pregnancy. Accordingly, those variables are not included in the final specification of the model.

[16] It is important to note that this variable could not be included among the covariates of the first equation since it is endogenous. As a matter of fact the probability of schooling the child depends, among other things, on whether the mother is working, on the household total income and on nationality. We also tested for the absence of endogeneity of this variable and the results showed that this hypothesis must be rejected.

[17] Those two variables are included for identification purposes. Under the assumption that errors follow a bivariate normal distribution, the estimates are consistent. Moreover, tests we have done do not give us conclusive evidence of whether we can consider the two variables as "excluded instruments" or not, suggesting caution in any causal interpretation.

housewives and students without any previous working experience. Compared to these mothers, the chance of finding a new job significantly increases for women with some prior working experience.

At the opposite end of the scale, mothers who are managers or entrepreneurs and mothers benefiting from the employment protection provided by the public sector show a high attachment to their profession. A possible explanation lies in the high implicit costs they would have to face if they had to leave their job. Moreover, in the public sector, mothers are more likely to have part-time jobs and shorter daily working hours, making it easier for them to reconcile work and family life.

The importance of employment protection is also confirmed by coefficients measuring the effects of different kinds of job contract. Working mothers with previous temporary contracts have a significantly higher probability of not working after childbirth compared to mothers with a permanent position.

The family network also has a major influence. The presence of grandparents increases the probability of working by about 25 points. Of course, the presence of elderly relatives could imply that women have to devote time to caring for co-residing and/or non-residing elderly relatives. Although such an effect cannot be estimated, the results show that the positive effect outweighs the negative one due to the need to care for the elderly (this is consistent with previous research, see Marenzi and Pagani 2003).

Finally, the availability of childcare services is also associated with the employment probability. In regions where the proportion of young children (0–2) using crèches is higher than 12 per cent, the new mothers' probability of being employed doubles with respect to those where less than 10 per cent of 0–2 children use childcare.

Table 1. Probability of not working 18-21 months after childbirth

Variable	Marginal probability of [a]	
	Not working	Using *crèches*
Mother's age		
<= 24	72.0	5.5
25 – 29	51.9	9.2
30 –34	43.8	12.6
35 – 39	40.7	15.9
40+	41.6	16.7
Mother's education		
Compulsory or informal schooling	67.9	6.2
High school	43.6	12.3
University degree	24.5	20.5
Mother's nationality (foreign)	65.2	12.0
Children before current pregnancy		
None	55.7	10.1
Youngest child 0-2 years old	59.1	11.4
Youngest child 3-5 years old	55.0	11.0
Youngest child over 6	55.9	9.2
Mother's previous employment status		
Housewife without working experience	99.4	1.0
Housewife with working experience	90.2	2.4
Student without working experience	99.8	2.1
Student with working experience	63.6	10.6
Employed in the private sector		
Manager, middle-management	12.9	26.3
Office worker, school teacher	18.4	19.6
Factory worker	37.6	12.2
Entrepreneur	11.9	19.9
Member of arts or professions	8.2	21.1
Sole proprietor and other self-employed	20.6	12.6
Employed in the public sector	9.7	19.4
Mother's type of contract		
Permanent status, working full-time	37.1	12.7
Permanent status working part-time	40.2	12.0
Fixed-term contract working full-time	51.9	10.9
Fixed-term contract working part-time	59.6	7.4
Partner's working status		
Not employed/single mother	58.8	9.0
Office worker	49.8	10.5
Manager, middle-management	34.8	20.1
Entrepreneur, self-employed	49.9	11.4
Partner's level of education		
High school	43.1	13.0
University degree	31.6	20.1
Presence of grandparents	24.7	4.4
Child-care system[b]		
Less than 10 per cent	59.4	8.5
10 - 12 per cent	35.5	14.3
More than 12 per cent	29.1	21.8
Total	49.2	11.4

[a]Both mothers who use nursery schools and those who do not are included.
[b]Proportion of young children (0-2) using public childcare.

6. The determinants of voluntary transition to non-employment after childbirth

In this section we focus on mothers who are employed at the beginning of pregnancy and analyse the determinants of voluntary withdrawal from labour market after delivery. The sub-sample consists of about 9,800 units.

As in the previous section, we take into account the simultaneity of mother's decisions using a *bivariate probit* .

In the first equation the dependent variable is a dummy indicating whether the mother declared to have voluntarily left her job (and to not be working at the interview time). In the sample those women represent 14 per cent of cases. The decision to leave is mainly motivated by "the need to spend more time with children" (60 per cent) or by the "difficulties in reconciling work and family life" (20 per cent). This variable is therefore a good proxy for the mother's decision to leave work to take care of her family in the event that no reconciliation is possible.

As in the previous section, the second equation includes two variables indicating that, according to those interviewed, socialization and educational methods play a key role in children's growth.

As expected, the availability of a nursery school is negatively related to the probability of voluntary exit (ρ=-0.65).

Table 2 summarizes the results of the analysis. As to the employment status, employees and in particular factory workers show a higher propensity towards leaving their job than entrepreneurs and members of art and professions.

The degree of job stability and protection confirms its importance in helping mothers into paid employment. For mothers working in the public sector the average exit probability is 5 per cent (about one third of the overall mean). By contrast, in the trade and services sector this probability increases to 18 per cent. A stronger effect is produced by fixed-term

contracts that increase the exit probability to 46 per cent when the mother is also working part-time.[18]

Among demographic characteristics, age and level of education show the strongest influence. For working mothers under 24 the probability of leaving their job is 26 per cent (twice the average).

The level of education confirms its influence not only for entering the labour market, but also for deciding not to leave it after childbirth. For mothers with a university degree this risk decreases by about 16 per cent compared with mothers with the lowest level of education. As in the previous analysis, the probability of withdrawing is - on average - higher for mothers with a previous child under three.

The partner's working status has a significant influence on mothers' decisions. When the partner is an entrepreneur or self-employed the probability of voluntarily leaving increases to about 46 per cent.

The presence of grandparents who can take care of the child significantly prevents mothers' withdrawal: the exit probability decreases by about a half.

Moreover, the probability of leaving the labour market decreases in areas with a better supply of childcare services. In regions with a low availability of childcare places (less than 10 per cent) the probability of voluntary exit is about 16 per cent (two points above the overall average). This percentage drops to about 9 per cent in areas with a higher supply of public childcare services.

[18] By contrast, fixed-term contracts don't seem to have an appreciable impact. This is not surprising because of the dependent variable. In the analysis, if the contract expires and it is not renewed, it is not classified as resignation.

Table 2. Probability of voluntarily leaving employment after childbirth

Variable	Marginal probability of [a]	
	Not working	Using *crèches*
Mother's age		
<= 24	26.0	11.2
25 – 29	15.3	14.4
30 –34	12.4	17.4
35 – 39	10.5	23.2
40 +	9.3	25.4
Mother's level of education		
Compulsory or informal schooling	23.3	12.6
High school	12.0	17.6
University degree	6.7	23.3
Mother's nationality (foreign)	23.5	18.6
Mother expecting a new baby	14.6	18.6
Children before pregnancy		
None	14.5	17.0
Youngest child 0-2 years old	16.3	16.8
Youngest child 3-5 years old	12.7	19.4
Youngest child over 6	12.7	17.3
Employed in the private sector		
Manager, middle-management	9.3	26.3
Office worker, school teacher	12.9	19.9
Factory worker	28.1	12.0
Entrepreneur	1.1	19.8
Member of arts or professions	4.4	21.0
Sole proprietor and other self-employed	12.1	12.8
Employed in services/ commerce sector	18.2	17.1
Employed in the public sector	4.7	19.7
Mother's type of contract		
Permanent status, working full-time	11.8	18.7
Permanent status working part-time	15.4	13.1
Fixed-term contract working full-time	33.0	11.3
Fixed-term contract working part-time	46.4	8.0
Partner's working status		
Not employed/single mother	13.6	16.5
Office worker	13.4	16.7
Manager, middle-management	9.5	24.3
Entrepreneur, self-employed	16.0	17.1
Partner's level of education		
High school	11.9	18.4
University degree	8.2	24.5
Presence of grandparents	5.9	4.7
Childcare system[b]		
Less than 10 per cent	15.7	15.9
10 - 12 per cent	12.6	17.4
More than 12 per cent	9.5	26.2
Total	13.8	17.5

[a]Both mothers who use nursery schools and those who do not are included.
[b]Proportion of young children (0-2) using public childcare.

7. Concluding remarks

Among European countries, Italy stands out for combining one of the lowest female employment rates with one of the highest long-term unemployment rates. Even the remarkable increase in female participation experienced since 1995 has been insufficient to close the gap with other European countries, especially in the Southern regions. In this paper we focused on the employment patterns of Italian mothers after childbirth.

In the two-year period surrounding childbirth, 20 per cent of women working before pregnancy leave the labour market, while only 4 per cent start working after delivery. Most of the drop-out probability – about 70 per cent – is due to voluntary departure, while one fourth is attributable to temporary jobs or a firm's bankruptcy.

Both the risk of not working and of voluntary leave after childbirth vary according to a similar set of characteristics. The care-giving role played by grandparents is probably one of the key factors that increases the probability of a mother remaining in the labour market. A second important factor is the availability of public care facilities.

Human capital variables have a significant influence on maintaining mothers in paid employment. As the education and the job attainment levels increase, the unemployment and voluntary exit probabilities decline, because of the high (implicit) costs highly-educated and well-paid mothers face if they leave their job.

A mother's age also plays an important role. In particular, mothers under 24 face the greatest difficulties in reconciling work and family. Their average probability of not working is about 70 per cent (the average is 49 per cent) and the probability of voluntarily leaving their job is about 25 per cent (twice the average); the latter probability jumps to 53 per cent for those who are not entitled to any help from family or public services.

The probability of keeping a job also grows with the degree of job protection. When mothers work in the public sector, the probability of not working after delivery decreases by about 25 per cent. At the opposite end of the scale, for mothers with fixed-term jobs, the probability increases by 23 per cent.

Overall, part-time contracts do have a positive net effect on the employment rate. Nevertheless, some points are worth noting. On the one hand, part-time contracts may

represent an important alternative to unemployment. In the sample, about 17 per cent of women switched from full-time to part-time work in order to reconcile family and work. On the other hand, for mothers working part-time during pregnancy the probabilities of unemployment and of voluntary exit increase significantly. A possible explanation is that the previous choice of a part-time job may also be an indicator of lower labour market attachment. Moreover, in most cases the low attractiveness of such jobs in terms of remuneration, working hours and self-fulfilment may convince mothers that being employed is not worthwhile.

Finally, from a policy point of view, it is worth nothing that the supply of childcare services is strongly associated with both the probabilities of entering and staying in the labour market.

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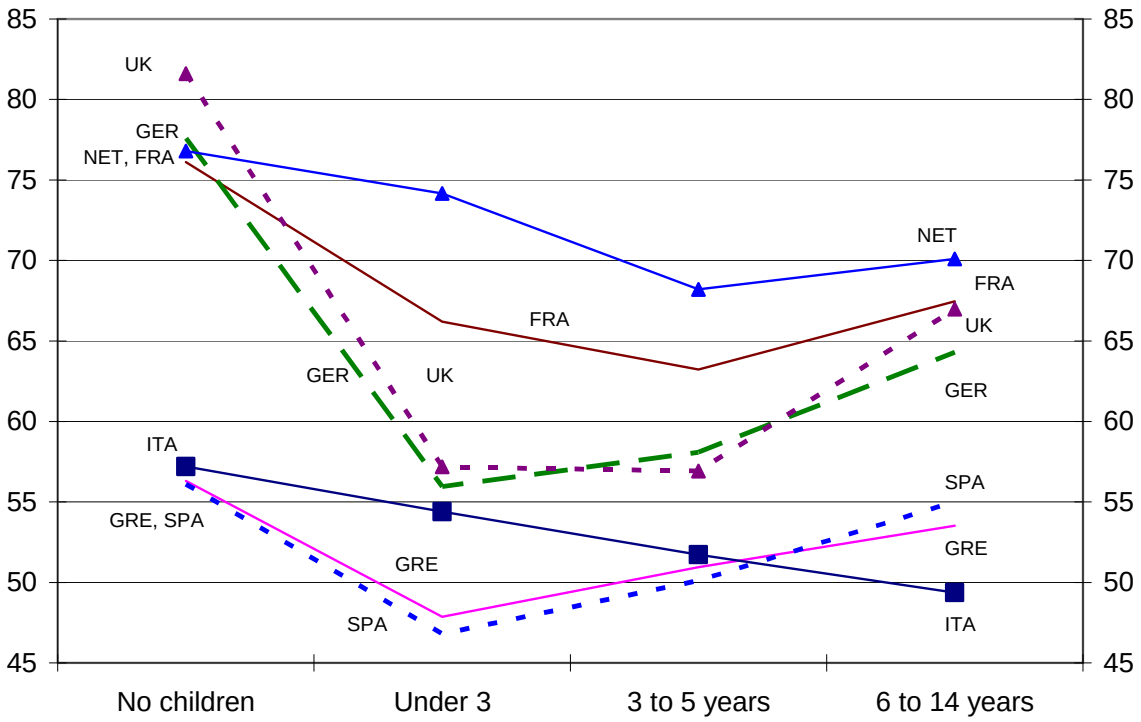
Appendix A: Statistical tables and figures

Figure A1 – Employment rates of women by the age of the youngest child, in 2003 (1)



Source : OECD, Society at a Glance, 2006. Social Indicators, SS3.3.
Notes: (1) the employment rates are for women with a child, aged 15-64. It is worth noting that there are very few mothers with children under 14 years in the following groups: under 19 years; 55-64 years. For a better comparison, the employment rates for childless women refer to females in the age group 25-54.

Table A1

Households by social and demographic characteristics
(percentages)

Variables	Percentages	Variables	Percentages
Mother's characteristics		**Husband/Partner' s characteristics(*)**	
Age		*Age*	
14 – 24	13.0	14 – 24	4.1
25 – 29	30.1	25 – 29	16.9
30 –34	35.9	30 –34	36.9
35 – 39	17.9	35 – 39	28.5
40 – 49	3.2	Over 40	13.5
Age at first child		*Education*	
Up to 19	4.4	Compulsory or informal schooling	44.9
20 – 24	21.9	High school	43.2
25 – 29	39.1	University degree	11.8
30 – 34	26.5		
35 – 49	8.1		
Nationality		*Occupation status after childbirth*	
Italian	89.5	Employee - Low	58.2
Foreign	10.5	Employee – High	7.3
Residential status		Self-employed	30.2
Single	2.0	Not working	4.0
Married	90.9		
Cohabiting	7.1	*Town size*	
Number of children		up to 20,000 inhabitants	47.8
One	51.1	from 20,000 to 40,000	13.8
Two	37.6	from 40,000 to 500,000	27.5
Three or more	11.3	more than 500,000	10.5
Education		*Geographical area*	
Compulsory or informal schooling	34.9	North	41.2
High school	50.3	Centre	17.2
University degree	14.8	South and Islands	41.4
Occupation status after childbirth			
Employee – Low	38.7		
Employee – High	3.0		
Self-employed	9.0		
Not working	49.2		

(*) Cases of single mothers are excluded
Percentages may not sum to 100 because of missing values.
Source: IBSS.

Table A2

Employment status(*) by geographical area
(percentages)

Variables	Mothers' status		
	Employed	Unemployed	Inactive
	IBSS (before childbirth)		
Geographical area			
North East	75.2	2.1	22.7
North West	74.9	2.2	22.9
Centre	65.5	3.6	30.9
South	38.2	4.8	57.0
Islands	43.1	4.7	52.2
Italy	*58.8*	*3.5*	*37.8*
	IBSS (after childbirth)		
Geographical area			
North East	65.2	3.2	31.6
North West	65.5	2.9	31.6
Centre	58.0	4.4	37.6
South	31.9	6.3	61.8
Islands	36.6	5.4	58.0
Italy	*51.0*	*4.5*	*44.5*
	LFS (women 20-40)		
Geographical area			
North East	67.5	5.1	27.4
North West	70.2	4.5	25.3
Centre	55.0	9.1	35.9
South	27.8	16.2	56.0
Islands	27.8	17.8	54.4
Italy	*50.8*	*10.1*	*39.1*

Source: 2001 LFS, IBSS.

Table A3

Mothers' working status before and after childbirth compared to women's working status
(percentages)

	Mothers'status (IBSS)		Women's status (LFS 2001*)
	…before childbirth	…after childbirth	
Employment status			
Employed	58.8	51.0	50.8
Unemployed	3.5	4.5	10.1
Not in labour force	37.8	44.5	39.1
Branch of activity			
Agriculture	1.6	1.3	1.6
Industry	11.9	9.2	11.5
Trade and commerce	14.7	12.0	11.8
Services	13.4	11.2	12.8
Public administration	17.1	17.1	13.1
Not employed	41.2	49.1	49.2
Work status			
Employee			
Cadre or manager	3.0	3.0	2.0
Office worker	30.0	27.3	23.8
Other	16.4	11.5	15.7
Total	49.4	41.8	41.5
Self-employed			
sole proprietor, member of arts or professions	3.7	3.9	2.5
Other self-employed	5.6	5.2	6.8
Total	9.3	9.1	9.3
Not employed			
Housewife	35.3	43.2	24.8
Other	6.0	6.0	24.4
Total	41.3	49.1	49.2
Type of work			
Full-time	91.4	66.9	81.8
Involuntary part-time	2.6	4.1	6.2
Voluntary part-time	6.0	29.0	12.0
Permanent status	83.2	85.4	85.3
Fixed-term contract	11.6	11.5	14.7 (**)
Without contract	5.2	3.1	

(*) women between 20 – 40. (**) the figure includes both fixed-term contracts and employment without a contract.
Source: 2001 LFS, IBSS.

Table A4

Mothers' working condition before and after childbirth, 2000-2001

…Total

(row percentages)

Before childbirth	Employed	Unemployed	Not in labour force	Total
		IBSS *After childbirth*		
Employed	79.9	3.1	17.0	100.0
Unemployed	31.3	40.7	28.0	100.0
Not in labour force	7.3	3.5	89.2	100.0
Total	50.8	4.5	44.6	100.0
		LFS(*)		
Employed	94.1	1.6	4.3	100.0
Unemployed	20.3	53.9	25.8	100.0
Not in labour force	3.5	2.7	93.8	100.0
Total	44.0	4.5	51.5	100.0

…By working time

(row percentages)

Before childbirth	Full-time	Part-time	Unemployed	Not in labour force	Total
			IBSS *After childbirth*		
Full-time	57.7	26.8	2.4	13.1	100.0
Part-time	13.3	18.2	10.2	58.3	100.0
			LFS(*)		
Full-time	92.8	2.2	1.3	3.7	100.0
Part-time	5.4	4.8	6.6	83.2	100.0

…By type of contract

(row percentages)

Before childbirth	Permanent	Temporary	Unemployed	Not in labour force	Total
			IBSS *After childbirth*		
Permanent	83.0	1.4	1.8	13.5	100.0
Temporary	6.7	49.7	9.0	34.7	100.0
			LFS(*)		
Permanent	89.2	6.7	1.1	3.0	100.0
Temporary	20.6	2.6	5.9	7.9	100.0

(*) One year transitions for women between 20 – 40. Source: 2001 LFS, IBSS.

Table A5

Test for selection into motherhood
(bivariate probit with selection)

	Selection equation		**Structural equation**	
	Dep. variable: Probability of having a child (0-3 year old)		Dep. Variable: Probabilty of unemployment	
Variable	Parameter	Robust Std. Error	Parameter	Robust Std. Error
Age	0.494***	0.059	0.123	0.554
Age squared	-0.008***	0.001	-0.003	0.009
Education *(*reference: none or elementary school)				
Middle or high school	0.119*	0.061	-0.893***	0.226
University degree	-0.024	0.107	-1.157***	0.320
Nationality *(*reference*:* Italian)				
Foreign	0.114	0.098	0.341***	3.100
Town size (reference: up to 20,000 inhabitants)				
from 20,000 to 40,000	-0.163*	0.087	0.299	0.300
from 40,000 to 500,000	-0.174**	0.068	0.265	0.261
more than 500,000	-0.435***	0.099	0.718	0.576
Geographical area (reference: North)				
Centre	-0.151*	0.083	0.238	0.293
South and Islands	0.058	0.063	1.010***	0.239
Distance from relatives (reference: less than one hour)				
1-2 hours	-0.224*	0.142	-0.008	0.449
More than 2 hour	-0.320***	0.081	0.345	0.398
Number of siblings	0.05*	0.028	-	-
Intercept	-7.591***	0.981	-1.450	9.463
Lambda	-	-	0.352	1.282
No. of observation		2909		450
Pseudo R-square		0.15		0.23

Source: 2002 SHIW.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level

Table A6

Test for endogeneity of second (or higher) order of birth
(bivariate probit)

	Reduced form equation		Structural equation	
	Dep. Variable: Probability of having more than three children		Dep. Variable: Probabilty of unemployment	
Variable	Parameter	Robust Std. Error	Parameter	Robust Std. Error
Age	0.313***	0.032	-0.135***	0.041
Age squared	-0.003***	0.001	0.002***	0.001
Education (reference: none or elementary school)				
Middle or high school	-0.241***	0.039	-0.553***	0.055
University degree	-0.520***	0.062	-1.020***	0.089
Nationality (reference: Italian)				
Foreign	0.177***	0.068	0.494***	0.148
Geographical area (reference: North East)				
North East	0.071	0.052	0.203***	0.081
Centre	0.128**	0.060	0.328***	0.070
South	0.272***	0.073	0.434***	0.105
Islands	0.397v	0.074	0.383***	0.109
Past working experience (reference: none)				
With working experience	-0.086***	0.036	-9.329***	0.146
Partner's working status (reference: Not employed/single mother)				
Office worker	0.230***	0.087	-0.056	0.120
Cadre or manager	0.095	0.102	0.065	0.166
Entrepreneur or Self-employed	0.182**	0.091	0.047	0.122
Education (reference: compulsory or not formal schooling)				
High school	-0.224***	0.038	-0.127***	0.048
University degree	-0.551***	0.075	-0.207***	0.094
Principal residence by tenure (reference: not rented)				
Rented or sublet	-0.038	0.045	0.116	0.071
Number of interrupted pregnancies (reference: one at maximum)				
Two	0.725***	0.045	-	-
More than two	0.747***	0.071	-	-
Childcare				
Childcare system (**)	-0.004	0.007	-0.035***	0.011
Presence of grandparents	-0.068**	0.033	-1.069***	0.050
Intercept	-7.296***	0.512	4.107	0.640
No. of observation				16417
rho	0.048	0.034		
Wald test of rho=0:	chi2(1) = 2.06752	Prob > chi2 = 0.1505		

Source: 2002 IBSS.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level

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