

Chapter 2

A Microeconometric Analysis of Female Labour Force Participation in Italy

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2.1 Introduction

In March 2000 the European Council set out an ambitious target for female employment rates in Lisbon, which should reach the level of 60% by 2010. However, Italy is very far from reaching this target. Indeed, according to the Italian National Statistical Institute (Istat) 2003 official data, only 42% of women aged 14–64 were in employment and less than one in two participated in the labour force.

One of the possible reasons for the low female labour force participation (*LFP*) is the incompatibility between work in the marketplace and childrearing, which in Italy could be exacerbated by the relatively low availability of public child-care services and part-time (PT hereafter) employment opportunities (Del Boca 2002). Hence, determining the factors associated with a high female labour force attachment appears to be a strong priority in order to implement policies aimed at increasing Italian women's *LFP* and employment.

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In this chapter we use microlevel individual data for Italy from the Quarterly Labour Force Survey (*Rilevazione Trimestrale delle Forze di Lavoro*, LFS hereafter) to undertake a microeconomic analysis of the factors affecting women's *LFP*. We will give a particular emphasis on the factors that can be affected by public policies such as availability of public child-care and elderly-care services, local availability of PT jobs or the role of female education. The main research questions that we will attempt to answer are: (1) Does the availability of child care and elderly care raise female *LFP*? (2) Does PT employment represent a way for women to reconcile home and market work? (3) Do women with larger families prefer PT work?

The structure of the chapter is as follows. [Section 2.2](#) reports a brief survey of the empirical literature on female *LFP* in Italy and [Sect. 2.3](#) deals with the description of our estimation sample. [Section 2.4](#) describes the econometric model and [Sect. 2.5](#) our main results. [Section 2.6](#) concludes.

2.2 A Brief Overview of the Empirical Literature on Female Labour Force Participation in Italy

A detailed survey of the empirical work that has analysed female *LFP* in Italy is beyond the scope of the present chapter.¹ Hence, in this paragraph we simply report some of the main findings of this literature that will help us in the specification of our empirical model. According to the neoclassical model of labour supply, a primary factor affecting female *LFP* is female wage. Several studies have included wages in women's *LFP* equations. Some examples include Colombino and Del Boca (1990), Colombino and Di Tommaso (1996), Aaberge et al. (1998), Aaberge et al. (1999, 2000) and Di Tommaso (1999) all of whom estimate significant positive effects of female wages on participation. By contrast, the estimated effect of the partner's wage or income on women's participation is usually negative, showing the existence of a negative non-labour income effect on participation (Colombino and Del Boca 1990; Colombino and Di Tommaso 1996; Aaberge et al. 1999; Di Tommaso 1999). A factor positively associated with female *LFP* is women's education. Studies that have empirically found such an effect include Del Boca (1993), Tanda (1994), Colombino and Di Tommaso (1996), Di Tommaso (1999), Addabbo (1999), Chiuri (2000), Del Boca (2002) and Bratti (2003b). The effect of education might reflect both pecuniary factors, such as higher wages and a higher flow of future expected incomes, and non-pecuniary factors such as cultural influences. Some studies have investigated the presence of an *added worker effect* or a *discouraged worker effect*. In the first case women with unemployed partners should be more likely to participate to contribute to family finances, while in the second case women with unemployed partners should be

¹ For a detailed survey see Bratti (2003a).

discouraged from participating in the labour force, since they believe they will be very unlikely to find a job. There is some evidence supporting the prevalence of an *added worker effect* in Italy. Indeed, findings in this direction are offered by Borzaga and Contrini (1999), Prieto-Rodríguez and Rodríguez-Gutiérrez (2003). The role of institutional factors is investigated among others by Del Boca (2002) who finds positive effects of the availability of public child care and PT employment opportunities on the probability of participation. Marenzi and Pagani (2005) focus instead on the role that elder relatives have in women's *LFP*. They find that women who can rely on informal child care by elder relatives are more likely to participate while those who have to take care of elder relatives have a lower probability of participation. Moreover, they consistently observe a positive effect of both the number of places in public elderly-care facilities and kindergartens at the regional level on female *LFP*. Bratti et al. (2005) study the *LFP* decisions of new mothers in the first three years after child birth and find a strong negative effect of the unavailability of child care (both formal and informal) on participation and positive effects of job characteristics associated with stronger levels of job protection and security, such as working in the public sector or with permanent contracts.

2.3 Data Description

We use data from the fourth quarter of the 2002 LFS (October), carried out by the Italian National Statistical Institute (Istat). We select women aged between 15 and 64 who declared to be heads of the household or spouses² and obtain a sample of 41,594 observations.

As to the definition of the dependent variable in our econometric analyses, we define non participation (NP hereafter) following Istat. We consider all women who were employed full-time (FT hereafter) and did not declare to be searching for a new job as participating FT whereas those who were searching preferably for PT jobs as participating PT. Women employed PT voluntarily and involuntary were considered as participating PT and FT, respectively. Unemployed women were considered as participating PT if they declared to be prevalently searching for PT employment. We excluded 301 individuals who declared searching indifferently for PT and FT jobs.

Therefore, our estimation sample consists of 19,922 women out of labour force (48.25%), 3,751 participating women preferring PT (9.08%) and 17,620 participating women preferring FT (42.67%).

² In a previous version of this chapter (see the 3rd chapter of our report to the Italian Ministry of Welfare and Social Policies, downloadable at: <http://www.dea.unian.it/staffolani/filespdf/rapporto.pdf>) we estimated a probit model for the probability of being "head of the household" or "spouse". Older women and women with low education showed higher probabilities to be in those states.

Table 2.1 Means of territorial variables, by macro-areas

	Child care	Part-time	Unemployment rate	Elderly care
North	10.28	9.82	4.07	3.42
Center	10.14	8.24	6.43	1.16
South and Isles	3.55	6.94	17.42	1.08
<i>Total</i>	<i>7.61</i>	<i>8.41</i>	<i>9.74</i>	<i>2.09</i>

In our sample, 84.7% of women have a partner; 60.6% have compulsory schooling or less whereas 30.9% have higher secondary schooling and 8.5% tertiary education.

The average number of children is 0.82 in Northern Italy, 0.89 in the Centre, 1.33 in the South; single women have 0.5 children on average, whereas women with a partner have 1.13 children.

In the following analyses we use territorial variables which may affect female *LFP*. In particular, we consider the number of places in public kindergartens per 100 children aged 0–2 by region in 2000, which will also be referred to as the *child care coverage ratio*, and the number of places in elderly-care public services per 100 seniors (aged more than 65) by region in 1999, which we will also refer to as the *elderly care coverage ratio*. Both variables have been taken from Marenzi and Pagani (2005). Other variables included in the econometric model are the percentage of PT employment out of total employment, as a proxy of PT work diffusion, and the unemployment rate, both measured at the provincial level and computed from the October 2002 LFS wave.

Table 2.1 reports average values of these variables by macro-area. A clear gap between the South and the rest of Italy emerges, especially for child care availability and the unemployment rate. PT diffusion is more similar in the three macro-areas. The elderly-care public service availability is very low all over Italy.

2.4 Econometric Issues

Let us assume that a woman has to decide between three possible *LFP* states (j): NP ($j = 0$, NP), PT participation ($j = 1$, PT) and FT participation ($j = 2$, FT).³ We assume that the direct costs of choosing the state j given the characteristics of individual i denoted with x_i are $c(j|x_i)$, which are weakly convex and increasing in j . For instance, these costs might reflect non-pecuniary costs due to the disutility produced by working time or pecuniary costs borne to buy external child care. The x 's being individual characteristics are the same across all alternative choices. Let us also assume that the discounted return to choose state j is $R(j|x_i, \varepsilon_i)$, concave and increasing in j , where ε_i is a person specific shifter of the return to state j . We define the utility for individual i in state j , i.e. V_{ij} , as the difference between the

³ This economic rationalisation of ordinal response models was originally introduced in Cameron and Heckman (1998).

return and the cost of choosing state j . The optimal *LFP* state is determined for each individual by solving the problem:

$$\text{Max}_j V_{ij} \equiv [R(j|x_i, \varepsilon_i) - c(j|x_i)] \quad (2.1)$$

where $j = 1, 2, 3$ and $j = 3$ is the state with the highest economic return (i.e. FT participation, which does not necessarily imply that it is also the highest utility state for individual i).

Let us assume that ε_i is stochastic, such that $\varepsilon_i \perp x_i$ and:

$$R(j|x_i, \varepsilon_i) = R(j)\varphi(x_i)\varepsilon_i \quad (2.2)$$

where $E(\varepsilon_i) = 1$, $\varepsilon_i \geq 0$, while $c(j|x_i) = c(j)$, i.e. participation costs do not depend on individual characteristics.⁴

If s is the optimal *LFP* state for individual i then:

$$\frac{c(s) - c(s-1)}{[R(s) - R(s-1)\varphi(x_i)]} \leq \varepsilon_i \leq \frac{c(s+1) - c(s)}{[R(s+1) - R(s)\varphi(x_i)]} \quad (2.3)$$

ε_i is therefore bounded by the ratios of marginal return to the marginal cost of the different states. If ε_i is continuously distributed and defining: $\exp[l(j)] = \frac{c(j)-c(j-1)}{R(j)-R(j-1)}$, then

$$\Pr(j = s|X = x_i) = \Pr\left[\exp(l(s)\varphi(x_i))^{-1} \leq \varepsilon_i \leq \exp(l(s+1)\varphi(x_i))^{-1}\right]. \quad (2.4)$$

If we further assume that $\phi(x_i) = \exp(x'_i\beta)$ and that ε_i is log-normally distributed, the expression above takes the more familiar form of the standard ordered probit model:

$$\begin{aligned} \Pr(j = s|X = x_i) &= \Pr[l(s) - x'_i\beta \leq u_i \leq l(s+1) - x'_i\beta] \\ &= \Phi[l(s+1) - x'_i\beta] - \Phi[l(s) - x'_i\beta] \end{aligned} \quad (2.5)$$

where $u_i = \ln(\varepsilon_i)$ and $\Phi(\cdot)$ is the standard normal distribution function. Eq. 2.5 gives the probability of choosing intermediate states, i.e. in our case $j = s = 1$ (PT). While for the two extreme states, NP and FT, the probabilities are given by:

$$\Pr(j = 1|X = x_i) = \Pr[u_i \leq l(1) - x'_i\beta] = \Phi[l(1) - x'_i\beta] \quad (2.6)$$

$$\Pr(j = 3|X = x_i) = \Pr[u_i \geq l(2) - x'_i\beta] = 1 - \Phi[l(2) - x'_i\beta] \quad (2.7)$$

respectively.

⁴ The specification can be adjusted so as to allow for both the return and costs of labour force participation to depend on individual and family characteristics (see, for instance, Lauer 2003 in the context of educational choices). However, this has no empirical relevance, since only the effect of the covariates on the ratio of the marginal return to the marginal cost of the LFP states, and not on the single components (return and cost), can be identified.

The vector β and the two thresholds $l(1)$ and $l(2)$ are estimated using maximum likelihood. In this framework individual and household attributes increase or decrease the return to participation and therefore affect the probability of choosing the different states.

In the specification of the econometric model we use the “standard approach” (see Browning 1992; Nakamura and Nakamura 1992), i.e. we include “child services” variables, such as the number and age of children, on the right-hand-side (RHS) of the female *LFP* equation. Although these variables are pre-determined with respect to *LFP*, they might be endogenous, i.e. they might be choice variables for an individual, and potentially jointly determined with female *LFP*.⁵ Unfortunately, the LFS does not contain retrospective data that could be useful to tackle the endogeneity problem and for this reason our estimates are likely to be affected by some endogeneity bias. However, we argue that the endogeneity problems are unlikely to affect all the RHS variables in the same way. For instance, educational choices are made much earlier than marital and fertility choices in Italy (where women generally get married and give birth after leaving FT education), and in this respect we could consider them predetermined and sufficiently exogenous with respect to future fertility and *LFP* decisions. Evidence in this direction is provided for instance by Bratti (2003b) who finds using data from the Bank of Italy’s Survey of Household Income and Wealth (SHIW) that the null hypothesis of weak exogeneity of women’s education with respect to both fertility and *LFP* could be rejected. Other variables that can be endogenous are the partner’s characteristics, such as his job qualification or education, in the case of positive assortative mating. However, also in this case partner’s characteristics are not perfectly controllable by a woman and the estimated correlations will partly reflect “causal effects”. Some variables of particular interest for our analysis are those related to child care and elderly care availability and PT employment opportunities. Also in this case, however, there might be problems of endogeneity or reverse causality: women with higher labour market attachment might choose to reside in places where PT employment opportunities and child-care services are more diffused or the latter might be more diffused because female *LFP* is higher. Unfortunately, as anticipated, the LFS does not contain enough information to solve these problems. However, although it is not possible to exclude that some individuals will choose residence considering the opportunities of PT employment and the availability of child-care or elderly-care services, this would produce a substantial endogeneity bias only if these criteria are the main determinants of residential choices, which is very unlikely to be the case in the Italian context. In particular, because of the constraints of child-care or elderly-care services in terms of number of places (see Del Boca 2002 and Marenzi and Pagani 2005) and the high competition in their allocation, the decision of a household to move where public care services are

⁵ This is acknowledged by the so-called “purist approach” in which child-services variables are jointly modelled with labour force participation. For some examples of such approach in the Italian context see Di Tommaso (1999), Del Boca (2002) and Bratti (2003b).

more developed will be a very risky one given the very low ex-ante probability of being assigned a place. Moreover, since we use public child care and elderly care availability at regional level, in our case a relevant endogeneity bias would only emerge if households prevalently choose their region of residence according to the local availability of public care services. Last but not least, geographical mobility is extremely low in Italy. For instance, in 1999 the percentage of the total population who resided in a different region (NUTS, level 2) the year before was only 0.9 and 1.2% when one considers the employed population (see European Commission 2002).

As to the potential endogeneity of child-services variables, this is now widely acknowledged by labour economists. The issue is that unobserved individual factors might affect both *LFP*, i.e. the outcome of interest, and the explanatory variables (such as the number and age of progeny). Unfortunately, we do not have suitable data to instrument child-services variables, and given the cross-sectional nature of our data we cannot control for unobserved heterogeneity using individual fixed or random effects. However, we will use a very intuitive way for judging whether our estimated effects are likely to simply reflect spurious correlations or may partly capture causal effects: the degree of similarity of the effects of the number of children by age. If differences in the number of children simply reflect different time-invariant women's unobserved characteristics, such as taste for market work, the effect of children is likely to be undifferentiated by children's age. On the contrary a differentiated effect by age, in particular a decreasing effect with age, would suggest that the effect on female *LFP* is related to the higher time-intensity that the care of younger children requires.

2.5 Results

In what follows, we will describe the results by considering different types of factors affecting female *LFP*:

- territorial variables (Table 2.2), including macro-area dummies, local unemployment rates, child care availability interacted with the number of children by age, PT availability interacted with the number of children by age, elderly care availability⁶;
- women's personal variables (Table 2.3), including the highest educational qualification achieved and age by classes;
- family composition (Table 2.4), including number of children by age, family size, number of employed children living in the family, number of employed family members older than 15, number of disabled family members, number of inactive grandfathers and grandmothers;

⁶ We also estimated the model with interaction terms between elderly care availability and presence of inactive grandparents and between inactive grandparents and young children but they did not turn out to be statistically significant.

Table 2.2 Ordered probit estimates of female participation: territorial characteristics

Variables	coeff.	z-stat.	Marginal effects (%)		
			NP	PT	FT
<i>Geographic area (ref. North)</i>					
Centre	0.049	[0.85]	−1.96	0.05	1.92
South and Isles	0.100	[0.68]	−3.96	0.07	3.89
Unemployment rate	−0.016	[1.75]*	0.62	−0.01	−0.61
Child care availability	0.038	[7.84]***	−1.52	0.03	1.49
Child care: children 0–1	−0.004	[0.54]	0.17	0.00	−0.17
Child care: children 2–3	−0.005	[0.90]	0.18	0.00	−0.18
Child care: children 4 or more	−0.011	[3.79]***	0.43	−0.01	−0.42
Part-time employment rate	−0.001	[0.05]	0.02	0.00	−0.02
Part-time: children 0–1	0.041	[2.76]***	−1.62	0.03	1.59
Part-time: children 2–3	−0.001	[0.09]	0.03	0.00	−0.03
Part-time: children 4–6	−0.001	[0.25]	0.06	0.00	−0.06
Part-time: children 7–14	0.003	[0.61]	−0.12	0.00	0.12
Part-time: children 15 or more	0.005	[1.11]	−0.19	0.00	0.19
Elderly care availability	0.066	[2.51]***	−2.61	0.05	2.56

Note:

No. of observations = 41,293

Pseudo R^2 = 0.152

Wald χ^2 (66) [p-value] = 8,333.78 [0.00]

Robust z statistics in square brackets (absolute values). Standard errors are clustered by *significant at 10%; ***significant at 1%

Table 2.3 Ordered probit estimates of female participation

Variables	coeff.	z-stat.	Marginal effects (%)		
			NP	PT	FT
<i>Women's education (ref. elementary or less)</i>					
Lower secondary	0.422	[15.71]***	−15.84	2.01	13.83
Vocational	0.883	[21.39]***	−33.97	2.18	31.79
Upper secondary	1.082	[23.81]***	−41.14	1.53	39.60
Tertiary	1.611	[17.63]***	−56.33	−1.60	57.93
<i>Women's age (ref. less than 30)</i>					
30–39	0.061	[2.03]**	−2.37	−0.05	2.43
40–49	0.032	[0.72]	−1.24	−0.02	1.27
50 or more	−0.415	[5.20]***	16.44	−0.73	−15.71

Women's characteristics

Standard errors are clustered by **significant at 5%; ***significant at 1%

- partner's characteristics (Table 2.5), including job qualification, age by classes and education.

Although we report our estimates in different tables, all the estimated coefficients and marginal effects refer to the same ordered probit model including all the control variables listed above for which we report some statistics in the notes in

Table 2.4 Ordered probit estimates of female participation

Variables	coeff.	z-stat.	Marginal effects (%)		
			NP	PT	FT
No. of children 0–1	−0.557	[4.06]***	22.13	−0.41	−21.72
No. of children 2–3	−0.256	[2.96]***	10.17	−0.19	−9.99
No. of children 4–6	−0.196	[3.05]***	7.81	−0.14	−7.67
No. of children 7–14	−0.141	[4.46]***	5.60	−0.10	−5.49
No. of children 15 or more	0.024	[0.70]	−0.95	0.02	0.93
Family size	−0.035	[1.62]	1.39	−0.03	−1.36
No. of employed children	−0.045	[2.02]**	1.80	−0.03	−1.76
No. of employed family members (>15)	0.201	[4.51]***	−7.99	0.15	7.85
No. of invalid family members	−0.192	[1.96]**	7.64	−0.34	−7.30
No. of inactive grandfathers	−0.034	[0.50]	1.36	−0.03	−1.34
No. of inactive grandmothers	0.198	[3.70]***	−7.89	0.15	7.75

Family characteristics

Standard errors are clustered by **significant at 5%; ***significant at 1%

Table 2.2. Marginal effects are computed at the sample means for continuous variables, and by calculating the difference in the probability of the three outcomes (NP, PT, FT) with respect to the reference category when changing the other dummies of the same group to 1 (e.g., women's education) for categorical variables.

With respect to the territorial variables (see Table 2.2), our results show a positive association between public child care availability and female participation in the labour market. A one point increase in the ratio of child care coverage is related to a decrease of 1.52 percentage points in the non-participation probability and to a 1.49 percentage points increase in the probability of participating full-time. The interaction between child care availability and children by age shows that the positive effect of child care on participation decreases when children grow up.

The availability of elderly-care services raises the attachment of women to the labour market: a one percentage point increase in the ratio of elderly-care coverage is associated to a 2.56 percentage points increase in FT participation and a decrease in the probability of NP of a similar magnitude.

A *discouraged worker effect* seems to emerge: local areas with higher unemployment rates are characterised by a higher female non participation, although the effect is only significant at the 10% level.

The ratio of PT employment in the local area significantly raises the FT participation probability only for women with children aged less than 2 (+1.59 percentage points).

Contrary to the conventional wisdom about regional differences in female *LFP* in Italy, once the above local control variables have been included, women living in Centre, Northern and Southern Italy do not seem to behave differently in terms of *LFP*.

Table 2.5 Ordered probit estimates of female participation

Variables	coeff.	z-stat.	Marginal effects (%)		
			NP	PT	FT
<i>Job (ref. manager, priv. services, typical)</i>					
Single	0.634	[6.52]***	−24.36	−0.45	24.80
Manager, industry, employee	0.062	[0.69]	−2.47	0.15	2.32
Manager, industry, indep.	0.038	[0.60]	−1.52	0.10	1.42
Manager, priv. services, atypical	0.203	[1.29]	−8.09	0.35	7.75
Manager, priv. services, indep.	−0.016	[0.22]	0.62	−0.05	−0.58
Manager, publ. services, typical	0.298	[2.95]***	−11.84	0.35	11.49
Manager, publ. services, atypical	−0.044	[0.18]	1.75	−0.13	−1.61
Manager, publ. services, indep.	−0.092	[1.04]	3.61	−0.30	−3.32
White collar, industry, typical	0.132	[1.55]	−5.25	0.28	4.97
White collar, industry, atypical	−0.045	[0.45]	1.78	−0.14	−1.65
White collar, priv. services, typical	0.131	[1.33]	−5.21	0.27	4.93
White collar, priv. services, atypical	0.150	[0.73]	−5.96	0.30	5.66
White collar, publ. services, typical	0.237	[3.01]***	−9.43	0.36	9.07
White collar, publ. services, atypical	0.313	[2.23]**	−12.40	0.34	12.06
Blue collar, industry, typical	0.097	[1.67]*	−3.84	0.22	3.62
Blue collar, industry, atypical	0.228	[2.50]**	−9.06	0.36	8.71
Blue collar, industry, indep.	0.360	[4.50]***	−14.24	0.29	13.94
Blue collar, priv. services, typical	0.071	[0.80]	−2.84	0.17	2.67
Blue collar, priv. services, atypical	0.153	[1.01]	−6.11	0.30	5.80
Blue collar, priv. services, indep.	0.432	[5.63]***	−16.99	0.18	16.81
Blue collar, publ. services, typical	0.158	[2.19]**	−6.29	0.31	5.98
Blue collar, publ. services, atypical	0.345	[2.25]**	−13.67	0.31	13.36
Blue collar, publ. services, indep.	0.416	[2.09]**	−16.38	0.21	16.18
Self-employed, industry	0.062	[0.88]	−2.45	0.15	2.30
Self-employed, priv. services	0.157	[3.98]***	−6.25	0.31	5.95
Self-employed, publ. services	0.316	[3.50]***	−12.54	0.34	12.21
Not employed	0.032	[0.46]	−1.27	0.08	1.19
<i>Age (ref. 50 or more)</i>					
<30	−0.063	[0.78]	2.52	−0.08	−2.44
30–39	0.068	[1.21]	−2.70	0.04	2.66
40–49	0.018	[0.55]	−0.70	0.01	0.69
<i>Education (ref. tertiary)</i>					
Elementary or less	0.064	[1.19]	−2.55	0.05	2.50
Lower secondary	0.037	[0.70]	−1.49	0.03	1.46
Vocational	0.056	[1.25]	−2.22	0.04	2.17
Upper secondary	0.024	[0.64]	−0.94	0.02	0.92

Partner's characteristics

Standard errors are clustered by *significant at 10%; **significant at 5%; ***significant at 1%

The marginal effects of the territorial variables on the probability of PT participation generally appear to be of limited size.

As expected (see Table 2.3), highly educated women tend to participate full-time; women with university education are less likely to participate PT than all the other categories. The marginal effects seem to be particularly high and are always

statistically significant at the 1% level. Elder women are more likely not to participate.

Family composition has a strong impact on female *LFP*. The presence of children aged less than 15 has a negative effect on both FT and PT participation, with a stronger effect on the former. The size of the effect tends to decline with children's age: women with one child aged less than two have a 22.13 percentage points lower probability of NP than women without children while the “participation penalty” is only 5.6 percentage points for women with children aged 7–14. These differences in the effects of progeny by age suggest that our estimates are likely to measure causal effects of children on female participation, as we anticipated in Sect. 2.4, rather than simply reflect women's unobserved heterogeneity in taste for children and *LFP*.

Both family size and the number of employed children have negative effects, significant only at 10% level, on female *LFP*. Women living in families where other family members work are more likely to participate (probably because of family network effects).

The presence of disabled members in the family is associated with a higher non-participation probability (+7.64 percentage points).

When inactive grandmothers live in the family, women are more likely to participate (+7.75 percentage points FT and +0.15 percentage points PT). This effect can be explained in terms of informal child care that elder relatives may provide to participating women.

Single women (see Table 2.5) are more likely to participate FT (+24.80 percentage points) and less likely to participate PT (−0.45 percentage points) with respect to the reference category (women with a partner working as a manager in the private services with a “typical” contract, i.e., a FT permanent position).

Women with partners in the reference category are more likely not to participate with respect to all the other groups. It seems that an “income effect” operates: women with a partner in a high income job are less likely to participate. The other partner's characteristics do not seem to matter.

2.6 Concluding Remarks

In this chapter we have analysed female *LFP* using Italian Quarterly LFS data. A number of factors emerge as important determinants of female labour force attachment.

Institutional factors such as child care and elderly care availability, which are highly differentiated across the country, and local unemployment rates all affect female behaviour. A higher provision of child-care and elderly-care services and a lower unemployment rate are positively associated with female *LFP*. These three variables apparently account for the generally observed lower participation rate in central and southern Italian regions. However, given that public care services are measured at regional level, these effects might partly capture other regional

influences. PT employment opportunities at local level appear to increase female *LFP* only for women with very young children.

In view of female employment rate increasing also in Italy, our analysis suggests that policy makers should improve care services, both for children and for elderly people. For instance, if our estimates fully reflect “causal effects”, doubling the current child-care coverage ratio (in 2000, there were 7.62 public kindergarten seats every 100 children aged 0–2) would imply an increase of 11.35 percentage points in the female FT participation rate and of 0.23 percentage points in the female PT participation rate. Doing the same for the elderly-care coverage ratio (in 1999, there were 2.09 places in public elderly-care services per 100 seniors aged more than 65), would produce an increase of 5.4 percentage points in the female FT *LFP*.

The presence of children aged less than 15 negatively affects female *LFP*, with a decreasing effect by children’s age. Our analysis does not support the idea that in Italy, in the period under study, PT was a way for women to reconcile home and market work, since the presence of young children rose women’s probability of inactivity, while having a negligible effect on PT participation. This may also be due to the period we have analysed (2002), since the diffusion of PT work is only a very recent phenomenon in Italy, and, therefore, it would be very interesting to replicate our analysis with current LFS data. The presence of inactive grandmothers in the family is positively correlated with participation and suggests the importance of informal child care. Single women and highly educated women are more likely to participate.

Because of evident discouragement effects, unemployment reduction, which is an obvious way of increasing female employment, would also help to increase women employment by raising female participation.

Last but not least, widening tertiary education, by increasing women’s participation in higher education and reducing drop-out rates, will improve female attachment to the labour force: the difference in the probability of FT participation between women with upper secondary schooling and university education, for instance, amounts to about 19 percentage points.

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