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**Childcare, work and immigration.  
Do Italian and foreign mothers behave differently?**

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**Abstract**

In this paper we study two aspects of the decision-making process following the birth of a child: whether or not the mother works, and whether or not the couple provides the child with formal childcare. Focusing on Padova and its district (North-East Italy), we discuss differences in the strategies of Italian and foreign mothers, controlling for socio-economic status, opinions on women's roles, and family structure, using the Blinder-Oaxaca decomposition. Six to thirty months after the birth of a child, the proportion of foreign mothers who are not employed is more than double that of Italian mothers (51% vs. 21%). In addition, 25% of Italian women entrust their children to the care of their parents and in-laws, vs. only 13% of foreign women. Although there are differences in the effects of variables on participation at work in the two groups, what matters most is the different composition of Italian and foreign women, especially as regards education and partners' characteristics. Even as regards the maximum price a couple is willing to pay for formal childcare, differences between the two groups can mostly be explained by differences in composition.

## 1. Introduction

Although a number of authors have studied the links between female labour force participation and childcare in Italy (see, e.g., Del Boca and Vuri 2007; Zollino 2008), fewer have investigated – mainly due to lack of data – the possible role of parents' citizenship. In this paper, we explore whether Italian and foreign women use different strategies to reconcile childcare and labour force participation, using data from a survey carried out in a province of the Veneto region in April 2009.

The decision to continue to care for a newborn child after maternity leave ends, to return to work (if the woman held a job before pregnancy), or to look for a job are all closely linked to the economic conditions of the household, the availability of formal childcare, and the presence of a family network. In addition, women's characteristics such as education, labour force attachment and ambitions are determinant in their decisions. Also of importance are cultural conditioning and women's beliefs about motherhood, which vary cross-culturally. Italian and foreign mothers may behave very differently in terms of participation at work after childbirth and of the use of formal childcare for their children. Such differences may partly be due to the diverse characteristics of the women themselves (socio-economic status, education, etc.) as well as cultural background. In this paper, we study two aspects of this decision-making process: whether or not to work, and whether or not to provide children with formal childcare. We discuss differences in the strategies of Italian and foreign mothers, exploiting the differences in socio-economic status, opinions and, as a residual, unobserved variables.

To separate observable compositional differences from unobserved differences between Italian and foreign mothers, we apply a method often used in applied economics to study wage differentials, the so-called Blinder-Oaxaca decomposition. This procedure is used to break down differences in average log-wages between two groups of individuals into differences due to the characteristics of the two groups (such as education, work experience etc., that is, the explained part) and a residual part which cannot be explained by observed variables. As applied to our problem, this decomposition allows us to separate the differences in participation at work and demand for formal childcare between Italian and foreign mothers into differences due to observable group characteristics and those due to unobserved variables.

We describe below three specific characteristics which Italy, over the last 30 years, has shared with other Southern European countries: a scarcity of (public and private) services devoted to couples with children aged 0-2 (described hereafter as *childcare*); a low proportion of employed mothers; and a sudden increase in the number of foreign couples with children. Section 2 introduces

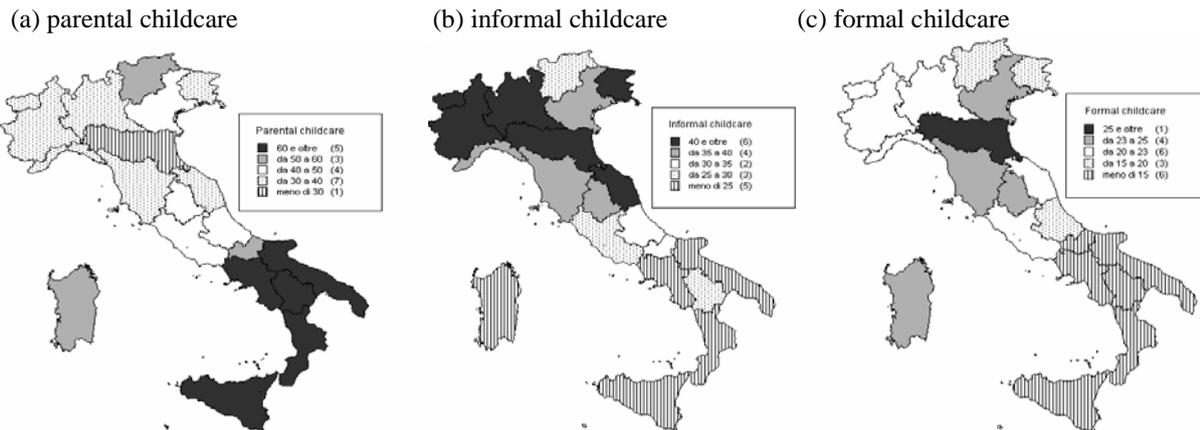
the survey on childcare conducted in Padova, and section 3 gives some descriptive statistics. Section 4 presents the empirical strategy and section 5 results. Section 6 concludes.

### *1.2. The “Italian approach” to childcare*

During the last decades of the 20th century, private and public childcare services have become widespread throughout the developed world. Instead, in Italy such services are not only lacking but the country ranks second last among 24 wealthy countries (UNICEF 2008). Some scholars argue that Italy, together with other European countries such as Spain and Greece, may be grouped into a so-called *Southern or Mediterranean welfare model*, characterised among other things by minimal availability of childcare services, partly compensated by a substantial family support system (Ferrera 1996, Del Boca et al. 2005; Del Boca and Vuri 2007; Zollino 2008; Albertini and Rosina 2010). Informal childcare (mainly provided by grandparents) offers some advantages, mainly flexibility for particular family needs and the fact that it is free of charge. However, this type of childcare also depends on several factors largely out of parents’ control, especially the “availability” of healthy grandparents living at a reasonable distance as well as their availability for childcaring (Keck and Saraceno 2008; Goodfellow and Lavery 2003). Although not universal, grandparental childcare is used by a large proportion of Italian couples; and residential proximity between generations in Italy is in fact the highest in Europe (Hank 2007). Instead, proximity between parents and grandparents is much lower among immigrant couples.

In 2002, according to data from the Italian Survey on Births, 50% of Italian mothers with babies aged about 18 months took care of their own children; slightly more than 30% had grandparents or other relatives providing (informal) childcare, but only 20% used formal private or public care (Gabrielli and Dalla-Zuanna 2010). In 2005, the percentage of parental childcare fell to 46%, but both formal and informal childcare increased (33% and 21%, respectively). In Italy, territorial differences in development, income and social organization are considerable, and public and private care services are mainly regulated by local rules. The southern regions have higher percentages of parental childcare (see figure 1). This result is partly due to a lack of formal care services. The Veneto region, the focus of our empirical analysis, lies in and around the national mean. The Veneto is also characterised by a rapid increase in formal childcare over the last 15 years, mainly due to the considerable involvement of catholic organizations in childcare services for children aged 0-2, and partly financed by regional administration.

**Figure 1: Percentage of mothers interviewed in 2002 and 2005 about 18 months after delivery, by region of residence and childcare arrangement**



Source: Gabrielli and Dalla-Zuanna 2010: *Italian Survey of Births, years 2002 and 2005*.

### 1.3. The “early withdrawal” of Italian mothers from the labour market

Female labour force participation in Italy is among the lowest in Europe: in 2009, only 46% of women aged 15-64 were employed, although this percentage varied significantly across geographical area, women's age and level of education. In the province of Padova, the employment rate of women aged 25-44 in 2009 was about 75%, approximately three percentage points higher than the Veneto region in general and fifteen percentage points higher than the rest of Italy.

Empirical literature suggests that one reason for the low level of female employment in Italy is the problem of reconciling work and childbearing. Although participation in the labour force for women aged 24-49 has increased over the years, there is still a considerable difference between the employment rate of women with children and those without (Righi 2003). In addition, this difference tends to be larger for younger women. Certainly, pregnancy and the period following delivery are crucial moments in women’s careers. Casadio et al. (2008), using data from the Italian Births Sample Surveys (2002), show that 20% of mothers stopped working for some length of time after delivery, and 14% decided to withdraw. The variety of variables related to this early departure from the labour market include: age (younger mother have a higher probability of departure), education, presence of a family network (mainly grandparents), and degree of job protection. The positive influence of highly protected and stable jobs before pregnancy on the probability of being employed after childbearing was also found by Bratti *et al.* (2005). In general, problems for working mothers increase with parity: the probability of leaving employment is higher for women with two or more children (Sabbadini, 2004). In 2009, mothers aged 16-64 who worked during their lifetimes were asked if they had stopped working because of the birth of a child (ISTAT, 2011, page 154). On average, this proportion was not very high (15%), but it doubled when all the family reasons (marriage, birth of a child, need to assist an elderly person, etc.) were taken into

consideration as a whole. These proportions were also higher among less educated women, mostly engaged in low-paid and not prestigious jobs (20% and 40%).

#### 1.4. The “explosion” of migration in Italy

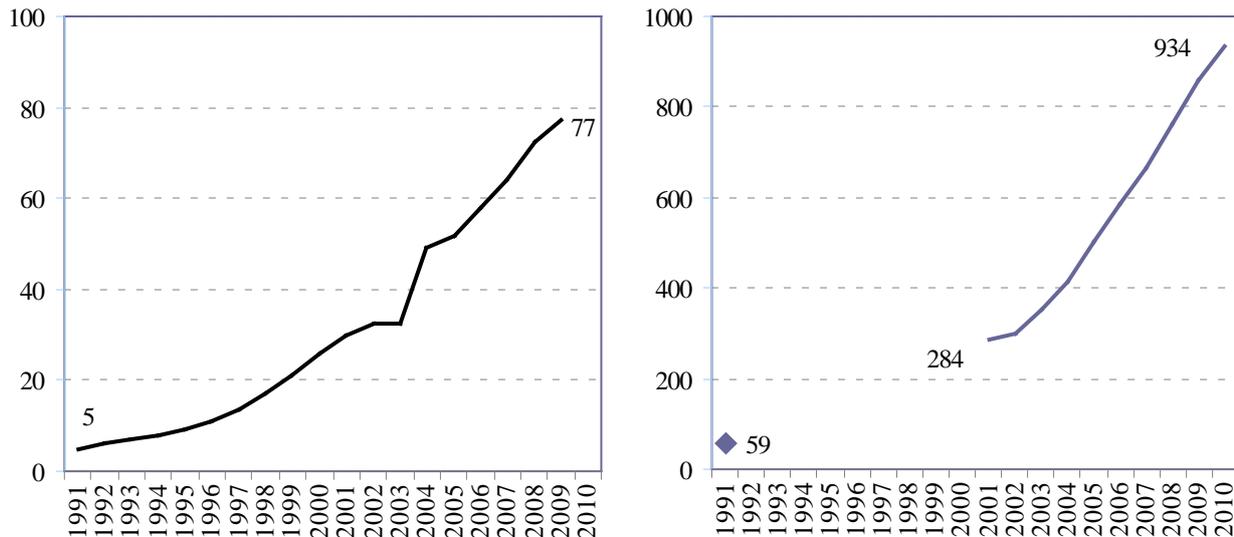
The number of foreigners aged 0-17 in Italian Population Registers has greatly increased, due to family migrations, family reunions, and births (Gabrielli et al., 2011). Data on this last aspect are the most reliable: births from at least one foreign parent increased from 5,000 in 1992 to about 100,000 in 2010. About 70% of these newborns had both parents of foreign origin (Italian law is based on the principle of *jus sanguinis*: children are foreign citizens up to their 18th birthday, when they decide on their citizenship), 20% had an Italian father and 10% an Italian mother (and thus, according to law, are Italian citizens). This considerable increase is also demonstrated by stock data (see figure 2). Foreigners aged 0-17 living in Italy numbered only 59,000 in the Census of October 1991, compared to about 934,000 in the Population Register at the beginning of 2010, i.e., an increase from 0.6% to 9.1% of the population of the same age living in Italy. In the same period, children aged 0-17 constituted 22% of the (legal) foreign population.

The children of immigrants living in Italy come from many different countries, a characteristic which sets Italy apart from most other European countries and is due to its lack of a significant colonial history and to its geographical position. In early 2006 (the most recent available data), no country exceeded 20% in terms of total numbers of foreigners aged 17 or younger; in fact, only Albania and Morocco exceeded 10%. The presence of foreigners in Italy is also characterised by great differences between the Centre-North (18% of the population aged 0-17 in 2010) and the South (2.6%). This is largely due to job opportunities, which are lacking in the South, even for natives. Foreigners living in the South tend to be concentrated in enclaves, whereas in the Centre-North they are spread out relatively homogeneously, as a consequence of the localization of the economic system. Only in certain marginal areas of the Centre-North, mainly in the mountains or hills, are the numbers of foreigners lower.

**Figure 2 – Foreign births (a) and foreign resident minors (b) in Italy (in thousands), 1991-2010.**

(a) Foreign births

(b) Foreign resident minors



Source: processing of ISTAT data, [www.demo.istat.it](http://www.demo.istat.it) (Gabielli et al., 2011).

As our empirical analysis concerns the city of Padova and its surroundings, we give some brief information on foreigners living in the city and its province. On January 1 2011, 92,000 foreigners (10% of the total population) lived in the province of Padova, whereas foreign residents in the city numbered 31,000 (14% of the total). During 2010, babies born to foreign parents totalled 20% in the province and 29% in the city. Also in this area of the country, the speed of growth is impressive: only nine years before (January 1 2002), there had only been 22,000 foreigners in the province and 8,000 in the city. In Padua, more than half the foreign residents come from Romania (8,300) or Moldavia (4,800), and even the number of Nigerians, Moroccans, Albanians, Filipinos and Chinese exceeds 1,000. These are the ethnicities most frequently represented in the province, but their concentration is lower than in the city (see [demo.istat.it](http://demo.istat.it) website).

## 2. A survey of childcare in Padova

To investigate couples' decisions on childcare, a sample survey, financed by the Regional Administration of the Veneto<sup>1</sup>, was carried out in Padova and its surroundings in 2009. The reference population were children aged 6 to 30 months, born in the area serviced by ULSS 16, the local agency for health services. In 2009, ULSS 16 covered 20 municipalities and 418,158 people (10% foreigners). In order to obtain free healthcare, parents are required to go to their local health office a few days after the delivery of their children and to choose the paediatrician who will take care of the children until their 14th birthday (free service for the family). The parents must also provide one or more telephone numbers, in order to allow rapid contact with the health unit. The list

<sup>1</sup> The research group led by Anna Giraldo and Gianpiero Dalla-Zuanna worked in collaboration with the *Osservatorio Regionale Infanzia e Nuove Generazioni del Veneto* (regional centre for study of children and new generations in the Veneto), the Education Department of the City of Padova, and the city's local health office (ULSS 16).

of all newborns registered at ULSS 16 is a by-product of this administrative procedure. The list includes the mother's name, address, citizenship, and telephone number. Full coverage of this list during 2006-08 was guaranteed, as the monthly number of births precisely matched those registered – following different procedures – in the population registers of Padova's 20 municipalities.

This provided an ideal situation for setting up a sample frame. Between July 1 2006 and June 30 2008, 7,454 newborns were registered by the ULSS 16 health office. Due to the birth of twins, triplets and (a very few) siblings born one shortly after the other, the number of children corresponded to 7,278 mothers (our statistical population). Of these mothers, 16% were foreigners. We designed a stratified sample, with strata defined by municipality of residence and citizenship. We defined six strata; the territory covered by ULSS 16 was split into 3 parts: the city of Padova, the municipalities bordering it, and “rural” municipalities. For each geographical stratum, Italian and foreign mothers were considered. Foreign mothers were over-sampled to improve the precision of the estimates for this subgroup. From the six strata, we randomly extracted an initial list of about 2,100 mothers (1,700 Italians and 400 foreigners), as well as a second list designed to replace unit non-responses. In order to achieve a reasonable sample size, almost all the foreign mothers (from both lists) were contacted. An extraordinary response rate of 80% was obtained for Italian mothers – Italian phone surveys rarely reach 40% – whereas for foreign mothers, it was only 48%. The main reason for the higher proportion of unit non-responses among foreign mothers – although a very strict contact protocol was followed – is the “volatility” of telephones for this segment of the population. In other words, numbers were often wrong or no longer used by the mothers. In some cases, the husband answered the mobile phone number given to the health office, but it proved impossible to contact the mother. In other cases, language difficulties, mainly with Chinese and Moroccan mothers, made understanding their answers a challenge. Rarely was it a matter of refusing to answer the questionnaire.

In April 2009, we interviewed 1,698 Italian mothers and 411 foreign mothers who had children between the ages of 6 and 30 months and were living in the 20 municipalities of ULSS 16. Our data are statistically representative of the population of each of the six strata and of the overall population. Data were collected by a CATI (Computer Assisted Telephone Interviewing) procedure, consisting of a questionnaire lasting about 20 minutes, developed from a questionnaire tested on a pilot-sample of about 50 women. The women on the main list were contacted in advance by letter, signed on behalf of the University of Padova, the city of Padova, and ULSS 16. The letter was written in Italian and in a language presumably known by the mother (French, English, Romanian, Albanian, Chinese). The questionnaire was originally written in Italian and then translated into three other languages: English, Romanian and Albanian. The women could chose their preferred

language for the interview: 184 women from Romania and Moldavia chose Romanian, 51 from Albania and Kosovo chose Albanian, and 38 (mainly Nigerian) chose English. 130 foreign mothers preferred having the questions asked in Italian. The possibility of answering in their native language dramatically increased the response rate.

Data were post-weighted<sup>2</sup> to obtain frequencies representative of the population as a whole. This post-stratification procedure was essential, in order to avoid under-representation of foreign mothers from Asia and ex-Yugoslavia and over-representation of foreign mothers from Romania, Moldavia and Sub-Saharan Africa.

<sup>2</sup> The post-stratification coefficient had the following ratios:  $n^*/n_i$ , where  $n^*$  is the theoretical number in the sample,  $n$  the actual number of people interviewed;  $i$  combines the three geographical strata with citizenship. The resulting weights are shown in Table A.

**Table A: Post-stratification coefficients**

	Actual number of interviews ( $n$ )	Theoretical number of interviews ( $n^*$ )	Post-stratification coefficient ( $n^*/n$ )
Italians, living in Padua	699	774	1,11
Italians, living near Padua	495	507	1,02
Italians, living in other municipalities	504	494	0,98
Foreigners, Romania and Moldavia	185	124	0,67
Foreigners, Ex-Yugoslavia	58	41	0,70
Foreigners, China	9	19	2,13
Foreigners, Asia	21	40	1,89
Foreigners, Mediterranean Africa	28	41	1,46
Foreigners, other African countries	79	55	0,70
Foreigners, other countries	31	14	0,47
Total	2,109	2,109	---

### 3. Descriptive statistics

Our data provide an accurate picture of the population of mothers with children aged 6-30 months living in Padova and its surroundings. Tables 1-3 describe their characteristics with respect to the main variables of interest: citizenship, childcare arrangements, and mothers' working status. Eight-four per cent of mothers were Italian; foreign mothers mainly came from Romania and Moldavia, but the percentage of mothers from Africa was also quite high. Italian and foreign mothers care for their children in very different ways: 60% of foreign mothers care for their children on their own, as opposed to only 30% of Italian mothers. Public childcare centres are more commonly used by foreigners, whereas the opposite is the case for private childcare (private childcare centres and babysitters). Lastly, perhaps as expected, approximately only one out of ten foreign babies is cared for by grandparents or other relatives, compared with 25% of Italian children. These results partly explain why working mothers are more common among Italians (72%) compared with foreigners (42%). The percentage of working mothers drops after pregnancy for both Italians and foreigners: before pregnancy, it was 87.8% for Italian and 60.5% for foreign mothers. Thus, the decline is greater for foreign mothers (-30%) than for Italian ones (-18%).

**Table 1: Mothers' citizenship (column %, weighted data)**

<i>Italy</i>	84.2
<i>Foreign country</i>	15.8
- <i>Romania – Moldavia</i>	37.0
- <i>Ex-Yugoslavia</i>	12.3
- <i>Africa (Mediterranean region)</i>	12.8
- <i>Africa (other countries)</i>	16.6
- <i>Asia</i>	18.6
- <i>Other countries</i>	2.7
<i>Total</i>	100.0

**Table 2: Childcare by citizenship (column %, weighted data)**

	<i>Italians</i>	<i>Foreigners</i>
<i>Public childcare centre</i>	13.6	17.0
<i>Private childcare centre</i>	23.3	4.6
<i>Babysitter</i>	7.0	3.9
<i>Grandparents or other relatives</i>	25.1	13.2
<i>Parents</i>	31.0	61.3
<i>Total</i>	100	100

**Table 3: Mothers' working status by citizenship (column %, weighted data)**

	<i>Italians</i>	<i>Foreigners</i>
<i>Working</i>	72.4	42.3
<i>On maternity leave</i>	6.3	6.6
<i>Not working</i>	21.3	51.1
<i>Total</i>	100.0	100.0

In order to study the differences between Italian and foreign mothers with respect to work status and childcare, we identified three groups of variables: socio-economic characteristics, opinions, and the presence of a family network. The socio-economic variables include: age of mother/father and child, number of cohabiting children, education of mother/father, father's work qualification and place of residence (Table 4). Although foreign mothers and fathers tend to be 4-5 years younger than Italian parents, they have more children than the Italians. They also tend to be less educated and – as expected – the large majority are to be found on the lowest rungs of the social ladder. Lastly, foreign couples are more concentrated in the city. Other researches show that, at the beginning of its immigrant history (1980s-1990s), Italy had immigrants with higher education, whereas during the following decade (2000s) a higher number of less educated foreign people moved to Italy (Gabrielli et al., 2011).

**Table 4: Socio-demographic characteristics by citizenship (column %, weighted data)**

<i>Mean age (years)</i>	<i>Italians</i>	<i>Foreigners</i>	<i>Total</i>
Mothers	36.1	31.1	35.3
Fathers	39.1	35.3	38.5
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<i>Number of children</i>	<i>Italians</i>	<i>Foreigners</i>	<i>Total</i>
1	51.1	43.9	50.0
2	39.9	38.1	39.6
3	7.4	13.6	8.4
4 or more	1.6	4.4	2.0
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>
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<i>Mother's education</i>	<i>Italians</i>	<i>Foreigners</i>	<i>Total</i>
University	40.7	18.4	37.2
High school	45.9	49.8	46.5
Primary school	13.4	31.8	16.3
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>
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<i>Father's education</i>	<i>Italians</i>	<i>Foreigners</i>	<i>Total</i>
University	33.1	15.8	30.4
High school	47.7	46.2	47.5
Primary school	19.1	38.0	22.1
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>
<hr/>			
<i>Work qualification (father)</i>	<i>Italians</i>	<i>Foreigners</i>	<i>Total</i>
High	34.2	1.9	29.8
Medium	46.6	23.0	43.3
Low / unemployed	19.2	75.1	26.9
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>
<hr/>			
<i>Place of residence</i>	<i>Italians</i>	<i>Foreigners</i>	<i>Total</i>
City of Padova	43.6	56.2	45.6
Suburbs	28.6	23.3	27.8
Other municipalities	27.8	20.5	26.7
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>

We used principal component analysis to summarise three questions concerning mothers' opinions (Table 5). The resulting variable (labelled *job-oriented*) takes on high values for mothers who consider that it is important for them to have a job (e.g., those who do not agree with the statement that “A mother is only truly happy when she is at home with her child”). Generally

speaking, Italian mothers are more job-oriented and foreign mothers more home-oriented, both when the questions are considered one by one and when they are collapsed into the synthetic index.

**Table 5: Opinions on work and maternity (column %, weighted data)**

In general, and not only taking into account your own situation, what is your opinion regarding these three statements?			
	Italians	Foreigners	Total
<i>A mother is only truly happy when she is at home with her child</i>			
I strongly agree	20.5	48.8	25.0
I agree	35.2	36.3	35.4
I disagree	35.3	13.6	31.9
I strongly disagree	9.0	1.3	7.8
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>
<i>It is right for a woman with children to continue working</i>			
I strongly agree	44.5	28.3	41.9
I agree	47.3	46.8	47.2
I disagree	6.4	20.1	8.6
I strongly disagree	1.8	4.8	2.3
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>
<i>Small children may suffer if their mother works</i>			
I strongly agree	19.8	38.3	22.7
I agree	35.0	34.2	34.8
I strongly disagree	33.3	22.1	31.5
I disagree	11.9	5.4	10.9
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>

**Table 6: Distance from parents and parents-in-law (weighed data)**

	<i>Mother's parents</i>		<i>Father's parents</i>		<i>Nearest parent</i>	
	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>
<i>Same building</i>	4%	3%	5%	6%	9%	9%
<i>100 m or less</i>	11%	4%	15%	6%	25%	10%
<i>1 km or less</i>	22%	5%	26%	8%	43%	13%
<i>10 km or less</i>	56%	10%	60%	11%	80%	19%
<i>Same region</i>	83%	13%	82%	13%	93%	23%
<i>Italy</i>	93%	14%	94%	15%	99%	25%
<i>Foreign country</i>	5%	80%	2%	79%	1%	74%
<i>Both parents deceased</i>	2%	6%	4%	6%	0%	1%

Data on the distance between couples and their parents confirm another great difference between Italians and foreigners (Tables 6-8). Results show that about 40% of Italian couples live 1 km or less away from *at least* one parent and around 80% live 10 km or less. The large majority of parents of Italian couples are retired and healthy, and are thus (theoretically) available to care for their grandchildren. With respect to foreign couples, despite their younger age, their parents are more frequently in bad health or deceased, but what matters most is that, in 74% of the cases, the nearest parent lives outside Italy.

**Table 7: Working status of parents and parents-in-law**

	<i>Mother of woman</i>		<i>Father of woman</i>		<i>Mother of father</i>		<i>Father of father</i>	
	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>
Working	18	27	27	33	14	18	21	21
Retired or housewife	78	65	57	45	80	73	56	48
Deceased	4	8	16	22	6	9	23	31
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

**Table 8: Health status of parents and parents-in-law (if alive)**

	<i>Mother of woman</i>		<i>Father of woman</i>		<i>Mother of father</i>		<i>Father of father</i>	
	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>	<i>Italian</i>	<i>Foreign</i>
In very poor health	5	11	6	10	7	12	7	10
In poor health	12	27	13	26	13	28	14	32
Healthy	83	62	81	64	80	60	79	58
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

#### 4. Empirical strategy

Descriptive statistics shows that Italian and foreign mothers are quite different with respect to observable characteristics. Are their different attitudes toward labour force participation and child care arrangements entirely explained by these observable differences between the two groups? Or are there other factors influencing them which we do not observe? In order to answer these questions, we applied a Blinder-Oaxaca-type decomposition, breaking down the differences between the two groups as due to observable characteristics and to the effects those characteristics have on outcomes. In the following, we interpret the latter as the component which reflects behavioural and cultural differences between Italian and foreign mothers.

We examined the differences with respect to two decisions. The first concerned the working status of mothers with children under 3 years of age (WORK); the second was the maximum price a couple is willing to pay for formal childcare (PRICE). Although the first aspect is common to this type of study (see, e.g., Gabrielli and Dalla Zuanna 2010), the second is less common (see, e.g., Bosi and Silvestri 2010) and is an alternative way of modelling the probability of enrolling a child in a daycare centre. The idea is that – in a market characterized by little availability of public childcare and relatively expensive private childcare centres – the maximum price that couples are willing to pay for formal childcare should be closely related to our explanatory variables. For example, this price should rise with the couple's social position and the opportunity-cost of women's work, and decline for couples who have parents willing to take on informal childcare. Lastly, the price should be higher for women who are more job-oriented, for whom work provides not only money, but also personal fulfilment.

#### 4.1 Work

We model the probability of work for a mother with children aged 0-3 years by means of a linear probability model. The decision to use such a model instead of a logit or probit specification<sup>3</sup> was made according to the additional information that the Blinder-Oaxaca decomposition had for the linear case, i.e., identification of the weight of each variable between observed and unobserved differences.

Let us consider a linear regression model, estimated separately for the two groups (Italian (I) and Foreign (F) mothers):

$$W_{ig} = X_{ig}\beta_g + \varepsilon_{ig}, \quad g \in (I, F) \quad (1)$$

where  $W_{ig}$  represents the dummy variable; working or not working, for mother  $i$  in group  $g$ ,  $X_{ig}$  is a vector of observable characteristics;  $\beta_g$  is a vector of parameters to be estimated, and  $\varepsilon_{ig}$  is the standard error term. Following Blinder (1973), Oaxaca (1973) and Oaxaca and Ransom (1994), the difference in mean outcome can generally be written as:

$$\bar{W}_I - \bar{W}_F = (\bar{X}_I - \bar{X}_F)\hat{\beta}_I + \bar{X}_F(\hat{\beta}_I - \hat{\beta}_F) \quad (2)$$

where  $\bar{W}_g = N_g^{-1} \sum_{i=1}^{N_g} W_{ig}$ . The first term on the right is the difference between the two groups in participation at work due to differences in observable characteristics; the second term is due to differences between the two groups in the effect of each variable on the dependent variable. For linear models, the specific contribution of each explanatory variable can also be studied, at least as regards the explained part. For the unexplained part, caution must be taken in interpreting results, due to sensitivity to the scale of the variables (see Jann, 2008)

#### 4.2 Willingness to pay for childcare services

The price a couple is willing to pay for childcare was modelled via a tobit regression. This was because for some of the mothers whose children were not in formal childcare, we observed the *maximum price* they were prepared to pay, whereas for mothers whose children were in formal childcare, we observed the *actual price* they pay. This was the result of the sequence of questions

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<sup>3</sup> We also estimate a logit model for the probability of work and apply a non-linear Blinder-Oaxaca decomposition. The results are more or less the same as for the linear case.

used to elicit the maximum price from mothers whose children were not in formal childcare<sup>4</sup>. In fact, for some of these mothers, we do not observe the maximum price, in that they are not able to afford even the minimum price proposed in the sequence of questions (100 euros per month). In other words, all we know about these couples is that the maximum price they can afford is less than 100 euros/month. As regards mothers whose children are already in formal childcare, rather than observing the maximum price they are willing to pay, we observe the price they actually pay, which is *less than (or equal to)* their maximum price. The resulting model is thus a tobit model with both right- and left-censored observations. Formally, let  $Y^*$  be the maximum price,  $Z$  the binary variable for a child in formal childcare (right-censored observations),  $V$  the binary variable for those unwilling to pay even the lowest price (left-censored observations) and  $Y$  the observed price (either that actually paid or the maximum price). The model is as follows:

$$Y^* = X' \beta + \varepsilon, \quad \varepsilon \sim N(0, \sigma^2 I) \quad (3)$$

where:

$$Y^* = \begin{cases} Y & \text{if } z_i = 0 \cap v_i = 0 \\ \geq Y & \text{if } z_i = 1 \\ \leq 100 & \text{if } z_i = 0 \cap v_i = 1 \end{cases} . \quad (4)$$

The log-likelihood is:

$$\log L(\beta | Y, X) = \sum_{i=1}^n [(1 - z_i)(1 - v_i) \ln \phi(y_i | X, \beta) + z_i \ln(1 - \Phi(y_i | X, \beta)) + (1 - z_i)v_i \ln \Phi(100 | X, \beta)] \quad (5)$$

To obtain the Blinder-Oaxaca decomposition, we evaluated the predicted value of the maximum price for each unit in the sample according to equation 3<sup>5</sup>. Then we decomposed the difference between the average value of such predicted values according to equation 2.

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<sup>4</sup> The exact phrasing of the question on maximum price was as follows: "If there were a quality childcare centre near your house, which had good teachers and the schedule you preferred, and if it cost 100 euros per month, would you take your child there? If it cost 200 euros per month, would you take your child there? If it cost 300 euros per month, would you take your child there? If it cost 400 euros per month, would you take your child there? If it costs 500 euros per month, would you take your child there?"

<sup>5</sup> For Blinder-Blinder decomposition for the tobit model see Bauer and Sinning (2010).

## 5. Results

### 5.1 Work

The set of explanatory variables used for the two groups were the same and referred to three groups (see descriptive statistics): socio-economic characteristics, availability of family network<sup>6</sup>, and opinions (Table 9).

We found that the socio-economic and demographic background deeply influences mothers' working status. The larger the number of children, the larger the proportion of housewives; this is true for both Italian and foreign mothers, but much stronger – approximately two times larger - for the latter. The strength of other demographic variables is significant only for foreigners: participation is lower among younger women and among women with older partners. Education (measured in years of schooling) has a positive effect on the probability of work for Italians, and the husband's or partner's education does the same on the same probability for foreigners. Again, the size of these effects are stronger for foreigners than for Italians.

Major differences between Italians and foreigners also appear with respect to the role played by opinions: a home-oriented opinion significantly reduces the probability of Italian mothers working, but is not statistically significant for foreign women. Neither for Italian nor for foreign women does the availability of a family network influence their choice to work, although foreign mothers' estimates probably have problems with the precision of the estimate. This result points to the accessibility of formal childcare – if families can afford it – and suggests that Italian women can work even if they do not have the support of a family network.

Results from the Blinder-Oaxaca decomposition show that the considerable difference between Italian and foreign mothers in participation at work – 78.67% vs 48.94% – is due to observable differences in the characteristics of these two groups (the first term on the right-hand side of equation 2). In other words, if the two groups had the same composition with respect to the set of explanatory variables included in regression 1, the difference between the two groups in participation at work would drop dramatically (from .2973 to .0265).

Looking at the details of the decomposition, it is clear that the difference in participation at work between the two groups is mostly driven by the level of qualification of husbands.

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<sup>6</sup> The dummy variable “family network” takes value 1 when there is at least one grandparent in good health living at a reasonable distance (10 km or less).

**Table 9: Results for WORK**

	<i>Regression model</i>		<i>Blinder-Oaxaca decomposition</i>
	<i>Italians</i>	<i>Foreigners</i>	<i>Explained</i>
<i>Intercept</i>	0.5478**	0.3645	
<i>Number of cohabiting children</i>	-0.0350**	-0.0623*	0.0066**
<i>Number of children aged 6-36 months</i>	-0.1049**	-0.1081	0.0049*
<i>Place of residence (city of Padova)</i>			
Suburbs	-0.0218	-0.0651	-0.0011
Other municipalities	0.0057	0.0284	0.0004
<i>Age of mother (years)</i>	-0.0002	0.0204**	-0.0012
<i>Age of father (years)</i>	-0.0004	-0.0173**	-0.0015
<i>Child's age (months)</i>	-0.0014	0.0032	0.0004
<i>Mother's education (years)</i>	0.0099**	-0.0077	0.0177**
<i>Father's education (years)</i>	-0.0016	0.0289**	-0.0027
<i>Father's work qualification (low / unemployed)</i>			
Middle/High qualification	0.3183**	0.1534*	0.1912**
<i>Opinions (- Home-oriented vs. Job-oriented +)</i>	0.0599**	-0.0012	0.0491**
<i>Family network (1 if available)</i>	0.0141	0.1186	0.0070
Number of observations	1,692	402	

\*\* p < 0.05, \* 0.05 < p < 0.10.

**Table 10: Oxaca decomposition for linear probability model**

Prediction for Italian mothers	0.7867	
Prediction for foreign mothers	0.4894	
Differences	0.2973	
Explained	0.2708	(91.1 %)
Unexplained	0.0265	(8.9 %)

## 5.2. Willingness to pay for formal childcare

Regardless of their citizenship, women with many children and/or very young babies are less willing to pay for childcare. As in the WORK results described above, results concerning education show that the most highly educated Italian mothers are willing to pay more, whereas among foreign couples it is the father's level of education which matters most. It may be that the returns of education for foreign women – hence the opportunity-cost of not working – are lower; consequently, women's level of education does not affect the maximum price they are willing to pay for formal childcare. Among foreign families, it is the father's level of education and age which influence the willingness to pay for formal childcare and, consequently, women's labour contribution: if partners are younger and more educated, women report greater willingness to pay for formal childcare. Among Italian couples, strength of opinions and family networks are highly significant. The most home-oriented Italian women and those with the strongest family networks are less willing to pay for formal childcare.

In conclusion, our expectations concerning the effect of covariates on the maximum price were met, but in different ways for Italian and foreign women: among the Italians, the opportunity-

cost of women's work and the family network play an evident role. As in the previous analysis for WORK, among foreign couples the fathers' characteristics play a central role.

**Table 11: Results for PRICE**

	<i>Regression model</i>		<i>Blinder-Oaxaca decomposition</i>
	<i>Italians</i>	<i>Foreigners</i>	<i>Explained</i>
<i>Intercept</i>	-169.4850	120.2752	
<i>Number of cohabiting children</i>	-36.3063**	-18.1358**	4.3213**
<i>Number of children aged 6-36 months</i>	3.9268	-61.7425**	-0.1150
<i>Place of residence (city of Padova)</i>			
Suburbs	-6.9960	28.1720	-0.3627
Other municipalities	-31.6005*	7.1174	-2.7125*
<i>Age of mother (years)</i>	3.6920**	2.2222	19.3545**
<i>Age of father (years)</i>	0.0348	-2.4371*	0.1366
<i>Child's age (months)</i>	3.0125**	1.9476*	-0.7814**
<i>Mother's education (years)</i>	13.9777**	2.8284	22.8563**
<i>Father's education (years)</i>	1.9112	4.6907*	2.7233
<i>Father's work qualification (low / unemployed)</i>			
Middle/High qualification	20.7727	10.8817	11.9484
<i>Opinions (- Home-oriented vs. Job-oriented +)</i>	62.1188**	14.6575**	50.5390**
<i>Family network (1 if available)</i>	-58.6916**	43.0615	-29.4778**
<i>Number of observations (Total)</i>	1,686	401	
Left-censored	377	73	
Uncensored	692	238	
Right-censored	617	90	

\*\* p < 0.05, \* 0.05 < p < 0.10.

**Table 12: Oxaca decomposition for tobit model:**

Prediction for Italian mothers	280.624	
Prediction for Foreigner mothers	167.296	
Differences	113.328	
Explained	78.430	(69.2 %)
Unexplained	34.898	(30.8 %)

The Blinder-Oaxaca decomposition on the tobit model showed that the difference in the composition of the two group explains most of the difference in their predicted values (69.2%); the unexplained part accounts for only 30.8% of the difference. In particular, the largest differences between Italian and foreign mothers concern mothers' age, their education, their opinions regarding jobs, and the presence of a family network.

## 6. Discussion

The starting point of our discussion is the large difference in the type of childcare arrangements and the employment status between Italian and foreign mothers. Foreign women who stay home with their children aged 0-2 numbered almost double the Italian women (61% vs 31%); conversely, foreign women who work account for almost half this figure (41% vs 72%). In addition,

only half the foreign women leave their children with grandparents (25% vs 13%), whereas very few foreign families use a private nursery or have a nanny (8% vs 30%). The only type of non-parental childcare with respect to which foreigners exceed Italians is the public kindergarten (17% vs 14%).

The Blinder-Oaxaca decomposition allows us to assess whether these large differences are due to observable differences in the composition of the two groups, or whether what determines the differences in the choice to work and take advantage of the availability of childcare are unobservable characteristics of the two groups. Our results show that the determinants of the choices are not the same in the two groups: for Italian families, the characteristics of the woman (her degree of education, more or less job-oriented cultural orientation, etc., matter most, while for foreign families it is the husband's characteristics (such as age and education) which are of prime importance. However, these differences become negligible when they are compared with differences in composition between the two groups. In other words, if Italian and foreign mothers had the same composition with respect to the variables considered here (family-network, education, social class, more or less job-oriented cultural orientation, etc., the differences would be 91% smaller for participation at work and 70% smaller for willingness to pay for childcare. Although the differences between Italians and foreigners are partly due to a different composition with respect to job orientation, the high proportion of foreign women who stay at home to look after their children is largely due to the limited availability of money, poor family network, and affordable childcare.

In conclusion, our results indicate that it is possible to increase the number of dual-earner couples in the foreign group. Obstacles to this increase are only minimally cultural in nature, and result from a private market characterized by relatively high costs (an average, almost 400 euros a month for couples who send their children to private kindergartens) and insufficient availability of public kindergartens which, for families with blue-collar fathers, cost on average less than 200 euro/month).

The greatest challenges are thus faced by the poorest couples, both Italian and foreign, especially if they do not live near their parents or in-laws. For these couples, access to private childcare centres is nearly impossible and/or economically unattainable. Hence, the only solution is to turn to less expensive childcare options. However, this does not consist of public childcare centres, since it is likely that in the near future, Italy will have to restrict rather than expand welfare spending. In other countries – and to some extent also in Italy – alternative solutions partially financed by the state (such as *Tagesmutter* and/or self-organisation of mothers) have produced positive results, both in terms of quantity and quality. Perhaps this is the path to be explored to prevent the growing number of foreign children living in Italy from suffering double jeopardy:

growing up in a poor family, because only the father holds an often low-paid job, and unable to enjoy the stimulation of early socialisation through early contact with their peers outside the family environment.

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