Economic insecurity and fertility intentions: the case of Italy

Paper Prepared for presentation at the IARIW-OECD Conference on Economic Insecurity
Paris, France, November 22-23, 2011

Francesca Modena (University of Trento and Euricse)
Concetta Rondinelli (Bank of Italy)
Fabio Sabatini (Sapienza University of Rome)

Abstract

We advance an explanation for the combination of low female participation rates with lowest-low fertility levels in Italy. Starting from the assumption that childbearing decisions are affected by uncertainty about future employment, income, and wealth, we build three measures of economic insecurity and test their effect on fertility in Italy. We show that the instability of women's work status (i.e. the fact of holding occasional and precarious positions) significantly discourages childbearing. Household wealth insecurity significantly and positively affects the decision to postpone, or even renounce, the first childbearing. The chances of further childbearing are significantly and negatively influenced by household income insecurity.

JEL Codes: C25, J13
Keywords: economic insecurity, income, wealth, fertility, childbearing, participation, job instability, precarious employment, Italy.

1. Introduction

It is a widely held view that the longer a woman delays childbearing, the lower is her completed fertility (Billari et al. 2002; Bumpass et al. 1977; Bumpass et al. 1978; Marini et al. 1981).

Empirical studies have highlighted that a significant and positive correlation between female participation in the labour force and the postponement of childbearing occurred across OECD countries in the 70s, which in turn has led to a fall in fertility rates (Ahn and Mira 2002; Adsera 2005). This trend has been attributed to the improvement in women's levels of education and employment, to changes in patterns of family formation (D'Addio and D'Ercole 2005) and to a major change in the values shared by younger women about their role within the family and the labour market (McDonald 2000; Hakim 2003; Kertzer et al. 2008).

Thank to the increased availability of childcare services and part-time jobs, especially in European Nordic countries, the cross-country association between female participation and fertility turned positive in the last decade (Ahn and Mira 2002; Adsera 2005; Del Boca and Locatelli 2006; Del Boca et al. 2007). Italy is experiencing the same trend, although it is still lagging behind compared to the European average. Over the last two decades the female employment rate rose from 35.4% in 1994 to 47.2% in 2008. On the other hand, at the beginning of the 1990s Italy attained lowest-low fertility levels, i.e. a total fertility rate of below 1.3 children per woman, reaching 1.4 in 2008 (Rondinelli and Zizza 2011).

Previous empirical literature on the Italian fertility puzzle has focused on institutional and policy differences in comparison with Nordic countries – where more generous protection systems have been implemented to reconcile motherhood with work (Engelhardt and Prskawetz 2004; Del Boca and Sauer 2009) – and on the role social and cultural factors in childbearing decisions (Micheli 2000; Kertzer et al. 2008; Fent et al. 2011). In this paper we argue that, in addition to these institutional factors, and to women's decisions to invest in human capital and to participate in the labour market, childbearing crucially depends on the economic conditions of the household. We thus add to the previous literature by testing the role that economic insecurity – i.e. the uncertainty about future employment, income, and wealth – plays in women's fertility intentions. To reach this goal, we build three measures of economic insecurity accounting for household's income and wealth levels, and uncertainty about future employment. The empirical analysis is based on a pooled cross section of Italian households sampled between 2002 and 2008 by the Bank of Italy in the Survey on Household Income and Wealth (SHIW).

Our study contributes to the literature in three substantive ways. To our knowledge, this is the first empirical assessment of the relationship between economic insecurity and fertility in Europe[1]. We try to account for the complexity of the concept of economic insecurity by measuring multiple aspects of uncertainty about the future encompassing income, wealth, and job instability. It is worth noting that, despite a few exceptions (see for example Del Bono et al. 2011, and Modena and Sabatini 2011), the stability of women's work status has so far been neglected in the literature. Job instability or "precariousness"[2] is generally considered more as an obvious and somewhat desirable side effect of flexibility rather than as a potentially crucial determinant of workers' well-being. This view can be hardly generalized to Italy, where precarious workers are characterized by low income levels, inadequate social protection and discontinuous careers (Barbieri and Scherer 2003; Sabatini 2008). In this paper we test the hypothesis that having a precarious job (i.e. unstable, low paid, and with scarce guarantees) is a deterrent to planning parenthood rather than being a persuasive factor encouraging childbearing through a decrease in women's opportunity cost of not working – as suggested by early theoretical studies (see for example Willis 1973 and Becker 1981). Second, we also differentiate from previous studies along two further lines: we focus on childbearing *intentions*, instead of accounting solely for actual fertility, in order to better evaluate the determinants of the *decision* to have (more) children. In addition, starting from the assumption that childbearing decisions are in most cases taken at the couple level, we assess the role of a number of socio-economic traits of *both* the components of Italian couples, instead of focusing on women only.

Third, we advance an explanation for the "Italian fertility puzzle" – i.e. the coexistence of low female participation rates with lowest-low fertility levels in Italy – based on the effect of women's economic insecurity, which encompasses both the income and wealth conditions of the family and women's uncertainty about future employment.

Results from the empirical analysis suggest that the instability of women's work status significantly discourages childbearing. Household wealth significantly and positively affects the decision to plan first childbearing. The chances of further childbearing are significantly reduced by household income insecurity.

However, there are reasons to suspect these findings to be the fruit of spurious correlations. First, it is difficult to distinguish the effect of the three dimensions of economic insecurity we account for

[1] Insightful and promising empirical studies on the topic have been conducted in Canada (Tang 2011) and Japan (Ogawa 2003).

[2] In its "Classification of Status in Employment", the International Labour Organisation (ILO) defines "precarious" workers as either: (a) workers whose contract of employment leads to the classification of the incumbent as belonging to the groups of "casual workers" ; (b) "short-term workers" or "seasonal workers"; or (c) workers whose contract of employment will allow the employing enterprise or person to terminate the contract at short notice.

from that of other phenomena that potentially influence family planning. To deal with this problem, we include in the fertility intentions equation a set of individual and household control variables. Second, personal traits or individual exogenous shocks may be correlated with both childbearing decisions and the dimensions of economic insecurity, thus creating a common bias. Third, in some cases one could suspect the existence of reverse causality: for example, as for labour precariousness, a woman who always wanted to have children may prefer to look for a very stable job. On the other hand, as we will better explain in the next section, we believe that precarious employment can be hardly seen as the result of a worker's deliberate choice, i.e. as an endogenous variable. To deal with these problems, we first run regression-based endogeneity tests. Tests' results do not support the endogeneity of economic insecurity dimensions. For the sake of robustness, we then instrument female labour precariousness and household income insecurity.

The paper is organized as follows. Sections 2 and 3 review the literature on economic insecurity and on the association between labour market outcomes and fertility. Section 4 describes our data and methodology. The main results and implications are presented in Section 5, and Section 6 concludes.

2. Economic insecurity and job insecurity

"Economic insecurity arises from the exposure of individuals, communities and countries to adverse events, and from their inability to cope with and recover from the costly consequences of those events" (UNDESA 2008). Osberg (1998) provides a similar definition: economic insecurity is based on the anxiety produced by a lack of economic safety, i.e. the inability to obtain protection against potential economic losses. According to the Commission on the Measurement of Economic Performance and Social Progress, economic insecurity is one of the dimensions that shape people's well-being: "economic insecurity may be defined as uncertainty about the material conditions that may prevail in the future. This insecurity may generate stress and anxiety in the people concerned, and make it harder for families to invest in education and housing" (Stiglitz, Sen and Fitoussi 2009, p.198). The insecurity perspective concerns the hazards faced by all citizens, and in this sense it differs from vulnerability to poverty which focuses on a segment of the population (Osberg 2010). Economic insecurity is shaped by many factors and this leads to a variety of approaches used to measure it. Some authors do not distinguish between different types of misfortunes and model an individual's sentiment of insecurity as a function of his/her current wealth and of variations in

wealth experienced in the past[3] (Bossert, D'Ambrosio 2009). The human-rights perspective, instead, identifies four key objective economic risks: unemployment, sickness, widowhood and old age[4]. Osberg and Sharpe (2011) follow this approach and construct an index of economic security for OECD countries based on these four sources of risk. Berloffa and Modena (2011a, 2011b) modify the Osberg and Sharpe indicator including new measures of economic insecurity related to the risk of unemployment. Another index of economic insecurity is the Economic Security Index (ESI)[5] which is a measure specific to the U.S. society and captures three major sources of risks: major income loss, large out-of-pocket medical spending, insufficiency of liquid financial wealth to deal with the first two risks.

Some papers focus on specific sources of risk, and many of them look at job insecurity[6] as a key factor shaping economic well-being. Amudeo-Dorantes and Serrano-Padial (2010) suggest that fixed-term contracts are linked to a greater poverty exposure among women and older men relative to open-ended contracts. Several papers find evidence of a worsening in health conditions associated with unemployment or precarious positions (Catalano 1991; Benach et al. 2000; Menendez et al. 2007; Kim et al. 2008). Scherer (2009) investigates the social consequences of insecure jobs in western European countries: she finds temporary employees to be less likely to intend to have children in the future, to have relatively less spare time for their family and to experience a higher level of conflict with their partner. Furthermore, general life satisfaction and well-being is clearly lower and the perceived household income situation is worse.

The issue of employment insecurity is particularly relevant in Italy due to the labour market reforms occurred in the 1990s with the adoption of new forms of temporary labour contracts (those used for the so-called *parasubordinati* and *interinali*[7]). In Italy, as in other Mediterranean countries (Spain for example), flexibility has been introduced at the margin, increasing labour market dualism between young and old labour market entry cohorts. While the insiders are largely unaffected by

---

[3] The authors define wealth as a comprehensive variable that encompasses anything that may help an individual in coping with adverse occurrences.

[4] In Article 25, the United Nations' Universal Declaration of Human Rights of 1948 affirmed the "right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

[5] ESI is sponsored by the Rockefeller Foundation and it is available since 1985.

[6] Stiglitz, Sen and Fitoussi (2009) provide a useful distinction between job instability and job insecurity: the first refers to the break in the contractual relationship between the worker and the employer, the second refers to the case of a person remaining jobless for an extended period.

[7] Most *parasubordinati* are similar to fixed-term employees except that they are paid less and receive lower social security contributions, and do not benefit from employment protection legislation (Brandolini et al 2007). *Interinali* are individuals who work through a temporary employment agency.

labour market adjustments, young people are more likely to be employed with these new flexible contracts, characterized by low income levels, low social protection and discontinuous careers (Cipollone 2001). Precarious workers are not supported by the social protection system, because of the lack of wage subsidies for the low-paid and low unemployment benefits (Brandolini et al. 2007). Such a situation increases the probability of being poor for households with non-standard workers: Bank of Italy (2009) shows that in 2006 the incidence of poverty for households with only atypical workers was about 47%. Negative effects associated with precarious jobs are more pronounced when temporary contracts represent a trap into instability, increasing the risk of social exclusion, rather than a port of entry to stable positions. Due to the lack of training, the extreme flexibility (both in terms of time and mobility), and the worsening in health conditions that may be associated with precarious positions (see for example Bardasi and Francesconi 2004 on this latter point), workers may find it very difficult to upgrade their skills and develop new contacts (Guadalupe 2003; Menendez et al. 2006; Kim et al. 2008; Amudeo-Dorantes et al. 2010). In addition, as argued by Barbieri and Scherer (2009), there might be a stigma associated with precarious or "b-series", jobs: "not having been selected for the primary labour market is interpreted as a negative signal by potential future employers" (p. 678). After a certain period of instability, individuals in precarious jobs concretely face the risk of a definitive exclusion from the labour market (Booth et al. 2002; Dolado et al. 2002; D'Addio and Rosholm 2005). Young people and women are more exposed to this risk (Brandolini et al. 2007; Barbieri and Scherer 2005). Barbieri (2009) underlines that better educated workers and those with higher occupational qualification are less likely to be trapped in the secondary, subprotected labour market. Another specificity of the Italian labour market, which increases inequality between insiders and outsiders, is that childcare welfare systems and parental benefits are in most cases designed to meet the needs of permanent workers, leaving women with precarious positions unprotected in the case of childbearing (see Ferrera 2005, and Ferrera and Gualmini 2004, for exhaustive reviews on the Italian welfare state)[8].

Given this evidence, following the approach in Modena and Sabatini (2011), we argue that, on average, job instability can be hardly considered as the result of a spontaneous choice – due for example to the workers' high risk propensity or to a preference for frequent changes in one's professional life. In Italy, precarious employment is such a disadvantageous condition that just a very few women would deliberately choose it for the seek of a more interesting and stimulating job. It thus seems much more reasonable to consider precariousness as a situation of disadvantage to which workers have to adapt only if there are no alternatives.

[8] Labour precariousness can thus be seen as a barrier to social integration that may destroy human and social capital: a high level of employment flexibility hinders training and qualification and, at the same time, hampers the consolidation of social ties, both inside and outside the workplace (Routledge and von Ambsberg 2003; Sabatini et al. 2011).

Due to precarious workers' high exposure to the risks of job loss, wage variability, and intermittent unemployment raise the uncertainty of future income (making any form of long-term life planning such as marriage and procreation difficult), we expect to find a negative association between the job instability of potential parents (and in particular of the mother) and their childbearing intentions (see also Modena and Sabatini 2011). Moreover, since the extent to which job insecurity affects people' quality of life may depend on the personal context of each individual (Osberg 1998), we include more comprehensive information about households' economic conditions in the childbearing intentions equation. More specifically, as advanced in the introduction, we account for further sources of risk (linked to household's current income and wealth) and we analyze their impact on childbearing intentions.

3. Labour market outcomes and fertility: a negative or a positive association?

Economic explanations of fertility decisions have been proposed in various studies, suggesting a positive correlation between the number of children and household income. Highly educated (potential) mothers, tend to substitute the number of children with "child quality" (Becker and Lewis, 1973)[9]. Since both production and rearing of children are time intensive, an increase in wage rates induces a negative substitution effect on the demand for children (for instance Mincer 1963, Becker 1965; Becker 1981; Willis 1973; Hotz et al. 1997). A higher income increases women's opportunity cost of children: with high earnings, it becomes more expensive for her to take time away from work to rear children; the income effect is unlikely to outweigh the negative substitution effect. For men, in contrast, the income effect tends to dominate since they spend less time on rearing children, though the magnitude of these effects will vary across countries and birth parity (Willis 1973; Butz and Ward 1979).

The contribution of increasing returns to schooling (especially for women) may act as a factor encouraging women's education relative to men's and driving the rise in women's labour market attachment (Schultz 2001). Schultz (1985), for example, identifies an exogenous appreciation in the value of women's time as a factor improving women's wages relative to men's and contributing to the decline in fertility in Sweden. Rosenzweig (1982), instead, simulates a natural experiment to empirically show that Indian farm households exposed to the new technologies reduced their

[9] The concept of "child quality" has been used to synthesize different factors of children's well-being, such as, for example, the time, effort, and money that parents devote to children's care and development, children's likelihood of not dropping out of school, and the level of parents' subjective well-being – which in turn has relevant effects on children's psychological development. Willis (1973), for example, defines child quality as a function of the resources parents devote to each child.

fertility and increased the allocation of resources to schooling despite the associated rise in the demand for unskilled labour.

The effect of women's labour market participation on fertility decisions may also depend on the availability of external childcare (Ermisch 1989). With costly external childcare, women with very high earnings may have more children, because they are more able to afford these expenses; those with very low income or wages are less likely to pay for childcare, but may still have higher fertility due to low opportunity costs.

Over the last two decades, research has shifted towards investigating the timing of births rather than completed fertility (Heckman and Walker 1990). Empirical studies have shown that higher educated women with a better position in the labour market have births at older ages (Gustafsson and Wetzels 2000; Prioux 2004; Amudeo-Dorantes and Kimmel 2005; Modena and Sabatini 2011). Mother's age at the first childbirth can be seen as the result of a trade-off between investment in human capital and career planning, on the one hand, and motherhood, on the other hand (Gustafsson 2001). The effect of income on the timing and the number of births may work through different paths: Gustafsson (2005) suggests that, for Swedish young individuals, any additional year of education affects fertility through a delay in the formation of a stable couple, rather than by delaying parenthood once the couple is formed. Amuedo-Dorantes and Kimmel (2005) sustain that college-educated mothers can profit from postponing motherhood, because they are in a position to negotiate a family-friendly work environment with flexible work schedules.

In the last two decades, the trade-off between career and the family seems to have eased off, causing a change in the relationship between labour market outcomes and fertility at the macro level. As stated in the Introduction, the correlation between female participation in the workforce and fertility turned positive at the end of the 80s across OECD countries (Ahn and Mira 2002; Morgan 2003; Engelhardt and Prskawetz 2004; Billari and Kohler 2004. This shift has been explained as a result of the increasing availability of childcare services and part-time jobs, especially in the Nordic countries (Del Boca and Locatelli 2006; Del Boca et al. 2007). This evidence is confirmed by recent findings for a panel of Latin American countries (Aguero and Marks 2008). Northern Italian regions are experiencing the same trend, even if they still lag well below the European average. It has been documented that the emergence of the lowest-low fertility in Italy is related to a decrease in the progression to the second, third and subsequent children, while the probability of a first child stayed almost stable (Dalla Zuanna 2004). Additionally, the personal

ideal family size for around 60% of Italian women aged 20-34 years is two children; while one quarter have a preference for large families (Goldstein et al. 2003).

4. Data and methodology

In order to analyze the effect of economic insecurity on family decisions we use a pooled cross section of households sampled between 2002 and 2008 by the Bank of Italy in the Survey on Household Income and Wealth (SHIW). The sample is composed of about 8,000 households per year and it is representative of the whole Italian population (Bank of Italy 2010). Couples in which the woman is under 46 years of age were asked if they were planning to have (more) children in the future. Possible answers were "yes", "not now, we will think about it later", "no we do not want any (more) children", and "no but we would have liked to have (more) children"[10].

After matching household head and partners characteristics our sample is reduced to 5063 couples[11]. Our dependent variable is the dummy ''intention to have (more) children'': 17% of the couples report they want children, with a higher percentage in the North than in the rest of the Country. The probability increases with female education and for childless women. In 2004 and 2008, all women that reported they would have liked to have (more) children, answered a question about the reasons for not having (further) children; possible answers included: insufficient income, incompatibility with work, an unsuitable home, lack of regular help from relatives, no nursery schools nearby or schools that were too expensive, the need to care for other relatives, the absence of a partner to have children with, a lack of agreement with the partner about the number of children, biological/physiological reasons. Responses are reported in Table 1. Economic reasons appear to be a key determinant for the mismatch between actual and wished for number of children: in 2008 (2004), 36% (35%) and 33% (23%) of women reported "insufficient income" and "incompatibility with work" as reasons that have discouraged them from planning to have (more) children.

The main independent variables are the measures of economic insecurity. Specifically, we consider three sources of uncertainty: low levels of household income and household wealth, and job insecurity, as identified with the precariousness of the work status. As regards the first two measures, the index of wealth (income) insecurity is defined according to the percentiles of the

[10] In 2002 the threshold was 50 years of age and possible answers for fertility intentions were yes, no, don't know. In 2008 the question on childbearing intentions was put to all women aged 18 to 45 years present at the interview.

[11] The households that answered the question on family planning are 1742, 1744, 1477 in 2006, 2004 and 2002 respectively. In 2008, 887 women where asked this question Since we want to control for the traits of both men and women, we restricted the sample to include those households in which both the head and the partner were present

weighted distribution in which the household falls (the index of insecurity is one minus the percentile; household income and wealth are divided by the OECD-modified scale). To account for employment insecurity we use dummies representing the work status of men and women. Dummies are equal to 1 in case of precarious employment, i.e. for employees with a fixed-term contract and for "atypical" workers such as casual, short-term, seasonal workers, or workers whose contract of employment allows the employer to terminate the contract at short notice.

We control for women's age, male and female level of education, the geographical area of residence, marital status, number of children in the family, and the presence of grandparents. A list of the variables used and the main descriptive statistics are reported in Table 2. The average number of children is 1.3. Men and women in the sample are on average 41 and 37, respectively. 50% (44%) of males (females) reported low education (no formal education or primary school), 41% (45%) completed high school, and 10% (11%) had a degree or more. The large majority of men (68%) are employed with a stable job (open-ended contract), while this proportion is remarkably lower for women (40%). A large fraction of women (40%) are out of the labour force (mainly housewives), with a sharp North-South divide: 21% in the North and 61% in the South and Islands. The proportions of precarious workers (employees with fixed-term contracts or atypical workers) are 5% for males and 7% for females, with a remarkable increase over time: from 5% in 2002 (4.5%) to 7.8% (9.6%) in 2008 for men (women). 5% of sampled women is unemployed, and the share is double in the South than in the North.

We model childbearing decisions as a binary choice. The dependent variable y may only take the values one and zero, which indicate whether the couple is planning to have (more) children in the future or not. The decision can be derived from an underlying latent variable model:

$$y^* = X\beta + e, \qquad y = 1\left[y^* > 0 \right] \tag{1}$$

where X is the set of independent variables aimed to explain fertility choices (described above). When e has a standard normal distribution we can derive the probit model:

$$prob(y = 1 \mid X) = F(X\beta) \tag{2}$$

where $F(\cdot)$ is the cumulative density function for a normal distribution with zero mean and unitary variance. Estimates from model (2) are not biased under the hypothesis of exogeneity of explanatory variables. We address this issues in section 5.1.

5. Assessing the effect of economic insecurity on planned fertility

The effect of economic insecurity on childbearing intentions is reported in Table 3, where the three measures of uncertainty related to job instability, household income and wealth are reported in columns 1, 2 and 3, respectively. We also provide a first attempt to consider the three dimensions all together in column 4.

As far as job insecurity is concerned, our results do not support early theoretical predictions according to which the rise in the opportunity cost of childbearing related to the higher levels of female education, participation, and earnings may be responsible for the fall in fertility. According to the conventional framework (see for example Willis 1973 and Becker 1981), childbearing should entail a lower opportunity cost for women holding unstable and/or low-paid positions. However, in Italy, precariously employed woman, i.e. woman holding a fixed-term or an atypical contract, have a significantly lower probability of having (more) children (Table 3, column 1) in respect to permanently employed women. The effect does not vary according to the motherhood condition, as precariousness reduces the estimated propensity to childbearing by about 5 percentage points, from 0.090, both in the presence or in the absence of children in the family.

This result may be explained as a combination of the worry of not being able to afford the expenses related to childbearing with the woman's fear of loosing her job, thereby causing a further worsening in the family's financial conditions. Bratti, Del Bono and Vuri (2005) show that in Italy about one out of four mothers employed during the pregnancy leave the labour market after the childbirth: the probability of coming back to work is higher for those working in the public sector – where open-ended employment contracts are more frequent - and living in a context with a more generous childcare system[12]. Results from the empirical studies we mentioned in sections 2 and 3 (see for example Dolado et al. 2002; Barbieri and Scherer 2005; Brandolini et al. 2007; Barbieri 2009) suggest that a relevant share of precariously employed new-mothers are concretely exposed to the risk of being definitively excluded from the labour market after the a pregnancy. The effect of

[12] It is worth noting that, as a consequence of a process of decentralization of social policies started in the 90s (the so-called "devolution", there are relevant differences in public welfare systems across Italian regions. See for example Ferrera (2005), Calamai (2009), Masseria and Giannoni (2010), Fiorillo and Sabatini (2011).

being unemployed is similar to that of job instability (coefficients and marginal effects are not statically different).

The condition of being inactive, i.e. out of the labour force, lowers the predicted probability of childbearing by 2.5 percentage points. Self-employment status, instead, is not significant. Our empirical analysis suggest that theoretical explanations pointing at the rise in women's opportunity cost of time as a major responsible in the fall of fertility tend to neglect some crucial aspects of women's labour precariousness and/or unemployment, specially in Mediterranean labour markets. According to the Italian legislation, temporary female workers with atypical contracts can rarely enjoy forms of sick leave or parental benefits. Anecdotal experience suggests that pregnancy can be cause for termination of the work relationship by the employer. Female atypical workers apparently face a trade-off between motherhood and participation in the labour market. As highlighted by Modena and Sabatini (2011), this choice has dramatic implications, because the job loss possibly caused by childbearing: a) may worsen the financial conditions of the family; b) can lead women into a "precariousness trap" or even an "unemployment trap". As argued by Del Bono et al. (2008), the job displacement caused by pregnancy may destroy all the worker's specific human capital, thereby worsening the future employability of women. We argue that the perspective of losing the job and/or of getting through the end of the month with greater (and possibly growing) difficulty may work as a strong dissuasive factor discouraging childbearing, which explains the decision to postpone childbearing even when the woman's participation to the labour market is limited and occasional and possibly related to low-paid and low-quality job positions.

As for the role of wealth, our results show that the higher is the index of wealth insecurity described in the previous Section, the lower are fertility intentions: a 1 percentage point increase in the household wealth uncertainty lowers planned fertility by 8 percentage points (from 0.091). Again there are not statistically significant differences between mothers and childless women. Household wealth acts as a buffer supporting childbearing intentions.

As expected, household income uncertainty also negatively affects the intention to have (more) children both for mothers and non-mothers. This result may be consistent with the claims of previous literature analyzing the effect of wages on childbearing decisions. Willis (1973) and Butz and Ward (1979) find a positive effect of income on for men and a negative one for females. In Italy, the main contribution to the household income is generally given by men, while women are primarily responsible for non-market services for children and older individuals. In other words, the so-called "male-beadwinner/female care-giver family model" seems to be still prevalent in the

Italian setting (Karamessini 2008). According to the *Time Use Survey* carried out by the Italian National Institute of Statistics (Istat), on average, women devoted about 76% of their time to domestic work in 2009, this proportion being 78% in 2002 and 85% in 1989. Considering both paid and unpaid work, Italian women work on average 75 minutes per day more than men (Burda et al. 2007). The time devoted to domestic activity is however higher than the European average. Even if our data do not allow us to distinguish between men's and women's income, it seems reasonable to assume household income insecurity to be strongly (and positively) dependent mainly on men's earnings. The negative effect of income insecurity is shown in column 3 of Table 3.

To check which of the three dimensions plays a major role in fertility decisions, in column 4 of Table 3 we report results of a model jointly accounting for our measures of job, household income and wealth insecurity. When these variables are included in a unique regression some differences between childless women and mothers come at play. The negative role of women's job instability is confirmed, even if there is a slight decrease in its marginal effect on fertility intentions equal to 4.2 and 5.0 percentage points for precarious mothers and non mothers, respectively (from 0.088). Second, wealth insecurity affects childbearing decisions solely for women with no children, lowering the likelihood of planning a first childbirth by 8.0 percentage points. That is, the more a childless woman suffers from wealth insecurity, the higher is the likelihood of a postponement – or even a renunciation – of the first childbearing. This result confirms the importance of the buffering effect possibly exerted by real and financial wealth. Third, and more importantly, the income effect acts only for mothers, reducing childbearing intentions by about 9 percentage points.

The household wealth can be considered as a cumulated variable deriving from real and financial investment decisions that a family planned over the life cycle, so that a low level of wealth hampers the major change entailed by the transition to a first child. On the other hand, household income can also reflect temporary shocks that impact on the transition to higher birth order, but do not necessarily affect the decision to become a mother for the first time.

In all the specifications employed in Table 3, women having no children are more willing to plan a first childbirth. Consistently with findings from Goldstein et al. (2003), our results show that Italian women would like to have (more) children even if they show lowest-low fertility levels (Billari and Kohler 2004). Marital status is positively related to childbearing, as the majority of Italian couples conceive a baby solely after marriage. Couples in which the man has a bachelor's degree (and beyond) are more likely to want (more) children. In addition to the better economic conditions probably related to higher levels of education (which are controlled for within the regressions) this

finding may be explained as a consequence of the division of domestic labour, which is likely to be more equal in couples where men are better educated. The share of domestic work performed by formally employed women forms a critical piece of current cross-national explanations for low fertility (Miller Torr and Shorr 2004). According to McDonald (2000), the decline in fertility in high-income countries is the outcome of a conflict or inconsistency between high levels of gender equity in education and labour market, and low levels of gender equity in the family and family-oriented institutions.

Despite the high levels of gender equity in education and labour market participation, Italy is still charactedized by low levels of gender equity in the family. Drawing on two waves of the Italian Time Use Survey, Mancini e Pasqua (2009) show that the increase in education equality within Italian couples caused a rise in father's involvement in childcare and children education between 1988 and 2002.. As regards men's occupational status, couples in which the man is self-employed show a higher probability of planning childbearing with respect to those where men are employed with open-ended contracts, only along the job insecurity measure. Self-employed men in our sample are mainly professionals and entrepreneurs, i.e. men with better economic resources for raising children. This result thus seems consistent with findings from previous literature highlighting the significant and positive effect of men's income on the family's childbearing intentions. When considering the three measures of instability all together, however, the variable is not statistically significant.

Male job instability seems not to have effect on the intention to have children. This finding may be viewed as a result of the institutional features of the Italian labour market and of the low levels of gender equity in the family. Precarious men are probably aware that childbearing will not hamper their career perspectives: for example, differently from their partners, they will not face any risk of lay-off or non-renewal of their contract, neither they have to fear the extra-burden connected to childcare and domestic work, which will be borne mostly by women (possibly with the support of the extended family).

5.1 Robustness checks

The analysis of the association between women's occupational status, and in particular the status of being precarious, and fertility may be driven by unobserved factors. Women with a precarious job are not a random sample of the population and compared to other women they may have dissimilar observed and unobserved characteristics, such as preferences for family size, differences in fecundity. Moreover, there may be a problem of reverse causality: women who are more family

oriented may choose stable, but less motivating, jobs. If we neglect to control for these issues, the estimates may be biased. Before addressing endogeneity issues, we run a multinomial logit model in order to investigate the determinants of female occupational status, with particular regard for job instability. The dependent variable has five categories: secure employment (employees with open ended contract), unemployed, insecure employment (employees with a fixed-term contract or atypical workers), self-employed, inactive. Independent variables capture individual, family and regional characteristics. In particular, we include women's educational level, type of university degree, region of residence, education cohorts (i.e. the year in which individuals finished their educational career), characteristics of the family of origin, the regional female unemployment rate, and the regional rate of precariousness[13]. Education cohorts allow us to compare individuals at similar "labour-market cycle" stage: given the reforms of the Italian labour market, labour market institutions and conditions are very different for different years in which individuals enter the labour market (Berloffa, Modena and Villa 2011). As regards the family background, we considered two main channels through which the family of origin can affect the individual's occupational status: 1) the cultural channel works through the values attached to the different alternatives (e.g. intrinsic value of "secure" labour contracts), through a better knowledge of important information, or through the stimulus of non-cognitive skills. 2) The social channel influences preferences, opportunities and choices through peer-effects and network-related advantages such as informal channels of job-search (Berloffa, Modena, Villa 2011). As a proxy for the cultural channel we use mother's education, as a proxy for the social channel it is common to consider the father's occupation.

Table 4 presents the results of the multinomial logit for female occupational status. We focus on the determinants of being precarious. Results are in line with what one would expect. Having an upper secondary school diploma or a university degree in medicine, engineering, economics, political science, sociology, or law decreases the probability of holding an insecure job position. Living in the South or in the Islands increases the probability of being a temporary worker, as does the regional rate of precariousness. The family background seems to have no effect on job insecurity, while having finished the educational career in the first half of the 80s, or in the periods 1995-98, 2003-2008 significantly increases the probably of being insecure (the former is statistically significant at the 10.4% level). This result can be interpreted as a consequence of labour market reforms carried out in the last two decades (Berton et al. 2009; Berloffa and Villa 2010): in 1984 the

[13] The share of precarious workers over the labour force in the region of residence. Precarious workers include: *parasubordinati, interinali*, irregual workers. Our calculation is on the basis of data collected from Inps, Ebitemp and Istat respectively.

CFL (*contratto di formazione e lavoro*) was introduced[14], in 1995 a special pension scheme was introduced for those self-employed workers characterised by a close and continuous relation with a single company (*co.co.co*), in 1997 temporary agency work (*lavoro interinale*) was introduced for the first time in Italy (within the so-called *Pacchetto Treu*), in 2003 the so-called *Legge Biagi* further enlarged the spectrum of atypical contracts (see Berloffa and Villa for a comprehensive review of recent Italian labour market reforms).

In order to address endogeneity issues, we perform a regression-based test to check whether women's employment instability is endogenous. Given the results of the multinomial logit, we use the educational cohort as an instrument for female job insecurity. In particular, we construct a dummy indicating whether the woman has finished her educational career in the periods 1981-85, 1995-98, or 2003-2008. Since an instrumental variables estimator for probit and logit models with endogenous regressors is not consistent (Dagenais 1999; Lucchetti 2002; Wilde 2008), we prefer to estimate IV in the Linear Probability Model. Results are reported in Table 5 The test fails to reject absence of endogeneity (the t test on the predicted residuals from the first stage is t=0.11, P>|t|=0.911), hence we use the probit model (2) to estimate the effect of women's employment instability on childbearing intentions.

Another issue to be addressed is the endogeneity of household income (and hence income insecurity). We use the occupational status of the father of the male as an instrument for household income (the share of male's income on household income is on average higher than the female's one). The importance of the family background to achieve important economic outcomes has been largely documented by the literature on intergenerational mobility: the income elasticity of children with respect to parents' income is positive, and the probability of children to access given economic conditions is strongly affected by the parents' one (for a survey see Corak 2006; for Europe and Italy see e.g. Franzini and Raitano, 2010; Giuliano, 2008; Brunetti and Fiaschi, 2010).
As for female precariousness, we performed a regression based test to check the endogeneity of household income insecurity (see Table 5). The occupational status of the father of the male[15] (whether he was manager, member of profession or employer) is found to be strongly and negatively correlated with household income insecurity (t=-4.13). Since the coefficient on the first stage predicted residuals is not statistically different from zero, we can conclude that income insecurity is not endogenous.

[14] CFL is a fixed-term contract with reduced social contributions, a lower entry wage and no firing costs (with respect to open-ended contracts) to be used for the hiring of young unemployed (aged less than 30).

[15] The occupational status of the parents refer to the time at which parents were the age of the interviewee individual.

We tested separately the endogeneity of female job insecurity and household income insecurity. We can also test for endogeneity of multiple explanatory variables. For each suspected endogenous variable, we obtain the reduced form residuals and we then test for the joint significance of these residuals in the structural equation (Wooldridge 2002). The F test indicates that both suspected explanatory variables are exogenous (F(2,3306)=0.06, Prob>F=0.9408).

6. Conclusions

Over the last two decades more and more Italian women entered the labour force, as a consequence of their major enrolment in education; at the same time the average number of children per women fluctuated around 1.4 since the early nineties. This paper offers an explanation for the drop in fertility mainly related to the fact that the labour market reforms implemented in the mid of the nineties introduced new forms of temporary labour contracts. The concept of flexibility was at the basis of these contracts, reserved to young individuals and females. They also were characterized by low levels of maternal and sick leave protection clearly penalizing women and discouraging them from having children.

In this paper we construct three measures of economic uncertainty related to job and household wealth and income insecurity. We adopt a macro-micro data based approach, on the grounds that the three measures are derived from micro-data at the couple level and then summarized using a macro methodology of weighting components.

We show that job instability of women negatively affects the propensity to have (more) children; the effect is not statistically significant for men, suggesting the persistence of the breadwinner model in the Italian setting with males being primarily responsible for the household budget. As for the other dimensions of insecurity, wealth insecurity undermines the transition from zero to one child: wealth is in fact a variable resulting from investments planned and fulfilled over the life cycle. Low levels of wealth discourage the first childbearing which is likely to have the major impact on the family's economic conditions. On the other hand, uncertainty about income, which is affected by temporary shocks, is shown to matter solely for mothers. It does not discourage the first childbearing, but it seems to significantly and negatively affect successive pregnancies.

Our results suggest that policies aimed at increasing fertility levels should account for – and try to reduce - insecurity about women's future employment and the household income and wealth. More specifically, public actions aimed at raising fertility should take into account appropriate labour market policies tackling the rising incidence of women's precariousness.

Table 1. Mismatch between actual and wished for number of children

	2004	2008 (first choice)	2008 (second choice)	2008 (third choice)	2008 (all choices)
Insufficient income	35.0%	19.9%	31.8%	9.9%	35.6%
Incompatibility with work		12.8%	19.0%	46.6%	33.0%
Incompatibility with work (female)	11.0%				
Incompatibility with work (male)	12.0%				
Unsuitable home	14.6%	1.5%	19.9%	17.7%	14.4%
No regular help from relatives	7.1%	1.7%	4.4%	9.6%	6.0%
No nursery schools nearby or too expensive	2.8%		4.1%	1.5%	2.1%
Caring for other relatives	2.1%	2.3%		6.8%	4.1%
Lack of agreement with partner on number of children		1.1%			1.1%
Biological/physical reasons		47.0%	5.2%		49.1%
Other reasons	39.1%	13.7%	15.6%	8.0%	22.3%
No. of women	168	74	30	19	74

Source: Our calculation from the SHIW, 2004 and 2008.
Note: sample weights included.

Table 2. Descriptive statistics					
	Obs.	Mean	Std. Dev.	Min	Max
Plan to have (more) children	5063	0.17	0.37	0	1
Married	5063	0.97	0.18	0	1
Number of children	5063	1.30	1.04	0	7
Presence of grandparents	5063	0.01	0.10	0	1
Female's age	5063	37.26	5.73	16	50
Male's age	5063	40.73	6.50	18	74
Male: none, elementary and middle school education	5063	0.50	0.50	0	1
Male: high school (diploma)	5063	0.41	0.49	0	1
Male: bachelor's degree and beyond	5063	0.10	0.30	0	1
Female: none, elementary and middle school education	5063	0.44	0.50	0	1
Female: high school (diploma)	5063	0.45	0.50	0	1
Female: bachelor's degree and beyond	5063	0.11	0.32	0	1
Male: inactive	5063	0.01	0.12	0	1
Male: unemployed	5063	0.04	0.19	0	1
Male: employed with stable job	5063	0.68	0.47	0	1
Male: precarious	5063	0.06	0.23	0	1
Male: self-employed	5063	0.21	0.41	0	1
Female: inactive	5063	0.40	0.49	0	1
Female: unemployed	5063	0.05	0.22	0	1
Female: employed with stable job	5063	0.40	0.49	0	1
Female: precarious	5063	0.06	0.25	0	1
Female: self-employed	5063	0.08	0.27	0	1
Wealth insecurity	5063	0.45	0.29	0	1
Income insecurity	5063	0.45	0.29	0	1
North	5063	0.48	0.50	0	1
Center	5063	0.18	0.38	0	1
South and Isles	5063	0.34	0.47	0	1
Year of the survey: 2002	5063	0.20	0.40	0	1
Year of the survey: 2004	5063	0.34	0.48	0	1
Year of the survey: 2006	5063	0.34	0.47	0	1
Year of the survey: 2008	5063	0.11	0.32	0	1

Source: Our calculation from the SHIW, 2002-04-06-08.
Note: sample weights included.

Table 3. The effect of economic insecurity on fertility plannings				
	(1)	(2)	(3)	(4)
No children	0.213***	0.209***	0.166***	0.185***
	(0.0258)	(0.0351)	(0.0327)	(0.0358)
Female: inactive	-0.0244*			-0.00672
	(0.0137)			(0.0154)
Female: unemployed	-0.0507***			-0.0382*
	(0.0162)			(0.0199)
Female: precarious*no child	-0.0558***			-0.0495***
	(0.0168)			(0.0186)
Female: precarious*child	-0.0507***			-0.0418**
	(0.0175)			(0.0195)
Female: self-employed	-0.000617			-0.00188
	(0.0205)			(0.0203)
Male: precarious	0.00889			0.0156
	(0.0240)			(0.0252)
Male: self-employed	0.0359**			0.0216
	(0.0162)			(0.0160)
Wealth insecurity* no child		-0.0823**		-0.0694*
		(0.0338)		(0.0365)
Wealth insecurity* child		-0.0798***		-0.0264
		(0.0278)		(0.0314)
Income insecurity*no child			-0.0795**	-0.0131
			(0.0395)	(0.0459)
Income insecurity*child			-0.116***	-0.0876**
			(0.0317)	(0.0386)
Married	0.0480***	0.0409**	0.0440***	0.0415**
	(0.0153)	(0.0175)	(0.0165)	(0.0165)
Male: none, elementary and middle school education	-0.0699***	-0.0624***	-0.0576***	-0.0575***
	(0.0217)	(0.0225)	(0.0221)	(0.0220)
Male: high school (diploma)	-0.0473***	-0.0452**	-0.0436**	-0.0413**
	(0.0181)	(0.0187)	(0.0183)	(0.0183)
Male inactive	yes	yes	yes	yes
Male unemployed	yes	yes	yes	yes
Female's education	yes	yes	yes	yes
Presence of grandparents	yes	yes	yes	yes
Female's age	yes	yes	yes	yes
Female's age sq	yes	yes	yes	yes
Geographical dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Obs			5063	
Pseudo R2	0.283	0.281	0.281	0.288

Source: Our calculation from the SHIW, 2002-04-06-08.

Note: Marginal effects reported. Robust standard errors clustered at the household level in brackets.

*** p<0.01, ** p<0.05, * p<0.1

Table …. Multinomial logit for the female occupational codition

	Insecure
High school (diploma)	-0.789***
	(0.217)
Bachelor's degree and beyond*type of degree1	-1.467***
	(0.513)
Bachelor's degree and beyond*type of degree2	-0.320
	(0.340)
Father's high occupation	0.366
	(0.297)
Mother's med/high education	-0.0149
	(0.296)
North	-1.183***
	(0.434)
Center	-1.222***
	(0.388)
Regional rate of precariousness	14.58***
	(3.869)
Regionale female unemp.rate	-0.00237
	(0.0308)
Education cohorts	
1976-80	0.00120
	(0.358)
1981-85	0.560
	(0.344)
1986-90	0.0866
	(0.353)
1991-94	-0.0465
	(0.400)
1995-1998	0.732*
	(0.433)
1999-2002	0.707
	(0.557)
2003-08	2.132***
	(0.630)
Constant	-3.723***
	(1.013)
Observations	4229
Wald chi2(64)	696.25
Prob>chi2	0
Pseudo R2	0.131
Observations	4229

Source: Our calculation from the SHIW, 2002-04-06-08.

Note: Base category: secure employment. Results for categories unemployed, self-employed, inactive are omitted. Robust standard errors clustered at the household level in brackets. Sample weights included.

*** p<0.01, ** p<0.05, * p<0.1

Table ---. Testing for endogeneity

Suspected explanatory variable	Female job insecurity	Household income insecurity
First stage		
education cohorts ('81-'85,'95-'98,'03-'08)	0.033	
	(0.012)***	
male's father high occupation		-0.071
		(0.017)***
Second stage		
predicted residulas	0.052	-0.189
	(0.467)	(0.4)
female precarious	-0.08	
	(0.025)***	
income insecurity		-0.122
		(0.034)***
F-test (multiple engoneous variables)		
F(2,3306)	0.06	
Prob>F	0.941	
Observations	5063	4320

Source: Our calculation from the SHIW, 2002-04-06-08.

Note: Linear Probability Model. Robust standard errors clustered at the household level in brackets. Sample weights included.

*** p<0.01, ** p<0.05, * p<0.1

References

Adsera, A. (2005). Vanishing Children: From High Unemployment to Low Fertility in Developed Countries. *American Economic Review*. Papers and Proceedings 95, 189-194.

Aguero J.M., Marks M.S. (2008). Motherhood and female labor force participation: evidence from infertility shocks. *American Economic Review*, 98, 2, 500-504.

Ahn N., Mira P. (2002). A note on the changing relationship between fertility and female employment rates in developed countries. *Journal of Population Economics*, 15, 4, 667-682.

Amudeo-Dorantes C., Serrano-Padial R. (2010). Labor market flexibility and poverty dynamics. *Labour Economics*, 17, 632–642.

Amuedo-Dorantes C., Kimmel J. (2005). The motherhood wage gap for women in the United States: The importance of college and fertility delay. *Review of Economics of the Household*, 3, 1, 17-48.

Bank of Italy (2009). *Relazione annuale sul 2008*. Rome: Bank of Italy.

Bank of Italy (2010) *Italian household budgets in 2008*, Technical report.

Barbieri P. (2009). Flexible Employment and Inequality in Europe. *European Sociological Review*, 25, 6, 621-628.

Barbieri P., Scherer, S. (2005). Le conseguenze sociali della flessibilizzazione del mercato del lavoro in Italia. *Stato e Mercato,* 74, 291-321.

Barbieri, P., Scherer, S. (2009). Labour Market Flexibilization and its Consequences in Italy. *European Sociological Review,* 25(6), 677-692

Becker G.S. (1965). A theory of the allocation of time. *Economic Journal*, 75, 493-517.

Becker G.S. (1981). *A Treatise on the Family*, Harvard University Press, Cambridge, MA.

Becker G.S., Lewis H.G. (1973). On the interaction between the quantity and quality of children. *The Journal of Political Economy*, 81, 2, S279-S288.

Benach J., Benavides F. J., Platt S., Diez-Roux A., Muntaner, C. (2000). The health-damaging potential of new types of flexible employment: A challenge for public health researchers. *American Journal of Public Health*, 90(8), 1316–1317.

Berloffa G., Modena F. (2011a). Economic well-being in Italy: the role of income insecurity and intergenerational inequality. *Journal of Economic Behavior and Organization*, in press doi:10.1016/j.jebo.2010.12.022.

Berloffa G., Modena F. (2011b). Measuring (in)security in the event of unemployment: are we forgetting someone?, paper presented at the IARIW-OECD Conference "Economic Insecurity: Measurement, Causes and Policy Implications", Paris 22-23 November.

Berloffa G., Villa P. (2010). Differences in equivalent income across cohorts of households: evidence from Italy. *Review of Income and Wealth*, 56, 4, 693-714.

Berton F. Richiardi M, Sacchi, S. (2009). *Flex-insecurity. Perché in Italia la flessibilità diventa precarietà*, Bologna, Il Mulino.

Billari F.C. and Kohler H.P. (2002). The impact of union formation dynamics on first births in West Germany and Italy: are there signs of convergence?, in: *Dynamics of Fertility and Partnership in Europe: Insights and Lessons from Comparative Research*, Klijzing E., Corijn M., eds., United Nations, Geneva/New York, 43–58.

Billari F.C., Kohler H.P. (2004). Patterns of low and lowest low fertility in Europe, *Population Studies*, 58, 2, 161-176.

Blossfeld H.P. and De Rose A. (1992). Educational expansion and the changes in entry into marriage and motherhood: the experience of Italian women, *Genus*, 48, 3-4, 73–89.

Booth, A. L., Francesconi, M., Frank, J. (2002). Temporary Jobs: Stepping Stones or Dead Ends? *The Economic Journal*, 112, F189–F213.

Bossert W., C. D'Ambrsio (2009). Measuring economic insecurity, ECINEQ working paper WP 111.

Brandolini A., Casadio P., Cipollone P., Magnani M., Rosolia A., Torrini R. (2007). Employment growth in Italy in the 1990s: institutional arrangements and market forces. In Acocella N., Leoni R. (Eds.), *Social Pacts, Employment and Growth*, Physica-Verlag, Heidelberg, 31-68.

Bratti M., Del Bono E. , Vuri D. (2005). New mothers' labour force participation in Italy: The role of job characteristics, *LABOUR*, 19, s1, 79-121.

Brunetti I., Fiaschi D. (2010). Intergenerational mobility in Italy, *Discussion Papers Department of Scienze Economiche* N.102, University of Pisa.

Bumpass L.L. and Mburugu E.K. (1977). Age at marriage and completed family size, *Social Biology*, 24, Spring, 31–37.

Bumpass L.L., Rindfuss R.R. and Janosik R.B. (1978). Age and marital status at first birth and the pace of subsequent fertility marriage and completed family size, *Demography*, 15, 1, 75–86.

Burda M., Hamermesh D. S., Weil P. (2007). Total work, Gneder and Social Norms, NBER Working Papers.

Butz W., Ward M. (1979) The emergence of countercyclical U.S. Fertility, *American Economic Review*, 69, 3, 318-328.

Calamai, L. (2009). The link between devolution and regional disparities: evidence from the Italian regions. Environment and Planning A 41 (5), 1129-1151.

Catalano, R. (1991). The health effects of economic insecurity. *American Journal of Public Health*, 81, 1148-52.

Cipollone, P. (2001). Is the Italian labour market segmented?. Bank of Italy, Temi di discussione 400.

Corak M. (2006). Do Poor Children Become Poor Adults? Lessons from a Cross Country Comparison of Generational Earnings Mobility, *IZA Discussion Paper* N.1993.

D'Addio, A. C., Rosholm, M. (2005). Exits from Temporary Jobs in Europe: A competing risks analysis. *Labour Economics,* 12, 449–468.

D'Addio, A., D'Ercole, M. (2005). Policies, Institutions and Fertility Rates: A Panel Data Analysis for OECD Countries.OECD Economic Studies 9 (2), 7-45.

Dagenais M. G. (1999). Inconsistency of a proposed nonlinear instrumental variables estimator for probit and logit models with endogenous regressors, *Economics Letters,* 63, 19–21.

Dalla Zuanna G. (2004). Few children in strong families. Values and low fertility in Italy, *Genus*, 60, 1, 39-70.

de la Rica S., Iza A. (2005). Career planning in Spain: do fixed-term contracts delay marriage and parenthood?, *Review of Economics of the Household*, 3, 49-73.

Del Boca D., Locatelli M. (2006). The determinants of motherhood and work status: A survey, IZA Discussion Papers 2414, Institute for the Study of Labor (IZA).

Del Boca D., Pasqua S., Pronzato C. (2007). The impact of institutions on motherhood and work, CHILDWorking Papers 06, Centre for Household, Income, Labour and Demographic economics.

Del Bono, E., Weber, A., Winter-Ebmer, R. (2008). Clash of Career and Family: Fertility Decisions after Job Displacement. CEPR Discussion Paper 6719.

Dolado, J. J., Garcìa-Serrano, C., Jimeno, J. F. (2002). Drawing Lessons from the Boom of Temporary Jobs in Spain. *The Economic Journal*, 112, F270–F295

Engelhardt H., Prskawetz A. (2004). On the changing correlation between fertility and female employment over space and time, *European Journal of Population*, 20, 35–62.

Ermisch J.F. (1989) Purchased child care, optimal family size and mother's employment: theory and econometric analysis, *Journal of Population Economics*, 2, 79-102.

Fent, D., Diaz, B. A., Prskawetz, A. (2011). Family Policies in the Context of Low Fertility and Social Structure. Vienna Institute of Demography Working paper N. 2/2011.

Ferrera M. (2005) *The Boundaries of Welfare. European Integration and the New Spatial Politics of Social Protection*. Oxford: Oxford University Press.

Ferrera M., Gualmini E. (2004). *Rescued by Europe? Social and Labour Market Reforms from Maastricht to Berlusconi*. Amsterdam: Amsterdam University Press.

Fiorillo, D., Sabatini, F. (2011). Quality and quantity: the role of social interactions in individual health. *Social Science & Medicine* 73, 1644-1652.

Franzini M., Raitano M. (2010). Non solo istruzione. Condizioni economiche dei genitori e successo dei figli nei paesi europei, in Checchi D. (a cura di), *Immobilità diffusa*, Il Mulino, Bologna, 11-51.

Giuliano P. (2008). Culture and the Family: An Application to Educational Choices in Italy, *Rivista di Politica Economica*, 98, 4, 3-37.

Goldstein J., Lutz W., Testa M.R. (2003). The emergence of sub-replacement family size ideals in Europe, *Population Research and Policy Review*, 22, 479-496.

Guadalupe, M. (2003). The hidden costs of fixed term contracts: the impact on work accidents. *Labour Economics,* 10, 339–357.

Gustafsson S. (2001). Optimal age at motherhoord. Theoretical and empirical considerations on the postponement of maternity in Europe, *Journal of Population Economics*, 14, 2, 225-247.

Gustafsson S. (2005). Having kids later. Economic analyses for Industrialized countries, *Review of Economics of the Household*, 3, 5-16.

Gustafsson, S. and C., Wetzels (2000). Optimal age at first birth: Germany, Great Britain, the Netherlands and Sweden. In Gustafsson S. and Meulders D.E. (2000), Gender and the Labour Market, Mac Millan, London.

Hakim, C. (2003). Models of the Family in Modern Societies: Ideals and Realities, June, Ashgate.

Heckman J.J. , Walker J.R. (1990). The relationship between wages and income and the timing and spacing of births: Evidence from Swedish longitudinal data, *Econometrica*, 58, 1411-1441.

Hotz V.J., Klerman J.A., Willis R.J. (1997). The economics of fertility in developed countries, in: *Handbook of Population and Family Economics*, Rosenzweig M.R., Stark O., eds., 275-347.

Istat (2010). *Time Use Survey*, Roma: Istat.

Karamessini M. (2008) Still a distinctive southern European employment model?. *Industrial Relations Journal*, 39, 6, 510-531.

Kertzer, D. I., White, M. J., Bernardi, L., Gabrielli, G. (2009). Italy's Path to Very Low Fertility: The Adequacy of Economic and Second Demographic Transition Theories. *European Journal of Population* 25, 89–115.

Kim M-H., K., Kim C.-Y., Park J.-K., Kawachi, I. (2008). Is precarious employment damaging to self-rated health? Results of propensity score matching methods, using longitudinal data in South Korea. *Social Science & Medicine*, 67, 1982–1994.

Kim, M-H., K., Kim, C.-Y., Park, J.-K., Kawachi, I. (2008). Is precarious employment damaging to self-rated health? Results of propensity score matching methods, using longitudinal data in South Korea. *Social Science & Medicine,* 67, 1982–1994.

Lucchetti R. (2002). Inconsistency of naive GMM estimation for QR models with endogenous regressors. *Economics Letters,* 75, 179–185.

Mancini A.L, Pasqua S. (2009). Asymmetries and interdependencies in Time use between Italian Spouses, CHILD Working papers.

Marini M.M. (1984). The order of events in the transition to adulthood, *Sociology of Education*, 57, 63–84.

Marini M.M. , Hodsdon P.J. (1981). Effects of the timing of marriage and first birth on the spacing of subsequent births, *Demography*, 18, 4, 529–548.

Masseria, C. Giannoni, M. (2010). Equity in access to health care in Italy: a disease-based approach. *European journal of public health*, 1101-1262.

McDonald, P. (2000). Gender Equity in Theories of Fertility Transition. *Population and Development Review,* 26, 3, 427-439.

Menendez M., Benach J., Muntaner C., Amable M., O'Campo P. (2007). Is precarious employment more damaging to women's health than men's?, *Social Science & Medicine*, 64, 776–781.

Menendez, M., Benach, J., Muntaner, C., Amable, M., O'Campo, P. (2007). Is precarious employment more damaging to women's health than men's? *Social Science & Medicine,* 64, 776–781.

Micheli G.A. (2000). Kinship, Family and Social Network: The anthropological embedment of fertility change in Southern Europe. Demographic Research 3, Article 13.

Miller Torr, B., Shorr, S. E. (2004). Second Births and the Second Shift: A Research Note on Gender Equity and Fertility. *Population and Development Review,* 30(1), 109-130.

Mincer J. (1963). Opportunity costs and income effects, in: *Measurement in Economics*, Christ C., ed., Stanford University Press, Stanford, CA.

Modena F., Sabatini F. (2011). I Would if I Could: Precarious Employment and Childbearing Intentions in Italy. *Review of Economics and Household*, in press, doi:10.1007/s11150-010-9117-y.

Morgan S.P. (2003). Is low fertility a twenty-first-century demographic crisis? *Demography*, 40, 589–604.

Ogawa, N. (2003). Japan's changing fertility mechanisms and its policy responses. Journal of Population Research 20 (1), 89-106.

Osberg L. (1998). Economic Insecurity, SPRC Discussion Paper No. 88, Social Policy Research Centre, University of New South Wales, Sydney, Australia.

Osberg L. (2010). Measuring Economic Insecurity and Vulnerability as Part of Economic Well-Being: Concepts and Context, Economic Insecurity, Demography and Well-Being, 31st General Conference of IARIW, St-Gallen, Switzerland.

Osberg L., Sharpe A. (2011). Moving from a GDP-based to a well-being based metric of economic performance and social progress: results from the Index of Economic Well-Being for OECD countries 1980-2009, CSLS Research Report 2001-12.

Prioux, F. (2004). Recent Demographic Developments in France. Population 59 (5), 595-617.

Rondinelli, C., Zizza, R. (2011). (Non)persistent effects of fertility on female labour supply. Bank of Italy working paper N. 783.

Rosenzweig M.R. (1982). Educational, subsidy, agricultural development, and fertility change, *The Quartely Journal of Economics*, 97, 1, 67-88.

Routledge, B., von Amsberg, J. (2003). Social Capital and Growth. Journal of Monetary Economics 50 (1), 167-193.

Sabatini, F. (2008). Social Capital and the quality of economic development. *Kyklos* 61 (3), 466-499.

Sabatini, F., Antoci, A., Sodini, M. (2011). The Solaria Syndrome: Social Capital in a Hyper-technological Growing Economy. *Journal of Economic Behavior & Organization*. Doi:10.1016/j.jebo.2010.12.018.

Scherer S. (2009). The Social Consequences of Insecure Jobs, *Social Indicator Research*, 93, 527-547.

Schultz T.P. (1985). Changing world prices, women's wages, and the fertility transition: Sweden, 1980-1910, *The Journal of Political Economy*, 93, 6, 1126-1154.

Schultz T.P. (2001). The fertility transition: Economic explanations, Discussion Paper, 833, Economic Growth Center, http://www.econ.yale.edu/»egcenter/research.htm.

Skirbekk V., Kohler H.P. and Prskawetz A. (2004). Birth month, school graduation, and the timing of births and marriages, *Demography*, 41, 3, 547–568.

Stiglitz J.E., Sen A., Fitoussi J.P. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress, OECD (www. stiglitz-sen-fitoussi. fr).

Tang, Z. (2001). Cultural Influence, Economic Security, and the Fertility Behavior of the Chinese in Canada. Canadian Studies in Population, 28 (1), 35-67.

United Nations Department of Economic and Social Affairs (2008). *World Economic and Social Survey 2008. Overcoming Economic Insecurity*, downloaded from http://www.un.org/en/development/desa/news/policy/wess-2008.shtml.

Wilde J. (2008). A note on GMM estimation of probit models with endogenous regressors, *Economics Letters,* 49, 471–484

Willis R.J. (1973). A new approach to the economic theory of fertility behaviour, *Journal of Political Economy*, 81, 2, S14-S64.

Wooldridge, J. (2002). Econometric analysis of cross-section and panel data. Cambridge, MA: The MIT Press.

Wooldridge J. (2003). *Introductory Econometrics: A Modern Approach*. South-Western College Publishing.