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Job instability and family planning: insights from the Italian puzzle

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Abstract - This paper carries out an investigation into the socio-economic determinants of couples' childbearing decisions in Italy. Since having children is in most cases a "couple matter", the analysis accounts for the characteristics of both the possible parents. Our results do not support established theoretical predictions according to which the increase in the opportunity cost of motherhood connected to higher female labour participation is responsible for the fall in fertility. On the contrary, the instability of the women's work status (i.e. their being occasional, precarious, and low-paid workers) reveals to be a significant dissuasive deterrent discouraging the decision to have children. Couples with unemployed women are less likely to plan childbearing as well. Other relevant explanatory variables are current family size and the strength of family ties.

JEL Codes: C25, J13, Z1

Keywords: Fertility, family planning, parenthood, childbearing, participation, job instability, labour precariousness, social capital, Italy.

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1. Introduction

Sometime in the next few years (if it hasn't happened already) the world will reach a milestone: half of humanity will be having only enough children to replace itself. That is, the fertility rate of half countries will be 2.1 or below, making the growth of their population slow down and eventually stabilize. This is not necessarily a bad news. According to the United Nations Population Division (2009), fast population growth, fueled by high fertility, hinders the reduction of poverty and the achievement of other development goals. However, in countries experiencing a dramatic population ageing like Italy, the fall in fertility brings about some worrying side effects. First, low fertility substantially reduces the size of the labour force. Second, the decline in the workforce blights the actuarial sustainability of the current pension system. Furthermore, with very low fertility, the fall in the labour supply is most severe at the young ages. Young workers are the main assimilators of new technology, and countries that have a shortage of young skilled workers are more vulnerable to competition (McDonald, 2008, McDonald and Temple, 2006).

Theory commonly relates the fall in fertility to the rise of female participation to the labour market (Willis, 1973, Becker, 1981, Cigno, 1991). In the 70s, consistently with such predictions, the higher level of education, and the related prospects of better work positions and higher earnings, raised the opportunity cost of not working, thereby causing a postponement of childbearing decisions in turn leading to a fall in fertility rates (Adsera, 2004, D'Addio and D'Ercole, 2005).

However, the relationship between female participation and fertility has changed significantly in the last two decades. In most EU countries, the sign of the correlation has now become positive (Ahn and Mira, 2002, Morgan, 2003, Engelhardt et al., 2004, Billari and Kohler, 2004; for an alternative view see Kögel, 2004). Still, the shift does not concern Italy, which, despite having one of the lowest female participation rates in Europe, still suffers from a markedly lower fertility. The Italian exception has been explained as the result of institutional and policy differences in respect to Nordic countries where more generous protection schemes have been implemented to reconcile motherhood with work (Bernhardt, 1993, Gauthier, 1996, Adsera, 2004, Engelhardt and Prskawetz, 2004, Del Boca and Sauer, 2009).

The empirical literature investigating the fall in fertility focuses almost only on women's economic conditions and on actual fertility rates, somewhat neglecting the facts that: 1) in EU countries, the desired fertility rate is significantly higher than the actual rate (Eurostat, 2001, Adsera, 2006). 2) Family planning decisions are in most cases – as the term itself suggests - a family matter or, better, a "couple-matter".

Here we argue that, besides female participation, on the one side, and the pressure of the "biological clock" and of social and cultural factors, on the other side, one of the main issues which a woman addresses when planning the decision to have a child is: can *we* – i.e. my partner and me - afford it? Thus, rather than analyzing the labour market participation only of women - which has already been fruitfully addressed by a series of previous studies – we aim at adding some new insights to the debate by focusing on the "economic sustainability" of childbearing decisions at the family level.

This choice is also related to the fact that, in very most cases, childbearing is conceived in the context of a steady relationship. In Italy, aspiring single mothers and fathers are in fact still quite rare and, in some case, even thwarted by law.

The empirical studies tracing back the differences between Northern and Southern Europe to the institutional framework of female participation reasonably account for social policies related to childcare assistance, parental leave arrangements, and the availability of part-time positions for women. Besides few exceptions (see for example Adsera, 2004), the stability of the aspiring parents' work status or, in other words, their "labour precariousness", has so far been neglected. It is worth noting that the concept of labour precariousness is in general disregarded by the conventional literature, which considers it more as an obvious and somewhat desirable side effect of flexibility rather than as a crucial factor of workers' well-being.

In this paper, together with a series of conventional socio-economic factors already considered by previous studies, like for example employment and marriage, we test the role of new labour market-related variables which may influence the economic sustainability of the decision to have children. In particular, we focus on the *stability* of the work status. The main hypothesis we want to test here is that having a precarious job (i.e. unstable, low paid, and with scarce guarantees) is a dissuasive deterrent from planning parenthood, instead of encouraging childbearing through a decrease in its opportunity cost for women.

Then, we carry out a first exploration of the role of the strength of family ties, or what the literature generally refers to as "bonding social capital". Social capital has in fact been proven to be a significant variable for the explanation of differences in the agents' behaviour across the Italian regions (Heliwell and Putnam, 1995, Guiso et al., 2004, Peri, 2004, Sabatini, 2008).

Raw data are drawn from the Survey of Household Income and Wealth (SHIW) carried out by the Bank of Italy which covers 7,768 households composed of 19,551 individuals and 13,009 income-earners. Social capital is measured by latent indicators synthesized through principal component analyses performed on survey data collected by the Italian National Institute of Statistics (Istat) in 2006. Relevant territorial indicators are taken from several other national data sources including the Istat's Quarterly survey on the labour force.

Based on probit models, our results contradict conventional economic theory predicting that the increase in the opportunity cost of motherhood connected to higher participation and wage rates necessarily leads to a decrease in fertility. Rather, we find evidence that being unemployed is a significant deterrent from planning to have children. More in general, women's labour instability discourages childbearing aspirations. Couples where women are precarious (i.e. atypical, temporary, and low-guaranteed) workers are in fact much less likely to plan to have children in the future.

Other relevant explanatory variables are age (both of men and women), current family size, the perceived economic well-being of the family, and the strength of family ties.

The remainder of the paper is organized as follows. In the next section we offer a synthetic background on Italy. We then describe our data and present a series of probit models. First, we test some traditional explanations of family planning decisions. Then, we introduce dummy measures of the precariousness of work status as new, main, explanatory variables. Finally, we test the influence of bonding social capital. We conclude by considering the policy lessons of the Italian case.

2. Background

The relationship between education, labour market participation, and fertility has changed over time. Until the second half of the 80s, higher levels of female education and labour participation were associated with lower fertility rates. Starting from the 90s, these correlations were partially reversed. The participation of women to the labour market continued to increase in all countries, but fertility rates started to decline at a lower rate or, in some cases, began to grow again. However, relevant differences can be observed. In the European Union, the countries with the lowest fertility (Spain, Italy, and Greece) are those with relatively low levels of female labour force participation, while the countries with higher fertility rates (Denmark, France, and Sweden) show a relatively high female participation to the labour market. Italy, especially in the Northern and Central regions, became the title-holder of the so-called “lowest-low” fertility (Kohler et al. 2002, Castiglioni and Della Zuanna, 2009).

According to the most recent data, the average number of children per fertile woman is now 1.33 (Istat, 2007). This is one of the lowest fertility rates in developed countries and is the result of a gradual decrease in fertility started at the beginning of the last century. The fall in fertility has been accompanied by significant changes in the chronology of the couples’ family planning choices. Mothers’ average age at the first childbirth, which has been quite stable around 25 for a long time, gradually raised to the current threshold of 29 (Istat, 2007). As a consequence, the average family size radically changed as well. Currently, the prevalent family model implies an only child. It is

noteworthy that the event of the first childbirth has been inappreciatively influenced by the fertility fall: Italian women continue to show a high propensity to motherhood. It is the second childbirth that has become an even more rare event. The decrease in fertility cannot thus be attributed to a negative attitude towards procreation. This interpretation is reinforced by the fact that, according to the Istat's Survey on Births (2007), the desired fertility rate is significantly higher than the actual one. Such a background suggests that further investigations are required to understand the determinants of this gap or, in other words, what curbs the couples' ambition to conceive a second child.

3. Main hypotheses: the importance of precariousness.

First, we test some traditional explanations of family planning decisions advanced by the theoretical and empirical debate. The models presented in section 5.1 are intended to assess the influence exerted on childbearing intentions by the age, educational qualification, and labour market participation of both the possible parents, as well as the couple's marital status, the perception of the family's economic well-being and the current family size. As pointed out in the introduction, according to microeconomic theory female participation should lower fertility rates by raising the opportunity cost of motherhood (Willis, 1973, Becker, 1981, Cigno, 1991, Ermish, 2003). Until the first half of the 80s, this hypothesis has been supported by data. However, according to a series of recent empirical studies, the negative relationship between female participation and fertility no longer holds.

At this stage of the analysis, our study differentiates itself from the previous literature by: 1) focusing on childbearing *intentions*, instead of accounting solely for actual fertility, in order to better evaluate the determinants of the *decision* to have (more) children; 2) assessing at the micro level the possible role of a series of economic features of *both* the components of the couple, instead of focusing on women only.

Then, in section 5.2, we test our new hypotheses by introducing measures of the precariousness of the aspiring parents' work status as explanatory variables. We argue that if the aspiring parents hold precarious positions in the labour market - e.g. they have unstable, low-paid, and not guaranteed jobs - they are less likely to have the time and the material resources for expanding their family. 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"[1]; (b) "short-term workers" or "seasonal workers"; or (c) workers whose contract of employment will allow the

[1] The ILO defines "casual" workers as having an explicit or implicit contract of employment which is not expected to continue for more than a short period.

employing enterprise or person to terminate the contract at short notice. As stated in the introduction, the concept of labour precariousness is generally disregarded by the conventional literature, which considers it more as a side effect of flexibility rather than as a crucial, potentially negative, factor of workers' well-being. This view can be hardly generalized to Mediterranean countries like Italy. Here, precarious workers are generally characterized by low employment conditions in terms of pay, employment security, sickness and parental benefits, balance between work and private life. They are usually provided with less work-related training and enjoy scarce prospects of building a career. Moreover, such negative labour market conditions are associated with an unfavourable institutional and policy framework. While in Nordic countries the effects of flexibility on well-being are tempered by more efficient childcare systems and generous parental benefits, in Italy public protection schemes are in most cases designed to meet the needs of permanent workers (see Ferrera, 2005, and Ferrera and Gualmini, 2004, for exhaustive reviews on the Italian welfare state)[2].

In this study, we attempt to assess the different childbearing intentions of first job seekers and of unemployed, not employed, atypical, and precarious workers, as well as of self-employed workers. Since the high exposure to the risks of job loss, wage variability, and intermittent unemployment raise the uncertainty on future incomes, making difficult any form of long-term planning of life activities such as marriage and procreation, we expect a negative association between the precariousness of potential parents and their childbearing intentions.

After the evaluation of the range of micro characteristics described above, we then try to assess the possible role of cultural and economic factors measured at the macro level. Some theoretical studies, often grouped under the common label of second demographic transition theories, emphasize the role of culture and social norms (Ariès, 1980, Lesthaeghe and van de Kaa, 1986, van de Kaa 1987, Lesthaeghe and Surkyn 1998). This strand of the literature attributes the fall in fertility to a basic shift toward values emphasizing "the rights and self-fulfillment of individuals" (van de Kaa, 1987, p. 5). According to van der Kaa (1987), dominant views have moved away from traditional family-oriented values, resulting in a relevant increase in divorce, cohabitation, and non-marital childbearing. In this paper, we attempt to add some insights to this debate by testing the influence of a cultural factor like the strength of family ties, which are often referred to by the literature as a form "bonding social capital". Here, we expect stronger family ties to be associated

[2] Labour precariousness can thus be seen as a barrier to social integration that may destroy human and social capital: a high level of flexibility on employment hinders training and qualification and, at the same time, hampers the consolidation of social ties, both inside and outside the workplace. While a stable and satisfactory work provides not only income, but also an identity and a "sense of belonging", precariousness generates discouragement and distrust towards labour market institutions that, at the macro level, may result in a more distrustful society. In Italy, the negative connotation of precariousness is further testified by the worrying growth of social conflicts associated with the constant increase in the number of atypical and unstable workers.

with higher levels of fertility. In our empirical analysis, following Sabatini (2008, 2009a) we discriminate between the "intensity" and the "quality" of family ties, to shed light on the possibly diverse effects of these two dimensions of bonding social capital.

4. Data

The paper draws upon cross-section data collected by the author on the basis of several national survey sources. Variables considered within the empirical analysis are in very most cases synthetic, latent, indicators derived from raw data through a series of methods ranging from simple recoding to principal component analysis (PCA)[3].

The main source is the Survey on Household Income and Wealth (SHIW) carried out by the Bank of Italy in 2006. The SHIW covers 7,768 households composed of 19,551 individuals and 13,009 income-earners and collects data on individual income, wealth, human capital and a range of relevant socio-economic behaviours and perceptions. In the 2006 wave of the survey, an interesting question on family planning was included in the questionnaire: "Do you plan to have (more) children in the future?" where possible answers were 1) yes, 2) not now, we will think about it later, 3) No, we don't want any (more) children, and 4) No, but we would have liked to have (more) children[4]. The question was asked only to couples in which the woman was under 46 and offers the opportunity for an investigation into the socio-economic determinants of childbearing intentions at the micro level.

The sub-sample interested by this question includes 1,742 couples, i.e. 1,742 men plus 1,742 women. Responses are provided by the head of the household, who was asked to speak in the name of the couple. The derived dataset used for the analysis thus includes 1,742 cases, corresponding to the heads of the household, to which we have attached variables describing the socio-economic characteristics of their (1,742) partners.

In our view, the fact of accounting for couples, instead of considering solely women, may add relevant hints to the debate. The decision to have children is in fact in most cases a couple matter, and is influenced by the socio-economic conditions of both the partners. It is worth noting that the SHIW covers only "conventional" couples formed by a woman and a man living together. Homosexual couples and singles are not included in the sample. Besides any ethical and political consideration, this choice seems to be representative of the Italian scenario. Italy is in fact usually regarded as the European country with the strongest family bonds and religious institutions.

[3] Indicators are described in detail in Appendix A. More detailed techinical notes on their construction are available by request to the author.

[4] The questionnaire and the microdata are available on the Bank of Italy's web site.

Aspiring single parents, whether women or men, are not only discouraged by cultural and ideological pressures. In some cases, they are even thwarted by law, to the point that people needing treatments like embryo donation and *in vitro* fertilization are forced to refer to foreign health facilities in neighbouring countries like France, Spain, and Switzerland (see Lalli, 2009, for an overview). As already outlined in section 3, Italy's levels of divorces, non-marital cohabitations, and illegitimacy rates are among the lowest in Europe.

Measures of social capital are obtained as results of principal component analyses (PCAs) performed on raw data aggregated at the regional level by the Istat in its Multipurpose surveys. Multipurpose surveys are carried out to investigate social phenomena by means of face-to-face interviews on a sample of 24,000 households, roughly corresponding to 50,000 individuals. Other territorial indicators are taken from different data sources which will be specified in Section 5.3.

5. Results

The hypotheses described in Section 3 are tested through a series of probit analyses. The dependent variable of the primary regression model is the response to the question: "Do you plan to have (more) children in the future?". Because of the limited nature of the dependent variable, we follow the well-established strategy to code this as a binary model with unity assigned to the response "Yes" and zero to the remaining categories.

5.1 Education and participation

First, we test some conventional hypotheses addressing the role of education, labour participation, and civil status. Independent variables accounted for at this and in the following stages of the analysis are as follows:

- An indicator of women's and men's participation to the labour market. The index ranges from 1 (lowest participation) to 8 (highest) and is described in detail in Table A1 in Appendix A. The classification takes into account two main parameters: the work status and the type of contract. The latter plays a fundamental role for two main reasons: a) as outlined in Section 3, diverse types of contract imply strong differences in terms of risks of job loss, wage variability, intermittent unemployment, training opportunities, parental benefits, and other guarantees; b) a difference in the type of contract may play a crucial role in determining the opportunity cost of childbearing as defined by microeconomic theory.
- An indicator of women's and men's educational qualification, ranging from 1 (none) to 8 (postgraduate qualification). See Table A2 for further details.

- Men's and women's age, where the women's age cannot be over 46 due to the sample design.
- Marital status, coded as 1 if the couple is married and 0 in all the other cases.
- Centre-North, a territorial dummy coded with unity if the couple lives in Northern or Central regions and 0 otherwise.
- The perceived economic conditions of the family, given by the interviewees' response to the question: "Is your household's income sufficient to see you through to the end of the month?", ranging on a scale from 1 ("with great difficulty") to 6 ("very easily").

Summary statistics are reported in Table 1, while probit estimates are described in Table 2. Detailed information on how variables were built are reported in Appendix A.

As expected, the results indicate that childbearing intentions decrease with the age of both the partners, with the number of children already born, and for couples living in Central or Northern regions. Married couples are more likely to want (more) children, as well as couples where men hold a higher educational qualification and a better job position. Such result confirms that men do not generally have to face any trade-off between fatherhood and their professional career. On the contrary, men's position in the labour market is likely to work as a factor reassuring the couple about the economic sustainability of its childbearing intentions. It is noteworthy that, even if the educational qualification of women is, on average, slightly higher, the gender divide in participation is still significant. Good perceived economic conditions are also a significant and positive predictor of the decision to have children. A first interesting result is that the educational qualification and the labour market participation of women are not significant explanatory variables. In other words, females' aspirations seem not to behave as factors diminishing childbearing intentions through the raise in the opportunity cost of motherhood, as predicted by microeconomic theory.

Table 1. Descriptive statistics

	Obs	Mean	St. dev	Min	Max
Married	1742	.9535017	.2106221	0	1
Number of children	1742	1.442021	1.000759	0	7
Man's age	1742	40.58783	8.425163	20	69
Woman's age	1742	36.52755	8.227599	18	45
Man's education	1742	4.058553	1.473493	0	8
Woman's education	1742	4.145235	1.543223	0	8
Man's participation	1742	5.0907	1.921741	1	8
Woman's participation	1742	3.352468	2.284677	1	8
Perceived Economic well-being	1742	3.11194	1.212412	1	6
Centre-North	1742	.6647532	.4722122	0	1
Man's education*participation	1742	22.00175	12.7256	1	64
Woman's education*participation	1742	15.47229	13.2574	1	64

Table 2. Model results

	Model 1			Model 2		
	Coef.	z	P > | z |	Coef.	z	P > | z |
Married	.9918152	4.94	0.000	.7948549	3.14	0.002
Number of children	-.598366	-11.45	0.000	-.638938	-11.64	0.000
Man's age	-.040702	-6.78	0.000	-.034010	-2.87	0.004
Woman's age	-.034837	-5.91	0.000	-.057685	-4.48	0.000
Man's education	.0921572	2.50	0.012			
Woman's education	.0180198	0.48	0.631			
Man's participation	.0590218	2.22	0.026			
Woman's participation	-.004754	-0.22	0.826			
Perceived Economic well-being	.1175236	2.68	0.007	.2389556	2.36	0.018
Centre-North	-.221709	-2.26	0.024	.1010039	-1.84	0.065
Man's education*participation				.0122577	3.00	0.003
Woman's education*participation				.0038389	0.45	0.654
Observations			1742			1742
Degrees of freedom			10			8
Log-likelihood			-548.30758			-500.99235
LR Chi-square			419.45			431.21

The same results hold after the introduction, in model 2, of an interaction variable given by the product between participation and education. The educational qualification is in fact likely to influence workers' professional ambitions helping to better define their involvement in the labour market. For example, a temporary worker holding a postgraduate qualification (e.g. a young scholar) is likely to devote a higher effort to the improvement of her position in respect to a permanent worker holding a secondary school diploma (e.g. a white collar worker). The index ranges from 1 to 64, with higher values corresponding to greater professional expectations. Once again, women's ambitions seem not to be a significant explanatory variable of the couples' childbearing intentions.

Both the models are statistically significant because the chi-square statistics are higher than the critical values for 10 and 8 degrees of freedom. Goodness of fit measures are briefly discussed in Appendix B. The addition of other potential explanatory variables does not change the significance, sign and size of the estimates, neither the goodness of fit of the model. In particular, in this and in the following regressions, we controlled for log real income, home ownership, home's surface, the fact of having debts (in particular home loans), the state of health, the sector of activity, and the self-declared wealth, which all proved not to be significant predictors of the couples' childbearing intentions[5].

[5] Estimates are available by request to the author.

5.2 Precariousness

In this section, we introduce a series of dummies to assess the possible effect of work status on childbearing decisions. In particular, we test the importance of being: unemployed (whether first-job seeker or not), self-employed, not employed (i.e. homemaker, student, non-paid volunteer, retired or pensioner), atypical worker (i.e. contingent worker on own account like occasional collaborator or project worker, or worker holding an unstable job with a temporary, or occasional or fixed term contract), and permanent worker. In model 4, we adopt a more comprehensive definition of precariousness by introducing a different dummy which is coded with unity in case of contingent workers, employees with temporary contracts or fixed-term contracts, first-job seekers and unemployed workers. Probit estimates are reported in Table 3.

Table 3. Model results

	Model 3			Model 4		
	Coef.	z	P > | z |	Coef.	z	P > | z |
Married	1.031179	5.06	0.000	1.011891	4.95	0.000
Number of children	-.618677	-11.63	0.000	-.614571	-11.52	0.000
Man's age	-.041363	-6.72	0.000	-.041411	-6.75	0.000
Woman's age	-.039632	-6.47	0.000	-.040057	-6.50	0.000
Man's education	.101478	2.71	0.007	.11055	2.90	0.004
Woman's education	.0398854	1.07	0.286	.0471949	1.24	0.421
Self-employed man	.2978011	2.50	0.012	.2527993	2.22	0.027
Self-employed woman	-.235188	-1.43	0.152	-.251930	-1.52	0.099
Not employed man	-.880848	-1.18	0.239	-.882865	-1.18	0.237
Not employed woman	-.511745	-0.87	0.386	-.485806	-0.82	0.411
Unemployed man	-.208852	-0.78	0.437			
Unemployed woman	-.463432	-2.30	0.022			
Atypical man	-.080368	-0.46	0.647			
Atypical woman	-.428590	-2.71	0.007			
Permanent man				-.168550	-0.89	0.373
Permanent woman				-.002723	-0.01	0.992
Precarious man				-.128732	-0.84	0.400
Precarious woman				-.452038	-3.43	0.001
Perceived Economic well-being	.2489144	2.55	0.011	.2724616	2.78	0.005
Centre-North	-.237949	-2.42	0.015	-.241378	-2.46	0.014
Observations			1742			1742
Degrees of freedom			16			18
Log-likelihood			-540.05429			-538.75591
LR Chi-square			435.95			438.55

As in the previous regressions, having less children (or not having at all), being younger, married and in good economic conditions positively influence couples' childbearing intentions.

What is interesting here is that, contrarily to theoretical predictions, unemployed women and women working with temporary, atypical, contracts are significantly less likely to plan a motherhood. The explanation seems to be straightforward: far from being encouraged by the lower opportunity cost of childbearing, these workers probably feel too precarious to conceive the decision to have children.

In most cases, temporary female workers with atypical contracts cannot enjoy any form of sickness or parental benefits. On the contrary, pregnancy is in most cases a cause of termination of the work relationship by the employer. Thus, female atypical workers generally have to face a trade-off between motherhood and their participation to the labour market. For couples in which the woman is unemployed, the decision to have a child is likely to sound as simply unsustainable. Interestingly, couples in which the man is self-employed show a higher probability to plan childbearing.

Similar results hold if we replace dummies for unemployed and atypical workers with the more comprehensive dummy coded as one in case of unemployed or first-job seekers or temporary workers. Once again, being on the fringes of the labour market seems to be a significant and strong dissuasive deterrent against childbearing for women. Even if job instability acts as a dissuasive deterrent against motherhood planning, being a permanent worker seems not to be a sufficient condition for childbearing. Probably, once the economic emergency is overcome, further factors concur in affecting family planning decisions. For example, a cultural factor like bonding social capital also plays a role, as it will be shown in the next section. Models 3 and 4 are statistically significant since the chi-square statistics are higher than the critical values for 16 and 18 degrees of freedom.

5.3 Bonding social capital

In this section we test the role of indicators measured at the regional level with the aim to capture other socio-cultural determinants of family planning decisions. In particular, we account for what the literature has often labelled as "bonding social capital". The term "bonding" holds a negative connotation and refers to relationships between people who know each other well, i.e., family members, close friends, and neighbours (Gittel and Vidal, 1998). These relationships correspond to what Granovetter (1973) termed as "strong ties" and are often considered the building blocks for relationships with broader social networks. Starting from the pioneer study of Banfield (1958) on the Italian Mezzogiorno, bonding social capital has been generally considered as a factor of

backwardness and economic underdevelopment (Putnam et al., 1993, Leonardi, 1995, Degli Antoni, 2006, Sabatini, 2008, 2009a. See Woolcock and Narayan, 2000, and Sabatini, 2007, for an overview). However, strong family ties may positively affect the agents' well-being through the provision of a series of services which are not accounted for by official statistics. For example, the family may provide young couples with fundamental services like financial help and babysitting. Here, we expect the strength of family ties to affect the commitment to reproduction. Following Sabatini (2009b), we carry out an attempt to take into account both the "intensity" and the "quality" of family ties. Intensity is measured through indicators of the family composition, of the spatial distance between family members' places of residence, and of the frequency of the encounters. Adopted indicators are described in detail in Table C1 in Appendix C.

The quality of relationships has been measured through indicators of grandparents helpfulness in taking care of their grandchildren, of the custom of non monetary gift exchange, and of the declared satisfaction with family relationships. The first indicator is aimed at capturing the strength of the mutual assistance mechanisms possibly taking place within the family. Gift exchange is considered as representative of the affection between family members. Making non monetary gifts is in fact a time consuming activity which requires a certain further effort to know the receiver's tastes or needs. Such an effort can hardly prescind from a good quality of relationships. Indicators are described in detail in Table C2, Appendix C. All the raw measures are taken from the Istat's (2006a, 2006b) multipurpose survey.

A PCA is performed on ten indicators of the intensity and quality of family relationships. The first factorial plan explains the 67% of the variation of the data. PCA's results reveal an interesting multidimensionality: the first axis is significantly and positively correlated with the indicators of family size, spatial proximity, and the frequency of encounters, and can thus be seen as a good measure for the intensity of family ties. The second axis is significantly and positively correlated with the willingness to take care of grandchildren, the custom of gift exchange, and the declared satisfaction with family relationships, and can thus be interpreted as a proxy for the quality of family relationships. Eigenvalues and factor loadings are reported in tables C3 and C4 in Appendix C. A possible interpretation is that too tight ties could turn into "bonds" leading to the reiteration of mechanic behaviours which not necessarily reflect a higher readiness to help one's family members. However, higher scores on the first factor are likely to be connected with a strong cultural commitment to traditional family formation and, thus, to reproduction.

Model results are reported in Table 4. The intensity of family ties is indeed significantly and positively associated with couples childbearing intentions. By contrast, the quality of family relationships is not statistically significant. Women's labour instability is confirmed as a significant

and strong factor discouraging motherhood. The importance of precariousness is thus robust to different model specifications.

As in previous sections, regressions have been controlled for home ownership, home's surface, the fact of having debts (in particular home loans), the state of health, the sector of activity, and the self-declared wealth. Moreover, in this section, we controlled for a series of territorial indicators aimed at capturing the labour market conditions (e.g. unemployment rate, female employment rate, female young unemployment rate, self-employed women rate, black labour, and gender gap in labour participation), taken from the Istat's (2006c) quarterly survey on the labour force. All these variables were not statistically significant or, in some cases, they were significant but the size of their effect was negligible.

Table 4. Model results

	Model 5		
	Coef.	z	P > | z |
Married	.9687911	4.78	0.000
Number of children	-.6076464	-11.57	0.000
Man's age	-.0410371	-6.81	0.000
Woman's age	-.0378606	-6.29	0.000
Man's education	.107253	2.92	0.004
Woman's education	.02863	0.77	0.443
Precarious man	-.1249236	-0.82	0.412
Precarious woman	-.4222994	-3.27	0.001
Perceived Economic well-being	.1281479	3.05	0.002
Intensity of family ties	.064552	3.06	0.002
Quality of family ties	-.0220974	-0.47	0.640
Observations			1742
Degrees of freedom			11
Log-likelihood			-543.44962
LR Chi-square			429.16

7. Conclusions

Besides confirming the reliability of conventional explanations like civil status, age, and economic well-being, the empirical analysis in this paper contradicts some of the statements of microeconomic theory and supports an alternative explanation of the postponement of childbearing with few precedents in the literature: the instability of females' work status. In the Italian labour market, being a precarious worker is a strong dissuasive deterrent from planning a motherhood. The theoretical predictions according to which female participation may be responsible for the fall in fertility are not supported by data. On the contrary, unemployed women, far from being encouraged

to childbearing by the lower opportunity cost of leaving the labour market, are definitely less likely to plan to have children.

These findings add some interesting insights to the debate on the fall in fertility. As outlined in the review of the literature, many authors have properly related the "Italian puzzle", i.e. the combination of low female participation with very low fertility, to differences in the institutional and policy framework. In Nordic countries, where more generous policies on parental arrangements and childcare assistance have been implemented, the negative correlation between participation and fertility has in fact been reversed. These studies suggest the creation of more part-time jobs and the improvement of childcare assistance as possible ways to fill the gap (Del Boca and Sauer, 2009, Del Boca et al., 2009). Here we argue that public actions aimed at raising fertility should take into account also appropriate labour market policies. In the Italian labour market, workers' flexibility essentially means their precariousness. Precarious workers have low-paid jobs, with scarce or nonexistent guarantees in terms of sickness and parental benefits, career prospects and training opportunities. Everyday-life experience widely suggests that one of the decisive questions that employers pose to female candidates in interviews refers to their civil status and childbearing intentions. Temporary female workers are well aware that in most cases a pregnancy would be a cause of termination of the work relationship by the employer. The resulting trade-off may be unsustainable, both in terms of women's life-satisfaction and of the economic well-being of the couple.

The demographic consequences of this phenomenon are doomed to become more and more important as the share of precarious workers in the labour market constantly grows. The scenario is worsened by the dramatic population ageing, which weakens the economic system's ability to face the global competition and blights the sustainability of the pension system.

In such a context, labour market policies alleviating the precariousness of temporary workers would probably lead to more balanced choices in terms of family planning and labour market participation.

Another interesting insight which this paper adds to the debate refers to the role of bonding social capital. The strength of family ties is negatively correlated with an indicator of their quality, and is associated with a stronger cultural commitment to reproduction which positively affects childbearing intentions.

Bibliography

Adsera, A., 2004. Changing fertility rates in developed countries. The impact of labor market institutions. *Journal of Population Economics* 17, 17-43.

Adsera, A., 2006. An economic analysis of the gap between desired and actual fertility: The case of Spain. *Review of Economics of the Household* 4, 75-95.

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

Aries, P., 1980. Two successive motivations for the declining birth rate in the West. *Population and Development Review* 6(4): 645-650.

Banfield, E. G., 1958. *The Moral Basis of a Backward Society*. New York: Free Press.

Becker, G. 1981. *A Treatise on the family*, Cambridge Mass.: Harvard University Press.

Bernhardt, E. M., 1993. Fertility and employment. *European Sociological Review* 9, 25-42.

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

Castiglioni, M., Della Zuanna, G., 2009. Marital and Reproductive Behavior in Italy After 1995: Bridging the Gap with Western Europe? *European Journal of Population* 25, 1-26.

Cigno, A. 1991. *Economics of the Family*. Oxford: University Press.

D'Addio, A. C., D'Ercole, M. M., 2005. Trends and Determinants of Fertility Rates: The Role of Policies. OECD Social Employment and Migration Working Papers, No. 27, OECD publishing.

Degli Antoni, G., 2006. Capitale sociale e crescita economica: una verifica empirica a livello regionale e provinciale. *Rivista Italiana degli Economisti* 3, 363-394.

Del Boca, D., Pasqua, S., Pronzato, C., 2009. Motherhood and market work decisions in institutional context: a European perspective. *Oxford Economic Papers* 61, 147-171.

Del Boca, D., Sauer, R. M., 2009. Life cycle employment and fertility across institutional environments. *European Economic Review* 53, 274-292.

employment over space and time. *European Journal of Population* 20, 35–62.

Engelhardt, H., Prskawetz, A., 2004. On the changing correlation between fertility and female

Ermisch, J., 2003. *An Economic Analysis of the Family*. Princeton: Princeton University Press.

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.

Gauthier, A. H., 1996. *The state and the family: A comparative analysis of family policies in*

Gittel, R., Vidal, A., 1998. *Community Organizing: Building Social Capital As A Development Strategy*. Newbury Park, California: Sage Publications

Granovetter, M., 1973. The Strength Of Weak Ties. *American Journal of Sociology* 78, 1360-80.

Guiso, L., Sapienza, P. Zingales, L., 2004. The Role of Social Capital in Financial Development. *The American Economic Review* 94, 526–556.

Heliwell, J. F., Putnam, R. D., 1995. Economic Growth And Social Capital In Italy. *Eastern Economic Journal* 21, 295-307

industrialized countries. Oxford: Clarendon Press.

Istat, 2006a. *Parentela e reti di solidarietà*, Roma: Istat.

Istat, 2006b. *Strutture familiari e opinioni sulla famiglia*. Roma: Istat.

Istat, 2006c. Indagine trimestrale sulle forze di lavoro. Roma: Istat.

Istat, 2007. Indagine campionaria sulle nascite. Roma: Istat.

Kögel, T., 2004. Did the association between fertility and female employment within OECD countries really change its sign? *Journal of Population Economics* 17, 45-65.

Kohler, H.-P., Billari, F. C., Ortega, J. A., 2002. The Emergence of Lowest-Low Fertility in Europe during the 1990s. *Population and Development Review* 28, 641-680.

Lalli, C. 2009. *Buoni genitori*. Milano: il Saggiatore.

Leonardi, R., 1995. Regional Development in Italy: Social Capital and the Mezzogiorno. *Oxford Review of Economic Policy* 11, 165-179.

Lesthaeghe, R., Surkyn, J., 1988. Cultural dynamics and economic theories of fertility change. *Population and Development Review* 14(1), 1-45.

Lesthaeghe, R., van de Kaa, D. J., 1986. Twee Demografische Transities? (Two Demographic

McDonald, P., 2008. Very Low Fertility. Consequences, Causes and Policy Approaches. *The Japanese Journal of Population* 6 (1), 19-23.

McDonald, P., Temple, J., 2006. Immigration and the Supply of Complex Problem Solvers in

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

Multicultural Affairs.

Peri, G., 2004. Socio-Cultural Variables and Economic Success: Evidence from Italian Provinces 1951-1991. *Berkeley Electronic Journal in Macroeconomics, Topics* 4, No. 1, Article 12, September 2004.

Putnam, R. D., Leonardi, R., Nanetti, R. Y., 1993. *Making Democracy Work*. Princeton: Princeton University Press.

Sabatini, F. 2007. The Empirics of Social Capital and Economic Development: a Critical Perspective. In: Osborne, M., Sankey, K. e Wilson, B. (eds). *Social Capital, Lifelong Learning Regions and the Management of Place: an international perspective*. London and New York, Routledge.

Sabatini, F., 2008. Social Capital and the Quality of Economic Development. *Kyklos* 61, 466-499.
Sabatini, F., 2009a. Social capital as social networks: A new framework for measurement and an empirical analysis of its determinants and consequences. *Journal of Socio-economics* 38, 429-442.
Sabatini, F., 2009b. Social capital and development in the Italian regions. Paper presented at the Conference "Civil society, social capital and economic development", organized by the Royal Institute of Technology, Stockholm, Sweden, 3-4 September 2009.
the Australian Economy, Canberra: Australian Government, Department of Immigration and transitions?). Pp. 9-24 in: D. J. van de Kaa and R. Lesthaeghe (eds.), Bevolking: Groei en Krimp (Population: Growth and Decline), Deventer, Van Loghum Slaterus.
United Nations Population Division, 2009. UN Population Division Policy Brief March 2009. United Nations Publications.
Van de Kaa, D. J., 1987. Europe's second demographic transition. *Population Bulletin* 42(1), 1-57.
Willis R.J., 1973. A New approach to the Economic Theory of Fertility Behavior. *Journal of Political Economy* 81, 3-18. Social Capital: Implications for Development, Theory, Research, and Policy. *World Bank Research Observer* 15, 225-249.

Appendix A. Labour market indicators

The index of educational qualification ranges from 1 to 8. Categories are sorted in ascending order from the lowest level of education. Codes are as follows: 1 = no education; 2 = primary school certificate; 3 = lower secondary school certificate; 4 = vocational secondary school diploma (3 years of study); 5 = upper secondary school diploma; 6 = 3-year university degree/higher education diploma; 7 = 5-year university degree; 8 = postgraduate qualification.

The index of participation to the labour market is obtained from the intervieewes responses to two questions:

1) "Was (name) employed in 2006? That is, was he/she in paid employment?", where possible responses where: 1) blue-collar worker or similar (including employees and apprentices, homeworkers and sales assistants); 2) office worker; 3) school teacher in any type of school (including teachers with term appointments, those under special contracts and similar); 4) junior/middle manager; 5) senior manager, senior official, school head, director of studies, university teacher, magistrate; 6) member of profession; 7) small employer; 8) own-account worker/craft worker; 9) owner or member of family business; 10) working shareholder/partner; 11) contingent worker on own account (regular or occasional collaborator, project worker, etc.); 12) first-job seeker; 13) unemployed; 14) homemaker (i.e. housewife or househusband; 15) independent means; 16) retired worker; 17) pensioner (disability/survivor's pension/old-age welfare benefits);

18) student (from primary school up); 19) pre-school-age child; 20) other non-employed (e.g. conscript/volunteer/disabled).

2) "Which was the type of your contract?". This question was posed only to employees and possible responses were: 1) permanent; 2) fixed-term; 3) temporary.

As stated in section 5.1, the type of contract plays a fundamental role for two main reasons: a) as outlined in Section 3, diverse types of contract imply strong differences in terms of risks of job loss, wage variability, intermittent unemployment, training opportunities, workplace conditions, parental benefits, and other guarantees; b) a difference in the type of contract may play a crucial role in determining the opportunity cost of childbearing as defined by microeconomic theory.

Table A1. Index of labour market participation

Value	Categories
1	Homemakers, students, others non-employed, unemployed, independent means, retired, pensioners.
2	First job seekers*.
3	Atypical workers (i.e. contingent worker on own account (regular or occasional collaborator, project worker, etc.), blue-collar workers, office workers, and school teachers with temporary contracts.
4	Blue-collar workers, office workers, and school teachers with fixed-term contracts, junior/middle managers with temporary contracts.
5	Blue-collar workers, office workers, and school teachers with permanent contracts, junior/middle managers with fixed-term contracts, senior managers, senior officials, school heads, directors of studies, university teachers, magistrates with temporary contracts.
6	Senior managers, senior officials, school heads, directors of studies, university teachers, magistrates with fixed-term contracts.
7	Junior/middle managers with permanent contracts.
8	Senior managers, senior officials, school heads, directors of studies, university teachers, magistrates with permanent contracts, members of profession, small employers, own-account workers/craft workers, owners or members of family business, working shareholders/partners**.

* We assume that first-job seekers involvement in the labour market is quite higher in respect of that of unemployed because, on average, they are younger and hold higher educational qualification. Thus, their job search actions are likely to be informed by higher expectations in terms of income and position. Anyway, estimates do not change if we include first-job seekers in category "2".

** Members of profession, small employers, own-account workers/craft workers, owners or members of family business, working shareholders/partners are all considered as self-employed and included in the highest category.

Appendix B. Goodness of fit

The LR Chi-square for model (1) is 419.45 which is higher than the critical value for 10 degrees of freedom at any reasonable significance level.

The pseudo R2 for model 1 is 0.2767, which is comparable with those obtained in the literature.
The LR Chi-square for model 2 (8 degrees of freedom) is 431.21 which is higher than the critical value for 10 degrees of freedom at any reasonable significance level.
The Pseudo R2 for model 2 is 0.3009.
The LR Chi-square for model 3 (16 degrees of freedom) is 435.95 which is higher than the critical value for 10 degrees of freedom at any reasonable significance level.
The Pseudo R2 for model 3 is 0.2876.
The LR Chi-square for model 4 (14 degrees of freedom) is 438.55 which is higher than the critical value for 18 degrees of freedom at any reasonable significance level.
The Pseudo R2 for model 4 is 0.2893.
The LR Chi-square for model 5 (11 degrees of freedom) is 429.16, which is higher than the critical value for 11 degrees of freedom at any reasonable significance level.
The Pseudo R2 for model 5 is 0.2831.

Appendix C. Social capital indicators

Table C1. Indicators of the intensity of family ties

Label	Variable
FAMSINGL	Singles families for every 100 families of the same area.
COPFIG	Couples with children, for every 100 families of the same area.
N_COMPFAM	Average number of members of the household.
FAMAGGR	Households including more than one family uunit for every 100 families of the same area.
BAMBOCC	Not married people between 18 and 34 living with a parent for every 100 people with the same age living in the same area.
MAD_1KMTOT	People having their mother living within 1 km (cohabitants or not) for every 100 people whose mother is alive.
VEDMUMTG	People meeting their mother everyday for every 100 people with non-cohabitant mother of the same area.

Since the frequency of encounters and spatial proximity between to different family members exhibit a strong correlation, when not collinearity (e.g., the encounters with the mother are collinear with the encounters with the father), we preferred to retain measures referring to just one member, the mother, instead of taking into account also fathers, sons, brothers, and sisters.

Table C2. Indicators of the quality of family ties	
Etichetta	Variabile
NOBABYSIT	People over 35 who have not cohabitants grandchildren under 13 who never take care of them for every 100 people with not cohabitants grandchildren living in the same area.
REGALI	Families with at least two people whose members are used to exchange non monetary gifts for every 100 families living in the same area.
SODFAMI	People aged 14 and more declaring themselves satisfied of relationships with their relatives for every 100 people of the same area

Table C3. Eigenvalues			
Axis	Eigenvalues	Percentage	Cumulated percentage
1	5,2672	52,67	52,67
2	1,4337	14,34	67,01
3	1,1271	11,27	78,28
4	0,9885	9,89	88,17

Factor Loadings and Variables Correlations with the first five Axes					
Variable	Axis 1	Axis 2	Axis 3	Axis 4	Axis 5
SODFAMI	-0,15	0,17	0,94	-0,15	-0,07
FAMSINGL	-0,85	0,41	-0,03	-0,08	-0,25
FAMAGGR	0,05	-0,95	0,14	0,17	-0,04
COPFIGL	0,91	0,17	0,05	0,16	0,13
N_COMPFA	0,95	-0,17	0,12	0,17	0,08
BAMBOCC	0,84	-0,02	0,11	0,06	-0,43
MAD_1KMT	0,93	0,19	0,22	-0,02	-0,05
VEDMUMTG	0,71	0,15	-0,04	-0,54	0,32
NOBABYSI	0,60	0,43	-0,23	0,49	-0,08
REGALI	-0,60	0,18	0,31	0,58	0,32