Economic insecurity and fertility: the case of Italy

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The fall in fertility rates in the 70s

- Empirical studies have found a significant and positive correlation between **female participation in the labour force** and the **postponement of childbearing** 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 and to a major change in the values shared by younger women about their role within the family and the labour market (McDonald 2000; D'Addio and D'Ercole 2005 Kertzer et al. 2008).

The Italian “fertility puzzle”

- The **cross-country association between female participation and fertility turned positive in the last decade** (Ahn and Mira 2002; Adsera 2005).
- Italy is still lagging behind compared to the European average:
  - female employment rate is lower than the European average (though it 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. one of the lowest fertility rates among OECD countries (below 1.3 children per woman, reaching 1.4 in 2008).

The Italian “fertility puzzle”

- Previous empirical literature based the explanation of the Italian “fertility puzzle” on:

  - Institutional and policy differences in comparison with Nordic countries (Engelhardt and Prskawetz 2004; Del Boca and Sauer 2009).

  - The role social and cultural factors in childbearing decisions (Micheli 2000; Kertzer et al. 2008; Fent et al. 2011).

- In this paper, we focus on the role of the **economic conditions of the household**.

Contribution of the paper to the literature

- We test **the role of economic insecurity on fertility intentions**.
- Economic insecurity is a **multidimensional** concept and we account for **3** main dimensions:

  1) Job insecurity, i.e. uncertainty about future employment, or “labour precariousness”

  2) Income insecurity

  3) Wealth insecurity

Contribution of the paper to the literature

- We contribute to the literature in three substantive ways:

  1) First empirical assessment of the relationship between economic insecurity and fertility in Western Europe – accounting for the complexity of the concept of insecurity.

  2) Focus on the role of **job instability** or "**precariousness**", which has so far been neglected in the literature.

  3) New explanation of the "Italian fertility puzzle", based on the role of women's economic insecurity – specially job insecurity.

Other differences from previous literature

- We focus on **childbearing *intentions***, instead of accounting solely for actual fertility. This serves to better assess the determinants of the ***decision*** to have (more) children.
- Since 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.

Unemployment traps

- 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 (Guadalupe 2003; Bardasi and Francesconi 2004; Menendez et al. 2006), precarious workers hardly succeed in upgrading their skills and developing new contacts (Amuedo-Dorantes and Serrano-Padial 2010).
- **Precarious workers face an erosion of their human and social capital**.
- Barbieri and Scherer (2009): there is 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 employers” (p. 678).

Risk of poverty

- **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).
- Young people and women are more exposed to this risk (Brandolini et al. 2007; Barbieri and Scherer 2009).
- The risk of poverty caused by unemployment traps is exacerbated by the lack of public social protection in terms of wage subsidies for the low-paid and low unemployment benefits (Brandolini et al. 2007).
- Households with non-standard workers face an higher probability of being poor. In 2006 the incidence of poverty for households with only atypical workers was about **47%** (Bank of Italy).

Data

- Pooled cross section (4 waves) 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 were asked if they were planning to have (more) children in the future.

Data

- **Dependent variable: dummy ‘‘intention to have (more) children’’**.
- **Main independent variables are the measures of economic insecurity**.
- We consider three sources of uncertainty:

  1) Low levels of household income

  2) Low levels of household wealth

  3) Job insecurity, as identified with the precariousness of the work status.
- **Controls**: 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.

Indicators of economic insecurity

- The **index of wealth (income) insecurity** is defined according to the percentiles of the weighted distribution in which the household falls (the index is one minus the percentile).
- **Employment insecurity**: dummies representing the work status of men and women. They 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.

Results

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

Precariousness reduces the estimated propensity for childbearing by about 5 percentage points, from 0.090 (with no differences between mothers and non mothers)

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The effect of being unemployed is similar (coefficients and marginal effects are not statically different).

Results

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The condition of being inactive, i.e. out of the labour force, lowers the predicted probability of childbearing by 2.5 percentage points.

Results

- Conventional theoretical predictions according to which the rise in the opportunity cost of childbearing related to female participation in the labour market may be responsible for the fall in fertility are not supported by data.
- In this framework, unemployed, precarious and low-paid women should have a lower opportunity cost and a higher propensity for childbearing.
- **In Italy, unemployed and precariously employed women are less likely to plan to have children in respect to permanently employed and better paid women.**

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Wealth insecurity significantly reduces fertility intentions:

a **1 percentage point increase in the index of household wealth uncertainty lowers planned fertility by 8 percentage points** (from 0.091).

Household wealth exerts a buffering effect against uncertainty which supports childbearing intentions.

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

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Household income uncertainty also negatively affects the intention to have (more) children both for mothers and non-mothers.

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When measures of economic insecurity are included in a unique regression some **differences between childless women and mothers emerge**.

The negative role of women's job instability is confirmed, even if there is a slight decrease in its marginal effect

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

Wealth insecurity affects childbearing decisions solely for women with no children, lowering the likelihood of planning a first childbirth by 7.0 percentage points.

The effect of income insecurity acts only for mothers, reducing childbearing intentions by about 9 percentage points.

Results

- **Household wealth** is 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**.
- **Household income** also reflects 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.

Results

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

Male job instability seems not to affect the intention to have (more) children.
This finding may be viewed as a result of:
1) Institutional features of the Italian labour market: precarious men are aware that childbearing will not hamper their career perspectives. Differently from their partners, men will not face any risk of lay-off or non-renewal of their contract.
2) Low levels of gender equity in the family: men do not fear the extra-burden connected to childcare and domestic work, which will be borne mostly by women

(Results)

In all specifications women having no children are more willing to plan a first childbirth.
Italian women would like to have (more) children even if they show lowest-low fertility levels

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.

Endogeneity issues

There are reasons to suspect these findings to be the fruit of spurious correlations.

1) It is difficult to distinguish the effect of the three dimensions of economic insecurity we account for from that of other phenomena that potentially influence family planning.

2) Personal traits or individual exogenous shocks may be correlated with both childbearing decisions and the dimensions of economic insecurity, thus creating a common bias.

3) 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.

Endogeneity issues

- In Italy, **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 seems much more reasonable to consider **precariousness as a situation of disadvantage to which workers have to adapt only if there are no alternatives**.

Endogeneity issues

- Before addressing endogeneity issues, we run a multinomial logit model to investigate the **determinants of female occupational status**, with particular regard for **job instability**.
- Independent variables measure individual, family and regional characteristics, including the **woman's education cohort**, which allows 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).

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

Endogeneity issues

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.

On reforms which exacerbated labour precariousness see Berloffa and Villa (2010, RIW).

Endogeneity issues

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

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 it is reasonable to use the probit model (2) to estimate the effect of women's employment instability on childbearing intentions.

We run the same test to assess endogeneity of household income, using the occupational status of the father of the male (which is found to be strongly and negatively correlated with household income insecurity, t=-4.13) as an instrument.

Since the coefficient on the first stage predicted residuals is not statistically different from zero, we can conclude that income insecurity is not endogenous.

Policy implications

- 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, we need **labour market policies** tackling the rising incidence of women's precariousness.