

Human Capital and the First Child in Italy

Daniele Vignoli

Abstract Increasingly, young women educate themselves for a lifelong professional career and the human capital accumulated is expected to have a strong influence on women's strategies around childbearing. This paper aims at investigating differences in the transition to motherhood in Italy as well as in the transition to employment after first birth by women's human capital accumulated. Results show that paid employment strongly conflicts with motherhood in Italy, especially among low and medium educated women. Moreover, this study reveals a strong polarization pattern between working and non-working women in Italy: nearly all women who accumulated some work experience before first conception (re-)enter paid work after they become mothers, while women who never worked before first conception tend to remain out of the labor market. Finally, this research provides evidence that conditions for work and family reconciliation, although important, are not the only determinant of women's fertility and employment decisions, but other country-specific factors do also play a potent role.

Keywords: Fertility and Family, Human Capital, First Child, Women's Education, Women's Paid Work, Italy

1 Background and objective

More and more often young women educate themselves for a lifelong professional career. Increasingly some of them delay the decision to have the first child, while others find that there is no space for childbearing and childrearing over their life-course. Moreover, the growing interest of women in investing in their human capital,

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also reflected in their increased attention to accumulate on-the-job-skills, may have strong impact on the decision to (re-)entry to work after first birth. From this perspective, difficulties with (re-)entering the labor market after first childbirth may seriously discourage further childbearing. Furthermore, basing on the experience of their colleagues, young women who have not started their fertility careers may anticipate the difficulties with entering the labor market after childbirth and consequently may postpone or even eschew having children. In this study, therefore, WE focus on the role of women's human capital accumulated around first birth; a stage in women's life-course particularly crucial for all the reasons mentioned so far.

Theoretically speaking, given the high quality and accessibility of fertility control, decisions about the timing of a first birth can be seen as intentional; that is, based on an evaluation of the costs and benefits related to childbearing, both in the short- and the long-term. It has been widely documented that the first birth risk rises as the time since leaving education passes (Nicoletti and Tanturri 2008), as women accumulate work experience (Kravdal 1994) and attain more stable positions in the workplace (Happel et al. 1984). Economic theory of fertility and women's labor supply explains this phenomenon by the opportunity costs of childbearing, such as the income lost during the non-participation period, but also future earnings foregone due to non-accumulation and depreciation of human capital (e.g., Hotz et al. 1997; Taniguchi 1999; Gustafsson 2001).

Overall, these costs are larger in countries with rigid labor markets and a pronounced insider-outsider divide, which lack safety nets and family policies oriented toward supporting the successful reconciliation of motherhood and paid work (e.g., Esping-Andersen 1999; Matysiak and Vignoli 2008). Italy is a clear example of this state of affair. In the country, in fact, part-time jobs are jeopardized, strong barriers to entry in the labor market are still present, and public childcare provision is weak when the child is very young (Matysiak and Vignoli 2009). Moreover, while the country experienced a strong increase in women's educational attainment and labor market participation in the last decades, the domestic institutions have not adjusted to the ongoing societal change (McDonald 2000). As a result, single-earner (male-breadwinner) couples still represent the most suitable environment for childbearing and childrearing, maximising on one hand, men's income security, and on the other hand, women's time availability at home (Vignoli and Salvini 2008).

The paper aims at investigating differences in the transition to motherhood in Italy as well as in the transition to (re-)enter employment after first birth by women's human capital accumulated. It provides further evidence that conditions for work and family reconciliation, although important, are not the only determinants of women's fertility and employment decisions, but other country-specific factors do also play a substantial role.

2 Data and methods

The study is based on the Italian Gender and Generation Surveys (2003, round 1). The Italian variant of the GGS is a retrospective survey conducted by the Italian National Statistical Office (Istat) called "Family and Social Subjects" in 2003 – GGS-FSS (2003). The analysis is divided into two steps.

In the first step, we modeled transition to first birth. To this end, a piecewise linear intensity regression was applied. Each woman was observed since the age of 15 until first conception (measured 7 months prior to birth) or the date of the interview, whichever come first. The main explanatory covariates were women's education and work experience accumulated; in this respect, time since finishing education and accumulated work experience were introduced. Each woman was first out of employment, then she might have entered employment, lost her first job, and remained out of paid work for a certain period of time, after which she may have reentered employment. All these events were taken into account in the model. The spline measuring the effect of work experience on first birth switches on at the entry to paid work, and switches off at employment exit. Each time a woman took up a job, the work experience accumulated during the past employment spells was added up to the time spent in the present employment spell. The reference category for this spline is woman-spells before first employment entry. Furthermore, in order to account for the effects of career breaks on the transition to motherhood, a time-varying covariate which accounts for the order of nonemployment spells was introduced. Note that women who had finished their education were classified into three groups: low (compulsory education and basic vocational education), medium (at least four years of education at the upper-secondary level), and high (bachelor's or a master's degree). Additionally, the model outcomes were controlled for parents' education and calendar time.

In the second step, we addressed the timing of women's employment entry after first birth. The most straightforward solution to this problem would be to apply event history techniques, observing a woman since childbirth. This approach was not appropriate in this case due to the fact that women on parental leave were coded as employed in the Italian dataset. Consequently, it was not possible to know the date when they decided to finish the parental leave and to re-enter paid work. However, in Italy mothers can be out of paid employment no longer than eleven months following birth without terminating the work contract (a 5-month long maternity leave is followed by an optional parental leave of 6 months). As a consequence, each woman was observed since the first child was one year old. We employed Kaplan-Meier survival curves corrected by the proportions of women at work one year after the first birth.

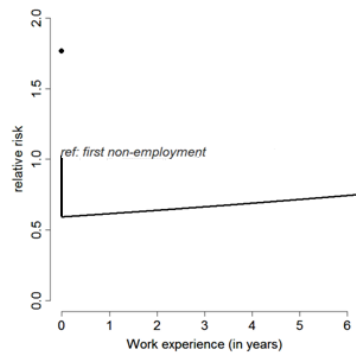
3 Human capital around the first child in Italy: empirical investigation

3.1 *Human capital before the first child*

The empirical findings show a decline in first birth intensity at the moment women entered their first period of employment, compared to the period before, and an increase thereafter, as women accumulated work experience (Figure 1). Regardless of their employment records, employed women in Italy were shown to have a lower intensity of childbearing than women who are out of employment. The difference in

first birth intensity was found to be particularly large when we compared women currently in paid work to women who used to have a job, but who exited the labor market (represented in the graph by a filled circle). It is notable, however, that this relationship is not necessarily causal. It may well be that in Italy women leave employment in order to become mothers.

Figure 1: Differentials in first birth intensity by work experience, Italy (cohorts 1967 – 1978)^a. Piecewise linear intensity regression estimates.



^a The results are standardized for a woman's age, calendar period, a woman's social background, time since leaving education, educational level, and non-employment experience.

To gain a deeper insight into differentials in first birth intensity by women's human capital accumulated, an interaction between work experience and educational level was performed. This allowed to break down the general pattern presented in Figure 1 by education (Figures 2). The differentials are marked with different type of lines (a dotted, dashed, and solid line for women with low, medium, and high levels of education, respectively), the symbols represent the first birth risks for women in the first nonemployment spell (a star, a triangle, and a circle for women with low, medium, and high levels of education, respectively), and the first birth risks for women in higher order nonemployment spell (a cross, a blank triangle and a blank circle for women with low, medium, and high levels of education, respectively).

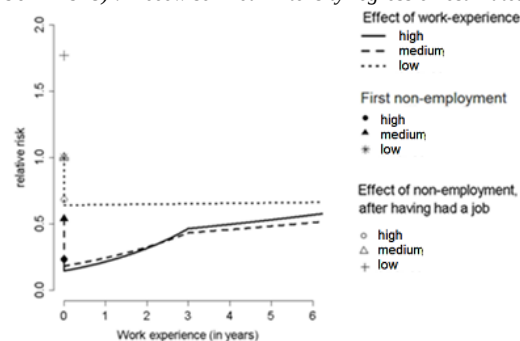
We start by looking at the findings for less educated women (10 - 11 years of schooling). For this group, differences in first birth intensity with respect to work experience accumulated were not found. This is likely because women with low levels of education do not attach much relevance to the accumulation of on-the-job skills, as they are likely to be less work oriented, and tend to be clustered in the lower end of the occupational hierarchy. Nonetheless, employed women with lower levels of education were found to be far less likely to give birth to a first child than those who do not work in the labor market. It is remarkable that the first birth risk was found to be particularly high among Italian women in their second or higher nonemployment spells, i.e., women who used to have a job but exited the labor market.

By contrast, medium educated women (12 - 13 years of education) attributed higher value to the accumulation of work experience. This finding can be explained by the fact that medium educated women in Italy tend to be in jobs which are higher in the occupational hierarchy (mainly technicians and associate professionals, followed by clerks), and which therefore require a higher degree of specialization than those performed by low-educated women. But, even after accumulating on-the-job skills,

women in Italy were shown to be less likely to have a child than those who do not work for pay. Again, those in second or higher order nonemployment spells had the highest intensity of progressing to motherhood.

Women holding university degrees exhibited the strongest increment in first birth intensity, along with the accumulation of work experience. They were more likely to conceive the first child after they had accumulated some on-the-job skills than before entering their first job. This suggests that having paid work is an important condition for having a child among women who invested in obtaining a university degree. However, women with a university degree who have stopped working for pay were shown to be more likely to have a first child than those who have a job.

Figure 2: Differentials in first birth intensity by education and work experience, Italy (cohorts 1967–1978)^a. Piecewise linear intensity regression estimates.



^a The results are standardized for woman's age, calendar period, women's social background, and non-employment experience.

3.2 Human capital after the first child

Descriptive event history analysis techniques are now employed to study the timing of women's employment entry after first birth. As anticipated in Section 2, in Italy mothers can be out of paid employment no longer than eleven months following birth without terminating the work contract. As a consequence, each woman was observed since the first child was one year old, if she did not come back to the previous work after the expiration of the leave period (compulsory maternity leave plus optional parental leave).

Although employment seems to hinder transition to motherhood in Italy, mothers resume employment after their first birth relatively quickly. Already half of Italian mothers were at work one year after the birth.

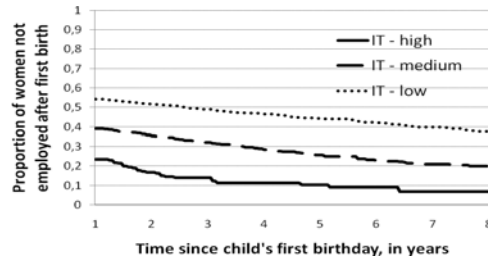
It turns out, however, that the intensity of employment entry in Italy strongly depends on whether a woman was employed at least for some time before the first conception (Figure 3), pointing out a strong polarization in behaviours. Almost 90% of Italian women who had some work-experience entered employment one year after birth. Among those who had never worked before the first conception, not more than 10% was employed one year after first birth and only 20% were on the job three years later.

Disentangling the survival curves by women's educational attainment gives us a deeper insight into the differences in the patterns of employment entry after first birth (Figure 4). As expected, differentials by education appear clearly: low-educated women enter the labour market to the lowest extent, the highly educated to the greatest extent, and the medium educated lie somewhere in the between. Overall, highly educated women are very likely to attach more importance to the accumulation of on-the-job skills than the lower educated women.

Figure 3: *Proportion of women not in employment 12 months after first birth, by women's work experience accumulated, Italy (cohorts 1967 – 1978). Kaplan-Meier survival curve estimates.*



Figure 4: *Proportion of women not in employment 12 months after first birth, by women's education, Italy (cohorts 1967 – 1978). Kaplan-Meier survival curve estimates.*



4 Conclusions

This paper focuses on the role of women's human capital accumulated on women's strategies around first birth in Italy. We followed a common paradigm expecting individuals to make their procreative choices intentionally, based on an evaluation, however imperfect, of the costs and benefits of reproduction. At least three important conclusions can be drawn from this study.

Firstly, results showed that employed women in Italy were in general more likely to defer childbearing than those out of paid work, irrespective of the human capital accumulated. The only exception was found for women with high levels of education. That group delays motherhood only in the initial years after starting a job and, after women accumulated some on-the job skills, they become more likely to give birth than

the nonemployed. These findings illustrate that paid employment strongly conflicts with motherhood in Italy, especially among low and medium educated women.

Secondly, marked educational differentials in the way women's employment affects transition to motherhood as well as in the intensity of employment entry after first birth were found. Tertiary educated women displaying visibly different behaviours with respect to low and medium educated women. Namely, tertiary educated women are more likely to conceive their first child if they are employed. It seems thus that for this group of women finding a job is an important condition for becoming mother. These women tend also to (re-)enter employment relatively quickly compared to low and medium educated women. It is thus clear that employment is an important life goal for highly educated women and that they aim at reconciling it with motherhood, despite difficulties they are very likely to encounter due to the Italian adverse institutional setting. Overall, tertiary educated women were more likely to conceive the first child than the secondary educated after they had accumulated about three years of work experience and they tended to approach the primary educated after about six years. This finding is in line with a recent trend that has been observed in Italy in which couples with greater cultural and economic resources do not have a lower propensity to have children (Rosina and Testa 2009).

Thirdly, this study revealed a strong polarization between working and non-working women in Italy. Namely, nearly all women who accumulated some work experience before first conception enter paid work already one year after childbirth. By contrast, women who never worked before first conception tend to remain out of the labour market after they become mothers. This polarisation pattern was found in Italy already by other researchers (e.g., Gutiérrez-Domènech 2004), although for older cohorts.

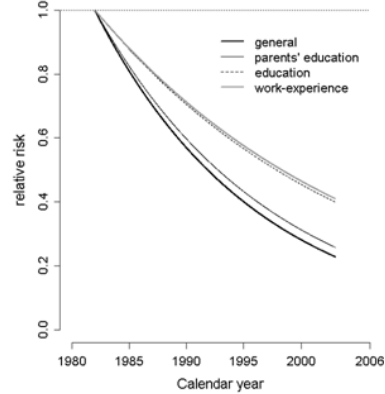
Overall, these results are in line with those who envision the increased interest of women in their human capital as one of the main forces behind the marked delay in motherhood observed in many societies where the reconciliation between work and family life is not supported by domestic institutions (e.g., Mc Donald 2000). However, a crucial question remains: how strong is the role played by women's education and work experience accumulated on the changed reproductive behaviours of Italian women?

To this end, Figure 5 shows the decline in first birth risks that was observed in Italy in the recent decades. Note that the decline is less pronounced after the changes in the status of women in the society is taken into account, namely after we control for women's social background, their educational attainment and participation in paid employment. This means that the observed change in first birth rates results partly from an increase in the number of women joining higher social population strata. Nevertheless, even after accounting for this socio-economic compositional change the overall decline in first birth risk remains substantial. This implies that our results only partly support the hypothesis that fertility ageing is largely driven by the increasing investment of women in their human capital and suggests that fertility postponement is also caused by other factors.

From this perspective, these results demonstrated that attributing the marked rise in the timing at first motherhood mainly as a reaction to the increasing investment of women in their human capital may not tell the whole story. Fertility postponement is also driven by other factors. As a consequence, this paper provides further evidence that women's increased interest in human capital accumulation and, to some extent,

women's changed role in the society, are not the only determinant of women's fertility and employment decisions, but other country-specific factors do also play a potent role.

Figure 5: Temporal change in the first birth risk due to compositional change, attributable to parents' education, educational attainment, work experience. Stepwise estimates.



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