Persistent Employment Instability and Fertility Intentions in Italy

Busetta A.*, Mendola D.*, Vignoli D.**

* University of Palermo, Dept. of Economics, Business and Statistics (DSEAS)
** University of Florence, Dept. of Statistics, Informatics, Applications (DiSIA)

Abstract:

Our paper adds to the growing literature on the measurement of employment instability and on that on its consequences on fertility dynamics. We argue that many of these studies disregard a crucial dimension of employment instability: its persistence (duration). It is the persistence in an unstable condition, more than the status itself, that may have the most severe consequences on subsequent family choices. In this paper, we propose an index of persistence in employment instability that synthesizes all the information inside the individual sequence of employment statuses in a single number accounting simultaneously for the duration, sequencing, intensity, and labour market circumstances. Then, we test its impact on short-term childbearing intentions, and we do this separately for women and for men as well as for different parities. The application focuses on the Italian case.

Keywords: Employment instability, Fertility intentions, Italy, Employment instability index

1. Motivation and Aim

Employment instability and job precariousness characterize contemporary labour markets everywhere in Europe. They intensify the difficulties experienced by the young in their transition to adulthood, when they start their labour market careers, try to strengthen their economic position and begin to consider family formation. Unstable labor market careers are also increasingly viewed as the primary forces behind the postponement of childbearing in modern European societies (Kreyenfeld et al., 2012; McDonald, 2006; Begall and Mills, 2011; Vignoli et al., 2012; Modena et al., 2013).

Our paper adds to the growing literature on the measurement of employment instability and on that on its consequences on fertility dynamics. To the best of our knowledge, virtually all empirical literature on the topic posit fertility as dependent variable and focuses on the current and past employment situation as key covariates -eventually time-dependent- (e.g. see the Special Collection of Demographic Research on "Economic Uncertainty and Family Dynamics in Europe" edited by Keyenfeld et al., 2012). We argue that such approach disregards a crucial dimension of employment instability: its persistence (duration). It is the persistence in an unstable condition, more than the status itself, that may have the most severe consequences on subsequent family choices.

We address that oversight by proposing an index of persistence in employment instability (derived from the literature on chronic poverty) which is based on the idea that the closer (and the deeper) two years spent in a detrimental situation are, the more they contribute to increase the value of the overall measure. We then investigate the impact of such index on short-term childbearing intentions, and we do this separately for women and for men as well as for different parities. We focus on Italy, a society that represents an interesting case study for a research of this kind from many respects.

The study of fertility intention is gaining ground in Europe (e.g., Sobotka and Testa, 2008; Philipov, 2009; Neyer et al., 2013; Balbo and Mills, 2011; Iacovou and Tavares, 2011; Testa, 2012) and our paper thus contributes to this literature. Despite the focus on the impact of employment instability on fertility intentions, however, our approach is also applicable to fertility behaviors. In fact, fertility intentions have been generally regarded as a fairly suitable predictor of actual behavior at the individual level (Westoff and Ryder, 1977; Rindfuss et al., 1988; Schoen et al., 1999), provided one distinguishes intentions by parity, considers age and partnership dynamics, includes a time frame for the realization of the intention, and assumes that the conditions at the time of interview, in particular a person's or couple's economic conditions, persist (Thomson, 1997; Schoen et al., 1999; Quesnel-Vallée and Morgan, 2003; Billari et al., 2009; Régnier-Loilier and Vignoli, 2011; Balbo and Mills, 2011).

2. Timing of Employment Instability

Economic theory suggests a positive impact of atypical employment on the probabilities of subsequently entering a stable job. Atypical employment might be a way to avoid unemployment (Korpi and Levine, 2001; Larsson et al., 2005) and, in comparison with unemployment, may still represent the better position (Chalmers and Kalb, 2000; DiPrete et al., 2003) for future career chances. What is more, precarious employment might provide the chance to acquire specific human capital together with the acquisition of firm-specific social capital such as connections, ties, and therefore information on vacancies (Barbieri, 2009). In this vein, there is some evidence that atypical employment is not necessarily a bad start and may even work as an entry port into stable employment, not least, because flexible employment might be used as a screening period with the potential conversion into permanent contracts after some time (Guell and Petrangolo, 2000; Booth et al., 2002; McGinnity et al., 2005; Addison and Surfield, 2006; Steijn et al., 2006). For

instance, an Italian study by Ichino et al. (2003) shows that temporary forms of employment enhance the workers' chances to subsequently enter in a stable job for Italy. Similarly, Barbieri and Sestito (2008) report evidence for higher employment chances one year later for former unemployed workers accepting temporary employment compared to those remaining unemployed.

Beside this state of affairs, however, there are also a series of reasons to expect negative entrapment effects from experiencing a *persistent employment instability*. Those in atypical employment may in fact get furnished with less human capital than permanent employees as, given the higher turnover of atypical workers, firms have fewer incentives to invest in the workers' training (Barbieri, 2009). The social risk is that non-standard employment is used as a way to lower labour costs and to acquire increased numerical flexibility, rather than an instrument to screen and select employees for competition strategies (Bronstein, 1991; Barbieri, 2009). Altogether, there might be a 'stigma' associated to these unstable employment biographies: not having been selected for a stable job for a prolonged period of time could be interpreted as a negative signal by potential future employers (Barbieri, 2009).

In sum, the consequences of experiencing unstable employment careers to subsequent employment prospects and family-related behaviors are unclear. We argue that the missing link in the overall discussion is the duration of the period spent holding an unstable contract and also the sequencing of the episodes of employment and not employment. In terms of fertility dynamics, we might expect the detrimental consequences of employment instability on positive fertility intentions to be more severe in case of longer periods spent in unstable employment conditions.

3. The case study: Italy

Italy constitutes an interesting case-study for testing the role of employment instability on family-related behaviors. Reforms of the Italian labour market began in the early 1980s, accelerated in the second half of the 1990s ("legge Treu," 1997), and then spiked in the early 2000s ("legge Biagi," 2003). "Flexible" forms of work have now become widespread, and they have led to the creation of about fifty new types of contracts (temporary, part-time, linked to specific projects, etc.), all of them far less "protective" for the worker than former, typically unlimited jobs used to be (Barbieri, 2011). These contracts are offered almost exclusively to the young, whose traditionally high unemployment, in the meantime, has not declined significantly. The traditional division between 'insiders' and 'outsiders' in the labour market has therefore been reinforced: the former are typically male, older workers, with long-term contracts, and solid guarantees in case of unemployment; the latter are young, or women, with precarious occupations, low pay, and very limited (or altogether nonexistent) safety nets for their unemployed periods (Ferrera, 1985 and 2000; Bettio and Villa, 1998).

Atypical contracts are generally characterized by limited income levels, low social protection, and discontinuous careers (Barbieri, 2011). Precarious workers are not supported by the social protection system, because of the lack of wage subsidies for the low-paid and very limited (or non-existent) unemployment benefits (Bettio and Villa, 1998; Brandolini et al., 2007). In

addition, according to the Bank of Italy (2009), this situation increases the probability of being poor for households with members employed in unstable jobs.

Italy is an interesting case-study also from a gender perspective. In Southern Europe, where women are the main caregivers and men act primarily as household providers, the economic well-being of the household depends mainly on the market performance of the man. When this dwindles, as is more and more frequently the case in modern societies, several consequences may ensue, also influencing fertility behaviors. In Italy, gender inequality in the labour market is pronounced: women's participation, although on the rise, is still relatively low (the occupation rate for the age range 15-64 is about 47%) and men, especially young men, are today confronted with a worsening of their economic situation due to the increasing diffusion of employment instability.

4. EINI: Employment Instability Index

In order to measure the persistence in condition of employment instability of individuals, we propose an adaptation of the classes of indices of longitudinal poverty proposed in Mendola et al. (2011) and in Mendola and Busetta (2012). This class of indices is based upon the idea that the closer (and the more severe) two years spent in a detrimental situation are, the more they contribute to increase the value of the overall measure. This hypothesis of cumulative hardship is translated in the employment context by working on all the pairwise distances between the years that an individual spends in discontinuous employment (meaning years in which the individual did not work all the twelve months, regardless paid parental leaves or medical leaves).[1]

The index used in this paper takes into account the sequences of employment statuses (properly dichotomized) associated with each year (continuous employment vs discontinuous employment in the year), for each individual. This Employment Instability Index (hereafter EINI) considers also: a) the *severity* of the instability of each spell of discontinuous employment in the employment trajectory; b) the chances for an individual to escape from unemployment, and c) the recentness of the not employment experience. The operationalization of these concepts will be explained in next section 5.

Let us now consider T=10 years and suppose we observe the following time-ordered employment sequence: (1100110000). The latter is the "**labour profile**" (LP) of an individual who is not employed for all the twelve months in the first and second year (labour status *1*), who then experiences two years of continuous employment (labour status *0* in position 3 and 4), then again a two-period spell of not continuous employment (corresponding to years 5 and 6), followed by four years of continuous employment.

To the same individual is possible to associate a second vector of length T, hereafter named "**instability profile**" (IP), whose elements are a time-ordered sequence of the proportions of the year (on a monthly basis) the individual did not work. So, for example, for the individual above we could have IP= (0.33, 0.5, 0, 0, 0.75, 0.75, 0, 0, 0, 0) meaning that the individual did not work 4

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[1] The status of "continuously employed" is assigned to individuals who have a job for all the 12 months of the year, whereas the status of "discontinuously employed" is assigned to individuals who have not a job for one or more month/s in the year.

months in the first year and 6 months in the second year, then s/he worked twelve months both in 3rd and 4th year (i.e. s/he was continuously employed), then s/he did not work for 9 months during the 5th and 6th year and again 0 months not working from the 7th to the 10th year.

A further element of interest for the building of our index are the elements in the set S^*, defined as the set of the numerical-id (position) of years which an individual spent in discontinuous employment. So, in our example, S^*= (1, 2, 5, 6).

The analytical formulation of the Employment Instability Index at the individual level is:

$$EINI = \frac{\sum_{i,j \in s^*} (d_{ij} + 1)^{-p_{ij}(o_{ij}+1)} w_{ij}}{\binom{T}{2}} * de \qquad \text{with } i>j \qquad (1)$$

in which i and j are the generic elements of the set S^* (given that i is greater than j) and represent the positions in the sequence of the spells of "discontinuous employment"; d_{ij} is the difference among positions of years spent in not continuous employment, that is *(i-j)*; o_{ij} is the number of years with not continuous employment (zeros) between each couple of years of discontinuous employment *(i,j)*; w_{ij} is a normalized measure of the intensity of instability experiences recorded during the two years of not continuous employment occupying positions i and j in the individual labour profile expressed by the average of the corresponding elements in the IP vectors.

Furthermore p_{ij} is the probability of being not continuously employed in year i and in year j estimated at population level (or, if relevant, at a regional one). It is important to note that these permanence probabilities are estimated for each pair of years spent in discontinuous employment in the individual labour statuses profile. They affect the value of the *EINI* in so that, given a pair of years, the higher is the number of persons who have discontinuous employment in a given year and instead improve their situation (i.e. are employed) in a subsequent year considered (not necessarily contiguous), the worst is evaluated the situation of an individual who, on the contrary, persists in discontinuous employment in both the years considered. Note that this parameter is very useful for territorial comparisons, since it accounts indirectly for their different labour markets.

Finally *de* is a '*decay factor*' that lowers the value at its left as much as the last year of discontinuous employment is not recent. The decay factor is defined as:

$$de = 1 - \frac{r^2}{(r+1)^2} \qquad (2)$$

where r is the number of consecutive zeroes at the end of the labour profile, that is the number of years in continuous employment after the last 1 in the LP (r is an integer from 0 to T-1). Note that if no 1 is present in the LP, then r is assumed to be 0, hence *de*=1 and the *EINI* equals 0. Whatever the length of the panel, $0 < de \leq 1$. Indeed the decay factor acts on the synthetic evaluation of the employment sequence of each individual. Being a multiplying factor, *de* has a smoothing effect on

EINI, it diminishes (progressively) the value of the index according to the not recentness of discontinuous experiences of employment. In our example *r*=4 and *de*=0.36, meaning that the last four years in continuous employment smooth (decrease) the intensity of the employment instability of the 64%.

Considering that both w_{ij} and *de* are normalized and that the denominator of the ratio in equation (1) is the maximum of the numerator, then the *EINI* spans in [0,1]. *EINI* equals 1 when the labour profile is wholly made by *1*s (i.e. there are only years of discontinuous employment) with maximum values of the instability measure (i.e. years of 100% of not worked months). *EINI* equals 0 when the individual does not experience any year of discontinuous employment.

The *EINI* is indeed a class of indices whose main characteristic is that, playing with the set of parameters (*w_{ij}, p_{ij}, o_{ij}, de*) described above one can give more or less importance to different aspects of the labour instability experience. They are respectively the intensity of the experiences of discontinuousness, and/or the chances for an individual to escape employment instability, and/or the alleviating effect of the years spent in continuous employment and/or the recentness of the experience.

5. Data and methods

For our empirical investigation, we reorganized retrospective data stemming from the 2009 Household Multipurpose Survey Family and Social Subjects (FSS). This survey was conducted by the Italian National Statistical Office (Istat) on a sample of about 24,000 households and about 50,000 individuals of all ages. Importantly for our study, it covers detailed information on women's and men's employment histories recorded on a monthly basis.

Our investigation focuses on the effect of the persistence of employment instability on the intention to have a child within the next three years (as reported at the interview date). By limiting the question about childbearing intention to a foreseeable time period we overcome some of the problems associated with the surveying of intentions. Questions on intentions that cover an overseeable time period and that therefore are "in close temporal proximity to the prospective behavior" (Ajzen and Fishbein, 1973, p.49) are generally considered to be the more suitable predictors of actual behavior (Philipov, 2009). We exclude women and men who do not live with a partner from our analysis because their childbearing intentions may not reflect a realizable plan, impeding a meaningful association between fertility and employment instability.

Our dataset includes women aged 18–42 and to men aged 18–49 at the time of the interview. We chose these age ranges because the decision to have a child beyond these ages may be less influenced by economic, private, and gender-equality considerations than the decision to have a child at a socially accepted childbearing age (Billari et al., 2011).

The EINI proposed in the previous section is our crucial explanatory variable and is here used to measure the employment instability of Italian men and women in couples as well as those of their partners. At the basis of our computations we use the two vectors LP and IP known for both the partners in a couple. Furthermore considering the strong labour market disparities existing in Italy at the regional level for each couple of years considered the permanence probabilities, i.e. the probability of remaining in a situation of discontinuous employment (1 in both the two years

considered), are computed at regional-level. We limit the sample to individuals with complete information on their labour market position in 2009 and in a number of years before. We are especially interested in the period of employment instability which is in a close temporal proximity with the formulation of fertility intentions; namely, we consider the employment situation over the last 5 years.

We specify a statistical model using the (short-term) fertility intention question (with its four ordinal answers: absolutely not, probably no, probably yes, absolutely yes), as response variable of generalized ordered logit models, and the employment instability of individuals and their partner as the main covariates. In particular in order to get closer to direct effects of these covariates we consider the EINI upon the five years before (2003-2008) to the survey date (2009), when fertility intentions are declared.

We model women's and men's childbearing intentions separately, because parenthood has different consequences for women than for men. Employment instability may therefore have different effects on the childbearing intentions of women and of men. We also analyze the intentions to have a first child, a second child, or three or more children separately, because the relevant issues may play out differently for the various parities. The models also include a series of additional demographic and socio-economic controls.

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