Unstable Employment Careers and (quasi-)Completed Fertility before and after Labour Market Deregulation in Italy

Giammarco Alderotti[1], Raffaele Guetto[1], Paolo Barbieri[2], Stefani Scherer[2], Daniele Vignoli[1]

[1] University of Florence; [2] University of Trento

Introduction

- Spread of **instability** in the European labour markets (LMs) due to the "Dual-Employment Protection Legislation (EPL) reform" (Bentolila et al. 2019)

- Employment instability has been concentrated on specific groups of the working-age population – namely **the youth** (Barbieri 2009) – generating rising uncertainty about future earnings and labour market outcomes, thus affecting their **ability to complete the transition to adulthood**

The labour market reform in Italy

1980s: **Work-and-training contracts**

  L.56/1987: less strict rules for fixed-term contracts

1997: **Treu Law**; 2003: **Biagi Law** → extended use of atypical contracts

- The expected positive effects on employment rates did not appear, except for a brief **"honeymoon-effect"** (Boeri and Garibaldi 2007; Barbieri and Cutuli 2016)

- The result was instead a rise of employment instability: particularly targeted were labour market entrants, without significantly increasing (regular) employment and without reducing unemployment risks (Barbieri and Scherer 2009; Barbieri and Cutuli 2016)

Labour market instability and fertility in Italy

- Vignoli and Salvini (2008): higher first birth risks among **single-earner couples** where the **man is permanently employed**, compared to dual-earner couples

- Vignoli et al. (2012): among Italian couples, **men's permanent contract** is crucial for fertility, but **unstable employment** for either of the two partners depresses fertility

- Barbieri et al. (2015): **atypical employment** experiences reduce the probability of transition to motherhood

- Vignoli et al. (2020): 7% of potential first-birth postponement among women and 5% among men is attributable to **unstable jobs**

Limitations of existing studies

Most existing studies **use Event-History Analysis** and are affected by the following **limitations**:

- They mainly address the **transition to 1st child** – higher-order childbirths are usually not studied;

- Most of the youngest cohorts affected by labour market deregulation are **right-censored** – aged less than 30/35 at interview;

- Focus on "atypical" **work episodes**, the (average) effect of instantaneous LM transitions vs. "precarious" **life course careers**;

- **Timing** & **probability** effects are mixed;

Our contribution

- Now as the first cohorts affected by deregulation policies start to reach the **end of their reproductive period**, it becomes possible to assess the consequences of (increased) employment instability on **completed fertility**, thus considering also **possible recuperation effects**

- We investigate the relationship between **employment history**, measured through a set of indicators capturing employment instability (e.g., number of non-employment spells, amount of time spent with atypical contracts), and the overall **number of children**

Data

- **Family and Social Subjects** (FSS) **2016** allows studying (quasi-)completed fertility at age 41[a] of women and men born up to 1975

- **Sample size**: 5,579 women and 5,355 men

- Data includes high-quality **retrospective information** on individual fertility and labour market histories with monthly detail, and information about the respondents' socio-economic background

- Main dependent variable: **number of children at 41**

- Two cohorts groups: **1951-1965** (virtually no LM deregulation) vs. **1966-1975** (increasingly exposed to LM deregulation)

[a] The choice of age 41 as a threshold was made in order to get as close as possible to the end of individuals' reproductive age and to include, at the same time, cohorts young enough to have experienced the consequences of the deregulation reforms

Variables

Independent variables: **labour market history until the conception of the first child** (for those who have ever had a child*) or until **age 41**.

- number of **months** spent with **atypical contracts**

- number of **non-employment spells** (>= 3 months)

- time between completing education and first significant job (>= 6 months)

*In order to avoid *potential reverse causality issues*, we do not consider labour market history after the first childbirth

Variables

Control variables: **family background**

- Both parents' educational level;
- Parents ever separated/divorced;
- Both parents' age at birth;
- Both parents' social class measured by 6-category ESeC;
- Number of siblings

Control variables: **individual characteristics**

- Born in Italy / abroad
- Educational level
- Macro-area of residence (at the time of interview)

Methods

Two sets of analyses:

1. **Multinomial logistic regression** (MLR) on the number of children at 41 (**0** vs. **1** vs. **2 or more**). The results of MLRs are reported through average marginal effects (AMEs)

2. **Poisson regression models** to estimate the number of children at age 41 for **profiles** defined by different values on the **employment history variables**

Results: MLR

Reference category: Having one child

Table 3 – Multinomial logistic regression on the number of children at 41, labour-related variables. AMEs

	Cohorts 1951-1965				Cohorts 1966-1975			
	MEN		WOMEN		MEN		WOMEN	
	0	2+	0	2+	0	2+	0	2+
Months atyp. empl. (ref. 0)								
1-11 months	-0.048 *	0.054	0.019	0.077 **	0.016	0.022	-0.040	0.086 **
12-23 months	-0.035	0.064	0.013	0.008	0.004	0.022	-0.040	0.009
24-47 months	-0.079	0.126 **	-0.056 **	0.136 ***	-0.067 *	0.034	-0.037	-0.062
48 months or more	0.013	-0.048	0.062 **	-0.036	0.132 ***	-0.103 ***	0.120 ***	-0.101 ***
N of work interrup.	0.051 ***	-0.064 ***	0.039 ***	-0.066 ***	0.064 ***	-0.075 ***	0.059 ***	-0.055 ***
Time between educ. and first relevant job (ref. <24 m.)								
Before complet. educ.	0.021	-0.007	0.035 *	-0.007	-0.050 *	0.056 *	-0.013	0.034
24-47 months	0.025	0.001	0.043 *	-0.060 *	-0.041	0.025	0.020	-0.002
48 months +	0.089 ***	-0.096 ***	0.195 ***	-0.159 ***	0.115 ***	-0.087 ***	0.167 **	-0.143 ***
Have worked, but not >6mths	-0.087 **	0.087	-0.046 *	-0.020	-0.036	0.014	-0.053	0.064
Never worked	0.002	-0.008	-0.038 **	0.101 ***	0.076 **	-0.023	-0.053 **	0.123 ***
N	3,019		3,187		2,336		2,392	

Source: authors' elaboration on FSS 2016 data. Note: * p<0.10, ** p<0.05, *** p<0.01. Control variables are the same as in Table 2.

Results:

MLR

Reference category: Having one child

Table 3 – Multinomial logistic regression on the number of children at 41, labour-related variables. AMEs

	Cohorts 1951-1965				Cohorts 1966-1975			
	MEN		WOMEN		MEN		WOMEN	
	0	2+	0	2+	0	2+	0	2+
Months atyp. empl. (ref. 0)								
1-11 months	-0.048 *	0.054	0.019	0.077 **	0.016	0.022	-0.040	0.086 **
12-23 months	-0.035	0.064	0.013	0.008	0.004	0.022	-0.040	0.009
24-47 months	-0.079	0.126 **	-0.056 **	0.136 ***	-0.067 *	0.034	-0.037	-0.062
48 months or more	0.013	-0.048	0.062 **	-0.036	0.132 ***	-0.103 ***	0.120 ***	-0.101 ***
N of work interrup.	0.051 ***	-0.064 ***	0.039 ***	-0.066 ***	0.064 ***	-0.075 ***	0.059 ***	-0.055 ***
Time between educ. and first relevant job (ref. <24 m.)								
Before complet. educ.	0.021	-0.007	0.035 *	-0.007	-0.050 *	0.056 *	-0.013	0.034
24-47 months	0.025	0.001	0.043 *	-0.060 *	-0.041	0.025	0.020	-0.002
48 months +	0.089 ***	-0.096 ***	0.195 ***	-0.159 ***	0.115 ***	-0.087 ***	0.167 **	-0.143 ***
Have worked, but not >6mths	-0.087 **	0.087	-0.046 *	-0.020	-0.036	0.014	-0.053	0.064
Never worked	0.002	-0.008	-0.038 **	0.101 ***	0.076 **	-0.023	-0.053 **	0.123 ***
N	3,019		3,187		2,336		2,392	

Source: authors' elaboration on FSS 2016 data. *Note:* * $p<0.10$, ** $p<0.05$, *** $p<0.01$. Control variables are the same as in Table 2.

Results: Predicted nr. of children (Poisson)

Precarious profile: *first significant job more than 4 years after completing education; >4 years in atypical employment; 2 non-employment spells*

Stable profile: *first significant job within 2 two years after completing education; one employment spell; no time in atypical employment*

Figure 1 – Predicted number of children by age 41, separately by cohort, gender, and profile

Cohorts 1951-1965

Cohorts 1966-1975
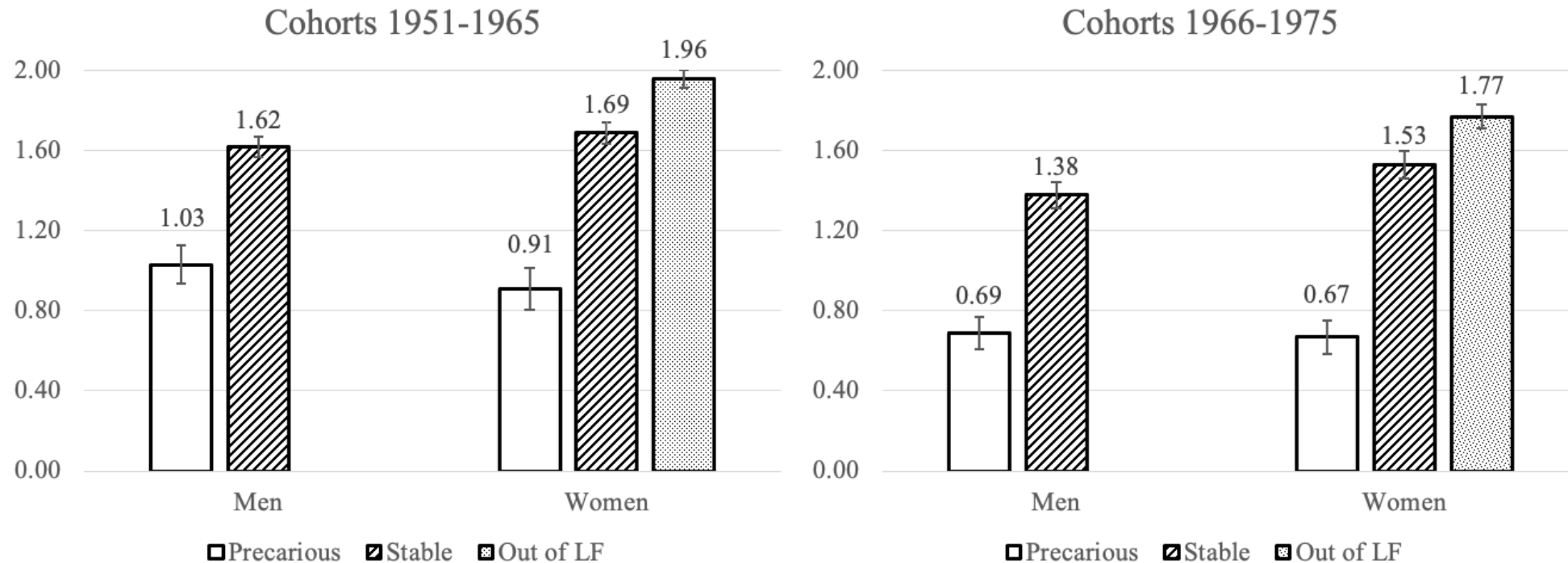
Source: authors' elaboration on FSS 2016 data.

Note: prediction from Poisson regression models. Control variables are the same as in the previous table.

Discussion

- Employment instability comes with **negative consequences** for fertility decisions

- Such consequences worsen over time, as **younger cohorts are affected by LM reforms**

- Employment instability **not only leads to a postponement** of fertility decisions, but actually **lowers overall fertility**, as recuperation does not take place to a sufficient extent

- The negative effect of employment instability is mainly a question of **fragmented employment careers**, rather than single episodes of involuntary work interruptions or atypical employment

- Employment conditions **gain importance** in the youngest cohorts

Limitations

- Lack of measures on **other objective** (e.g., income) **and subjective sources of employment/ economic uncertainty** which may be relevant as well (Guetto et al. 2022; van Wijk et al. 2021; Vignoli, Guetto et al. 2020)

- In order to assess completed fertility, the two decades since the introduction of labour market reforms still represent a **limited time span**

  → our focus on cohorts with completed fertility history represents **only the tip of the iceberg**: the effects of the precarious employment careers will be even more visible with the subsequent (i.e. after 1975) cohorts

Unstable Employment Careers and Completed Fertility before and after Labour Market Deregulation in Italy

Giammarco Alderotti[1], Raffaele Guetto[1], Paolo Barbieri[2], Stefani Scherer[2], Daniele Vignoli[1]

[1] University of Florence; [2] University of Trento

References

Alderotti, G., Vignoli, D., Baccini, M., & Matysiak, A. (2021). Employment instability and fertility in Europe: A meta-analysis. *Demography*, *58*(3), 871-900.

Barbieri, P., & Scherer, S. (2009). Labour market flexibilization and its consequences in Italy. *European Sociological Review*, 25, 677–692.

Barbieri, P., Bozzon, R., Scherer, S., Grotti, R., & Lugo, M. (2015). The rise of a Latin model? Family and Fertility consequences of employment Instability in Italy and Spain. *European Societies*, 17, 423–446.

Barbieri, P., Cutuli, G. (2016). Employment Protection Legislation, Labour Market Dualism, and Inequality in Europe. *European Sociological Review*, 32(4), 501-516.

Bentolila, S., Dolado, J. J., & Jimeno, J. F. (2019). Dual Labour Markets Revisited, *IZA DP No*. 12126.

Boeri, T. & Garibaldi, P. (2007). Two Tier Reforms of Employment Protection: a Honeymoon Effect? *Economic Journal*, 2007, 117(521), 357-385.

Guetto, R., Bazzani, G., & Vignoli, D. (2022). Narratives of the future and fertility decision-making in uncertain times. An application to the COVID-19 pandemic. *Vienna Yearbook of Population Research*, 20, 1-38.

van Wijk, D.C., de Valk, E., and Liefbroer, A.C. (2021). Temporary employment and family formation: An income or insecurity effect? European Sociological Review online first.

Vignoli, D., & Salvini, S. (2008). Couples' career, self-selection, and fertility in Italy. In *Proceedings of the XLIV Scientific Meeting of the Italian Statistical Society, University of Calabria* (pp. 25-27).

Vignoli, D., Drefahl, S., & De Santis, G. (2012). Whose job instability affects the likelihood of becoming a parent in Italy? A tale of two partners. *Demographic Research*, 26, 41–62.

Vignoli, D., Guetto, R., Bazzani, G., Pirani, E., & Minello, A. (2020). A reflection on economic uncertainty and fertility in Europe: The Narrative Framework. Genus, 76(1), 1-27.

Vignoli, D., Tocchioni, V., & Mattei, A. (2020). The impact of job uncertainty on first-birth postponement. *Advances in Life Course Research*, 45, 100308.

Backup – Descriptive statistics

Men	1951-55	1956-60	1961-65	1966-70	1971-75	*1976-80*	*1981-85*
Nr. of children at age 41							
0	16.71%	23.07%	25.28%	32.05%	31.27%	*43.29%*	*61.46%*
1	22.71%	24.20%	28.29%	22.42%	23.96%	*26.41%*	*20.93%*
2 or more	60.58%	52.73%	46.43%	45.53%	44.77%	*30.30%*	*17.61%*
Atypical LM entry	18.73%	22.10%	20.25%	23.47%	31.00%	34.68%	42.29%
Nr. of employment spells							
0	4.14%	6.41%	3.22%	6.69%	7.97%	*6.07%*	*9,83%*
5 or more	6.47%	8.24%	9.63%	9.43%	9.53%	*11.48%*	*10.46%*
Months spent in atypical employment							
0 months	79.25%	77.19%	77.37%	73.41%	73.41%	*60.35%*	*57.16%*
48 months or more	10.83%	9.12%	10.20%	11.40%	11.40%	*15.07%*	*20.66%*
Nr. of voluntary work interruptions	0.37	0.36	0.38	0.38	0.39	*0.49*	*0.42*
Nr. of involuntary work interruptions	0.13	0.19	0.21	0.23	0.28	*0.43*	*0.39*
Time from educ. to 1st empl.							
0-23 months	26.23%	29.55%	32.38%	29.65%	27.58%	*32.57%*	*29.64%*
48 months or more	23.33%	22.31%	26.05%	27.83%	27.51%	*25.81%*	*21.26%*

Backup – Descriptive statistics

Women	1951-55	1956-60	1961-65	1966-70	1971-75	1976-80	1981-85
Nr. of children at age 41							
0	13.94%	15.48%	16.89%	19.35%	24.45%	25.34%	45.14%
1	24.09%	21.83%	24.71%	28.35%	25.68%	26.27%	23.63%
2 or more	61.97%	62.69%	58.40%	52.30%	49.87%	48.39%	31.23%
Atypical LM entry	24.75%	25.75%	31.97%	30.14%	35.30%	37.51%	44.39%
Nr. of employment spells							
0	24.49%	28.06%	28.35%	22.93%	19.99%	19.59%	23.14%
5 or more	3.61%	3.68%	6.17%	7.21%	9.87%	8.71%	10.17%
Months spent in atypical employment							
0 months	79.69%	76.91%	73.15%	71.44%	63.17%	64.53%	58.01%
48 months or more	8.91%	7.44%	9.83%	10.88%	12.05%	13.54%	17.55%
Nr. of voluntary work interruptions	0.43	0.41	0.40	0.49	0.46	0.52	0.41
Nr. of involuntary work interruptions	0.19	0.24	0.33	0.28	0.36	0.40	0.41
Time from educ. to 1st empl.							
0-23 months	22.16%	24.13%	23.35%	25.17%	28.31%	26.98%	28.19%
48 months or more	22.56%	18.11%	18.28%	22.76%	23.78%	20.97%	16.33%

Results: EHA

In addition to the Odds Ratios (ORs), we reported, for each category of employment status, the yearly variation in the probability of experiencing the event with respect to the reference category (i.e. permanent employment), computed as the AME (which refers to the monthly variation in the probability of having a(nother) child) multiplied by 12, and thus expressed in pp

Transition to the first child

| | Cohorts 1951-65 | | | | | | | | Cohorts 1966-75 | | | | | | | |
| | MEN | | | | WOMEN | | | | MEN | | | | WOMEN | | | |
	OR		yearly change		OR		yearly change		OR		yearly change		OR		yearly change
Employment (ref. permanent)																
Atypical empl.	0.72	***	-1.5 pp		0.81	**	-1.2 pp		0.56	***	-1.9 pp		0.79	**	-1.1 pp
Self-empl.	0.90	*	-0.5 pp		1.06		0.3 pp		1.02		0.1 pp		0.91		-0.5 pp
No work	0.43	***	-3.1 pp		0.99		-0.1 pp		0.44	***	-2.4 pp		0.88	**	-0.7 pp
N	3,013				3,133				2,335				2,374			

Transition to the second child

| | Cohorts 1951-65 | | | | | | | | Cohorts 1966-75 | | | | | | | |
| | MEN | | | | WOMEN | | | | MEN | | | | WOMEN | | | |
	OR		yearly change		OR		yearly change		OR		yearly change		OR		yearly change
Employment (ref. permanent)																
Atypical empl.	1.05		1.6 pp		0.92		-2.2 pp		0.67	***	-9.4 pp		0.80	*	-5.2 pp
Self-empl.	1.07		1.8 pp		1.13		3.7 pp		0.99		-0.0 pp		1.25	*	6.6 pp
No work	0.88		-2.9 pp		0.92		-2.1 pp		0.77	**	-6.4 pp		0.96		-0.9 pp
N	2,433				2,662				1,621				1,845			

Source: authors' elaboration on FSS 2016 data. *Note:* * $p<0.10$, ** $p<0.05$, *** $p<0.01$. Control variables include birth cohort, parental education, parents' union dissolution, parents ever married, both parents' age and social class (ESeC) when the respondent was 14, number of siblings, respondent's place of birth and educational level.

Additional analyses and robustness checks

- We re-estimated the MLRs **restricting the sample to individuals who have ever worked**

  - **Reduces collinearity** between labour market-related variables
  - Allows adding a variable about respondent's **highest socioeconomic-status** (ISEI) **reached** and a variable about **career mobility**.
  - The variables about ISEI and social mobility are seldom substantially and statistically significant; however, they support the 'role incompatibility' hypothesis among women, since high ISEI and upward mobility are related to higher chances of childlessness among women

- We added **interaction terms between education and labour market-related variables to MLR**

  - Small sample size; results suggest that the **negative effect of temporary employment on fertility is stronger among higher educated women**

- We included a control for **union history**

  - Union formation mediates a substantial part of the relationship between employment and fertility

Recuperation over 41?

"Data at the national level suggest that the increase of childbearing after age 40 took place to a relatively small extent: the share of children born to mothers aged 40 or older increased from 7.2% in 2012 to 8.4% in 2016, while the share of children born to fathers aged 40 or older increased from 21.1% in 2012 to 23.5% in 2016."