



Natives' and migrants' employment uncertainty and childbearing during the great recession: a comparison between Italy and Sweden

Giammarco Alderotti, Eleonora Mussino & Chiara Ludovica Comolli

To cite this article: Giammarco Alderotti, Eleonora Mussino & Chiara Ludovica Comolli (2022): Natives' and migrants' employment uncertainty and childbearing during the great recession: a comparison between Italy and Sweden, *European Societies*, DOI: [10.1080/14616696.2022.2153302](https://doi.org/10.1080/14616696.2022.2153302)

To link to this article: <https://doi.org/10.1080/14616696.2022.2153302>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



[View supplementary material](#)



Published online: 28 Dec 2022.



[Submit your article to this journal](#)



Article views: 593




[View related articles](#)



[View Crossmark data](#)

Natives' and migrants' employment uncertainty and childbearing during the great recession: a comparison between Italy and Sweden

Giammarco Alderotti ^a, Eleonora Mussino^b and Chiara Ludovica Comolli^c

^aUniversity of Florence, Firenze, Italy; ^bUniversity of Stockholm, Stockholm, Sweden; ^cUniversity of Bologna, Bologna, Italy



ABSTRACT


This study contributes to the empirical research on the fertility decline registered in Europe in the aftermath of the Great Recession adopting a comparative perspective. We explore childbearing behavior during the crisis across three dimensions of vulnerability: migration background (measured as: country of origin and length of stay in the destination country), labor market uncertainty, and country of residence. We compare childbearing behavior by parity among native and migrant women with different employment statuses in Sweden and Italy. Using the Swedish population registers and the Italian Labor Force Survey, we investigate the change in childbearing probabilities between the pre-crisis (2006–2009) and the years following the onset of the crisis (2010–2015). We find that the chances of motherhood in the aftermath of the Great Recession decreased substantially among recently arrived migrant women, but also among unemployed natives and women with unstable careers. The migration and labor market vulnerabilities, however, do not accumulate: unemployment and career instability negatively affect only native women's probability of motherhood. Finally, the country comparison demonstrates that while the duration of stay and the weaker labor market attachment reduces the chances of motherhood in both contexts, the negative effect of unemployment is particularly strong in Italy.

ARTICLE HISTORY Received 22 January 2022; Accepted 8 November 2022

EDITED BY Katya Ivanova

KEYWORDS Great recession; first and higher order births; migrants; Italy; Sweden; employment uncertainty

CONTACT Giammarco Alderotti  giammarco.alderotti@unifi.it  University of Florence, Firenze, Italy

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/14616696.2022.2153302>.

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

1. Introduction

The impact of economic crises on population dynamics has long been on the demographers' agenda (Easterlin, 1987; Livi Bacci, 2001). The overall outcome of such a strand of research is that economic uncertainty negatively influences fertility decisions, at the very least in terms of timing, inducing a postponement of childbearing, but possibly also affecting the quantum of fertility (Sobotka et al., 2011, Comolli and Bernardi, 2015, Caltabiano et al., 2017). The evidence regarding the consequences of the Great Recession of 2008 in Europe is in line with such findings, with many studies reporting a strong correlation between, for instance, increasing unemployment rates and fertility decline (Goldstein et al., 2013; Comolli, 2017). However, despite the rich and growing body of literature on the association between economic uncertainty and childbearing, the evidence regarding migrants' fertility behavior during recessions is scarce. Being generally more weakly attached to the labor market and facing greater financial and employment uncertainty, migrants represent a relatively more vulnerable group in society than natives (Sobotka et al., 2011). Sobotka (2017) shows that in 11 out of 15 European countries considered, in the period 2008–2013, the Total Fertility Rate (TFR) fell much more markedly among migrants than natives. This is certainly the case for Italy, where the TFR dropped by about 2% among natives and 20% among migrants, while in other countries such as Sweden the decline in natives' and migrants' fertility was more similar (below 5%).

To our knowledge, the evidence on migrants' fertility behavior across the years of the Great Recession is limited to the aggregate-level (with few exceptions which, however, do not focus specifically on the crisis' impact, e.g. Dupray and Pailhé, 2018). Macro-level relationships do not always mirror micro-level ones and do not allow investigating the mechanisms behind such processes. To fill this gap in the literature, the first contribution of this paper is to compare, at the individual level, childbearing behavior by parity among first generation migrants and natives over the Great Recession decade. Still, migrants are not homogeneous as a group, as they differ in terms of migration background. Most relevant for the current study, migrants differ by country (or region) of origin and duration of stay in the destination country.¹ Migrants of different

¹We are aware that the literature refers to 'migration background' to distinguish individuals who might have migrated themselves (migrant vs native) and/or previously had a different nationality (foreigners vs nationals), and/or have at least one parent who is a migrant (first vs second generation) (UN, 2006). However, here we only look at first generation migrants and for a person with a first migration background this is generally defined as his or her country of birth. In this study, when we refer to 'migration

origin display heterogenous fertility levels and degrees of labor market attachment (Kraus 2017; Kulu and Hannemann 2016). Moreover, migrants who arrived more recently to the destination country tend to be economically more vulnerable, because of their weaker integration in the labor market (Bevelander and Pendakur, 2012; OECD 2020; Reyneri and Fullin, 2011). Recently arrived migrants may thus be more negatively affected by economic downturns compared to natives and migrants who arrived earlier. Finally, migrants' composition differs across contexts and may vary over business cycles fluctuations (Mussino and Strozza 2012a; Tønnessen et al. 2021).

While investigating in details changes in childbearing behavior over the years of the crisis by migrants' country of origin goes beyond the scope of the study and exceeds the statistical power of the analyses, neglecting such existing heterogeneity would be inaccurate. Therefore, first, we present extensive descriptive evidence on migrants' composition in terms of macro area of origin by country, parity, duration of stay, and period. What is crucial for this study, is that we do not observe a marked variation in the composition of migrants from before to after the Great Recession in either Italy or Sweden. We return to this issue in the concluding discussion. Second, we analyze period variations in the probability of childbirth by migration background both regarding macro area of origin and duration of stay in the destination country. Finally, in all other models on migrants we always control for both macro area of origin and duration of stay.

The second contribution of this study is the investigation of the interplay between migration and a more traditional dimension of vulnerability in the context of crises, i.e. employment instability. Unemployment lowers current and future income prospects. Besides, re-employment becomes even harder in times of recessions. Permanent and tenured job positions are more secure during economic downturn compared to atypical employment, or recently acquired jobs. A solid position in the labor market is usually considered a precondition for parenthood, while unstable working careers are typically linked to the postponement or renunciation of parenthood (Alderotti et al., 2021). While the relationship between employment conditions and fertility has been studied intensively, and a few studies also address to what extent it differs between natives and migrants (e.g. Wood and Neels, 2017; see also Kil et al.,

background' we include not only the country (or macro-area) of origin but also the duration of stay in the destination country, hence distinguishing natives from recently arrived and long-standing migrants.

2018 and Vidal-Coso, 2019 on the consequences of fertility on employment), the interaction between the two sources of vulnerability under the unprecedented circumstances of a global recession has been overlooked in the literature so far.

Finally, the impact of the Great Recession on fertility, and more generally the association between economic and labor market uncertainty and childbearing, differs a great deal not only across social groups but also across contexts (Adserà, 2005, Matysiak et al., 2020). The strength and the nature of the crisis differs across countries. The heterogeneity in the degree of coverage of social and family policies mediates the effect of economic shocks on childbearing decisions. Similarly, the degree of protection of the insiders vs. outsiders, the diffusion of precarious contracts, and the rigidity of the salary scale, among other labor market features, also mediate the effect of employment uncertainty on family decisions. Having a stable or an unstable career might matter in some contexts more than others. In addition, welfare and job market dimensions can vary across our groups of interest – migrants vs. natives – insofar as, for instance, a country grants access to social benefits based on citizenship or not. Because of this complexity, comparative studies are rare and mostly limited to the aggregate-level. The third contribution of this study is hence to compare individual-level childbearing behavior across country contexts. Italy and Sweden differ in many aspects (e.g. fertility rates, family and welfare regime, migration history and labor market features), but both experienced significant and persistent declines in birth rates after 2010. While these declines were largely expected in Italy, they came at a surprise in Sweden (Comolli et al., 2020). Investigating how childbearing postponement over the Great Recession years differed depending on social origin and labor market attachment at the individual level and in cross-country comparative terms, allows us to understand the nature and rationale of the last decade's fertility declines in such seemingly different landscapes.

2. Background

2.1. *Women's employment, career uncertainty and childbearing*

The theoretical pillars of the relationship between employment and fertility are to be found in the New Home Economics theory (Becker, 1981), in which childbearing is seen as a rational choice that depends on individual preferences, on the evaluation of the costs and benefits of

having a(nother) child, and on the family's income constraints. If the household's income or financial security increases, the number of children will also increase. On the contrary, a job loss or an insecure employment position, via reduced income or increased uncertainty regarding future income, induces couples to postpone childbearing (Ranjan, 1999). Beyond monetary constraints, employment instability signals a lower ability to provide for a family; or, at least, it signals uncertainty in the type of future life one's partner offers, making individuals with unstable careers less attractive in the marriage and childbearing market (Oppenheimer, 1994). Traditionally a prerogative of men, we can argue that today this applies to women's labor market attachment too, so that it is not only the income loss following women's career interruption but also the uncertainty concerning the future ability to contribute to the couple that makes female employment instability detrimental to childbearing. However, having children implies an additional indirect cost of the foregone working hours, tenure, and career opportunities due to the time spent in parental leave and childcare. Women, still being the main childcare providers, suffer from this opportunity cost more than men do. If the opportunity cost were large enough, it would offset the income and uncertainty effects, and women's unemployment or career instability would be positively associated with childbearing.

Although not the focus of this study, it is important to note that childbearing decisions are made by the couple, and both men's and women's employment statuses affect these decisions (Comolli, 2021). Couples may follow a specialization model in which one partner increases family responsibilities while the other increases work commitment, or a compensatory model in which one partner's job loss is compensated for by an increased labor market attachment by the other partner. Yet, more and more often changes in partners' work allocation are independent or complementary if both partners' work or family commitments increase (Killewald and García-Manglano 2016). Empirical evidence on couples' decision-making processes shows in fact a decline over time in gender specialization within the household (Esping-Andersen 2009) with partners bargaining over family – work decisions based on their relative earnings or career prospects (Testa et al., 2011).

Importantly, childbearing decisions are also made sequentially, and the determinants of reproductive decisions may differ between the first and higher-order births (Kreyenfeld, 2021). Compared to higher parities, the transition to parenthood represents a major turning point in the life course when competing goals in different domains must be aligned

(Mynarska et al., 2015). Childless women, in fact, tend to be more active in the job market compared to mothers (Boeckmann et al., 2015). The first child is particularly time-intensive and financially demanding, in terms of both the direct expenses of raising a child and the opportunity cost of time diverted from paid work to childcare.

Empirical evidence on the relationship between women's employment and fertility is highly context-dependent (Matysiak and Vignoli, 2008), and mostly focused on the transition to motherhood. More than higher parities, in fact, first births have been postponed as a result of growing economic uncertainty during and after the Great Recession period (Goldstein et al., 2013; Sobotka et al., 2011). Kreyenfeld (2004) and Róbert and Bukodi (2005), regarding East Germany and Hungary, respectively, find that employment has a positive effect on first birth risk. Other studies, including ones on Sweden, find no significant influence of women's employment on fertility (see e.g. Berinde, 1999, for the transition to the third child). For Italy, some studies present evidence of a negative relationship between female labor force participation and transition to motherhood (Santarelli, 2011; Busetta and Giambalvo, 2014) while others show no significant association (Bernardi and Nazio, 2005), although recent evidence suggests that such relation might have become positive in the most recent years (Alderotti, 2022).

Results are also inconclusive when the focus is on unemployment. Many empirical findings support the view that unemployment leads to negative expectations about the future financial situation and therefore to the postponement of first and higher parities childbearing (Adserà, 2005, 2011; Kravdal, 2002; Del Bono et al., 2015), especially in more recent years (Comolli, 2021). However, a few studies report that unemployment is positively related to transition to parenthood (Schmitt, 2008; Ozcan et al., 2010), and others find that the association differs across women's education levels (e.g. Kreyenfeld, 2009).

Finally, a number of studies find that unstable careers, more broadly characterized by temporary or flexible contracts (Alderotti et al., 2021), part-time work and other types of precarious, atypical employment (Del Bono et al., 2015), are among the primary causes of childbearing postponement (Adserà, 2011; Dupray and Pailhé, 2018 and Kreyenfeld et al., 2012 for a review). Barbieri (2011) shows that Italian women's job precariousness negatively affects the entry into motherhood, while Pifti and Vuri (2013) show that increased employment protection in Italy positively affects working women's likelihood to have a child. In Sweden, Lundström and Andersson (2012) prove that having a

temporary job reduces the propensity to become a parent. Studies from other contexts, however, show that employment uncertainty has no significant effect on fertility (see e.g. Wolbers, 2007; de Lange et al., 2014 for the transition to the first child) or that such effect depends on parity, cohort, or women's education level or career tenure (Kreyenfeld and Andersson, 2014; Yu and Sun, 2018).

2.2. Migrants' fertility: the role of country of origin, duration of stay and employment

Migrants' fertility behavior may vary substantially depending on their country, or region, of origin. Migrants may come from low or high (or lower or higher than the destination country at least) fertility settings, and indeed, different fertility behaviors were found among migrants from different countries of origin – also within the same country of destination (Impicciatore et al. 2020; Mussino and Cantalini, 2020; Tønnessen and Mussino, 2020).

The duration of stay in the destination country is another key factor in explaining the reproductive behavior of foreign women (Andersson, 2004; Milewski, 2010). Among recently arrived migrants, fertility behavior tends to be closer to that of their origin country, where they have usually spent their childhood and where they have absorbed most social norms (Socialization hypothesis: Mussino and Strozza, 2012a; Milewski, 2010; Hervitz, 1985). Often, the migration and childbearing processes are connected, with migrants having children right after arrival (Interrelation hypothesis: Mulder and Wagner, 1993; Mussino and Strozza, 2012b), regardless of their country of origin (Cantalini and Panichella, 2019). Migrants with a longer duration of stay in the destination country, where they may have spent part or their entire childbearing years, have been exposed longer to the destination than to the origin country's social norms, therefore, they tend to adapt to the fertility behavior of the destination country (Mussino and Van Raalte, 2013; Mussino et al., 2015). This means that migrants may start behaving more similarly to natives also in response to economic and labor market uncertainty (Adaptation hypothesis: Andersson, 2004; Kulu and González-Ferrer, 2014).

Importantly, the duration of stay in the host country is crucial for migrants' childbearing behavior also in relation to their economic and labor market vulnerability. Immigrants tend to be disadvantaged in the labor market compared to native workers in a number of dimensions.

Migrants face comparatively more obstacles in accessing employment (Bevelander and Pendakur, 2012; van Tubergen et al., 2004). They are more likely than natives to occupy low-status occupations with time-consuming, low-skilled and precarious jobs (Milewski, 2009; Ortensi, 2015), and to earn lower wages (Kreyenfeld and Konietzka, 2002), albeit some of these differences have weakened over time (Borjas, 1985; Reyneri and Fullin, 2011). Female migrants' penalization in the labor market is usually even higher, as they carry a double disadvantage in the labor market: both the gender and the ethnic disadvantage (Mussino and Duvander, 2016; Ballarino and Panichella, 2018). In most OECD countries, the difference in unemployment rate between immigrants and the native-born is significantly more pronounced for women than men. In Europe, migrant women suffer in particular a greater risk of long-term unemployment and involuntary inactivity (OECD, 2020).

2.3. Migrants in context: Italy and Sweden

Migrants are disadvantaged to different extents in Italy and Sweden, first because of the countries' different models for immigrants' integration in the labor market (Reyneri and Fullin, 2011; Adserà et al., 2020). In Northern Europe, where the labor market is highly regulated and there is a low demand for low-skilled labor, foreigners are strongly disadvantaged with respect to natives in terms of employment probability, but they are less strongly penalized as regards job quality. In contrast, in Southern European countries, where the demand for low-skilled labor is high and the labor market is *de facto* poorly regulated in its lowest segments (Reyneri, 2004), migrants are not as strongly penalized in terms of employment opportunity but face higher risks of remaining trapped in the secondary segments of the labor market than their native counterparts (Fellini and Guetto, 2018; Guetto, 2018). Accordingly, in Italy the share of foreign-born women in the labor force is systematically higher than that of native women, while the opposite holds for Sweden (Eurostat 2020). Figure 1 shows trends between 2005 and 2017 in unemployment and inactivity rates among native and migrant women in Italy and Sweden (Eurostat 2020). Unemployment rates are lower among natives compared to migrant women in both countries, but in Sweden the difference is more pronounced, due to the very low rates of unemployment among native women. After 2010, unemployment rates increased similarly among native and migrant women in Italy, while in Sweden they tended to increase more, and to remain higher, among migrant compared

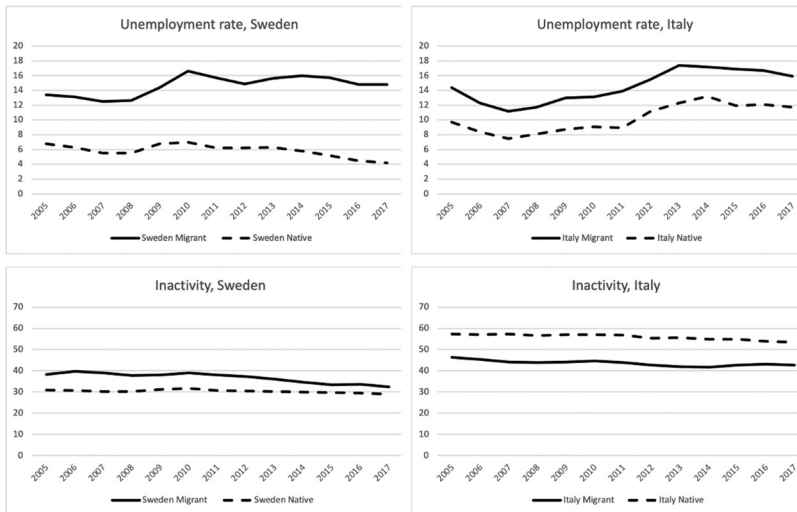


Figure 1. Unemployment and inactivity rates. Natives and migrants in Italy and Sweden, 2005–2017. Source: Eurostat (2020).

to native women. Inactivity rates are much higher in Italy than in Sweden and the two countries display opposite native-migrant comparisons. While inactivity rates are around 10% higher among Italian women than migrant, inactivity among native and migrant women in Sweden is more similar, but with lower prevalence among Swedish women. These figures are in line with the theories on immigrants' integration in the labor market and the country comparison discussed above, predicting an overall greater attachment to the labor market in Sweden than in Italy, but also a greater difference between native and migrant women in terms of unemployment risk in Sweden than in Italy.

The incentives to work for women in the two countries are also clearly different across social groups. In Italy, a traditional familistic society, native Italian women face a normative cost of being working mothers, which seems to be less strong for migrants. At the same time, migrant women often have a stronger need to work in order to support themselves (Ballarino and Panichella, 2018). In Italy, even migrant women who obtain a work permit receive very poor benefits from one of the least generous welfare states in Europe (Reyneri and Fullin, 2011), hence their incentive to work is strong. In Sweden, even jobless women would instead receive minimum benefits.

Finally, the relation between labor market conditions and fertility behavior among migrants is also highly context-dependent. Andersson

and Scott (2005 and 2007) find a positive association between women's labor force participation and the transition to motherhood for immigrants in Sweden. Lundström and Andersson (2012) find that being out of the labor force or having precarious employment has negative effects on the propensity to become a parent, for both immigrants and natives. At least in terms of childbearing, it seems that the universalistic welfare state of Sweden makes immigrants behave more similarly to natives. In fact, where migrants have more limited social rights, immigrant and native fertility patterns are more heterogeneous (Parrado and Morgan, 2008).²

The results for Italy are scarce. Fiori et al. (2018) show that, overall, in Italy between 2002 and 2012 the intention to have a(nother) child among mothers declined significantly and the proportion of women reporting economic constraints as a motivation increased substantially. They also find a convergence over the years of the Great Recession between native Italian and women of another nationality to a similar 20% chance of not wanting a second child due to economic reasons. The authors suggest that non-Italian women tend to work in the private-care sector, which was less affected by the crisis than were other sectors in which native Italian women tend to work.

2.4. The great recession in context: Italy and Sweden

The comparison of Italy and Sweden is interesting because, despite their many differences, both countries have been characterized by a substantial and prolonged fertility decline after 2010. Italy is a typical example of strong recession-poor welfare, and the fertility decline after the Great Recession was largely expected. In contrast, Sweden represents a typical example of weak recession-generous welfare, and the fertility decline was unexpected. Figure 2 shows the two countries' steady and similar decline in Total Fertility Rates (TFR): from 1.98 in 2010 to 1.78 children per woman in 2017 in Sweden and from 1.46 to 1.32 in the same years in Italy (Eurostat 2020). At the same time, the trend in one of the main indicators of the state of the economy, unemployment rate, has been remarkably similar during the years leading up to the onset of the fertility decline. Figure 2 shows that unemployment in the two countries followed an identical trend of initial decline and subsequent increase between 2005

²Andersson (2004) (for fertility behavior) and Milewski and Mussino (2019) (for fertility preference) further discuss how the process of adaptation depends on country's welfare institutions.

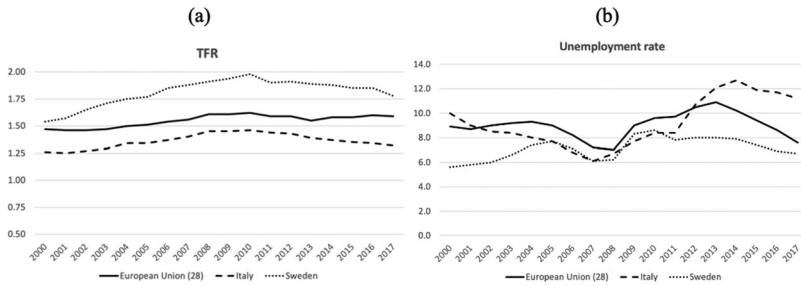


Figure 2. TFR (2000–2017) and unemployment rate (2000–2017) in Sweden and Italy. Source: Eurostat (2020).

and 2010. It seems that the macroeconomic conditions preceding the fertility decline were somehow similar in the two countries but started to diverge after 2011. As a second recession (due to a public debt crisis) hit Southern European countries, the unemployment rate continued to increase in Italy. The Nordic European countries were instead spared this second phase of recession, and in fact the unemployment rate in Sweden leveled off in 2011–2014 and declined afterwards. Despite the Great Recession being thus comparatively mild and short-lived in Sweden, the TFR declined as much as in Italy (–10% between 2010 and 2017, Figure 2), one of the most negatively affected countries. The two countries clearly differ in a number of other crucial dimensions: fertility and family regimes, migration history, female employment participation, and labor market features more generally. These differences are difficult to single out, and it is beyond the scope of this paper to assess which contextual features moderate the effect of the recession on child-bearing. However, it is in light of these differences that the remarkable similarity of the fertility declines in Italy and Sweden becomes worthwhile investigating.

3. Research hypotheses

First, we investigate whether and how, in comparison to natives, the fertility behavior of migrants of different origins and with different durations of stay in the destination country changed across the years of the Great Recession. We hypothesize that *women coming from contexts of high fertility and low female labor market attachment (e.g. Africa and Middle East) display not only a higher level, but also a smaller drop in the probability of birth during the Great Recession, compared to natives*

and to migrants from low fertility and high female labor market attachment contexts (e.g. East Europe) (H1). Moreover, we hypothesize that women who recently migrated display a higher probability of childbirth than long-term migrants and natives; yet, they are also likely to display a greater drop, compared to the latter, in the probability of birth during the Great Recession due to their weaker financial and labor market stability (H2).

Second, the study investigates not only how protective it is, in relation to childbearing during a recession, to have a stable employment instead of non-employment or an intermittent working career, but also how this type of employment vulnerability interacts with migration status. *With this respect, we expect unemployment and career instability to drive childbearing probability down during the crisis more strongly among migrants compared to natives, because of the cumulative disadvantage they suffer in the labor market (H3).*

Third, we test the previous hypotheses in relation to the country context. Because migrants tend to be more integrated in the labor market in Sweden than in Italy, especially in the long-term, we *expect larger level differences between migrant and native women and larger declines during the crisis in childbearing probability in Italy compared to Sweden (H4).* In addition, we hypothesize a stronger link between employment and childbearing among migrants in Italy than in Sweden. *Migrant women's greater financial vulnerability in Italy, especially for recently arrived migrants, suggests a stronger negative effect of the Great Recession on childbearing probability among those more weakly attached to the labor market there, compared to Sweden (H5).*

Finally, in light of the arguments and evidence presented in Section 2, we *expect first births to be postponed during the Great Recession more than subsequent births both among natives and among migrants in both contexts (H6).*

4. Data and methods

4.1. Data and analytic sample

We analyze the change in the fertility behavior of natives and migrants over the years of the Great Recession using individual-level data for Italy and Sweden: the Italian Labor Force Survey (LFS) and a Swedish population collection of registers called 'Migration Trajectories'. The differences between the two datasets are numerous. First, the registers

cover the entire Swedish resident population each year, while the LFS is a survey of the Italian resident population in a given year. Second, Swedish registers have a longitudinal setup, covering complete family-demographic histories and a large amount of socioeconomic and background information. In contrast, the LFS has a cross-sectional character, in which different women are interviewed each year, and contains only retrospective information on current family size and employment status, and job's duration. Despite the limitations of the Italian in comparison to the Swedish data, at the time of writing the LFS contains the best micro data source available for Italy. The LFS is in fact the most reliable survey to use when the focus is on migrants, due to the comparatively large immigrant population surveyed (Fullin and Reyneri, 2011), and it was already used to analyze migrant fertility (e.g. Cantalini and Panichella, 2019; Mussino and Cantalini, 2022). Moreover, the LFS offers the most recent, publicly available, yearly micro data for Italy, necessary when studying the consequences of the Great Recession.

The most relevant consequence of the differences between the two data sources is that, in order to make the two datasets comparable, restrictions on the construction of the explanatory variables need to be imposed. Disposing in the Italian LFS of retrospective information on women's employment status and duration before the interview, we are able to pre-date employment conditions to childbirths. This limits issues of reversed causation and the reliance on cross-sectional information only. We then adapt the Swedish data to this design, by using employment information retrospectively (not longitudinally) and treating the data as cross-sectional. The following section illustrates the variable constructions more in details. Further issues regarding the different types of data used and the implications for our findings are discussed in the conclusions. We run separate but identical analyses for the two countries. Our analytic sample is composed of women of reproductive age (15–44 years old) resident in the two countries from 2006 to 2015 ($N = 287,825$ for Italy; $N = 17,979,422$ for Sweden³). We weight⁴ the Italian data in order to report estimates to the relevant population of interest. Moreover, as a robustness check to further ensure comparability of the two datasets, we also run analyses on a sample (5%) of Swedish women.

³The analyzed Swedish population includes repeated observations. However, observations from different years are analyzed cross-sectionally and each year, women may enter or leave the dataset because of ageing, death, outmigration.

⁴By design, the LFS, after using weights, is fully representative of the Italian population.

4.2. Variables and methods

The dependent variable is the probability of childbirth, a dummy that records whether a woman had a child during the past 12 months.⁵ In the Swedish registers we have the actual date of the birth, while women's fertility history in the Italian LFS is based on the information on the number and age of the co-resident children (Own-children method, Cho et al., 1986). This method is applied in many surveys in several European countries for the study of fertility (Bordone et al., 2009; Adserà and Ferrer, 2011), also in combination with LFS data to study migrant fertility specifically (e.g. Dubuc, 2012). We exclude foreign-born women who arrived during those 12 months (in both countries), because they could have had a child abroad during that time, which would not be accounted for in our estimates.

The main explanatory variable is a period dummy for the years of the Great Recession. We consider the 2006–2009 waves (corresponding to children conceived in 2005–2008) as the pre-crisis period and the 2010–2015 waves (corresponding to children conceived in 2009–2014) as the aftermath of the Great Recession. We operationalize the period dummy taking into consideration a delay of at least one year between the decision to have a child, the fact that a few attempts might be needed before conception, and childbirth.⁶ Our second explanatory covariate is a categorical variable for women's duration of stay, distinguishing between natives, recent migrants, and long-term migrants. The distinction between recent and long-term migrants is based on the duration of stay of migrant women in the destination country being lower or equal to or greater than ten years.⁷ Different thresholds have been used in demographic studies about migrant fertility to distinguish between recent and long-term migrants, depending on the context and period analyzed (10 years, e.g. Dubuc 2012; Ng and Nault 1997; 8 years, e.g. Robards and Berrington 2016; 7 years, e.g. Stonawski et al. 2016; 5 years, e.g. Adserà

⁵This information is unavailable in the usual release of the Italian LFS (which, instead, includes information about the presence of children aged 0–2 in the household). We access a richer version of the LFS data through the Adele Laboratory (ISTAT) in Florence (IT).

⁶As a robustness check, alternatives were tested in order to account for potential bias regarding the timing of the effect of the Great Recession on fertility outcomes. We moved 2009 in the post-crisis period, and results remain virtually unchanged. We also moved only the first two quarters of 2009 in the post-crisis period for Italy (Swedish data are not separable by quarters), and results are still consistent.

⁷In the Swedish case, we run models with the cut at 5 and 7 years after migration and the results are virtually identical. The same robustness check would result in a too strong reduction of the number of recently arrived migrants in Italy due to the relatively small share of foreign-born individuals in the LFS. However, we repeated all the analysis in the Italian sample using 9 and 11 as alternative thresholds and results remain virtually unchanged.

and Ferrer, 2016). We chose a threshold high enough (ten years) to ensure that long-term migrants are effectively better integrated in the labor market than the recently arrived ones (e.g. Borjas, 1985). Additionally, for migrants who have spent more than 10 years in the country and are still in fertile age, we can assume that they would have spent a considerable part of their childbearing years in the destination country. Besides the duration of stay in the destination country, migrants are identified by their country of birth. Due to sample size issues, we aggregate countries into macro-areas of origin: Eastern Europe, Central and South America, Middle East and Africa, Asia, Other (see Tables 1–4 in the supplementary material). The first set of analyses is based on the interaction between the period dummy and the migration background, both on macro-area of origin and duration of stay.

In a second set of analyses, we add women's employment status. For the Italian LFS data we group women in four categories based on their labor market status during the 12 months preceding the eventual childbirth (i.e. up to 24 months before the interview, in order to avoid reverse causation). First, women who have been continuously employed in the previous 12 months; second, women who have been continuously unemployed in the previous 12 months; and third, women who have been continuously inactive in the previous 12 months. The fourth and residual category includes all the other women, namely those who have changed either job or employment status at least once in the same period. These women might have gone in and out of the labor market or changed occupation or simply workplace during this time. This category of women with an unstable career is admittedly heterogeneous. Nevertheless, what these women have in common is the experience of some kind of interruption in their recent career development, voluntarily or not, a situation of employment uncertainty and instability, characterized by alternations of (short-term) employment and non-employment. In the Swedish registers, employment status is assessed *via* the main source of income earned during the year before the eventual childbirth (for more details, see Andersson and Scott, 2005; and Ohlsson-Wijk, 2015). We defined four employment categories following the same logic of the Italian dataset: employed women (received only a working salary); unemployed women (received only unemployed benefit) and inactive women (in absence of any income from work or public transfers). The fourth category in the Swedish case includes all the other women which have been in between statuses, namely their income came from different sources in the year before the eventual childbirth. Full-time students are included

among the inactive in both countries, while part-time students are included in the unstable category in Sweden.⁸ We introduce women's employment status preceding childbirth in the model first as a control and, second, as an interaction with the period dummy to test whether the effect of the crisis was concentrated in a particular social origin group *and* in a particular job status.

All models include the following control variables measured 12 months before the interview: women's age and age squared, education (primary, secondary, tertiary) and region of residence (NUTS1). We also control for civil status (unmarried, married, separated/divorced/widow), but only when modelling the probability of having another child. In fact, civil status has a very different nexus with the transition to motherhood in the two countries. In Italy, marital status would strongly mediate the effect of the Great Recession on transition to motherhood, as most first childbirths still take place within marriage and the crisis delayed them too. In Sweden, on the contrary, couples marry as a consequence of having the first child, making it wrong to include civil status as a control variable. Finally, when looking at the migrant population we include macro area of origin and duration of stay as control variables. Descriptive statistics are reported in the supplementary material (Table 5).

In light of the parity specificities highlighted earlier, we run all models separately for the probability of having a first or a second or higher order birth.

We use Linear Probability Models (LPM) to study the probability of the first or a(nother) child.⁹ The LPM offers the advantage of simplicity of interpretation of coefficients and interactions, identical to any standard linear model (i.e. a one unit change in the independent variable leads to an X change in the probability of birth). In contrast to Event History Models, the time dimension is not incorporated in LPM estimates, which express simply a change in probability of birth, yet, we generally interpret our results as postponement of childbirths as we cannot rule out the possibility that (especially first) births will be recuperated later on. Confidence Intervals are calculated using the method by Goldstein and Healy (1995) to have an average level of 5% for type I errors in

⁸As a sensitivity check, we replicated the analyses defining an additional category for students. Results proved to be robust.

⁹Logit models have been shown to suffer from estimation bias when interactions terms – the main focus in this paper – are used (Mood, 2010). Yet, since LPM predicted probabilities are identical to those provided by the Logit models, we run a robustness check repeating the analysis with logistic models, and results (available upon request) remain largely unchanged.

pair-wise comparisons of a group of means (i.e. with a confidence level of 83.5%). Results are illustrated graphically using predicted probabilities to ease interpretability, but complete results are reported in the supplementary material (Tables 6–9).

5. Results

5.1. Descriptive results

Migrants in Italy and Sweden differ by country of origin (Tables 1–4 in the supplementary material). What follows is a brief discussion of migrants' composition by macro-areas of origin in Sweden and Italy based on our analytical samples. Most migrants in Sweden come from Africa or the Middle East (around 30%, mostly from Iraq, Iran and Somalia) and from Eastern European countries (around 25%, especially from Poland, Bosnia and Herzegovina, and other countries of the former Yugoslavia). Migrants from Asia represent an additional 20%. While no big differences emerge by parity and duration of stay in most groups, the share of migrants from Africa or Middle East is especially high among those recently arrived and with at least one child (above 35%). Importantly, we do not observe major changes in the composition of migrants by macro area of origin from before to during the Great Recession in Sweden. Yet, within the group of migrants from Africa or Middle East, the share of those from particularly high fertility countries (i.e. Somalia, Djibouti, or other African countries) increases in 2010–2015 with respect to the past.

In Italy, Eastern European migrants represent by far the largest group (above 40%, mostly from Romania and Albania), especially among the recently arrived. Migrants from Africa and the Middle East represent about 15–20% of all recent migrants, while among long-term migrants the majority comes from other countries (about 50%, mainly from Western Europe: Germany, Switzerland and France). Relative to the period 2006–2009, in 2010–2015 we observe an increasing share of recently arrived Eastern European migrants in Italy, largely offset by a decline in migrants from neighbouring Western countries (category Other countries).

Finally, in terms of country comparison, these differences suggest a greater presence of high-fertility migrants in Sweden compared to Italy, thus a weaker link between migration and fertility in Italy than in Sweden.

5.2. Migration background

Figure 3(a, b) show how the predicted probability of having a first or another child has changed from before to after the Great Recession by migrants' macro area of origin (full models in Table 6 in the supplementary material). Figure 3(a) shows that the probability of becoming mother is lower in 2010–2015 than in 2006–2009 among all subgroups in Sweden. Such reductions in the probability of having the first child are relatively small in magnitude but significant among Eastern European, Central and South American and Asian women, while they are negligible for women from Africa or the Middle East. In Italy, the probability of having the first child decreases in the aftermath of the Great Recession among migrant women from Africa or the Middle East (although confidence intervals are large), and from Eastern Europe, while we observe no significant change among the other subgroups.

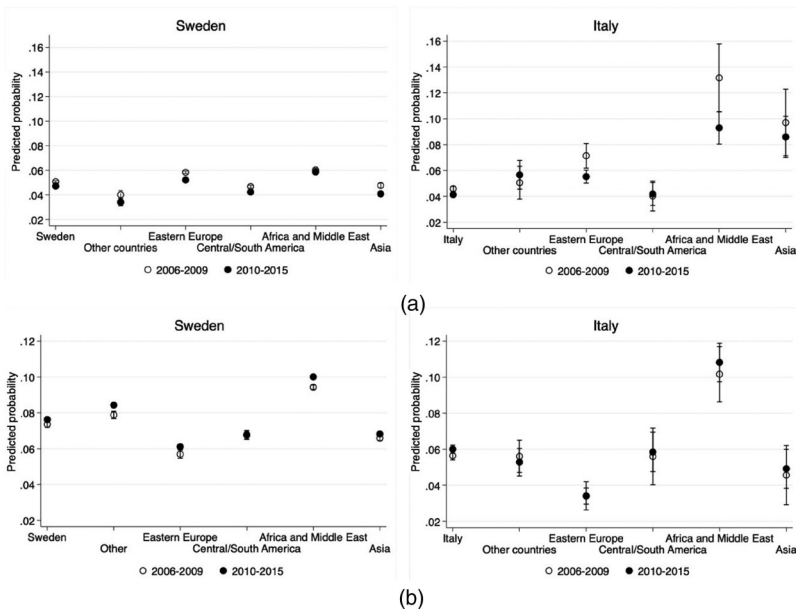


Figure 3. (a) Predicted probability of a first child by macro-area of origin. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence. Control variables at mean value. Error bars denote 83.5% confidence intervals. (b) Predicted probability of another child by macro-area of origin. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence, civil status. Control variables at mean value. Error bars denote 83.5% confidence intervals.

Figure 3(b) shows instead (slightly) higher probabilities of having another child for women who already have at least one child among all subgroups in Sweden, including natives, with the only exception of Central and South Americans. The probability of having higher parity births increased especially among women born in Africa or Middle East. However, as noted earlier, among the latter, in 2010–2015 we observe a rise in the share of migrants from particularly high fertility countries which may partially explain such increase in higher order births probability. Conversely, figures for Italy suggest a relatively stable probability of having another child for all subgroups.

Figure 4(a, b) show the predicted probabilities of having, respectively, a first or a higher-parity child before and after the onset of the Great Recession in Sweden and Italy for native women, women who migrated in the previous ten years, and women who migrated earlier (full models in Table 7 in the supplementary material). The probability of having the

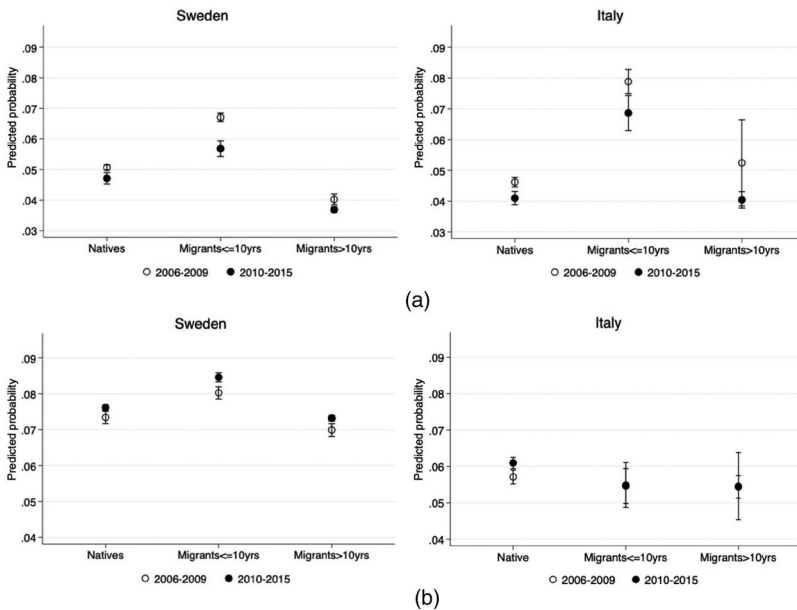


Figure 4. (a) Predicted probability of a first child by duration of stay. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence. Control variables at mean value. Error bars denote 83.5% confidence intervals. (b) Predicted probability of another child by duration of stay. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence, civil status. Control variables at mean value. Error bars denote 83.5% confidence intervals.

first child decreases after the onset of the crisis in Sweden and in Italy in all the groups analyzed, but with different intensities. The decline during the Great Recession is greater among recent migrants, who also display, as expected, a higher probability of a first child in both countries. To get a sense of the magnitude of the association, we can compare the 2010–2015 decline in first births probability among recent migrants (-0.011 in Sweden and -0.010 in Italy, Table 7) to the coefficient of higher education (-0.016 in Sweden and -0.007 in Italy, Table 7). Close but not as large in Sweden, in Italy the period negative association among recent migrants with first birth is even stronger than that of socioeconomic status.

The drop is smaller among natives and long-term migrants but still statistically significant in both groups in Sweden and among natives in Italy. On the contrary, the probability of a second or higher-order birth increases in the aftermath of the Great Recession for all groups in Sweden and among natives in Italy (but the difference is not statistically significant). No relevant change in the probability of having another child is detected among migrants in Italy. Overall, the duration of stay hence did not seem to matter regarding changes during the Great Recession in higher order births probabilities, neither in Sweden nor in Italy.

5.3. Employment status

Figures 5 and 6 show the change across the years of the crisis in the predicted probability of having the first child, respectively for natives and migrants, across the four categories of employment status (full models in Table 8 in the supplementary material). Among Swedish women,

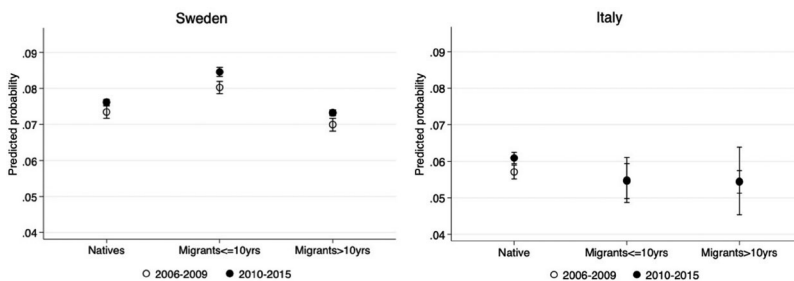


Figure 5. Predicted probability of a first child by employment status. Natives. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence. Control variables at mean value. Error bars denote 83.5% confidence intervals.

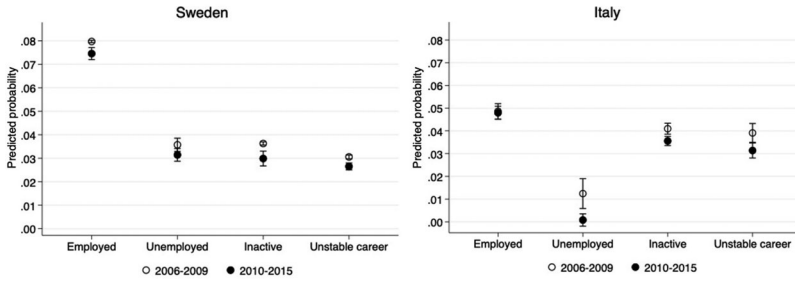


Figure 6. Predicted probability of a first child by employment status. Migrants. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence, duration of stay, macro area of origin. Control variables at mean value. Error bars denote 83.5% confidence intervals.

the chances of having a first child decrease significantly in all groups, but the difference is not statistically significant among the unemployed. In contrast, the probability of having the first child remained virtually unchanged before and after the Great Recession among Italian employed women, but decreased significantly among the unemployed, the inactive, and among women with unstable careers. The point estimates of the decline after 2010 for Swedish women with weaker labor market attachment are not large (one third of the estimate for higher education) while the estimate of the drop for Italian unemployed women is greater than that the association with tertiary education (Table 8). Among migrants in Sweden, the probability of having a first child decreases among employed and inactive women, while it remains unchanged among women with unstable employment and increases among the unemployed. The results on Italy suggest that migrant inactive women are less likely to have their first child after the crisis (although confidence intervals are large), while no relevant variation is detected among the unemployed and among migrant women with unstable careers.

Finally, Figures 7 and 8 present the probability of higher-order parities among the same groups (full models in Table 9 in the supplementary material). Here, estimates are less precise. Among natives, we observe a weak decrease (confidence intervals partially overlap) in the probability of having another child among Swedish unemployed women. Among migrants, our results suggest that the probability of having another child increased in the aftermath of the Great Recession in Sweden, significantly among inactive women, while in Italy it increased among women with unstable employment.

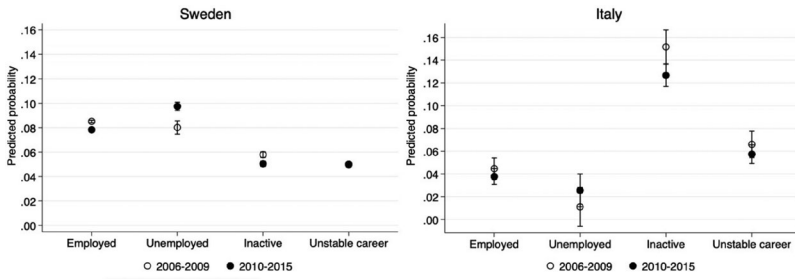


Figure 7. Predicted probability of another child by employment status. Natives. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence, civil status. Control variables at mean value. Error bars denote 83.5% confidence intervals.

6. Discussion

6.1. Summary of results

Building on the literature showing that fertility declines during economic downturns (e.g. Comolli, 2017), this study is the first to consider migration background as a source of vulnerability in relation to child-bearing during recessions. Migrants are economically more fragile than natives because they are less integrated in the society and the labor market. They tend to be overrepresented among the unemployed and in more precarious jobs and might face even greater insecurity during recessions when jobs are scarcer. Establishing whether migration background during the Great Recession – per se or in interaction with the more traditional source of vulnerability of

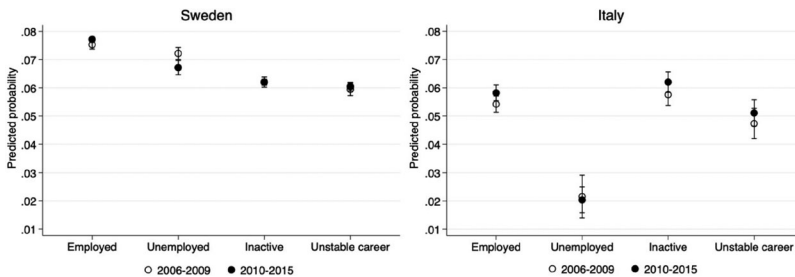


Figure 8. Predicted probability of another child by employment status. Migrants. Source: Elaboration of the authors based on Swedish Population Registers and Italian LFS. Note: Models control for age, age squared, educational level, area of residence, civil status, duration of stay, macro area of origin. Control variables at mean value. Error bars denote 83.5% confidence intervals.

employment insecurity – is associated to childbearing is the principal contribution of this study.

The second novelty of the study lies in its individual-level comparative approach. We explore childbearing behavior among migrant and native women in Italy and Sweden. This comparison is intriguing and opens up to interesting comparative questions. The postponement of childbirths was in fact largely expected in Italy, in light of its contextual macroeconomic fragilities and long-term weak family support. In contrast, this was not the case for Sweden, where the fertility decline came as a surprise after the Great Recession, given the weaker and shorter character of the economic downturn and the long-term generous family support. Using the Italian LFS and the Swedish population registers, we ran separate but identical analyses to study whether specific socioeconomic vulnerabilities are associated with a stronger birth postponement across the years of the Great Recession in one context or the other.

We find support for our first hypothesis (H1) of a stronger decline in childbearing probability among migrants from low fertility contexts (Eastern European, Central and South American and Asian women), compared to migrant women from high fertility contexts (Africa or the Middle East), but only for first births in Sweden. We find no support for H1 on first births in Italy, where the strongest decline is witnessed among migrant women from Africa or the Middle East; and on higher parities in neither country.

Our hypothesis (H2) of a stronger decline in childbearing probability during the crisis among recently arrived migrants, less integrated and more vulnerable, was confirmed both in Sweden and in Italy, but again only on the transition to parenthood. The argument that the processes of migration and childbearing are interconnected is also generally supported for both Sweden and Italy: in all periods, the probability of birth is higher for recently arrived migrants compared to natives and women who migrated earlier than 10 years ago (González-Ferrer et al., 2017).

While we find a stronger postponement of first births among native unemployed women and those with unstable careers compared to the employed in both Sweden and Italy, our hypothesis (H3) of a cumulative disadvantage of migration background and labor market vulnerabilities on childbearing is not supported. In both countries, employment instability and joblessness are in fact strongly negatively associated to motherhood among natives, but not among migrants. Inactive migrant

women are instead those who most strongly postponed the entry into motherhood, again in both countries.

Mixed evidence emerges in relation to the country differences. Employed Swedish women displayed a net advantage during the Great Recession over other employment statuses on the transition to motherhood, but for subsequent births and among migrants the differences across employment statuses are very small in Sweden, as hypothesized (H4). In Italy, a disadvantage among unemployed women emerges (common to all parities and migration backgrounds) but, contrary to what expected (H5), more substantially among native women than migrants. Overall, we also find greater period changes across employment statuses in Italy among natives, and greater period changes in Sweden among migrants.

Notably, our finding of no effect on unemployed migrant women in Italy, and even positive effect on unemployed migrant in Sweden is interesting. As the Uncertainty Reduction theory (Friedman et al., 1994) postulates, extremely disadvantaged women who in periods of rising insecurity do not see any future prospect in their role in the labor market, turn to their role of mothers as a strategy to reduce uncertainty, and accelerate childbirth. A stronger positive effect in Sweden than in Italy might be explained by the more generous social benefits, and it is in line with similar findings for Norway (Aassve and Lappegard, 2009).

Finally, our results suggest (in support of H6) that the probability of having an additional child has changed rather little (if at all) after the onset of the Great Recession among Italian and Swedish native mothers, regardless of their employment condition, and it has possibly increased among inactive migrants in Sweden and migrant women with unstable careers in Italy. This is in line with other studies on European countries suggesting that the Great Recession affected transition to parenthood much more than subsequent parities (Dantis and Rizzi, 2020; Goldstein et al., 2013).

Beyond our hypotheses, but in relation to the theories of the fertility of migrants, our results also confirm, in both contexts, a strong interrelation between fertility and migration, in particular (but not only) in the pre-crisis period, with higher fertility level for recent migrants and for childless women (Andersson 2004; Mussino and Strozza, 2012). Our results also support the adaptation hypothesis: the risks for long standing migrant are similar to the ones of natives. Not surprisingly, we also found evidence for the socialization effect, in particular for recent migrants (who spent most of their fertility period in the origin countries).

The socialization is also confirmed by the different fertility patterns among country of birth (Mussino and Cantalini, 2022).

6.2. Conclusions

Before discussing the implications of our findings, it is important to acknowledge that the study suffers from a few limitations. First, due to the Italian LFS data, some restrictions had to be placed to the variable construction and research design. Most notably, we cannot look at how changes in labor market variables influence childbearing within individuals to assess a more causal effect of the crisis on childbearing. In this respect, panel data are always preferable when studying life-course family decisions; however, longitudinal data on Italy covering the period of the crisis were not available at the time of writing. In addition, the residual category of career instability also includes women who did not truly interrupt their career but simply changed job or workplace. This might include those who were actually promoted to a better job, which is not exactly the type of employment insecurity we are pointing at in this study on the Great Recession, but more a problem of ‘role incompatibility’. We chose the shortest interval for which we had childbearing information for the LFS (12 months before childbirth) to limit as much as possible the selection on the length of employment. In order to make our findings about labor market attachment stronger, we run a robustness check by measuring employment two years before the birth of the child and found that results remain mostly unchanged.

Second, while acknowledging that the employment/fertility link during the Great Recession may differ among migrants from different origins, the relatively small sample size of Italian data did not allow carrying out models on the relationship between labor market attachment and fertility specifically by (groups of) country of birth. Given the relevance of the issue, we provided detailed descriptive statistics about the composition of migrant subgroups by macro-area (and country) of origin in order to shed light on the main changes in the composition of migrants’ subgroups over the years of the crisis. As shown in Tables 1–4 in the supplementary material, few changes in the composition of migrant samples took place between the two periods. One such change is the increase in the share of migrants from Eastern Europe in Italy in the aftermath of the Great Recession, which mainly relates to the accession of Poland and Romania into the European Union in 2004 and 2007. At the same time, we observe a decline in migrants from neighbouring

Western countries (category Other countries). Albeit with clear differences in terms of socioeconomic origin, both Eastern and Western European migrants represent low fertility-high female labor market participation populations. Therefore, despite this compositional change in the migrant population in Italy, we believe the overall migrant fertility-employment structure in Italy changed only marginally, and not enough to invalidate our estimates. Moreover, all models that we could not run by migrants' origin, controlled for it, so that our results, albeit being averaged across migrant subgroups, hold net of their composition.

Third, despite the Italian LFS being representative also for the non-national population and being broadly used to study migrants (for Italy, see Ballarino and Panichella, 2015, 2018), including their fertility behaviors (e.g. Cantalini and Panichella, 2019; Mussino and Cantalini, 2022; Dubuc, 2012), we cannot completely rule out the possibility that recent migrants have a greater non-response rate compared to Italians or long-term migrants (e.g. because of language or residential mobility issues).

A fourth limitation comes instead from the Swedish data. Register data are subject to measurement error because, especially with migrants, they could overestimate the population at risk due to unaccounted outmigration – an issue known as *over-coverage*. Monti et al., (2018) found that this has a direct effect in underestimating migrant fertility. We do not have the same problem with the Italian survey. This could slightly affect our comparative results in the sense that the Swedish estimates might underestimate the actual fertility of migrants and maybe overestimate the fertility decline of migrants during the Great Recession, if unaccounted outmigration increased due to the crisis. This remains an open question for future research.

Fifth, due to the complexity of the study, we did not include partners' characteristics in our models to avoid introducing additional selection bias on partners' presence and on employment duration. However, we controlled for civil status in the models about transition to higher order parities, which helps accounting for the presence of a stable partner without introducing selection into our estimates. Additionally, we could not investigate empirically the role of the contextual differences between the Italian and Swedish contexts (e.g. migration history, female employment participation, welfare systems, and the extent to which they were hit by the Great Recession). The interpretation of cross-country heterogeneity in our findings in light of specific contextual features remains therefore speculative and a question for future studies.

Despite these limitations, the novel contributions of our study are numerous. First, we demonstrate that the migration background and lack of integration represented, in relation to childbearing, a prominent condition of vulnerability during the Great Recession. This confirms, in two different contexts, Sobotka's (2017) macro-level findings, according to which the TFR decreased during the years of the Great Recession also due to a decline of migrants' fertility. Second, labor market attachment plays a different role in shaping fertility behavior between natives and migrants. Contrary to our expectations, employment insecurity in the form of unemployment or career instability negatively affects childbearing among native but not migrant women. The different sources of vulnerability, as interpreted here, hence do not cumulate. Moreover, the nexus between labor market uncertainty and childbearing seems to depend on the national context more than the nexus between migration background and childbearing. Unemployment represents a clear disadvantage and increasingly so after the Great Recession in Italy, where period effects are more negative among natives. In Sweden, where period effects are instead more negative among migrants, stable employment represents a clear advantage only for first births among natives.

The novel focus of this study on migrants, a largely overlooked group in the literature on childbearing behavior over the business cycle, suggests that, while fundamental per se, the two sources of vulnerability – migration background and employment uncertainty – did not interact in determining childbearing decisions during the Great Recession. However, results for migrants in Sweden suggest possible different unanticipated implications of our findings in terms of migrants' cumulative disadvantages. Considering that during the crisis only unemployed migrants show higher probability of becoming mothers and that only inactive women show higher chances of having another child, we can imagine that migrant women's eventual (re-)entry to the labour market after the Great Recession would be even more problematic due to the increased burden of family duties. This is in line with recent studies documenting fragmented paths of return to employment after childbearing among migrant mothers (e.g. Liu and Kulu, 2022; Lu et al., 2017). More research is needed in the field, addressing how these ascertained disadvantages in contemporary societies expand and cumulate during periods of economic turmoil, and how they affect, and they are in turn re-affected by key demographic processes and family dynamics.

This study also has policy implications. Our findings confirm that the effect of the economic crisis on fertility behaviour has been much smaller for the more integrated migrants, and in particular in Sweden, a country where, until now, migrants have enjoyed equal and generous social rights. In light of these results, the recent political debate about moving the access to social benefits from universal to citizenship-based instead of residence-based should be rethought, not only in connection to the human rights realm, but also in term of the possible implications for future fertility trends in contemporary low fertility countries. Citizenship-based rights may be particularly hard to achieve in Italy, where the overall time to obtain the Italian citizenship is *de facto* between ten and thirteen years (ten years of residence in the country plus up to three years for the application), and the children of migrants born in Italy may apply for citizenship only when they reach their eighteenth birthday, as long as they have legally and continually resided in the country (Trappolini and Giudici, 2021).

Acknowledgements

The authors are grateful for valuable feedback and help provided by the colleagues at the Stockholm University and by the Population and Society Unit (UPS) of the University of Florence.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The authors are grateful for financial support from the Swedish Research Council for Health, Working Life and Welfare (FORTE), grants 2016-07105 and 2018-00310. Financial support was also received from the Swedish Foundation for Humanities and Social Sciences (Riksbankens Jubileumsfond), grant M18-0214:1; and from the European Union's Horizon 2020 research and innovation program/ERC Grant Agreement No. DLV-72596 (PI: Daniele Vignoli).

Notes on contributors

Giammarco Alderotti is a post-doc researcher at the University of Florence, where he also teaches courses on population studies as adjunct professor. He received his PhD in Demography from Sapienza University of Rome in 2020. His main research interest include fertility, union formation and dissolution, and migrations.

Eleonora Mussino is Associate Professor at the Stockholm University Demography Unit (SUDA). Her studies mainly focus on international migration, migrant child-bearing, including the provision of antenatal care and parental leave use of migrants and natives.

Chiara Ludovica Comolli is Assistant Professor at the Paolo Fortunati Department of Statistics of the University of Bologna. Her main research interest concerns fertility in developed countries, in particular regarding the link between reproductive choices and economic uncertainty and the dynamics of the labour market and gender. Her other research interests are more generally concerned with family dynamics, economic inequality, and how family and work trajectories jointly influence the multiple dimensions of wellbeing.

ORCID

Giammarco Alderotti  <http://orcid.org/0000-0002-7988-8385>

Data availability statement

This study uses Swedish Population Registers. For privacy concerns, this restricts the availability of the data sets. Unidentifiable data can be available from the author, conditional on permission from Statistics Sweden and access via MONA. More information on formal requirements and how to apply for permission can be found at <https://www.scb.se>.

Italian data are provided by ISTAT (the Italian National Institute of Statistics) and come from the Labour Force Survey. Elaborations on the Italian data were carried out at the ISTAT Data Analysis Laboratory (ADELE) and in compliance with the regulations on statistical confidentiality and personal data protection. The results and opinions expressed are the sole responsibility of the authors.

Replication files include the codes used for the analyses reported in this paper and are available on Open Science Framework (DOI: [10.17605/OSF.IO/UMNH3](https://doi.org/10.17605/OSF.IO/UMNH3)).

References

- Aassve, A. and Lappegård, T. (2009) 'childcare cash benefits and fertility timing in Norway', *European Journal of Population/Revue Européenne de Démographie* 25 (1): 67–88.
- Adserà, A. (2005) 'vanishing children: from high unemployment to low fertility in developed countries', *American Economic Review* 95(2): 189–93.
- Adserà, A. (2011) 'where Are the babies? labor market conditions and fertility in Europe. Où sont les bébés? conditions du marché du travail et fécondité en Europe', *European Journal of Population/Revue Européenne de Démographie* 27(1): 1–32.
- Adserà, A. and Ferrer, A. (2011) Age at migration, language and fertility patterns among migrants to Canada. IZA Discussion Papers, No. 5552, Institute for the Study of Labor (IZA), Bonn.

- Adserà, A. and Ferrer, A. (2016) 'the fertility of married immigrant women to Canada', *International Migration Review* 50(2): 475–505.
- Adserà, A., Ferrer, A. M. and Herranz, V. (2020) Descriptive labor market outcomes of immigrant women across Europe (No. 18). Working Paper Series, University of Waterloo, Canadian Labour Economics Forum (CLEF), Waterloo.
- Alderotti, G. (2022) 'female employment and first childbirth in Italy: what news?', *Genus* 78(1): 1–19.
- Alderotti, G., Vignoli, D., Baccini, M. and Matysiak, A. (2021) 'employment instability and fertility in Europe: A meta-Analysis', *Demography* 58(3): 871–900.
- Andersson, G. (2004) 'childbearing after migration: fertility patterns of foreign-born women in Sweden 1', *International Migration Review* 38(2): 747–74.
- Andersson, G. and Scott, K. (2005) 'Labour-market status and first-time parenthood: The experience of immigrant women in Sweden, 1981–97', *Population Studies* 59 (1): 21–38.
- Andersson, G. and Scott, K. (2007) 'childbearing dynamics of couples in a universalistic welfare state: The role of labor-market status, country of origin, and gender', *Demographic Research* 17: 897–938.
- Ballarino, Gabriele and Panichella, Nazareno (2015) 'The occupational integration of male migrants in Western European countries: assimilation or persistent disadvantage?', *International Migration* 53(2): 338–352. <https://doi.org/10.1111/imig.12105>
- Ballarino, G. and Panichella, N. (2018) 'the occupational integration of migrant women in western European labour markets', *Acta Sociologica* 61(2): 126–42.
- Barbieri, P. 2011. Italy: No country for young men (and women): The Italian way of coping with increasing demands for labour market flexibility and rising welfare problems. In *Globalized Labour Markets and Social Inequality in Europe* (pp. 108–145). Palgrave Macmillan: London.
- Becker, G. S. (1981) 'altruism in the family and selfishness in the market Place', *Economica* 48(189): 1–15.
- Berinde, D. (1999) 'pathways to a third child in Sweden', *European Journal of Population/Revue Européenne de Démographie* 15(4): 349–78.
- Bernardi, F. and Nazio, T. (2005) Globalization and the transition to adulthood in Italy. *Globalization, uncertainty and youth in society: The losers in a globalizing world*, 359–385.
- Bevelander, P. and Pendakur, R. (2012) 'citizenship, co-ethnic populations, and employment probabilities of immigrants in Sweden', *Journal of International Migration and Integration* 13(2): 203–22.
- Boeckmann, I., Misra, J. and Budig, M. (2015) 'cultural and institutional factors shaping mothers' employment and working hours in postindustrial countries', *Social Forces* 3(4): 1301–1333.
- Bordone, V., Billari, F. C. and Dalla Zuanna, G. (2009) 'the Italian labour force survey to estimate fertility', *Statistical Methods and Applications* 18(3): 445–51.
- Borjas, G. J. (1985) 'assimilation, changes in cohort quality, and the earnings of immigrants', *Journal of Labor Economics* 3(4): 463–89.
- Busetta, A. and Giambalvo, O. (2014) 'the effect of women's participation in the labour market on the postponement of first childbirth: a comparison of Italy and Hungary', *Journal of Population Research* 31(2): 151–92.

- Caltabiano, M., Comolli, C. L. and Rosina, A. (2017) 'the effect of the great recession on permanent childlessness in Italy', *Demographic Research* 37: 635–68.
- Cantalini, S. and Panichella, N. (2019) 'the fertility of Male immigrants: a comparative study on six western European countries', *European Societies* 21(1): 101–29.
- Cho, L. J., Retherford, R. D. and Choe, M. K. (1986) The own-children method of fertility estimation.
- Comolli, C. L. (2017) 'the fertility response to the great recession in Europe and the United States: structural economic conditions and perceived economic uncertainty', *Demographic Research* 36: 1549–600.
- Comolli, C. L. (2021) 'couples' paid work, state-level unemployment, and first births in the United States', *Demographic Research* 45: 1149–84.
- Comolli, C. L. and Bernardi, F. (2015) 'the causal effect of the great recession on childlessness of white American women', *IZA Journal of Labor Economics* 4(1): 21.
- Comolli, C. L., Neyer, G., Andersson, G., Dommermuth, L., Fallesen, P., Jalovaara, M., ... Lappegård, T. (2020) 'beyond the economic gaze: childbearing during and after recessions in the nordic countries', *European Journal of Population*, 1–48.
- Dantis, C. and Rizzi, E. L. (2020) 'transition to first birth during the great recession: the case of Greece', *Genus* 76(1): 1–21.
- de Lange, M., Wolbers, M. H., Gesthuizen, M. and Ultee, W. C. (2014) 'the impact of macro-and micro-economic uncertainty on family formation in The Netherlands', *European Journal of Population* 30(2): 161–85.
- Del Bono, E., Weber, A. and Winter-Ebmer, R. (2015) 'fertility and economic instability: the role of unemployment and job displacement', *Journal of Population Economics* 28(2): 463–78.
- Dubuc, S. (2012) 'immigration to the UK from high-fertility countries: intergenerational adaptation and fertility convergence', *Population and Development Review* 38(2): 353–68.
- Dupray, A. and Pailhé, A. (2018) 'does employment uncertainty particularly impact fertility of children of north African immigrants in France? A gender perspective', *Journal of Ethnic and Migration Studies* 44(3): 401–24.
- Easterlin, R. A. (1987) *Birth and Fortune: The Impact of Numbers on Personal Welfare*, University of Chicago Press.
- Esping-Andersen, G. (2009) *The Incomplete Revolution: Adapting to Women's New Roles*, Malden, MA: Polity Press.
- Eurostat (2020) <https://ec.europa.eu/eurostat/>.
- Fellini, I. and Guetto, R. (2018) 'a "U-shaped" pattern of immigrants' occupational careers? A comparative analysis of Italy, Spain, and France', *International Migration Review* 0197918318767931.
- Fiori, F., Graham, E. and Rinesi, F. (2018) *Economic Reasons for not Wanting a Second Child: Changes Before and After the Onset of the Economic Recession in Italy*, *Demographic Research*.
- Friedman, D., Hechter, M. and Kanazawa, S. (1994) 'a theory of the value of children', *Demography* 31(3): 375–401.
- Fullin, G. and Reyneri, E. (2011) 'low unemployment and bad jobs for new immigrants in Italy', *International Migration* 49(1): 118–47.

- Goldstein, H. and Healy, M. J. (1995) 'the graphical presentation of a collection of means', *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 158 (1): 175–7.
- Goldstein, J. R., Kreyenfeld, M., Jasilioniene, A. and Örsal, D. K. (2013) 'fertility reactions to the "great recession" in Europe: recent evidence from order-specific data', *Demographic Research* 29: 85–104.
- González-Ferrer, A., Castro-Martín, T., Kraus, E. and Eremenko, T. (2017) 'child-bearing patterns among immigrant women and their daughters in Spain: over-adaptation or structural constraints', *Demographic Research* 37: 599–634.
- Guetto, R. (2018) 'employment returns to tertiary education for immigrants in Western Europe: cross-country differences before and after the economic crisis', *Social Inclusion* 6(3): 64–77.
- Hervitz, H. M. (1985) 'selectivity, adaptation, or disruption? A comparison of alternative hypotheses on the effects of migration on fertility: The case of Brazil', *International Migration Review* 19(2): 293–317.
- Impicciatore, R., Gabrielli, G. and Paterno, A. (2020) 'migrants' fertility in Italy: A comparison between origin and destination', *European Journal of Population* 36 (4): 799–825.
- Kil, T., Neels, K., Wood, J. and de Valk, H. A. (2018) 'employment after parenthood: women of migrant origin and natives compared', *European Journal of Population* 34(3): 413–40.
- Killewald, A. and García-Manglano, J. (2016) 'tethered lives: A couple-based perspective on the consequences of parenthood for time use, occupation, and wages', *Social Science Research* 60: 266–82.
- Kraus, E. K. (2017) *Family Dynamics of International Migrants and Their Descendants (Doctoral Dissertation, Universitat Pompeu Fabra)*.
- Kravdal, Ø (2002) 'the impact of individual and aggregate unemployment on fertility in Norway', *Demographic Research* 6: 263–94.
- Kreyenfeld, M. (2004) 'fertility decisions in the FRG and GDR: An analysis with data from the German fertility and family Survey', *Demographic Research* 3: 275–318.
- Kreyenfeld, M. (2009) 'uncertainties in female employment careers and the postponement of parenthood in Germany', *European Sociological Review* 26(3): 351–66.
- Kreyenfeld, M. (2021) 'causal modelling in fertility research: A review of the literature and an application to a parental leave policy Reform', *Comparative Population Studies* 46.
- Kreyenfeld, M. and Andersson, G. (2014) 'socioeconomic differences in the unemployment and fertility nexus: evidence from Denmark and Germany', *Advances in Life Course Research* 21: 59–73.
- Kreyenfeld, M., Andersson, G. and Pailhé, A. (2012) 'economic uncertainty and family dynamics in Europe: Introduction', *Demographic Research* 27: 835–52.
- Kreyenfeld, M. and Konietzka, D. (2002) 'the performance of migrants in occupational labour markets', *European Societies* 4(1): 53–78.
- Kulu, H. and González-Ferrer, A. (2014) 'family dynamics among immigrants and their descendants in Europe: current research and opportunities', *European Journal of Population* 30(4): 411–35.

- Kulu, H. and Hannemann, T. (2016) 'why does fertility remain high among certain UK-born ethnic minority women?', *Demographic Research* 35: 1441–88.
- Liu, C. and Kulu, H. (2022) Work-migration-life balance: Patterns of immigrant labor market engagement by family status. *Migrant Life Working Paper 11*. University of St. Andrews.
- Livi-Bacci, M. (2001) 'too few children and too much family', *Daedalus* 130(3): 139–55.
- Lu, Y., Wang, J. S. H. and Han, W. J. (2017) 'women's short-term employment trajectories following birth: patterns, determinants, and variations by race/ethnicity and nativity', *Demography* 54(1): 93–118.
- Lundström, K. E. and Andersson, G. (2012) 'labor market status, migrant status, and first childbearing in Sweden', *Demographic Research* 27: 719–42.
- Matysiak, A., Sobotka, T. and Vignoli, D. (2020) 'the great recession and fertility in Europe: A sub-national analysis', *European Journal of Population*, 1–36.
- Matysiak, A. and Vignoli, D. (2008) 'fertility and women's employment: A meta-analysis', *European Journal of Population/Revue Européenne de Démographie* 24 (4): 363–84.
- Milewski, N. (2009) *Fertility of Immigrants: A two-Generational Approach in Germany*, Springer Science and Business Media.
- Milewski, N. (2010) 'immigrant fertility in west Germany: Is there a socialization effect in transitions to second and third births?', *European Journal of Population/Revue Européenne de Démographie* 26(3): 297–323.
- Milewski, N. and Mussino, E. (2019) Editorial on the Special Issue "New Aspects on Migrant Populations in Europe: Norms, Attitudes and Intentions in Fertility and Family Planning". *Comparative Population Studies*, 43.
- Monti, A., Drefahl, S., Härkönen, J. and Mussino, E. (2018) 'Over-coverage in population registers and what We Can Do about It', *SRRD*, 24.
- Mood, C. (2010) 'logistic regression: Why we cannot do what we think we can do, and what we can do about it', *European Sociological Review* 26(1): 67–82.
- Mulder, C. H. and Wagner, M. (1993) 'migration and marriage in the life course: a method for studying synchronized events', *European Journal of Population/Revue Européenne de Démographie* 9(1): 55–76.
- Mussino, E. and Cantalini, S. (2020) Multiple-origin and multiple- destination: The fertility of migrants in Europe. *SRRD*, 2020, 47.
- Mussino, E. and Cantalini, S. (2022) 'influences of origin and destination on migrant fertility in Europe', *Population, Space and Place*, online First. doi:10.1002/psp.2567.
- Mussino, E. and Duvander, A. Z. (2016) 'use it or save it? migration background and parental leave uptake in Sweden', *European Journal of Population* 32(2): 189–210.
- Mussino, E., Gabrielli, G., Paterno, A., Strozza, S. and Terzera, L. (2015) 'motherhood of foreign women in lombardy: testing the effects of migration by citizenship', *Demographic Research* 33: 653–64.
- Mussino, E. and Strozza, S. (2012a) 'the fertility of immigrants after arrival: The Italian case', *Demographic Research* 26: 99–130.
- Mussino, E. and Strozza, S. (2012b) 'does citizenship still matter? second birth risks of migrants from Albania, Morocco, and Romania in Italy', *European Journal of Population/Revue Européenne de Démographie* 28(3): 269–302.

- Mussino, E. and Van Raalte, A. A. (2013) 'immigrant fertility: A comparative study between Italy and Russia', *International Migration* 51(2): 148–64.
- Mynarska, M., Matysiak, A., Rybińska, A., Tocchioni, V. and Vignoli, D. (2015) 'diverse paths into childlessness over the life course', *Advances in Life Course Research* 25: 35–48.
- Ng, E. and Nault, F. (1997) 'fertility among recent immigrant women to Canada, 1991: An examination of the disruption hypothesis', *International Migration* 35 (4): 559–80.
- OECD (2020) Labor market outcomes of immigrants and integration policies in OECD countries. *International Migration Outlook 2020*.
- Ohlsson-Wijk, S. (2015) 'type of occupation and the transition to parenthood in Sweden', *Stockholm Research Reports in Demography* 11.
- Oppenheimer, V. K. (1994) 'women's rising employment and the future of the family in industrial societies', *Population and Development Review*, 293–342.
- Ortensi, L. E. (2015) 'the integration of forced migrants into the Italian labor market', *Journal of Immigrant and Refugee Studies* 13(2): 179–99.
- Özcan, B., Mayer, K. U. and Luedicke, J. (2010) 'the impact of unemployment on the transition to parenthood', *Demographic Research* 23: 807–46.
- Parrado, E. A. and Morgan, S. P. (2008) 'intergenerational fertility among hispanic women: New evidence of immigrant assimilation', *Demography* 45(3): 651–71.
- Prifti, E. and Vuri, D. (2013) 'employment protection and fertility: evidence from the 1990 Italian reform', *Labour Economics* 23: 77–88.
- Ranjan, P. (1999) 'fertility behaviour under income uncertainty', *European Journal of Population/Revue Européenne de Démographie* 15(1): 25–43.
- Reyneri, E. (2004) 'immigrants in a segmented and often undeclared labour market', *Journal of Modern Italian Studies* 9(1): 71–93.
- Reyneri, E. and Fullin, G. (2011) 'labour market penalties of new immigrants in new and old receiving west European countries', *International Migration* 49(1): 31–57.
- Robards, J. and Berrington, A. (2016) 'the fertility of recent migrants to England and Wales', *Demographic Research* 34: 1037–52.
- Róbert, P. and Bukodi, E. (2005) The effects of the globalization process on the transition to adulthood in Hungary. *Globalization, Uncertainty and Youth in Society: The Losers in a Globalizing World*, 177–2014.
- Santarelli, E. (2011) 'economic resources and the first child in Italy: A focus on income and job stability', *Demographic Research* 25: 311–36.
- Schmitt, C. (2008) *Gender-specific Effects of Unemployment on Family Formation: A Cross-National Perspective*, DIW Berlin, *Discussion Papers* 841.
- Schöne, P. (2004) 'labour supply effects of a cash-for-care subsidy', *Journal of Population Economics* 17(4): 703–27.
- Sobotka, T. (2017) Migrant Fertility in Europe: Accelerated Decline During the Great Recession Period?, Conference "The Fertility of Migrants and Minorities", Hannover (Germany), February 6th 2017.
- Sobotka, T., Skirbekk, V. and Philipov, D. (2011) 'economic recession and fertility in the developed world', *Population and Development Review* 37(2): 267–306.
- Stonawski, M., Potančoková, M. and Skirbekk, V. (2016) 'fertility patterns of native and migrant muslims in Europe', *Population, Space and Place* 22(6): 552–67.

- Testa, M. R., Cavalli, L. and Rosina, A. (2011) 'couples' childbearing behaviour in Italy: which of the partners is leading it?', *Vienna Yearbook of Population Research*, 157–78.
- Tønnessen, M., Aradhya, S. and Mussino, E. (2021) 'how assad changed population growth in Sweden and Norway: Syrian refugees' impact on nordic national and municipal demography', *PloS one* 16(1): e0244670.
- Tønnessen, M. and Mussino, E. (2020) 'fertility patterns of migrants from low-fertility countries in Norway', *Demographic Research* 42: 859–74.
- Trappolini, E. and Giudici, C. (2021) 'gendering health differences between nonmigrants and migrants by duration of stay in Italy', *Demographic Research* 45: 221–58.
- Van Tubergen, F., Maas, I. and Flap, H. (2004) 'the economic incorporation of immigrants in 18 western societies: origin, destination, and community effects', *American Sociological Review* 69(5): 704–27.
- Vidal-Coso, E. (2019) 'female employment following childbirth: differences between native and immigrant women in Switzerland', *Journal of Ethnic and Migration Studies* 45(9): 1667–92.
- Vignoli, D., Drefahl, S. and 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.
- Wolbers, M. H. (2007) 'employment insecurity at labour market entry and its impact on parental home leaving and family formation: A comparative study among recent graduates in eight European countries', *International Journal of Comparative Sociology* 48(6): 481–507.
- Wood, Jonas and Neels, Karel (2017) *Advances in Life Course Research* 33: 38–52. <http://dx.doi.org/10.1016/j.alcr.2016.09.003>.
- Yu, W. H. and Sun, S. (2018) 'fertility responses to individual and contextual unemployment: differences by socioeconomic background', *Demographic Research*.