Employment, Gender Norms, and fertility: a couple approach

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Introduction

This paper aims to study the association between couples' employment and relative earning arrangements and fertility, and whether gender norms might moderate this relationship.

Previous literature provided evidence for a negative association between employment instability and childbearing, yet heterogenous between institutional frameworks and genders (Alderotti et al. 2021).

Women's importance position in the private sphere has been growing, given the vital role played by their employment situation on households' well-being and income (Kowalewska and Vitali 2020; Vitali and Arpino 2016), and as mothers in younger cohorts tend to remain in the labour market after childbirth (Musick et al., 2020). Nonetheless, female-breadwinning couples, while growing in prevalence, face earning penalties with respect to (still common) male-breadwinning couples, increasing their economic vulnerability (Kowalewska and Vitali 2021), and sole-earner couples might face higher economic uncertainty with respect to dual-earner ones, since, when both partners contribute to the household income, they might be better prepared to face economic shocks, such as the cost of a child, especially in lower social strata (Barbieri and Bozzon 2016; Nolan and Whelan 2011). The latter might explain, in part, the positive relationship between fertility and female labour market participation (FLFP hereafter) observed at the macro level, still with country-specific differences (Engelhardt and Prskawetz 2004; Goldscheider, Bernhardt, and Lappegård 2015). However, previous literature on the relationship between employment instability and fertility focused, primarily, on the impact of fixed-term contracts and unemployment from an individual perspective, neglecting partners' presence and employment status (Di Nallo and Lipps 2023). Thus, we intend to move beyond the level of individuals and set our analysis at a couples' level, defining breadwinning arrangements based on the employment status and income condition of both partners. Moreover, while previous research studied the relationship between employment and fertility through a cross-sectional time-invariant framework, we introduce a longitudinal perspective to grasp the consequences of changing employment dynamics, especially among lower social strata (Alderotti et al. 2021; Barbieri et al. 2019; Barbieri and Gioachin 2022).

Thus, at first, we aim to inquire (RQ1) *the relationship between employment status and fertility at the couple level, disentangling how different couples' employment arrangements (i.e., breadwinning models) might be associated with fertility*. We do so by addressing fertility as individual transitions to first, second and third births, introducing our outcome – and explanatory variable – in a longitudinal perspective.

However, employment arrangements might address only part of the problem. Gender inequalities are present between sole-earner couples, where women face earnings penalties with respect to men as sole earner, and within dual-earner couples (Kowalewska and Vitali 2021), due, inter alia, to lower wage-setting, which are exacerbated when transitioning to motherhood (Musick, Bea, and Gonalons-Pons 2020), increasing economic instability. Hence, we intend to dig deeper into couples' arrangements based on partners' contribution to the household income by (RQ2) *addressing the association between couples' partners' relative earning arrangements and the transition to a first, second and third child*.

Low fertility levels observed throughout advanced countries are not merely the product of a shift toward self-fulfilment and individualism (Lesthaeghe 2015), rather, fewer children and childlessness are rarely a conscious choice. Empirical research observed a gap, throughout Europe, between fertility desires and realisations (Testa 2012), which is wider in Southern Europe (Beaujouan and Berghammer 2019), where poorer employment

conditions led to higher economic instability, especially among young people and women, and, in turn, to lower fertility (Ahn and Mira 2002; Barbieri et al. 2015). Thus, the appearance of greater social inequalities and the rise of a gender gap in fertility demands to consider gender and social stratification when addressing fertility trends (Lappegård 2020). Additionally, in advanced countries, fertility is higher among the highest and the lowest educated women with respect to the middle ones (Doepke et al. 2022), while, in Nordic countries, least educated woman are the one characterised by higher levels of childlessness (Jalovaara et al. 2019). This relationship could be explained by the positive association between educational attainment and labour market outcomes, and consequently economic security, which in turn is positively associated with fertility (Kohler, Billari, and Ortega 2002). Furthermore, mating market dynamics could reinforce (or mitigate) the previous relationship, given the influence of education on earnings and employment stability (Blossfeld 2009; Corti and Scherer 2021). In fact, it is relevant to address education at the couples' level, since homogamous higher educated couples', whilst postponing first births, show higher rates at second and third births, while hypergamous couples, in which male partners have higher education, show lower levels of second births (Nitsche et al. 2018). Therefore, we intend to study (RQ3) *if the associations between employment (or partners' relative earning) arrangements and fertility might differ by partners' educational level.*

The latter will be also addressed considering household income levels to disentangle whether, for example, the (expected) higher fertility presented by dual-earner couples with respect to sole-earner can be explained by income effects or gender equity effects. Income effects will be stronger if the relationship will weaken as household income increases, among highly educated couples. On the contrary, if the same association is still observed among more economically secure social strata, and as household income increases, gender equity effects might be dominant.

At last, at the contextual level, traditional gender-role attitudes are negatively related to fertility, while the opposite holds for gender egalitarian norms (Arpino, Esping-Andersen, and Pessin 2015). Moreover, countries that first showed a positive relationship between FLMP and fertility also experienced earlier contextual changes, such as more favourable attitudes regarding working mothers compared to Southern European countries, where the association reversed only some decades later (Brewster and Rindfuss 2000). In fact, gender role attitudes and norms play a key role on childbearing, especially in relation to the time devoted to care, which, in gender unequal contexts, falls disproportionally on mothers (Mcdonald 2006), thus hindering their labour market participation and increasing their partners' earnings, while decreasing their own (Matteazzi and Scherer 2021). As a matter of fact, the probability of observing male-breadwinning couples decreases as gender egalitarianism increases (Vitali and Arpino 2016). Then, gender norms might influence couples breadwinning arrangements and partners' contribution to the household income. Hence, we are interested in inquiring (RQ4) *whether gender norms might moderate the associations studied in RQ1 and RQ2.*

Data, key measures, and methods

We address our research questions using a longitudinal approach at the couples level, taking advantage of the four-year rotational panel design of the European Union Statistics on Income and Living Conditions (EU-SILC) covering 27 countries, mostly from 2006 until 2020 (Eurostat 2022). The information on parities transitions is gathered by building a fertility calendar for each (potential) mother, taking advantage of the variable that link each child to their mothers' personal identifier and then identifying transitions by observing children entering the survey, in the in a fashion similar to the so-called Own Children Method (Krapf and Kreyenfeld 2015). Moreover, EU-SILC allows us to construct in our main explanatory variable(s) taking advantage of the very detailed information on income and its sources, both at the individual and at the household level, and on the employment status up to the year before entering the survey. Thus, partners' relative earning arrangements are considered net of household income. Couples' variables are generated by

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merging women's personal information with those of partners, thanks to their partner identifier. Thus, we will address also educational level and employment status, at the couple level, as the interaction between partners' characteristics.

To address the heterogeneity of the association across Europe, we interact the our main explanatory variable with an indicator of gender norms in the region of residence, obtained using the level of agreement to the survey question 'men should have more right to jobs than women when jobs are scarce' from the European Social Survey (ESS) – covering a span of 12 years on 18 countries from European Social Survey (ESS, years 2004, 2008, 2010 and 2016). These 4 points in time information will allow us to introduce gender norms both as time-fixed levels and as trends, aggregated by region of residence.

The final sample is composed by cohabiting couples with women aged 20 to 45 years old, to avoid the bias that could be introduced by the method used to retrieve birth events (Krapf and Kreyenfeld 2015).

To account for the hierarchical structure of our data we develop our analysis using multilevel (random effects) regression models with three levels (couples; region-years; regions) (Schmidt-Catran, Fairbrother, and Andreß 2019). However, if the number of regional clusters will be too small (Bryan and Jenkins 2015), we will employ a two-step hierarchical estimation (Achen 2005). Unfortunately, given the short observational window provided by EU-SILC, it is impractical to implement other longitudinal methods, such as Hazard models.

Since our outcome variable follows a Binomial distribution, the results will be carried out running logistic regressions. However, given the small parities transition probability in our sample, we will account for possible rare events biases in our results by testing different distribution families, such as Negative Binomial and Poisson regressions with robust standard errors (King and Zeng 2001; Zou 2004). We include a set of controls on demographic and socio-economic characteristics at the household and couple level, such as, for example, age, marriage status, and household harmonised income, in all models.

Expected and preliminary results

Based on previous findings on the negative relationship between economic uncertainty and fertility, we expect to observe lower transition probability among sole-earner couples with respect to double-earner ones, which are characterised by higher average household income (Kowalewska and Vitali 2021). However, the association might be stronger among those couples in which both partners are lower educated, which are characterised by lower earnings overall, while being weaker in least gender-egalitarian contexts, where women still are the main family care provider and male-breadwinning arrangements are more prevalent. Following the same reasoning, we expect lower probability of transitioning to a first, second or third child among full female-breadwinner couples with respect to those where the male partner is the only income provider in the household, given the earning penalties suffered by the former.

Preliminary results show crude associations between different type of employment arrangements (fixed) when entering the survey, and the transitions to a first and second child (Figure 1). Sole-earner couples are associated with lower odds of transitioning to parenthood with respect to dual-earner (in orange), and this seems to be also particularly true for unemployed couples compared to couples where at least one partner is employed (in red). However, this is not true when addressing second parities transitions. Full female-breadwinner couples are associated with smaller odds of transitioning to second parities with respect to both dual-earner couples (in blue) and full male-breadwinner couples (in green), which, in turn, show higher odds also with respect to dual-earner couples (in blue).

Figure 1. Crude associations between employment arrangements and parities transitions.
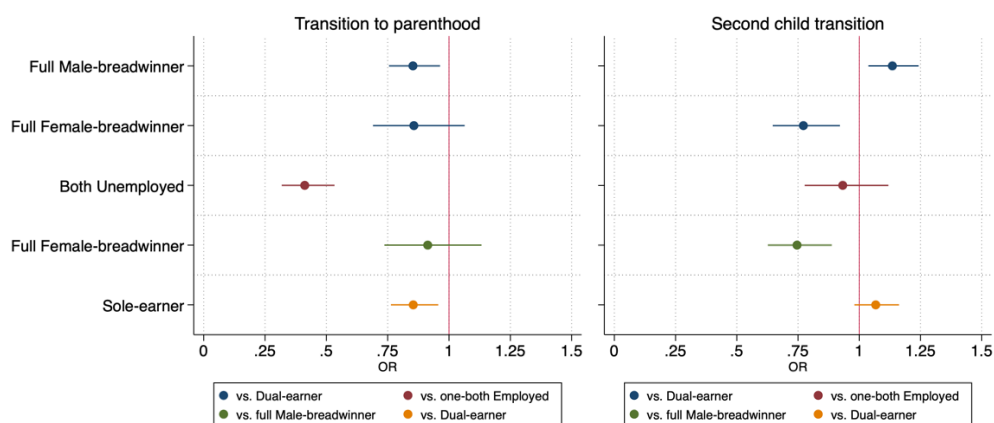
Source: authors' elaboration on EU-SILC data. (95% CIs)

References

Achen, Christopher H. 2005. 'Two-Step Hierarchical Estimation: Beyond Regression Analysis'. *Political Analysis* 13(4):447–56. doi: 10.1093/pan/mpi033.

Ahn, Namkee, and Pedro Mira. 2002. 'A Note on the Changing Relationship between Fertility and Female Employment Rates in Developed Countries'. *Journal of Population Economics* 15(4):667–82. doi: 10.1007/s001480100078.

Alderotti, Giammarco, Daniele Vignoli, Michela Baccini, and Anna Matysiak. 2021. 'Employment Instability and Fertility in Europe: A Meta-Analysis'. *Demography* 58(3):871–900. doi: 10.1215/00703370-9164737.

Arpino, Bruno, Gøsta Esping-Andersen, and Léa Pessin. 2015. 'How Do Changes in Gender Role Attitudes Towards Female Employment Influence Fertility? A Macro-Level Analysis'. *European Sociological Review* 31(3):370–82. doi: 10.1093/esr/jcv002.

Barbieri, Paolo, and Rossella Bozzon. 2016. 'Welfare, Labour Market Deregulation and Households' Poverty Risks: An Analysis of the Risk of Entering Poverty at Childbirth in Different European Welfare Clusters'. *Journal of European Social Policy* 26(2):99–123. doi: 10.1177/0958928716633044.

Barbieri, Paolo, Rossella Bozzon, Stefani Scherer, Raffaele Grotti, and Michele Lugo. 2015. 'The Rise of a Latin Model? Family and Fertility Consequences of Employment Instability in Italy and Spain'. *European Societies* 17(4):423–46. doi: 10.1080/14616696.2015.1064147.

Barbieri, Paolo, Giorgio Cutuli, Raffaele Guetto, and Stefani Scherer. 2019. 'Part-Time Employment as a Way to Increase Women's Employment: (Where) Does It Work?' *International Journal of Comparative Sociology* 60(4):249–68. doi: 10.1177/0020715219849463.

Barbieri, Paolo, and Filippo Gioachin. 2022. 'Social Origin and Secondary Labour Market Entry: Ascriptive and Institutional Inequalities over the Early Career in Italy and Germany'. *Research in Social Stratification and Mobility* 77:100670. doi: 10.1016/j.rssm.2021.100670.

Beaujouan, Eva, and Caroline Berghammer. 2019. 'The Gap Between Lifetime Fertility Intentions and Completed Fertility in Europe and the United States: A Cohort Approach'. *Population Research and Policy Review* 38(4):507–35. doi: 10.1007/s11113-019-09516-3.

Blossfeld, Hans-Peter. 2009. 'Educational Assortative Marriage in Comparative Perspective'. *Annual Review of Sociology* 35(1):513–30. doi: 10.1146/annurev-soc-070308-115913.

Brewster, Karin L., and Ronald R. Rindfuss. 2000. 'Fertility and Women's Employment in Industrialized Nations'. *Annual Review of Sociology* 26(1):271–96. doi: 10.1146/annurev.soc.26.1.271.

Bryan, Mark L., and Stephen P. Jenkins. 2015. 'Multilevel Modelling of Country Effects: A Cautionary Tale'. *European Sociological Review* 32(1):3–22. doi: 10.1093/esr/jcv059.

Corti, Giulia, and Stefani Scherer. 2021. 'Mating Market and Dynamics of Union Formation'. *European Journal of Population* 37(4–5):851–76. doi: 10.1007/s10680-021-09592-2.

Di Nallo, Alessandro, and Oliver Lipps. 2023. 'How Much His or Her Job Loss Influences Fertility: A Couple Approach'. *Journal of Marriage and Family* jomf.12907. doi: 10.1111/jomf.12907.

Doepke, Matthias, Anne Hannusch, Fabian Kindermann, and Michèle Tertilt. 2022. *The Economics of Fertility: A New Era*. Working Paper. 29948. National Bureau of Economic Research. doi: 10.3386/w29948.

Engelhardt, Henriette, and Alexia Prskawetz. 2004. 'On the Changing Correlation Between Fertility and Female Employment over Space and Time'. *European Journal of Population/Revue Européenne de Démographie* 20(1):35–62. doi: 10.1023/B:EUJP.0000014543.95571.3b.

Eurostat. 2022. 'EU Statistics on Income and Living Conditions Microdata 2004-2021, Version 1, Release 3 in 2022'.

Goldscheider, Frances, Eva Bernhardt, and Trude Lappegård. 2015. 'The Gender Revolution: A Framework for Understanding

Changing Family and Demographic Behavior'. *Population and Development Review* 41(2):207–39. doi: https://doi.org/10.1111/j.1728-4457.2015.00045.x.

Jalovaara, Marika, Gerda Neyer, Gunnar Andersson, Johan Dahlberg, Lars Dommermuth, Peter Fallesen, and Trude Lappegård. 2019. 'Education, Gender, and Cohort Fertility in the Nordic Countries'. *European Journal of Population* 35(3):563–86. doi: 10.1007/s10680-018-9492-2.

King, Gary, and Langche Zeng. 2001. 'Logistic Regression in Rare Events Data'. *Political Analysis* 9(2):137–63. doi: 10.1093/oxfordjournals.pan.a004868.

Kohler, Hans-Peter, Francesco C. Billari, and Jose Antonio Ortega. 2002. 'The Emergence of Lowest-Low Fertility in Europe During the 1990s'. *Population and Development Review* 28(4):641–80. doi: 10.1111/j.1728-4457.2002.00641.x.

Kowalewska, Helen, and Agnese Vitali. 2020. *Work/Family Arrangements across the OECD: Incorporating the Female-Breadwinner Model. LIS Working papers*. 769. LIS Cross-National Data Center in Luxembourg.

Kowalewska, Helen, and Agnese Vitali. 2021. 'Breadwinning or on the Breadline? Female Breadwinners' Economic Characteristics across 20 Welfare States'. *Journal of European Social Policy* 31(2):125–42. doi: 10.1177/0958928720971094.

Krapf, Sandra, and Michaela R. Kreyenfeld. 2015. *Fertility Assessment with the Own-Children Method: A Validation with Data from the German Mikrozensus*. 0 ed. TR-2015-003. Rostock: Max Planck Institute for Demographic Research. doi: 10.4054/MPIDR-TR-2015-003.

Lappegård, Trude. 2020. 'Future Fertility Trends Are Shaped at the Intersection of Gender and Social Stratification'.

Lesthaeghe, Ron J. 2015. 'Second Demographic Transition'. P. wbeoss059.pub2 in *The Blackwell Encyclopedia of Sociology*, edited by G. Ritzer. Oxford, UK: John Wiley & Sons, Ltd.

Matteazzi, Eleonora, and Stefani Scherer. 2021. 'Gender Wage Gap and the Involvement of Partners in Household Work'. *Work, Employment and Society* 35(3):490–508. doi: 10.1177/0950017020937936.

Mcdonald, Peter. 2006. 'Low Fertility and the State: The Efficacy of Policy'. *Population and Development Review* 32(3):485–510. doi: https://doi.org/10.1111/j.1728-4457.2006.00134.x.

Musick, Kelly, Megan Doherty Bea, and Pilar Gonalons-Pons. 2020. 'His and Her Earnings Following Parenthood in the United States, Germany, and the United Kingdom'. *American Sociological Review* 85(4):639–74. doi: 10.1177/0003122420934430.

Nitsche, Natalie, Anna Matysiak, Jan Van Bavel, and Daniele Vignoli. 2018. 'Partners' Educational Pairings and Fertility Across Europe'. *Demography* 55(4):1195–1232. doi: 10.1007/s13524-018-0681-8.

Nolan, Brian, and Christopher T. Whelan. 2011. *Poverty and Deprivation in Europe*. Oxford ; New York: Oxford University Press.

Schmidt-Catran, Alexander W., Malcolm Fairbrother, and Hans-Jürgen Andreß. 2019. 'Multilevel Models for the Analysis of Comparative Survey Data: Common Problems and Some Solutions'. *KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie* 71(1):99–128. doi: 10.1007/s11577-019-00607-9.

Testa, Maria Rita. 2012. *Family Sizes in Europe: Evidence from the 2011 Eurobarometer Survey*. Vienna Inst. of Demography Vienna.

Vitali, Agnese, and Bruno Arpino. 2016. 'Who Brings Home the Bacon? The Influence of Context on Partners' Contributions to the Household Income'. *Demographic Research* 35:1213–44. doi: 10.4054/DemRes.2016.35.41.

Zou, G. 2004. 'A Modified Poisson Regression Approach to Prospective Studies with Binary Data'. *American Journal of Epidemiology* 159(7):702–6. doi: 10.1093/aje/kwh090.