

MOTHERS' AND DAUGHTERS' EMPLOYMENT IN EUROPE. A COMPARATIVE ANALYSIS

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Abstract

This paper analyzes the intergenerational correlation of employment between young women (at about 30 years of age) and their mothers (when daughters were about 14 years old), using EU-SILC data. It examines the extent to which this correlation varies across 19 European countries, and is associated with the national socioeconomic context. Having grown up with a working mother is associated with a sizeable increase in daughters' employment probability in almost all countries, with larger effects for women with children. For this group, the intergenerational correlation is smaller in countries where the policy context is less favorable to maternal employment, i.e. where 'constraints' may obscure the intergenerational transmission of preferences. Hence, it is crucial to create conditions that allow young women's preferences for work to be reflected in employment outcomes, by strengthening policies that favor a balanced sharing of unpaid work, and a larger externalization of care work.

Keywords: Mothers, Labor Market, Family, Gender Analysis, Social Norms.

JEL classification codes: J16, J62, D19

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INTRODUCTION

Various studies document a positive intergenerational correlation between mothers' and daughters' employment status. Most of these studies consider a single country, while international comparative evidence on the effect of maternal employment on their adult daughters' outcomes is very limited. The few studies on European countries only estimate an average intergenerational effect over a pooled sample of countries, leaving unexplored the consequences of the large heterogeneity among European countries in terms of prevailing gender norms and women-friendly policies (e.g. childcare services, compulsory leaves for fathers, flexible work schedules). Indeed, the mother-daughter correlation of employment could be weakened or strengthened by societal attitudes towards women's roles (in the private and public spheres) and by the national socioeconomic context affecting women's employment, especially when they have children. A better understanding of the influence of societal views about women's employment and the national socioeconomic context on the intergenerational correlation of labor market outcomes has important implications for both the analysis of gender inequalities and the identification of areas of policy action.

This paper analyzes the extent to which young women's probability of being employed (active) is correlated with having had an employed mother during adolescence, in 19 European countries. We focus on young women (aged 25-34) because the initial labor market experience is crucial for long-term outcomes (participation and earnings). It is also a lifecycle phase in which the influence of the family of origin on young people's cognitive and soft skills, developed during adolescence, plays a fundamental role. Indeed, as the lifecycle evolves, labor market outcomes increasingly depend on individuals' accumulated work experience. Moreover, women in this age group made their participation decisions in a similar socioeconomic context. We carry out separate analyses for young women with and without (small) children because the experience of motherhood may affect preferences for work, introducing an important difference between the two groups of women. Furthermore, the role of policies can be quite different for these two groups.

The main goal of our analysis is to examine the extent to which the intergenerational correlation of employment between mothers and daughters varies across European countries, and the extent to which it is associated with societal views about women's employment, and the national socioeconomic context. To this end, we exploit the 2011 ad-hoc module of the European Union Survey on Income and Living Conditions (EU-SILC) on intergenerational transmission of disadvantages, complemented with information about societal views from the European Value Survey (EVS) and national policies from various international sources (see Appendix for details).

BACKGROUND LITERATURE

Various studies show that daughters of working mothers are more likely to be in paid employment (and/or

to participate in the labor market) than daughters who have grown up with non-working mothers (Lidia Farré and Francis Vella 2013, Melinda Sandler Morrill and Thayer Morrill 2013, Claudia Olivetti, Eleonora Patacchini and Yves Zenou 2018, for the US; David Johnston, Stefanie Schurer and Michael Shields 2014, for the UK). These contributions considered a single country. Three recent studies analyzed the intergenerational correlation of labor market outcomes in a cross-country perspective. Kathleen McGinn, Mayra Ruiz Castro and Elisabeth Long Lingo (2019) explored the relationship between maternal employment during adolescence and their adult children's employment (and domestic) outcomes for 29 European countries. Results reveal that daughters raised in families where mothers were employed had a higher likelihood of being employed, whereas no significant impact emerged for sons. Only the average effect over the pooled sample of countries was estimated. Gabriella Berloff, Eleonora Matteazzi and Paola Villa (2019) considered the employment status of young adults in five groups of European countries, and showed that having had a working mother during adolescence reduced the likelihood of being workless for both daughters and sons in all country groups, except in Nordic countries. No evidence was provided on how these effects varied within country groups. Lindsey Macmillan, Paul Gregg, John Jerrim, and Nikki Shure (2018) showed significant differences across 16 European countries in the association between experiencing a jobless household during adolescence and various adult outcomes (education, joblessness, and poverty).

Berloff, Matteazzi, and Villa (2017) presented a detailed discussion of the various channels through which mothers' and fathers' employment during their children's adolescence may affect the latter's employment outcomes as young adults (beyond their effects on education and a pure income effect). Having had a working mother may impact on offspring's preferences, values, and attitudes. Specifically, it could shape the conceptualization of gender roles, as well as the sense of stigma associated with worklessness and attitudes towards relying on welfare benefits.¹ Moreover, it could influence the development of soft skills (i.e. motivation, self-discipline, communication skills, perseverance, confidence, self-esteem), affecting children's educational and labor market outcomes (James Heckman, Jora Stixrud and Sergio Urzua 2006). Macmillan (2013) showed that soft skills partly account for the intergenerational transmission of worklessness in the UK.

The socioeconomic context prevailing at the national level may affect both these channels. The expression 'socioeconomic context' is used to refer to the whole set of factors (i.e. labor market conditions, policies for working parents, societal cultural values towards women's employment) within which young adults' decisions about participation are taken, and labor market outcomes are determined, eventually mediated by the parental role.

Societal cultural values towards women's employment influence women's own preferences. Dante

¹ A large body of evidence demonstrates strong intergenerational correlations or causal effects in the use of welfare programs. See Berloff et al. (2017) for a review of the literature.

Contreras and Gonzalo Plaza (2010) documented that, in Chile, women who incorporated traditional gender norms, have a lower probability of participating. Rachel Fernández (2007) and Rachel Fernández and Alessandra Fogli (2009) examined the labor supply of second-generation immigrant women in the US, and found that cultural proxies have quantitatively significant effects on women's work outcomes. Since the innovative contribution by Raquel Fernández, Alessandra Fogli and Claudia Olivetti (2004), an increasing number of papers have considered the experience of having had a working mother during childhood as a mechanism for preference transmission.² Farré and Vella (2013) found that women with more (less) traditional views regarding women's role (in the family and in the labor market) have children with more (less) traditional views. Olivetti, Patacchini and Zenou (2018) found that the work behavior of mothers (own and peers') during adolescence has no influence on the labor supply of young men, while it affects adult daughters' labor supply decisions, and more significantly when they have children.

The findings of Olivetti, Patacchini and Zenou (2018) suggest that the strength of the mother-daughter transmission of preferences may be affected by the values and attitudes prevailing in the place of socialization and in society at large. Adopting a macro-level perspective, Stephanie Seguino (2007) examined the effects of changes in women's economic activity on trends in gender norms and stereotypes. Using responses from World Value Surveys over a 15-year period for 70 countries, she found that women's increased share of employment has a positive impact on attitudinal shifts in a gender-equitable direction with a 5-year lag. This finding suggests that a higher share of female employment reduces the strength of the intergenerational transmission of gender role attitudes between mothers and daughters. When female employment increases, daughters of non-working mothers face a cost in following their mother's behavior, because the social norm increasingly supports women's employment (Francesca Barigozzi, Helmuth Cremer and Kerstin Roeder, 2018). Hence, they are more likely to participate, additionally because institutions tend to improve to meet the needs of working parents.

Societal gender norms influence women's work preferences, but also their 'constraints' (within the household or in society at large, through services and social policies). Bina Agarwal (1997: 37), in a seminal article on bargaining and gender relations, highlighted the role played by social norms "*in setting limits to bargaining, in determining bargaining power for that which can be bargained over, and in influencing how bargaining gets conducted*". And decisions about partners' time allocation is the result of intra-household bargaining. Immaculada García-Mainar, Jose Alberto Molina and Victor Montuenga (2011) analyzed gender differences in the allocation of time spent caring for children in five European countries, considering explicitly the role of women's relative bargaining power. Juan Carlos Campaña, Jose Ignacio Giménez-Nadal, and José Alberto Molina (2018) examined the influence of societal gender norms on time-allocation decisions of couples in Mexico, Peru and Ecuador. They found that countries

² They found that women whose husbands had a working mother, had almost a double probability of working. This is interpreted as evidence of a preference transmission between mothers and sons, which might have played an important role in changing female labor supply.

with less egalitarian gender norms have larger gender differences in total work.

Constraints within the household interact also with institutional arrangements. Rebecca Pearse and Raewyn Connel (2016) argued that gender norms are embedded not only in personal attitudes and conduct but also in institutional arrangements. İpek İlkkaracan (2012: 22) states that ‘*whether women engage in the labor market or not depends on their attitudes toward paid work as much as the obstacles that they face*’. Examining the evolution of female labor force participation in Turkey, she finds that the institutionalization of the gendered labor division and roles act as binding constraints on women’s labor supply. Wolfgang Keck and Chiara Saraceno (2013) showed that social policies, an important component of a more complex institutional and cultural framework, shape options and constraints that affect female labor market participation. Institutions may also directly affect women’s preferences for work (Miriam Beblo and Luise Görge, 2018).

The literature suggests that the intergenerational correlation of employment depends on two key elements: i) the strength of the mother-daughter transmission of preferences for paid work (which, in turn, is influenced by societal views about women’s work); ii) the presence of constraints, within the household and in society at large, which could prevent women’s preferences to be reflected in observed outcomes. The next section will discuss in more detail the components of the mother-daughter correlation of employment and the way in which societal views about women’s employment and the policy context might interact in determining the magnitude of this correlation.

HYPOTHESES AND METHODOLOGY

This paper examines the intergenerational correlation of employment between mothers and daughters in 19 European countries.³ To this end, it uses the ad-hoc module on intergenerational transmission of disadvantages of the 2011 EU-SILC cross sectional data, which provides information on parental education and occupation when the individual was about 14 years old. We considered young women aged 25-34 and modelled their employment probability as a function of their mother’s employment status (and type of occupation) during their adolescence, as well as of other individual and country characteristics. Before presenting the empirical models, we discuss some methodological choices and formulate our hypotheses.

First, we estimated multilevel models, because women’s employment probability is influenced by national institutional contexts, which are highly heterogeneous among European countries. This heterogeneity could be accounted for by running separate regressions for each country. But, in this case, the influence of country-level characteristics on the intergenerational correlation should be estimated by

³ The choice of countries depended on both sample size issues and the availability of the socioeconomic variables used in the analysis. For sample size reasons, Estonia, Latvia and Lithuania were grouped together (i.e. Baltic countries).

using a two-step estimation strategy (by recovering marginal effects from the country level regressions and regressing them on macro-level variables). Alternatively, we could estimate a single model for all countries including country dummies. However, country dummies would capture the entire macro-level variability, making it impossible to assess the role of the specificities in the socioeconomic national context. Multilevel models are more appropriate for our analysis, because their goal is not to *control* for contextual effects, but to *interpret* and *compare* these effects (Erhel and Guergoat-Larivière, 2013: 83). Note that the cross-sectional structure of our database prevents us from correcting for potential endogeneity biases resulting from a reverse causality between labor market statuses and some individual characteristics. As is commonly the case in both intergenerational and international comparative studies, our analysis aims at describing these relations, not at providing clear-cut causality. However, “*there is significant value in trying to better understand how such intergenerational associations vary across countries, before attempting to understand why*” (Macmillan et al., 2018: 337). Hence, the words ‘effect’ or ‘influence’ are used here with a descriptive meaning.

Second, we used a binary classification of mothers’ employment status (employed vs not employed) because the information about parents’ main activity status are based on the recall-based nature of the childhood experience. Despite referring to parental employment status at a specific point in time, the reported information is likely to capture sustained rather than transitory employment conditions (Héroult and Kalb 2016; Macmillan et al. 2018: 341). Indeed, almost all non-employed mothers are reported as inactive rather than unemployed.

Third, we carried out separate analyses for young women with and without (small) children because the experience of motherhood may affect work preferences (Marion Willetts-Bloom and Steven Nock 1994; Gillian Marks and Diane Houston 2002), introducing an important difference between the two groups of daughters (mothers and childfree). Moreover, the literature shows that the influence of having had a working mother becomes crucial when the daughter herself has small children (Olivetti, Patacchini and Zenou 2018; McGinn et al. 2019). Finally, as discussed above, positive work preferences do not always translate into participation decisions. A young woman can decide not to participate to the labor market because: i) she prefers not to; ii) she would like to participate, but the presence of some constraints prevents her from doing so. These constraints can be either *within the household* (e.g. differences in partners’ bargaining power) or *in the socioeconomic context* (e.g. inadequate policies for working mothers and/or unfavorable labor market conditions for young women). For example, a young mother could prefer to participate, but the absence of affordable child-care services could prevent her from doing so. A young childfree woman could face some form of gender discrimination, resulting in some discouragement. In both cases, we would observe that they do not participate, despite their positive preferences for work. Since the role of policies differ substantially for these two groups of women, they are considered separately.

Some hypotheses that will guide our empirical work are now presented. We measure the intergenerational correlation of employment between mothers and daughters by the average marginal effect of having had a working mother on daughters' employment probability (MEE_I). This marginal effect has two main components: the effect on daughters' *participation* and the effect on their *risk of remaining unemployed* once they participate. Indeed, MEE_I can be written as follows (proof available in the *Appendix*):

$$MEE_I = (p_1 - p_0) (1 - u_1) + (u_0 - u_1) p_0 \quad [1]$$

where: p_1 (p_0) represents a young woman's probability of participating, conditional on having had a working (workless) mother during adolescence; u_1 (u_0) a young woman's unemployment risk, conditional on both having had a working (workless) mother during adolescence and on participation. We cannot estimate the two components separately because the sample size is often not large enough to estimate the effect of having had a working mother on daughters' unemployment. However, we can estimate MEE_I and the marginal effect on participation ($MEP_I \equiv p_1 - p_0$).

Our first hypothesis describes the implications of [1]:

H1: Having had a working mother during adolescence affects both her daughter's participation and unemployment risk at about 30 years of age.

H1 can be tested (partially) by comparing the size of the estimated MEE_I and MEP_I in each country. If MEE_I is equal to or greater than MEP_I , we can conclude that having had a working mother *does have an effect* on the unemployment risk (accepting H1).⁴ In contrast, if MEE_I is smaller than MEP_I , we cannot say whether having had a working mother during adolescence has an effect on the unemployment risk or not, because MEE_I smaller than MEP_I is consistent with both $u_1 = u_0$ and $u_1 \neq u_0$.

As discussed above, the influence of having had a working mother on her daughter's *participation* is more likely to emerge when the daughter herself has small children. Hence, we can formulate our second hypothesis:

H2: The effect of having had a working mother on her daughter's employment probability (at about 30 years of age) is mainly driven by the mother's influence on participation for daughters with children, and by her influence on the unemployment risk for childfree daughters.

Since we carry out separate analyses for young women with children and childfree, we do not formally test H2; rather, we compare the estimated MEE_I and MEP_I , and their relative size, for the two groups of

⁴ If having had a working mother *does affect* women's unemployment risk ($u_1 \neq u_0$), MEE_I can be *greater or smaller* than MEP_I according to whether the effect on the unemployment risk is larger or smaller (in percentage terms) than the effect on participation. More precisely, $MEE_I > = < MEP_I$ if $\frac{u_0 - u_1}{u_1} > = < \frac{p_1 - p_0}{p_0}$. In contrast, if having had a

working mother *does not affect* women's unemployment risk ($u_1 = u_0$), MEE_I *must be smaller* than MEP_I because the latter is multiplied by $(1 - u_1)$ which is lower than one. The difference between the two is larger (in absolute value) the higher the unemployment risk.

women in each country. Suppose that, in some countries, MEE_1 is significant for both groups, while MEP_1 is significant only for women with children. We can conclude that, in those countries: i) having had a working mother affects her daughter's participation decision only when she has small children; ii) having had a working mother affects her childfree daughter's employment probability mainly by influencing her unemployment risk.

The third hypothesis, crucial for an international comparative analysis, is concerned with *cross-country differences in both MEP_1 and MEE_1* . Estimates of MEP_1/MEE_1 are based on *observed* participation, which depends on the interaction between preferences and constraints. Hence, MEP_1/MEE_1 could differ across countries because of differences in the intergenerational *transmission of work preferences*, or in the presence of a *policy context* that prevents women to participate and affects differently daughters of working and non-working mothers.

The transmission of work preferences between mothers and daughters is influenced by societal views about women's employment. If daughters grew up in a 'traditional' society (in which most people think, for example, that small children suffer if their mother works), there may be two opposite effects. On the one hand, daughters of working mothers may deviate from their mother's example because of the contrasting social norm, and because they may have seen their mothers struggling to balance work and family. This would lead to a weak intergenerational transmission of preferences. On the other hand, they may follow their mother's example when the transmission of preferences for work prevails over the cost of deviating from the social norm, leading to a strong intergenerational correlation. Similarly, there may be two opposite effects also for daughters who grew up in a 'modern' society (where non-working mothers were a small selected group). On the one hand, the pressure of societal norms should push daughters of non-working mothers to deviate from their mother's example, leading to a weak intergenerational transmission of preferences. On the other hand, some specific factors characterizing the 'non-working mother' group (e.g. cultural factors) could be transmitted to daughters, leading to a strong intergenerational transmission of preferences. Finally, in a rapidly changing society, daughters of non-working mothers are likely to deviate from their mother's example because the social norm increasingly supports women's employment, leading to a weak intergenerational transmission of preferences.⁵

We cannot directly test the strength on the mother-daughter transmission of preferences because we do not observe young women's *desired* participation (preferences), but only *actual* participation (outcomes). And the latter is influenced by the national policy context (i.e. labor market conditions for young women and institutions supporting female employment). For example, young mothers are more likely to exit

⁵ Rachel Fernández (2013) and Alessandra Fogli and Laura Veldkamp (2011), present a 'learning' model, where mothers transmit a signal to their daughters about the long-run cost of working, and daughters update their beliefs observing also a public signal (the proportion of women - or neighboring women - who worked in the previous generation). According to this model, the intergenerational correlation should be larger in traditional and modern societies and smaller in rapidly changing societies.

(temporarily or definitely) the labor market, in countries where child-care services are more rationed, part time jobs are less widespread and fathers have less incentives to be involved in child care. Young childfree women may remain unemployed or decide not to search for a job, where they are discriminated against because of the motherhood *risk*.

The national policy context influences the intergenerational correlation insofar as it affects differently daughters of working and non-working mothers. For example, consider a young woman with a small child. If her mother was working when she was fourteen, it is likely that her mother is still employed when the daughter takes her participation decision. In this case, the (grand)mother would be unable to provide informal child care to support her daughter decision. If the mother was not working when her daughter was fourteen, it is likely that she is still out of the labor market, and can provide informal child care. Hence, an unfavorable policy context would represent a larger obstacle to participation for daughters of working mothers than for daughters of non-working mothers. Therefore, we can formulate the following hypothesis:

H3: Cross-country differences in MEE_1 are influenced by the national policy context, and not only by differences in the intergenerational transmission of work preferences.

In order to test H3, we need to identify some factors that may affect the mother-daughter transmission of preferences and other factors that shape the national policy context. By capturing the former in a ‘gender norm indicator’, and the latter in a ‘policy context indicator’, we can test H3 as follows. If the interaction between the working mother dummy and the *gender norm indicator* is significant, while that with the *policy indicator* is not, we can reject H3, concluding that cross-country differences in MEE_1 are due to differences in the intergenerational transmission of preferences, and not to the national policy context. If the interaction between the working mother dummy and the *policy indicator* is significant, while that with the *gender norm indicator* is not, we can confirm H3, concluding that cross-country differences in MEE_1 are due to the presence of some deficiencies in the national institutional context. In this last case, we can also identify which group of daughters is relatively more affected by these deficiencies. If the *coefficient* associated with the interaction between the working mother dummy and the policy indicator is *positive* (i.e. the working mother has larger effects in countries where policies are more favorable to women’s employment), we can conclude that daughters of *working* mothers are relatively more affected by the deficiencies of the national institutional context than daughters of *non-working* mothers. If it is *negative* (i.e. the working mother has smaller effects in countries where policies are more favorable to women’s employment), we can conclude that daughters of *non-working* mothers are relatively more affected by the deficiencies of the national institutional context than daughters of *working* mothers. Finally, if both interactions are significant, we cannot conclude that the national policy context plays a role (i.e. we can neither reject nor accept H3), because the interaction terms could simply capture a spurious correlation.

EMPIRICAL SPECIFICATION AND DESCRIPTIVE STATISTICS

In order to investigate the mother-daughter correlation of employment, we estimated various multilevel logit models, where individuals (level 1) are nested in countries (level 2). Equations are reported in the Appendix. In model 1 we estimated the ‘*gross*’ association between mothers’ and daughters’ employment. We included a random intercept (to capture cross-country differences in the likelihood of being employed), individual age, and a set of parental background variables: mother’s and father’s employment status and type of occupation,⁶ and a dummy variable for having grown-up in a lone-parent family. In order to capture differences across countries in the mother-daughter correlation of employment, we also included a random slope for the mother’s employment status.⁷

In model 2 we estimated the ‘*net*’ effect associated with mother’s employment, by adding various individual characteristics and family arrangements which could affect individual employment probability: education, citizenship, cohabiting with a partner, the partner’s employment status. Since the relationship between these characteristics and labor market outcomes can vary across countries, controlling only for the average effect in the pooled sample may cause the residual variation to be captured by other variables, and in particular by the random slope associated with mother’s working status. Hence, we included also a random slope for individual educational level (tertiary education dummy).⁸

As noted above, young adults take their decisions within a national socioeconomic context that may enhance or constrain their individual choices. Hence, in model 3 we added a ‘gender norm indicator’, a ‘policy context indicator’, as well as the female unemployment rate (25-34 yrs) to control for labor market conditions, and the gender gap in unemployment rates (20-29 yrs) as a measure of discrimination against young women (i.e. employers may prefer to recruit young men to prevent costs related to future motherhood).

The gender norm indicator is constructed by using some EVS questions (in 2008). In particular, we consider the proportion of individuals (aged 15-64) who disagree with these two statements: i) “When jobs are scarce, men have more right to a job than women”, ii) “A pre-school child is likely to suffer if his or her mother works”; and who agree with the following statements: i) “A working mother can establish

⁶ We included father’s employment status and type of occupation to control for cross-gender intergenerational correlations of labor market outcomes. We did not control for parents’ education because it is highly correlated with occupational variables. We carried out a robustness check by estimating all models with controls for parents’ education rather than type of occupation. Parents’ education had no residual effect on daughters’ employment probability when we controlled for individual characteristics, and it did not affect the magnitude of the correlation between parents’ and daughters’ employment status.

⁷ A likelihood ratio test confirms that the model fit improves significantly with the inclusion of this random slope (LR $\chi^2(1) = 9.37$ for mothers; 3.43 for childfree women).

⁸ A likelihood ratio test confirms that the model fit improves significantly with the inclusion of this random slope (LR $\chi^2(1) = 54.36$ for mothers; 8.83 for childfree women). No significant improvement was detected if we included random slopes for other variables. As a robustness check, we also performed separate regressions for each country. The marginal effects associated with the ‘working mother’ dummy are comparable to those obtained from the multilevel estimation. Results are available from the authors upon request.

just as warm and secure a relationship with her children as a mother who does not work”; ii) “Men should take as much responsibility as women for the home and children”. Since these proportions are highly correlated, we run a Principal Component Analysis (PCA) on them and take the first component as our ‘gender norm indicator’. Higher values of this indicator correspond to contexts characterized by more gender equal views (both in the labor market and at home), and more favorable attitudes towards female and maternal employment.

The policy context indicator is identified by considering the availability of child-care services (share of children < 3 yrs in formal child care), the share of female part-time employment, and the length of the parental leave reserved to fathers. We consider also the maximum length of the parental leave for mothers, which works in the opposite direction: the longer the leave, the longer women with children can stay at home, the higher the share of inactive mothers in our sample. We carry out a PCA analysis also for these variables, and use the first component as the ‘policy indicator’. Higher values of this indicator correspond to policy contexts that are more favorable to female and maternal employment. More details on the sources of these variables and the PCA analyses are reported in the Appendix, and some descriptive statistics are included in the Appendix.

The gender norm indicator and the policy indicator may be correlated, and the causal relationship between them could go in either direction: individuals in countries with more egalitarian gender norms could ask for and obtain more child-care services and longer leaves for fathers; more child-care services and longer leaves for fathers could boost female participation, leading to more egalitarian gender norms. We cannot distinguish between these cases in our analysis, but we can observe whether one indicator retains an *independent* residual effect on young women’s employment probability, once the other indicator has been controlled for.

In models 4-8, we examined the way in which the mother-daughter correlation of employment varies across different socioeconomic national contexts. We did so by re-estimating model 3 with interaction terms between the macro-level variables and the working-mother dummy. Coefficients associated with these interaction terms indicate whether the effect of maternal employment is somehow correlated with some specific institutional characteristics of the countries included in the analysis, allowing to test H3.

Some descriptive statistics of our main variables of interest are reported in Table 1.

[Table 1]

There is a large degree of homogeneity in childfree women’s activity shares, which range from 97 (Sweden) to 89 percent (Italy), with only 8pp difference. The picture changes considerably when young women with children are considered. The shares of active women range from very high levels (above 80%) in Sweden, Portugal, the Netherlands and Belgium, to very low levels in Austria (47%) and Hungary (54%). The gap between the two extremes is very large: 42pp difference.

It is interesting to notice that the difference in the activity shares between the two groups of young women (with/without children) varies considerably both across countries and within country groups. In particular, it is very small in Sweden (8pp), Portugal (7pp), Belgium (10pp), and the Netherlands (13pp), but very large in Austria (48pp), Germany and Hungary (38pp), followed by Finland, Ireland and the UK (with over 30pp).

Because of some unemployment in all countries, the share of employed young women is lower than the share of active young women, for both groups of women (with/without children). However, there are noticeable differences between countries and within country groups. Sweden, Austria and Romania record a relatively small gap (4-5pp) between activity and employment shares for both mothers and childfree women. In Ireland, Austria, Spain, Portugal, Baltic countries, and Hungary the gap between activity and employment shares is large for both groups of women (9-12pp). In Greece, Italy, Finland and France childfree women suffer more than mothers from unemployment; this seems to imply some discouragement effect for mothers, as they tend to re-enter active life when employment opportunities open up. This is in contrast with the UK where young mothers suffer more than young childfree women from unemployment.

Table 1 presents also simple correlations between the employment status of mothers (during their daughters' adolescence) and that of their adult daughters (aged 24-35) in each country (measured by the Cramer's V), separately for the two groups of young women (with/without children). These provide a first idea of whether and where mothers' employment status appears somehow linked to their daughters' employment status in the early stage of their working life. Almost all correlations are positive, meaning that the incidence of employed young women is higher among those who had a working mother. It stands out that correlations are larger (and significant for a larger number of countries) for young women with children in comparison to childfree women. Correlations between mothers and daughters with children appear quite large and significant in the majority of countries, and generally larger than the correlations for childfree daughters. Again, the magnitude of this correlation is quite different within country groups. For example, in Nordic countries, the correlation between mothers and daughters with children is 0.02 in Finland but 0.30 in Sweden; in Continental countries, it varies from 0.04 in Austria and Germany to 0.26 in Belgium; in Mediterranean countries, it varies from 0.04 in Greece and Spain to 0.19 in Italy. The econometric analysis, presented in the next section, verified whether these correlations remain or become significant after controlling for several individual and country characteristics.

RESULTS

Table 2 shows the estimated coefficients for the employment probability (models 1 to 3) of young women with children and childfree, separately. For the sample of countries as a whole, in all models there is a significant association between mothers' employment status and their daughters' employment probability: if mothers were working during adolescence, their daughters (with and without children) have a higher

probability to be employed at about 30 years of age, whether we control for individual and country characteristics or not. In contrast, fathers' employment status has only a significant 'gross' effect (model 1) for daughters with children, and parents' type of occupation is never significant.

Almost all individual variables (models 2-3) have the expected effects: age and education are associated with higher employment probabilities, whereas having a non-EU citizenship is associated with lower employment probabilities. Women in a couple have a lower probability of being employed compared to single women (especially when they have children), but if their partner is employed this difference diminishes (and becomes positive for childfree women). Macro-level variables work differently for the two groups (model 3). For young mothers, the probability of being employed is mainly associated with a national policy context favorable to maternal employment (more childcare services, more part-time opportunities, longer leaves reserved for fathers, shorter maternal leaves). Societal views about female employment, female unemployment rate and the gender gap in unemployment rates do not affect their employment probability. In contrast, young childfree women are less likely to be employed in countries with higher female unemployment rates, and higher gender gaps in unemployment rates. A policy context that favors maternal employment is positively associated also with the employment probability of childfree women. This could be due to the fact that the policy indicator encompasses a set of measures that favor female employment in general (i.e. independently on whether they have children or not). Societal views about female employment do not play any role for the employment probability of childfree women.

[Table 2]

Results for the probability of participation are very similar to those just described (available from the authors upon request). The only difference is that there is no significant association between the probability of participation of childfree young women and either female unemployment rates or gender gaps in unemployment rates.

Figures 1 and 2 show the country-specific average marginal effects associated with having had a working mother for the probability of employment (MEE_i) and of participation (MEP_i), of young mothers and childfree women, respectively.⁹ Focusing on MEE_i , four aspects are worth noting. First, MEE_i is positive and significant in almost all countries for both groups of women. Exceptions are Austria for women with children and Austria, Greece and Spain for childfree women. Second, MEE_i is generally larger, and with more pronounced differences across countries, for women with children compared to childfree women. The size of MEE_i varies from 4pp to 14pp for young mothers, and from 2pp to 9pp for childfree women. Third, for both groups of women, the ordering of countries differs from the

⁹ The marginal effects described in Figure 1 are obtained from model 3. Estimates of these marginal effects from model 1 are generally somewhat higher (i.e. gross correlations are larger than net correlations), but the ordering of countries is very similar to that reported in Figure 1. Estimations are available from the authors, upon request.

conventional country groups. For example, for women with children in Continental countries, MEE_I is quite large in Belgium, the Netherlands, and France (around 10pp or above), somewhat smaller in Germany (7pp) and not significant in Austria. The same happens among Mediterranean, Nordic and CEE countries.

[Figure 1 and 2]

Turning to the association between having had a working mother and the participation probability, MEP_I is positive and significant in all countries for young women with children, but Austria; for childfree women, MEP_I is positive and significant only in 10 countries, and also lower. This confirms the findings of previous studies: the influence of having had a working mother on their daughter's participation becomes more important when the daughter herself has small children. In Baltic countries, Greece, Spain, Finland, Hungary and Poland, having had a working mother affects her daughter's participation decision *only* when she has small children. Furthermore, for both groups of women, MEE_I is generally equal to or greater than MEP_I . The only cases in which MEP_I is (notably) larger than MEE_I are young women with children in Romania and Baltic countries. Hence, we can conclude that having had a working mother does have an effect on their daughters' unemployment risk (accepting H1) in almost all countries.

These findings also suggest that H2 is only partially true. H2 stated that the effect of having had a working mother on her daughter's employment probability (at about 30 years of age) is mainly driven by the mother's influence on participation for daughters with children, and by her influence on the unemployment risk for childfree daughters. For daughters with children, having had a working mother affects their employment probability by influencing both participation and the unemployment risk in all countries, but Romania and Baltic countries – where it may influence only participation –, and Austria – where there is no association neither with participation nor with the unemployment risk. For childfree women, having had a working mother is positively associated with both their participation and unemployment risk only in 10 countries, it is associated only with their unemployment risk in four countries (BA, FI, HU, PL), while it does not influence neither participation nor unemployment in the remaining three countries (AT, EL, ES).

All together, these results suggest that mother's employment during adolescence can play a role in facilitating their daughters' successful integration into the labor market, besides favoring their participation. Differences across countries in the relative importance of these two effects are difficult to interpret, and more adequate datasets (including a larger sample size) would be needed for a deeper understanding.

In order to examine whether the cross-country differences in MEE_I (and MEP_I) are somehow related to some characteristics of the socioeconomic national contexts, we augmented model 3 (for both employment and participation) with interactions between the working-mother dummy and our four macro-level variables. Table 3 reports estimated coefficients of these interactions for the employment

probability (model 4 to 8; all other coefficients – not shown – are very similar to those reported in table 2). Interactions in the model of participation have similar coefficients, both in terms of magnitude and of significance.

For young women with children, only the interaction between the working mother dummy and the policy-context indicator is significant (both for participation and employment). This confirms our third hypothesis (H3), that cross-country differences in MEE_I are mainly driven by differences in the national policy context. This does not imply that societal gender norms do not affect the mother-daughter transmission of work preferences. Rather, this influence, if it exists, is not reflected in women's outcomes because the policy context is unfavorable to maternal employment. Indeed, the *coefficient* associated with the interaction between the working mother dummy and the policy context indicator is *positive*, i.e. the correlation between having had a working mother and her daughter's employment probability is larger in countries where the policy context is more favorable to maternal employment. This suggests that daughters of *working* mothers are relatively more affected by an unfavorable policy context than daughters of *non-working* mothers. This is coherent with our previous discussion about the role of grandmothers in helping their working daughters looking after their children.

For childfree women, neither the policy context nor societal views about women's employment play a role in explaining cross-country differences in MEE_I and MEP_I .¹⁰ This suggests that other factors may be behind this correlation, related to the influence of maternal employment on daughters' integration into the labor market (e.g. preference for certain types of jobs or transmission of soft skills). The interaction term between the working-mother dummy and the female unemployment rate was significant, suggesting that the correlation between having had a working mother and her daughter's employment (and participation) probability is lower in countries with higher female unemployment rates. A possible interpretation of this result is that the definition of what is considered to be a 'good job' differs for daughters of working and non-working mothers. When female unemployment rate is high, good jobs become relatively scarce. If daughters of working mothers have stronger preferences for good jobs, they will be relatively more unemployed (or discouraged) than daughters of non-working mothers. Hence, the correlation with their mothers' employment status decreases. This issue would deserve a deeper analysis, which our dataset does not allow.

In order to check the robustness of our findings, we performed some additional analyses (available in the *Appendix*). Neither the concentration of working mothers at the time respondents were 14, nor the *rate of change* of societal views appear to influence the intergenerational correlation between mothers' and daughters' employment. As before, this could be due to the fact that we do not observe preferences but

¹⁰ Some of the variables included in the gender norm indicator do not suit childfree women. Hence, in all models we substituted the gender norm indicator with the share of individuals (15-64) who disagree with the following statement: "When jobs are scarce, men have more right to a job than women". This variable was never significant neither on its own, nor interacted with the working mother dummy.

only realized outcomes, which are more affected by the current policy context. We estimated also the intergenerational correlation between mothers' and sons' employment. This correlation is positive and significant in the majority of European countries, but quite small and similar across countries (between 2pp and 6pp), and not correlated with any macro-level variable.

CONCLUSIONS

This paper presented a comparative analysis of the intergenerational correlation of employment between mothers and daughters in 19 European countries. Daughters' employment is observed at about 30 years of age, whereas mothers' employment refers to their daughters' adolescence (at about 14 years of age). The main goal of our analysis was to examine the extent to which the mother-daughter correlation of employment is associated with societal views about women's employment, and the national socioeconomic context. To this end, we used the ad-hoc module on intergenerational transmission of disadvantages of the 2011 EU-SILC cross sectional data, and modelled daughters' employment (and participation) probability as a function of their mother's employment status during their adolescence, as well as of other individual and country characteristics. Separate analyses for young women with and without (small) children were carried out.

In order to interpret the results of our analysis, it is important to underline that the intergenerational correlation of employment depends on two key elements: i) the strength of the mother-daughter transmission of preferences for paid work (which, in turn, is influenced by societal views about women's work); ii) the presence of constraints, within the household and in society at large, which could prevent women's preferences to be reflected in observed outcomes. We could not examine directly the strength on the mother-daughter transmission of preferences because we only observe young women's outcomes. And the latter are influenced by the national policy context (i.e. labor market conditions for young women and institutions supporting working mothers), which could affect differently daughters of working and non-working mothers.

Our analysis shows that, in almost all countries, having had a working mother is associated with daughters' higher employment probability, independently on whether they have children (although the effect is larger for young women with children). In many cases, mother's employment during adolescence plays a role in facilitating their daughters' successful integration into the labor market, besides favoring their participation. The effect on participation is larger and more widespread for women with children, whereas that on the unemployment risk is more widespread for childfree women. For both groups of women, the dimension of the intergenerational correlation of employment does not reflect the conventional country groups. For women with children, the intergenerational correlation is smaller in countries where the policy context is less favorable to maternal employment; this suggests that the context limits the participation of daughters of working mothers, i.e. a group of women with stronger work

preferences. Societal views about women's employment do not seem to play a significant role. This could mean that societal gender norms do not influence the mother-daughter transmission of preferences for paid work, or that preferences are not reflected in women's outcomes. For childfree women, neither the policy context nor societal views about women's employment play a role in explaining cross-country differences in the intergenerational correlation of employment, which are associated only with the female unemployment rate. This suggests that other factors might be behind this correlation, related to the influence of maternal employment on daughters' integration into the labor market (e.g. preferences for certain types of jobs or transmission of soft skills).

Our findings contribute to a better understanding of the relationship between the intergenerational transmission of preferences for work and the role of the policy context. In particular, a relatively small intergenerational correlation observed for young mothers should not be interpreted as evidence of a weak transmission of preferences. Rather, it signals the presence of obstacles to the realization of preferences. The intriguing result is that, among young women with children, daughters of working mothers suffer more than daughters of non-working mothers from an unfavorable context (i.e. policies supporting maternal employment are lacking). In a historical perspective, female participation is on the increase in all countries. Therefore, it is crucial to create the conditions for young women's preferences for work to translate into employment, while having children and a family. This is not the case in some Mediterranean countries (like Italy) – where large numbers of women exit the labor market after motherhood – and in some CEE countries – where mothers take advantage of the unpaid maternity leave to interrupt their career.

Which policies? It is not possible to provide clear policy prescriptions at the country level, given the characteristics of the empirical work and data sources. Nevertheless, our results suggest two main directions for policy improvements that would loose young mothers' constraints. First, strengthening policies favoring a more balanced sharing of unpaid work within the household. Second, moving towards an increasing externalization of care work (not only child-care, but also elderly care). One has to consider that in an ageing society, an increasing number of 'old' mothers will still be engaged in paid work (because of the increasing retirement age), therefore unable to help their daughters, looking after their grandchildren. Moreover, this cohort of 'old' mothers will have little time for caring their grandchildren, because of the increasing caring needs of the elderly relatives.

The main implication for future analysis is that we need a better understanding of the role of existing 'constraints' (in the couple and/or in society) that prevent preferences for work from translating into outcomes (employment). A limitation of our study – focused on a cross-country analysis – is given by the static approach. Future research should analyze the evolution over time of the mother-daughter intergenerational correlation, taking into account the changes recorded in the national socioeconomic context. Focusing on a limited number of countries belonging to a similar cultural-historical background (e.g. ES, IT and PT; or DK, FI and SE) would help to highlight the role of changes in labor market

conditions and social policies.

REFERENCES

- Agarwal, Bina. 1997. "Bargaining' and gender relations: Within and beyond the household." *Feminist Economics* 3(1): 1-51.
- Barigozzi, Francesca, Helmuth Cremer, and Kerstin Roeder. 2018. "Women's career choices, social norms and child care policies." *Journal of Public Economics* 168: 162-173.
- Barón Juan D., Deborah A. Cobb-Clark, and Nisvan Erkal. 2015. "Welfare Receipt and the Intergenerational Transmission of Work-Welfare Norms." *Southern Economic Journal* 82(1): 208–234.
- Beblo, Miriam, and Luise Görge. 2018. "On the nature of nurture. The malleability of gender differences in work preferences." *Journal of Economic Behavior & Organization* 151: 19-41.
- Berloffa, Gabriella, Eleonora Matteazzi, and Paola Villa. 2019. "The Worklessness Legacy. What Difference do Mothers Make for Youth Transitions?" In *Youth Labor in Transition. Inequalities, Mobilities and Policies in Europe*, edited by Jaqueline O'Reilly, et al., 294-333.
- Berloffa, Gabriella, Eleonora Matteazzi, and Paola Villa. 2017. "The influence of parental employment status on children's labor outcomes. Does the gender of parents and children matter?" *Journal of Research in Gender Studies* 7(2): 136-164.
- Campaña, Juan Carlos, Jose Ignacio Giménez-Nadal, and José Alberto Molina. 2018. "Gender Norms and the Gendered Distribution of Total Work in Latin American Households." *Feminist Economics* 24(1): 35-62.
- Contreras, Dante and Gonzalo Plaza. 2010. "Cultural factors in women's labor force participation in Chile." *Feminist Economics* 16(2): 27-46.
- Defloor, Bart, Luc Van Ootegem, and Elsy Verhofstadt. 2015. "A good or bad transition from school to work: who is responsible?" *International Journal of Manpower* 36(8): 1207-1226.
- Erhel, Christine and Mathilde Guergoat-Larivière. 2013. "Labor market regimes, family policies, and women's behavior in the EU." *Feminist Economics* 19(4): 76-109.
- Farré, Lidia and Francis Vella. 2013. "The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labor Force Participation." *Economica* 80(318): 219-247.
- Fernández, Raquel. 2007. "Women, work and culture." *Journal of the European Economic Association* 5(2-3): 305–332.
- Fernández, Raquel. 2013. "Cultural Change as Learning: The Evolution of Female Labor Force Participation over a Century." *American Economic Review*, 103 (1): 472-500.
- Fernández, Raquel and Alessandra Fogli. 2009. "Culture: An empirical investigation of beliefs, work, and fertility." *American Economic Journal: Macroeconomics* 1(1): 146-77.
- Fernández, Raquel, Alessandra Fogli, and Claudia Olivetti. 2004. "Mothers and Sons: Preference Formation and Female Labor Force Dynamics." *The Quarterly Journal of Economics* 119(4): 1249-1299.
- Fogli, Alessandra, and Laura Veldkamp. 2011. "Nature or Nurture? Learning and the Geography of Female Labor Force Participation." *Econometrica* 79(4): 1103-38
- García-Mainar, Inmaculada, Jose Alberto Molina, and Víctor M. Montuenga. 2011. "Gender differences in childcare: time allocation in five European countries." *Feminist Economics* 17(1): 119-150.
- Heckman, James J., Jora Stixrud, and Sergio Urzua. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior." *Journal of Labor Economics* 24(3): 411–482.

- Hérault, Nicolas and Guyonne Kalb. 2016. "Intergenerational Correlation of Labor Market Outcomes." *Review of Economics of the Household* 14(1): 231-249.
- Hox Joop J. 2010. *Multilevelanalysis. Techniques and applications*. New York: Routledge.
- İpek, İlkkaracan. 2012. "Why so Few Women in the Labor Market in Turkey?" *Feminist Economics* 18(1): 1-37.
- Johnston, David W., Stefanie Schurer and Michael A. Shields. 2014. "Maternal gender role attitudes, human capital investment, and labour supply of sons and daughters." *Oxford Economic Papers* 66(3); 631–659.
- Keck, Wolfgang, and Chiara Saraceno. 2013. "The impact of different social-policy frameworks on social inequalities among women in the European Union: The labour-market participation of mothers." *Social Politics* 20(3): 297-328.
- Macmillan, Lindsey, Paul Gregg, John Jerrim, and Nikki Shure. 2018. "Children in jobless households across Europe: Evidence on the association with medium-and long-term outcomes." *Journal of Poverty and Social Justice* 26(3), 335-358.
- Macmillan, Lindsey. 2013. "The Role of Non-Cognitive and Cognitive Skills, Behavioural and Educational Outcomes in Accounting for the Intergenerational Transmission of Worklessness." DoQSS Working Paper No.13-10, London, UK, Institute of Education, University of London.
- Marks, Gillian., and Houston, Diane M. 2002. "Attitudes Towards Work and Motherhood Held by Working and Non-working Mothers." *Work, Employment and Society*, 16(3): 523–536.
- McGinn, Kathleen L., Mayra Ruiz Castro, and Elizabeth Long Lingo. 2019. "Learning from mum: Cross-national evidence linking maternal employment and adult children's outcomes." *Work, Employment and Society* 33(3): 374-400.
- Morrill, Melinda Sandler, and Thayer Morrill. 2013. "Intergenerational links in female labor force participation." *Labour Economics* 20: 38-47.
- Olivetti, Claudia, Eleonora Patacchini, and Yves Zenou. 2018. "Mothers, Peers, and Gender-Role Identity." *Journal of the European Economic Association*. <https://doi.org/10.1093/jeea/jvy050>.
- Pearse, Rebecca, and Raewyn Connell. 2016. "Gender norms and the economy: insights from social research." *Feminist Economics* 22(1): 30-53.
- Seguino, Stephanie. 2007. "PlusÇa Change? Evidence on global trends in gender norms and stereotypes." *Feminist Economics* 13(2): 1-28.
- Willett-Bloom, Marion C., and Steven L. Nock. 1994. "The influence of maternal employment on gender role attitudes of men and women." *Sex Roles* 30(5-6): 371-389.

Table 1 Shares of active and employed young women (aged 25-34; 2011) by presence of children and country; correlations (Cramer's V) between their employment status in 2011 and their mother's employment status when young women were about 14.

	Women with children				Childfree women			
	Active	Employed	Cramer's V	No. obs.	Active	Employed	Cramer's V	No. obs.
Nordic								
FI	0.58	0.56	0.02	291	0.91	0.83	0.20	240
SE	0.89	0.85	0.30	227	0.97	0.92	0.05	157
English speaking								
IE	0.62	0.50	0.11	315	0.94	0.83	0.11	176
UK	0.65	0.59	0.06	466	0.95	0.91	0.06	287
Continental								
AT	0.47	0.42	0.04	391	0.95	0.90	-0.06	335
BE	0.81	0.73	0.26	457	0.91	0.83	0.18	353
DE	0.58	0.51	0.04	572	0.96	0.90	0.04	623
FR	0.79	0.74	0.20	793	0.95	0.88	0.15	534
NL	0.82	0.82	0.18	292	0.97	0.95	0.06	281
Mediterranean								
EL	0.65	0.45	0.04	333	0.90	0.61	-0.03	385
ES	0.75	0.55	0.04	728	0.90	0.71	0.04	1,097
IT	0.65	0.54	0.19	847	0.89	0.71	0.07	1,284
PT	0.88	0.78	0.15	311	0.95	0.85	0.10	320
CEE								
BA	0.75	0.63	0.01	1,219	0.91	0.78	0.03	537
HU	0.54	0.45	0.14	939	0.92	0.83	0.13	706
PL	0.70	0.63	0.08	1,342	0.92	0.80	0.07	643
RO	0.69	0.65	0.19	381	0.91	0.86	0.24	372

Note: see the Appendix for country abbreviations. Values in bold indicate a significant Chi squared test of association between the corresponding two variables (5% significance level).

Table 2 Estimated coefficients of multilevel logistic models for the employment probability of women with children and childfree (aged 25-34; 2011).

	Women with children			Childfree women		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Family characteristics (at about 14 years of age)						
Working mother	0.512*** (0.090)	0.436*** (0.085)	0.439*** (0.085)	0.414*** (0.107)	0.342*** (0.101)	0.355*** (0.101)
Working father	0.218*** (0.081)	0.132 (0.083)	0.131 (0.083)	0.422*** (0.120)	0.320*** (0.122)	0.337*** (0.122)
Lone-parent family	0.087 (0.073)	0.076 (0.074)	0.075 (0.074)	0.014 (0.106)	-0.014 (0.107)	-0.013 (0.107)
Father's high-status occupation ^a	-0.010 (0.064)	-0.036 (0.065)	-0.040 (0.065)	0.032 (0.075)	0.011 (0.076)	0.003 (0.076)
Mother's high-status occupation ^a	-0.091 (0.070)	-0.108 (0.071)	-0.107 (0.071)	0.118 (0.089)	0.112 (0.090)	0.104 (0.090)
Individual characteristics						
Age	0.100*** (0.009)	0.092*** (0.009)	0.092*** (0.009)	0.063*** (0.011)	0.059*** (0.011)	0.059*** (0.011)
Non-EU citizenship		-0.816*** (0.097)	-0.819*** (0.097)		-0.880*** (0.155)	-0.889*** (0.155)
Upper secondary education		0.665*** (0.063)	0.663*** (0.063)		0.818*** (0.093)	0.809*** (0.093)
Tertiary education		1.183*** (0.141)	1.179*** (0.140)		1.385*** (0.118)	1.369*** (0.118)
In a couple		-0.697*** (0.088)	-0.697*** (0.088)		-0.128 (0.131)	-0.137 (0.131)
Employed partner		0.506*** (0.072)	0.506*** (0.072)		0.762*** (0.139)	0.764*** (0.139)
Macro-level variables						
Gender norm indicator			0.082 (0.089)			-0.017 (0.050)
Policy context indicator			0.192** (0.085)			0.128*** (0.049)
Female unemployment rate (25-34)			0.008 (0.023)			-0.061*** (0.012)
Gender gap in unemployment rates (20-29)			0.029 (0.033)			-0.056*** (0.018)
Constant	0.471*** (0.156)	0.373** (0.164)	0.272* (0.143)	1.503*** (0.157)	1.327*** (0.162)	1.197*** (0.114)
Observations	9,904	9,904	9,904	8,330	8,330	8,330
Number of countries ^b	17	17	17	17	17	17

Notes: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. All models include a random intercept and a random slope for the 'Working mother' dummy. Models 2-3 include also a random slope for the 'Tertiary education' dummy. ^a Managers, professionals or technicians; categories 1-3 ISCO-08. ^b The analysis includes 19 European countries (see the Appendix); Estonia, Latvia and Lithuania are pooled for sample size reasons.

Table 3 Estimated coefficients of interactions between the working mother dummy and macro-level variables from multilevel logit models of employment probability (women with and without children, aged 25-34)

	Women with children					Childfree women				
	Model 4	Model 5	Model 6	Model 7	Model 8	Model 4	Model 5	Model 6	Model 7	Model 8
Working mother #										
Gender norm indicator	0.063 (0.05)				0.038 (0.05)	0.092 (0.05)				0.081 (0.05)
Working mother #										
Policy context indicator		0.117** (0.05)			0.097* (0.05)		-0.038 (0.07)			-0.077 (0.06)
Working mother #										
Female unempl. rate (25-34)			-0.017 (0.01)		-0.011 (0.01)			-0.025** (0.01)		-0.030*** (0.01)
Working mother #										
Gender gap in unempl. rate (20-29)				0.009 (0.02)	0.015 (0.02)				-0.032 (0.02)	-0.015 (0.02)
Observations	9,904	9,904	9,904	9,904	9,904	8,330	8,330	8,330	8,330	8,330
Number of countries	17	17	17	17	17	17	17	17	17	17

Notes: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. All models include all the variables of Model 3 (Table 2). Estimated coefficients for the variables not shown here are very similar to those reported in Table 2 for Model 3 (available from the authors, upon request).

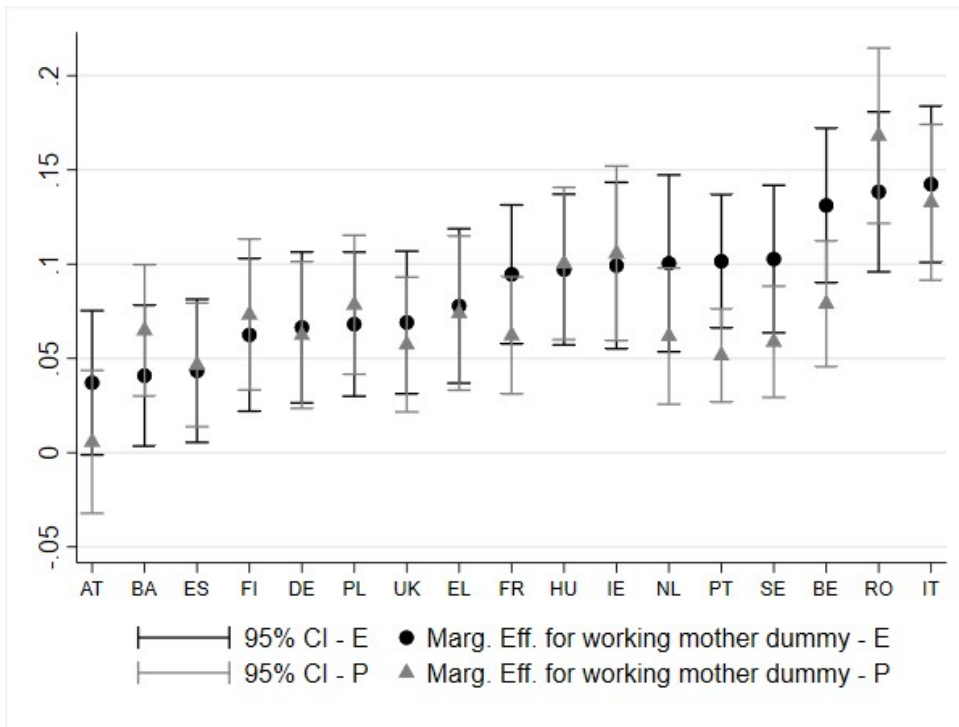


Figure 1 Average marginal effects of having had a working mother on the employment (E) and participation (P) probability of young women with children (aged 25-34)

Note: 95 percent confidence intervals are represented vertically. Marginal effects estimated from Model 3.

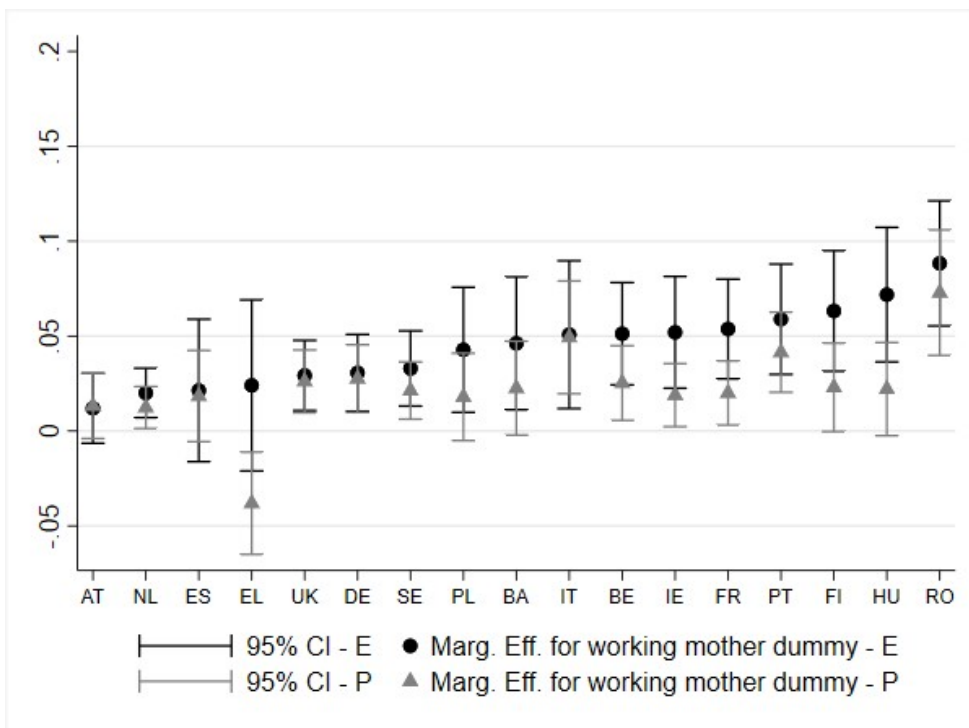


Figure 2 Average marginal effects of having had a working mother on the employment (E) and participation (P) probability of young childfree women (aged 25-34)

Note: 95 percent confidence intervals are represented vertically. Marginal effects estimated from Model 3.

APPENDIX

Country abbreviations

AT:	Austria
BA:	Baltic countries (grouping Estonia, Latvia, Lithuania)
BE:	Belgium
DE:	Germany
EL:	Greece
ES:	Spain
FI:	Finland
FR:	France
HU:	Hungary
IE:	Ireland
IT:	Italy
NL:	the Netherlands
PL:	Poland
PT:	Portugal
RO:	Romania
SE:	Sweden
UK:	the United Kingdom

DECOMPOSING THE MARGINAL EFFECT OF HAVING HAD A WORKING MOTHER ON WOMEN'S PROBABILITY OF BEING EMPLOYED

Subscript 1 identifies the condition of having had a working mother during adolescence, and subscript 0 the case of having had a non-working mother during adolescence.

Let PE_k represent a woman's probability of being employed conditional on $k=0,1$; p_k a woman's probability of participating conditional on k ; e_k the probability of being employed conditional on both k and participation. PE_k can be written as the product of the probability of participating and of being employed conditional on participation; i.e., $PE_k = p_k e_k$. By definition, e_k is equal to one minus the probability of being unemployed conditional on k and on participation (u_k); i.e. $e_k = 1 - u_k$.

The marginal effect of having had a *working* mother during adolescence on her daughter's probability of being employed at about 30 years of age (MEE_1) is defined as:

$$MEE_1 = PE_1 - PE_0 = p_1 e_1 - p_0 e_0 \quad [A1]$$

By adding and subtracting $p_0 e_1$, [A1] can be rewritten as:

$$MEE_1 = (p_1 - p_0) e_1 + (e_1 - e_0) p_0 \quad [A2]$$

Since $e_1 = 1 - u_1$, [A2] can also be written as:

$$MEE_1 = (p_1 - p_0) e_1 + (u_0 - u_1) p_0 \quad [A3]$$

[A3] corresponds to [1] in the paper.

ESTIMATED MODELS (TWO-LEVEL LOGIT MODELS)

In order to investigate the mother-daughter correlation of employment, we estimated various multilevel logit models, where individuals (level 1) are nested in countries (level 2). Our models include both individual-level (X) and country-level variables (Z), besides some cross-level interactions. The log-odds of being employed for individual i in country j can be written as follows:

$$\ln\left(\frac{PE_{ij}}{1 - PE_{ij}}\right) = \beta_{0j} + \beta_{1j}X_{1ij} + \beta_{2j}X_{2ij} + \beta_3X_{3ij} + \beta_4Z_j + \beta_5Z_jX_{1ij} + e_{ij}$$

where bold indicates vectors; PE_{ij} is the probability of being employed for individual i in country j ; X_1 is the working-mother dummy, X_2 is the tertiary education dummy, X_3 is a vector of other individual-level characteristics (such as age, citizenship, partnership status, etc.), Z_j is a vector of two-level variables (the unemployment rate, the gender gap in unemployment rates, the policy context indicator and the gender norm indicator); e_{ij} is the residual error term. Note that β_{0j} , β_{1j} , β_{2j} , have the subscript j (i.e. they vary across countries). β_{0j} represents the random intercept and can be rewritten as:

- $\beta_{0j} = \gamma_0 + u_{0j}$, with γ_0 being the fixed intercept (i.e. the expected log-odds of being employed, for a woman with average individual characteristics, living in a country with average contextual characteristics) and u_{0j} the level-2 residual (i.e. a country-specific effect).

β_{1j} and β_{2j} represent the random slopes, associated with the working-mother dummy and the tertiary education dummy, respectively. They can be written as:

- $\beta_{1j} = \gamma_1 + u_{1j}$ [$\beta_{2j} = \gamma_2 + u_{2j}$], with γ_1 [γ_2] being the fixed slope (i.e. the average effect of X_1 [X_2] in the overall sample), and u_{1j} [u_{2j}] the residual term associated with X_1 [X_2] (i.e. a country-specific effect).

u_{0j} , u_{1j} and u_{2j} are (random) residual error terms at the country level. These error terms are assumed to have zero mean and variance σ^2_{u0} , σ^2_{u1} and σ^2_{u2} , and to be independent from e_{ij} . For more details, see Hox (2010).

SOURCES AND DESCRIPTION OF SOCIOECONOMIC VARIABLES

Variables used to construct the ‘Gender norm indicator’

From the *European Values Survey* (2008). Proportion of individuals aged 15-64, who agreed/disagreed with the following statements:

- “When jobs are scarce, men have more right to a job than women” [Q21 - v103; disagreed]
- “A working mother can establish just as warm and secure a relationship with her children as a mother who does not work” [Q48 – v159; agreed]
- “A pre-school child is likely to suffer if his or her mother works” [Q48 – v160; disagreed]
- “Men should take as much responsibility as women for the home and children” [Q48 – v166; agreed]

Variables used to construct the ‘Policy context indicator’

Child-care services (< 3 years old; 2011): Children in formal child care by age group (% over the population); *EUROSTAT Database* [ilc_caindformal]

Female part-time, as a share of total employment (15-64 years old; 2011): Part-time employment as percentage of total employment, by sex and age; *EUROSTAT Database* [lfsa_eppga]

Paid leave reserved to fathers (2011): Total weeks of paid leave reserved for exclusive use by the father, *OECD Family database*. For Baltic countries and Romania, *Multilinks Database on Intergenerational Policy Indicators* (2009).

Maximum length of leave for mothers (2011): Maximum weeks of job-protected maternity, parental and home care leave available to mothers, regardless of income support, *OECD Family database*,

2011. For Baltic countries and Romania, *Multilinks Database on Intergenerational Policy Indicators (2009)*.

Other variables

Female/Male unemployment rate (25-34 years old; 2011): Female and male unemployment rate for individual aged 25-34 years, computed using data on *Population by sex, age, citizenship and labour status; EUROSTAT Database* [lfsa_pganws]

Gender gap in unemployment rates (20-29 years old; 2011): Difference between female and male unemployment rates (%); *EUROSTAT Database* [lfsa_urgan]

Table A1: Principal components estimates, and cumulative variance explained by components, for the 'Gender norms indicator'.

Variable	Principal components estimates				Cumulative variance explained by components	
	PC1	PC2	PC3	PC4	Components	Cumulative variance
V1	0.5605	0.1545	-0.7991	0.1533	PC1	0.6184
V2	0.4884	-0.5425	0.3502	0.5869	PC2	0.8212
V3	0.5687	-0.1846	0.2150	-0.7722	PC3	0.9243
V4	0.3521	0.8048	0.4389	0.1891	PC4	1
Eigenvalues	2.6455	0.9621	0.2224	0.1700		

Notes: All four variables are expressed in terms of shares of individuals who agree/disagree with the following statements. V1: "When jobs are scarce, men have more right to a job than women"(disagree); V2: "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work" (agree); V3: "A pre-school child is likely to suffer if his or her mother works" (disagree); V4: "Men should take as much responsibility as women for the home and children" (agree). Shares are taken from the European Value Survey (2008).

Table A2: Principal components estimates, and cumulative variance explained by components, for the 'Policy context indicator'.

Variable	Principal components estimates				Cumulative variance explained by components	
	PC1	PC2	PC3	PC4	Components	Cumulative variance
V1	0.5655	-0.0766	0.0203	0.8210	PC1	0.6614
V2	0.5001	0.4511	-0.6818	-0.2855	PC2	0.9019
V3	-0.3923	0.8431	0.1254	0.3457	PC3	0.9575
V4	0.5257	0.2824	0.7204	-0.3535	PC4	1
Eigenvalues	2.4736	0.8112	0.4122	0.3029		

Notes: V1: Female part-time employment as percentage of total female employment (15-64); V2: Total weeks of paid leave reserved for exclusive use by the father; V3: Maximum length of the parental leave for mothers; V4: Children (< 3 yrs) in formal child care over the population of the same age group. For the sources of these variables see the description above.

DESCRIPTIVE STATISTICS OF COUNTRY-LEVEL VARIABLES AND CORRELATIONS

Table A.3 Descriptive statistics of country-level variables

	Policy context indicator				Gender norm indicator				Other variables	
	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
Nordic										
	19	9.	15		0.	0.	0.	0.	7.7	
FI	.0	0	9.0	26	84	94	75	91	9	-2.60
	39	10	85.		0.	0.	0.	0.	7.2	
SE	.3	.0	0	51	93	87	72	94	3	-1.20
English speaking										
	35	0.	56.		0.	0.	0.	0.	20.	
IE	.0	0	0	21	70	76	63	91	45	-11.60
	42	2.	65.		0.	0.	0.	0.	8.0	
UK	.2	0	0	34	83	80	63	93	7	-2.30
Continental										
	43	8.	10		0.	0.	0.	0.	4.7	
AT	.5	7	3.3	14	69	71	38	82	1	-0.30
	43	15	28.		0.	0.	0.	0.	8.8	
BE	.3	.0	0	38	84	87	67	92	3	-0.10
	45	8.	16		0.	0.	0.	0.	6.9	
DE	.4	7	2.0	24	61	74	44	90	7	-1.90
	29	2.	16		0.	0.	0.	0.	10.	
FR	.9	0	2.0	44	89	89	68	96	00	0.80
	76	26	42.		0.	0.	0.	0.	3.9	
NL	.6	.4	0	52	91	83	62	84	3	-0.60
Mediterranean										
	10	0.	58.		0.	0.	0.	0.	21.	
EL	.1	4	2	19	65	77	28	85	09	9.10
	22	2.	16		0.	0.	0.	0.	23.	
ES	.8	1	6.0	39	77	80	54	95	77	-2.70
	29	0.	47.		0.	0.	0.	0.	10.	
IT	.1	0	7	26	69	68	26	89	19	3.70
	13	21	13		0.	0.	0.	0.	13.	
PT	.8	.3	4.1	35	65	76	34	89	42	1.80
CEE										
	11	0.	13		0.	0.	0.	0.	16.	
BA	.4	0	9.0	15	67	75	34	89	26	-2.80
	8.	1.	16		0.	0.	0.	0.	10.	
HU	7	0	0.0	8	85	78	45	97	15	-0.60
	10	1.	17		0.	0.	0.	0.	8.8	
PL	.5	0	8.0	3	64	64	38	92	0	3.20
	10	0.	11		0.	0.	0.	0.	8.3	
RO	.3	0	2.2	2	55	86	45	75	7	-1.30

Note: see the Appendix for country abbreviations. V1: Female part-time employment as percentage of total female employment (15-64); V2: Total weeks of paid leave reserved for exclusive use by the father; V3: Maximum length of the parental leave for mothers; V4: Children (< 3 yrs) in formal child care over the population of the same age group. Variables from V5 to V8 are expressed in terms of shares of individuals who agree/disagree with the following statements. V5: “When jobs are scarce, men have more right to a job than women”(disagree); V6: “A working mother can establish just as warm and secure a relationship with her children as a mother who does not work” (agree); V7: “A pre-school child is likely to suffer if his or her mother works” (disagree); V8: “Men should take as much responsibility as women for the home and children” (agree). V9: Female unemployment rate (25-34). V10: Gender gap in unemployment rates (20-29): Difference between female and male unemployment rates (%). For the sources of these variables see the Appendix.

Table A.4 Correlations among country-level variables

	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
v1	1									
	0.59									
v2	5*	1								
	-	-								
v3	0.514*	0.242	1							
	0.63	0.58	-							
v4	6*	2*	0.317	1						
	0.46	0.33	-	0.71						
v5	6	2	0.170	2*	1					
	0.15	0.25	-	0.48	0.58					
v6	4	4	0.055	4*	5*	1				
	0.44	0.25	-	0.57	0.74	0.78				
v7	6	3	0.088	6*	8*	1*	1			
	-	-	0.29	0.35	0.56	0.07	0.37			
v8	0.057	0.135	6	0	2*	8	2	1		
	-	-	0.05	-	-	-	-	0.19		
v9	0.470	0.429	3	0.085	0.264	0.145	0.232	5	1	
	-	0.04	-	-	-	-	-	-	-	
v10	0.253	4	0.025	0.062	0.139	0.212	0.525*	0.159	0.089	1

Note: see Table A.3 for variable definitions.

ADDITIONAL ANALYSES

i) The role of the context at the time respondents were 14

We examined whether the context at the time respondents were 14 influenced the intergenerational correlation between mothers' and daughters' employment. Indeed, in some countries many mothers were already working at that time, while a working mother was an exception in other countries, and the influence of mothers' example on their daughters' decisions could be different in these two cases. Hence, for each country, we computed the share of working mothers when respondents were 14, and included it as an interaction with the working mother dummy in model 3. We allowed for both a linear and a quadratic association, because the relationship between the intergenerational transmission of preferences for work and the context during adolescence could be U-shaped. The interaction terms were never significant.

ii) The role of the context dynamics

As discussed in the paper, the intergenerational correlation between mothers' and daughters' employment could be influenced by the *rate of change* of societal views about women's employment. If daughters grew up in a society that was traditional but experienced rapid progresses towards gender equality over time, it is likely that they prefer to participate even if their mother did not, leading to a weak intergenerational transmission of preferences. In contrast, if they grew up in a society that was and remained relatively traditional, it is likely that they will follow their mother's example, leading to a strong intergenerational transmission of preferences for work. In order to check this, we used data

from the European Value Survey for both 2008 and 1990.¹¹ In particular, we considered three (out of four) variables, previously included in the gender norm indicator (the only variable that we could not use because it was not available in 1990 was the share of individuals who agreed with the statement: “Men should take as much responsibility as women for the home and children”). We performed a PCA analysis on the *variation*, between 1990 and 2008, of the share of individuals (aged 15-64) who expressed gender equal views on the three items considered. We then constructed a simple dummy variable capturing those countries that experienced a larger change in societal view and interacted it again with the working mother dummy. In all models, the estimated coefficients of the interactions were negative (indicating, as expected, a smaller correlation between mothers’ and daughters’ employment in countries that experienced more change in societal views), but never significant.

iii) The mother-son correlation of employment

We estimated the intergenerational correlation between mothers’ and sons’ employment. We considered only childfree men because the share of young men with children is too small in many countries. We used the same specification used for young women, but substituting female unemployment rate with male unemployment rate (in the age group 25-34). Results of the estimated models are reported in Table A.5, while the average marginal effects associated with the working mother dummies are represented in Figure A.1. Interestingly, mothers’ employment (during adolescence) is significantly correlated also with their sons’ employment outcomes, as young adults.¹² Similarly to what we observed for childfree daughters, parents’ employment status remains significant across all models, but in this case the coefficient associated with father’s employment is somewhat larger than the coefficient associated to mother’s employment. Individual characteristics have similar effects on the employment probability for sons and daughters, except for being in a couple. Young men in a couple are more likely to be employed, while young women are less likely. Neither the gender norm indicator, nor the policy-context indicator, play any role for young men. As for childfree women, young men are less likely to be employed in countries with higher male unemployment rates, while the effect of the gender gap in unemployment rates is reversed: young men are more likely to be employed where this gender gap is larger.

The marginal effect associated with the working mother dummy is similar for childfree sons and daughters (compare Figure 2 in the paper with Figure A.1). Only Romania displays a (significantly) larger effect for daughters than for sons (9pp vs. 4pp), while Greece displays a smaller effect (2pp vs.

¹¹Greece did not participate to the EVS 1990, therefore we exploited EVS 1999. Interviews for EVS 1990 were conducted between 1990 and 1993. At that time, young women in our sample were in their childhood or adolescence.

¹²McGinn, Ruiz Castro and Long Lingo (2019) found no significant effect of mothers’ employment on their sons’ likelihood of being employed. This different result is partly due to the age and cohorts of sons, and partly to the countries included in the analysis. Indeed, the correlation between mothers’ and sons’ employment status for older sons and cohorts is lower.

6pp). All the remaining countries have very similar marginal effects for childfree sons and daughters. There is not much variability across country in the size of this marginal effect: it varies between 2pp and 6pp, with an overall mean of 4pp. Only the marginal effect in Hungary is somewhat larger (8pp). The small differences in these marginal effects across countries is not correlated with any macro-level variable. Indeed, none of the interaction terms between having had a working mother and the macro-level variables is significant.

Our findings suggest that in the majority of European countries, mothers’ employment during adolescence plays a role for their sons’ employment outcomes, increasing their employment probability by about 4pp. This correlation could be due to the influence of mothers’ work experience on their sons’ values and attitudes, in particular the value they attach to paid work vs. welfare dependency, and the effort they are willing to make to find and maintain a job. It could also be related to mothers’ role in developing soft skills that are valued in the labor market, such as the ability to organize and manage time and activities, to be flexible and/or to work under pressure. For example, Bart Defloor, Luc Van Ootegem and Elsy Verhofstadt (2015) showed that the quality of the first job depends to a large extent on personal efforts, but mother’s education impacts on young adult’s effort. Juan Barón, Deborah Cobb-Clark and Nisvan Erkal (2015) found that young people develop positive individual characteristics if their mothers were employed while they were growing up. Unfortunately, our dataset does not allow us to identify these channels.

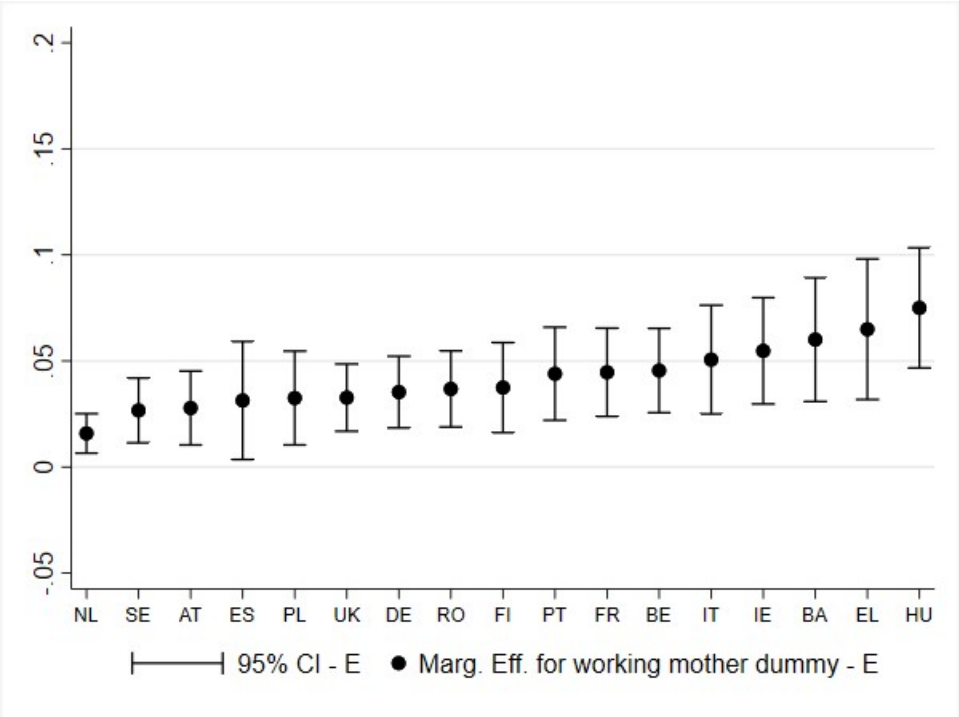


Figure A.1 Average marginal effects of having had a working mother on the employment (E) probability of young childfree men (aged 25-34)

Note: 95 percent confidence intervals are represented vertically. Marginal effects estimated from Model 3, Table SA.1.

Table A.5: Estimated coefficients of multilevel logit models for the employment probability of childfree men (aged 25-34; 2011).

	Model 1	Model 2	Model 3
Family characteristics(at about 14 years of age)			
Working mother	0.341*** (0.074)	0.322*** (0.073)	0.327*** (0.075)
Working father	0.377*** (0.097)	0.326*** (0.101)	0.329*** (0.101)
Lone-parent family	-0.124 (0.086)	-0.112 (0.089)	-0.116 (0.089)
Father's high-status occupation ^a	0.047 (0.066)	-0.014 (0.067)	-0.018 (0.067)
Mother's high-status occupation ^a	0.133* (0.077)	0.046 (0.078)	0.041 (0.078)
Individual characteristics			
Age	0.033*** (0.009)	0.020** (0.009)	0.020** (0.009)
Non-EU citizenship		-0.388*** (0.119)	-0.393*** (0.119)
Upper secondary education		0.825*** (0.063)	0.816*** (0.063)
Tertiary education		1.318*** (0.145)	1.315*** (0.149)
In a couple		0.672*** (0.118)	0.667*** (0.118)
Employed partner		0.790*** (0.145)	0.782*** (0.145)
Macro-level variables			
Gender norm indicator			-0.009 (0.050)
Policy context indicator			0.064 (0.050)
Male unemployment rate (age 25-34)			-0.061*** (0.012)
Gender gap in unemployment rates (age 20-29)			0.021 (0.020)
Constant	1.602*** (0.150)	1.967*** (0.146)	1.862*** (0.107)
Observations	11,465	11,465	11,465
Number of countries ^b	17	17	17

Notes: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. All models include a random intercept and a random slope for the 'Working mother' dummy. Models 2-3 include also a random slope for the 'Tertiary education' dummy. ^aManagers, professionals or technicians; categories 1-3 ISCO-08. ^bThe analysis includes 19 European countries (Austria, Belgium, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Portugal, Romania, Sweden, Spain, the Netherlands, the United Kingdom). Estonia, Latvia and Lithuania are pooled in a single group ('Baltic countries') for sample size reasons.