Understanding the Impacts of Paid Maternity Leave on Women's Labor Market Outcomes

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Abstract

All OECD countries except the United States offer at least four months of paid maternity leave, and the average duration of mandated paid maternity leave has increased steadily from 1970 to the present. Policies guaranteeing longer paid leaves increase leave-taking and hence the amount of time women spend out of the labor force, but there is little evidence that they increase women's labor force attachment. To explore the relationships between early-life exposure to more generous paid leave guarantees and later life outcomes, we link data on 40 years of paid leave policy across 24 European countries to individual-level data from the European Social Survey. We find that exposure at age 18 to policies guaranteeing longer paid maternity leaves is associated with reductions in women's labor force participation later in life. Early-life exposure to longer paid leaves is also associated with a reduced likelihood of tertiary education and an increased likelihood of reporting housework as one's main activity. Controlling for the contemporaneous leave policies experienced in adulthood, early-life exposure to stronger leave guarantees is associated with reduced female labor force attachment.

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1 Introduction

Women are less likely than men to participate in the labor force in 184 of 187 countries for which data is available (The World Bank, 2022), and they also typically receive lower wages than men for similar work (Waldfogel, 1998; Goldin and Mitchell, 2017). Childbearing is one of the main drivers of women's lower wages and labor force attachment (Bertrand, Goldin and Katz, 2010; Cortés and Pan, 2023). Women's earnings, hours, and wages decline after the birth of their first child and do not ever fully recover (Kleven, Landais, Posch, Steinhauer and Zweimüller, 2019a; Kleven, Landais and Sögaard, 2019b; Cortés and Pan, 2023). Factors like the child penalty that discourage high-ability women from participating in the labor force have efficiency implications: Hsieh, Hurst, Jones and Klenow (2019) argue that between 20 and 40 percent of US productivity growth between 1960 and 2010 can be attributed to the entry of women and minorities into high-skill occupations. Thus, policies that mitigate the child penalty and strengthen mothers' labor force attachment may be justifiable on both efficiency and equity grounds.

Maternity leave is one of the most widely adopted policies intended to allow women to combine career and family (Olivetti and Petrongolo, 2017). 37 of the 38 OECD countries – all except the United States – guarantee working mothers at least four months of paid leave (Thévenon and Solaz, 2013), and scholars have long been interested in understanding the impacts of such policies on women's participation in the economy. However, current evidence paints a mixed picture of paid leave policies' ability to meaningfully increase female labor force participation. While some studies using cross-country data find that short-duration leave can improve women's labor market outcomes, research using administrative data finds that women's long-run labor market outcomes are not impacted by expansions of paid leave.[1] Kleven, Landais, Posch, Steinhauer and Zweimüller (2024) suggest that this result can be explained by the persistence of gender roles: if a mother is expected to stay home and care for children, then the available length of job-protected paid maternity leave might not matter for her long-run labor force attachment.

In recent years, a growing body of work has emphasized the role of gender norms in determining the labor market penalty mothers face after the birth of their first child, as well as the potential for policy to impact those norms.[2] However, to the best of our knowledge, no

[1] See, for example, Ruhm (1998); Thévenon and Solaz (2013); Olivetti and Petrongolo (2017); and Del Rey, Kyriacou and Silva (2021) for examples of the former and Lalive and Zweimüller (2009); Lalive, Schlosser, Steinhauer and Zweimüller (2014); Dahl, Løken, Mogstad and Salvanes (2016); Bergemann and Riphahn (2023); Corekcioglu, Francesconi and Kunze (2024); and Kleven, Landais, Posch, Steinhauer and Zweimüller (2024) for examples of the latter.

[2] See Olivetti, Patacchini and Zenou (2020); Boelmann, Raute and Schönberg (2025); Kleven (2025); Kleven,

studies have examined the potential for maternity leave itself to influence gender norms and, by extension, female labor force attachment.

In this paper, we present new evidence on the relationship between early-life exposure to maternity leave policies and women's subsequent life outcomes. Combining country-level panel data on the length of paid leave available to mothers in 24 European countries with rich individual-level data from the European Social Survey (ESS), we construct a birth-cohort panel and use a two-way fixed effects framework to estimate the association between paid leave expansions when a woman is young and her long-run labor market outcomes.[3] We first document that exposure at age 18 to policies guaranteeing at least four months of paid leave is associated with a reduction in women's labor force participation later in life and an increase in the likelihood that a woman's main activity is housework or childcare. Taken at face value, preliminary estimates suggest that shorter leaves are positively associated with women's labor force participation – but we demonstrate that this relationship cannot be credibly estimated in our country-level panel because of well-known issues with two-way fixed effects when treatment timing is staggered (Goodman-Bacon, 2021; Roth et al., 2023). However, exposure early in adulthood to policies guaranteeing at least four months of maternity leave is linked to lower female labor force attachment and increased housework and childcare. This finding holds even under a robust estimation approach that avoids problems with negative weighting (Gardner, Thakral, Tô and Yap, 2024).

Second, guided by a simple theoretical model, we investigate the potential channels through which exposure to maternity leave policies at different points in the life course might impact women's life outcomes. To do this, we generate measures of exposure to different maternity leave policies during three distinct periods of a woman's life: childhood (ages 5-16), young adulthood (ages 17-24), and adulthood (ages 25-40). Our findings resonate with recent estimates of the (lack of) impacts of paid leave on eligible mothers (Kleven, Landais, Posch, Steinhauer and Zweimüller, 2024): we find no evidence of a relationship between the average length of paid maternity leave available when a woman is between the ages of 25 and 40 and labor force participation. However, increased early-life exposure to longer paid maternity leave – and hence exposure to more women taking longer leaves after childbirth – is associated with reductions

Olivero and Patacchini (2025); Farré, Felfe, González and Schneider (2021); and Hara and Rodríguez-Planas (2025).

[3]The ESS collects data in both Israel and Turkey. We follow the ESS in referring to the set of countries included in the data set as "European countries."

in labor force participation in adulthood. We estimate that a one-year increase in average maternity leave between the ages of five and 16 is associated with an almost six percentage point decrease in a woman's labor force participation and a five percentage point increase in the likelihood that her primary activity will be housework. We also find evidence that increases in the average length of guaranteed leave available when a woman is between the ages of 17 and 24 are associated with a decrease in her educational investments. In demonstrating an association between early-life exposure to paid leave and women's long-run outcomes, we emphasize a channel through which maternity leave policies can impact female labor market outcomes that has been largely overlooked in the literature. Since longer paid maternity leave has been shown to increase short-run maternal absences from the labor force (Lalive, Schlosser, Steinhauer and Zweimüller, 2014; Bergemann and Riphahn, 2023), exposure to policies guaranteeing longer paid maternity leaves early in life will cause women and girls to witness more women around them taking time off work to care for children. This, in turn, could shift gendered expectations about the division of labor within the household, resulting in a decrease in female labor force participation many years after the introduction of paid leave policies.

Our analysis contributes to several active strands of literature on paid leave and women's employment outcomes. First, we contribute to a large literature on the cross-country effects of maternity leave policies, much of which is reviewed in Canaan, Lassen, Rosenbaum and Steingrimsdottir (2022). These studies exploit variation in leave length at the country level and generally find a non-monotonic relationship between leave length and female labor force participation, with short-duration leaves improving women's labor market outcomes and longer leaves having negative impacts (Ruhm, 1998; Thévenon and Solaz, 2013; Olivetti and Petrongolo, 2017; Del Rey, Kyriacou and Silva, 2021).[4] Consistent with this literature, our coefficient estimates suggest that shorter leaves are positively rather than negatively associated with women's labor force participation. However, we demonstrate that this pattern may arise because two-way fixed effects analysis places negative weight on some treated country-years when evaluating policies like short-duration leaves that are eventually adopted by all countries in the sample. Using the alternative estimation approach suggested by Gardner, Thakral, Tô and Yap (2024), we show that the impacts of short leaves cannot be credibly estimated in our country-level panel. We

[4]The consensus in this literature is that maternity leaves of around three months can have positive impacts on female labor force attachment, while very long leaves (one year or more) can be detrimental. For example, Thévenon and Solaz (2013) estimate that paid leave of up to two years has positive labor market effects, Olivetti and Petrongolo (2017) estimate the inflection point to be just over 11 months (50 weeks), and Del Rey, Kyriacou and Silva (2021) estimate it to be just under seven months (30 weeks).

further differ from this literature in that we focus on the impact of changes in leave length early in a woman's life, rather than while a woman is working-age.

Second, our work complements the growing body of studies that identify individual-level labor market responses to maternity leave policies by proposing a new explanation for the divergence between the findings of those papers and earlier cross-country literature. This literature generally uses administrative data in regression discontinuity (RD) designs, comparing mothers who give birth immediately before a change in leave policy to those who give birth immediately after. These studies have typically found precise null effects of paid maternity leave on labor market outcomes three years or more after birth (Lalive and Zweimüller, 2009; Lalive, Schlosser, Steinhauer and Zweimüller, 2014; Dahl, Løken, Mogstad and Salvanes, 2016; Bergemann and Riphahn, 2023; Corekcioglu, Francesconi and Kunze, 2024; Kleven, Landais, Posch, Steinhauer and Zweimüller, 2024). One possible explanation for the divergence in findings between cross-country studies and single-country RDs is that the latter estimate the impact of moving from short-duration leaves to longer-duration leaves – not the overall impact of guaranteed leave relative to no guaranteed leave.[5] Another possible explanation is that RDs identify the direct effect of offering longer paid leave to mothers who were already pregnant – but this may only capture part of the overall impact of leave policy. Our analysis provides some evidence for this explanation: we find no relationship between increases in paid leave and the long-run labor market outcomes of women between the ages of 25 and 40 (who are most likely to have children); instead, our result is driven by a reduction in labor force participation for women who were between the ages of 5 and 16 when paid leave policy was expanded. This suggests that the impact of paid leave that is measured in cross-country analyses may be excluded from the estimand in single-country RDs that focus more narrowly on new mothers, rather than on female labor force participation as a whole.

One crucial insight from the single-country literature that we incorporate into our analysis is the fact that changes in leave policy have been shown to lead directly to changes in leave-taking (Rossin-Slater, Ruhm and Waldfogel, 2013; Lalive, Schlosser, Steinhauer and Zweimüller, 2014; Baum and Ruhm, 2016; Dahl, Løken, Mogstad and Salvanes, 2016; Bergemann and Riphahn, 2023; Ziegler and Bamieh, 2025; Bailey, Byker, Patel and Ramnath, 2025). Our paper builds

[5]Recent evidence from a modest leave expansion (increasing the amount of paid leave available to new mothers by six weeks) in California also finds a null effect of increased paid leave on employment for mothers who already have a child, but a persistent negative employment effect of about 6 percent for first-time mothers (Bailey, Byker, Patel and Ramnath, 2025).

on this result by examining the potential unintended consequences of this increase in leave-taking behavior. If women's short-term behavioral responses alter the gendered labor market expectations of younger generations, then early-life exposure to policies that guarantee longer maternity leaves may impact women's beliefs about their future labor force attachment if they choose to have children.

Third, we contribute to a literature on the relationship between gender norms and female labor market outcomes. Our work is closely related to papers such as Olivetti, Patacchini and Zenou (2020), Rodríguez-Planas and Tanaka (2022), Hara and Rodríguez-Planas (2025), Boelmann, Raute and Schönberg (2025), Kleven (2025), and Kleven, Olivero and Patacchini (2025), which emphasize the role of experiences in adolescence and early adulthood in shaping long-run career and family outcomes. These papers find that cultural norms during a girl's youth have strong effects on her long-run labor market outcomes; specifically, an increase in the exposure to working mothers and progressive gender norms during childhood increases the likelihood that women will work after childbirth.[6] Within this literature, there is a small but growing subset of papers that focus on the relationship between parental leave policies and gender norms. Unterhofer and Wrohlich (2017) and Farré, Felfe, González and Schneider (2021) study European paternity leave reforms and find that increased paternal leave allocations resulted in more progressive gender norms among the grandparents and children of eligible fathers, respectively. Welteke and Wrohlich (2019) find evidence of the social transmission of labor market behavior in a maternity leave context – after a German paid leave reform, the female coworkers of eligible mothers were more likely to take longer paid leaves than women who were not exposed to increased leave-taking behavior. However, at present there is little work exploring the implications of early-life exposure to maternity leave policies. Our paper provides evidence that these policies, while intended to improve female labor market outcomes, might actually weaken labor force attachment for subsequent generations by influencing gender norms.[7]

Fourth, we contribute to the broader literature on women's labor force participation, household specialization, and the child penalty – much of which is reviewed in Goldin (2006), Goldin

[6]This exposure to gender norms can also be impacted by government policies: Hara and Rodríguez-Planas (2025) find that ending gender segregation in Japanese high school home economics classes increased post-birth full-time employment by 4 percentage points for women who went to school after the reform.

[7]This point was recently emphasized by Bailey, Byker, Patel and Ramnath (2025, p. 404), who argue that "greater take-up of paid leave among women relative to men tends to reinforce long-standing gender norms and childcare patterns, which have limited women's labor market advancement."

(2014), Olivetti and Petrongolo (2017), Blau and Kahn (2017), Kleven, Landais and Sögaard (2019b), and Cortés and Pan (2023). Our analysis provides another perspective on the interplay between paid leave policies and women's labor force participation, emphasizing social norms as a crucial barrier for achieving gender parity in the labor market.

The rest of this paper is organized as follows: Section 2 outlines a stylized model of women's labor market decisions under paid leave policies. Section 3 describes our data sources and gives an overview of the evolution of maternity leave policies in Europe. Section 4 presents our empirical results, and Section 5 concludes.

2 Conceptual Framework

In this section, we outline a simple conceptual framework illustrating the potential impact of maternity leave policies over the life course. The model highlights the potential channels through which the leave policies that are in place during a woman's adolescence and early adulthood – before she has a child – can impact her educational investments and beliefs about the costs and benefits of staying home with a new baby.[8]

2.1 Setup

Women live for four periods. In period $t = 0$, which represents late adolescence, women decide whether to make an educational investment. We consider educational investment decisions in section 2.3, but first analyze labor force participation and fertility decisions in adulthood conditional on education. Periods $t = 1, 2, 3$ represent three stages of adulthood – before children ($t = 1$), when all women work; middle adulthood ($t = 2$), when some women have children and some of those mothers temporarily exit the labor force; and later adulthood ($t = 3$), when mothers who left the labor force attempt to return to work and other women continue working.

A woman's wage in period t depends on her experience, $e \in \{0, 1, 2\}$, and her level of human capital, $h \in \{0, 1\}$. A woman's experience level is equal to the number of past periods that she worked. Thus, all women have experience level $e = 0$ at $t = 1$. Wages increase with experience: for all e and all h, $e > e' \Rightarrow w(e, h) > w(e', h)$. Women who have more education ($h = 1$) earn more than women with less education ($h = 0$): for all e and all h, $w(e, 1) > w(e, 0)$. To

[8] Our model is similar in spirit to the model presented in Albrecht, Edin, Fernández, Lee, Thoursie and Vroman (2024), who also focus on the channels through which exposure to other women's leave-taking may influence a woman's decision to take parental leave, though their implementation is entirely different.

keep the model as transparent as possible, we do not allow wages to vary with other individual attributes – so, for example, the return to education conditional on experience is the same for all women. For the remainder of this subsection, we let $\bar{h}$ denote a woman's level of education, which is already determined before time $t = 1$.

In period $t = 1$, women work and earn $w(0, \bar{h})$, and they also decide whether to have a child in the following period. Let τ_i indicate the utility of having a child; τ_i varies across individuals and may be negative for some women. Women who have a child must decide before their child is born whether they will work or remain at home with their baby at time $t = 2$. A mother who works in period 2 must send her baby to daycare, and pays cost $c_i \geq 0$ to do so. The parameter c_i captures both the monetary and time costs of sending a child to daycare, but may also include social stigma, anxiety about low-quality care, or other non-monetary costs. Both women who do not have children and those who send their children to daycare work in all three periods of adulthood, earning $w(1, \bar{h})$ and $w(2, \bar{h})$, respectively, in periods $t = 2$ and $t = 3$.

A woman who stays home with a baby at time $t = 2$ does not earn a wage in that period. Her direct utility from staying home with her baby is b_i, which may be negative. The parameter b_i captures the immediate utility (or disutility) of time at home with one's child as well as future benefits (e.g., the return to human capital investments mothers make by, for example, nursing) and any psychic or social costs/benefits (i.e. spending time with other mothers or social stigma from leaving the workforce). Women who leave the labor force when they have a child attempt to return to work in later adulthood. The probability that a mother who left the labor force at time $t = 2$ finds a job at time $t = 3$ is $\pi < 1$. Thus, a stay-at-home mother's wage in period $t = 2$ is zero, and her expected wage in period $t = 3$ is $\pi w(1, \bar{h})$ because she only has one period of work experience (rather than two).

Women decide at time $t = 1$ whether to have a child and, if they do, whether to stay at home with that child, but the utility of having a child is not realized until the following period when the child is born. Thus, they make their decision based on their beliefs about the parameters τ_i, b_i, and c_i. We let $\tilde{\tau}_i$, $\tilde{b}_i$, and $\tilde{c}_i$ denote woman i's beliefs about these parameters at time $t = 1$.

Total utility is the sum of utility across all periods, and within-period expected utility is the sum of wages and beliefs about the costs and/or benefits of parenting, which are captured by $\tilde{\tau}_i$, $\tilde{b}_i$, and $\tilde{c}_i$. Women have three options: not having a child, working and having a child that goes to daycare, and staying at home while their baby is young. If a woman chooses not

to have a child, her anticipated utility is:

$$U(\text{no child}) = w(0, \bar{h}) + w(1, \bar{h}) + w(2, \bar{h}). \tag{1}$$

The anticipated utility of having a child, sending that child to daycare, and continuing to work is:

$$U(\text{daycare}) = w(0, \bar{h}) + w(1, \bar{h}) + \tilde{\tau}_i - \tilde{c}_i + w(2, \bar{h}). \tag{2}$$

The anticipated utility of staying at home with one's child and then attempting to return to work at time $t = 3$ is:

$$U(\text{stay home}) = w(0, \bar{h}) + \tilde{\tau}_i + \tilde{b}_i + \pi w(1, \bar{h}). \tag{3}$$

Notice that

$$U(\text{no child}) > U(\text{daycare}) \Leftrightarrow \tilde{\tau}_i < \tilde{c}_i, \tag{4}$$

$$U(\text{no child}) > U(\text{stay home}) \Leftrightarrow \tilde{\tau}_i < (1 - \pi)w(1, h) + w(2, h) - \tilde{b}_i, \tag{5}$$

and

$$U(\text{daycare}) > U(\text{stay home}) \Leftrightarrow \tilde{c}_i < (1 - \pi)w(1, h) + w(2, h) - \tilde{b}_i. \tag{6}$$

Thus, when

$$\tilde{\tau}_i < \tilde{c}_i \tag{7}$$

and

$$\tilde{\tau}_i < (1 - \pi)w(1, h) + w(2, h) - \tilde{b}_i, \tag{8}$$

so

$$\tilde{\tau}_i = \min\{\tilde{\tau}_i, \tilde{c}_i, (1 - \pi)w(1, h) + w(2, h) - \tilde{b}_i\}, \tag{9}$$

a woman will choose not to have children. Likewise, when

$$\tilde{c}_i < \tilde{\tau}_i \tag{10}$$

and

$$\tilde{c}_i < (1 - \pi)w(1, h) + w(2, h) - \tilde{b}_i, \tag{11}$$

so

$$\tilde{c}_i = \min\{\tilde{\tau}_i, \tilde{c}_i, (1-\pi)w(1,h) + w(2,h) - \tilde{b}_i\}, \tag{12}$$

a woman will have a child that she sends to daycare. Otherwise, a woman will choose to stay at home in period 2 and attempt to return to work in period 3.

Women cannot have it all, and women choose an optimal life trajectory by giving up whatever they value the least. A woman who chooses not to have children gives up $\tilde{\tau}_i$, the utility of having a child. A woman who sends a child to daycare gives up $\tilde{c}_i$, the cost of daycare. A woman who stays at home effectively gives up

$$(1-\pi)w(1,h) + w(2,h) - \tilde{b}_i \tag{13}$$

which represents her expected loss of wages from leaving the labor force, offset by the benefit, $\tilde{b}_i$, from staying home with a baby. Women choose their optimal life trajectory by giving up the thing that yields the smallest anticipated utility, i.e. the minimum of $\tilde{\tau}_i, \tilde{c}_i, (1-\pi)w(1,h) + w(2,h) - \tilde{b}_i$.

2.2 Maternity Leave

Job protection is the central component of maternity leave policies. We capture this via the parameter π. Let π^0 denote the probability that a mother who leaves the workforce to have a child finds work in later adulthood in the absence of maternity leave, and let $\pi^M \in (\pi^0, 1)$ represent the probability of returning to work once the leave policy is in place.

Increasing π clearly reduces $(1-\pi)w(1,h) + w(2,h) - \tilde{b}_i$, making it less likely that

$$(1-\pi)w(1,h) + w(2,h) - \tilde{b}_i = \min\{\tilde{\tau}_i, \tilde{c}_i, (1-\pi)w(1,h) + w(2,h) - \tilde{b}_i\}. \tag{14}$$

Thus, all else equal, job-protected maternity leave has a direct effect on the likelihood that a woman exits the labor force to stay home with a new baby. Whether this comes from an overall increase in fertility or a switch from daycare to staying at home depends on the joint distribution of $\tilde{\tau}_i$, $\tilde{b}_i$, and $\tilde{c}_i$ – though the framework outlined so far would not permit maternity leave to have a negative impact on fertility. Impacts on the proportion of women in the labor force at time $t = 3$ are also ambiguous (unless $\pi^M = 1$), since more women exit the labor force at time $t = 2$ but the probability that a stay-at-home mother is able to return at time $t = 3$

increases.

The predictions above assume that $\tilde{\tau}_i$, $\tilde{b}_i$, and $\tilde{c}_i$, the perceived costs and benefits associated with having a child, are not impacted by the introduction of job-protected leave. Predictions would be identical if the introduction of leave also increased $\tilde{b}_i$, either because it included financial compensation for stay-at-home mothers or because the perceived social or psychological benefits of staying at home increase as women choose that alternative.[9]

However, the situation is more complicated if the introduction of maternity leave impacts $\tilde{c}_i$, the anticipated cost of putting a child in daycare. This might occur for market reasons, for example, if a reduction in the demand for daycare caused some centers to close.[10] Maternity leave may also impact $\tilde{c}_i$ by changing the social or psychological costs of placing a child in daycare, for instance if most mothers opt to stay at home. If introducing or expanding job-protected leave increases the perceived costs of putting a child in daycare, leave may have a negative impact on fertility if women who would have chosen daycare instead opt to forgo having children.

Whether or not these social mechanisms are at play, the model illustrates that the level of job-protected leave in place before a woman gets pregnant can affect fertility and, consequently, the policy's overall impact on women's labor force participation. The model predicts that more generous leave policies will increase the proportion of new mothers who take leave. However, if girls and women begin forming beliefs early in life and update them continually over time, the range of leave policies in place over a woman's life course may impact her fertility and labor force participation decisions.

2.3 Educational Investments

We now extend the model to incorporate educational decisions. In period $t = 0$, a woman can choose to pay price $p > 0$ to obtain advanced education, which increases her future wages. As discussed above, we assume that women with more education ($h = 1$) earn more than women with less education ($h = 0$): for all e and all h, $w(e, 1) > w(e, 0)$. Specifically, we let

$$w(e, 1) = w(e, 0) + g(e) \tag{15}$$

[9] Most leave policies guarantee some level of income support. We omit income support for practical reasons: adding a monetary component that directly increases $\tilde{b}_i$ has exactly the same effect – within the model – as increasing π since the two terms always appear together in the expression $(1 - \pi)w(1, h) + w(2, h) - \tilde{b}_i$.

[10] While it may at first seem counterintuitive that decreasing the demand for childcare could lead to an increase in the (non-psychological) cost of childcare, there are high fixed costs to operating a childcare center, and non-price costs such as travel time or anxiety about quality may contribute to $\tilde{c}_i$.

so $g(e)$ is the return to education in the period where a woman has experience level e. Thus, if

$$g(0) + \pi g(1) > p \tag{16}$$

then all women are better off investing in education, regardless of their occupational trajectory. On the other hand, when

$$g(0) + g(1) + g(2) < p \tag{17}$$

even women who plan to work throughout adulthood will not choose to obtain advanced education. When

$$g(0) + \pi g(1) < p < g(0) + g(1) + g(2), \tag{18}$$

women will choose advanced education when they expect to work in all periods, and they will choose to forgo education when they expect to stay home in period $t = 2$, as we discuss further below. By raising π, job-protected leave increases the likelihood that Equation 16 holds – in which case, (expectations of) leave can increase educational attainment. However, if the return to education is particularly important for women with more experience (i.e. if $g(2)$ is large), then Equation 18 can hold even if $\pi = 1$.

When Equation 18 holds, women with

$$\tilde{\tau}_i = \min\{\tilde{\tau}_i, \tilde{c}_i, (1-\pi)w(1,0) + w(2,0) - \tilde{b}_i\} \tag{19}$$

or

$$\tilde{c}_i = \min\{\tilde{\tau}_i, \tilde{c}_i, (1-\pi)w(1,0) + w(2,0) - \tilde{b}_i\} \tag{20}$$

will choose to obtain advanced education and work in all periods, while women with

$$\begin{aligned} (1-\pi)\left[w(1,0) + g(1)\right] + w(2,0) + g(2) - \tilde{b}_i \\ = \min\{\tilde{\tau}_i, \tilde{c}_i, (1-\pi)\left[w(1,0) + g(1)\right] + w(2,0) + g(2) - \tilde{b}_i\} \end{aligned} \tag{21}$$

will chose not to obtain advanced education because they definitely plan to stay at home with their baby. Increasing τ from τ^0 to τ^M means that women who stay home with a child are giving up less, making that option more attractive.[11] Hence, job-protected leave can negatively impact women's educational attainment by increasing the likelihood that a woman expects to

[11] Again, increasing the monetary payment associated with maternity leave, and hence b_i, would have exactly the same effect.

be out of the labor force when her children are young. If $\tau^M < 1$, this channel can also lead to reductions in women's labor force participation at time $t = 3$. Moreover, all of the social and psychological channels relating to $\tilde{b}_i$ and $\tilde{c}_i$ are still at play, and potentially stronger if women who stay home with their children are also less likely to obtain higher education in a way that reinforces traditional gender norms.

3 Research Design and Data

3.1 Paid Maternity Leave in Europe

Data on paid maternity leave comes from the OECD Family Database, a collection of 70 cross-national indicators of family policies in OECD countries, covering the years 1970–2021. Our main independent variable is the amount of paid parental leave (measured in months or years) available to working women who give birth in a given country and year.[12]

The length of paid leave available to European mothers has increased since the 1970s, as shown in Figure 1 and Table A1. Though several European countries first implemented maternity leave policies in the nineteenth century (Ruhm, 1998; Olivetti and Petrongolo, 2017), only Austria guaranteed mothers more than six months of paid parental leave as of 1970, and Iceland, Ireland, and Switzerland did not yet offer mothers any guaranteed paid leave. Online Appendix Table A1 shows that every European country in our sample increased the length of paid leave available to mothers between 1970 and 2010; the mean length of paid leave increased by more than 8 months, and the median increased by 7 months.[13]

Figure 1 shows that broad cross-country variation in leave policy has remained relatively constant over time. Iceland, Ireland, and Switzerland offered no paid leave in 1970, and in 2010 they were in the bottom third of countries in our sample in terms of the length of guaranteed paid leave offered to mothers. In contrast, Austria, Czechia, Slovakia, and Sweden were the only four countries in our sample that guaranteed at least six months of leave in 1970, and in 2010

[12]Paid maternity leave is the total length of paid maternity and/or parental leave available to mothers. Paid maternity leave includes the portion of parental leave that can be taken by either the mother or father, but excludes any portion of paid parental leave that is earmarked for the father, designated paternity leave, and paid home care leave. In the OECD Family Database, this is equivalent to the "Total weeks of paid maternity, parental and home care payments available to mothers" variable less the "Duration in weeks of payments associated with home care leave" variable.

[13]While all OECD countries besides the US have expanded their policies to include paid leave for fathers (Thévenon and Solaz, 2013), paid maternity leave remains the predominant family leave policy. Paternity leave allowances are also much smaller and were implemented more recently than maternity leave, which makes them harder to study using our birth-cohort design. Among our sample of 24 countries, the mean length of paid paternity leave stayed very close to zero until the early 1990s, at which point it rose steadily to reach 0.18 years by 2020.

they all offered more than a year of guaranteed paid leave. Within our sample, the country-level correlation between the length of paid leave offered in 1970 and the length of paid leave offered in 2010 is 0.45.

Different countries implement maternity leave policies for different reasons. As discussed in Ruhm (1998) and Olivetti and Petrongolo (2017), many early leave policies were enacted to protect women's physical health and to encourage women to stay home with their young children. A number of communist countries including Czechia, Slovakia, and Hungary expanded paid family leave rapidly in the 1980s in an attempt to address concerns about low birth rates.[14] In 2010, these three countries were the only ones in our sample that offered more than two years of paid maternity leave. Similarly, the 2006 increase in French paid leave was part of a national campaign to encourage women to have larger families (Moore, 2006). To the extent that long periods of paid leave are intended to increase fertility, they might be expected to weaken women's labor force attachment.

However, other countries have expanded paid leave to encourage women's equality and facilitate the labor force participation of mothers. For example, Sweden's Equal Opportunities Act of 1980 reinforced its commitment to gender equality in the workplace by removing the term "maternity leave" from its policies and replacing it with the more inclusive "parental leave" (Thévenon and Solaz, 2013).[15] The fact that policymakers implement maternity leave policy with different aims – in some cases seeking to increase fertility or encourage women to remain at home with their young children, and in other cases seeking to enhance gender equality in the workplace – suggests the possibility of countervailing effects on women's labor force outcomes.

Figure 2 characterizes the duration of paid maternity leave in the eight European countries with the largest gap between maximum and minimum leave lengths, highlighting the spatial and temporal variation in leave length among countries in our sample.[16] The figure highlights several important facts. First, though every country in our sample offered more maternity leave in 2010 than in 1970, leave lengths have not increased monotonically in all countries. Austria, Czechia, and Germany, for example, all guaranteed almost a year less paid maternity

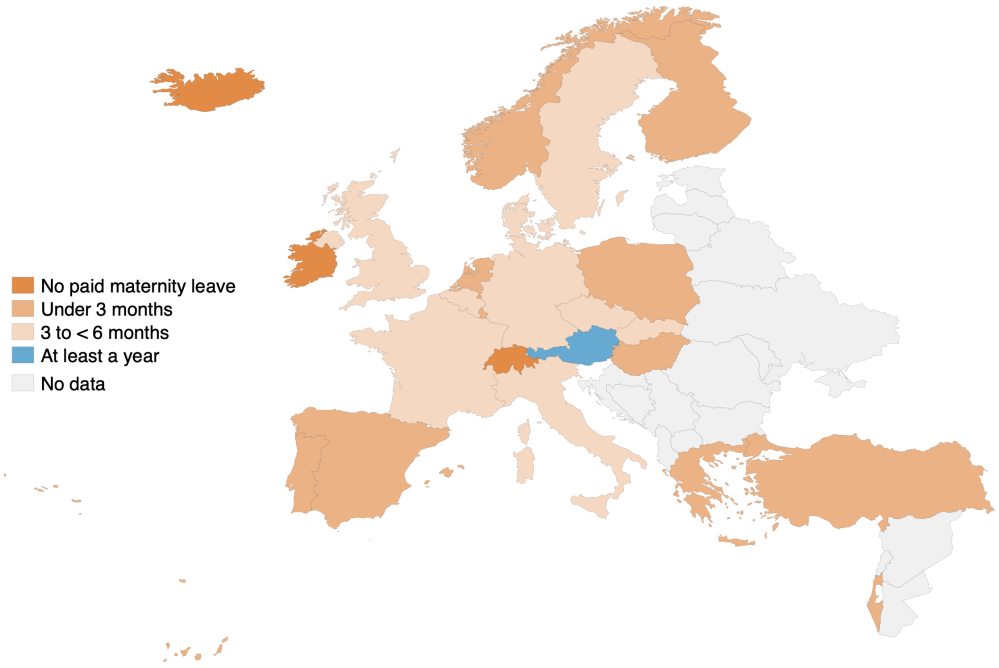
[14] A newspaper article from 1973 describes this trend, saying: "Along with tighter restrictions on abortions and, in some countries, restrictions on birth control devices, most of the Eastern European governments have substantially increased their maternity benefits, hoping to urge more women to have children" (Prinz, 1973).

[15] In 2011, nine out of ten fathers took advantage of this parental leave policy (Duvander, Haas and Thalberg, 2017).

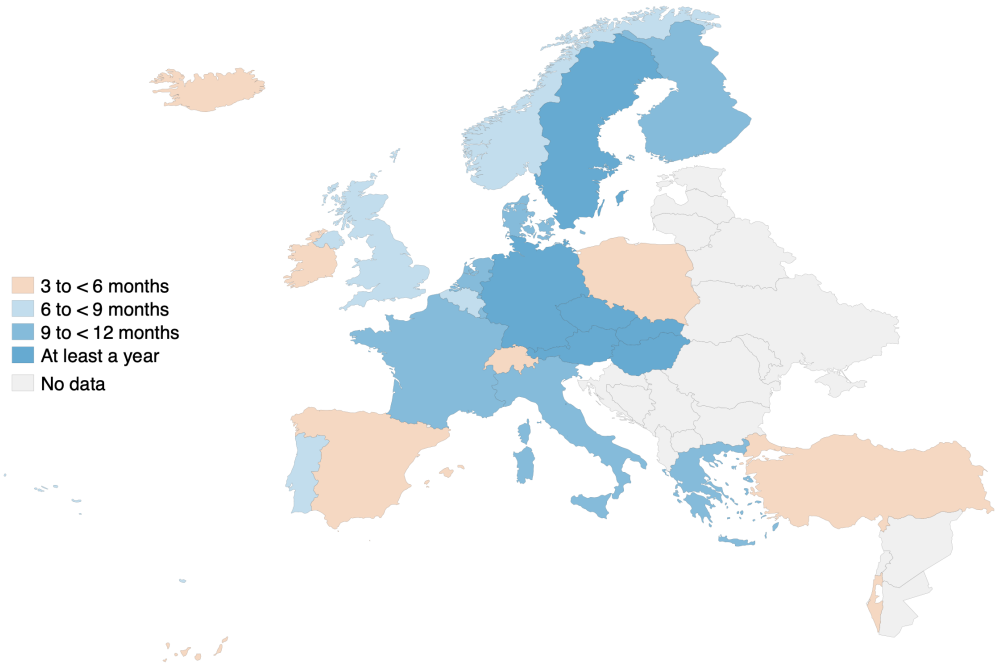
[16] See Online Appendix Figure A1 for equivalent charts for the other sixteen countries in our sample.

Figure 1: Paid Leave Policies in Europe in 1970 and 2010

Panel A: 1970



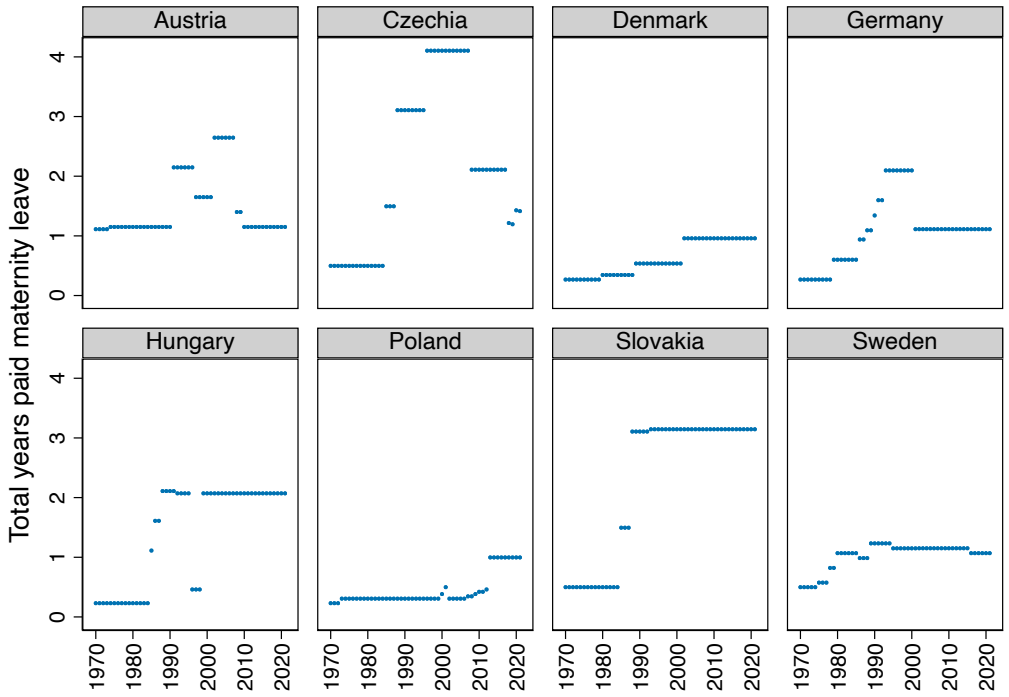
Panel B: 2010



Data on the duration of paid maternity and/or parental leave available to all working mothers comes from the OECD Family Database.

leave in 2010 than they did in 1995. Second, many countries offer guaranteed leaves of very long duration – for example, Czechia and Hungary guaranteed more than two years of leave in 2010 while Slovakia guaranteed more than three years. This contrasts with Sweden, which implemented leave policy with the explicit aim of promoting women's equality (as discussed above) and never offered more than fifteen months of leave. Finally, a number of countries implemented very large, discrete changes in the length of guaranteed paid leave. These sharp changes in policy create variation in exposure to paid leave that we exploit in our empirical analysis.

Figure 2: The Duration of Paid Maternity Leave for Select Countries



Data on the duration of paid maternity and/or parental leave available to all working mothers comes from the OECD Family Database.

3.2 Data on Women in Europe

Outcome data comes from the European Social Survey (ESS), a cross-national survey conducted every two years in up to 39 European countries.[17] In each of the ten rounds since 2002, a representative sample of respondents was drawn in every participating country. We restrict attention to the 24 countries that are included in the ESS and for which comprehensive leave

[17]Not all ESS rounds include every country.

data is available from the OECD.[18]

We consider six binary outcomes that are included in all ESS rounds and capture important aspects of women's personal and professional lives: whether a woman is currently working, whether she has ever worked, whether she reports doing housework or childcare as a primary activity, whether she has ever been married, whether she has ever had children in her household (either her own or those of a partner), and whether she attended college or attained any form of tertiary education.[19] We restrict the sample to women between the ages of 25 and 60, excluding women who are not native-born citizens of their country of residence. We restrict attention to women over 25 to limit the extent to which our measure of tertiary education will be censored, and we restrict attention to women born in 1952 or later, ensuring that we have information on the paid leave available in a woman's country when she was 18 years old. This leaves us with a sample of 82,867 women born between 1952 and 1996 from 24 European countries, drawn from ten survey rounds and interviewed between 2002 and 2020.

Table 1 presents summary statistics for our sample. The average age among women in our sample is 42, and slightly more than half have any tertiary education. 95 percent of the women in our sample have worked for pay at some point in their lives, 73 percent were working at the time they were surveyed, 60 percent were married when surveyed, and 77 percent have had children in their households (either their own or those of a partner) at some point. 31 percent of respondents reported that their main activity over the past seven days was housework and/or childcare. Across all women in our sample, the average length of paid maternity leave available when a woman turned 18 is 0.67 years, but ranges from zero to over four years.

[18]Eleven countries are included in some rounds of the ESS but are not part of the OECD (Albania, Bulgaria, Croatia, Cyprus, Kosovo, Montenegro, North Macedonia, Romania, Russia, Serbia, and Ukraine). An additional four ESS countries (Estonia, Latvia, Lithuania, Slovenia) joined the OECD relatively recently. We exclude them from the analysis because the OECD database does not include leave data from prior to 2000.

[19]The indicators for currently working and doing housework are constructed based on responses to a question about "what you have been doing for the last 7 days." Only 13.6 percent of respondents indicate more than one activity, suggesting that the question captures the main occupation of the respondent. Respondents are asked "Which of these descriptions applies to what you have been doing for the last 7 days?" and shown a card containing the following seven possibilities: "In paid work (or away temporarily) (employee, self-employed, working for your family business)", "In education (not paid for by employer), even if on vacation", "Unemployed and actively looking for a job", "Unemployed, wanting a job but not actively looking for a job", "Permanently sick or disabled", "Retired", "In community or military service", and "Doing housework, looking after children or other persons."

Table 1: Individual-level Summary Statistics for Women in the Sample

	Mean	SD	Min.	Max.	N
Age	41.89	9.59	25	60	82,867
Years of education	13.49	3.74	0	20	82,867
Currently enrolled in school	0.04	0.20	0	1	82,867
Higher education	0.58	0.49	0	1	82,867
Currently married	0.60	0.49	0	1	82,867
Never married	0.24	0.43	0	1	82,867
Currently employed	0.73	0.44	0	1	82,867
Ever employed	0.95	0.22	0	1	82,867
Unemployed	0.05	0.22	0	1	82,867
Out of labor force	0.02	0.15	0	1	82,867
Main activity housework	0.31	0.46	0	1	82,867
Ever had children in household	0.77	0.42	0	1	82,867
Number of children in household	1.16	1.17	0	12	82,867
Years of paid maternity leave available at age 18	0.67	0.80	0	4.10	82,867

All variables except Years of paid maternity leave from rounds 1-10 of the European Social Survey. Our sample includes only female ESS respondents aged 25 to 60 at the time of the survey. Women with missing data on age, educational attainment, household composition, or employment status are excluded from the sample, as are women who are not native-born citizens of their current country of residence. Years of paid maternity leave comes from linking the OECD family database to our sample of ESS respondents.

4 Analysis

4.1 Empirical Strategy

We exploit spatial and temporal variation in the length of paid maternity leave available to mothers across European countries to estimate the impacts of maternity leave policies on women's life trajectories in a generalized difference-in-differences framework that controls for country and birth cohort fixed effects (Angrist and Pischke, 2009). Our benchmark regression specification is:

$$Y_i = \alpha + \beta L_{jc}^a + \theta X_i + \nu_j + \gamma_c + \mu_k + \epsilon_i \tag{22}$$

where Y_i is an outcome for woman i born in year j in country c and interviewed in ESS round k, L_{jc}^a represents the length of guaranteed paid leave that was available to mothers in country c when women born in year j were a years old, X_i is a vector of individual controls (respondent's years of education, marital status, mother's education, and father's education), ν_j is a vector of birth cohort fixed effects, γ_c is a vector of country fixed effects, μ_k is a vector of survey round fixed effects, and ϵ_i is a conditionally-mean-zero error term. L_{jc}^a is the treatment of interest, capturing a woman's exposure to maternity leave policies at a specific time in her life.

Though the ESS data is a repeated cross-section of individuals, we are using it as a country by birth cohort panel, exploiting the fact that ESS respondents are representative of the populations of their countries of residence. Our empirical approach identifies the causal effect of maternity leave under a standard parallel trends assumption: in the absence of changes in the length of maternity leave, outcomes would have evolved in parallel in treated countries that changed the length of paid maternity leave and comparison countries that did not. The parallel trends assumption cannot be tested, and our setup – where treatment might impact young women at different points in their life course in different ways – precludes event-study type assessments of whether pre-trends are parallel. We report a range of robustness checks and placebo tests, but nevertheless our findings do not necessarily represent causal effects. At present, little empirical work documents the relationship between exposure to maternity leave policies early in life and later life outcomes – so the suggestive evidence of causal effects that we document expands the existing evidence base.

We are interested in estimating the relationship between the maternity leave policies in place when a woman is young and later life outcomes. Policies guaranteeing new mothers paid, job-protected leave influence leave-taking behavior directly and consequently shape perceived norms

around parenting and women's labor force participation. In our benchmark specifications, we take the length of leave available when a woman is 18, L_{jc}^{18}, as a summary measure of the leave policy in place early in a woman's life. We view 18 as a salient year because many women decide whether to enroll in tertiary education around that age, and it is also a time when women are beginning to make marriage and fertility decisions. However, our robustness checks include sensitivity analyses where we vary the value of a.

We also consider several alternative definitions of treatment. In our second set of empirical specifications, we discretize L_{jc}^{18}, creating a set of dummy variables indicating whether country c offered women at least $m = 1, 2, \ldots, 12$ months of paid maternity leave when women born in cohort j were 18 years old. Thus, our second estimation approach compares birth cohorts (within countries) that were exposed to policies guaranteeing at least m months of paid maternity leave to birth cohorts that were exposed to less generous leave policies. Dichotomizing treatment in this manner is particularly helpful if the impact of maternity leave is non-monotonic in leave length, as recent evidence suggests, with shorter and longer leaves having countervailing effects (Del Rey, Kyriacou and Silva, 2021). When dose-response relationships between treatment and outcomes of interest are non-monotonic, linear regression with a continuous measure of treatment intensity as the independent variable may be misspecified, and will not capture the marginal effect of an increase in leave length at any specific point in the distribution (Callaway, Goodman-Bacon and Sant'Anna, 2024). If the impacts of maternity leave are not proportional to leave length, defining a binary measure of treatment reduces the potential for misspecification by simplifying the estimand to focus on simple comparisons of more-intensely-treated vs. less-intensely-treated units.

Even with a binary treatment, fixed effects regressions may be misspecified when treatment timing is "staggered" – i.e. when leave policies are adopted by different countries at different times. In such contexts, linear fixed effects estimation weights different treated observations differently, and some treated observations may receive negative weight in the calculation of the estimated treatment effect (De Chaisemartin and d'Haultfoeuille, 2020; Goodman-Bacon, 2021; Jakiela, 2021; Roth, Sant'Anna, Bilinski and Poe, 2023). Negative weights are a particular concern when treatment effects are heterogeneous and all or most panel units (in this case, countries) eventually implement the treatment.[20] Most countries in our sample offered at least

[20]Negative weights do not lead to biased estimates of the treatment effect when treatment effects are homogeneous.

six months of paid maternity leave by 2010. Thus, negative weights are a concern in our setting, and the absence of a substantial "never treated" group makes fixed effects estimation of the impact of relatively short leaves particularly challenging. Negative weights can lead to two-way fixed effects estimates of treatment effects that are incorrectly signed, and they are one potential explanation for the observed U-shaped relationship between leave length and women's labor market outcomes – if estimates of the impacts of short leaves are heavily influenced by negative weighting of some treated country-years (Olivetti and Petrongolo, 2017; Del Rey et al., 2021). We explore this possibility by, first, assessing the extent to which treated observations are receiving negative weight in our fixed effects estimation and, second, comparing OLS results to those obtained using a two-stage difference-in-differences estimator proposed by Gardner, Thakral, Tô and Yap (2024).[21]

In our final piece of analysis, we take a more descriptive approach by calculating the average length of paid maternity leave available in country c when women in birth cohort j were between the ages of five and 16, 17 and 24, and 25 and 40. We include these three distinct variables in regression specifications that also include country, birth cohort, and ESS round fixed effects as well as individual sociodemographic covariates (X_i in Equation 22). The average length of leave available when a woman in country c and birth cohort j was between age five and age 16 is a summary measure of exposure to leave and associated leave-taking responses during childhood, when individuals first form beliefs about household structure and social roles. The length of leave available when a woman was between the ages of 17 and 24 captures both the policies in place and the norms surrounding leave-taking when a woman is making important decisions about higher education, occupational choice, marriage, and planned fertility. Finally, maternity leave when a woman is between the ages of 25 and 40 is intended to capture the leave policy in place when a woman is of childbearing age – and to partially disentangle the early life impacts of maternity leave, which would operate through norms and beliefs about the costs and benefits of staying home with young children, from the direct effects of income support and job protection when a woman actually gives birth.

[21] The estimator proposed by Gardner, Thakral, Tô and Yap (2024) is one of several recent approaches designed to overcome the problem of negative weighting in two-way fixed effects estimation. When treatment timing is staggered but treatment is irreversible, the Gardner, Thakral, Tô and Yap (2024) and Borusyak, Jaravel and Spiess (2024) estimators yield identical coefficient estimates, but take different approaches to estimating the variance-covariance matrix. However, neither the Borusyak, Jaravel and Spiess (2024) estimator nor the widely-used alternative proposed by Callaway and Sant'Anna (2021) can be used when treatment is reversible. Since a number of countries in our sample decrease the length of guaranteed paid leave available to mothers, the Gardner, Thakral, Tô and Yap (2024) approach is best suited to our research design and data.

To summarize, we report three sets of results. First, we estimate the impact of the leave policy in place when a woman turned 18, which we interpret as a broad proxy for the generosity of leave when a woman is young. Second, we report specifications where we dichotomize the amount of leave offered when a woman was 18 into a series of dummies for offering at least m months of paid maternity leave. This approach is less prone to misspecification, relative to our first empirical strategy, and allows us to separately estimate the impacts of shorter versus longer guaranteed leaves. Finally, we estimate regression specifications where we include three measures of leave policy exposure over the life course: the average length of leave available when a woman was a child (aged five to 16), a young adult (aged 17 to 24), and during the years when she was most likely to be combining work and childbearing (aged 25 to 40).

4.2 Results

4.2.1 Paid Leave Length as a Continuous Treatment

Table 2 presents OLS estimates of the impact of paid maternity leave on our two labor market outcomes: whether a woman is currently working (Columns 1 and 2) and whether a woman has ever worked outside the home (Columns 3 and 4). Leave length is measured in years rather than months for ease of exposition (avoiding coefficients that are extremely small in magnitude). An additional year of paid maternity leave available by the time a woman reaches adulthood reduces the likelihood that she is working later in life by between 2.09 and 3.24 percentage points (Columns 1 and 2) and reduces the likelihood that a woman has ever worked by between 1.01 and 1.39 percentage points (Columns 3 and 4).[22] Across the 24 countries in our sample, the median length of paid leave increased from 2.8 to 9.6 months between 1970 and 2010; our regression estimates suggest that this change might have reduced women's labor force participation (proxied by the CURRENTLY WORKING variable) by between 1.2 and 1.8 percentage points and reduced the likelihood that a woman ever worked by 0.6 to 0.8 percentage points.

Table 3 reports estimates of the impact of paid maternity leave (measured in years) on non-labor outcomes: whether a woman obtained any education beyond high school (Columns 1 and 2), whether a woman is married (Columns 3 and 4), whether she ever had children living in her household (Columns 5 and 6), and whether she reported housework or childcare

[22]Relative to our sample mean of 73 percent, the estimates in columns 1 and 2 represent a 2.8 to 4.4 percent decrease in women's long-run employment per additional year of paid leave. This result is fairly modest compared to estimates from Bailey et al. (2025), who estimate that a 5-week increase in paid maternity leave in California decreased the long-run employment of first-time mothers by 6.2 percent.

Table 2: The Impacts of Access to Paid Maternity Leave On Women's Labor Market Outcomes

	Currently working		Ever worked	
	(1)	(2)	(3)	(4)
Paid maternity leave at 18	-0.0324***	-0.0209***	-0.0139***	-0.0101**
	(0.0087)	(0.0074)	(0.0045)	(0.0040)
Observations	82,867	82,867	82,867	82,867
R-squared	0.072	0.110	0.214	0.233
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Paid maternity leave indicates the length of paid maternity leave (measured in years) available in a woman's country of birth during the year she turned 18. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education, whether was married at the time of the survey, and the education levels of both the respondent's father and the respondent's mother. Currently Working is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. Ever worked is an indicator for ever having worked for pay outside the home.

as one of her primary activities in the week prior to the survey (Columns 7 and 8). Coefficient estimates suggest that an additional year of paid leave available when a woman is 18 decreases the likelihood that she completes any tertiary education by between 2.83 and 4.25 percentage points (Columns 1 and 2), and increases the likelihood that housework or childcare was her primary activity in the week prior to the survey by between 3.78 and 4.41 percentage points (Columns 7 and 8). Since 31 percent of women in the sample report housework as their main activity (see Table 1), this represents more than a 10 percent increase in the likelihood that a woman sees housework and childcare as her primary occupation.

We report a range of robustness checks in the online appendix. In Online Appendix Tables A2 and A3, we replace our continuous measure of the amount of guaranteed paid maternity leave available when a woman was 18 with a top-coded version, which caps leave at 12 months. Results are qualitatively similar for all outcome variables, demonstrating that our findings are not driven by a small number of countries implementing unusually long periods of maternity leave. In Online Appendix Tables A4, A5, A6, and A7, we replace our measure of paid maternity leave available at age 18 with equivalent measures at ages 16 and 20. We find results that are qualitatively similar for all outcomes and still statistically significant. We further explore

the relationship between age at policy implementation and our outcomes further in section 4.2.2. In Online Appendix Tables A8 and A9, we replicate our main specifications controlling for the length of paid *paternity* leave when a woman was 18.[23] The mean level of paternity leave available remains quite low in many countries, and the mean of our measure of paid paternity leave available (measured in years) when a respondent was 18 is only 0.016. As expected, including this control has no meaningful impact on our estimates of the impact of paid maternity leave. Finally, in Online Appendix Tables A10 and A11, we use a different measure of maternity leave that captures all weeks of job-protected leave available to mothers, regardless of pay. While our coefficients on ever working for pay remain negative and significant, we lose significance for our other variables of interest, suggesting that payments are an important factor in determining a woman's long-run responses to parental leave policy (Lalive, Schlosser, Steinhauer and Zweimüller, 2014; Bergemann and Riphahn, 2023).[24]

We also conduct a placebo test to partially address concerns about potential violations of the common trends assumption underlying the generalized difference-in-differences estimation approach. In Online Appendix Table A12, we estimate Equation 22 using two outcome variables that should not be impacted by the maternity leave policy in place when a respondent turned 18: mother's education and father's education, captured via dummies indicating whether a respondent's parents obtained any tertiary education. While we find a significant relationship between paid leave and the likelihood of an individual's father attaining higher education, that significance disappears with the addition of our standard set of controls.

[23] We also restrict the sample to exclude country-years with no data on paternity leave, which slightly changes our coefficients, even before the addition of controls.

[24] Another factor that may be relevant for a woman's labor market response is the replacement rate of a paid leave policy. We are unable to include country-by-year information on the parental leave replacement rate in our fixed-effects model due to data limitations (the OECD only published parental leave replacement rates for 2014), but in 2014, in our sample, the country-level correlation between overall length of leave and net equivalized income from parental leave (the measure of the replacement rate reported by the OECD) was low directly after childbirth (7% at 1 month) but relatively high later on – 66%, 69%, and 70% at 6 months, 1 year, and 2 years after childbirth, respectively. This suggests that our results would not change much with the inclusion of parental leave replacement rates. Additionally, if the long-term labor market response we document is mediated through changing gender norms as a result of increased leave-taking behavior, then the replacement rate would only be important for our results to the extent that it impacts paid leave take-up. Most countries that offer guaranteed paid leave have replacement rates above 50%, and Lalive, Schlosser, Steinhauer and Zweimüller (2014) and Bergemann and Riphahn (2023) document high paid leave take-up rates, regardless of the replacement rate.

Table 3: The Impacts of Access to Paid Maternity Leave On Women's Other Life Decisions

	Higher education		Married		Ever had kids		Doing housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Paid maternity leave at 18	-0.0425***	-0.0283**	0.0159	0.0140	-0.0029	-0.0139*	0.0441***	0.0378***
	(0.0107)	(0.0117)	(0.0132)	(0.0130)	(0.0100)	(0.0073)	(0.0107)	(0.0089)
Observations	82,867	82,867	82,867	82,867	82,867	82,867	82,867	82,867
R-squared	0.142	0.210	0.068	0.070	0.131	0.241	0.090	0.118
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable PAID MATERNITY LEAVE indicates the length of paid maternity leave (measured in years) available in a woman's country of birth during the year she turned 18. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for whether or not a respondent is married, the education levels of both their father and mother, and the years of education a respondent has completed. Controls which are colinear with the outcome are removed from the equation. MARRIED is an indicator for whether or not the respondent is currently married. EVER HAD KIDS is an indicator for ever having kids in the household. DOING HOUSEWORK is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

4.2.2 Treatment Effects by Leave Length

In Tables 2 and 3, we treat maternity leave as a continuous variable – the length of job-protected paid leave guaranteed to new mothers – ignoring the possibility that relatively shorter and longer periods of leave may have countervailing effects on women's labor market attachment. As discussed above, those regressions may be misspecified if the impact of maternity leave is not monotonic in leave length. To address this, we estimate a suite of regressions in which we replace our independent variable of interest with dummies indicating whether country c guaranteed mothers at least m months of paid leave when women in birth cohort j were 18 years old, allowing for cleaner comparisons of cohorts growing up in countries that offered at least m months of maternity leave to cohorts from the same countries that were not exposed to equally generous maternity leave policies early in adulthood.

Even with a dichotomous treatment variable, recent literature on two-way fixed effects estimation highlights the potential for misspecification in settings where treatment timing is staggered, with some units adopting treatment earlier than others. When all or most panel units eventually receive treatment, some treated observations may receive negative weight in the calculation of the estimated treatment effect. Intuitively, placing negative weight on some treated observations is optimal when the treatment effect is homogeneous – but when treatment effects are heterogeneous, two-way fixed effects estimates may be biased. As discussed in Goodman-Bacon (2021) and Roth, Sant'Anna, Bilinski and Poe (2023), the bias reflects the fact that fixed effects estimators involve some "forbidden comparisons" which use already-treated units to estimate the counterfactual time trend. When the impact of treatment varies over time, this can lead to biased estimates of the average treatment effect.

The share of treated units assigned negative weight in fixed effects estimation summarizes the extent of forbidden comparisons and the resulting risk of bias. We characterize the extent of negative weighting in Panel A of Online Appendix Figure A2. The figure illustrates that all of our OLS specifications involve some negative weighting of treated observations, and more than 60 percent of treated observations receive negative weight in the estimation of the impact of having at least one month or at least two months of paid leave. This suggests that traditional two-way fixed effects estimates of the impact of paid maternity leave should be treated with caution, particularly when evaluating the impacts of short-duration leaves.

To address these specification concerns, we compare conventional OLS results (with country and birth cohort fixed effects) to coefficient estimates produced using the robust estimator

proposed by Gardner, Thakral, Tô and Yap (2024). Their estimation procedure uses a two-stage approach to estimate counterfactual outcomes for treated observations, calculating birth cohort and country fixed effects using only untreated observations. The strategy omits always-treated cohorts and countries from the analysis because it is impossible to estimate counterfactual outcomes for these observations. Panel B of Online Appendix Figure A2 displays the proportion of observations that are used to construct fixed effects when implementing the Gardner, Thakral, Tô and Yap (2024) estimator. It suggests that estimates of the impacts of one and two months of leave should be treated with caution: the estimation uses only 12 percent of the data, restricting the sample to the three countries that did not offer at least two months of paid maternity leave in 1970 (Iceland, Ireland, and Switzerland). Using such a small and selected sample raises issues with generalizability and suggests that clustered standard errors will yield tests with incorrect size. In contrast, the analysis of the impact of having three months of leave uses 54 percent of the data and includes data from 14 countries, while the analysis of the impact of having four months of leave uses 76 percent of the data and includes observations from 19 countries. Estimation of the impacts of leave lengths of at least six months always uses more than 95 percent of the data, and includes observations from all countries except Austria.[25]

Figures 3 and 4 present estimated regression coefficients and confidence intervals, summarizing the association between being exposed to policies guaranteeing at least m months of paid leave and our outcomes of interest, where m varies from 1 to 12. The figures allow for comparison of traditional OLS (fixed effects) estimates with Gardner, Thakral, Tô and Yap (2024)'s robust estimator. Both OLS and the Gardner, Thakral, Tô and Yap (2024) estimates indicate that relatively long paid maternity leaves are associated with a decrease in the likelihood that women are working. The Gardner, Thakral, Tô and Yap (2024) estimates, which are preferable to conventional OLS when negative weighting is a concern, suggest that being exposed to maternity leave lengths of four months or more when one is transitioning to adulthood is associated with a statistically significant reduction in the probability that a woman is working later in life. Coefficient estimates are broadly similar across values of m between four and 12, though traditional OLS estimates on the dummies for being exposed to at least three, four, or five months of leave appear to be biased toward zero and statistically insignificant. Both OLS and imputation-based estimates suggest that being exposed to policies guaranteeing at least one or two months of paid leave is associated with positive rather than negative changes

[25] As shown in Table 1, Austria offered more than a year of maternity leave in 1970.

in women's later life labor force participation. Thus, our results replicate the broad pattern observed in Del Rey, Kyriacou and Silva (2021), where short leave increases women's labor force participation while longer leaves have the opposite effect. However, given the concerns about negative weighting and sample selection discussed above, estimates of the relationship between exposure to short leaves and later life outcomes should be treated with caution.

Figure 3: The Impacts of Paid Leave On Women's Labor Force Participation

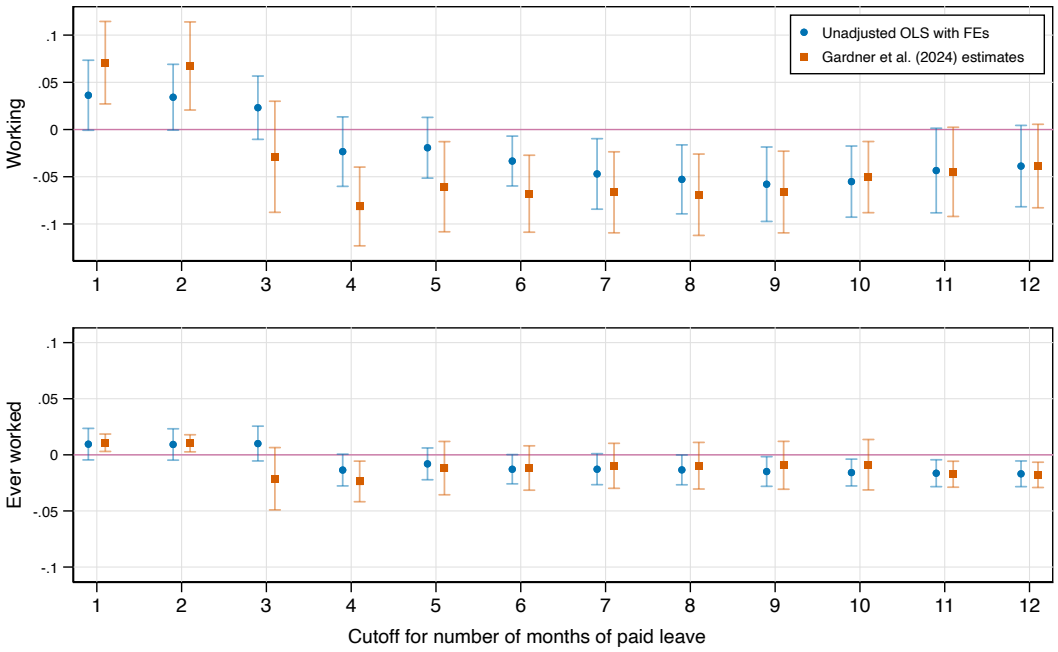


Figure presents regression coefficients and confidence intervals from OLS regressions of the CURRENTLY WORKING (top panel) and EVER WORKED (bottom panel) variables on indicators for guaranteeing at least 1, 2, 3. etc., months of paid maternity leave, respectively, conditional on country, birth cohort, and survey round fixed effects. The figures compare traditional OLS to the the two-stage estimation approach of Gardner, Thakral, Tô and Yap (2024); the two-stage approach omits countries and years that show no variation in the independent variable of interest.

We observe a similar pattern of coefficients when we look at the relationship between exposure to leave policies at 18 and the likelihood of ever working, with shorter-duration leaves associated with increases in the likelihood of work (albeit subject to the specification-related caveats discussed above) and longer-duration leaves associated with reductions in the likelihood of working. However, estimated coefficients are quite small in magnitude, and most are not statistically significant.

Turning to the other life outcomes shown in Figure 4, our results suggest that exposure to policies guaranteeing at least six months of maternity leave is associated with a reduction in the likelihood that a woman obtains tertiary education, though the association between shorter guaranteed leaves and women's educational attainment is not statistically significant. Exposure

to maternity leave policies at age 18 does not appear to be associated with changes in the likelihood that a woman is married later in life, though our results do suggest that exposure to policies guaranteeing at least eight months of maternity leave is associated with a decrease in the likelihood that a woman ever had children in her household. Finally, our results suggest a strong relationship between exposure to longer guaranteed maternity leaves at age 18 and the likelihood that a woman reports housework and childcare as her main activity later in life. Imputation-based estimates suggest that leaves of four months or longer are associated with statistically significant increases in the likelihood of doing domestic work, and coefficient estimates point to a substantial effect. For example, our estimates suggest that being exposed (at age 18) to a policy that guaranteed at least six months of paid maternity leave increases the likelihood that a woman reports domestic work or childcare as her main activity by 7.5 percentage points, which represents a 24% increase in the likelihood of staying at home.

Our fixed effects estimation assumes that treated and untreated countries – i.e. those that do and do not implement a particular maternity leave policy – would be on similar trajectories in the absence of treatment. While this assumption cannot be tested directly, we examine the association between our independent variables of interest and parental education using both conventional OLS and the robust estimator proposed by Gardner, Thakral, Tô and Yap (2024). Results are presented in Online Appendix Figure A3. We find no evidence of a statistically significant association between fathers' education and the maternity leave policy in place when a woman turns 18. Short duration leaves are associated with differences in maternal education, though given the other negative-weighting-related caveats about those specifications we may not be particularly concerned about potential violations of common trends.

In Figure 5, we replicate the Gardner, Thakral, Tô and Yap (2024) two-stage specification with dichotomized treatment, holding constant the length of leave but varying the age of exposure. In other words, we again estimate regressions of outcomes of interest on our standard set of fixed effects and individual-level controls plus an indicator equal to one if country c guaranteed new mothers at least m months of paid leave when a woman in birth cohort j was a years old. Instead of fixing a at 18 and varying m, we fix m at 12 (months of leave or more) and vary a from five to 30. This analysis serves as a robustness check, demonstrating that results are similar as we vary a across a range of ages in late adolescence and early adulthood. This framework also allows us to compare the potential impacts of early-life exposure to maternity leave policies, which might alter women's life trajectories through changes in social norms and

Figure 4: The Impacts of Paid Leave On Women's Other Life Outcomes

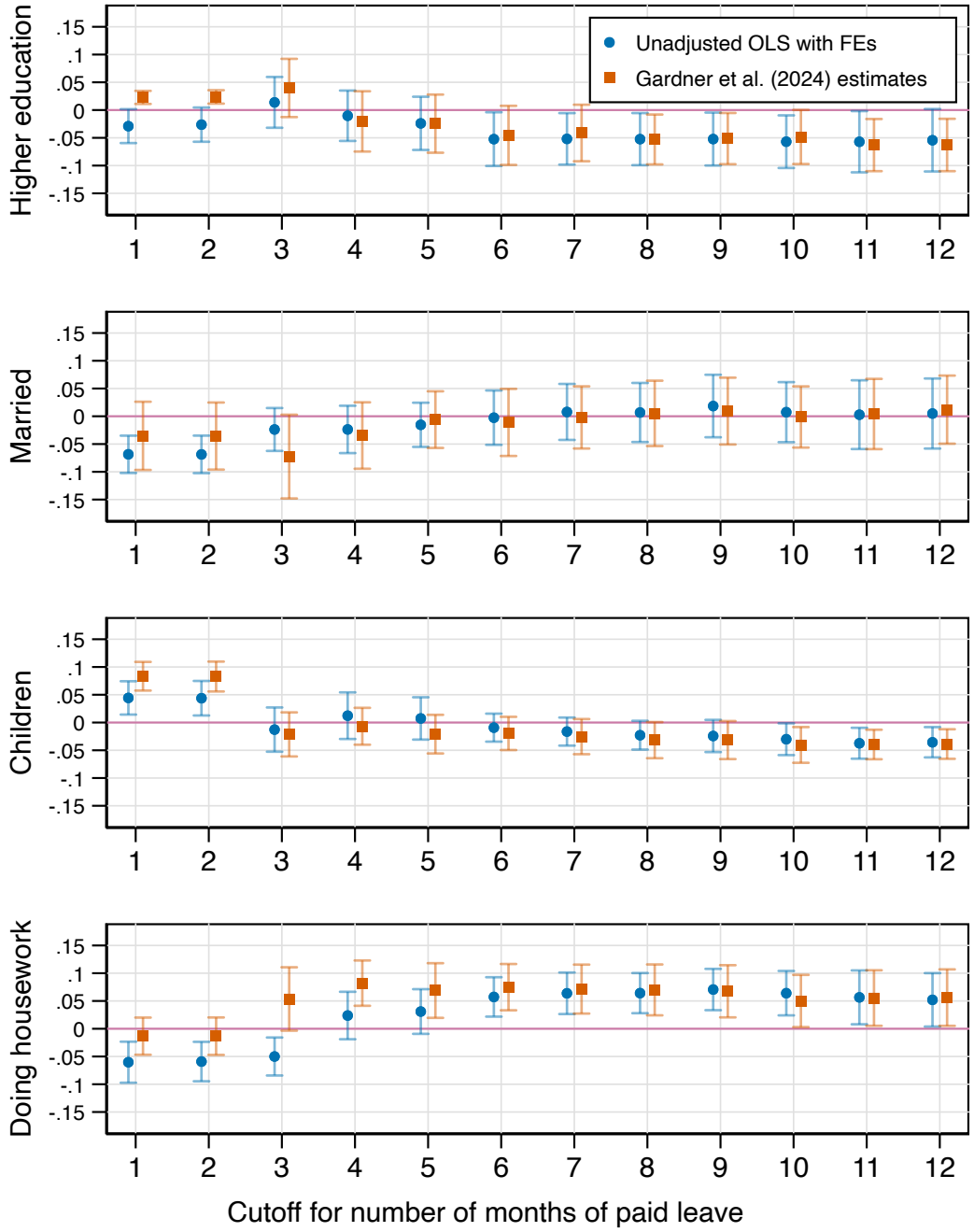


Figure presents regression coefficients and confidence intervals from OLS regressions of the Higher Education (top panel), Currently Married (second panel), Ever Had Children in the Household (third panel), and Doing Housework (bottom panel) variables on indicators for guaranteeing at least 1, 2, 3. etc., months of paid maternity leave, respectively, conditional on country, birth cohort, and survey round fixed effects. The figures compare traditional OLS to the the two-stage estimation approach of Gardner, Thakral, Tô and Yap (2024); the two-stage approach omits countries and years that show no variation in the independent variable of interest.

beliefs about gender roles, and through the direct effects of leave on women who have already made education, marriage, and fertility decisions. Offering at least 12 months of paid leave by the time a woman has children will impact her ability to take leave after giving birth, whereas offering leave earlier in life may also impact her decisions about educational attainment, occupational choice, and marriage (as discussed above) as well as the career and family trajectories of her slightly older peers (Olivetti, Patacchini and Zenou, 2020).

Panels A through F in Figure 5 plot the estimated relationship between exposure to policies guaranteeing at least 12 months of paid leave when a woman was a years old and our six outcomes of interest. The vertical dashed line in each panel of Figure 5 indicates the critical age of 18 that was the focus of our earlier specifications, at which point we see in Panel A that paid leave policies longer than twelve months are associated with a 3.9 percentage point decrease in female employment, significant at the 10% level. For ages $a > 18$, our estimates of the association between paid leave and female employment decrease in magnitude and significance, approaching zero at age $a = 30$. For ages $a < 18$, our estimates are larger in magnitude (i.e. more negative) and statistically significant, reaching negative 7 percentage points at $a = 10$, significant at the 0.1% level.

Panel B shows that our estimates on the ever worked variable are robust to different values of a, falling between -1.7 and -2.7 percentage points and remaining significant regardless of the age at which we define women as treated. Panel C shows that our estimates on the higher education variable are sensitive to different values of a. Specifically, we estimate that exposure to longer leaves at ages $13 \leq a \leq 26$ is associated with a between 5 and 7 percentage point decrease in the likelihood that a woman will pursue higher education, but exposure to longer paid leaves at earlier ages is not statistically significant. Our estimates on marriage (Panel D) remain insignificant for all levels of a, and our estimates on fertility (Panel E) remain negative and significant for all levels of a, falling between -2.9 and -5.5 percentage points. Panel F shows that childhood exposure to policies guaranteeing longer paid leaves is positively associated with the likelihood that a woman will primarily be doing housework at the time of the survey, with estimates ranging between 5.1 and 7.4 percentage points for those ages.

Figure 5 presents evidence that increasing paid leave may affect women differently at different ages. If paid leave is increased past 12 months when a woman is age 18 or older, we find no significant long-run changes in her labor force participation, replicating the established finding that increases in paid leave allowances do not impact the long-run employment outcomes of

Figure 5: The Impacts of at least 12 Months of Paid Leave on Decisions Across the Life Cycle

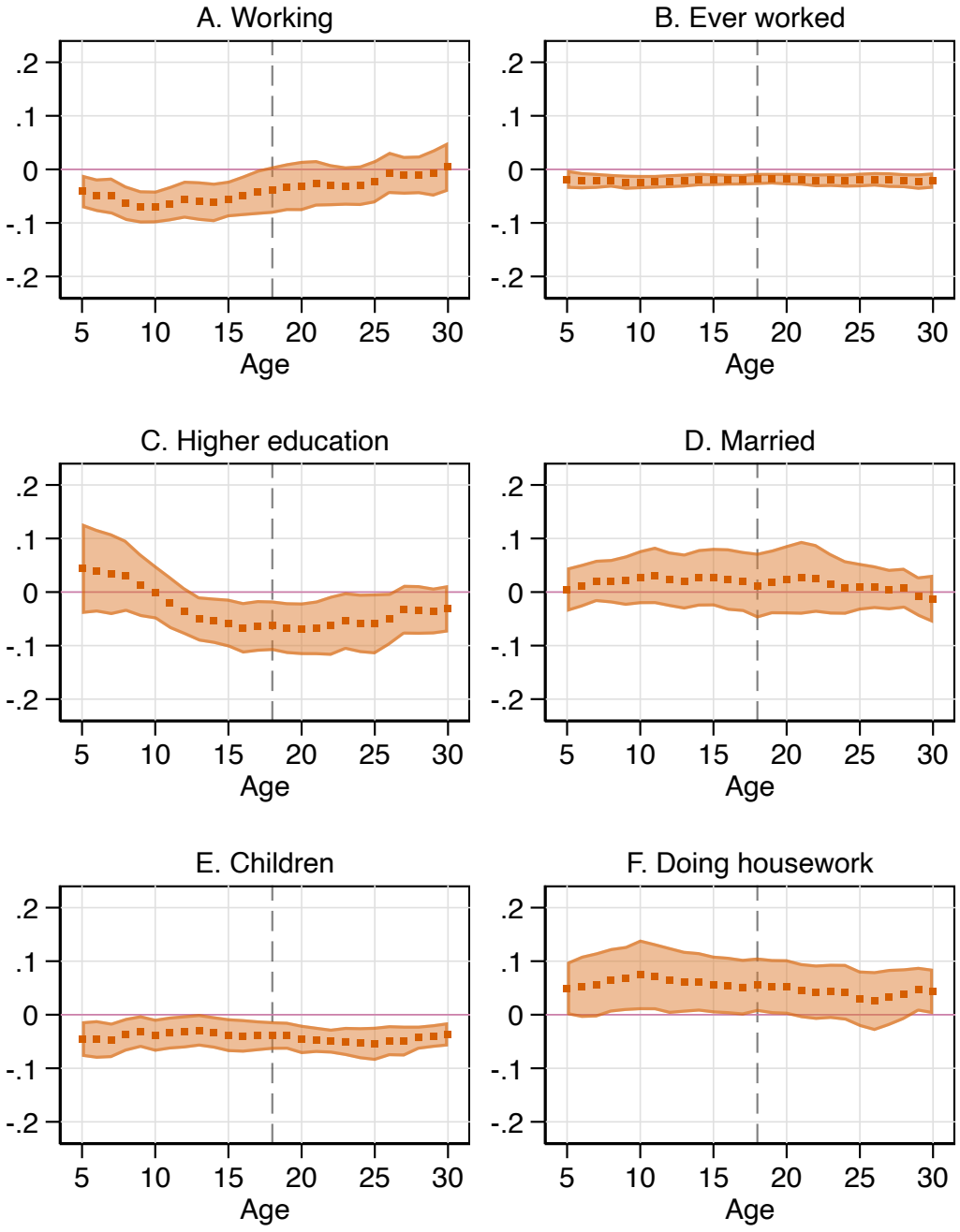


Figure presents robust Gardner, Thakral, Tô and Yap (2024) coefficients and confidence intervals of the Currently Working (panel A), Ever Worked (panel B) Higher Education (panel C), Currently Married (panel D), Ever Had Children in the Household (panel E), and Doing Housework (panel F) variables on indicators for guaranteeing at least 12 months of paid maternity leave, conditional on country, birth cohort, and survey round fixed effects. Online Appendix Figures A4 and A5 repeat the analysis using indicators for guaranteeing at least 4 months and 8 months, respectively. All panels show estimates varying the age at which a policy must have taken effect in order for us to count a women as treated. The two-stage approach omits countries and years that show no variation in the independent variable of interest.

women of childbearing age (Lalive and Zweimüller, 2009; Kleven et al., 2024). On the other hand, we do find evidence that exposure to longer paid leaves between the ages of five and 17 is negatively associated with later life labor force participation outcomes. We find similar patterns for leave length between the ages of 13 and 26 and higher education, and leave length between the ages of 8 and 20 and the likelihood that a woman will be doing housework as her main activity. These estimates suggest that the leave policy in place during childhood and young adulthood matters. Young girls and adolescents may be influenced by the employment behaviors of older women in their surrounding environments (Olivetti, Patacchini and Zenou, 2020; Rodríguez-Planas and Tanaka, 2022; Kleven, 2025), and increased paid leave allowances have been shown to increase the time that new mothers spend at home before returning to work (Lalive, Schlosser, Steinhauer and Zweimüller, 2014; Bergemann and Riphahn, 2023). The increased presence of women at home taking care of children could impact girls' perceptions of their future role in a family environment, having long-run implications for female labor force participation (Hara and Rodríguez-Planas, 2025).

4.2.3 Average Exposure to Maternity Leave Over the Life Course

In Tables 4 and 5, we investigate the relationship between average leave length at different periods of a woman's life and our six outcomes of interest. Specifically, we estimate the equation:

$$Y_i = \alpha + \beta_1 L_{jc}^{(5,16)} + \beta_2 L_{jc}^{(17,24)} + \beta_3 L_{jc}^{(25,40)} + \theta X_i + \nu_j + \gamma_c + \mu_k + \epsilon_i \tag{23}$$

where Y_i is an outcome for woman i born in year j in country c and interviewed in ESS round k, $L_{jc}^{(5,16)}$ represents the average length of guaranteed paid leave that was available to mothers in country c when women born in year j were between the ages of five and 16, $L_{jc}^{(17,24)}$ represents the average length of guaranteed paid leave that was available to mothers in country c when women born in year j were between the ages of 17 and 24, $L_{jc}^{(25,40)}$ represents the average length of guaranteed paid leave that was available to mothers in country c when women born in year j were between the ages of 25 and 40, X_i is a vector of individual controls, ν_j is a vector of birth cohort fixed effects, γ_c is a vector of country fixed effects, μ_k is a vector of survey round fixed effects, and ϵ_i is a conditionally-mean-zero error term. Our three different variables allow us to compare the relationships between life outcomes and (1) paid leave during childhood, when girls might be forming their own gendered conceptions of the division of household labor; (2) leave

length during young adulthood, when women might be making decisions about investment in education and employment; and (3) leave length in adulthood, when women are more likely to be making decisions about fertility and labor supply. Our vector of controls X_i includes the same variables as in equation 22, with the addition of a variable that captures the length of paid leave available at the time woman i was surveyed. This is intended to isolate the potential impact of paid leave during a given age range by measuring it conditional on contemporaneous paid leave, as the two country-level measures are likely to be correlated. Here, we rely on the fact that increases in paid leave length have been shown to increase the time that mothers spend out of the labor force in the short run (Lalive, Schlosser, Steinhauer and Zweimüller, 2014; Bergemann and Riphahn, 2023) and that girls and young women form expectations about their future labor supply after childbirth by watching the employment behavior of mothers around them (Olivetti, Patacchini and Zenou, 2020; Kleven, 2025; Boelmann, Raute and Schönberg, 2025). As such, our estimates should be viewed as a composite of the direct effects of paid leave on a woman's future labor supply expectations (Kuziemko, Pan, Shen and Washington, 2018) and the indirect effects of paid leave that act through a gender norms channel (Unterhofer and Wrohlich, 2017; Farré, Felfe, González and Schneider, 2021).

Tables 4 and 5 present our regression results. Results in Table 4 suggest that a one-year increase in the average length of paid maternity leave in place when a girl is between the ages of five and 16 decreases the likelihood that she will be working for pay at the time of the survey by around six percentage points, regardless of the inclusion of individual-level controls. We find no statistically significant relationship between average leave length when a woman is 17-24 (25-40) and the likelihood that she is working at the time of the survey. We rule out negative effects larger than about 4 (2) percentage points for those age ranges. Columns 3 and 4 show that a one-year increase in the average length of paid maternity leave between ages five and 16 is associated with just under a three percentage point decrease in the likelihood that a woman has ever worked for pay, with or without individual controls. We also find a significant negative relationship of a similar magnitude between average leave in the 25-40 age range and the likelihood that a woman has ever worked for pay.[26] In Table 5, Columns 1 and 2 show that leave length between the ages of 17 and 24 is negatively associated with the likelihood that a respondent will complete higher education. Estimates for average leave length between ages

[26]Online Appendix Table A13 repeats the analysis with the addition of a control for the average level of paternity leave between the ages of 25 and 40. Our results remain largely unchanged.

25 and 40 have a similar sign but are slightly less precise. We find no significant relationship between paid leave at any age and the likelihood a woman will get married (columns 3 and 4). Results on fertility are mixed, but generally insignificant (columns 5 and 6). Columns 7 and 8 show a strong positive relationship between average leave length between ages five and 24 and the likelihood that a woman will be primarily doing housework at the time of the survey.[27]

Table 4: Maternity Leave Exposure at Different Ages and Labor Market Outcomes

	Currently Working		Ever Worked	
	(1)	(2)	(3)	(4)
Average paid maternity leave (5-16)	-0.0613***	-0.0559***	-0.0289***	-0.0273***
	(0.0099)	(0.0102)	(0.0048)	(0.0048)
Average paid maternity leave (17-24)	-0.0055	0.0050	0.0006	0.0047
	(0.0101)	(0.0092)	(0.0040)	(0.0038)
Average paid maternity leave (25-40)	-0.0356	-0.0195	-0.0284***	-0.0253***
	(0.0234)	(0.0217)	(0.0060)	(0.0060)
Observations	78,504	78,504	78,504	78,504
R-squared	0.069	0.106	0.211	0.230
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable AVERAGE MATERNITY LEAVE indicates the average length of paid maternity leave (measured in years) available in a woman's country of birth during a certain age range. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education the respondent has completed, whether or not they are married, the education levels of both their father and mother, and the current level of paid maternity leave at the time of the survey. CURRENTLY WORKING is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. EVER WORKED is an indicator for ever having worked for pay outside the home.

[27]Including controls for average paternity leave between 25 and 40 (Online Appendix Table A13) leaves our results largely unchanged.

Table 5: Maternity Leave Exposure at Different Ages and Other Life Outcomes

	Higher education		Married		Ever had kids		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Average paid maternity leave (5-16)	-0.0058	0.0045	0.0034	0.0009	-0.0256	-0.0304	0.0515**	0.0478***
	(0.0195)	(0.0175)	(0.0189)	(0.0196)	(0.0225)	(0.0185)	(0.0187)	(0.0169)
Average paid maternity leave (17-24)	-0.0552***	-0.0430***	0.0250	0.0256	0.0146	0.0029	0.0220**	0.0179*
	(0.0128)	(0.0143)	(0.0153)	(0.0163)	(0.0174)	(0.0145)	(0.0088)	(0.0088)
Average paid maternity leave (25-40)	-0.0480**	-0.0527**	0.0191	0.0089	0.0076	-0.0111	0.0211	0.0003
	(0.0229)	(0.0197)	(0.0253)	(0.0296)	(0.0307)	(0.0263)	(0.0247)	(0.0207)
Observations	78,504	78,504	78,504	78,504	78,504	78,504	78,504	78,504
R-squared	0.142	0.209	0.066	0.068	0.123	0.236	0.091	0.118
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Average maternity leave indicates the average length of paid maternity leave (measured in years) available in a woman's country of birth during a certain age range. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for whether or not a respondent is married, the education levels of both their father and mother, the years of education a respondent has completed, and the current (at time of survey) level of paid leave. Controls which are colinear with the outcome are removed from the equation. Higher education is an indicator for whether or not the respondent has completed more than 12 years of schooling. Married is an indicator for whether or not the respondent is currently married. Ever had kids is an indicator for ever having kids in the household. Doing housework is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Together, Tables 4 and 5 support the hypothesis that the length of paid leave during childhood and young adulthood might impact a woman's career and family decisions later in life. Specifically, we estimate that a one-year increase in the average length of paid maternity leave between the ages of five and 16 is associated with a decrease in the likelihood that she will be working for pay later in life by about six percentage points, and an increase in the likelihood that she will be primarily doing housework by about five percentage points. We also find some evidence that increases in paid leave length between ages 5-16 and 25-40 are negatively associated with the likelihood that a woman will ever work for pay, and that increases in leave length between ages 17 and 24 are negatively associated with women's investment in higher education.

Our estimates of the impact of average leave length on long-run employment for women who are most likely to utilize maternity leave (between the ages of 25 and 40) are small and insignificant, replicating the null results found by a number of well-identified single-country studies (Lalive and Zweimüller, 2009; Dahl, Løken, Mogstad and Salvanes, 2016; Kleven, Landais, Posch, Steinhauer and Zweimüller, 2024). We interpret this pattern as support for an indirect story of the impact of leave length on female labor force participation. While the women who initially benefit from increases in paid leave may not change their long-run employment trajectories, the girls and young women who witness fewer working mothers around them change their own expectations about their future labor supply in a long-lasting and impactful way.

Finally, Online Appendix Table A15 presents the results of a placebo test that regresses parental education on our average paid leave measures from equation 23. With the inclusion of controls, we find no significant relationship between average leave length at any age and parental education level, providing qualified support for a common trends assumption.

5 Conclusion

Using policy data for 24 European countries across 50 years, we explore the relationship between early-life exposure to maternity leave policies and women's subsequent life outcomes. Policies guaranteeing job-protected paid maternity leave lead to increased leave-taking, reinforcing norms that new mothers will temporarily exit the labor force. These norms may, in turn, impact young women's beliefs about their future labor force attachment if they choose to have children – potentially changing the incentives to invest in human capital and altering their occupational trajectories. We explore these channels by linking data on the leave policies in

place early in a woman's life – particularly at age 18, when she is making important decisions about education and family formation – and later life outcomes. We find strong evidence of an empirical link between early-life exposure to generous leave policies and weaker labor force attachment in adulthood.

Our empirical strategy relies on spatial and temporal fixed effects, and these approaches can lead to biased estimates of treatment effects because countries phase in leave policies at different times. We show that the issue of negative weighting is a serious problem when evaluating short leaves in particular, because all countries in our sample eventually implemented at least some paid maternity leave. This bias may lead to spurious positive estimates of the impact of short-duration leaves. However, using the robust estimator proposed by Gardner, Thakral, Tô and Yap (2024), we show that there is a robust negative association between longer maternity leaves of four to eight months or more and women's involvement in the labor force.

Our results reinforce the growing body of work suggesting that women's labor outcomes are heavily influenced by their early life environment. If leave policies affect young women and girls as well as new mothers, regression discontinuity estimates of the impacts of increases in maternity leave on women's labor market outcomes may not capture policies' full effects. This conclusion, taken in conjunction with our evidence that paid maternity leave policies impact a woman's educational and child-rearing decisions as well as labor force attachment, points to the fact that policymakers should consider the broader implications of paid leave policies over and above their immediate effect on new mothers.

Like previous work, we find that paid leave policy alone is not enough to mitigate child penalties and promote gender equality in the labor market, and that women's labor market decisions are affected by the gender norms of their surrounding environment. As such, policymakers seeking to reduce the child penalty and improve gender equality in the labor force may wish to explore policies that address gendered expectations surrounding domestic work or the potential negative impacts of paid maternity leave – for example, improved childcare systems and enhanced paid paternity leave.

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A Online Appendix: not for print publication

Table A1: Paid leave by country (1970 vs. 2010)

Country	Paid Leave (1970)	Paid Leave (2010)	Difference
Austria	1.11	1.15	0.04
Belgium	0.27	0.54	0.27
Czechia	0.50	2.11	1.61
Denmark	0.27	0.96	0.69
Finland	0.17	0.80	0.63
France	0.27	0.81	0.54
Germany	0.27	1.11	0.84
Greece	0.23	0.82	0.59
Hungary	0.23	2.07	1.84
Iceland	0.00	0.50	0.50
Ireland	0.00	0.50	0.50
Israel	0.23	0.27	0.04
Italy	0.27	0.91	0.64
Luxembourg	0.23	0.81	0.58
Netherlands	0.23	0.81	0.58
Norway	0.23	0.69	0.46
Poland	0.23	0.42	0.19
Portugal	0.17	0.58	0.41
Slovakia	0.50	3.15	2.65
Spain	0.23	0.31	0.08
Sweden	0.50	1.15	0.65
Switzerland	0.00	0.27	0.27
Turkey	0.23	0.31	0.08
United Kingdom	0.35	0.75	0.40
Mean	0.28	0.91	0.63
Median	0.23	0.80	0.57

Data from the OECD Family Database. Paid maternity leave measured in years.

Table A2: Paid Maternity Leave at Age 18 and Women's Labor Market Outcomes, Top-Coding Leave Length at One Year

	Currently working		Ever worked	
	(1)	(2)	(3)	(4)
Paid maternity leave	-0.107**	-0.0791*	-0.0346**	-0.0254*
	(0.0434)	(0.0402)	(0.0156)	(0.0134)
Observations	82,867	82,867	82,867	82,867
R-squared	0.072	0.110	0.214	0.233
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable PAID MATERNITY LEAVE indicates the length of paid maternity leave (measured in years) available in a woman's country of birth during the year she turned 18, top coded at one year. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education, whether was married at the time of the survey, and the education levels of both the respondent's father and the respondent's mother. CURRENTLY WORKING is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. EVER WORKED is an indicator for ever having worked for pay outside the home.

Table A3: Paid Maternity Leave at Age 18 and Women's Other Life Outcomes, Top-Coding Leave Length at One Year

	Higher education		Married		Ever had kids		Doing housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Paid maternity leave	-0.109**	-0.0978*	-0.0178	-0.0207	-0.0228	-0.0326	0.106**	0.0986**
	(0.0498)	(0.0477)	(0.0474)	(0.0465)	(0.0326)	(0.0248)	(0.0449)	(0.0404)
Observations	82,867	82,867	82,867	82,867	82,867	82,867	82,867	82,867
R-squared	0.142	0.210	0.068	0.070	0.131	0.241	0.090	0.118
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable PAID MATERNITY LEAVE indicates the length of paid maternity leave (measured in years) available in a woman's country of birth during the year she turned 18, top coded at one year. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for whether or not a respondent is married, the education levels of both their father and mother, and the years of education a respondent has completed. Controls which are colinear with the outcome are removed from the equation. MARRIED is an indicator for whether or not the respondent is currently married. EVER HAD KIDS is an indicator for ever having kids in the household. DOING HOUSEWORK is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Table A4: Paid Maternity Leave at Age 16 and Women's Labor Market Outcomes

	Currently Working		Ever Worked	
	(1)	(2)	(3)	(4)
Paid maternity leave at 16	-0.0368***	-0.0258***	-0.0147***	-0.0110**
	(0.0081)	(0.0070)	(0.0047)	(0.0042)
Observations	79,386	79,386	79,386	79,386
R-squared	0.069	0.106	0.215	0.232
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Paid maternity leave at 16 indicates the length of paid maternity leave (measured in years) available in a woman's country of birth at age 16. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education the respondent has completed, whether or not they are married, and the education levels of both their father and mother. Currently Working is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey.. Ever worked is an indicator for ever having worked for pay outside the home.

Table A5: Paid Maternity Leave at Age 20 and Women's Labor Market Outcomes

	Currently Working		Ever Worked	
	(1)	(2)	(3)	(4)
Paid maternity leave at 20	-0.0281***	-0.0154*	-0.0132***	-0.0089**
	(0.0094)	(0.0081)	(0.0043)	(0.0036)
Observations	82,867	82,867	82,867	82,867
R-squared	0.072	0.109	0.214	0.233
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Paid maternity leave at 20 indicates the length of paid maternity leave (measured in years) available in a woman's country of birth at age 20. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education the respondent has completed, whether or not they are married, and the education levels of both their father and mother. Currently Working is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. Ever worked is an indicator for ever having worked for pay outside the home.

Table A6: Paid Maternity Leave at Age 16 and Women's Other Life Decisions

	Higher education		Married		Ever had kids		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Paid maternity leave at 16	-0.0434***	-0.0289**	0.0168	0.0147	-0.0043	-0.0156*	0.0436***	0.0373***
	(0.0117)	(0.0126)	(0.0118)	(0.0117)	(0.0104)	(0.0082)	(0.0106)	(0.0089)
Observations	79,386	79,386	79,386	79,386	79,386	79,386	79,386	79,386
R-squared	0.141	0.209	0.070	0.072	0.133	0.246	0.091	0.118
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable PAID MATERNITY LEAVE AT 16 indicates the length of paid maternity leave (measured in years) available in a woman's country of birth at age 16. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for whether or not a respondent is married, the education levels of both their father and mother, and the years of education a respondent has completed. Controls which are colinear with the outcome are removed from the equation. HIGHER EDUCATION is an indicator for whether or not the respondent attained any level of higher education. MARRIED is an indicator for whether or not the respondent is currently married. EVER HAD KIDS is an indicator for ever having kids in the household. DOING HOUSEWORK is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Table A7: Paid Maternity Leave at Age 20 and Women's Other Life Decisions

	Higher education		Married		Ever had kids		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Paid maternity leave at 20	-0.0479***	-0.0338***	0.0223*	0.0202	-0.0005	-0.0138*	0.0415***	0.0339***
	(0.0104)	(0.0112)	(0.0123)	(0.0122)	(0.0100)	(0.0077)	(0.0110)	(0.0096)
Observations	82,867	82,867	82,867	82,867	82,867	82,867	82,867	82,867
R-squared	0.142	0.210	0.069	0.071	0.131	0.241	0.090	0.117
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable PAID MATERNITY LEAVE AT 20 indicates the length of paid maternity leave (measured in years) available in a woman's country of birth at age 20. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for whether or not a respondent is married, the education levels of both their father and mother, and the years of education a respondent has completed. Controls which are colinear with the outcome are removed from the equation. HIGHER EDUCATION is an indicator for whether or not the respondent attained any level of higher education. MARRIED is an indicator for whether or not the respondent is currently married. EVER HAD KIDS is an indicator for ever having kids in the household. DOING HOUSEWORK is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Table A8: Paid Maternity Leave at Age 18 and Women's Labor Market Outcomes, Controlling for Paternity Leave

	Currently Working		Ever Worked	
	(1)	(2)	(3)	(4)
Paid maternity leave at 18	-0.0311***	-0.0200**	-0.0117***	-0.0079**
	(0.0095)	(0.0083)	(0.0038)	(0.0032)
Observations	80,819	80,819	80,819	80,819
R-squared	0.074	0.111	0.216	0.234
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable PAID MATERNITY LEAVE indicates the average length of paid maternity leave (measured in years) available in a woman's country of birth at age 18. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: level of paternity leave at age 18, years of education the respondent has completed, whether or not they are married, and the education levels of both their father and mother. CURRENTLY WORKING is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. EVER WORKED is an indicator for ever having worked for pay outside the home.

Table A9: Paid Maternity Leave at Age 18 and Women's Other Life Decisions, Controlling for Paternity Leave

	Higher education		Married		Ever had kids		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Paid maternity leave at 18	-0.0355***	-0.0206**	0.0129	0.0107	-0.0052	-0.0154*	0.0416***	0.0359***
	(0.0078)	(0.0077)	(0.0162)	(0.0157)	(0.0116)	(0.0084)	(0.0127)	(0.0109)
Observations	80,819	80,819	80,819	80,819	80,819	80,819	80,819	80,819
R-squared	0.146	0.214	0.069	0.071	0.131	0.242	0.092	0.120
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Average maternity leave indicates the length of paid maternity leave (measured in years) available in a woman's country of birth at age 18. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for level of paternity leave at age 18, whether or not a respondent is married, the education levels of both their father and mother, and the years of education a respondent has completed. Controls which are colinear with the outcome are removed from the equation. Higher education is an indicator for whether or not the respondent attained any level of higher education. Married is an indicator for whether or not the respondent is currently married. Ever had kids is an indicator for ever having kids in the household. Doing housework is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Table A10: Total (Paid and Unpaid) Maternity Leave and Women's Labor Market Outcomes

	Currently Working		Ever Worked	
	(1)	(2)	(3)	(4)
Total maternity leave at 18	-0.0141	-0.0114	-0.0078**	-0.0071**
	(0.0134)	(0.0112)	(0.0034)	(0.0029)
Observations	82,867	82,867	82,867	82,867
R-squared	0.072	0.109	0.214	0.232
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable TOTAL MATERNITY LEAVE indicates the length of (paid or unpaid) maternity leave (measured in years) available in a woman's country of birth at age 18. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education the respondent has completed, whether or not they are married, and the education levels of both their father and mother. CURRENTLY WORKING is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. EVER WORKED is an indicator for ever having worked for pay outside the home.

Table A11: Total (Paid and Unpaid) Maternity Leave and Women's Other Life Decisions

	Higher education		Married		Ever had kids		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total maternity leave at 18	0.0014	0.0160	-0.0105	-0.0117	-0.0133	-0.0129	0.0127	0.0135
	(0.0184)	(0.0160)	(0.0132)	(0.0137)	(0.0092)	(0.0085)	(0.0100)	(0.0089)
Observations	82,867	82,867	82,867	82,867	82,867	82,867	82,867	82,867
R-squared	0.141	0.209	0.068	0.070	0.131	0.241	0.089	0.116
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable TOTAL MATERNITY LEAVE indicates the length of (paid or unpaid) maternity leave (measured in years) available in a woman's country of birth at age 18. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for whether or not a respondent is married, the education levels of both their father and mother, and the years of education a respondent has completed. Controls which are colinear with the outcome are removed from the equation. HIGHER EDUCATION is an indicator for whether or not the respondent attained any level of higher education. MARRIED is an indicator for whether or not the respondent is currently married. EVER HAD KIDS is an indicator for ever having kids in the household. DOING HOUSEWORK is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Table A12: Falsification Test: Parent's Education

	Mother Highly Educated		Father Highly Educated	
	(1)	(2)	(3)	(4)
Paid maternity leave at 18	-0.0092	-0.0001	-0.0102**	0.0019
	(0.0066)	(0.0069)	(0.0044)	(0.0052)
Observations	82,867	82,867	82,867	82,867
R-squared	0.084	0.128	0.066	0.127
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Paid maternity leave indicates the length of paid maternity leave (measured in years) available in a woman's country of birth during the year she turned 18. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education the respondent has completed and whether or not they are married. Mother Highly Educated is an indicator variable that measures whether or not an individual's mother has completed any higher education, and Father Highly Educated does the same for their father.

Table A13: The Impacts of Access to Paid Maternity Leave On Women's Labor Market Outcomes - Controlling for Paternity Leave

	Currently Working		Ever Worked	
	(1)	(2)	(3)	(4)
Average paid maternity leave (5-16)	-0.0613***	-0.0565***	-0.0289***	-0.0270***
	(0.0099)	(0.0112)	(0.0048)	(0.0044)
Average paid maternity leave (17-24)	-0.0055	0.0055	0.0006	0.0044
	(0.0101)	(0.0091)	(0.0040)	(0.0038)
Average paid maternity leave (25-40)	-0.0356	-0.0212	-0.0284***	-0.0245***
	(0.0234)	(0.0235)	(0.0060)	(0.0055)
Observations	78,504	78,504	78,504	78,504
R-squared	0.069	0.106	0.211	0.230
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable AVERAGE MATERNITY LEAVE indicates the average length of paid maternity leave (measured in years) available in a woman's country of birth during a certain age range. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: the average level of paternity leave between ages 25 and 40, years of education the respondent has completed, whether or not they are married, the education levels of both their father and mother, and the current level of paid maternity leave at the time of the survey. CURRENTLY WORKING is an indicator for describing work outside the home as the respondent's main activity over the week prior to the survey. EVER WORKED is an indicator for ever having worked for pay outside the home.

Table A14: The Impacts of Access to Paid Maternity Leave On Women's Other Life Decisions - Controlling for Paternity Leave

	Higher education		Married		Ever had kids		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Average paid maternity leave (5-16)	-0.0058	0.0009	0.0034	-0.0000	-0.0256	-0.0341**	0.0515**	0.0480**
	(0.0195)	(0.0168)	(0.0189)	(0.0186)	(0.0225)	(0.0161)	(0.0187)	(0.0175)
Average paid maternity leave (17-24)	-0.0552***	-0.0395***	0.0250	0.0266	0.0146	0.0065	0.0220**	0.0177*
	(0.0128)	(0.0135)	(0.0153)	(0.0165)	(0.0174)	(0.0150)	(0.0088)	(0.0091)
Average paid maternity leave (25-40)	-0.0480**	-0.0635***	0.0191	0.0060	0.0076	-0.0225	0.0211	0.0009
	(0.0229)	(0.0175)	(0.0253)	(0.0271)	(0.0307)	(0.0248)	(0.0247)	(0.0234)
Observations	78,504	78,504	78,504	78,504	78,504	78,504	78,504	78,504
R-squared	0.142	0.210	0.066	0.068	0.123	0.237	0.091	0.118
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable AVERAGE MATERNITY LEAVE indicates the average length of paid maternity leave (measured in years) available in a woman's country of birth during a certain age range. All specifications include country, birth year, and ESS round fixed effects. The baseline specification include controls for the average level of paternity leave between ages 25 and 40, whether or not a respondent is married, the education levels of both their father and mother, the years of education a respondent has completed, and the current level of paid maternity leave at the time of the survey. Controls which are colinear with the outcome are removed from the equation. MARRIED is an indicator for whether or not the respondent is currently married. EVER HAD KIDS is an indicator for ever having kids in the household. DOING HOUSEWORK is an indicator for selecting "Doing housework or childcare" as the primary way you spent your time in the last seven days.

Table A15: Average Paid Leave Falsification Test: Parent's Education

	Mother Highly Educated		Father Highly Educated	
	(1)	(2)	(3)	(4)
Average paid maternity leave (5-16)	-0.0179	-0.0138	-0.0124	-0.0069
	(0.0112)	(0.0122)	(0.0085)	(0.0091)
Average paid maternity leave (17-24)	-0.0041	0.0041	-0.0101**	0.0004
	(0.0073)	(0.0067)	(0.0043)	(0.0044)
Average paid maternity leave (25-40)	-0.0296*	-0.0139	-0.0323**	-0.0100
	(0.0156)	(0.0146)	(0.0125)	(0.0115)
Observations	78,504	78,504	78,504	78,504
R-squared	0.084	0.129	0.066	0.128
Country FE	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes
Survey round FE	Yes	Yes	Yes	Yes
Individual-Level Controls	No	Yes	No	Yes

*p<0.1; **p<.05; ***p<.01. Standard errors clustered at country level in parentheses. Independent variable Average maternity leave indicates the average length of paid maternity leave (measured in years) available in a woman's country of birth during a certain age range. All specifications include country, birth year, and ESS round fixed effects. Controls included in Columns 2 and 4: years of education the respondent has completed and whether or not they are married. Mother Highly Educated is an indicator variable that measures whether or not an individual's mother has completed any higher education, and Father Highly Educated does the same for their father.

Figure A1: The Duration of Paid Maternity Leave in Europe - Remaining Countries

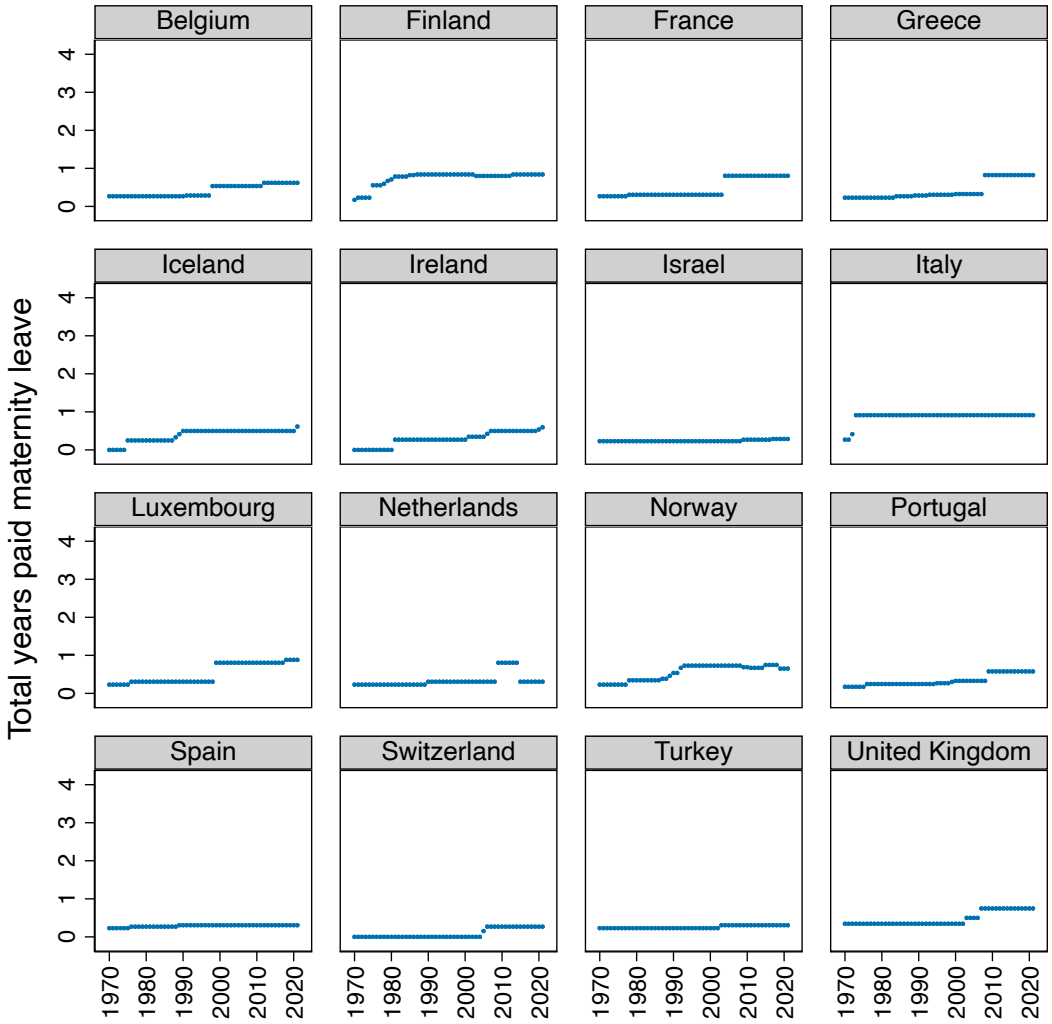
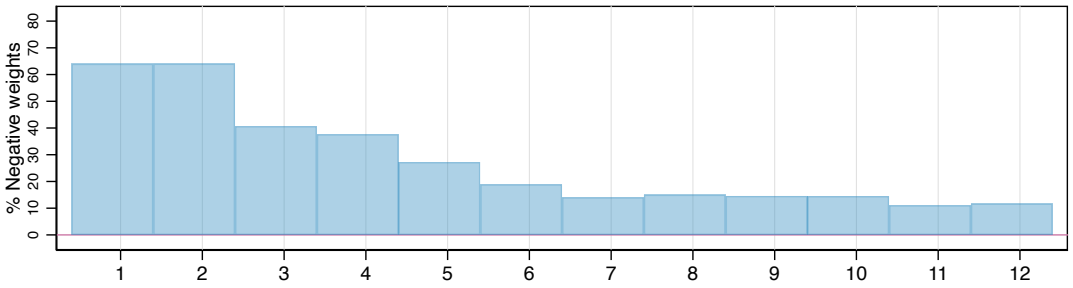


Figure A2: Regression Estimates and Negative Weighting

Panel A: Proportion of treated observations with negative weight in OLS



Panel B: Proportion of observations used in robust estimation

Panel A shows the proportion of treated observations in the sample that receive negative weight in fixed effects estimation of the regression presented in the first panel of Figure 3. Panel B shows what fraction of the data can be used in the two-stage estimation approach of Gardner, Thakral, Tô and Yap (2024); the two-stage approach omits countries and years that show no variation in the independent variable of interest.

Figure A3: The Impact of Paid Leave on Parental Education

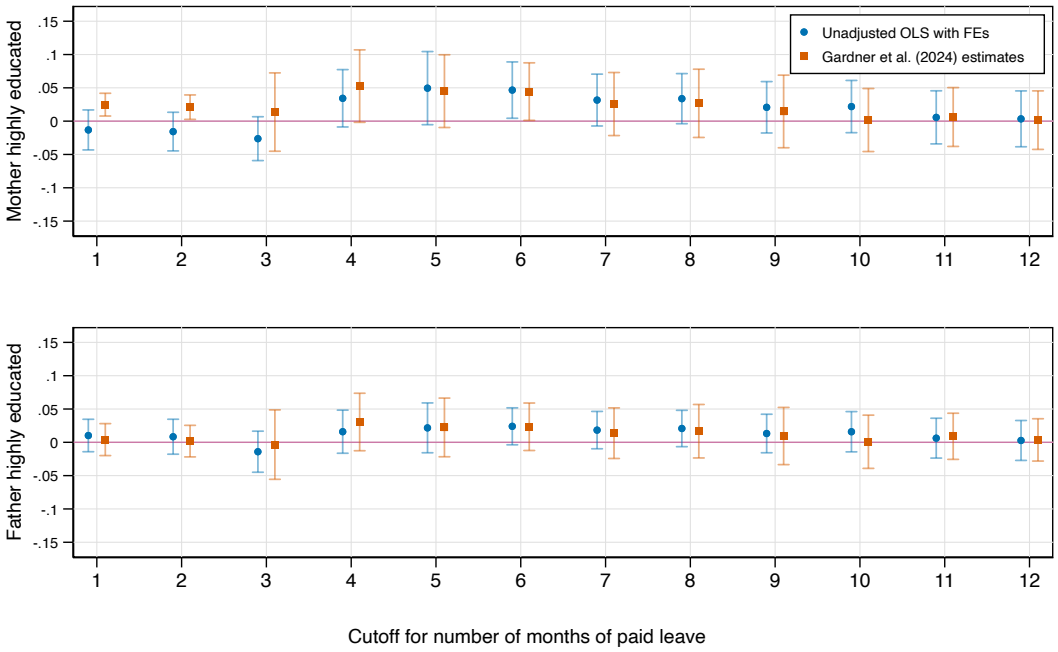


Figure presents regression coefficients and confidence intervals from OLS regressions of the Mother's Education (top panel) and Father's Education (bottom panel) variables on indicators for guaranteeing at least 1, 2, 3. etc., months of paid maternity leave, respectively, conditional on country, birth cohort, and survey round fixed effects. Parental education ranges from one to five, representing educational categories, with higher numbers indicating more education. The figures compare traditional OLS to the the two-stage estimation approach of Gardner, Thakral, Tô and Yap (2024); the two-stage approach omits countries and years that show no variation in the independent variable of interest.

Figure A4: The Impacts of at least 4 Months of Paid Leave on Decisions Across the Life Cycle

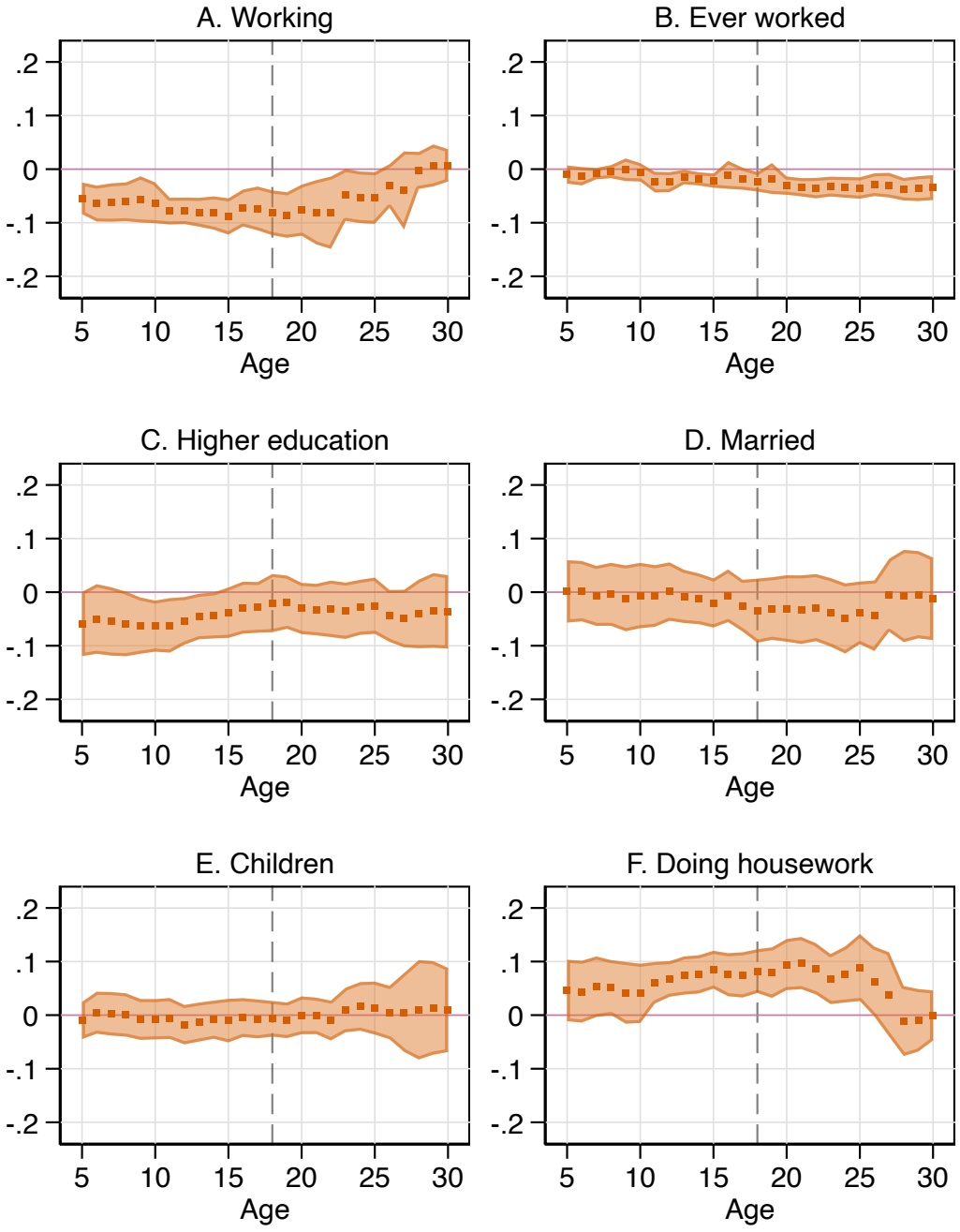


Figure presents robust Gardner, Thakral, Tô and Yap (2024) coefficients and confidence intervals of the Currently Working (panel A), Ever Worked (panel B) Higher Education (panel C), Currently Married (panel D), Ever Had Children in the Household (panel E), and Doing Housework (panel F) variables on indicators for guaranteeing at least 12 months of paid maternity leave, conditional on country, birth cohort, and survey round fixed effects. All panels show estimates varying the age at which a policy must have taken effect in order for us to count a women as treated. The two-stage approach omits countries and years that show no variation in the independent variable of interest.

Figure A5: The Impacts of at least 8 Months of Paid Leave on Decisions Across the Life Cycle

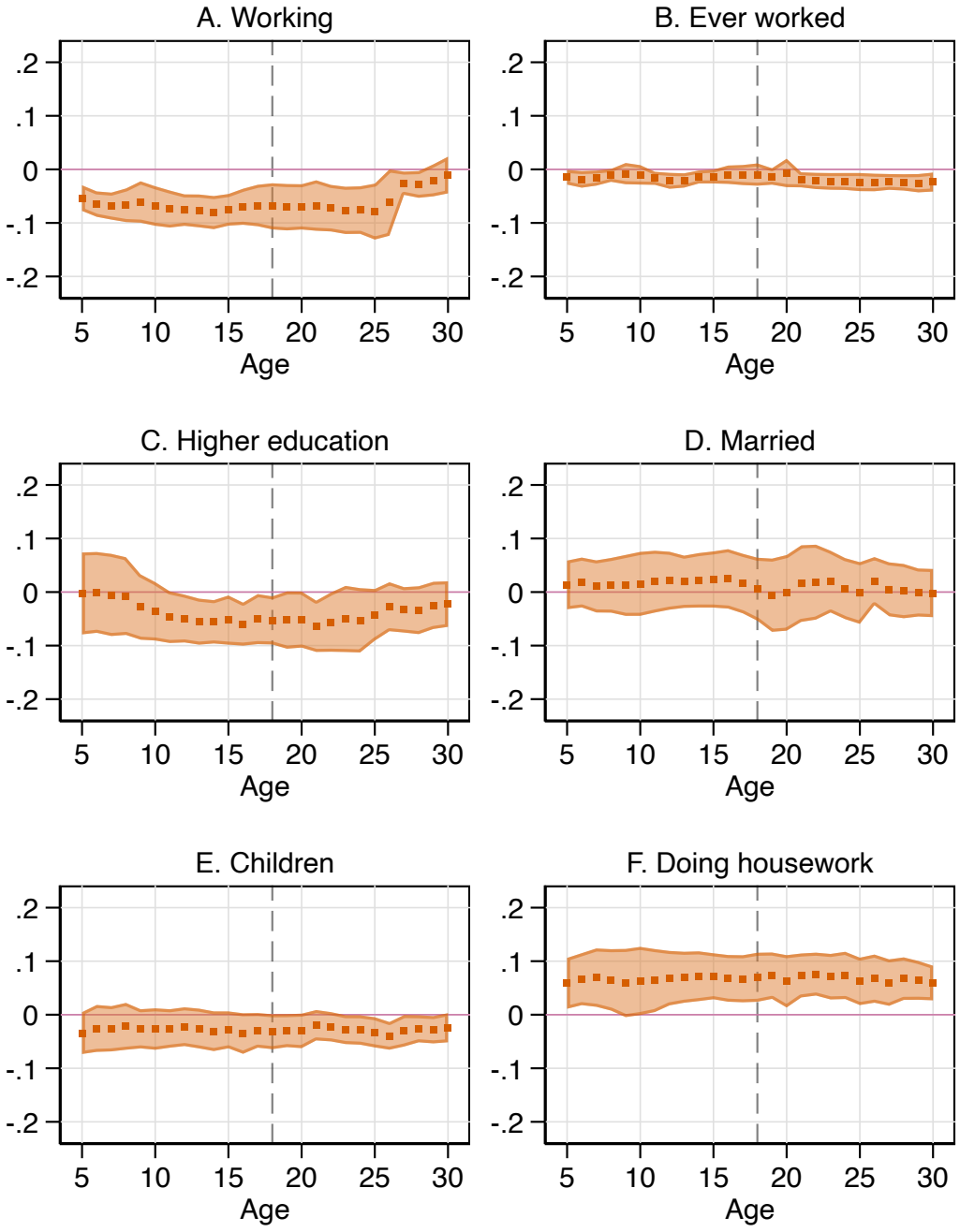


Figure presents robust Gardner, Thakral, Tô and Yap (2024) coefficients and confidence intervals of the Currently Working (panel A), Ever Worked (panel B) Higher Education (panel C), Currently Married (panel D), Ever Had Children in the Household (panel E), and Doing Housework (panel F) variables on indicators for guaranteeing at least 8 months of paid maternity leave, conditional on country, birth cohort, and survey round fixed effects. Online Appendix Figures A4 and 5 repeat the analysis using indicators for guaranteeing at least 4 months and 12 months, respectively. All panels show estimates varying the age at which a policy must have taken effect in order for us to count a women as treated. The two-stage approach omits countries and years that show no variation in the independent variable of interest.