What Drives Child Penalties? Evidence from a Global Organization*

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Abstract

How do child penalties emerge within organizations? We study how parenthood affects careers at the World Bank Group, exploiting variation in the timing of first childbirth among eventual parents in a staggered event-study difference-in-differences design. We estimate a 3.1 percent motherhood earnings penalty over the first six years after childbirth, primarily due to slower grade progression, while fathers experience no significant earnings loss. Mothers' annual performance evaluations do not deteriorate durably. After childbirth, mothers take on fewer leadership responsibilities and travel less for work: they are less likely to initiate development projects and supervise external consultants. By contrast, the quality of realized outputs is not impacted by parenthood. Mothers increasingly sort into positions with lower promotion potential and greater scope for home-based work, where child penalties tend to be smaller. Together, these findings point to an advancement–flexibility trade-off: following childbirth, mothers shift away from responsibilities and positions conducive to career advancement, without persistent declines in observable performance.

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1 Introduction

The arrival of children leads to a large and persistent divergence in the labor market trajectories of women and men. Following childbirth, women experience sharp and lasting declines in earnings and career advancement, while men's trajectories remain largely unchanged (Kleven et al., 2019a; Kuziemko et al., 2018; Berniell et al., 2024a). These child penalties account for a substantial share of gender gaps in earnings and in representation in high paying and leadership positions (Kleven et al., 2019b; Angelov et al., 2016; Olivetti and Petrongolo, 2017). Despite extensive evidence documenting their prevalence across countries (Kleven et al., 2025), we know surprisingly little about how they emerge.

Child penalties can arise through several mechanisms. Some are visible in standard labor market data: mothers may reduce labor supply, change employers, or leave the labor force altogether. But even among women who remain with the same employer, parenthood may change the assignments they receive, the outputs they produce, when and where they work, the jobs they occupy, or how managers evaluate and reward their performance. Existing data rarely allow these mechanisms to be studied jointly.[1] As a result, even when child penalties are documented within organizations, it remains largely unclear where they originate.

This paper opens this black box of how child penalties emerge within organizations by studying how parenthood affects the careers of highly skilled employees within the World Bank Group. Using exceptionally rich administrative data and a heterogeneity robust event-study difference-in-differences design that exploits variation in the timing of first childbirth among eventual parents (de Chaisemartin and D'Haultfoeuille, 2024), we estimate the effects of parenthood on earnings, grade progression, and performance evaluations, and examine how parenthood changes employees' responsibilities, outputs, time use, work arrangements, and movement across jobs. Together, these outcomes provide a comprehensive picture of how careers evolve after childbirth within a single organization.

Our main findings can be summarized as follows. First, the motherhood earnings penalty is primarily an advancement penalty. Mothers' earnings remain 5.4 percent below their counterfactual trajectory six years after childbirth. This divergence is primarily driven by substantially slower progression to higher-paying grades. By year six, mothers have missed out on roughly one quarter of a grade promotion relative to their counterfactual trajectory, on average. By contrast, declines in their performance ratings

[1] Labor force surveys provide limited information on employers, while administrative datasets typically observe earnings and promotions but not employees' responsibilities, work arrangements, productivity, or the evaluation processes that shape career progression.

that determine annual salary increases are temporary and largely disappear within a few years.

Second, parenthood primarily reshapes the allocation of responsibilities rather than the quality of outputs. Following childbirth, mothers become substantially less likely to take on leadership responsibilities such as initiating new development projects and managing external consultants, whereas fathers do not exhibit such changes. Women also reduce work-related travel more sharply than fathers. Home-based work increases for both mothers and fathers in the later post-birth years, although the estimates are imprecise. By contrast, we find much less evidence that parenthood affects the quality of realized outputs. We detect little robust evidence of changes in ex post project success, or research impact.

Third, motherhood reshapes women's careers through sorting within the organization. Following childbirth, mothers become less likely to switch jobs and increasingly sort into positions with lower promotion potential and greater opportunities for home-based work. Motherhood penalties are also larger in travel-intensive jobs and tend to be smaller in jobs that can be performed from home. Together, these findings suggest that mothers trade career advancement for greater flexibility in balancing work and family responsibilities.

Finally, we find little evidence that managers or gender norms shape the motherhood penalty. The earnings penalty varies little with manager characteristics or employees' inherited gender norms, and mothers are not evaluated differently than fathers conditional on observable performance.

This paper makes several contributions to the literature. First, it sheds light on the mechanisms underlying child penalties by examining how careers evolve within an organization following parenthood. Prior work using linked employer-employee data links parenthood pay gaps to worker-firm matching (Wilner, 2016) and to missed internal promotions within a single firm (Lucifora et al., 2021) but evidence on how these penalties emerge remains limited. Using unusually rich personnel data, we show that parenthood reduces mothers' participation in leadership responsibilities such as initiating development projects and supervising external consultants, while having comparatively little effect on the quality of realized outputs. These results connect the child-penalty literature to the literature on task assignments and career advancement, which has shown that women are more likely to undertake non-promotable tasks (Babcock et al., 2017), and less likely to be assigned visible, promotion-enhancing responsibilities (Bircan et al., 2025). Our finding of little decline in output quality contrasts with evidence of lower measured performance following motherhood among U.S. marines, lawyers, and scientists (Healy and Heissel, 2026; Azmat and Ferrer, 2017; Kim and Moser, 2025).

Second, we show that motherhood induces sorting within the internal labor market. Prior work emphasizes the role of workplace flexibility and temporal demands in generating gender gaps (Goldin, 2014; Abraham, 2017; Hotz et al., 2018; Bøler et al., 2018). Relatedly, Tannenbaum and Timpe (2025) show that mothers sort away from leadership-intensive occupations after childbirth. We complement this evidence by documenting sorting across jobs within an organization: mothers become less likely to switch jobs and increasingly sort into positions more amenable to home based work but weaker promotion prospects, where child penalties tend to be lower. Together, these patterns point to an advancement-flexibility trade-off, as mothers move toward jobs more compatible with caregiving responsibilities.

Third, we contribute to the literature on gender norms and labor-market outcomes (Blau and Kahn, 2017; Olivetti and Petrongolo, 2017; Alesina et al., 2013; Fernández, 2013; Kleven, 2022; Kleven et al., 2024; Åslund et al., 2025). Comparing employees from more than 190 countries under a common compensation and promotion system, we find little evidence that inherited cultural norms or observable manager characteristics predict the magnitude of the penalty. Instead, job demands appear more salient in this setting. Although our analysis concerns a single organization, this common institutional environment is particularly informative for high-skill multinational employers with standardized pay systems and centralized promotion rules.

The remainder of the paper is organized as follows. Section 2 describes the institutional setting and the data used in the analysis. Section 3 outlines the empirical strategy. Section 4 documents the motherhood earnings penalty and shows that it is driven primarily by slower progression to higher grades rather than persistent differences in performance evaluations. Section 5 investigates the mechanisms underlying this penalty, examining how parenthood changes employees' responsibilities, work arrangements, output quality, and within-firm sorting. Section 6 then examines heterogeneity in the motherhood penalty by managerial and individual characteristics, and tests whether mothers are differentially evaluated conditional on observable performance. Finally, Section 7 concludes.

2 Institutional setting and data

This section describes the institutional setting and data. We first provide background on the World Bank Group, then introduce the various datasets used in the analysis, and conclude with descriptive statistics for the estimation sample.

2.1 Institutional setting

The World Bank Group (WBG) is a multilateral development lender that finances development projects and provides policy advice worldwide. It employs approximately 15,000 staff under a common human-resource framework governing compensation, grade progression, and performance evaluation. Most staff are based at its headquarters in Washington, DC, where they design, supervise, and evaluate development projects and conduct analytical and policy work. Many of these responsibilities require close interaction with client governments and extensive international travel.

Professional staff are organized within a common grade structure that determines both their position in the organizational hierarchy and their salary range. Salaries increase through two channels: annual salary increases and progression to a higher grade. Internationally recruited professional staff typically enter at grades GE (analyst) or GF (professional) and may subsequently progress to more senior professional and managerial grades. Staff at grades GE and above are not compensated for overtime, so earnings do not vary directly with hours worked. Grade progression is not automatic but depends on sustained performance, managerial assessments, and the availability of higher-grade positions. Because each successive grade is associated with a higher salary range, progression typically results in a substantial increase in earnings.[2]

Employees are evaluated annually through a standardized five-point performance rating system, with a rating of 3 indicating satisfactory performance and ratings of 4 or 5 indicating performance above expectations.[3] Ratings are a key determinant of annual salary increases and inform decisions about grade progression. Distributional guidelines cap the share of top ratings within each unit, introducing a relative component into evaluations. Annual salary increases are also generally smaller for employees closer to the top of their grade's salary range.[4]

The World Bank offers extensive family-benefits and is strongly committed to gender equity. Primary and secondary caregivers are entitled to 100 and 50 calendar days of paid parental leave, respectively. Staff also have access to financial support for family planning and an on-site childcare center. Although part-time employment is rare, staff have access to flexible work arrangements, including home-based work.[5] The institution systematically monitors gender parity in hiring, grade progression, and compensation

[2]Upon progression to a higher grade, managers may grant a salary increase ranging from 3 to 23 percent of the staff member's annual salary.

[3]Ratings of 1 or 2 indicate unsatisfactory performance and may lead to termination.

[4]The schedule of salary adjustments varies across years with inflation and budget availability.

[5]Staff are also entitled to at least 26 working days of annual leave, 15 days of sick leave, and up to 5 days of short-term family leave each year.

and holds managers accountable for progress toward its diversity objectives. Together, these institutional features make the WBG a useful setting for examining child penalties in pay and career progression.

2.2 Data

We combine administrative personnel records with survey, project, and country-level data to study career trajectories of employees at the World Bank Group (WBG). Our primary source is the Human Resources Longitudinal Dataset first compiled by Das and Joubert (2023), which originally covered fiscal years (FY) 1988–2015 and which we extend to FY2024.[6] The data cover all staff except short-term consultants and contain rich sociodemographic, professional, and organizational information.

The personnel records contain information on age, gender, marital status, nationality, education, and household composition, which we use to identify employees' first births. Because actual birth dates are unavailable, we define first birth as the year in which the number of self-reported dependent children increases from zero to one (or more), following Marchionni and Pedrazzi (2025).[7]

Professional and organizational characteristics include annual salary (net of taxes, in constant 2024 US dollars), grade, annual performance ratings, contract type, duty station (Headquarters or Country Office), and organizational unit. Promotions are identified as transitions to a higher grade, while annual performance ratings are available from 2000 onward. For the purposes of our analysis of job sorting, we define a job as a grade-by-unit combination, allowing us to characterize jobs according to attributes such as promotion and travel intensity.[8] From 2014 onward, employees can also be linked to their direct manager, allowing us to measure manager characteristics such as gender, parenthood status, and performance ratings.

To measure employees' responsibilities, output, and work patterns, we augment the HR records with six additional annual data sources. First, we match employees to World Bank projects using Task Team Leader (TTL) names extracted from Implementation Completion and Results Reports (ICRs). We then link the matched projects to information from the World Bank Project Portal and ex-post outcome ratings from the Inde-

[6] A fiscal year runs from July of year $t-1$ to June of year t. We refer to fiscal years by the calendar year in which they end.

[7] As a robustness check, we cross-validate first-birth identification with administrative parental leave records. Restricting attention to individuals observed from 2010 onward, 89% of mothers and 82% of fathers took parental leave around the time of birth, providing strong support for the accuracy of this identification.

[8] Unit size ranges between one and 600 employees, with an average of 30 and a median of 21. Mobility across units is non-negligible, with 21% of employees changing units each year.

pendent Evaluation Group (IEG), allowing us to measure project initiation, supervision, budgets, and outcomes.[9] Second, we link staff to the short-term consultant contracts they initiate from 2007 onward. Third, we identify staff listed as (co-)authors of Policy Research Working Papers and record annual publication counts and paper downloads from the Open Knowledge Repository. Fourth, travel records (2010–2024) capture the frequency, duration, purpose, and destination of official missions. Fifth, administrative leave records measure annual usage of sick, family, annual, parental, and other leave types.[10] Finally, we compile data on flexible work arrangements, including compressed schedules and telework.

To examine heterogeneity in child penalties, we supplement the administrative records with measures of workplace attitudes and inherited gender norms. Workplace attitudes are measured using the Culture Wizard (CW) survey, completed by approximately 6,000 employees between 2017 and 2022.[11] Using employees' nationality, we also assign each employee a gender-norm progressivity index following Kleven (2022), Bussolo et al. (2024), and Berniell et al. (2024b). The index is constructed from the World Values Survey (2017–2022) as the share of respondents expressing progressive views on women's labor market participation and maternal employment.[12]

We focus on headquarters-based employees who entered at grade GE or above, corresponding to the World Bank's internationally recruited professional staff, who are observed at least once before and once after childbirth.[13] After excluding employees with employment gaps around childbirth or insufficient observation windows, the final sample includes 1,617 mothers and 1,710 fathers (see Table A.1 in the Appendix). Estimation samples vary across outcomes because several linked datasets are available only for subsets of employees or shorter time periods; Appendix Table A.2 summarizes data availability by outcome.[14]

[9] Projects rated "moderately satisfactory" or above—approximately 76% of rated projects—are classified as successful.

[10] Emergency and compensatory leave are negligible.

[11] Administered by RW3 Culture Wizard, the survey measures employees' attitudes along eight cultural dimensions.

[12] It is computed as the share of respondents in each country who disagree with the statements: (i) when jobs are scarce, men should have more right to a job than women, (ii) being a housewife is just as fulfilling as working for pay, and (iii) when a mother works for pay, her children suffer.

[13] This restriction excludes administrative support positions (grades GA–GD), which follow distinct career paths with limited opportunities to progress into the professional grade structure. We also exclude country-office staff because birth reporting is less reliable, as evidenced by a spike in reported dependent children in 2005 that likely reflects reporting changes rather than actual fertility (Figure A.1).

[14] Information on the probability of work-related travel is available for 1,615 parents, while conditional measures of travel duration and the number of countries visited are available for 931. Leave records cover 1,557 parents. Data on the hiring of external consultants are available for 1,936 parents, while information

2.3 Descriptive statistics

Table 1 reports summary statistics for individuals in our sample measured in the year before the birth of their first child over the period 1988–2024. Prior to first childbirth, women are on average 35.9 years old, 78% are married or partnered, and 24% have a PhD as their highest educational attainment. Fathers-to-be are about 1.2 years older than women, 11 percentage points more likely to be married, and 5 percentage points more likely to have a PhD.

on compressed work schedules and home-based work covers 2,092 and 1,393 parents, respectively. Finally, around 700 individuals in our sample responded to the Culture Wizard survey.

Table 1: Summary statistics in the year before childbirth

	Mothers	Fathers	Diff
Demographics			
Age	35.86	37.05	-1.19***
Married / partnered	0.78	0.89	-0.11***
Has doctoral degree	0.24	0.29	-0.05**
Selective entry program	0.18	0.17	0.01
Career progression			
Annual salary (constant 2024 USD)	137816	146493	-8678***
Pr. of promotion	0.12	0.09	0.03**
Grade GE – analyst	0.18	0.10	0.07***
Grade GF – professional	0.49	0.48	0.01
Grade GG – senior professional	0.30	0.35	-0.05***
Grade GH-GK – managers, directors	0.03	0.06	-0.03***
Open-ended contract	0.49	0.56	-0.07***
High performance ratings	0.40	0.44	-0.04*
Outputs			
Pr. of initiating a new project	0.12	0.10	0.02
Pr. of supervising at least 1 project	0.62	0.59	0.03
Pr. of successful ex-post project rating	0.80	0.78	0.02
Pr. of co-authoring a working paper	0.05	0.11	-0.06***
Downloads of published working papers	134.93	374.33	-239.39***
Pr. of hiring external consultants	0.11	0.10	0.01
Time use			
Pr. of work-related travel	0.79	0.80	-0.01
Duration of work-related travels (days/year)	35.52	37.72	-2.20
Sick and family leave (days/year)	3.85	2.14	1.71***
Total leave (days/year)	24.26	20.94	3.32***
Home-based work (weeks/year)	3.69	3.38	0.31
Observations	1617	1710	

Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024, and all statistics are measured in the year before the first birth. Annual salary is net of taxes and measured in constant 2024 US dollars. The duration of work-related travel is conditional on traveling. Project- and working-paper–related measures are conditional on units that have ever held a project or published a working paper, respectively.

In terms of employment and career outcomes, prior to childbirth, women earn annual salaries that are 8,678 USD lower than those of men (137,816 versus 146,493 USD).[15] Mothers-to-be are slightly more likely to progress to a higher grade in the year before childbirth than fathers-to-be (12 versus 9 percent). Men are more likely to occupy more senior grades within the organizational hierarchy.[16] Women are 7 percentage points less likely to hold an open-ended contract and receive slightly lower performance ratings, although the latter difference is significant only at the 10% level.

Turning to responsibilities and output, we find no statistically significant gender differences in the probability of initiating a new project approved by the Board or supervising at least one project prior to first childbirth.[17] We also find no significant gender differences in the probability of receiving a successful ex-post project rating (80% for mothers-to-be versus 78% for fathers-to-be). There is also no significant gender difference in the probability of supervising external consultants. In terms of research output, fathers-to-be are more likely to have co-authored a working paper (11% versus 5%), and their published working papers receive substantially more downloads (374 versus 135).

Turning to time use and work arrangements, professional jobs at the World Bank Group are highly travel-intensive. Approximately four-fifths of staff travel internationally for work each year and, conditional on traveling, spend more than a month away on average. There are no statistically significant gender differences in either the probability of traveling or, conditional on traveling, the length of work-related travel. However, leave-taking patterns differ by gender: before childbirth, mothers-to-be take 1.7 more days of sick or family-related leave and 3.3 more days of leave overall per year than fathers-to-be. Finally, there is no statistically significant difference in the use of home-based work prior to childbirth, which averages 3.7 weeks annually for mothers-to-be and 3.4 weeks for fathers-to-be.

3 Empirical Strategy

Our empirical strategy estimates the impact of first parenthood on career outcomes by tracing employees' trajectories around the birth of their first child, following the event-study approach of Kleven et al. (2019a). Because employees who become parents may differ systematically from those who remain childless, we restrict the comparison group

[15] Salaries are measured in constant 2024 U.S. dollars.

[16] See Das and Joubert (2023) for an analysis of gender pay gaps across positions within the World Bank Group.

[17] Project-related measures are conditional on employment in a unit that ever managed a project. Working-paper measures are conditional on employment in a unit that ever published a working paper.

to employees who eventually become parents. Identification therefore comes exclusively from variation in the timing of first birth.

Employees enter parenthood in different calendar years, resulting in staggered treatment timing. We therefore estimate event-study coefficients using the heterogeneity-robust difference-in-differences estimator of de Chaisemartin and D'Haultfoeuille (2024), which compares each cohort of new parents only to employees who have not yet had their first child, thus avoiding the contaminated comparisons that arise when already-treated units serve as controls. The parameter of interest is the actual-versus-status-quo (AVSQ) effect: the causal effect of entering parenthood at a given event time relative to the counterfactual in which first parenthood is delayed beyond that horizon.

Let G_i denote the calendar year in which employee i has a first child, and let $\tau = t - G_i$ denote event time, so that $\tau = 0$ is the year of birth. We estimate all specifications separately for women and men, but suppress the gender subscript for expositional simplicity. Let $\bar{Y}_{g,t}$ denote the average outcome among employees whose first child is born in year g, measured in calendar year t, and let $\Delta\bar{Y}_g(\tau) = \bar{Y}_{g,g+\tau} - \bar{Y}_{g,g-1}$ denote the change in outcomes for this cohort between the year before birth and event time τ. Let $C(g,\tau)$ denote the control group of employees whose first birth occurs after year $g + \tau$, and $\Delta\bar{Y}_{C(g,\tau)}(\tau)$ the corresponding average change for this control group.

For each first-birth cohort the estimator computes the cohort-specific difference-in-differences estimator

$$\widehat{\mathrm{DID}}_{g,\tau} = \Delta\bar{Y}_g(\tau) - \Delta\bar{Y}_{C(g,\tau)}(\tau), \tag{1}$$

which compares the change in outcomes for employees entering parenthood in year g with the change among otherwise similar future parents. The event-study coefficient at each horizon τ, δ_τ^{AVSQ}, averages these cohort-specific AVSQ effects across birth cohorts.[18] All specifications include individual and calendar-year fixed effects, adjust for age, and are estimated separately for women and men.

To facilitate comparisons across outcomes, we follow Kleven et al. (2019b) in reporting the estimated effects in percentage terms and, as in Melentyeva and Riedel (2025), normalize them relative to the mean outcome in the year before birth, computed within gender-specific five-year age-at-first-birth cells.

A causal interpretation of the estimates rests on three identifying assumptions. First, outcomes for treated and control workers must follow parallel trends in the absence of the

[18] Specifically, $\delta_\tau^{AVSQ} = \sum_{g\in\mathcal{G}_\tau} \omega_{g,\tau}\, \widehat{\mathrm{DID}}_{g,\tau}$, where $\mathcal{G}_\tau$ is the set of first-birth cohorts contributing to event time τ and the weights $\omega_{g,\tau}$, which sum to one, reflect each cohort's contribution. See de Chaisemartin and D'Haultfoeuille (2024).

birth. We assess the plausibility of this assumption by examining whether the pre-birth coefficients are close to zero, and free of any systematic trend. As shown in Section 4, this condition is satisfied for most of the outcomes we examine.[19]

Second, the identification strategy requires the absence of anticipation effects—that is, behavioral adjustments in the periods preceding the birth of the first child. Anticipation may operate through both long- and short-run channels. Long-run anticipation may arise if employees adjust their career choices or investments well before becoming parents (Melentyeva and Riedel, 2025; Adda et al., 2017). Our design limits concern: because the comparison group consists exclusively of employees who eventually become parents, identification does not rely on comparisons with permanently childless workers, which reduces the scope for systematic differences in early-career investments between the two groups. Short-run anticipation, in turn, would manifest as systematic movements in earnings or promotions in the years immediately preceding the first birth. We test for this by inspecting the pre-birth coefficients of our event studies; as reported in Section 4, these are generally small and statistically insignificant, which we read as evidence against meaningful short-run anticipation.

Third, identification requires that post-birth attrition is not systematically related to potential outcomes. Because employees are observed only while they remain employed by the World Bank Group, estimates may be biased if departures following childbirth are selective. Two pieces of evidence, however, suggest this is unlikely to drive our results. First, mothers are not more likely to leave than women who have not (yet) had a child. In a linear probability model, mothers have an exit probability 3.1 percentage points lower than women without (or not yet with) children, and the difference shrinks as controls are added (Table A.3), showing they are, if anything, less likely to leave. Second, those who exit are negatively selected on their pre-birth characteristics. Parents who leave within three years of the first birth had, before childbirth, lower grades, performance ratings, and fewer active projects than those who remain, and were less likely to hold a PhD or to have entered through the selective entry program (Figure A.3, panel a). These differences are not driven by any single dimension: when all characteristics enter jointly in a single regression, exiters remain, if anything, negatively selected on observables (panel b). Given that those who leave come disproportionately from the lower part of the outcomes distribution, attrition would, if anything, bias our estimates toward zero, making them conservative.

[19] As an additional robustness exercise, we refine the control group by comparing employees of similar ages at the time of birth, following Melentyeva and Riedel (2025). This stacked DiD approach yields quantitatively similar estimates, especially for mothers, although the smaller sample makes the estimates less precise. The results are reported in Appendix Figure A.7

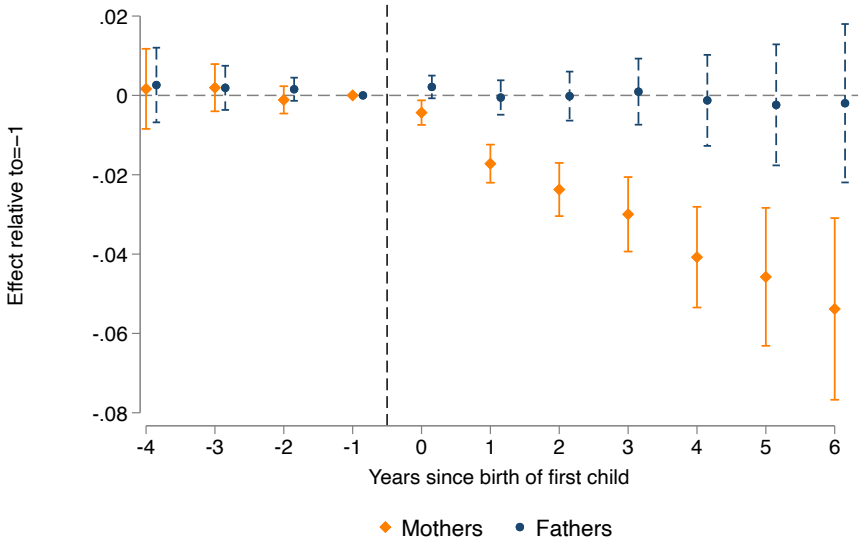
4 How large is the penalty?

We now turn to our results. All specifications are estimated separately for mothers and fathers. Figure 1 presents dynamic event-study estimates and 95 percent confidence intervals tracing earnings from three years before to six years after the birth of the first child, controlling for age and time trends. Coefficients are expressed relative to the year immediately preceding childbirth ($\tau = -1$) and divided by the average outcome conditional on age group in the pre-birth year (as previously explained in Section 3) to measure percentage changes relative to that baseline. We then examine career progression and performance ratings as potential channels driving the earnings divergence.

Figure 1 shows that pre-birth earnings coefficients are small and statistically indistinguishable from zero for both women and men, consistent with the no anticipation and parallel-trends assumptions. After childbirth, the earnings trajectories of mothers and fathers diverge sharply. Beginning in the year of birth, mothers' earnings grow more slowly than their pre-birth trend implies, declining by roughly 0.4 percent relative to their counterfactual earnings trajectory, and the gap widens thereafter. Six years after childbirth, mothers' earnings are approximately 5.4 percent below the level implied by their pre-birth trajectory. Over the first six years after childbirth, mothers earn cumulatively approximately USD 29,376 less than implied by the continuation of their pre-birth earnings trajectory. In contrast, fathers' earnings trajectories show no systematic response to childbirth. Averaged across the post-birth period, the estimated child penalty, defined as the difference between fathers' and mothers' earnings, is approximately 3 percent and statistically significant at the 1 percent level.[20]

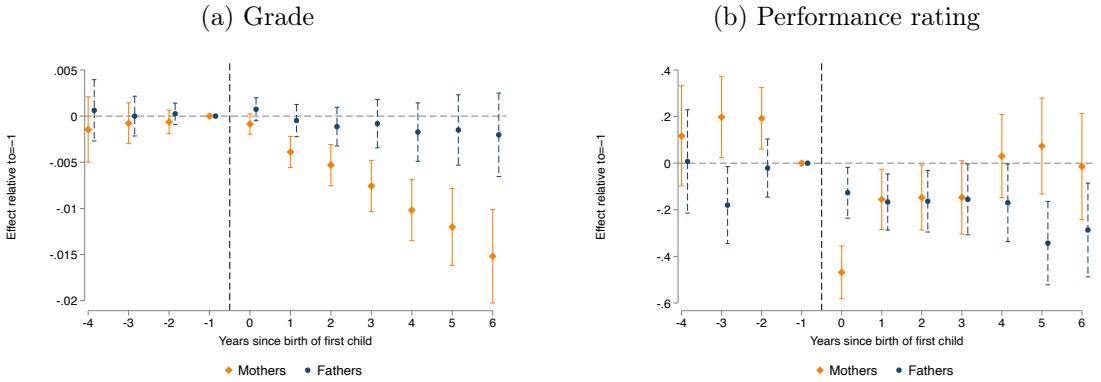
[20]This value is computed as the simple average, across all post-birth periods, of the difference between the estimated coefficients for mothers and fathers (net of the pre-birth average, which is approximately zero for both groups). Statistical significance is assessed using a bootstrap procedure with 500 replications.

Figure 1: Impact of first childbirth on earnings



The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the mother–father difference at each event time are reported in Table A.6 in the Appendix.

Figure 2: Impact of first childbirth on career progression



Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. Panel (a) covers the period 1988-2024, and Panel (b) the period 2000-2022. Panel (a) shows the employee's grade in the salary hierarchy (higher = more senior); since grade is an ordinal ladder, the economically meaningful magnitude is expressed in grade steps in the text (roughly one quarter of a grade six years after birth). Panel (b) shows an indicator equal to one for a high performance rating (a rating of 4 or 5 on the five-point scale). Panel (a) reports grade effects relative to the pre-birth mean, as for all other outcomes. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the mother–father difference at each event time are reported in Table A.6 in the Appendix.

Within the organization, earnings can increase through two channels: promotion to a higher grade or salary increases tied to annual performance evaluations within grade. Panel 2a examines the first channel by tracing employees' position in the grade hierarchy around the birth of their first child. For fathers, the estimated effects are economically negligible and statistically indistinguishable from zero throughout the post-birth period. For mothers, by contrast, a clear and persistent shortfall in grade progression emerges after childbirth and widens over time. Six years after the first birth, mothers are about one quarter of a grade level below their counterfactual trajectory, implying that they have, on average, missed roughly one quarter of a promotion. Consistent with this pattern, Appendix Figure A.4 traces the corresponding flow measure—the probability of being promoted in a given year—and shows that mothers' annual promotion probability is roughly 53 percent lower than in the year before birth over much of the post-birth

period, whereas the estimate for fathers is small and statistically insignificant.[21]

Beyond promotions, salary growth within grade depends on annual performance evaluations (see Section 2.1). Mothers experience a sharp decline in performance ratings in the year of first childbirth. Ratings recover partially but remain significantly below pre-birth levels for the following three years before fully recovering. Fathers also experience a decline in performance ratings around childbirth, although the drop in ratings in the year of childbirth is considerably smaller for them. In the years following childbirth, the estimates for mothers and fathers are broadly similar in magnitude, but mothers' ratings recover while fathers' ratings remain persistently below their pre-birth levels. Because the estimates for mothers exhibit modest pre-trends, these results should be interpreted cautiously. Taken together, the evidence suggests that slower promotion, rather than persistent differences in performance evaluations, is the primary driver of the motherhood earnings penalty. Mothers also become somewhat less likely to hold permanent contracts following childbirth, although this effect is considerably smaller than the decline in promotion rates and no comparable pattern is observed for fathers (Appendix Figure A.5).

Our estimated child penalty of 3 percent is substantially smaller than those typically reported in the literature. Using administrative and survey data, Kleven et al. (2019a) estimate long run earnings penalties, measured as the average annual penalty between five and ten years after childbirth, ranging from 21 percent in Denmark to 61 percent in Germany. Kleven (2022) estimate a penalty of 33 percent in the United States. Part of this difference likely reflects workforce composition, as these studies examine the labor force as a whole. Among college educated women in the United States, the estimated penalty falls to 23 percent (Kleven, 2022). A more comparable benchmark is provided by Lucifora et al. (2021), who estimate a 9 percent earnings penalty within a single large French firm, primarily arising through missed promotions and slower progression up the firm's internal job ladder. The smaller penalty we document at the World Bank may reflect institutional features, such as flexible work arrangements, generous parental leave, and gender equity policies, as well as the selection of highly educated and career oriented workers into the organization.

[21] Grade is treated as a continuous stock measure of cumulative career progression: it records the position employees have reached in the organizational hierarchy at each event time and therefore incorporates all promotions attained up to that point. Because successive grades are equally spaced, a difference of one grade unit corresponds to one promotion step, so the estimated shortfall is invariant to the scale used to label grades. Although grade changes discretely at the individual level, the average event-study effect can take fractional values.

5 How do careers change after childbirth?

The previous section documented a motherhood earnings penalty and slower career progression. We now examine how careers evolve after childbirth using the same event-study framework used to study earnings, promotions and performance ratings, focusing on changes in employees' responsibilities and work outputs, the quality of their realized outputs, the way they work, and the types of jobs they hold.

5.1 How does parenthood impact employees' responsibilities and production?

We begin by examining whether parenthood changes the responsibilities employees take on and the outputs they produce. Figure 3 summarizes impacts on leadership responsibilities, project outputs, and knowledge production. Project-related outcomes are analyzed only for staff in units that ever managed projects, while working-paper outcomes are restricted to staff in units that have ever produced Policy Research Working Papers.[22]

Figure 3a shows that motherhood substantially and significantly reduces women's propensity to originate World Bank projects and bring them to the Executive Board for approval as designer Task Team Leaders. Mothers are already about 46 percent less likely to initiate a new project in the year of childbirth relative to their pre-birth baseline of roughly 12 percent (a decline of about 5.5 percentage points), and the effect becomes more pronounced over time. In contrast, fathers' propensity to initiate new projects remains unchanged following childbirth and shows a slight increase in the last years, although it is only statistically significant at the 10% level. Project initiation is a demanding, high-profile responsibility requiring extensive client engagement and international travel, and is closely linked to career progression, as shown in Section 6.1. Indeed, descriptive evidence from multinational firms highlights access to challenging assignments as an important source of visibility and career advancement for women (Hewlett and Rashid, 2010).

The likelihood of managing an active project as a Supervisor Task Team Leader also declines after childbirth, as is shown in Figure 3b. By year six, mothers are approximately 33 percent less likely to manage at least one project relative to their pre-birth baseline. In contrast to project initiation, however, this pattern is not unique to mothers: it also occurs among fathers, although to a smaller extent, and the difference between the two

[22] In our sample, 67 percent of women and 67 percent of men worked, prior to childbirth, in units that had ever managed projects; the corresponding shares for units that had ever produced working papers are 47 percent and 46 percent, respectively.

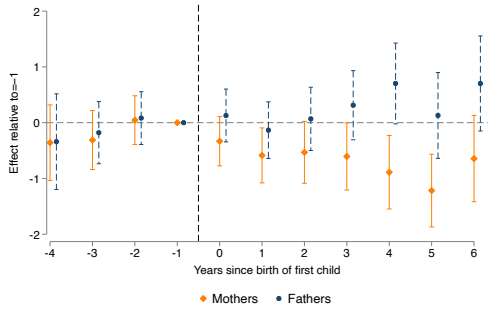
groups is not statistically significant.

Figure 3c examines another leadership responsibility, the management of short-term consultants (STCs). Following childbirth, mothers become less likely to supervise at least one external consultant, with negative and often statistically significant estimates across the post-birth period. Estimates for fathers generally point in the opposite direction but are less precise at individual event times. Averaged across the post-birth period, mothers are 32.5 percent less likely to supervise external consultants relative to their pre-birth baseline, while fathers exhibit a 35.4 percent increase. The difference between the two groups is large and statistically significant at the 1 percent level.

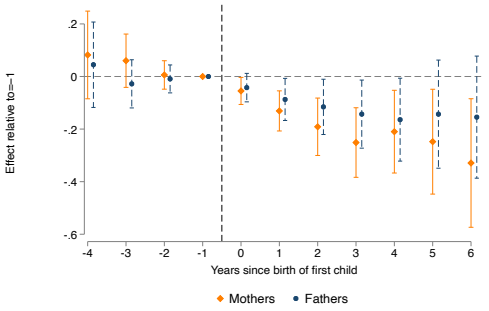
Finally, parenthood does not appear to impact research productivity as proxied by (co-)authorship of World Bank Policy Research Working Papers, either for men or for women, as is shown in Figure 3d. Although the estimates suggest some decline among fathers, the average difference between mothers and fathers across the post-birth period is not statistically significant.

Figure 3: Impact of first childbirth on responsibilities and output

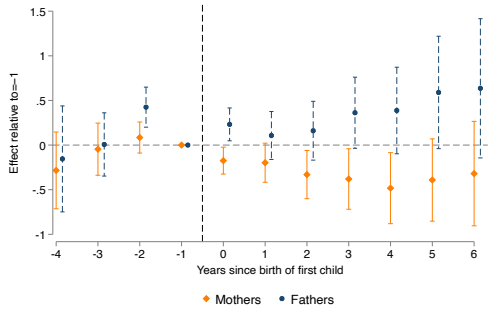
(a) Pr. of initiating a new project



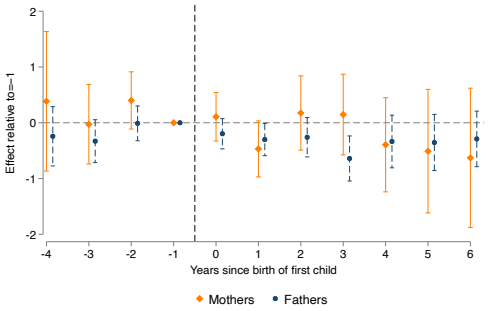
(b) Pr. of managing at least one project



(c) Supervising external consultants



(d) Working papers co-authored



Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. Panels (a), (b), and (d) cover the period 1988–2024, and panel (c) the period 2007–2024. Project- and leadership-related outcomes (panels a–c) are restricted to staff in units that ever carried out a project, and the working-paper outcome (panel d) to staff in units that ever produced a working paper. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the mother–father difference at each event time are reported in Table A.7 in the Appendix.

5.2 Does parenthood affect the quality of realized outputs?

The preceding results show that parenthood substantially changes the responsibilities employees take on. Does it also affect the quality of the work they produce? To address

this question, Figure 4 examines the impact of parenthood on two proxies of the quality of work output, notably project outcome rating and downloads of new working papers. These outcomes are not observed until projects and working papers are completed and may partly reflect work performed before childbirth. The estimates should therefore be interpreted as effects on the quality of realized outputs rather than on employees' contemporaneous productivity.

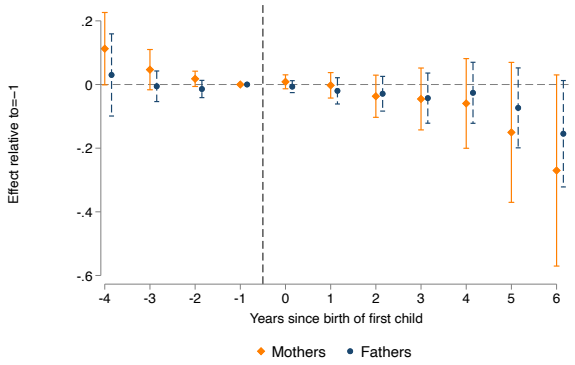
To start with, Figure 4a examines the probability that projects that employees are managing receive a successful ex-post outcome rating from the Independent Evaluation Group. Childbirth does not appear to impact this probability, either for mothers or for fathers.

Turning to research reach, Figure 4b provides no evidence of a systematic effect of parenthood on research reach, proxied by downloads of newly published World Bank Policy Research Working Papers. For both mothers and fathers, the estimates are imprecise and display no clear or persistent post-birth pattern.

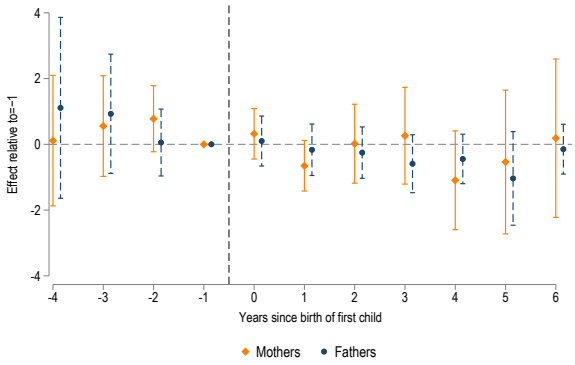
Overall, parenthood primarily reshapes the allocation of responsibilities rather than the quality of outputs. Following childbirth, mothers become less likely to initiate new projects and take on leadership responsibilities. Among the outputs they continue to produce, we find no evidence of changes in ex-post project ratings, or working-paper reach. Together with the absence of persistent effects on performance ratings documented in Section 4, these findings suggest that the motherhood penalty operates primarily through changes in responsibilities and work allocation rather than a broad deterioration in performance. This pattern points to changes in the allocation of work, a theme we return to in Section 5.4.

Figure 4: Impact of first childbirth on output quality

(a) Probability that a completed project receives a successful ex-post rating



(b) Downloads of newly published working papers



Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and after childbirth, entered at grade GE or above, and are based at Headquarters. The data cover 1988–2023. Panel (a) includes staff in units that ever carried out a project; panel (b) includes staff in units that ever produced a working paper. In panel (a), the outcome is conditional on having supervised a rated project. Each coefficient captures the change at event time τ relative to the year before childbirth ($\tau = -1$). Estimates are reported separately for mothers and fathers and control for age, individual fixed effects, and year fixed effects. Outcomes are expressed relative to their average at $\tau = -1$ within gender-by-age-at-first-birth cells. Bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the mother–father difference at each event time are reported in Table A.8 in the Appendix.

5.3 How does parenthood reshape employees' time use and work arrangements?

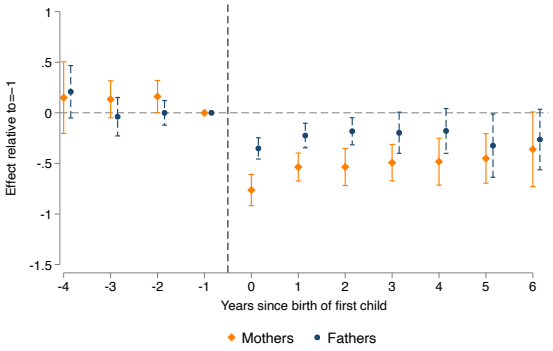
Next, we examine whether parenthood changes how employees organize their work, focusing on travel, leave, home based work and schedules. First, Figure 5a shows that both mothers and fathers reduce work-related travel following childbirth, although the decline is markedly larger for mothers. Beyond the natural decrease in the first year after

birth, conditional on traveling, mothers reduce their days traveled by about 51.8 percent, and this reduction persists over time (on average, it represents 18 fewer days per year). Fathers also reduce their travel following childbirth, but the estimated decline is smaller and not statistically significant in some post-birth years; by year six, the point estimates for mothers and fathers are similar, but the decline remains negative and statistically significant at the 10 percent level for mothers, whereas the estimate for fathers is not statistically distinguishable from zero. Appendix Figure A.6 shows that, conditional on traveling, both mothers and fathers visit fewer countries after childbirth, with a particularly large initial reduction among mothers and more comparable estimates for the two groups later in the post-birth period. Moreover, mothers become about 10 percentage points less likely to travel for at least 60 days per year, whereas fathers experience a smaller but persistent decline. These findings suggest that parenthood reduces employees' ability to undertake travel-intensive work, particularly among mothers in the early post-birth years.

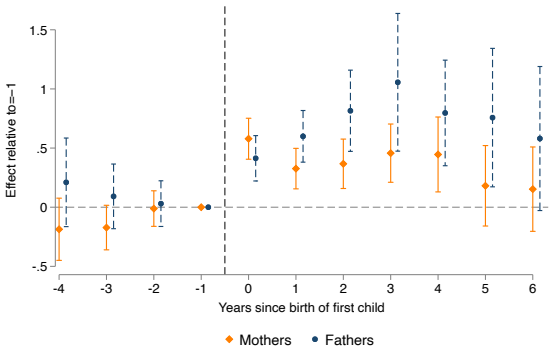
Second, Figure 5b shows that both fathers and mothers significantly increase their use of sick and family leave following childbirth, although the estimated increase is larger for fathers. One possible explanation for this difference is that fathers make less use of sick and family leave prior to parenthood, leaving greater unused leave entitlements that can be drawn upon after childbirth.

Figure 5: Impact of first childbirth on time use and work arrangements

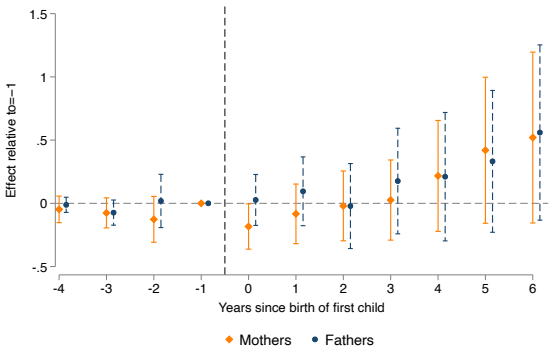
(a) Days of work-related travel



(b) Sick and family leave (days per year)



(c) Home-based work (weeks per year)



Notes: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and after childbirth, entered at grade GE or above, and are based at Headquarters. Panels (a) and (b) cover 2010–2024; panel (c) covers 2011–2024. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions controlling for age, individual fixed effects, and year fixed effects. They are expressed relative to the average outcome at $\tau = -1$, computed within gender-by-age-at-first-birth cells. Bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the mother–father difference at each event time are reported in Table A.9 in the Appendix.

Third, Figure 5c shows that the use of home-based work increases for both mothers and fathers in the later post-birth years. Although the point estimates are positive, they are imprecisely estimated and not statistically distinguishable from zero.

Overall, parenthood is associated with adjustments in work patterns for both mothers and fathers. Mothers reduce work-related travel more than fathers, whereas fathers increase their use of sick and family leave more than mothers. Averaged across the post-birth period, the mother–father difference is statistically significant at the 5 percent level for work-related travel and at the 10 percent level for sick and family leave.

5.4 Sorting

Childbirth may affect earnings not only by slowing career progression within jobs, but also by changing the types of jobs employees hold. Sorting across firms contributes importantly to child penalties (Casarico and Lattanzio, 2023; Bruns, 2019). Here, we ask whether similar sorting occurs within a single organization. Specifically, we examine whether mothers and fathers move into jobs with different characteristics following childbirth, potentially trading off career progression for work-life balance (Goldin, 2014). We first examine whether parents sort into different jobs and then assess which jobs are associated with larger penalties.

5.4.1 Do parents move into different jobs?

To examine whether parents sort into different jobs following childbirth, we first characterize jobs according to their promotion potential, travel intensity, and workplace flexibility. We define a job as the combination of an organizational unit (OUI) and grade, so that employees in the same organizational unit but at different levels of the hierarchy are treated as holding different jobs. To avoid endogeneity, we estimate these job characteristics using the sample of non-parents only.[23] We then use the same event-study framework as before (see section 4) to examine whether mothers and fathers sort into jobs with systematically different characteristics following childbirth.

[23] Specifically, for each job attribute Y, we estimate

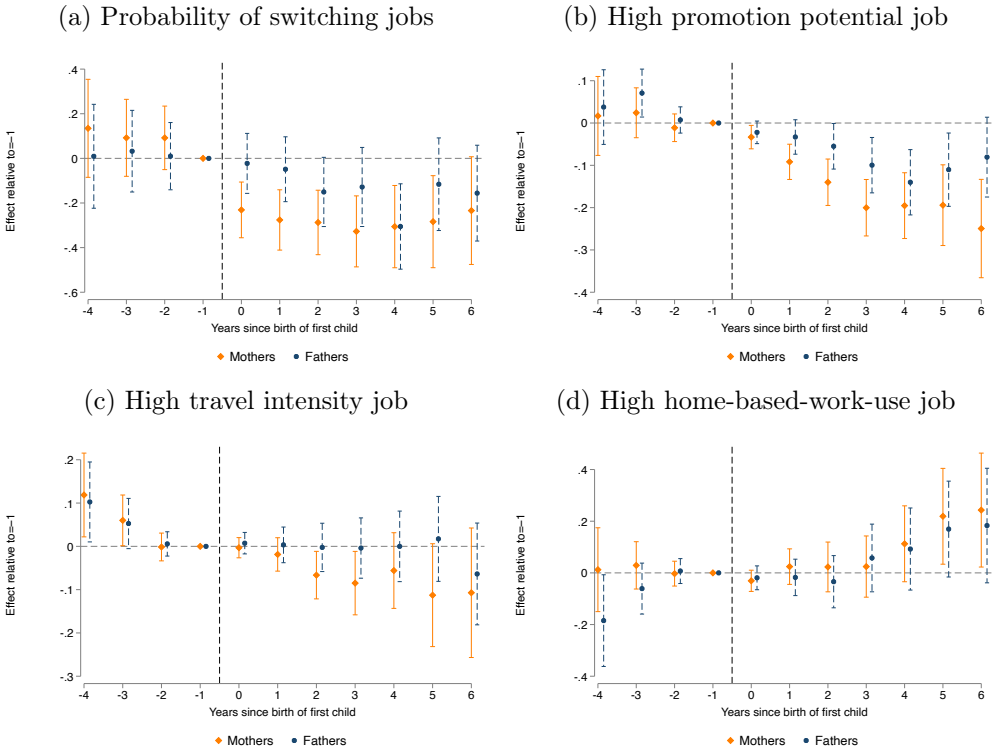
$$Y_{ijt} = \beta_0 + \beta_1 \,\text{tenure}_i + \beta_2 \,\text{tenure}_i^2 + \gamma \text{position}_i + \delta_j + \lambda_t + \varepsilon_{ijt}, \tag{2}$$

where δ_j denotes a job fixed effect and λ_t year fixed effects. The regression is estimated using non-parents only, so that the estimated job attributes are not themselves affected by parenthood. We classify jobs as having high or low values of each attribute according to whether the estimated fixed effect exceeds the median. A similar approach is used by Casarico and Lattanzio (2023). Results are robust to using the 75th percentile instead of the median as the cutoff.

Internal job mobility is common at the World Bank, including around the transition to parenthood: 76 percent of mothers and 78 percent of fathers switch jobs at least once within three years of first childbirth. These cumulative rates, however, mask a marked change relative to pre-birth mobility. In Figure 6, panel 6a shows that, relative to the year before birth, mothers' annual probability of switching jobs falls by around 30 percent after childbirth. In contrast, the estimates for fathers are generally smaller and less precise, with only occasional evidence of a decline in individual post-birth years. Thus, although internal mobility remains high in absolute terms, childbirth is associated with a relative slowdown in job switching among first-time mothers.

The remaining panels of Figure 6 examine the characteristics of the jobs held after childbirth. Panel 6b indicates that both mothers and fathers become less likely to hold jobs with high promotion potential after the first birth, but the decline is significantly larger and more persistent for mothers. By year six, mothers are 25 percent below their pre-birth level, while fathers show a smaller and less precisely estimated decline.

Figure 6: Impact of first childbirth on job characteristics



Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. Panel (a) shows the probability of switching jobs; in panels (b)–(d), job characteristics are measured using the job fixed effects (δ_j) obtained from Equation 2, estimated using non-parents only, and a job is coded as "high" in a given year if the corresponding fixed effect lies above the median across all jobs. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the mother–father difference at each event time are reported in Table A.10 in the Appendix.

At the same time as moving away from jobs conducive to advancement, they appear to move towards jobs that are more flexible and compatible with caregiving. Panel 6d reveals that both mothers and fathers increasingly sort into jobs where home-based work is more common in the years following childbirth, but the increase is only significant at the 10% level for mothers. Panel 6c suggests a similar shift away from high-travel jobs. Mothers' probability of working in these jobs falls by about 6.4% on average across the six

years after childbirth, though this effect is again only significant at the 10% significance level.[24]

5.4.2 Which job characteristics amplify the motherhood penalty?

The previous subsection showed that mothers gradually reallocate toward jobs with different characteristics following childbirth. We now ask whether these job characteristics shape the motherhood earnings penalty. To isolate differences across jobs from endogenous post-birth sorting, we classify jobs according to their pre-birth characteristics.[25] Focusing on women, Figure 7 examines heterogeneity in earnings effects by baseline job characteristics.[26]

Child penalties vary across job types. From the year of birth through the fourth post-birth year, mothers in high-promotion-potential jobs experience larger and statistically significant earnings penalties, whereas the estimates for mothers in low-promotion-potential jobs remain smaller and statistically indistinguishable from zero. Losses for the latter group become more pronounced only toward the end of the event window. For travel intensity, the pattern is similarly stark: mothers in high-travel jobs suffer a clear and persistent penalty, while those in jobs with low travel demands are largely unaffected, and the gap between the two groups widens over the observation window. These patterns are consistent with recent evidence from multinational firms showing that demanding job environments amplify gender gaps following parenthood (van der Straaten et al., 2024)

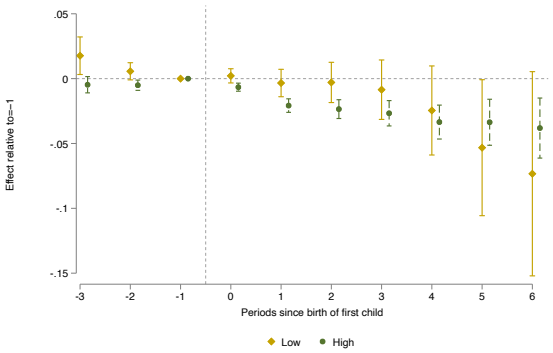
[24] We also investigate sorting along the gender and parental composition of jobs. Appendix Figure A.8 provides little evidence of systematic changes along either dimension.

[25] Figure A.11 in the Appendix shows results using contemporaneous job characteristics rather than characteristics fixed prior to the first birth. Results are broadly similar, though differences across groups are somewhat attenuated.

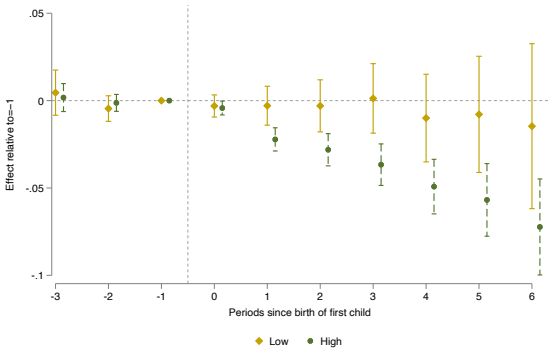
[26] Given that several of the variables used in the heterogeneity analysis are available only for a more limited time period, the figures focus on a slightly shorter window around the birth event for most outcomes.

Figure 7: Impact of first childbirth on women's annual salary, by job's pre-birth characteristics

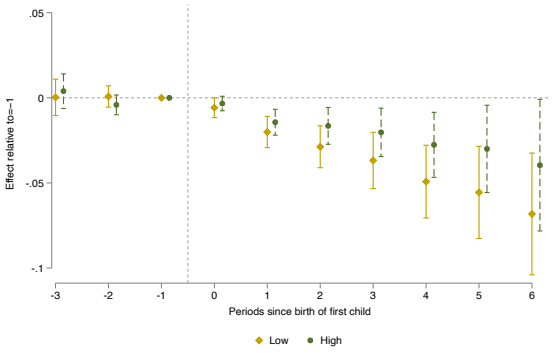
(a) Promotion potential



(b) Travel intensity



(c) Home-based work



Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. Panel (a) covers the period 1988–2024, panel (b) the period 2010–2024, and panel (c) the period 2011–2024. In each panel, mothers are split into those in low- and high-characteristic jobs, classified according to the job's pre-birth characteristics measured in the year before childbirth using the job fixed effects (δ_j) from Equation 2, estimated on non-parents only. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, computed within each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and the difference between groups at each event time are reported in Table A.11 in the Appendix.

Mothers in jobs with limited opportunities for home-based work experience larger earnings penalties than those in jobs where home-based work is more common, although the confidence intervals overlap. Likewise, earnings penalties are somewhat smaller in jobs where compressed work schedules are more prevalent, although the differences are modest.[27]

Taken together, these findings suggest that the motherhood penalty is attenuated in jobs offering greater scope to adjust when and where work is performed. Combined with the evidence on post-birth job sorting, the results suggest that mothers gradually reallocate toward jobs in which the career costs of balancing work and family responsibilities are smaller.

6 Which mothers incur the largest penalties?

We next examine which mothers incur the largest earnings penalties following childbirth and whether these penalties depend on the managers under whom they work. Section 6.1 examines the role of manager characteristics and differential managerial treatment. Section 6.2 considers heterogeneity by mothers' family circumstances, career attachment, and inherited cultural norms. To limit concerns that the characteristics used to define these groups are themselves affected by childbirth, we measure them prior to the first birth.[28]

6.1 Do managers mediate the penalty?

Managers play an important role in shaping employee's performance and career progression (Hoffman and Tadelis, 2018; Shaw, 2019). A unique feature of our data is that since 2014, they allow us to link each employee with her manager, and to examine whether motherhood penalties vary with her manager characteristics. We find little heterogeneity in the penalties experienced by mothers who, prior to childbirth, had managers of different gender, parenthood status, performance rating, work orientation, and origin-country gender norms (Appendix Figure A.10). Mothers face comparable declines in annual salary after childbirth regardless of whether their manager is a man or a woman, a parent or a non-parent, someone with a low or a high performance rating, strong career commitment or not, or someone coming from a more conservative or progressive coun-

[27] Figure A.9 in the Appendix shows that the penalty is also larger for mothers in jobs with low use of sick and family leave.

[28] Because several characteristics are available only over shorter periods, the corresponding estimates use somewhat narrower event windows.

try. These results thus provide little evidence that observable manager traits shape the motherhood earnings penalty.[29]

Finally, we test whether mothers receive different performance evaluations for the same observable dimensions of employee performance. Specifically, we examine whether the association between performance ratings and project initiation, project supervision, supervision of external consultants, working-paper production, work-related travel, home-based work, and compressed work schedules differs for mothers and fathers following childbirth. Our most general estimating equation is:

$$\begin{aligned}\text{Rating}_{it} = {} & \beta_1 \text{Parent}_{it} + \beta_2 \big(\text{Parent}_{it} \times \text{Woman}_i\big) + \beta_3 X_{it} \\ & + \beta_4 \big(\text{Parent}_{it} \times X_{it}\big) + \beta_5 \big(\text{Parent}_{it} \times \text{Woman}_i \times X_{it}\big) \\ & + \alpha_i + \lambda_t + \varepsilon_{it}. \end{aligned} \tag{3}$$

The results are presented in Table A.4. Column 1 assesses whether, in general, women, parents, and especially mothers receive different performance ratings on average. We find no evidence that they do: none of the coefficients is statistically significant. This conclusion remains unchanged after conditioning on observable measures of performance, as shown in Column 2. The estimated coefficients on these performance measures nonetheless reveal some interesting patterns. Taking annual and sick leave is significantly negatively associated with performance ratings, as is adopting a compressed work schedule, which allows employees to take one day off every two weeks. By contrast, bringing projects to the Board is associated with significantly higher performance ratings, with a coefficient of 0.168. Producing working papers and supervising external consultants are also positively associated with performance ratings. The explanatory power of the model is relatively low, however, suggesting that our measures capture only part of the dimensions of performance reflected in annual evaluations.

Column 3 examines whether these observable dimensions of performance are rewarded differently for women, and especially for mothers, by including a full set of interactions between gender, parenthood, and the performance measures. None of these interaction terms is statistically significant. Thus, we find little evidence that either women in general, or mothers in particular, are evaluated differently conditional on their observable performance. This conclusion is robust to controlling for individual fixed effects, as shown in Columns 4–6.

[29] Appendix Figure A.12 shows similar results when manager characteristics are measured contemporaneously.

Overall, these findings provide little evidence that mothers are evaluated differently than fathers with comparable observable performance. Instead, the motherhood penalty appears to arise primarily through changes in the responsibilities mothers undertake and the jobs they hold, rather than through differential evaluation conditional on observed performance. Still, because we observe only manager traits and realized ratings, we cannot rule out that managers shape the penalty through less visible channels, such as assessments of future potential, on which women score lower despite higher performance ratings (Benson et al., 2026).

6.2 Which individual characteristics shape the motherhood penalty?

First, family circumstances modulate the penalty. Mothers who were unmarried prior to childbirth experience larger earnings penalties than married mothers as is shown in Figure 8a. Six years after the first birth, the estimated penalty reaches roughly 9 percent for single mothers compared with about 3.6 percent for married mothers. Spousal support seems to mitigate some of the career costs associated with parenthood.

Second, women exhibiting stronger attachment to their careers prior to childbirth experience systematically smaller earnings penalties. Mothers without a PhD experience sizable and statistically significant earnings losses following childbirth, whereas the estimated losses among mothers with a PhD are smaller and not statistically distinguishable from zero on average. The average post-birth difference between the two groups is statistically significant at the 10 percent level, although their confidence intervals overlap in some individual event years (Figure 8b). The strongest heterogeneity arises by pre-birth performance ratings. Mothers with high pre-birth ratings experience no earnings penalty and, if anything, modest earnings gains, whereas mothers with lower ratings incur the largest penalties (Figure 8c). The same extends to other measures of career attachment. Mothers reporting a stronger career orientation in the Culture Wizard survey and those taking shorter maternity leave also experience somewhat smaller earnings penalties, as is shown in Figures 8d and 8e respectively, although these differences are estimated less precisely.

Finally, we find little evidence that inherited cultural norms shape the motherhood penalty. Mothers originating from countries with relatively progressive and relatively conservative gender norms experience strikingly similar earnings trajectories following childbirth (Figure 8f), a pattern that holds across a range of alternative measures of inherited gender and family norms.[30] This complements the findings of Kleven (2022),

[30] We test this using four alternative proxies for inherited gender and family norms in mothers' countries

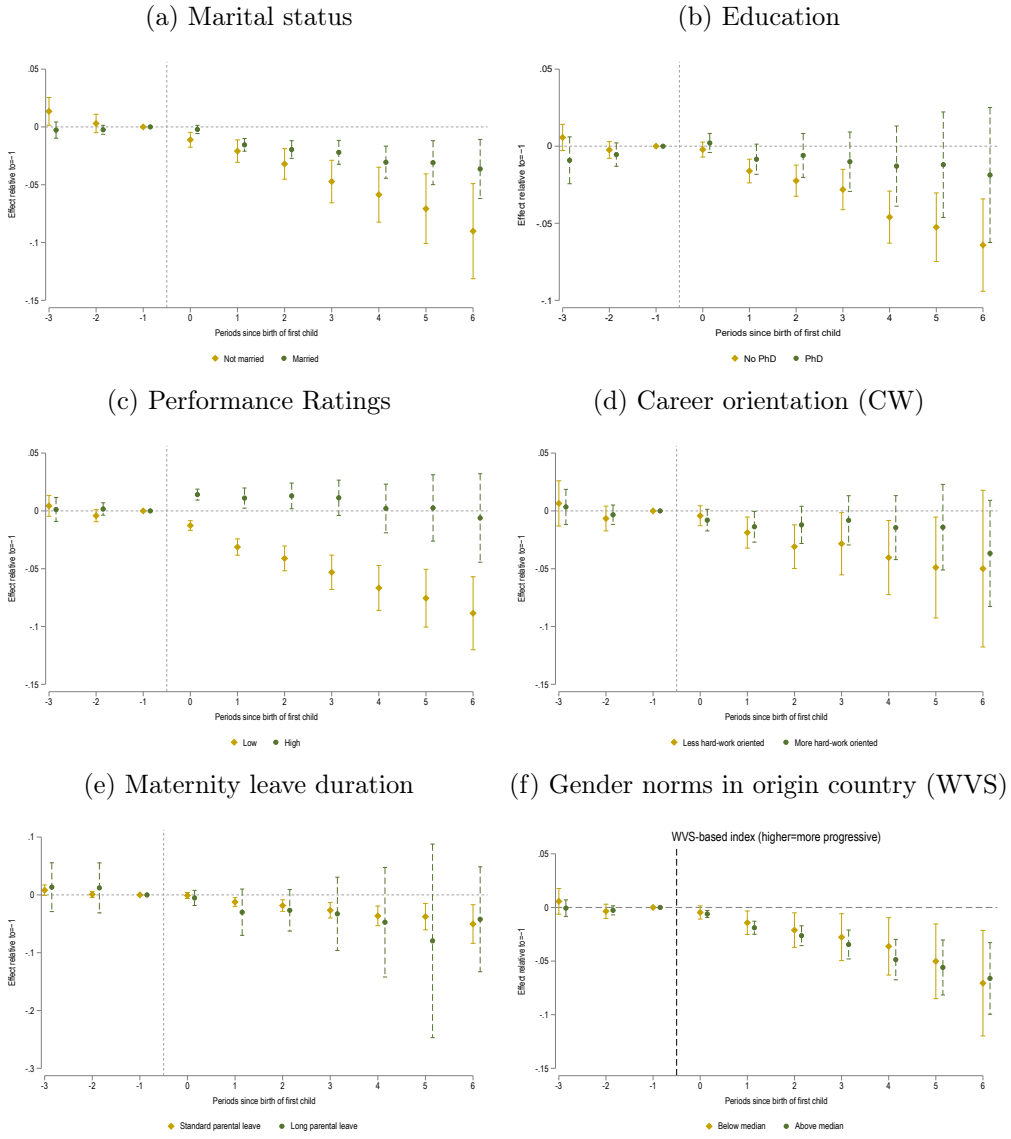
who show that child penalties vary with inherited gender norms, measured using individuals' U.S. state or country of origin, even among women residing in the same U.S. state. Our findings are closer to those of Åslund et al. (2025), who show that child migrants and children of immigrants in Sweden exhibit broadly similar post-birth labor market trajectories despite differences associated with origin-country gender equality. Comparing women from diverse cultural backgrounds within a single organization, we likewise find remarkably similar post-birth earnings trajectories, suggesting that inherited cultural norms become much less predictive once workplace institutions are held constant, although workforce selection may also contribute.

Overall, heterogeneity in the motherhood penalty appears to be driven primarily by differences in mothers' family circumstances and attachment to their careers prior to childbirth, rather than by inherited cultural norms.[31]

of origin: the Global Gender Gap (GGG) Index published by the World Economic Forum; an indicator for whether the mother was born in an OECD country; and the "nuclear family" and "neolocality" indices constructed from the Ethnographic Atlas and reported in Bau and Fernández (2023). The latter two capture, respectively, the prevalence of nuclear-family structures and of newly married couples establishing an independent household. The results are reported in Appendix Figure A.14.

[31] We additionally explore heterogeneity along four institution-specific dimensions that affect the timing and persistence of child penalties in Figure A.13. Having entered the institution through a selective entry program delays the onset of earnings losses but does not prevent them from eventually appearing. Prior country-office experience—a dimension that possibly reflects the presence (or absence of) local support networks—is associated with larger motherhood penalties, while holding an operational role prior to birth—which demands a lot of face-to-face interaction and client engagement—is associated with a similar short-run penalty but more persistent losses over time. Child penalties are also slightly lower for employees who have ever worked in the human resources department.

Figure 8: Impact of first childbirth on annual salary, by mothers' pre-birth characteristics



Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. Mother characteristics are measured in the year before childbirth, except for maternity leave duration, which is measured around childbirth as described below. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to average annual salary in the year before childbirth, computed separately within each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Point estimates, standard errors, and differences between groups at each event time are reported in Appendix Table A.12. Subgroups are defined as follows. In panel (c), a high performance rating is a rating of 4 or 5. In panel (d), career orientation is measured using the Culture Wizard (CW) survey, with groups defined relative to the median. In panel (e), long maternity leave indicates that the mother took more parental leave in either the year before or the year of first childbirth than the modal positive amount taken by mothers in the same calendar year. In panel (f), the gender-norms progressivity index is assigned based on nationality and constructed from World Values Survey questions on female employment and maternal work, with groups defined relative to the median.

6.3 Machine learning analysis

The heterogeneity analyses in Sections 6.1 and 6.2 examine one characteristic at a time. With many candidate moderators, correlated characteristics, and modest subsamples, such splits can overstate heterogeneity—or attribute to motherhood differences that reflect mothers' differing pre-birth career trajectories. This section reports a systematic machine-learning analysis designed to discipline those comparisons.

For each parent we construct a unit-level estimate of her earnings effect (a "pseudo-outcome") that mirrors the estimator of Section 3: the long difference in earnings from the year before first birth to each post-birth year, net of the average contemporaneous change among not-yet-parents, adjusting for age, averaged over event years 0 to +6 and normalized, as in Section 3, by the mean pre-birth earnings within gender-specific age-at-first-birth cells.[32] Averaged across parents, these pseudo-outcomes reproduce the event-study estimates closely (Appendix Figure 9). We then relate them to roughly sixty pre-determined characteristics, grouped into five families: demographics, career status, and origin-country norms ("regular")[33]; pre-birth task portfolios (project leadership, travel, research output); pre-birth use of flexible-work and leave arrangements; workplace-culture orientations (eight Culture Wizard dimensions, measured from individual survey responses and from two imputation schemes); and characteristics of the pre-birth manager. Heterogeneity is assessed in three layers. First, per-moderator subgroup gaps with familywise (Holm) correction. Second, dimension-level tests, implemented in two variants: family summary indices (Kling et al., 2007), and machine-learning group average treatment effects with honest sample splitting (Chernozhukov et al., 2025), complemented by honest causal trees (Athey and Imbens, 2016). Third—crucially—a validity layer in which the entire pipeline is re-estimated on placebo pseudo-outcomes constructed from pre-birth windows only. Because the moderator analysis compares effect estimates *across* parents against a common counterfactual, it rests on stronger, cross-group parallel-trends requirements than the aggregate estimator of Section 3; the placebo layer polices precisely this additional requirement, and significant "heterogeneity" there indicates differential pre-birth trajectories rather than differential effects of motherhood, disqualifying the corresponding moderator. Appendix Table 2 reports all three layers: the gap and Holm columns correspond to layers one and two (per-moderator rows and index rows,

[32] Results are unchanged when the counterfactual change is additionally computed within entry-grade cells.

[33] The "regular" family comprises: age at first birth; tenure at first birth; pre-birth marital status; an above-median indicator for origin-country gender norms (World Values Survey index); entry through the Young Professionals program; holding an operational role before birth; and above-median pre-birth earnings. Grade at first birth enters the supporting regressions.

respectively), the GATES column to the machine-learning variant of layer two, and the placebo columns to layer three.

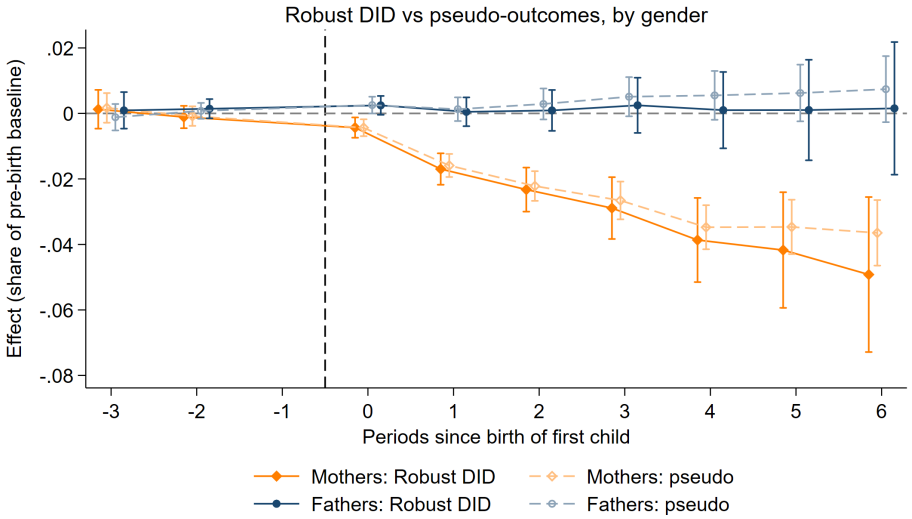
Three findings emerge. First, the motherhood penalty is remarkably homogeneous: the only moderator that survives all three layers is entry through the institution's selective Young Professionals program. Non-program mothers lose 2.5 percent of pre-birth earnings on average while program entrants lose 0.9 percent—a gap of 1.7 percentage points (Holm-adjusted $p = .002$) with a placebo gap indistinguishable from zero (Figure 10). Second, dimensions related to pre-birth career trajectories—earnings, grade, and task intensity—show sizable apparent gaps that fail the placebo layer: each is mirrored by an opposite-signed pre-birth "gap" (most starkly, the highest pre-birth grade carries an apparent gap of +24 percentage points and a placebo gap of −24), the signature of steeper counterfactual trajectories rather than causal heterogeneity. The same verdict applies to the broadest possible test, a pooled specification in which the machine-learning proxy draws on all moderators available for the full sample simultaneously:[34] the top-versus-bottom quartile spread of predicted effects is 3.2 percentage points in the main runs but 8.4 in the placebo runs, so pooled machine-learning heterogeneity is dominated by trajectory contamination as well. We therefore do not interpret career-trajectory moderators as shifting the penalty; these dimensions may still be examined descriptively in split-sample designs (cf. Section 6.1).[35] Third, the remaining families are precise nulls: task portfolios, flexible-work usage, all twenty-four culture measures (including individual survey responses), pre-birth manager characteristics, and origin-country gender norms show no detectable moderation, with confidence intervals excluding gaps larger

[34]The pooled set comprises roughly forty indicators: age at first birth; grade at first birth; entry grade; tenure; pre-birth earnings; marital status; Young Professionals entry; operational role; open-ended contract; other dependents in the household; prior country-office experience; origin-country norm indicators (World Values Survey, Global Gender Gap, Kleven child-penalty measure, OECD membership, the Bau–Fernández nuclear-family and neolocality indices, and the spouse's Kleven measure); pre-birth task indicators (project design, active and closed project supervision, overall and conditional on later success, and working papers); and the sixteen country- and demographics-imputed Culture Wizard dimensions. Indicators observed for fewer than 70 percent of mothers (survey-based culture responses, manager characteristics, pre-2011 flexible-work and leave measures, short-term-consultant supervision, pre-birth travel intensity, and pre-birth earnings growth) are excluded by the availability screen.

[35]Split-sample event studies such as those in Figure 8 need not display these pre-trends, for three reasons, in decreasing order of importance. First, the comparison structure differs: split-sample estimates compare, say, high-earning mothers to high-earning not-yet-mothers, so trajectories shared by a subgroup's treated and control units are absorbed within the split; the placebo layer instead evaluates all mothers against a common counterfactual and therefore detects between-group trajectory differences directly. Second, power: the placebo statistic is a single differenced contrast with a standard error of roughly 0.4 percentage points, whereas each subgroup's pre-birth placebo coefficients in a split-sample figure carry confidence intervals of ±1–2 percentage points, within which trajectory differences of the magnitude we detect are invisible. Third, each subgroup's event study is separately normalized at event year −1, which re-anchors level and slope differences between groups before they are plotted.

than about 1.2 percentage points for the full-sample dimensions. Honest causal trees find no stable partition of mothers, and the same machinery applied to fathers finds neither an average effect nor robust heterogeneity. Notably, the program entrants' protection is not mirrored in ratings, promotions, travel, or flexible-work outcomes, suggesting it operates through the program's pay and track progression rather than through observable behavior. Overall, the machine-learning evidence indicates that who bears the motherhood penalty is governed less by mothers' preferences, culture, or work arrangements than by the institution's own selection into fast-track careers.

Figure 9: Robust DiD vs. pseudo-outcome event studies, by gender (share of pre-birth earnings; points left of the dashed line are pre-birth placebo windows; 95% CIs).



7 Conclusion

Child penalties are prevalent across the globe, yet comparatively little is known about how child penalties emerge within organizations. Using uniquely detailed data from the World Bank Group, a global employer committed to gender equity with common pay scales, this paper aims to help fill this gap. We focus on professional staff who are engaged in project preparation and supervision as well as analytical work and policy advice. Overtime is not compensated and part-time work is very rare, such that the changes in earnings are not driven by changes in paid hours.

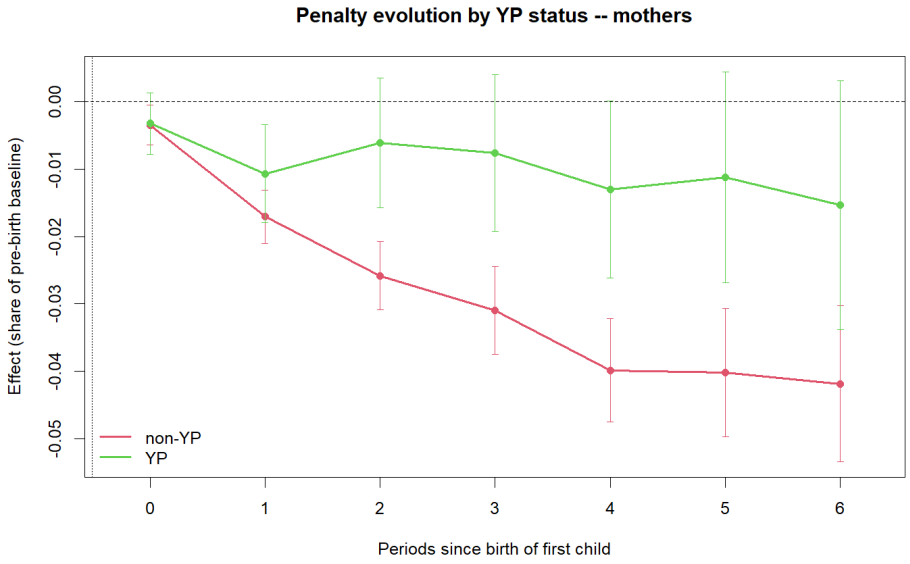
Our first finding is that the motherhood penalty is primarily an advancement penalty.

Table 2: Machine-learning heterogeneity analysis of the motherhood penalty: summary

Dimension / moderator	Gap (SE)	Holm p	GATES adj. p	Placebo gap [p]	N	Verdict
Layer 1: per-moderator gaps (selected; see notes)						
Young Professionals program	1.70 (0.47)	.002	—	−0.06 [.84]	1,423	robust
Operational role pre-birth	1.22 (0.46)	.046	—	−0.45 [.20]	1,423	suggestiv
Pre-birth earnings above median	1.53 (0.60)	.051	—	−2.39 [<.001]	1,423	contamin
Origin-country gender norms (WVS)	0.34 (0.41)	>.9	—	0.16 [.62]	1,423	null
Layer 2: dimension-level (family index; GATES)						
Career/demographics ("regular")	1.49 (0.53)	.051	<.001	−0.45 [.21]†	1,423	contamin
All full-sample moderators (pooled GATES)‡	3.23 (0.91)	—	<.001	8.43 [<.001]	1,423	contamin
Task portfolio	0.33 (0.37)	>.9	>.9	−0.50 [.13]	1,423	null
Flexible work / leave	0.14 (0.61)	>.9	.92	0.21 [.64]	982	null
Culture (survey responses)	−0.46 (0.91)	>.9	.59	−0.50 [.50]	327	null
Culture (origin-country imputed)	0.28 (0.48)	>.9	.76	−0.70 [.06]	1,416	null
Culture (ctry×age×gender imputed)	−0.00 (0.40)	>.9	>.9	−0.51 [.12]	1,406	null
Manager characteristics (2015+ births)	−0.17 (0.43)	>.9	.94	0.19 [.73]	423	null

Notes: Mothers; specification of Section 3 (age-adjusted, no entry-grade cells; results are unchanged under the entry-grade refinement). N is the number of mothers identifying each row (placebo layer: 1,072 for full-sample rows, proportionally fewer for subsample rows); the average effect is −2.19 (SE 0.28) on $N = 1{,}423$. All quantities in percentage points of pre-birth earnings. "Gap" is the above-vs-below-median (or indicator) difference in the individual-level motherhood effect; dimension rows use standardized family summary indices (Kling et al., 2007). Holm adjustment within family. "GATES" is the hi-vs-lo (median) gap in ML-predicted effects under honest sample splitting (Chernozhukov et al., 2025), median over splits, adjusted p. Median groups, rather than the four quantile groups sometimes reported, preserve per-group power in the subsample families after honest halving and align the two layer-2 variants on the same contrast; four-group GATES yield the same conclusions. Layer 1 is carried out for all ∼60 moderators (Holm correction within family), but is reported only for the moderators attaining Holm $p < .10$ plus one representative null (WVS norms)—all, notably, members of the "regular" family. Sample accounting: the robust DiD event studies use more mothers (1,505 switchers at event year 0) because the estimator chains flexible pre-birth reference years, whereas the pseudo-outcomes require earnings observed in the year immediately before birth and in at least two post-birth years, and at least ten not-yet-mother controls per cohort cell. "Placebo gap" re-estimates the identical statistic on pseudo-outcomes from pre-birth windows only (layer 3); a significant, typically opposite-signed placebo gap indicates differential pre-birth trajectories and disqualifies a causal reading. †The regular-family index placebo is insignificant, but its GATES placebo is large and highly significant (3.8 pp, $p < .001$): the ML proxy loads on trajectory-contaminated components (pre-birth earnings, grade). Its robust content is captured by the Young Professionals row. ‡Pooled GATES over all moderators available for the full sample (list in the text footnote); the reported gap is the top-vs-bottom quartile spread (Q4−Q1) of ML-predicted effects; its placebo counterpart is estimated identically. Honest causal trees find no stable partition and are not tabulated. Fathers: no average effect and no robust heterogeneity on any dimension.

Figure 10: Motherhood penalty by selective-entry (Young Professionals) status. Individual-level pseudo-outcome means by event year (share of pre-birth earnings, 95% CIs).



Earnings rise through two channels: annual merit increases, which are tied to performance ratings, and promotions to higher-paying grades. Over the first six years after childbirth, women's earnings are, on average, 3.1 percent below the levels they would have reached in the absence of childbirth. Fathers, by contrast, experience no earnings penalty. This divergence is driven primarily by slower grade progression: mothers' annual probability of promotion falls by 53 percent, leaving them roughly one-quarter of a promotion behind by year six after childbirth. Performance ratings cannot explain this persistent divergence: mothers' ratings decline only temporarily, while fathers' ratings fall by a similar amount.

Second, mothers take on fewer leadership responsibilities after childbirth and adjust work patterns more than fathers. Mothers become less likely to initiate development projects and manage external consultants, whereas the corresponding estimates for fathers, if anything, point toward increases. Both mothers and fathers become less likely to supervise ongoing projects, with no significant gender difference. Mothers also reduce work-related travel more sharply than fathers, by approximately 52% versus 25%, respectively, averaged across the post-birth period—and the difference is statistically significant at the 5 percent level. Both mothers and fathers become more likely to work from home, although these estimates are imprecise.

Despite these changes in responsibilities and work patterns, we find no detectable

decline in realized output for either mothers or fathers. Projects managed by parents are no less likely to receive a successful ex-post rating following childbirth. We also find no effect on research production or reach, measured by the number of working papers produced and their downloads.

Third, parenthood induces sorting within the internal labor market, with mothers shifting more strongly toward flexibility and away from advancement opportunities. Mothers' job mobility slows after childbirth, and they become less likely to hold jobs with high promotion potential. Fathers exhibit a similar but smaller and less persistent decline. Both mothers and fathers increasingly hold jobs in which home-based work is more common, although the increase is statistically significant only for mothers. Mothers also move away from travel-intensive jobs. These patterns point to an advancement–flexibility trade-off: parents, and especially mothers, increasingly hold jobs that are more compatible with caregiving but offer weaker advancement prospects. Consistent with this interpretation, motherhood penalties emerge earlier and are initially larger in high-promotion-potential jobs, are larger in travel-intensive jobs, and tend to be smaller in jobs more amenable to home-based work. Taken together, the results suggest that mothers gradually reallocate toward job types in which the earnings costs of parenthood are smaller.

Fourth, we find little support for alternative explanations centered on managers or cultural norms. The motherhood penalty does not vary systematically with manager characteristics, and managers do not appear to evaluate mothers and fathers differently conditional on observable performance. Penalties also do not vary systematically with gender norms, whether measured using employees' national origins or survey responses. A machine-learning analysis similarly reveals limited additional predictable heterogeneity in the motherhood penalty based on employees' observable characteristics.

Taken together, our findings show that a motherhood penalty can emerge even in an organization committed to gender equity with common pay scales and promotion rules, without measurable declines in the quality of realized output or evidence of differential evaluation. Instead, they point to an advancement–flexibility trade-off, as mothers increasingly move toward jobs that are more compatible with caregiving but offer weaker advancement prospects. Reducing the motherhood penalty may therefore require ensuring that greater flexibility does not come at the expense of career-building responsibilities and promotion opportunities.

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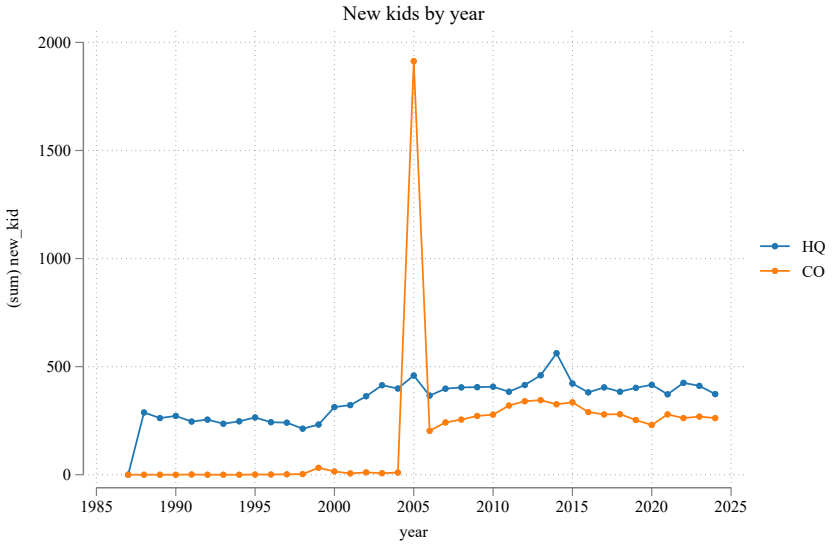
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Appendix

A Tables and figures

Figure A.1: Number of newborns per year in Headquarters and Country Offices



Note: The figure plots the number of employees having their first child in each year, separately for staff based at Headquarters (HQ) and in Country Offices (CO). First birth is identified as the year in which an employee's number of self-reported dependent children first increases from zero to one or more.

Table A.1: Sample sizes

	Women	**Men**	**Total**
Observations (UPI-year)	85273	121764	207037
Employees (UPI)	10081	13908	23989
Total first births	1937	1988	3925
Final first-birth sample	1617	1710	3327

Note: The table reports the construction of the estimation sample. The sample is restricted to Headquarters-based employees who started at grade GE or above, corresponding to professional, managerial, or executive roles. Observations are employee-year observations. Employees are unique individuals. Total first births counts all observed first births in this sample, while the final first-birth sample further restricts the data to mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth and have no employment gaps around childbirth. The data cover the period 1988–2024.

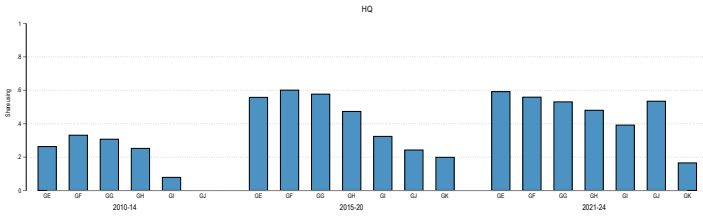
Table A.2: Data availability and sample size by outcome

Variable	Period	Number of parents
Annual salary (constant 2024 USD)	1988–2024	3,272
Pr. of promotion	1988–2024	3,326
Grade	1988–2024	3,327
Open-ended contract	1988–2024	3,288
High performance rating	1999–2022	2,152
Pr. of initiating a new project	1988–2020	2,023
Pr. of supervising at least 1 project	1988–2023	2,199
Project ex-post outcome rating	1988–2023	892
Budget of new projects initiated (million USD)	1988–2020	793
Working papers co-authored	1988–2024	1,608
Pr. of hiring external consultants	2007–2024	1,936
Pr. of work-related travel	1988–2024	1,615
Duration of work-related travels (days/year)	2010–2024	931
Countries visited on work-related travel	2010–2024	931
Sick and family leave (days/year)	2010–2024	1,557
Total leave (days/year)	2010–2024	1,557
Home-based work (weeks/year)	2011–2024	1,393
Pr. of using compressed work schedule	1993–2024	2,092

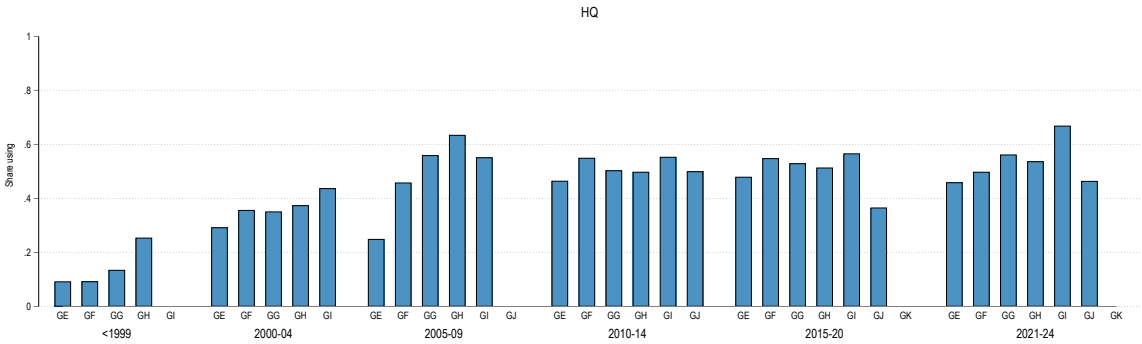
Note: The table reports data availability for each outcome used in the analysis. The "Period" column reports the years for which each variable is available, and the "Number of parents" column the number of parents with non-missing information for that variable in the year immediately preceding the first birth. The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters.

Figure A.2: Percentage of staff using home-based work and compressed work schedules, by professional position

(a) Home-based work



(b) Compressed work schedule



Note: Each bar represents a grade-position level, from GA (lowest) to GK (highest). Compressed work schedule in Panel (b) implies working one extra hour every day in exchange for one day off every two weeks. Data for home-based work is available starting in 2010 only.

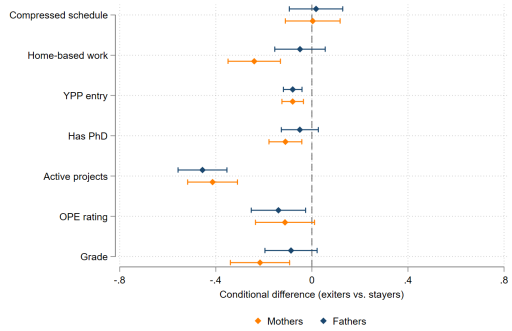
Table A.3: Are mothers more likely to exit than comparable women?

	(1)	(2)	(3)	(4)
Mother	-0.031^{***}	-0.009^{***}	-0.026	-0.003
	(0.002)	(0.002)	(0.022)	(0.002)
Mother × PhD			0.004	
			(0.004)	
Mother × Selective entry			-0.007	
			(0.006)	
Mother × Compressed schedule			0.003	
			(0.003)	
Mother × Home-based work			0.0001	
			(0.0001)	
Mother × Performance rating			0.005	
			(0.006)	
Mother × Promotion rate			-0.005	
			(0.005)	
Baseline controls	No	Yes	Yes	Yes
Behavior controls	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual FE	No	No	No	Yes
Joint test of interactions (p)	—	—	0.44	—
Observations	85,273	21,295	21,295	24,629

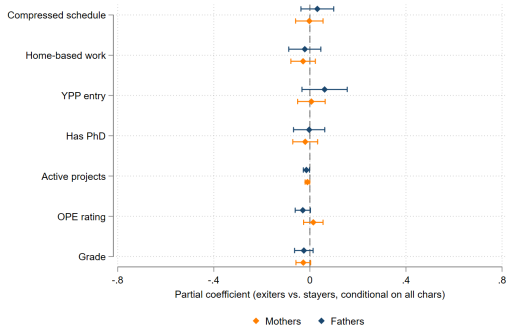
Notes: The sample is restricted to women based at Headquarters who entered at grade GE or above, and consists of employee-year observations. The outcome is an indicator equal to one if the employee leaves the World Bank Group in a given year. *Mother* equals one in the years following the first birth and zero before the first birth or for women who never have children, so the comparison group comprises both not-yet-mothers and never-mothers. Baseline controls include basic demographic controls (age, tenure), grade fixed effects, PhD, selective entry, performance rating, promotion rate (number of promotions per tenure), use of compressed schedule and of home-based work. Standard errors clustered at the individual level in parentheses. Average marginal effects from an analogous probit model yield similar results (e.g., -0.037 and -0.009 in the specifications of columns 1 and 2). $^{***}\,p < 0.01$, $^{**}\,p < 0.05$, $^{*}\,p < 0.1$.

Figure A.3: Pre-birth characteristics of exiters and stayers

(a) One characteristic at a time

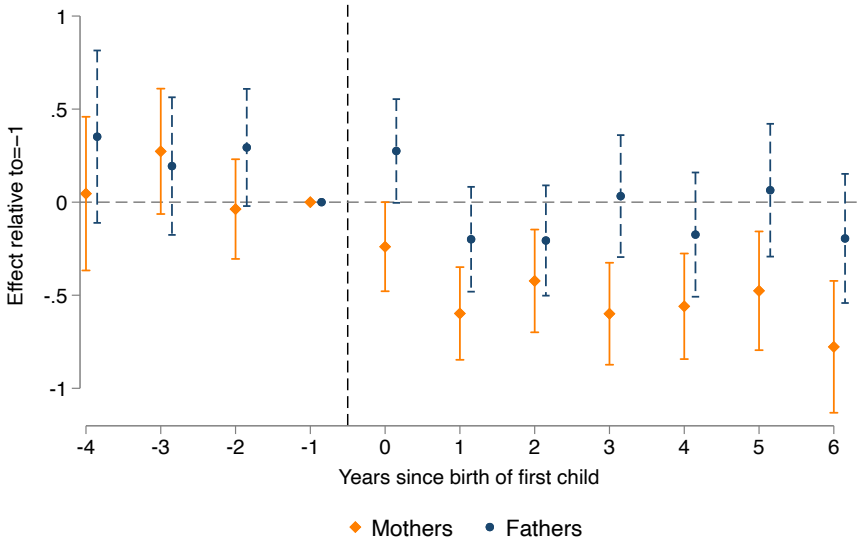


(b) Conditional on all characteristics jointly



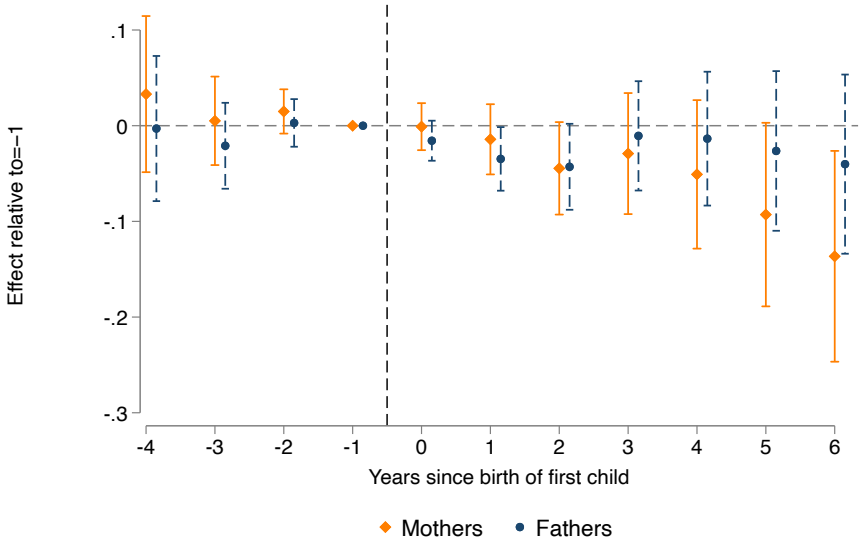
Note: The sample includes mothers and fathers based at Headquarters who entered at grade GE or above, observed at least once before and once after childbirth. The outcome is an indicator equal to one if the employee exits the World Bank Group within three years of the first birth. Each marker reports the coefficient (with 95% confidence intervals) from a regression of this exit indicator on pre-birth characteristics, measured in the year before childbirth ($\tau = -1$), controlling for birth-year fixed effects, with standard errors clustered at the individual level. In panel (a), each characteristic is entered in a separate regression (unconditional differences); in panel (b), all characteristics are entered jointly in a single regression (partial coefficients).

Figure A.4: Promotion



Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. The outcome is an indicator equal to one if the employee is promoted to a higher grade in a given year. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers (orange) and fathers (blue) from regressions that control for age, individual fixed effects, and year fixed effects; darker shades restrict the sample to first-time parents. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level.

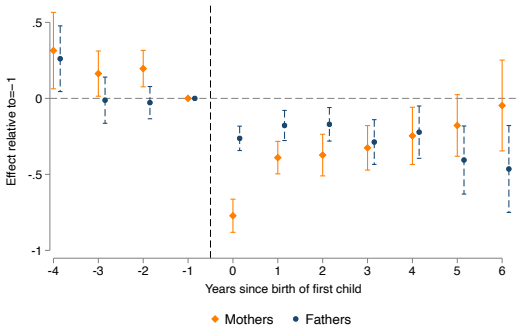
Figure A.5: Open-ended (permanent) contract



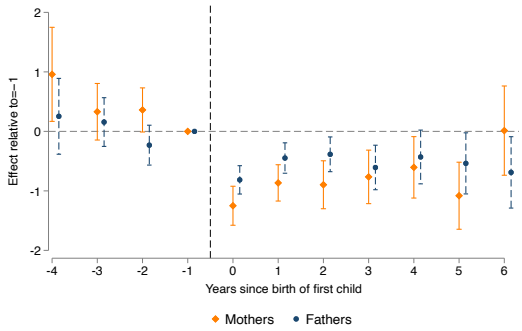
Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. The outcome is an indicator equal to one if the employee holds an open-ended (permanent) contract in a given year. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level.

Figure A.6: Impact of first childbirth on work-travel intensity

(a) Number of countries visited

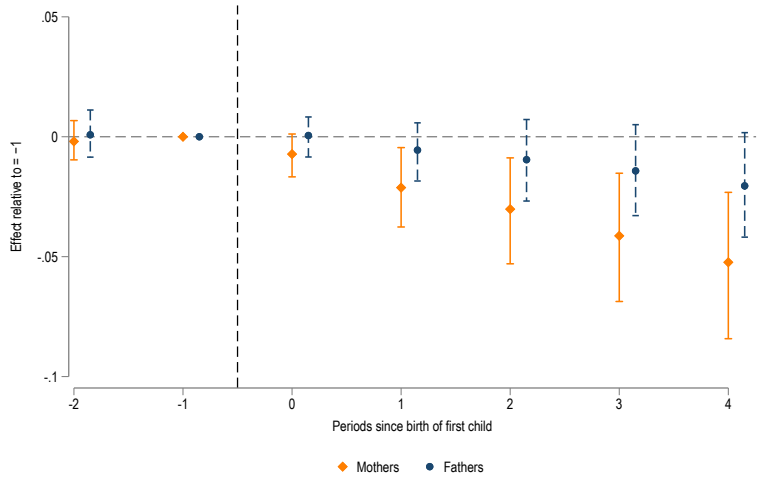


(b) Pr. of traveling for at least 60 days/year



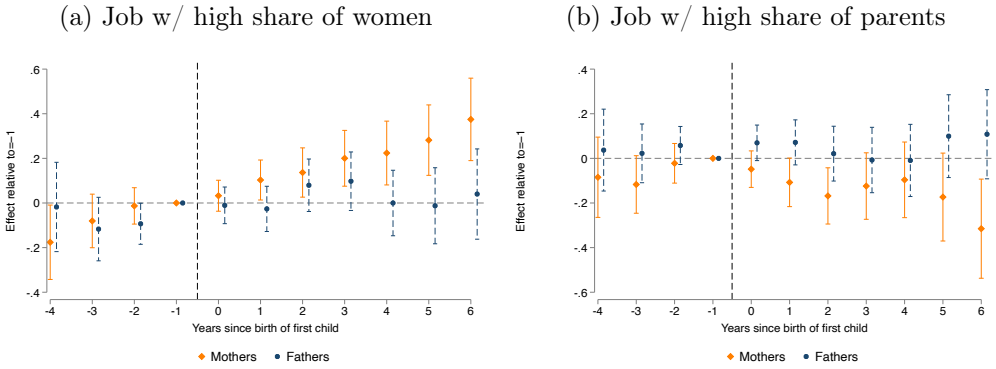
Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 2010–2024. Both outcomes are conditional on traveling. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level.

Figure A.7: Impact of first childbirth on annual salary. Melentyeva and Riedel (2025)



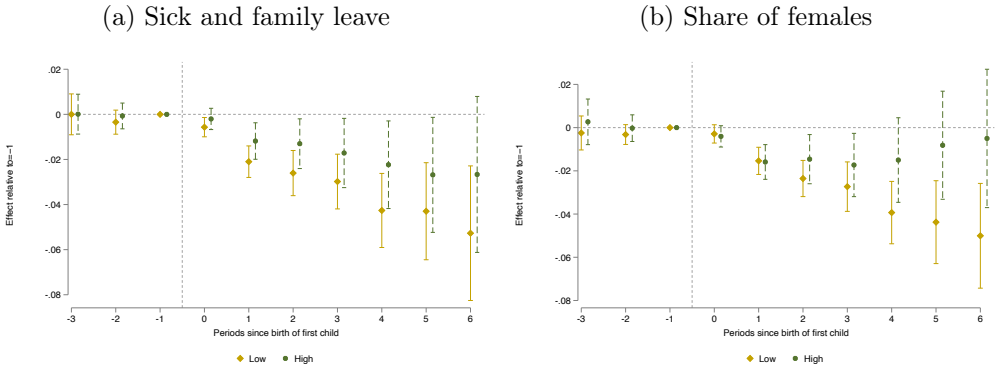
Note: The sample includes first-time mothers aged 18–49 and first-time fathers aged 18–59 who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. We estimate separate stacked difference-in-differences models for mothers and fathers, following the age-at-first-birth design of Melentyeva and Riedel (2025). Each stack is defined by age at first birth and compares employees who become parents at the focal age with future parents who have their first child five to seven years later. The estimation uses a balanced event-time window from $\tau = -2$ to $\tau = 4$, where $\tau = 0$ denotes the year of first childbirth and $\tau = -1$ is the omitted reference period. Each stack includes individual and age fixed effects, and the age-specific estimates are aggregated using the share of treated employees in each stack. Coefficients are expressed relative to the mean outcome at $\tau = -1$ within the corresponding gender-specific age stack. The bars show 95% percentile confidence intervals based on 500 bootstrap replications conducted at the individual level.

Figure A.8: Impact of first childbirth on job characteristics



Note: The sample includes mothers aged 18–50 and fathers aged 18–60 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. In both panels, jobs are classified according to their pre-birth characteristics, measured in the year before childbirth, using the job fixed effects (δ_j) from Equation 3, estimated on non-parents only; a job is coded as "high" if the corresponding measure lies above the median across all jobs, and "low" otherwise. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for mothers and fathers from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of the outcome in the year before childbirth, computed within each gender-by-age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level.

Figure A.9: Impact of first childbirth on women's annual salary, by job's pre-birth characteristics

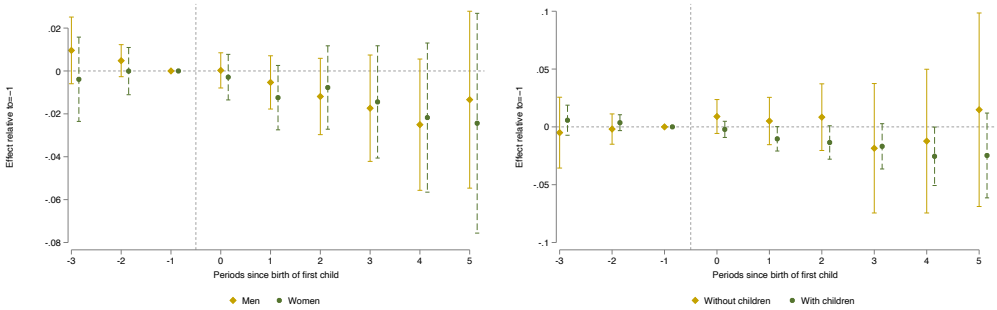


Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period from 1988 to 2024. Each coefficient captures the change in the outcome at event time τ relative to the year before childbirth, with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, calculated separately for each age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. Jobs are classified according to their pre-birth characteristics, measured in the year prior to childbirth. In Panel (a), jobs are classified using the job fixed effects (δ_j) from Equation 2, estimated on non-parents only. In Panel (b), jobs are classified using the leave-one-out mean share of female employees. A job is coded as "high" if the corresponding measure lies above the median across all jobs, and "low" otherwise.

Figure A.10: Impact of first childbirth on annual salary, by manager's pre-birth characteristics

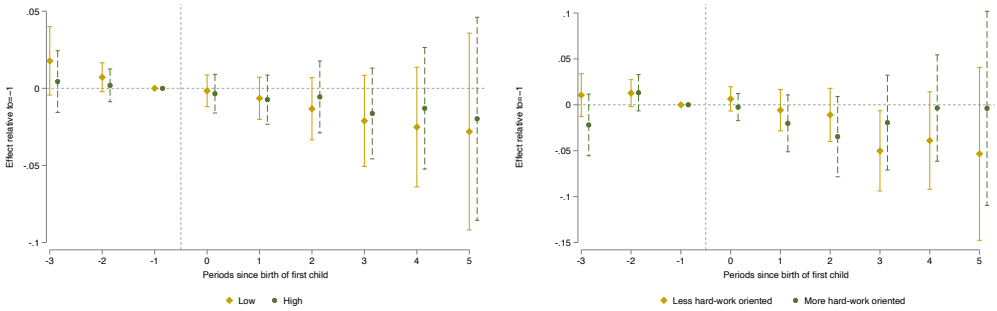
(a) Gender

(b) Parental status

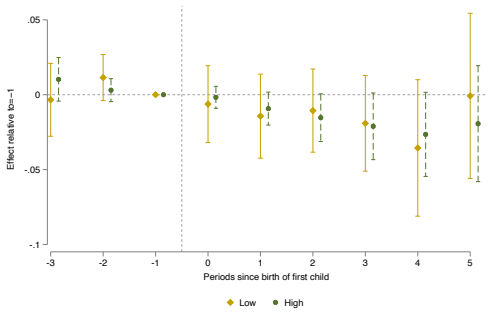


(c) Top performer (high rating)

(d) Hard-work orientation



(e) Gender norms (WVS-based index)



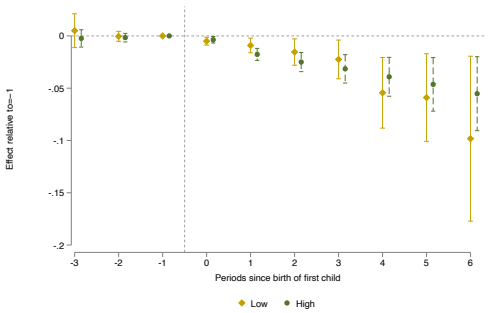
Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. All panels cover the period 2014–2024, except panel (b), which covers 2014–2022. Manager characteristics are measured in the year before childbirth. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, calculated separately for each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. In panel (c), a high performance rating is defined as a rating of 4 or 5. In panel (d), managers' hard-work orientation is measured using the Culture Wizard (CW) survey, so this panel is restricted to the smaller sample of mothers whose managers completed the survey. In Panel (e), the gender-norms progressivity index is assigned based on the manager's nationality and constructed using World Values Surveys. In Panels (d) and (e), groups are defined relative to the median of the corresponding measure.

Table A.4: Differential evaluation: performance ratings by gender, parenthood, and observable behaviors

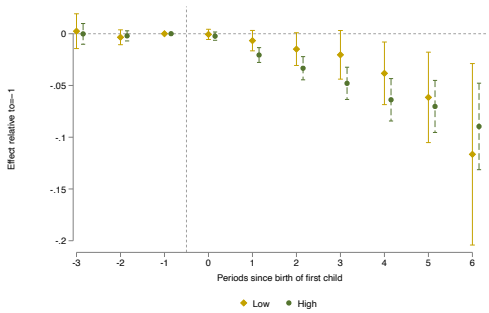
	First-time parents (event-study sample)						All professional staff (GE+, HQ)					
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Woman	-0.010	0.015	0.018	0.000	0.000	0.000	0.009	0.058***	0.087**	0.000	0.000	0.000
	(0.018)	(0.038)	(0.115)	(.)	(.)	(.)	(0.007)	(0.015)	(0.043)	(.)	(.)	(.)
Parent (post-birth)	-0.000	0.008	0.162	-0.001	0.017	0.102	0.063***	0.058***	0.197***	0.019	0.029	0.122
	(0.016)	(0.035)	(0.105)	(0.018)	(0.052)	(0.130)	(0.010)	(0.020)	(0.063)	(0.017)	(0.049)	(0.100)
Woman × Parent	-0.011	-0.013	-0.008	-0.006	-0.097	-0.131	-0.030**	-0.042	-0.066	-0.009	-0.057	-0.162
	(0.021)	(0.045)	(0.141)	(0.022)	(0.066)	(0.175)	(0.015)	(0.028)	(0.088)	(0.021)	(0.063)	(0.128)
Travel (days/yr)		0.000	0.001		0.001*	0.000		0.000**	0.001**		0.001***	0.001**
		(0.000)	(0.001)		(0.000)	(0.001)		(0.000)	(0.000)		(0.000)	(0.000)
Sick/family leave		-0.009***	0.002		-0.003*	0.001		-0.009***	-0.008***		-0.004***	-0.003
		(0.002)	(0.008)		(0.002)	(0.005)		(0.001)	(0.002)		(0.001)	(0.002)
Annual leave		-0.002**	0.002		-0.002**	0.004		-0.001	0.001		-0.001	0.001
		(0.001)	(0.003)		(0.001)	(0.003)		(0.001)	(0.001)		(0.001)	(0.001)
Home-based work (wks)		-0.003	0.003		-0.000	0.007		-0.002	-0.003		-0.000	-0.003
		(0.003)	(0.009)		(0.003)	(0.011)		(0.002)	(0.002)		(0.002)	(0.003)
Active projects		0.001	0.011		0.019	0.028		-0.002	-0.006		0.019**	0.020*
		(0.006)	(0.014)		(0.012)	(0.023)		(0.004)	(0.006)		(0.008)	(0.011)
New projects approved		0.168***	0.253***		0.161***	0.300**		0.203***	0.221***		0.167***	0.160***
		(0.030)	(0.093)		(0.033)	(0.121)		(0.019)	(0.030)		(0.021)	(0.033)
Working papers		0.047*	0.004		-0.023	-0.124***		0.061***	0.056***		0.021	0.000
		(0.025)	(0.047)		(0.028)	(0.047)		(0.013)	(0.019)		(0.015)	(0.021)
Compressed schedule		-0.055**	-0.113		-0.022	-0.162*		-0.056***	-0.052**		-0.019	-0.032
		(0.024)	(0.071)		(0.040)	(0.092)		(0.014)	(0.021)		(0.026)	(0.044)
Hires STCs		0.105***	0.074		-0.002	-0.027		0.125***	0.137***		0.010	0.026
		(0.024)	(0.068)		(0.028)	(0.077)		(0.014)	(0.022)		(0.017)	(0.026)
F: behaviors × Women			0.59			0.99			0.75			1.48
p-value			0.809			0.447			0.660			0.148
F: behaviors × Parents			1.60			2.54			1.64			1.28
p-value			0.110			0.007			0.097			0.245
F: behaviors × Mothers (add.)			0.66			0.81			0.91			0.95
p-value			0.749			0.609			0.513			0.477
Individual FE	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Behaviors	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Interactions	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Observations	37,179	7,320	7,320	37,049	7,080	7,080	120,517	19,973	19,973	118,621	19,032	19,032
R-squared	0.002	0.018	0.023	0.229	0.330	0.334	0.004	0.024	0.026	0.271	0.343	0.344

Figure A.11: Impact of first childbirth on women's annual salary, by contemporaneous job characteristics

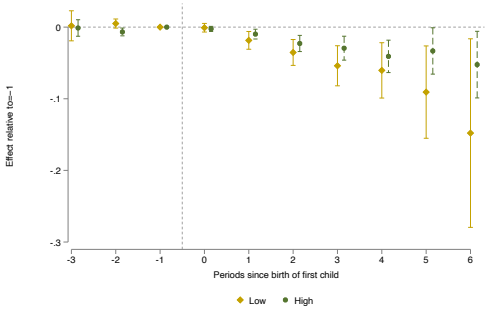
(a) Promotion probability



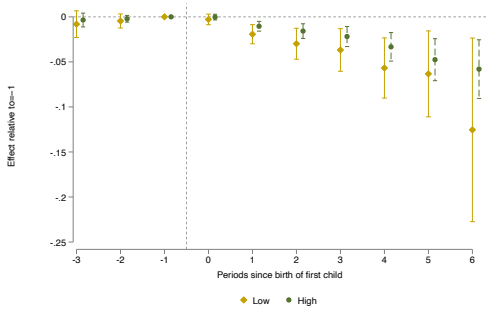
(b) Travel intensity



(c) Home-based work

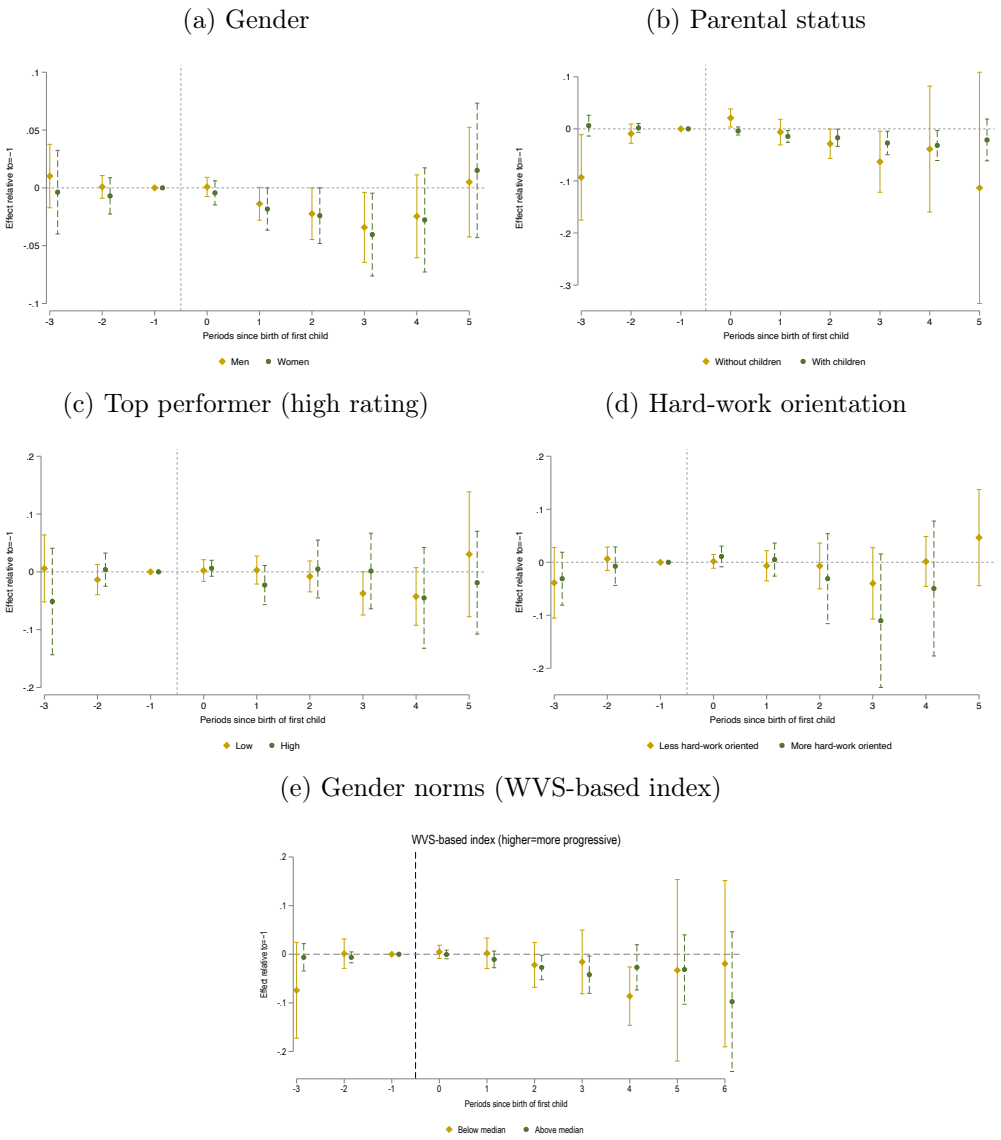


(d) Compressed work schedule



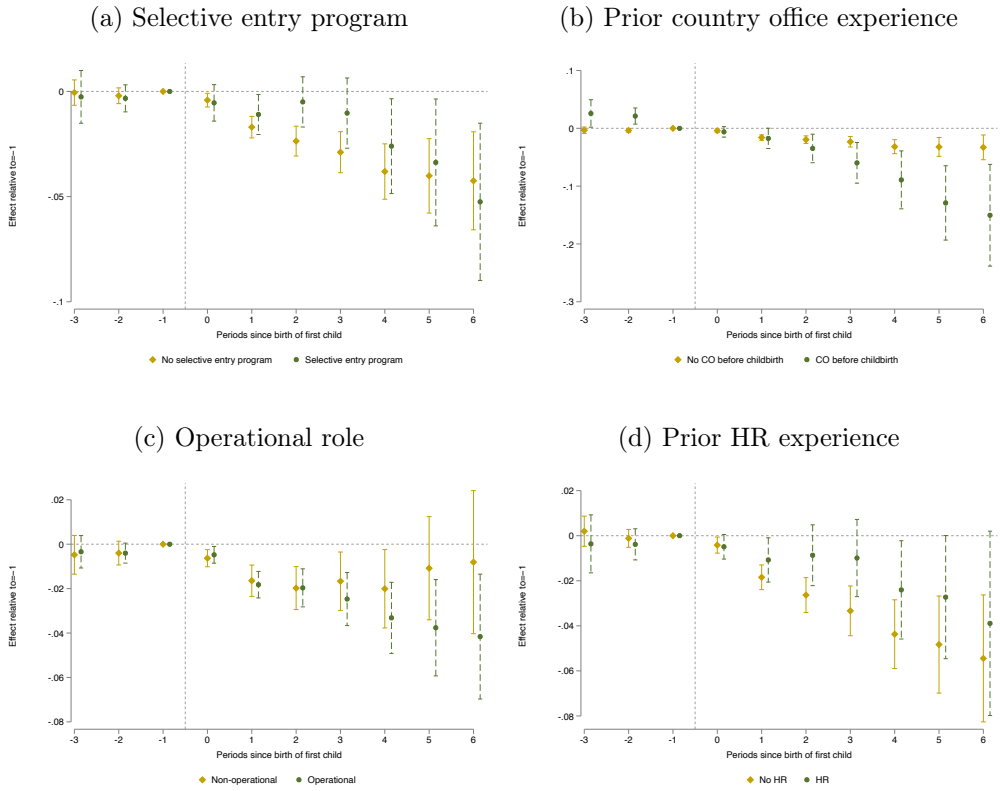
Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. Panel (a) covers the period 1988–2024, panel (b) the period 2010–2024, panel (c) the period 2011–2024, and panel (d) the period 1993–2024. In each panel, mothers are split into those in low- and high-characteristic jobs, classified according to the job's contemporaneous characteristics measured in year t using the job fixed effects (δ_j) from Equation 3, estimated on non-parents only. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, computed within each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level.

Figure A.12: Impact of first childbirth on annual salary, by contemporaneous manager's characteristics



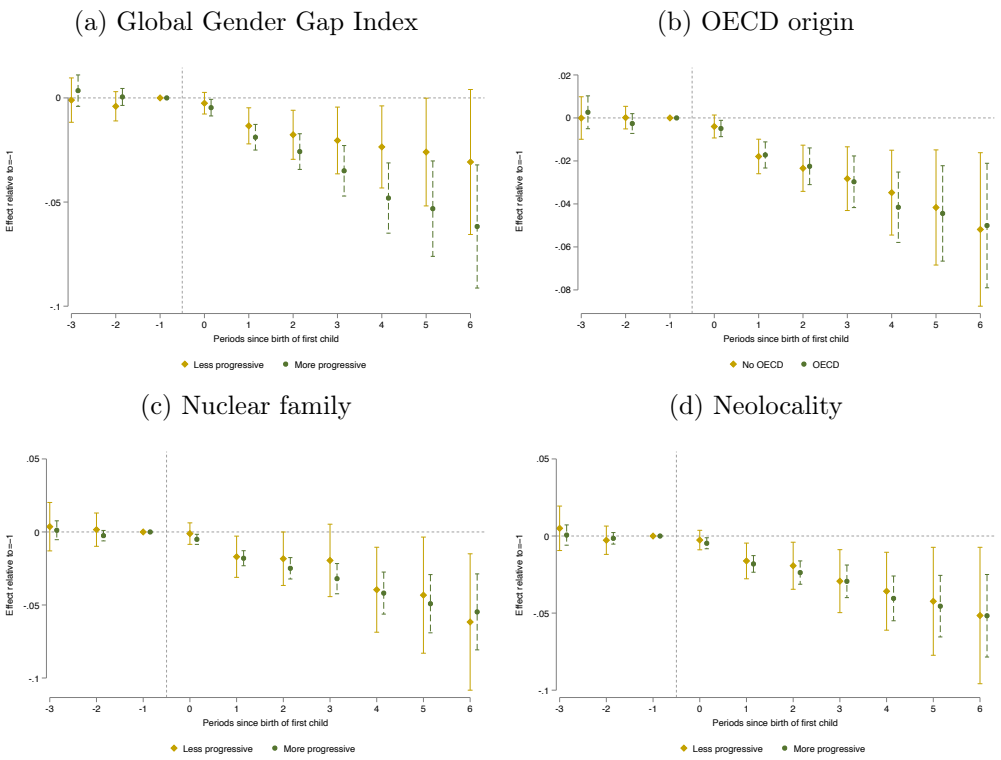
Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. All panels cover the period 2014-2024, except for panel (b), which covers the period 2014-2022. Manager characteristics are measured contemporaneously in each event year. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, computed within each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. In panel (c), a high performance rating is defined as a rating of 4 or 5. In panel (d), managers' hard-work orientation is measured using the Culture Wizard (CW) survey, so this panel is restricted to the smaller sample of mothers whose managers completed the survey. In panel (e), the gender-norms progressivity index is assigned based on the manager's nationality and constructed using World Values Surveys questions on female employment and maternal work. In panels (d) and (e), groups are defined relative to the median of the corresponding measure.

Figure A.13: Impact of first childbirth on annual salary, by mothers' pre-birth career experience



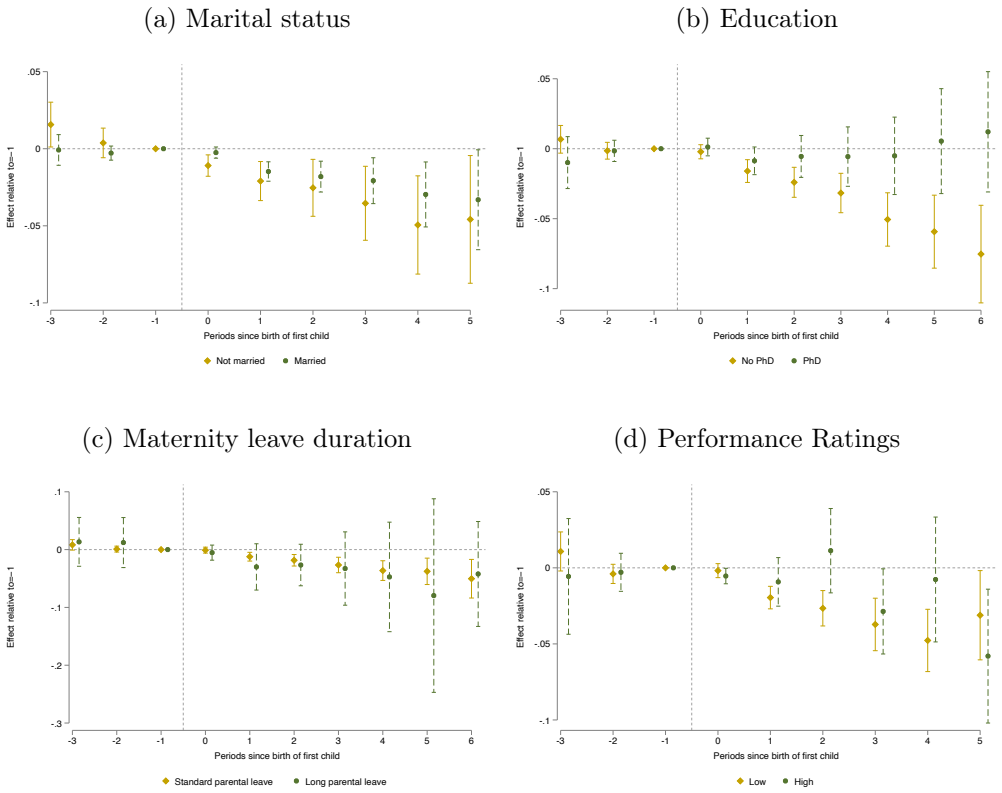
Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024. Mother characteristics are measured in the year before childbirth. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, computed within each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level.

Figure A.14: Impact of first childbirth on annual salary, by alternative measures of inherited gender and family norms



Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period from 1988 to 2024. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth, with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, calculated separately for each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. The Global Gender Gap Index, published by the World Economic Forum, measures gender parity, with higher values indicating greater equality. OECD origin indicates whether the mother's country of origin is an OECD member. The nuclear-family and neolocality indices, drawn from the Ethnographic Atlas and reported in Bau and Fernández (2023), capture, respectively, the prevalence of ancestral nuclear-family structures without co-residence with extended relatives and of newly married couples establishing an independent household. In Panels (a), (c), and (d), countries are classified as less or more progressive according to whether the corresponding index is below or above its median.

Figure A.15: Impact of first childbirth on annual salary, by contemporaneous mothers' characteristics



Note: The sample includes mothers aged 18–50 who are observed at least once before and at least once after childbirth, who entered at grade GE or above, and are based at Headquarters. The data cover the period 1988–2024, except for panel (d) which covers 1999-2022. Mother characteristics are measured contemporaneously at event time τ. Each coefficient captures the change in annual salary at event time τ relative to the year before childbirth ($\tau = -1$), with $\tau = 0$ corresponding to the year of birth. Coefficients are estimated separately for the two groups shown in each panel from regressions that control for age, individual fixed effects, and year fixed effects. They are expressed relative to the average level of annual salary in the year before childbirth, computed within each subgroup and age-at-first-birth group. The bars indicate 95% confidence intervals based on standard errors clustered at the individual level. In panel (c), long maternity leave indicates that the mother took more parental leave in either the year before or the year of first childbirth than the modal positive amount taken by mothers in the same calendar year; in panel (d), a high performance rating is defined as a rating of 4 or 5.

Table A.5: Differential evaluation: performance ratings by gender, parenthood, and observable behaviors

	First-time parents (event-study sample)		All professional staff (GE+, HQ)	
	Year FE	Indiv FE	Year FE	Indiv FE
Woman	0.018	0.000	0.087**	0.000
	(0.115)	(.)	(0.043)	(.)
Parent (post-birth)	0.162	0.102	0.197***	0.122
	(0.105)	(0.130)	(0.063)	(0.100)
Woman × Parent	-0.008	-0.131	-0.066	-0.162
	(0.141)	(0.175)	(0.088)	(0.128)
Travel (days/yr)	0.001	0.000	0.001**	0.001**
	(0.001)	(0.001)	(0.000)	(0.000)
Sick/family leave	0.002	0.001	-0.008***	-0.003
	(0.008)	(0.005)	(0.002)	(0.002)
Annual leave	0.002	0.004	0.001	0.001
	(0.003)	(0.003)	(0.001)	(0.001)
Home-based work (wks)	0.003	0.007	-0.003	-0.003
	(0.009)	(0.011)	(0.002)	(0.003)
Active projects	0.011	0.028	-0.006	0.020*
	(0.014)	(0.023)	(0.006)	(0.011)
New projects approved	0.253***	0.300**	0.221***	0.160***
	(0.093)	(0.121)	(0.030)	(0.033)
Working papers	0.004	-0.124***	0.056***	0.000
	(0.047)	(0.047)	(0.019)	(0.021)
Compressed schedule	-0.113	-0.162*	-0.052**	-0.032
	(0.071)	(0.092)	(0.021)	(0.044)
Hires STCs	0.074	-0.027	0.137***	0.026
	(0.068)	(0.077)	(0.022)	(0.026)
Woman × Travel (days/yr)	-0.001	0.001	-0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.001)
Woman × Sick/family leave	-0.010	0.001	-0.002	0.000
	(0.009)	(0.008)	(0.002)	(0.003)
Woman × Annual leave	-0.003	-0.008**	-0.001	-0.004**
	(0.004)	(0.004)	(0.001)	(0.001)
Woman × Home-based work (wks)	0.006	0.004	0.003	0.006*
	(0.011)	(0.014)	(0.003)	(0.003)
Woman × Active projects	0.015	-0.003	0.016*	0.002
	(0.024)	(0.034)	(0.010)	(0.020)
Woman × New projects approved	-0.066	-0.155	0.003	0.056
	(0.133)	(0.157)	(0.052)	(0.053)
Woman × Working papers	-0.008	0.013	0.014	0.047
	(0.097)	(0.104)	(0.034)	(0.035)
Woman × Compressed schedule	0.125	0.213*	0.006	-0.004
	(0.088)	(0.127)	(0.032)	(0.063)
Woman × Hires STCs	0.007	0.000	-0.014	-0.025
	(0.104)	(0.125)	(0.033)	(0.041)
Parent × Travel (days/yr)	-0.001	0.000	-0.001*	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Parent × Sick/family leave	-0.008	-0.004	0.001	-0.001
	(0.008)	(0.006)	(0.004)	(0.004)
Parent × Annual leave	-0.006*	-0.007**	-0.004**	-0.004**
	(0.003)	(0.003)	(0.002)	(0.002)
Parent × Home-based work (wks)	-0.014	-0.015	-0.008**	-0.004
	(0.009)	(0.011)	(0.003)	(0.004)
Parent × Active projects	-0.016	-0.029	-0.004	-0.017
	(0.016)	(0.023)	(0.009)	(0.017)
Parent × New projects approved	-0.082	-0.139	-0.030	0.012
	(0.102)	(0.130)	(0.051)	(0.057)
Parent × Working papers	0.068	0.142**	0.004	0.048
	(0.052)	(0.055)	(0.032)	(0.037)
Parent × Compressed schedule	0.090	0.123	0.035	0.055
	(0.082)	(0.108)	(0.044)	(0.080)
Parent × Hires STCs	0.044	0.003	-0.018	-0.057
	(0.075)	(0.083)	(0.039)	(0.044)
Woman × Parent × Travel (days/yr)	0.001	-0.000	0.001	0.000
	(0.001)	(0.002)	(0.001)	(0.001)
Woman × Parent × Sick/family leave	0.003	-0.003	-0.003	-0.003
	(0.010)	(0.010)	(0.004)	(0.005)
Woman × Parent × Annual leave	0.004	0.007	0.003	0.004
	(0.004)	(0.004)	(0.002)	(0.003)
Woman × Parent × Home-based work (wks)	0.007	0.006	0.008	0.004
	(0.012)	(0.015)	(0.005)	(0.006)
Woman × Parent × Active projects	-0.008	0.035	-0.008	0.024
	(0.027)	(0.034)	(0.016)	(0.026)
Woman × Parent × New projects approved	0.026	0.108	-0.051	-0.106
	(0.145)	(0.171)	(0.079)	(0.084)
Woman × Parent × Working papers	-0.006	-0.019	-0.000	-0.071
	(0.111)	(0.119)	(0.064)	(0.074)
Woman × Parent × Compressed schedule	-0.197*	-0.182	-0.102*	-0.032
	(0.103)	(0.140)	(0.061)	(0.100)
Woman × Parent × Hires STCs	-0.032	0.047	0.001	0.083
	(0.115)	(0.134)	(0.057)	(0.067)
F: behaviors × Women	0.59	0.99	0.75	1.48
p-value	0.809	0.447	0.660	0.148
F: behaviors × Parents	1.60	2.54	1.64	1.28
p-value	0.110	0.007	0.097	0.245
F: behaviors × Mothers (add.)	0.66	0.81	0.91	0.95
p-value	0.749	0.609	0.513	0.477
Individual FE	No	Yes	No	Yes
Observations	7,320	7,080	19,973	19,032
R-squared	0.023	0.334	0.026	0.344

Table A.6: Event-study estimates: earnings and career outcomes

	Annual salary			Grade			High performance rating		
Years since birth	Mothers	Fathers	Difference	Mothers	Fathers	Difference	Mothers	Fathers	Difference
-4	0.002	0.003	-0.001	-0.001	0.001	-0.002	0.117	0.007	0.110
	(0.005)	(0.005)	(0.007)	(0.002)	(0.002)	(0.003)	(0.117)	(0.111)	(0.161)
-3	0.002	0.002	0.000	-0.001	0.000	-0.001	0.198**	-0.180**	0.378***
	(0.003)	(0.003)	(0.004)	(0.001)	(0.001)	(0.002)	(0.097)	(0.083)	(0.128)
-2	-0.001	0.002	-0.003	-0.001	0.000	-0.001	0.192***	-0.021	0.213**
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.072)	(0.063)	(0.094)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	-0.004***	0.002	-0.006***	-0.001	0.001	-0.002*	-0.469***	-0.127**	-0.342***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.048)	(0.055)	(0.070)
1	-0.017***	-0.001	-0.017***	-0.004***	-0.000	-0.003**	-0.155**	-0.167***	0.011
	(0.003)	(0.002)	(0.003)	(0.001)	(0.001)	(0.001)	(0.062)	(0.058)	(0.085)
2	-0.024***	-0.000	-0.024***	-0.005***	-0.001	-0.004**	-0.147**	-0.163**	0.016
	(0.004)	(0.003)	(0.005)	(0.001)	(0.001)	(0.002)	(0.066)	(0.068)	(0.093)
3	-0.030***	0.001	-0.031***	-0.008***	-0.001	-0.007***	-0.147*	-0.155*	0.008
	(0.005)	(0.004)	(0.006)	(0.001)	(0.001)	(0.002)	(0.078)	(0.076)	(0.108)
4	-0.041***	-0.001	-0.040***	-0.010***	-0.002	-0.008***	0.030	-0.170**	0.200*
	(0.006)	(0.006)	(0.008)	(0.002)	(0.002)	(0.002)	(0.095)	(0.082)	(0.123)
5	-0.046***	-0.002	-0.043***	-0.012***	-0.002	-0.011***	0.073	-0.343***	0.417***
	(0.009)	(0.007)	(0.011)	(0.002)	(0.002)	(0.003)	(0.104)	(0.083)	(0.130)
6	-0.054***	-0.002	-0.052***	-0.015***	-0.002	-0.013***	-0.014	-0.287***	0.272*
	(0.012)	(0.010)	(0.015)	(0.002)	(0.002)	(0.003)	(0.115)	(0.100)	(0.150)
Post avg	-0.031***	-0.000	-0.030***	-0.008***	-0.001	-0.007***	-0.118*	-0.202***	0.083
Joint pre-test p-value	0.679	0.778	0.629	0.715	0.912	0.616	0.031**	0.128	0.010***

Note: This table reports event-study estimates around the birth of the first child for mothers and fathers. Event time $\tau = -1$ is the omitted reference period. Difference is defined as Mothers minus Fathers. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. The joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -4$, $\tau = -3$, and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-test, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table A.7: Event-study estimates: responsibilities and outputs

	New project initiated			Active project supervised			External consultants hired			Working-paper authorship		
Years since birth	Mothers	Fathers	Difference	Mothers	Fathers	Difference	Mothers	Fathers	Difference	Mothers	Fathers	Difference
-4	-0.239	-0.331	0.092	0.082	0.045	0.037	-0.284	-0.155	-0.129	0.385	-0.242	0.627
	(0.409)	(0.487)	(0.624)	(0.084)	(0.087)	(0.120)	(0.236)	(0.291)	(0.371)	(0.692)	(0.277)	(0.750)
-3	-0.331	-0.047	-0.283	0.060	-0.028	0.088	-0.046	0.007	-0.053	-0.027	-0.330*	0.303
	(0.266)	(0.352)	(0.442)	(0.052)	(0.047)	(0.067)	(0.144)	(0.172)	(0.228)	(0.374)	(0.202)	(0.424)
-2	-0.068	0.245	-0.313	0.006	-0.009	0.015	0.084	0.425***	-0.340**	0.400	-0.010	0.410
	(0.213)	(0.305)	(0.374)	(0.027)	(0.028)	(0.040)	(0.095)	(0.129)	(0.163)	(0.300)	(0.159)	(0.346)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	-0.461**	0.340	-0.801**	-0.055**	-0.042	-0.013	-0.175**	0.232**	-0.406***	0.108	-0.197	0.305
	(0.178)	(0.302)	(0.357)	(0.025)	(0.027)	(0.038)	(0.069)	(0.105)	(0.125)	(0.236)	(0.122)	(0.258)
1	-0.505**	-0.006	-0.498	-0.131***	-0.087**	-0.044	-0.198*	0.107	-0.305*	-0.469**	-0.301*	-0.167
	(0.201)	(0.317)	(0.369)	(0.037)	(0.039)	(0.055)	(0.104)	(0.146)	(0.175)	(0.212)	(0.145)	(0.256)
2	-0.415	0.204	-0.619	-0.191***	-0.116**	-0.076	-0.331***	0.161	-0.492***	0.175	-0.259	0.435
	(0.256)	(0.368)	(0.428)	(0.052)	(0.052)	(0.074)	(0.126)	(0.170)	(0.213)	(0.355)	(0.171)	(0.401)
3	-0.567	0.417	-0.984*	-0.251***	-0.143**	-0.108	-0.380**	0.362*	-0.743***	0.147	-0.641***	0.787**
	(0.331)	(0.432)	(0.540)	(0.067)	(0.068)	(0.096)	(0.154)	(0.229)	(0.270)	(0.385)	(0.182)	(0.428)
4	-0.814**	0.900**	-1.714***	-0.210**	-0.164**	-0.046	-0.483***	0.387	-0.870**	-0.395	-0.336	-0.059
	(0.337)	(0.534)	(0.628)	(0.080)	(0.081)	(0.113)	(0.187)	(0.280)	(0.336)	(0.416)	(0.233)	(0.483)
5	-1.126***	0.372	-1.498**	-0.248**	-0.143	-0.105	-0.391*	0.590*	-0.981**	-0.509	-0.354	-0.156
	(0.361)	(0.574)	(0.674)	(0.101)	(0.104)	(0.144)	(0.219)	(0.373)	(0.427)	(0.568)	(0.272)	(0.637)
6	-0.625	1.085*	-1.710**	-0.329**	-0.155	-0.174	-0.320	0.636	-0.956*	-0.629	-0.290	-0.340
	(0.437)	(0.651)	(0.789)	(0.125)	(0.125)	(0.174)	(0.285)	(0.471)	(0.552)	(0.655)	(0.256)	(0.715)
Post avg	-0.645***	0.473*	-1.118***	-0.202***	-0.121*	-0.081	-0.325**	0.354*	-0.679***	-0.224	-0.340**	0.115
Joint pre-test p-value	0.656	0.638	0.763	0.686	0.752	0.562	0.424	0.005***	0.169	0.580	0.432	0.624

Note: This table reports event-study estimates around the birth of the first child for mothers and fathers. Event time $\tau = -1$ is the omitted reference period. Difference is defined as Mothers minus Fathers. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. The joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -4$, $\tau = -3$, and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-test, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table A.8: Event-study estimates: output quality

	Pr. of successful ex-post project rating			Downloads of published working papers		
Years since birth	Mothers	Fathers	Difference	Mothers	Fathers	Difference
-4	0.113*	0.030	0.083	0.112	1.110	-0.998
	(0.065)	(0.075)	(0.102)	(1.199)	(1.418)	(1.823)
-3	0.047	-0.006	0.052	0.556	0.928	-0.372
	(0.033)	(0.027)	(0.041)	(0.808)	(0.861)	(1.209)
-2	0.018	-0.014	0.032*	0.779	0.054	0.724
	(0.013)	(0.015)	(0.020)	(0.666)	(0.556)	(0.870)
-1	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	0.008	-0.007	0.015	0.320	0.100	0.220
	(0.011)	(0.010)	(0.016)	(0.430)	(0.408)	(0.568)
1	-0.003	-0.020	0.017	-0.652*	-0.167	-0.486
	(0.022)	(0.022)	(0.030)	(0.331)	(0.398)	(0.514)
2	-0.037	-0.029	-0.008	0.019	-0.252	0.271
	(0.035)	(0.029)	(0.044)	(0.666)	(0.415)	(0.792)
3	-0.045	-0.043	-0.003	0.260	-0.590	0.851
	(0.051)	(0.042)	(0.063)	(0.845)	(0.407)	(0.953)
4	-0.059	-0.026	-0.033	-1.093	-0.445	-0.648
	(0.075)	(0.052)	(0.086)	(0.773)	(0.394)	(0.882)
5	-0.150	-0.073	-0.077	-0.538	-1.037	0.499
	(0.105)	(0.074)	(0.121)	(1.184)	(0.674)	(1.390)
6	-0.270**	-0.155	-0.115	0.186	-0.148	0.334
	(0.140)	(0.118)	(0.174)	(1.333)	(0.423)	(1.430)
Post avg	-0.079	-0.050	-0.029	-0.214	-0.363	0.149
Joint pre-test p-value	0.271	0.771	0.373	0.614	0.676	0.792

Note: This table reports event-study estimates around the birth of the first child for mothers and fathers. Event time $\tau = -1$ is the omitted reference period. Difference is defined as Mothers minus Fathers. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. The joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -4$, $\tau = -3$, and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-test, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table A.9: Event-study estimates: time use and work arrangements

	Days of work-related travel			Sick and family leave (days per year)			Home-based work (weeks per year)		
Years since birth	Mothers	Fathers	Difference	Mothers	Fathers	Difference	Mothers	Fathers	Difference
-4	0.149	0.208	-0.059	-0.187	0.210	-0.397	-0.048	-0.012	-0.036
	(0.179)	(0.131)	(0.219)	(0.137)	(0.205)	(0.234)	(0.056)	(0.030)	(0.063)
-3	0.134	-0.039	0.173	-0.172*	0.092	-0.264	-0.076	-0.073	-0.002
	(0.098)	(0.097)	(0.138)	(0.092)	(0.151)	(0.168)	(0.062)	(0.052)	(0.081)
-2	0.161*	-0.000	0.161	-0.012	0.030	-0.042	-0.127	0.019	-0.145
	(0.086)	(0.063)	(0.106)	(0.075)	(0.096)	(0.120)	(0.087)	(0.104)	(0.137)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	-0.764***	-0.352***	-0.411***	0.579***	0.414***	0.165	-0.183*	0.027	-0.210
	(0.059)	(0.045)	(0.077)	(0.100)	(0.114)	(0.152)	(0.090)	(0.108)	(0.141)
1	-0.536***	-0.225***	-0.312***	0.326***	0.599***	-0.273*	-0.083	0.095	-0.178
	(0.061)	(0.057)	(0.085)	(0.095)	(0.131)	(0.166)	(0.123)	(0.148)	(0.203)
2	-0.536***	-0.183**	-0.353***	0.367***	0.815***	-0.448**	-0.021	-0.022	0.001
	(0.084)	(0.067)	(0.107)	(0.122)	(0.203)	(0.235)	(0.156)	(0.182)	(0.241)
3	-0.493***	-0.197*	-0.296**	0.457***	1.056***	-0.599*	0.026	0.176	-0.150
	(0.081)	(0.104)	(0.134)	(0.143)	(0.312)	(0.351)	(0.164)	(0.221)	(0.279)
4	-0.483***	-0.179	-0.304*	0.446***	0.797***	-0.351	0.217	0.211	0.006
	(0.116)	(0.120)	(0.169)	(0.174)	(0.259)	(0.309)	(0.224)	(0.257)	(0.339)
5	-0.452***	-0.325**	-0.127	0.181	0.758**	-0.577	0.419	0.332	0.088
	(0.122)	(0.166)	(0.205)	(0.179)	(0.342)	(0.388)	(0.295)	(0.306)	(0.423)
6	-0.361*	-0.264	-0.096	0.153	0.581*	-0.428	0.520	0.560	-0.040
	(0.195)	(0.156)	(0.251)	(0.186)	(0.341)	(0.397)	(0.360)	(0.396)	(0.533)
Post avg	-0.518***	-0.246***	-0.271**	0.358***	0.717***	-0.359*	0.128	0.197	-0.069
Joint pre-test p-value	0.284	0.357	0.278	0.239	0.773	0.340	0.342	0.470	0.663

Note: This table reports event-study estimates around the birth of the first child for mothers and fathers. Event time $\tau = -1$ is the omitted reference period. Difference is defined as Mothers minus Fathers. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. The joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -4$, $\tau = -3$, and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-test, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table A.10: Event-study estimates: job sorting

	Job switching			High-promotion job			High-travel job			High home-based-work job		
Years since birth	Mothers	Fathers	Difference	Mothers	Fathers	Difference	Mothers	Fathers	Difference	Mothers	Fathers	Difference
-4	0.135	0.009	0.125	0.017	0.038	-0.021	0.119***	0.103**	0.016	0.012	-0.185**	0.197
	(0.119)	(0.116)	(0.169)	(0.049)	(0.046)	(0.068)	(0.048)	(0.047)	(0.069)	(0.082)	(0.094)	(0.127)
-3	0.092	0.032	0.060	0.024	0.071**	-0.047	0.060**	0.053*	0.007	0.029	-0.061	0.090
	(0.094)	(0.094)	(0.134)	(0.030)	(0.031)	(0.044)	(0.028)	(0.030)	(0.043)	(0.047)	(0.050)	(0.067)
-2	0.092	0.010	0.082	-0.011	0.007	-0.018	-0.001	0.006	-0.007	-0.003	0.007	-0.010
	(0.075)	(0.081)	(0.112)	(0.016)	(0.016)	(0.022)	(0.016)	(0.015)	(0.021)	(0.026)	(0.024)	(0.034)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	-0.231***	-0.022	-0.209**	-0.033**	-0.022	-0.011	-0.003	0.007	-0.011	-0.031	-0.019	-0.012
	(0.059)	(0.068)	(0.086)	(0.014)	(0.014)	(0.020)	(0.012)	(0.013)	(0.017)	(0.020)	(0.024)	(0.032)
1	-0.276***	-0.049	-0.227***	-0.092***	-0.033	-0.059*	-0.019	0.003	-0.022	0.024	-0.017	0.042
	(0.064)	(0.073)	(0.097)	(0.021)	(0.021)	(0.030)	(0.019)	(0.021)	(0.028)	(0.035)	(0.038)	(0.050)
2	-0.287***	-0.151*	-0.137	-0.140***	-0.055**	-0.085**	-0.066**	-0.002	-0.064	0.023	-0.034	0.057
	(0.070)	(0.078)	(0.103)	(0.028)	(0.026)	(0.037)	(0.028)	(0.029)	(0.039)	(0.049)	(0.054)	(0.073)
3	-0.327***	-0.128	-0.199*	-0.200***	-0.100***	-0.101**	-0.085**	-0.004	-0.081	0.024	0.058	-0.033
	(0.075)	(0.091)	(0.116)	(0.033)	(0.031)	(0.044)	(0.037)	(0.037)	(0.052)	(0.060)	(0.073)	(0.097)
4	-0.306***	-0.305***	-0.001	-0.195***	-0.140***	-0.055	-0.056	-0.000	-0.056	0.113	0.092	0.020
	(0.092)	(0.094)	(0.125)	(0.039)	(0.038)	(0.053)	(0.043)	(0.043)	(0.061)	(0.074)	(0.086)	(0.116)
5	-0.284***	-0.116	-0.168	-0.194***	-0.110***	-0.084	-0.113*	0.017	-0.130*	0.219***	0.170*	0.050
	(0.102)	(0.104)	(0.144)	(0.049)	(0.043)	(0.064)	(0.056)	(0.051)	(0.073)	(0.090)	(0.104)	(0.138)
6	-0.234*	-0.156	-0.078	-0.249***	-0.081*	-0.169***	-0.107	-0.064	-0.043	0.243**	0.183*	0.060
	(0.118)	(0.109)	(0.166)	(0.058)	(0.045)	(0.074)	(0.075)	(0.061)	(0.096)	(0.110)	(0.117)	(0.161)
Post avg	-0.278***	-0.132*	-0.145*	-0.158***	-0.077***	-0.081**	-0.064*	-0.006	-0.058	0.088*	0.062	0.026
Joint pre-test p-value	0.518	0.989	0.837	0.478	0.078*	0.739	0.030**	0.150	0.969	0.897	0.230	0.340

Note: This table reports event-study estimates around the birth of the first child for mothers and fathers. Event time $\tau = -1$ is the omitted reference period. Difference is defined as Mothers minus Fathers. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. The joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -4$, $\tau = -3$, and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-test, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table A.11: Event-study estimates: heterogeneity by job's pre-birth characteristics

	Promotion potential			Travel intensity			Home-based work		
Years since birth	Low	High	Difference	Low	High	Difference	Low	High	Difference
-3	0.018**	-0.004	-0.023***	0.005	0.003	-0.002	0.001	0.004	0.003
	(0.008)	(0.003)	(0.008)	(0.007)	(0.004)	(0.008)	(0.005)	(0.005)	(0.007)
-2	0.006*	-0.005**	-0.010**	-0.004	-0.001	0.003	0.001	-0.003	-0.004
	(0.003)	(0.002)	(0.004)	(0.004)	(0.002)	(0.005)	(0.003)	(0.003)	(0.004)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	0.002	-0.007***	-0.009***	-0.003	-0.004**	-0.001	-0.006*	-0.004*	0.002
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.004)	(0.003)	(0.002)	(0.004)
1	-0.003	-0.021***	-0.017***	-0.003	-0.022***	-0.019***	-0.020***	-0.015***	0.006
	(0.006)	(0.003)	(0.006)	(0.006)	(0.003)	(0.007)	(0.005)	(0.004)	(0.006)
2	-0.003	-0.024***	-0.020**	-0.003	-0.029***	-0.026***	-0.029***	-0.017***	0.011
	(0.008)	(0.004)	(0.009)	(0.008)	(0.005)	(0.009)	(0.006)	(0.006)	(0.008)
3	-0.010	-0.027***	-0.018	0.001	-0.037***	-0.039***	-0.038***	-0.021***	0.016
	(0.013)	(0.005)	(0.013)	(0.010)	(0.006)	(0.012)	(0.008)	(0.007)	(0.011)
4	-0.026	-0.034***	-0.008	-0.010	-0.050***	-0.040***	-0.049***	-0.029***	0.021
	(0.019)	(0.006)	(0.020)	(0.012)	(0.008)	(0.015)	(0.011)	(0.010)	(0.015)
5	-0.056**	-0.034***	0.022	-0.008	-0.057***	-0.049**	-0.055***	-0.031**	0.024
	(0.027)	(0.009)	(0.029)	(0.017)	(0.010)	(0.020)	(0.014)	(0.013)	(0.019)
6	-0.076*	-0.039***	0.037	-0.015	-0.072***	-0.058*	-0.068***	-0.039**	0.030
	(0.041)	(0.011)	(0.042)	(0.025)	(0.013)	(0.028)	(0.018)	(0.020)	(0.026)
Post avg	-0.025	-0.026***	-0.002	-0.006	-0.039***	-0.033***	-0.038***	-0.022***	0.016
Joint pre-test p-value	0.039**	0.079*	0.006***	0.288	0.648	0.640	0.955	0.185	0.429

Note: This table reports event-study estimates around the birth of the first child for mothers, separately by the characteristics of their jobs prior to childbirth. Event time $\tau = -1$ is the omitted reference period. For each heterogeneity dimension, Difference is defined as the estimate for the second subgroup minus the estimate for the first subgroup, following the order shown in the table. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. Each joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -3$ and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-tests, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table A.12: Event-study estimates: heterogeneity by mothers' pre-birth characteristics

Panel A: Marital status, education, and performance ratings

	Marital status			Education			Performance ratings		
Years since birth	Not married	Married	Difference	No PhD	PhD	Difference	Low	High	Difference
-3	0.013**	-0.003	-0.016**	0.006	-0.008	-0.013*	0.004	0.001	-0.003
	(0.006)	(0.004)	(0.007)	(0.005)	(0.008)	(0.009)	(0.005)	(0.005)	(0.007)
-2	0.003	-0.002	-0.005	-0.002	-0.005	-0.003	-0.004	0.002	0.006
	(0.004)	(0.002)	(0.004)	(0.003)	(0.004)	(0.005)	(0.003)	(0.003)	(0.004)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	-0.011***	-0.002	0.009**	-0.002	0.001	0.004	-0.013***	0.014***	0.027***
	(0.003)	(0.002)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)
1	-0.021***	-0.016***	0.005	-0.016***	-0.010**	0.006	-0.031***	0.011**	0.042***
	(0.005)	(0.003)	(0.006)	(0.004)	(0.005)	(0.006)	(0.003)	(0.004)	(0.006)
2	-0.032***	-0.020***	0.012	-0.023***	-0.009	0.014	-0.041***	0.013**	0.054***
	(0.007)	(0.004)	(0.008)	(0.005)	(0.008)	(0.009)	(0.005)	(0.006)	(0.008)
3	-0.047***	-0.022***	0.025**	-0.028***	-0.014	0.015	-0.053***	0.011	0.064***
	(0.009)	(0.005)	(0.010)	(0.007)	(0.011)	(0.013)	(0.007)	(0.008)	(0.010)
4	-0.059***	-0.031***	0.028**	-0.046***	-0.017	0.029*	-0.067***	0.002	0.069***
	(0.012)	(0.007)	(0.014)	(0.009)	(0.014)	(0.016)	(0.009)	(0.011)	(0.014)
5	-0.071***	-0.031***	0.040**	-0.052***	-0.014	0.038*	-0.076***	0.003	0.078***
	(0.016)	(0.010)	(0.018)	(0.011)	(0.017)	(0.021)	(0.012)	(0.015)	(0.019)
6	-0.090***	-0.036***	0.054**	-0.064***	-0.022	0.043	-0.089***	-0.006	0.082***
	(0.021)	(0.013)	(0.024)	(0.015)	(0.022)	(0.027)	(0.015)	(0.019)	(0.024)
Post avg	-0.047***	-0.022***	0.025**	-0.033***	-0.012	0.021*	-0.053***	0.007	0.060***
Joint pre-test p-value	0.100*	0.477	0.091*	0.121	0.384	0.318	0.040**	0.836	0.196

Panel B: Career orientation, maternity leave, and gender norms

	Career orientation (CW)			Maternity leave duration			Gender norms in origin country (WVS)		
Years since birth	Less hard-work oriented	More hard-work oriented	Difference	Standard parental leave	Long parental leave	Difference	Below median	Above median	Difference
-3	0.006	0.003	-0.003	0.008	0.013	0.005	0.001	0.002	0.001
	(0.011)	(0.008)	(0.013)	(0.005)	(0.024)	(0.024)	(0.006)	(0.004)	(0.007)
-2	-0.007	-0.003	0.003	0.001	0.012	0.011	-0.002	-0.001	0.002
	(0.006)	(0.004)	(0.007)	(0.003)	(0.020)	(0.020)	(0.004)	(0.002)	(0.004)
-1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
0	-0.004	-0.008	-0.004	-0.001	-0.005	-0.004	-0.005	-0.005***	0.000
	(0.005)	(0.005)	(0.007)	(0.003)	(0.007)	(0.007)	(0.004)	(0.002)	(0.004)
1	-0.019***	-0.014**	0.005	-0.012***	-0.030*	-0.018	-0.017***	-0.018***	-0.001
	(0.007)	(0.007)	(0.010)	(0.004)	(0.018)	(0.018)	(0.005)	(0.003)	(0.006)
2	-0.031***	-0.012	0.019	-0.018***	-0.027	-0.008	-0.022***	-0.025***	-0.002
	(0.010)	(0.008)	(0.013)	(0.005)	(0.019)	(0.019)	(0.007)	(0.004)	(0.008)
3	-0.028*	-0.008	0.020	-0.027***	-0.033	-0.006	-0.024***	-0.031***	-0.007
	(0.014)	(0.011)	(0.018)	(0.007)	(0.026)	(0.027)	(0.009)	(0.006)	(0.010)
4	-0.040**	-0.014	0.026	-0.036***	-0.047	-0.011	-0.028***	-0.043***	-0.015
	(0.017)	(0.014)	(0.024)	(0.009)	(0.036)	(0.037)	(0.011)	(0.008)	(0.014)
5	-0.049*	-0.014	0.035	-0.038***	-0.080	-0.042	-0.038**	-0.045***	-0.007
	(0.024)	(0.019)	(0.031)	(0.012)	(0.059)	(0.061)	(0.014)	(0.011)	(0.017)
6	-0.050	-0.037**	0.013	-0.050***	-0.042	0.008	-0.055***	-0.051***	0.004
	(0.034)	(0.022)	(0.040)	(0.018)	(0.049)	(0.051)	(0.020)	(0.014)	(0.024)
Post avg	-0.032**	-0.015*	0.016	-0.026***	-0.038	-0.012	-0.027***	-0.031***	-0.004
Joint pre-test p-value	0.249	0.448	0.799	0.213	0.779	0.853	0.683	0.716	0.896

Note: This table reports event-study estimates around the birth of the first child for mothers, separately by maternal characteristics measured prior to childbirth. Event time $\tau = -1$ is the omitted reference period. For each heterogeneity dimension, Difference is defined as the estimate for the second subgroup minus the estimate for the first subgroup, following the order shown in the table. Bootstrap standard errors are reported in parentheses. Post avg is the unweighted average of the event-study coefficients from $\tau = 0$ through $\tau = 6$. Each joint pre-test reports the p-value for the null hypothesis that the coefficients at $\tau = -3$ and $\tau = -2$ are jointly equal to zero. For the event-time estimates and post averages, *, **, and *** indicate that the 90%, 95%, and 99% percentile bootstrap confidence intervals exclude zero, respectively. For the joint pre-tests, *, **, and *** denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.