Daddy's girl: Daughters, managerial decisions, and gender inequality

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Abstract

We study the role of managers' gender attitudes in shaping gender inequality within the workplace. Using Danish registry data, we exploit the birth of a daughter as opposed to a son as a plausibly exogeneous shock to male managers' gender attitudes and compare within-firm changes in women's labor outcomes depending on the manager's newborn gender. We find that women's relative earnings and employment increase by 4.4% and 2.9% respectively following the birth of the manager's first daughter. These effects are driven by an increase in managers' propensity to replace male workers by hiring women with comparable education, hours worked, and earnings. In line with managers' ability to substitute men with comparable women, we do not detect any significant effect on firm performance. Finally, we find evidence of rapid behavioral responses which intensify over time, suggesting that both salience and direct exposure to themes of gender equality contribute to our results.

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1 Introduction

Despite remarkable convergence in most indicators of economic success, large gender differences in career trajectories persist in the corporate world. Women are still under-represented in leadership positions and high-paying occupations (e.g. **?**), are less likely to be promoted than their male counterparts (e.g. **?**), and receive less recognition for their work (e.g. **??**). While several factors have been proposed to rationalize these gaps, attitudes towards women's role in the workplace and labor market at large have attracted increasing attention as a potential explanation. In particular, a growing body of work shows that gender attitudes can contribute to gender gaps in earnings and employment by affecting women's own career choices and outcomes (**??**). However, differences in the career progression of men and women are also plausibly affected by the decisions and actions of managers. Yet, surprisingly little is known about the role played by managers' gender attitudes in shaping gender disparities within and across workplaces.

This paper studies whether and how gender attitudes shape managers' decisions over hiring, retention, and promotions, and their implications for firm-level gender inequality. Because managers are a key input of firm behavior (**?**), uncovering the interplay between their gender attitudes and human resource practices can provide important insights into the labor market dynamics leading to the observed gender disparities in economic outcomes.[1] However, establishing this causal relationship is challenging, for two reasons. First it is hard to identify and isolate the role of attitudes, as they are generally unobservable and endogenous. Second, due to the endogeneity of a manager-firm match, it is difficult to identify the causal impacts of managers on corporate outcomes. To overcome these challenges one would ideally need to randomly assign attitudes to managers, holding everything else constant - including the match between a manager and a firm. As this ideal experiment is hard to come by, it remains unclear whether managers' gender attitudes play a role in shaping gender inequalities in the workplace.

We fill this knowledge gap by exploiting a natural experiment that comes as close as possible to the ideal one, as it generates an exogenous shift in managers' gender attitudes while allowing us to estimates changes in gender inequality within a manager-firm match. Specifically, motivated by sociological work showing that fathering daughters makes men more sensitive to themes of gender equality, we exploit the birth of a daughter, as opposed to a son, as a plausibly exogeneous shock to unobservable male managers' gender attitudes. We then account for the non-random allocation of managers across organizations by comparing within-firm changes in women's relative outcomes along hiring, promotion, and retention margins depending on the gender of the manager's newborn.[2]

[1] Related research has focused on the role of managerial attitudes for firm financial policies. For example, managerial attitudes such as overconfidence and risk aversion are found to affect firm financing, investment, and performance (see **?** for a survey). The potential impact of managers' gender attitudes on human resource practices remains however unexplored.

[2] In pioneering work from sociology, **?** shows that having daughters affects parental attitudes and behavior towards women and can be "instrumental for consciousness raising, especially for fathers". Warner's hypothesis is that men with daughters should have "heightened awareness" of the "structural and cultural barriers that still exist for women and girls in our society" and thus should be more sensitive to the issue of gender inequality than men with sons (**?**). Later studies confirmed Warner's findings, showing a positive effect of

In order to make sure that we have enough traction to identify the presence of a *daughter effect*, i.e. whether women's relative outcomes improve in firms where *male* managers experience the birth of a daughter as opposed to a son, we use registry data on the universe of single-manager firms in Denmark. Danish administrative data allows us to link employer-employee matched information with longitudinal information on individuals' household composition. Thanks to this unique feature, we can identify the sample of male managers who experience a birth, exploit the randomness of child's gender as an exogenous shock to their gender attitudes, and account for the endogenous match between managers and firms by identifying the impacts of interest within a job spell.

We present four sets of results. First, we find evidence of a daughter effect, as women's relative earnings and employment increase in establishments where male managers experience the birth of an additional daughter, as opposed to an additional son. Importantly, we rule out the possibility that these effects are due to differential managers' mobility or differential take-up rate of paternity leave depending on the newborn gender. Our results show that the positive effects on women's relative outcomes are driven by managers who experience the birth of their first daughter, while we do not detect similar effects from a newborn's gender at higher parities. Quantitatively, female relative earnings and employment increase by 4.4% and 2.9% respectively following the birth of a manager's first daughter. Because several studies have found a negative relationship between female-led companies and gender gaps in wages and promotions (e.g. **?**; **?**), we benchmark these magnitudes to the effects of having a female manager and find that the size of the daughter effect is between 20% and 50% of the positive association between female relative outcomes and female-led companies.

Second, we investigate the margins of adjustment behind the estimated impacts and find that female employment and earnings are mostly affected through the hiring margin, while patterns of job separation and promotions remain unaffected. In particular, the birth of a manager's first daughter steers the composition of hires towards women, and especially women with post-secondary education, who work full-time, and earn high salaries in the firm. We do not detect significant impacts on the share of women working part-time or with pre-school children, which indirectly suggests that the newborn gender does not affect the likelihood that managers implement human resource practices favoring the work-life balance of female employees. Importantly, while the birth event impacts the composition of the female workforce, it leaves the average characteristics of the overall workforce as well as average labor costs per employee unaffected. This indicates that the improvement in women's relative outcomes is not achieved through a general restructuring of the firm labor force. Rather, treated managers tend to *substitute* male workers by hiring women with comparable characteristics. As a result, the only observable characteristic of the workforce that appears to be affected is its gender-mix. Through a series of heterogeneity tests, our analysis also suggests that frictions on the supply-side of the labor market are likely to limit the daughter effect — as the results are stronger in firms that operate in more female intensive industries — and that daughters may lead to some convergence in gender equality within sectors — as

daughters on men's gender attitudes and support for policies tackling gender inequality (e.g. **?**; **?**). Instead, effects on gender gaps in the labor market have been overlooked.

effects are concentrated in firms whose share of female employment was below the industry average before the birth event.

Third, we explore the mechanisms through which daughters can affect male managers' behavior towards women. One possibility is that managers gradually change their behavior as they get exposed to gender issues through their daughters' life experiences. For example, by raising their daughters, male managers may progressively learn about relevant female traits and the structural or cultural barriers they may face in the labor market and society at large. In case the effects are driven by exposure to daughters' life experiences, one would reasonably expect changes in human resource management to appear some time after the birth event and to develop as daughters grow older. Another channel could work via increased salience of gender issues as soon as a manager experiences the birth of their first daughter, with an associated change in attitudes towards women. Existing work shows that this may happen both because daughters increase their fathers' awareness of gender inequality, thus shaping their beliefs, or because they make them feel closer to women in general, thus affecting their preferences.[3] While registry data do not naturally lend themselves to study changes in preferences and beliefs, we can leverage their longitudinal nature and focus on the timing of the estimated effects to gain indirect insights into the plausible mechanisms at play.

In an event-study analysis, we find evidence of effects appearing right after birth and persisting while a manager stays in the firm, suggesting that our results cannot be fully explained by a reduction in managers' informational asymmetries following gradual exposure to their own daughters. Rather, this evidence is consistent with a discontinuous and persistent increase in the salience of gender issues upon birth of the first daughter. However, it should be noted that the relatively short time window analyzed in the event-study may not be sufficient to reveal whether sustained exposure to female children affects fathers' behavior. We therefore test whether the estimated effects vary over a longer time span in a cross section of managers whose oldest daughters belong to different age groups. Consistent with the hypothesis of learning through exposure, we find that the daughter effect increases with the age of the manager's first daughter, especially from late adolescence onward.

Finally, we investigate whether the observed improvement in gender equality has an impact on firm performance. Theoretically, the daughter effect might hurt performance if a manager lowers the productivity threshold used to evaluate female employees. On the other hand, if discrimination was the key driver of gender inequality in the pre-birth period, the daughter effect may redress such distortion. Using employment, sales per employee, and value-added per employee as measures of firm performance, we do not detect any statistical difference in the latter depending on the gender of the manager's newborn child. This result is in line with our evidence on the margins of adjustments, which indicates that managers are able to replace male workers by hiring comparable female workers. In particular, the in-

[3]Specifically, there is evidence that the birth of a daughter can change men's perception of gender roles (e.g. ?; ?) as well as that fathers with daughters may identify more with women when forming their own views and preferences (e.g. ?; ?). A rapid change in managers' behavior might also be explained by a rational drive to reduce overall gender inequality in labor outcomes, as this may directly benefit a manager's female child. However, this explanation seems less plausible in our context as the actions of a single manager are unlikely to significantly impact aggregate levels of gender inequality.

significant effect on performance may reflect the fact that, in the context we study, managers can alter the gender-mix of the workforce without affecting any other of its dimensions.[4] This result may be specific to the fact that our analysis focuses on lower-ranked employees. Indeed previous work shows not only that lower-ranked employees are easier to replace than higher-ranked ones, but also that their individual contribution to firm performance is relatively modest (e.g. ?; ?; ?).

By studying the consequences of managerial decisions through the lens of gender attitudes, our work contributes to several strands of literature. First, it relates to the literature on the impacts of managers' characteristics on firm outcomes. This literature, which builds on the seminal work by ? on the role of management styles, has primarily focused on identifying the effects of managerial attitudes and attributes on corporate financial behavior and performance (?; ?; ?; ?). However, evidence on gender outcomes within the firm remains scant and limited to studies showing that women-led firms are characterized by better outcomes for female employees (?; ?; ?). We add to this literature in two ways. First, we study whether managers' traits other than their own gender can shape inequality in their workplace.[5] This is particularly important as women are still under-represented in leadership roles in the corporate sector and beyond. Secondly, because we can identify changes in firm outcomes within a manager-firm spell, our empirical design overcomes problems of endogenous manager sorting, which represents a major challenge for the causal identification of managers' impacts on corporate outcomes (?; ?; ?).[6]

Second, our paper contributes to the literature investigating the causes of remaining differentials in men and women's labor market outcomes. Because traditional human capital factors like education and experience can no longer explain gender gaps in earnings or employment, economists have increasingly investigated the role of gender differences in opportunities and constraints, including attitudes towards women's role in the labor market. Our paper brings a personnel perspective to the rapidly growing body of literature showing that gender attitudes feed into gender gaps by influencing women's choices in the labor and marriage markets (?; ?; ?; ?). In particular, our focus on managers extends the relevance of gender attitudes beyond individual and household outcomes by showing that they can shape gender inequality at the corporate level via their impact on key decision makers. Also, while existing evidence on the origin of gender attitudes is relatively scant, our results support the hypothesis that such attitudes are not necessarily innate, but can evolve over the life-cycle and be molded by personal experiences (?; ?; ?).[7]

[4] In line with this argument, recent studies by ? and ? show that even the unexpected loss of a CEO has no impact on firm performance unless the circumstances make it particularly difficult for the firm to substitute the manager.

[5] ? study the role of the type of environment in which CEOs grew up for the allocation of investment capital to male and female division managers. While this analysis also moves beyond relative statements on CEOs of opposite genders, it focuses on variation in endogenous characteristics, such as the family and neighborhood in which CEOs grew up or the type of schools they attended.

[6] Section 7.2 suggests that the issue of managers' endogenous mobility is likely to be relevant also in the context of our study, attesting to the importance of being able to look at changes within a manager-firm spell.

[7] Research shows that individuals' attitudes other than those towards women can also be shaped by personal experiences. See for example ? and ? showing how the macroeconomic environment may affect individuals risk attitudes and preferences for redistribution.

Finally, by linking the effects of fathering daughters to gender inequality within firms, our paper contributes to research on the relationship between a child's gender and parental behavior. Importantly for our work, **?** and **?** find that fathers express lower support for traditional gender roles following a daughter's birth, while mothers' attitudes remain largely unaffected. Survey-based evidence is key to establish links between fathering daughters and men's gender attitudes, but it is not well suited to shed light on their implications. Existing work directly looking at parents' behavior has typically focused on the effects of daughters on men's political preferences (e.g. **?**, **?**, **?**). **?** and **?** show evidence of a link between fathering daughters and CEO behavior. However, their focus is limited to the venture capital sector and outcomes such as corporate social responsibility spending, which are not directly related to personnel policies and gender inequality. Moreover, we bring to this literature an identification strategy based on birth-events and evidence on the plausible channels underlying the daughter effect.[8]

Given over-representation of men in leadership positions, showing that male managers' gender attitudes influence the career of the employees they supervise has important policy implications for reshaping organizational practices toward a more gender-neutral culture. For example, in comparison to board gender quotas, which aim at increasing women's representation by directly mandating female appointments and which have been shown to have limited consequences on gender disparities outside the boardroom (**?**; **?**), our paper emphasizes the role of male managers' attitudes and their malleability. In particular, our results suggest that policies aimed at changing the attitudes of decision-makers may constitute a complementary path to achieve gender equality within companies.[9]

The remainder of the paper is organized as follows. The next section describes the data and sample. Section 3 describes the empirical strategy and discusses its validity. Section 4 presents our baseline results, namely the daughter effect on women's relative earnings and employment. Next, we describe the timing of the effects and discuss the potential mechanisms. Section 6 focuses on the margins of adjustment and presents results on firm performance. Section 7 performs a series of heterogeneity analyses depending on managers' and establishments' characteristics and shows long-run effects. The last section concludes.

2 Data

We use Danish registry data covering employer-employee matched information on the universe of Danish firms and individuals between 1992 and 2017. We link individual career histories with longitudinal data on household structure. For each manager we identify the establishment in which he works each year, the characteristics of the employees he supervises,

[8] **?** also rely on birth events to identify the effects of CEOs' transition to fatherhood on their decision-making. However, unlike this study, we are not interested in the transition to fatherhood per se, as the decision of having an extra child is endogenous and may correlate with managers' gender attitudes. For this reason, our analysis always controls for managers' total number of children.

[9] Unfortunately, evidence on the effectiveness of policies changing gender attitudes for reducing within firms gender inequality is scant. However, in line with our results, **?** show that making teachers aware of their own stereotypes against migrants leads them to adjusts their bias in grading.

and the number, gender, and age of his children. By observing variation in the family composition of managers due to birth events, we can relate changes in gender outcomes within the firm to the gender of a manager's newborn.

Besides the unique features of its registry data, Denmark provides an interesting setting for the study of the labor market impacts of gender attitudes. Despite generous provisions of parental leave rights and childcare subsidies, previous work has found evidence of glass ceiling effects (??) and women bear virtually the whole earning penalty associated to childbirth (?).[10]

2.1 Sample selection

Following previous work, we identify managers in the employer-employee register using Danish occupational codes, which are based on international standards (ISCO codes). The first digit of the occupational code identifies 10 major occupational classes, including a specific class for managerial positions. We identify as managers all those individuals whose first digit of the occupational code corresponds to the class of managerial positions.[11]

Because our goal is to identify managers who are directly involved in personnel decisions, our working dataset includes all private-sector single-manager establishments, i.e. establishments where in a given year we observe only one individual holding a managerial position.[12] The rationale for this sample selection is to increase the likelihood that the managers we identify are both human-resource managers, i.e. individuals responsible for decisions regarding hiring, promotions, etc., and operational managers, i.e. individuals supervising and interacting with employees on a day-to-day basis.[13] While single-manager establishments tend to be relatively small, with an average size of 13 employees, our sample covers more than half of the population of managers. Moreover, it covers more than 90% of all distinct establishments in the database, thus incorporating the most representative type of establishment in the Danish economy. This is further confirmed by Figure 1, which compares the distribution of single-manager establishments with that of the entire population of establishments across industries and shows that they generally overlap.

As discussed in more detail in section 3, our empirical strategy exploits birth events for identification. Thus, from the overall sample of single-manager establishments, which covers a total of 169 thousand distinct plants, we select out the *birth sample*. This sample consists in the sub-group of manager-establishment spells in which we observe managers experiencing at least one birth event.[14] As managers are typically in an advanced phase of their career,

[10] The paper by ? also shows that the great majority of the Danish population still thinks that women should not be working full time when they have children living at home. In line with this, ? report that Danish families traditionally do not consider potential substitution options between fathers and mothers when allocating parental leave.

[11] The Danish administrative data is available from 1980, but we start the analysis in 1992 as this is the first year occupation, the variable we use to identify managers, is available for the majority of individuals.

[12] In this paper the term establishment refers to a firm's individual plant and, with the exception of section 6.4, all our analysis is conducted at the establishment level. However, for simplicity, we will sometimes refer to establishments as firms.

[13] Previous work interested in identifying managers with similar responsibilities also typically selects firms that have only one manager. See, for example, ?, ?, and ?.

[14] A birth event is identified as an increase in the number of managers' children from one year to the next

they tend to be older than the average employee and to have generally concluded their reproductive life.[15] Therefore birth events are relatively infrequent. In particular, we observe birth events in 8,123 distinct manager-establishment spells, or 4% of the total number of job spells observed in the overall sample of single-manager establishments. Because previous work documents that effects of daughters on parental attitudes and behavior are concentrated on fathers (**?**; **?**; **?**), and because more than 80% of the managers experiencing births are men, our analysis focuses only on male managers.[16]

One direct consequence of working with a sample of firms in which we observe managers experiencing at least one birth event is that all manager-establishment spells have a length of at least two years, namely the year of birth and the preceding year. As we explain in section 3, we exploit this panel structure of the sample to look at *within-firm* changes in the labor market outcomes of female employees before and after a birth event.

2.2 Descriptive statistics and outcome variables

Table 1 reports descriptive characteristics for the managers, employees, and establishments included in the birth sample. On average managers who experience a birth event are slightly younger than 39 years old, have two children - one boy and one girl -, and their youngest child is just above 4 years old. Columns (2) and (3) show demographic characteristics for male and female employees respectively, while column (4) shows the differences across gender.[17] In general, because we focus on small firms with only one manager, the workforce in our establishments is less educated and less skilled than the average employed population. In particular, 10% of workers have a university degree and 17% are employed in a high-skilled occupation as professionals or technicians. The corresponding shares in the overall population are roughly double, namely 20% and 31% respectively. In terms of gender differences, female workers are younger, more likely to work part-time, to hold only a high-school diploma, and to earn less.[18] They are also more likely to work part-time, and to hold only a high-school diploma. These gender differences carry on also at the establishment level. In particular, column (5) shows our main outcome variables, namely the share of female employment and the female earnings ratio, which are defined in the following way:

$$Share\ F\ Employment = \frac{N_f}{N_m + N_f} \qquad F\ Earnings\ Ratio = \frac{I_f}{I_f + I_m} \tag{1}$$

one. To assure that our sample of manager-establishments spells is balanced over time, we use the following procedure: if a single-manager establishment is sampled at two separate points in time with the same manager, the same person is assumed to be the manager of the establishment also in the years in between, provided he is at the establishment. All our results are robust if we replicate the analysis ignoring this procedure.

[15] Specifically, managers in the overall sample of single-manager establishment are on average 47.5 years old.

[16] More precisely, the number of manager-establishment spells in which we observe a birth event for a female manager is only 1,422, and therefore we lack the power to replicate our results for the sample of female managers separately. Once we exclude female managers, our final birth sample includes 6,701 unique manager-establishment spells.

[17] All the differences showed in column (4) are statistically significant at the 1% level.

[18] The earning difference across gender is around 80,700 Danish Krone, which corresponds to approximately 10,850 euros or 13,000 dollars using August 2021 exchange rates.

N_f and N_m represent respectively the total number of female and male workers in an establishment, and I_f and I_m represent their average annual labor earnings. In terms of female employment, column (5) shows that female workers represent only 34% of the total workforce and that 25% (7%) of all establishment-year observations are characterized by zero female (male) employees. Because we don't always observe employees of both gender in each year, we define the measure of female relative earnings displayed in equation 1 also as a share. In this way the female earnings ratio is defined also when either gender is zero and is always bounded between zero and one.[19] Columns (5) of Table 1 shows that the female earnings ratio is on average equal to 0.39 which indicates that, in line with the statistics on employment, females average earnings are lower than males one.

3 Empirical Strategy

From the work of **?** and **?**, and from the subsequent studies inspired by their their findings, we know that child's gender affects the probability that men hold egalitarian views and support policies addressing gender inequality. Exploiting birth events experienced by male managers, we extend this insight to the corporate world. Specifically, to study whether child's gender shapes managers' personnel decisions and what this implies for within-firm gender inequality, we estimate the following regression:

$$Y_{et} = \alpha + \beta NDaughters_{et} + C_{et} + \chi_{me} + \phi_t + \epsilon_{et} \tag{2}$$

where Y is the outcome of interest in establishment e and year t, $NDaughters$ is the number of daughters parented by the manager of the establishment e at time t, and C is a set of fixed effects for the total number of the manager's children.[20] Finally ϕ_t and χ_{me} are respectively year and spell fixed-effects, where a spell is defined as a unique match between a manager and an establishment. We cluster standard errors at the establishment level.

Conditioning on the total number of managers' children is of first-order importance because it allows us to separate the effect of parenting an additional child, a possibly endogenous decision, from the impact of parenting an additional daughter, an exogenous event once we condition on the decision of having a child.[21] Note that once we condition on the total number of children, the number of daughters and the number of sons are linearly dependent and therefore we cannot discern whether the change in parental attitudes is driven by the presence of an extra daughter or by the absence of an extra son.

Another important feature of our specification is that it includes fixed effects for manager-

[19] The female earnings ratio is usually defined as the average of female earnings divided by the average of male earnings. However, because in our sample the denominator of such measure would be missing for all the establishments employing zero male workers, we re-define it as a share. For the unbalanced sub-sample in which we can estimate the standard measure of the female earnings ratio we find that it is on average equal to 0.82, meaning that women earn 0.82 Danish Krone for each Krone earned by men.

[20] Note that in a sample of single-manager establishments there is a one-to-one correspondence between managers and establishments. Thus, the subscript e can refer also to managers characteristics, such as their number of daughters and children.

[21] Section 3.1 presents evidence in favor of the assumption that - conditional on the decision of having a child - the newborn gender is exogeneous.

establishment spells, denoted by χ_{me}. By adding these fixed-effects we are identifying the impact of a manager's child's gender on female employees by looking at *within-establishment* changes in their labor market outcomes. This implies that we are automatically ruling out the possibility that our results are driven by differential sorting of managers across firms following the birth event. In particular, because daughters have been shown to affect men's values and behavior toward women, managers might endogenously sort into different types of firms depending on the gender of their children. For example, as a result of the birth of their daughters, male managers may become more likely to sort into female-friendly workplaces, such as firms characterized by more part-time work or a higher share of female managers.[22] By adding fixed effects for manager-establishment spells, we automatically solve for the potential endogeneity of managers' sorting and we exclusively identify the effect of daughters on managerial decision-making.

Given the presence of fixed effects for both managers' total number of children and job spells, our identification strategy can be thought of as the empirical estimation of following experiment. Take two single-manager establishments in which the managers have the same number of children and experience the birth of an extra child while employed at those firms. Nature assigns to one manager the birth of a daughter (*treated*) while the other manager experiences the birth of a son (*control*). The treatment effect is measured as the difference between the changes in labor market outcomes of female employees in treated and control establishments and is captured by β in equation 2. In other words, β identifies the relative daughter effect while simultaneously controlling for unobservable characteristics of both the managers and their firms.

Finally, we expand equation (2) to include controls for a set of time-varying organization characteristics, such as the average age and educational level of the workforce, the share of full-time workers, and establishment size. As our regression includes fixed effects for manager-establishment spells, the coefficients of these controls are estimated based on changes before and after the birth event. While we cannot rule out that some of these controls might be endogenous, a specification that includes them allows us to account for changes in female employees' labor market outcomes conditional on other changes in the general workforce characteristics. To account for the potential endogeneity of these controls, we always show our results both including and excluding them.[23]

3.1 Discussion on the validity of the identification strategy

Our empirical strategy hinges on two identifying assumptions. Because we rely on variation in the gender of newborn children, the first identifying assumption is that, once we condition on a manager's decision of having a child, the child's gender is exogenous. This assumption may be violated if managers follow a gender-based stopping rule for fertility that impacts the

[22] We show suggestive evidence in line with this hypothesis in section 7.2.

[23] The full list of controls includes employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. We do not include controls for managers' characteristics because they would be absorbed by the combination of fixed effects for years and manager-establishment spells.

proportion of daughters they parent. For example, managers with a preference for daughters may follow a fertility rule which stipulates that they keep having children until they have at least one daughter.[24] If this is the case, parents with more sons would be more likely to be using such a stopping rule even once we condition on the total number of children.[25]

To check for the presence of a gender-biased stopping rule for fertility, we follow the literature (e.g. ?) and test whether having a first-born daughter predicts the total number of managers' children. Results are presented in Table A1 of the Appendix, which shows that while having a first-born female child strongly predicts the total number of managers' daughters, it does not determine the total number of children, nor the probability that managers have more than one or two children. This evidence indicates that managers are not following some gender-biased stopping rule for fertility and therefore, once we condition on the total number of children, we can treat the number of daughters as a random variable.

To interpret our estimates as the effects of child's gender on managers' personnel decisions and within-firm gender inequality, we are also implicitly assuming that the treatment does not directly impact managers' ability to affect the personnel policies inside their firms. In our context, this assumption might not hold if child's gender influences the actual time the manager spends in the establishment, thus affecting the degree to which he is able to have a direct impact on human-resource practices. Therefore we next investigate whether the newborn gender influences two margins that can both affect the total time a manager spends in a firm following a birth event, namely manager's propensity to take-up paternity leave and his decision to exit the firm in the years following the birth.[26]

First, we show in Table A2 that child's gender has no effect on either the probability a manager takes paternity leave (columns 1 to 4) or on the duration of such leave for the subsample of managers taking at least some leave (columns 5 and 6). Next, we look at whether the probability of observing a break in the manager-establishment spell in the years following the birth depends on the gender of the newborn.[27] This is a fist order concern given that, through job spell fixed effects, our identification strategy conditions on managers' presence within the firm where the birth event occurs. Results are presented in Figure 3, which displays the "survival rate" of a job spell depending on whether the manager experienced the birth of a daughter or a son.[28] The graph shows that the probability that a spell breaks does not depend on the gender of the newborn and therefore we can exclude the hypothesis that

[24] For a more detailed discussion on preferences for a specific child's gender and the sex composition of children see also the discussion in ? and ?.

[25] Note that sex-selective abortion is illegal in Denmark. Thus, managers cannot recur to this practice to influence the gender of their children.

[26] Existing work (e.g. ?) shows that divorce risk is higher among couples with girls than those with boys. While it is not obvious why a differential probability of divorce should affect managers' personnel decisions, we nevertheless investigate whether the birth of an extra daughter, as opposed to an extra son, influence the probability that managers divorce and find that child's gender has no effect on this outcome. Results are available upon request.

[27] There are two factors that can generate a break in the manager-establishment spell. First, a spell breaks if the manager moves to another firm. Second, a spell breaks if the manager stops being the only decision-maker of the establishment, either because the total number of managers increases or because his occupational code changes. For simplicity, we will often refer to spell breaks in terms of managers' mobility.

[28] Because, as explained in section 2, all our sample consists in manager-establishment spells with a length of at least two years - the year of the birth and the preceding year - the share of spells observed in Figure 3 in these two periods is, by construction, equal to one.

our results are driven by differential mobility patterns across treated and control managers.[29] Moreover, the fact that there is no difference between the two groups of managers in the years preceding the birth - represented by the negative values of the horizontal axis - reassures us that the timing at which a spell is formed does not depend on the gender of the future child, in line with the fact that parents cannot predict nor select the gender of children.[30]

4 Women's relative earnings and employment

Women's relative labor outcomes improve when managers experience the birth of a daughter. This relationship can be seen in Panel A of Table 2, which presents the results from estimating equation (2) for our two main outcomes, namely the female earnings ratio and the share of female employment. All specifications include fixed effects for manager-establishment spells, total number of managers' children, and years. Other controls vary between columns but, as the Table shows, their inclusion does not affect our estimates.[31] The results displayed in column (2) of Panel A indicate that following the birth of a daughter, and as opposed to the birth of a son, the female earnings ratio increases by almost 1 percentage point, which corresponds to an increase of 2.5% with respect to the average. Similarly, in column (4) we find that the share of female employment increases by 2.3% in establishments where managers become fathers of a female child.

We characterize these results along two lines. First, although we showed that the individuals in our sample do not follow a gender-biased family stopping rules, we replicate the analysis for the sub-sample of managers who experience the birth of their first-born child, whose gender is arguably more exogenous. Because this exercize entails that we select only the sample of managers who before the birth event had zero children, we are automatically controlling for managers' family size, and thus we can show effects for daughters and sons separately. The results are displayed in Figure 2, which compares within-establishment changes in the outcomes of interest following the birth of managers' first-born children of opposite genders.[32] We can see that there is a significant increase in female relative earnings and employment in establishments where the manager first-born is female. On the contrary, establishments where the managers' first-born is male do not see any significant change in female outcomes. This result is in line with **?** argument that having sons, as opposed to daughters, does not lead men to "be antifeminist, but rather, it makes the issue of gender fairness less salient".

Second, because the estimates presented in Panel A combine together the effects of the birth of any daughter, we compare managers who experience the birth of their first daughter

[29] The differences between the two bars presented in Figure 3 are never statistically significant.

[30] Despite the exogenous assignment of child's gender, we inspect for the absence of differential trends between treated and control managers in section 4.1, where we also discuss how we deal with the pitfalls of two-way fixed effects estimators highlighted for example in recent work by ?; ?; and ?.

[31] In particular, adding potentially endogenous time-varying controls does not impact the results as odd and even columns are virtually identical.

[32] To improve the readability of our results and as well as increase sample size, the rest of the analysis always pools together all managers and birth events while controlling for family size by means of fixed effects for number of children. Thus, with the exception of Figure 2, our estimates of the daughter effect will be directly displayed as the difference between treated and control establishments, i.e. the coefficient β of equation 2.

and managers who already have at least one female child and experience the birth of an additional daughter as opposed to a son. If, as argued by sociologists, having daughters can be instrumental for increasing the saliency of gender issues in men, we may expect the birth of the first female child to have a stronger effect on their fathers' behavior. To assess whether the results vary with parity, we substitute the continuous variable *N Daughters* of equation 2 with the dummies *First Daughter* and *Additional Daughters* which, respectively, switch to one when the total number of daughters becomes positive and when it becomes greater than one.[33]

The results are showed in Panel B of Table 2 and indicate that the aggregate effects previously presented were driven by managers who experienced the birth of their first daughter. Specifically, following the birth of the manager's first daughter, female relative earnings and employment increase by 4.4% and 2.9%. Instead, we do not detect similar effects from a newborn gender in establishment where managers already have at least one female child. In particular, the effects of daughters at higher parity are much smaller and statistically insignificant, albeit still positive. This evidence indicates that the first female child is particularly important for shifting managers' behavior, suggesting that saliency and awareness of gender issues may discontinuously and persistently increase after men experience the birth of their first daughters, which is an hypothesis we investigate in more detail in Section 5. Given this result, in the rest of the analysis we concentrate on the effects of the birth of the first daughter by relying on the specification used in Panel B.

Finally, to help interpret the magnitudes shown in Panel B, we build on previous work establishing that female executives have a positive impact on gender equality within firms. In particular, various papers have documented a negative relationship between female-led companies and the size of firm-level gender gaps in earnings and promotions (e.g. **?**; **?**; **?**; **?**). Therefore, exploiting variation in managers' gender across establishments, we estimate the magnitude of the effect of having a female manager, and compare it to the size of the results obtained in Table 2.[34]

Table A3 shows that, in line with existing evidence, there is a positive relationship between female managers and female employees outcomes. In particular, even once we account for managers' endogenous sorting across very narrowly defined sectors and control for average characteristics of male and female employees, establishments led by a woman are characterized by higher female relative earnings and employment.[35] Specifically, columns (2) and (4) indicate that the female earnings ratio and the share of female employment are respectively

[33]Note that this analysis differs from the one represented in Figure 2 as the birth of the first female child may follow rather than correspond to the birth of the first-born child.

[34]In order to use a directly comparable benchmark for the magnitudes presented in Panel B of Table 2, we have opted for computing our own estimates of the effects of the gender of managers using the population of single-manager establishment in Denmark. The results of existing papers in fact cannot be readily used as a benchmark because they are based on different types of companies and workforce and often relate to firm-specific measures of gender inequality. For example, **?** focus on gender gaps in promotions using data on seven hierarchical ranks specific to white-collar workers employed in a sub-sample of Norwegian firms, while **?** investigates the role of manager's gender using administrative as well as survey data specific to a large commercial bank in Asia.

[35]Note that without controlling for female workforce characteristics, the effects of female managers are likely to be upward biased because of omitted variables. This can be easily seen by comparing odd and even columns in Table A3.

almost 4 and 5 percentage points higher in female-led companies than in observably similar male-led companies. If we compare the magnitudes of the female manager dummy of Table A3 with those of the daughter effect obtained in Panel B of Table 2, we can see that the effects we find when a *male* manager experiences the birth of his first daughter are between 50% and 20% of the effects of having a *female* manager.

4.1 Event study analysis

This section inspects the presence of differential pre-trends between treated and control establishments. Given the exogeneity of child's gender, experiencing the birth of a daughter, as opposed to a son, should be uncorrelated with the evolution of outcomes in the pre-birth years.[36] To provide evidence in favor of this assumption, we perform an event study analysis.

In addition to obtaining information about whether our outcomes of interest exhibit parallel trends in the pre-birth period, the event study design can also help us achieve two additional objectives. First, it can be used to investigate the dynamic evolution of the daughter effect, which, as we discuss in more detail in section 5, may give us some insights about the plausible mechanisms at play.

Second, this methodology enables us to address the pitfalls of two-way fixed effects estimators (**?**; **?**; **?**). Typically, limitations of two-way fixed effects estimators are particularly severe in contexts of staggered treatment where, in absence of a pure control group, the researcher needs to use not-yet-treated units as a control group for already-treated units. Instead, our setting is characterised by the presence of a natural control group, namely the managers who experience the birth of a son. Yet, some of these control managers may also be considered already-treated if, on top of the newborn son, they also have other children some of which are female. In presence of dynamic treatment effects, this may bias, likely downward, the estimation of the results. To address this concern, in our event study analysis we define as treated all manager-establishment spells during which managers experienced the birth of their first daughter, and as control all the spells during which managers experience the birth of a son and do not have any daughter.

For the event study we denote the year in which the manager experiences the birth as event time $j = 0$ and index all other years relative to that. Indicating with $Y_{em,jt}$ the outcomes of interest for the manager-establishment spell me in year t and event time j, we run the following regression:

$$Y_{me,jt} = \sum_{j \neq -1} [\alpha_j \, event_{me,j} + \beta_j (event_{me,j} \times treated_{me})] + C_{me,jt} + \chi_{me} + \phi_t + \epsilon_{me,jt} \quad (3)$$

which includes a full set of event time dummies (first term on the right-hand side), the interaction between the event dummies and the treatment status as defined earlier (second-term on the right-hand side), calendar year dummies ϕ_t, fixed effects for the total number

[36] In line with this, Figure 3 shows that the timing of creation of a job spell is orthogonal to the gender of managers' newborns.

of managers' children, denoted by $C_{me,jt}$, and fixed effects for manager-establishment spells χ_{me}. We let the event time j run from 3 years before the birth to 5 years after and we omit it when $j = -1$.[37] Thus the coefficients β_j measure, for each event time, the difference in outcomes between treated and control establishments relative to their difference the year preceding the birth.

Figure 4, which displays the coefficients β_j for both the female earnings ratio and the share of female employment, allows us to graphically inspect the presence of differential pre-trends between treated and control units. We do not find evidence of differential pre-trends, as for both outcomes the coefficients are not statistically different from zero in the years preceding the birth event. To limit any concern related to the break of job spells right after the birth event, Figure A1 in the Appendix replicates the event study analysis on a balanced sample between event time -1 and +1.[38] Results are very similar to those we obtain on the full sample of job spells.[39]

Figure 4 and Figure A1 also show that the positive effects of daughters kick in immediately after birth and persists for the subsequent years a manager spends in the firm. We discuss this result more at length in the next section, where we discuss how the timing underlying the estimated results can help us understand the channels driving the daughter effect.

5 The timing of the effects and plausible mechanisms

While this study is motivated by existing work showing that daughters positively affect men's gender attitudes (e.g. **?**; **?**; **?**), registry data do not naturally lend themselves to study changes in managers' preferences and beliefs about women. However, we can leverage the longitudinal nature of our data and focus on the timing of the estimated effects to gain indirect insights into the plausible mechanisms underlying the link between the birth of a manager's first daughter and the improvement in the labor outcomes of his female employees.

By investigating *when* the daughter effect appears - specifically how quickly after the birth event - and whether it *varies* over the years - particularly in relation to the daughter's age - we can assess the role played by managers' exposure to their own daughters in driving

[37] We chose the event time window $[-3; +5]$ because it allows us to observe at least 1,000 distinct manager-establishment spells at each point in time. As it can be best seen in Figures 3, job spells decrease asymmetrically around the birth event. This asymmetry in the length of job spells around a birth event is consistent with the age at which individuals normally become managers: because individuals tend to be older when they reach a managerial position, we are less likely to observe a long spell before the birth rather than after the birth.

[38] Because of our relatively small sample size, we do not perform the event study analysis on a fully balanced panel of manager-establishment spells. However, by replicating the analysis on a balanced sample between event time -1 and +1 we not only impose a symmetric length of the job spell around the birth event, but also minimize any concern related to the drop in the survival rate between time +1 and 0 shown in Figure 3.

[39] Figure A2 of the Appendix instead shows results obtained by more closely replicating the regressions specification used in Panel B of Table 2. Specifically, we identify the effects of the variable *First Daughter* by defining the group of treated managers as in Figure 4, but we include in the control group everybody else, i.e. managers who already have a daughter and experience the birth of an extra child of either gender and managers who do not have any female child and experience the birth of an extra son. The results look very similar but are generally smaller than those we obtain in Figure 4 where we select only the "good" control group, i.e. the never treated. This suggest that in our context issues related to dynamic treatment effects are likely to be limited and, if anything, they bias downward the results.

the results. Indeed, one possible channel works via exposure to daughters gradually redressing men's informational asymmetries, if any, about women's abilities and the constraint they face. For example, male managers could learn about women's ability through their daughters' accomplishments at school or gain insights into gender differences in opportunities and constraints in the labor market from their daughters' professional experiences. Independently on the type of information acquired, if the effects are exclusively driven by exposure to daughters' life experiences, one would reasonably expect changes in human-resource management to appear only some time after the birth event and to potentially gradually increase with daughters' age.

Rapid behavioral responses instead, would indicate that direct exposure in not the only mechanism behind the estimated effects and they may be consistent with at least two channels. First, they may reflect a rational push to reduce overall inequality in the labor market, as managers' female children could eventually benefit from a reduction in gender gaps. In comparison, managers with sons do not have this added incentive to challenge gender disparities in labor outcomes. However, this explanation does not seem very plausible, since the actions of a single managers are unlikely to significantly alter aggregate levels of gender inequality in the labor martket.[40]

Second, rapid behavioral responses could work via increased salience of gender issues as soon as a manager experiences the birth of his first daughter, with an associated change in attitudes towards women. Existing work shows that this may happen both because the birth of a female child may increase a man's awareness of gender inequality, thus shaping their beliefs and perceptions of gender roles (**?**; **?**) and because it may trigger an identity effect, whereby fathers with daughters identify more with women when forming their preferences (**?**; **?**).[41] Both these mechanisms, which are not mutually exclusive and can rationalize rapid responses, seem more plausible in our setting.

To investigate the timing characterizing our baseline results, we first draw upon the dynamic effects of the event study specification estimated in the previous section and displayed in Figure 4. The graph shows that the daughter effect appears right after the birth event and persists for the subsequent five years. As discussed, the fact that the daughter effect emerges soon after the birth indicates that our results cannot be fully explained by e redressing in managers' informational asymmetries following direct exposure to their daughters' life experiences. Rather, this evidence is consistent with a discontinuous and persistent increase in the saliency of gender issues upon birth of a manager's first female child.

However, it should be noted that the relatively short time window analyzed in the event study may not be sufficient to reveal the effects of sustained exposure to female children

[40] This channel seem more plausible for interpreting changes in the voting behavior of men with female children, especially if these men have power over the implementation of nationwide policies, like in the case of the congressmen studied by **?**. This mechanism is also underlying the theoretical model by **?** showing that the fact that men care about their daughters induces a *taste for equality* which represents one of the driving forces behind the process of voluntary renunciation of power by men to improve women's legal rights in the 19th century.

[41] From a theoretical perspective, models of selective attention and learning through noticing (e.g. **?**; **?**; **?**) could help rationalize the effects of daughters on men's beliefs, while effects on men's preferences would be consistent with models of group identity and social preferences (e.g. **?**); **?**).

on fathers' behavior. We therefore test whether the daughter effect varies over a longer time span in a cross-section of managers whose oldest daughters are of different age. More specifically, we run the following regressions, which compares female relative outcomes across single-manager establishments depending on the age group of the managers' oldest daughter while controlling for managers' and firms' characteristics:

$$\begin{aligned} Y_{et} =& \alpha + \beta_1 D_{et}^{0-5} + \beta_2 D_{et}^{6-15} + \beta_3 D_{et}^{16-21} + \beta_4 D_{et}^{22+} + C_{et} \\ &+ MGR'_{et}\,\delta + WORK'_{et}\,\gamma + \eta_j + \lambda_l + \phi_t + \epsilon_{et} \end{aligned} \tag{4}$$

D^{a-b} are dummies equal to one if the manager's oldest daughter is between a and b years old, C_{et} are fixed effects for the total number of children of the manager employed in establishment e at time t, MGR is a vector of manager characteristics, while $WORK$ is a vector of workforce characteristics aggregated at the establishment-year level.[42] Finally η_j, λ_l and ϕ_t are respectively fixed-effects for industry (at the 5-digits level), municipality, and year.

The β coefficients displayed in equation 4 identify the relationship between the age of the manager's oldest daughter and female employees' outcomes at the firm-level. Each coefficient is identified by comparing managers with the same number of children, employed in establishments with an observably similar workforce, and working in the same narrowly defined industry and municipality.[43] But while, for example in the case of the coefficient β_1, the oldest daughters of treated managers are between the age of zero and five, control managers either do not have any daughter or have their oldest daughter in a higher age group. As the age of the oldest daughter correlates with that of the manager, we make sure to compare managers of similar age by accounting for cohort effects through the inclusion of age deciles dummies in the vector of managers controls MGR.[44]

Figure 5 plots the β coefficients from equation (4) and shows that the effects of fathering a daughter on our outcomes of interest remain positive over time and seem to be increasing with the age of managers' oldest daughters. This result is consistent with the hypothesis of gradually learning through exposure to one's own female child, which, in the medium-long run, may lead to a redressing in managers' informational asymmetries about women's abilities and the constraints they face.

[42] We defined daughters' age groups in a way that is consistent with the Danish educational system. In particular, the age group 0-5 captures pre-school children; the age group 6-15 captures children enrolled in compulsory education, which is formed by primary and lower secondary education; the age group 16-21 includes students in upper secondary education and those potentially enrolled into university. Finally, the age group 22+ captures the years generally spent in the labor market as, after the age of 21, the majority of Danish youngsters have concluded their education.

[43] Establishment's controls include employees' average years of education and tenure; employees' average age; the share of employees working full-time, who are married, and who have at least one child; and establishment size.

[44] We use age deciles rather than five or ten-years age groups to account for the fact that managers' age distribution is quite skewed towards older individuals. Specifically, we include dummies for the following age deciles: younger than 34, 34-38, 39-42, 43-45, 46-48, 49-51, 52-53; 54-57, 58-61, older than 61. We add to the vector of managers' controls their years of education and tenure in the establishment. We also run a specification where, rather than controlling for managers' age deciles, we include dummies equal to one if the manager's oldest child is between a and b years old, where the age categories are the same as those used for oldest daughters in equation 4. The results are virtually identical and are shows in Figure A3 of the Appendix.

6 Margins of adjustment and firm performance

We now turn to look at the specific dimensions of impact. Ex ante, the birth of a daughter can have ambiguous effects on the type of human resource policies managers implement. On the one hand, treated managers might become more supportive of corporate policies that improve work-family balance and increase amenities for women with young children. If this is the case, we may find evidence of a general restructuring of the firm workforce and, for example, detect an increase in the representation of women - and possibly also men - working part-time or having pre-school children.

On the other hand, the birth of the first female child may lead managers to increase female presence within the workplace while at the same avoiding a general restructuring of the firm labor force. To obtain this result, managers would have to substitute men with women with comparable characteristics, thereby increasing women's representation among full-time workers or among workers employed in high-pay positions.

To assess the relative importance of these different hypothesis, we start by investigating in Section 6.1 the direction in which the birth of the manager's first daughter affects the average characteristics of the female workforce and the consequential impact for the composition of the overall labor force within the firm. Next, in Sections 6.2 and 6.3, we assess the relative importance of the hiring, retention, and promotion margins in driving these changes. Finally, Section 6.4 concludes this part of the analysis by testing whether the observed changes in human resource management have an affect on firm performance.

6.1 Changes in workforce composition

Table 3 shows whether daughters affect the average characteristics of the female workforce within the firm. First, we show in the first three columns that women's representation within the group of employees earning a high salary relative to the firm earnings distribution increases. In particular, column (1) indicates that, following the birth of the manager's first daughter, there is an 8% increase in the probability that the employee with the highest earnings in the establishment is a woman. The next two columns show a similar increase in the share of women whose earnings are above the 90th percentile of the employees' earnings distribution calculated at the firm-level (column 2) and in the share of women who are among the top three earners in the establishment (column 3).

To account for possible changes in human resource management to favor family-work balance, we also investigate the daughter effect on the representation of women working full-time vs part-time or having pre-school aged children. While column (4) indicates that treated establishments experience a 2.2% rise in the share of female workers employed full-time, we do not find any evidence of a positive daughter effect on the other two outcomes, as indicated in columns (5) and (6). Finally, while column (7) shows that there is a 5.9% increase in the share of female workers with post-secondary education, the last column indicates that there is no effect on the proportion of women whose highest educational title is high-school or below.

The results of Table 3 indicate that treated establishments see an increase in women's

representation within the categories of workers in which they are generally under-represented, as shown in Table 1. In particular, following the birth of their first daughter, treated managers increase the share of female employees whose observable characteristics resemble those of males. On the contrary, these results speak against the hypothesis that daughters induce managers to implement corporate policies that improve family-work balance by introducing, for example, more flexible work arrangements and amenities for women with very young children.

Next, we investigate whether the adjustments observed in Table 3 translate into broader changes affecting the composition of the overall labor force within the firm. In particular, Table 4 investigates if the birth of the manager's first daughter affects the average age and years of tenure of the labor force, or the overall proportion of employees who work part-time, as opposed to full-time, who have young children, or who have completed post-secondary education.[45] In contrast to the results of Table 3, the first five columns of Table 4 show that the composition of the overall workforce is not affected by the newborn gender. Importantly, in line with a lack of an effect on the average characteristics of the establishment labor force, the last column of Table 4 indicates that the birth of the manager's first daughter leaves unchanged also average labor costs per employee.

Combined together, the results of Table 3 and 4 suggest that the changes in women's relative outcomes are not achieved through a general restructuring of the firm labor force. Rather, treated managers *substitute* male workers with observably similar women , i.e. women with post-secondary education, working full-time, and occupying more remunerative positions within the firm. As a result, the only observable characteristic of the workforce that appears to be affected by the change in managers' personnel decisions is its gender-mix.

The substitution between male and female workers and the consequential increase in women's representation among full-time and high-pay workers can occur through two main margins. On the one hand, the effect might run through a change in the promotion rate of *incumbents*, i.e. the group of workers employed at the firm already before the birth event. In particular, following the birth of their first daughter, treated managers may adjust their evaluation of male and female incumbents and become more likely to offer a higher salary or a full-time position to a woman. This would result in an increase in the promotion rate of female incumbents, possibly at the expense of men.

On the other hand, daughters might affect managers' hiring and separation policies. In particular, treated managers may increase their propensity to hire women, particularly for full-time and high-pay positions. Similarly, child's gender could also differentially affect the probability of separation of male and female employees. In the following sections, we investigate these two margins of adjustment in more detail.

[45]Note that in Table 3 the shares used as outcomes are computed by dividing the total number of female workers with a certain characteristic by the total number of employees in the firm. Thus, for example, we can compute effects on both the share of full-time and part-time female workers as the two do not sum up to one. In Table 4 instead these two share sum up to one and thus we only show the effects on one of the two.

6.2 Hiring and separations

In Panel A of Table 5 we tests whether the newborn's gender affects managers' hiring and separations practices. We find that the birth of the managers' first daughter has a positive effect on a manager's propensity to hire women, as the proportion of female hires over total hires increases by 4.5%, while it has a negative but imprecisely estimated effect on the share of female separations. Moreover, Figure A4 in the Appendix plots the coefficients obtained from an event study analysis of these two outcomes and shows that the effect found on the share of female hired is consistently positive over time and it is not due to a one-off adjustment.

The observed increase in the share of women hired can come from two margins. On the one hand, treated managers might want to increase women's representation among hires but, at the same time, keep constant the number of men hired. If this is the case, then we should observe treated managers hiring more workers overall. On the other hand, daughters might lead managers to substitute male hires with female candidates, without any effect on the total number of hires.

Panel B of Table 5 shows evidence supporting this substitution mechanism, as we find that treated establishments are not characterized by a higher hiring (or separation) rate with respect to control establishments. Taking stock of these results and going back to the interpretation of our baseline effects, the analysis presented so far in this section suggests that the overall increase in female employment observed in Table 2 is driven by a shift in the gender mix of new hires, while patterns of job separations are mainly unaffected.

Next, we turn to investigate if the observed change sin hiring patterns can rationalize also the increase in the share of female workers who are high earners, work full-time, and have post-secondary education. We address this question in two ways. First, in Table 6 we replicate the results presented in Table 3 but, rather than focusing on the change in the total number of female workers having a specific characteristic, we measure changes in the number of female hires having that characteristic. In this way, we can compare the magnitudes of the coefficients presented in Table 6 with those presented in Table 3 and assess, for example, how much of the increase in the overall share of female workers working full-time is explained by an increase in the share of hires who are both women and employed full-time.

By looking at the results, it emerges that the majority of the total increase in the share of *female workers* who are top earners, who work full-time, and who have post-secondary education, can be explained by an increase in the share of *female hires* who have those characteristics.[46] In particular, the magnitudes estimated in Table 6 are approximately between 60 and 80% of the magnitudes obtained in Table 3.

The analysis presented in Table 6 is performed using the entire sample of establishments, including those that did not hire any woman before the birth event. Therefore, part of the effects previously estimated might by driven by managers who had never hired a female candidate before the birth and start doing so only after. However, we may also be interested in knowing whether, in reaction to the treatment, managers start hiring female candidates

[46] Table A4 in the Appendix replicates the analysis of Table 6 but looking at changes in the composition of female separations and shows that this margin is not affected by child's gender.

with different observable characteristics with respect to the women they used to hire. To answer this question, we study changes in the observable characteristics of female hires in the sub-sample of establishments characterized by a positive number women hired both before and after the birth.

The results of this analysis are shown in Table 7. Specifically, the first three columns indicate that, in the sub-sample of establishments with a positive number of female hired in the pre- and post-birth period, treated managers become more likely to hire women with more education, who work full time, and with higher earnings, although this last result is imprecisely estimated. In line with the substitution mechanisms highlighted before, we find symmetric results when we replicate the analysis on the sub-sample of establishments that hired at least one man both before and after the birth event (see columns 4 to 6). Note that the sample of establishments in the first three columns does not perfectly overlap with the sample used in columns (4) to (6). Therefore, in the last three columns of Table 7, we focus on the group of establishments hiring workers of both genders both before and after the birth event. This allows us to calculate the daughter effect on the gender gap in the observable characteristics of new hires. While the number of observations drops significantly, these results suggest that in establishments where managers experience the birth of their first daughter, the gender gap in educational qualifications, in the probability of working full-time, and in earnings among new hires closes, albeit significantly so only for education.

6.3 Promotions

Beside the hiring margin, changes in promotion practices may also play a role in driving the observed improvement in female relative earnings. After the birth of their first daughter, treated managers may, for example, change their evaluations of the workers already employed at the firm before the birth event (i.e. the *incumbents*) and become more likely to promote women over men.

We measure the potential adjustment in male and female incumbents' promotion rate by analyzing within-firm changes in the growth of their salaries around a birth event.[47] We report the results of this analysis in Panel A of Table 8, which shows that the birth of the manager's first daughter does not have any significant effect on the earnings of male and female incumbents.

The analysis presented in Panel A tests for the relationship between manager's newborn gender and promotion policies using the entire sample of establishments, independently on the gender mix of the incumbents. However, it may be that, in order to re-assess their evaluation of female employees, managers need to benchmark the performance of women with that of men. To test this hypothesis, we replicate the analysis on promotions only on the sample of establishments that employed workers of both genders the year before the birth. The results are presented in Panel B of Table 8 and they confirm the effects found in Panel A. If anything,

[47] Because of their small size, our establishments are characterized by a relatively simple occupational hierarchy that prevents us from using occupational categories as a proxy for promotions. In particular, 65% of the times we observe only two distinct occupations within an establishment-year observation. Therefore, we proxy for promotions using earnings growth. This is in line with previous work; see among others **?**, **?**, and **?**.

Panel B shows that, in the sub-sample of mixed gender establishments, daughters might slow the wage growth of male employees, but this effect is not significant at conventional levels.[48]

Taken together, the results presented so far indicate that the increase in female relative earnings and employment is mainly driven by a change in managers' hiring practices rather than in promotion policies. The fact that treated managers mostly rely on the hiring margin to change the relative outcomes of female employees might be a result specific to the type of firms we study. Indeed, a change in hiring practices might be the most effective strategy to change the composition of the female workforce if, as it sometimes happens in our sample, there are no female workers already employed at the firm or if the number of female incumbents that can be considered for a promotion is small.

6.4 Firm performance

The observed changes in human-resource management can have both a positive or a negative effect on firm performance depending on whether, prior to the birth event, managers' personnel practices were motivated by discrimination or by profit maximization. In particular, if the birth of daughters induces treated managers to lower the productivity threshold used to evaluate female candidates, managers may find themselves hiring lower-quality workers, with potentially negative effect on performance. On the other hand, if discrimination was the key driver of women's worse relative outcomes in the pre-birth period, the observed changes in human-resource management could have positive effects on firm performance.

We measure firm performance in terms of employment, sales per worker, and value added per worker.[49] While registry data on workers' characteristics is available at the establishment level, balance sheet data is only available at the firm level. Therefore, this part of the analysis is restricted to the sample of single-establishment firms with non-missing information for our outcomes of interest, which represent approximately 73% of the total number of observations used for the main analysis.

As Table 9 indicates, we do not detect any significant effects of child's gender on our measures of firms performance. In particular, although our coefficients are imprecisely estimated, they indicate effects close to zero for what concerns employment and sales per worker, while the estimates for value added per employee correspond an increase in labor productivity of about nine thousands Danish Kroner (equivalent to approximately 1,200 euro or 1,400 US dollars). In particular, our results imply that we can exclude with 90% probability negative effects on labor productivity larger than 2,223 Kroner (equivalent to approximately 299 euro or 347 dollars) and positive effects larger than 20,825 Kroner (equivalent to 2,799 euro or 3,246 dollars). Taken at face value, these results seem to suggest the lack of a trade-off between equity and efficiency, as the observed improvement in gender equality does not appear to come to the detriment of firm performance.

The lack of a significant effect on firm performance is consistent with our evidence on the

[48] This result is consistent with recent papers analyzing the effects of pay transparency requirements on the gender pay gap which find that this type of legislation reduces the pay gap primary by slowing the wage growth for male employees. See for example ? for evidence on Denmark and ? for evidence on the UK.

[49] Information on these outcomes is available since the start of our sample period, while data on profits becomes available only six years later and is more likely to be missing for small firms.

margins of adjustments, which indicates that treated managers are able to substitute men by hiring comparable female workers. In particular, the insignificant effect on performance may reflect the fact that, in the context we study, hiring frictions are relatively low, as managers can alter the gender-mix of the workforce at no additional cost for the firm, that is without affecting any other characteristic of the workforce.[50] In line with this argument, recent work by **?** shows that discrimination significantly hampers firm performance only when it is particularly difficult for a firm to replace a minority worker with a comparable nonminority worker.

In addition to the high degree of substitutability of lower-ranked employees, another aspect of this type of workers that may be relevant for the interpretation of the insignificant effects displayed in Table 9, is that their individual contribution to firm performance is likely to be modest. Indeed, firm performance is found to disproportionately depend on the skills of the executives rather than on the skills of the average worker (e.g. **?**; **?**; **?**; **?**). Consistently with this, our estimates of the daughter effect on labor productivity are relatively small compared to existing ones computed for higher-ranked workers.[51]

7 Heterogeneous and long-run effects

This section is divided into two parts. Section 7.1, performs a series of heterogeneity tests to investigate whether and how the baseline results vary depending on managers' and establishments' characteristics. Section 7.2 investigates the persistence of the effects by testing whether, in the medium-long run, treated and control managers are employed in firms with a different workforce composition, particularly in terms of female employees' characteristics, and discusses the implications of these results for the issue of managers endogenous sorting across firms.

7.1 Heterogeneous effects

We first analyze whether our baseline results differ depending on female intensity at the industry level. A priori, it is ambiguous whether the daughter effect should be stronger or weaker in establishment operating industries characterized by high female employment.

On the one hand, we may expect weaker results in sectors characterized by a scarcity of female labor supply because, due to supply-side constraints, treated managers might face higher frictions when adjusting their personnel policies to increase the proportion of female workers. On the other hand, if managers employed in female intensive industries have already developed a higher level of familiarity in working with female employees independently on the presence of female children, the room for changing human-resource management following

[50] This argument is consistent with models of employers discrimination that allow for frictions in job search (e.g. **?**). In particular, because employers forgo profit when a vacancy remains unfilled, indulging in discrimination will be more costly when it is more difficult for a firm to fill a vacancy, either because of to the tightness of the labor market (e.g. **?**; **?**) or because of the high level of human capital specificity required (e.g. **?**).

[51] For example, a recent paper by **?** finds that the unexpected death of a CEO results in a change in value added per employee that is, in absolute value, up to eight times greater than the average effects we detect.

the birth of their first daughter might be smaller in these sectors.

We test this relationship in Panel A of Table 10, where we divide the sample of manager-establishment spells into two groups depending on whether the firm operates in an industry with a share of female employment above (even columns) or below (odd columns) 50%. In line with the hypothesis suggesting that supply-side considerations may constrain the adjustment of human-resource practices, the results of Panel A show that the baseline effects, especially those on female employment, are stronger if the firm operates in an industry characterized by a relatively higher presence of female employment.

Next, we move onto analyzing heterogeneous effects depending on female intensity at the establishment-level. Specifically, we investigate whether the results vary depending on how large are the margins of adjustment, as proxied by whether, the year before the birth event, the establishment employed a higher or lower share of female workers with respect to the industry average.

Results are shown in Panel B of Table 10. The comparison of columns (1) and (3) with columns (2) and (4) highlights that the birth of the manager's first daughter has a stronger effect on female relative earnings and employment in those establishments whose pre-birth share of female employees was below the industry average. In particular, the coefficients in columns (2) and (4), while still positive, are imprecisely estimated and smaller than the coefficients displayed in columns (1) and (3). The fact that effects are stronger in establishments that were characterized by a higher gender gap in employment, suggests that the birth of the manager's first daughter may foster some convergence in female outcomes across firms within the same sector.

Finally, we investigate the presence of heterogeneous effects depending on managers' characteristics. Since gender norms and gender gaps evolve though time, we check whether baseline results vary depending on managers' year of birth. In particular, because societal support for gender equality has significantly increased over the last decades, we may expect that female labor market outcomes will improve more when we look at treated managers were born in more recent years.

We base this hypothesis on two main factors. First, as argued by the sociologists **?**, parents want the best for their children and care about the barriers that their sons and daughters have to face to fulfil these hopes. However, both the types of barriers constraining women as well as parents' hopes and aspirations for their daughters evolve through time, and it is only since recently that parents with daughters are likely to be mostly concerned with the issue of gender inequality in economic success.[52] Because of the very rapid improvement

[52]For example, **?** show that in the 19th century men had very different concerns and hopes for their daughters. Prior to the first half of the 19th century in fact, women had very little legal rights as all legal authority rested with their husbands. **?** link the subsequent improvement in legal rights witnessed by women to men's altruism toward their own female children. In particular, they show that because men prefer their daughters to have strong bargaining position vis-a-vis their sons-in-law, fathers with daughters have an incentive to agree to grant more economic rights to women. 200 years later, and thanks to the expansion of political rights through female suffrage, fathers with daughters are likely to be concerned about different issues, such as gender inequality in labor outcomes. This is best exemplified in a remark on equal pay for equal work made by President Obama in April 2014. In that occasion Obama said: "equal pay is not just an economic issue for millions of Americans and their families. It's also about whether [...] our daughters have the same chances to pursue their dreams as our sons [...]. And that's personal for me. I've got two daughters

in women's labor outcomes during the 20th century, it is possible that men born in the first rather than second half of the century have different views about gender issues as well as different aspirations for their daughters. In other words, as women's economic prospects have been gradually improving, parents' perceptions of gender issues has likely changed over time, and, as a result, managers born in more recent decades may be more likely to make more extensive adjustments to their personnel decisions following their daughters' births.

Second, even if managers born in different periods react with the same intensity to the birth of a female child, the effects might still vary across them because of supply-side considerations. In particular, it is reasonable to expect that the personnel decisions of managers born in recent years will be less constrained by frictions coming from women's labor-supply, which - as suggested by the results shown in Panel A of Table 10 - can potentially limit the daughter effect.

To test whether baseline effects are stronger for managers born in more recent decades, we divide the sample of job spells into two groups depending on whether the manager is born before or after 1965, which is the median value of executives' year of birth. Results are shown in Table 11. The first thing to notice is that, consistent with the fact that women's position in the labor market has improved over the last decades, Table 11 indicates that the average values of both female relative earnings and employment are higher in more recent years. Second, in line with our hypothesis, the Table shows that the daughter effect on female labor market outcomes is stronger if the manager was born after 1964. Finally, the more muted effects found for managers born towards the first half of the 20th century can help us rationalize why we still observe gender inequality in labor outcomes in spite of the fact that men have been having female children for millenniums.

7.2 Long-run effects

So far our analysis has focused on what happens *inside* the establishment where the manager experiences the birth and in the years *immediately after* this event. In this section instead, we investigate if the daughter effect persists throughout a manager's careers by testing whether, in the medium-long run, treated and control managers are observed working in different types of firms.

To test for this, we follow the sample of managers who experienced a birth event and we look at whether, 5 to 10 years after the break of the job spell during which they experienced the birth event, treated and control managers are employed in firms with a different workforce composition, particularly in terms of female employees' characteristics.

To ease the interpretation of the analysis on long-run effects, we fist investigate if child's gender affects the career trajectories of managers 5 to 10 years after their spells break. In particular, finding that treated and control managers have similar career trajectories would reassure us that potential long-run differences in female employees' labor market outcomes are not simply driven by differences in their work histories. Therefore we test if daughters affect their fathers' probability of holding a managerial position and of working in a multi-manager

and I expect them to be treated just like anybody's sons."

firm in the long-run.

The results - which are shown in the top panel of Figure 6 - indicate that, 5 to 10 years after the break of their spell, treated and control managers are equally likely to hold an executive position and to work in a multi-manager firm. Because this evidence suggests that treated and control managers have, also in the long-run, the same decision-making power over personnel practices, we can rule out that potential long-run differences in female outcomes at the firm-level are driven by a differential ability of treated and control individuals to affect the human-resource practices of their organizations. Given this results, we test for the effects of child's gender on women's relative labor outcomes in the long-run without conditioning on whether the firms are single- or multi-manager establishments nor on whether the father's himself remains in a managerial position.

The results on long-run effects on workforce composition are displayed in the bottom panel of Figure 6. The graph shows that treated and control managers are employed in firms where female employees exhibit different labor outcomes. In particular, not only these firms are characterized by higher female earnings and employment, but also by a higher proportion of employees working part-time and by a higher share of managers who are women. Because these outcomes have been previously used to proxy for the female-friendliness of a workplace (e.g. **?**), we conclude that treated managers are more likely to be employed at firms characterised by a higher female presence and by better opportunities for female workers.

These long-run differences in the workforce composition might be driven by two main factors. The first is persistence, by which we mean that the birth of the manager's first daughter persistently changes managers' human-resource practices and positively affects women's labor outcomes also in firms in which treated managers are subsequently employed. The second factor is endogenous sorting, i.e. the possibility that managers who experienced the birth of a daughter may, in the years following the birth event, prefer to be employed at establishments characterised by a higher presence of female workers or better opportunities for female employees.

While we cannot perfectly distinguish between these two explanations, we argue that endogenous sorting is likely to explain at least part of the potential differences between treated and control managers in the long-run. Indeed, 5 to 10 years after the break of their spells, managers are observed filling an executive position 47% of the time and they are employed in multi-manager establishments 25% of the time. These statistics imply that treated and control managers are often not in the best position to be able to directly affect personnel outcomes at the firm-level, thus suggesting that it is unlikely that long-run differences in firms' characteristics are exclusively driven by the persistence channel.

Taking stock, this evidence indicates that the effects of daughters on female employees' labor market outcomes are not only restricted to the establishment where the birth happened. Instead, we find positive effects on female outcomes also in the medium-long run, unconditionally on the type of establishment (single- vs multi-manager) and on the managerial status of treated and control individuals. This evidence suggests that daughters may have a persistent effect on their fathers human-resource practices and on their preferences for

the type of workplace they want to be employed at, attesting to the importance of being able to control for managers' endogenous sorting when looking at the role of executives in driving firms' outcomes.

8 Conclusion

Despite decades of progress, large gender differences persist in the career progression of men and women in the corporate world. This paper identifies a mechanism that can contribute to closing within and across firms gender disparities, namely changing the gender attitudes of male managers. To identify the causal effect of managers' gender attitudes on firm-level gender inequality, we build on previous work establishing a positive association between fathering daughters and fathers' attitudes and behavior towards women and we extend it to the context of human resource management. In particular, taking advantage of some unique features of Danish registry data, we exploit the birth of a daughter, as opposed to a son, as a plausibly exogenous shock to male managers' gender attitudes and we compare within-firm changes in female relative earnings and employment depending on managers' new born gender. Because we identify changes in firm outcomes within a manager-firm spell, out empirical design overcomes problems of endogenous sorting of managers across firms, which represents a major challenge for causal identification of managers' impacts on corporate outcomes.

We show evidence of a daughter effect, as female employees working in establishments where male managers parent an additional daughter, as opposed to a son, experience an improvement in labor outcomes. Specifically, we find that following the birth of the manager's first daughter, the female earnings ratio and the share of female employment increase by 4.4% and 2.9% respectively. Instead, we do not detect similar effects if managers already have a daughter and experience the birth of an additional child of opposite gender.

We study the margins of adjustment and find that, following the birth of their first daughter, managers increase their propensity to hire female workers who work full-time, are more educated and have high earnings. On the contrary, we do not find any increase in the share of female workers employed part-time or having pre-school aged children, which indirectly suggests that newborn's gender does not affect the likelihood that managers implement human-resource practices favoring the work-life balance of female employees. We also show that the observed changes in managers' hiring decisions do not affect the average characteristics of the workforce nor average labor costs per employee. Taken together, these results suggest that treated managers substitute male workers by hiring women with comparable characteristics. As a result, the only observable characteristic of the workforce that appears to be affected by the changes in managers' personnel decisions is its gender-mix.

We find that these changes in human resource management have a positive but imprecisely estimated effect on firm performance, as measured by labor productivity per employee. More in particular, while the daughter effect is close to zero in the first three years following the birth event, it becomes consistently positive and more precisely estimated thereafter, suggesting

that, after a sufficiently long period of time, the observed changes in managers' personnel decisions may have a positive effect on firm performance. Thus, our analysis indicates that, in the context we study, there is no equity-efficiency trade-off, as the observed improvement in women's relative outcomes do not come to the detriment of firm performance.

We leverage the timing of the estimated effects to gain indirect insights about the plausible mechanisms through which daughters can affect men's behavour. Using an event study analysis, we first show that the positive effects on female earnings and employment appear right after the birth event and persist for the whole length of the job spell. This rapid behavioral response is consistent with a discontinuous and persistent increase in the salience of gender issues as soon as a manager experiences the birth of his first daughter, with an associated change in attitudes towards women. Using cross-sectional variation, we also show that the effects are increasing in the age of a manager's oldest daughter, suggesting that managers may gradually learn about women's abilities and the constraints they face via sustained exposure to their daughters.

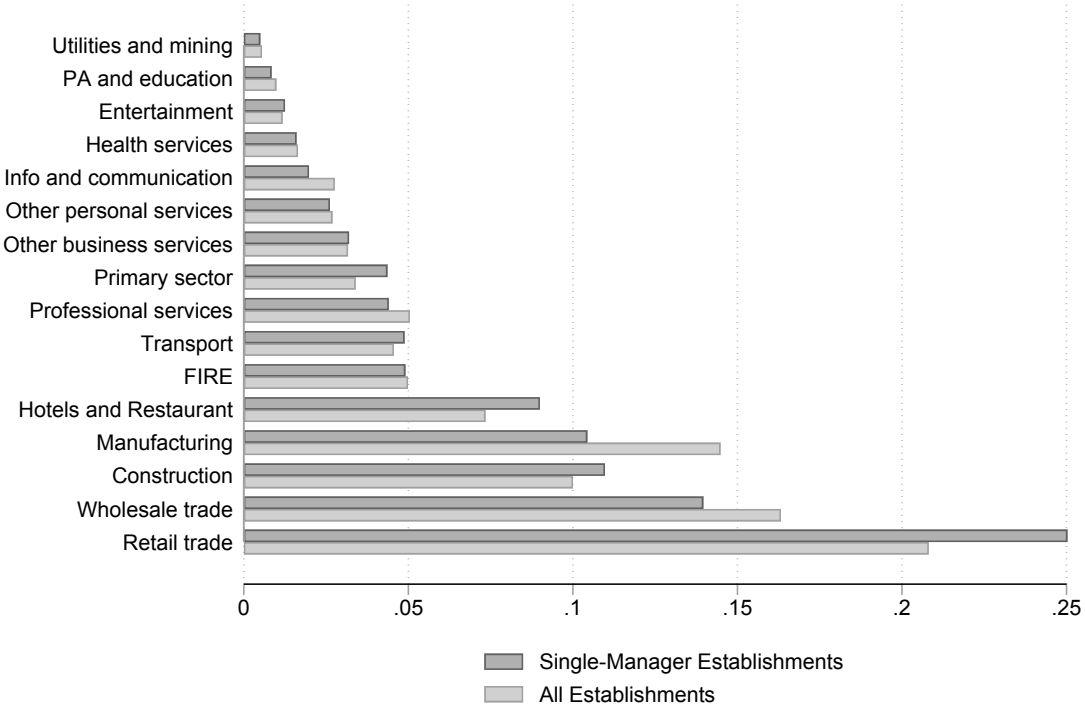
Finally, we find that the positive effects on female relative employment and earnings persist in the medium- long-run. In particular, we follow managers 5 to 10 years after the break of the job spell during which the birth event took place and show that treated managers are more likely to work in female-friendly firms. This result suggests that the daughter effect is not restricted to the establishment where the birth happened and that managers might endogenously sort into different types of workplaces depending on their gender attitudes.

Given the key role played by managers in the labor market and the over-representation of men in leadership positions, showing that male managers' gender attitudes shape gender differences in personnel outcomes within their organizations has important policy implications. To accelerate the process towards gender equality, several countries have introduced board quotas, which aim at increasing the representation of women in the corporate world by directly mandating their appointment to top economic positions. However, research from a growing number of countries shows that, while quotas have been effective in fostering gender balance inside boards, they have not benefited a larger set of women nor reduced gender gaps overall (**?**; **?**).

This evidence seems to suggest that women's representation, on its own, is not sufficient to reduce gender inequality in the workplace and that policies aimed at changing the gender attitudes of decision-makers may also be required. In line with this, our analysis shows that personnel policies and firm-level gender inequality change following a shift in managers' gender attitudes. Specifically, our results support the hypothesis that gender attitudes are not necessarily innate, but, rather, can evolve over the life-cycle and be molded by personal experiences which increase the salience of gender issues. Given these results and the increasing amount of firms' budget which is - often ineffectively - spent on diversity training (**?**), future research could investigate which type of interventions are more successful at mimicking the daughter effect on managers decisions making and study the implications for within-firm inequality.

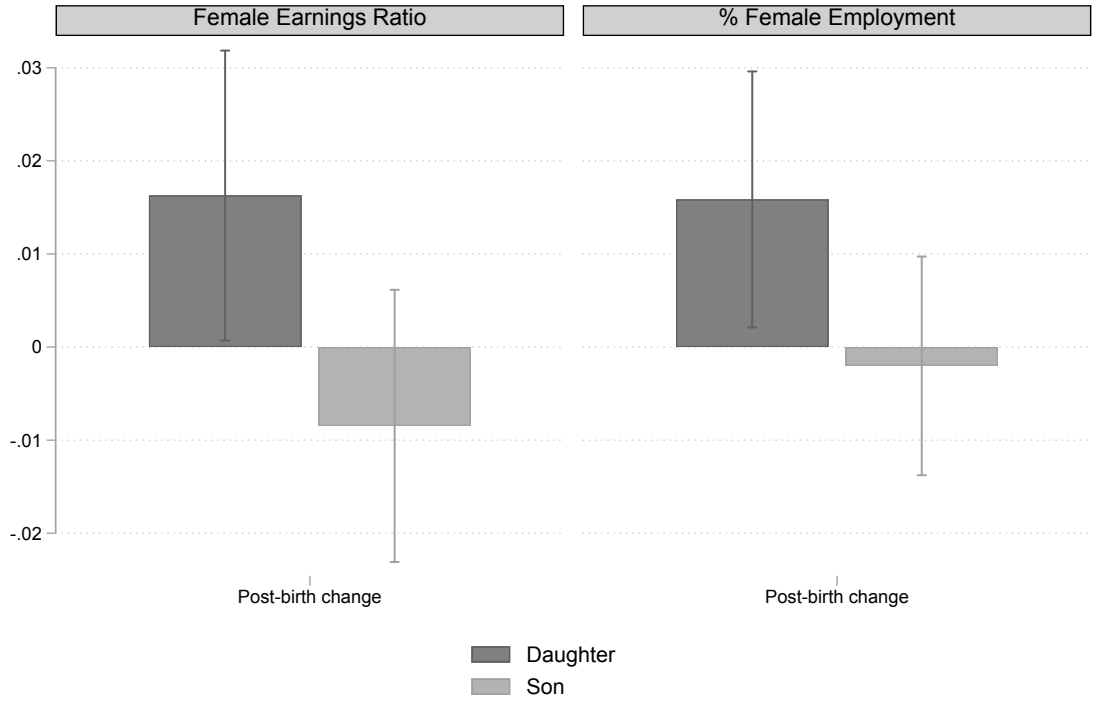
Figures

Figure 1: Industry distribution of establishments



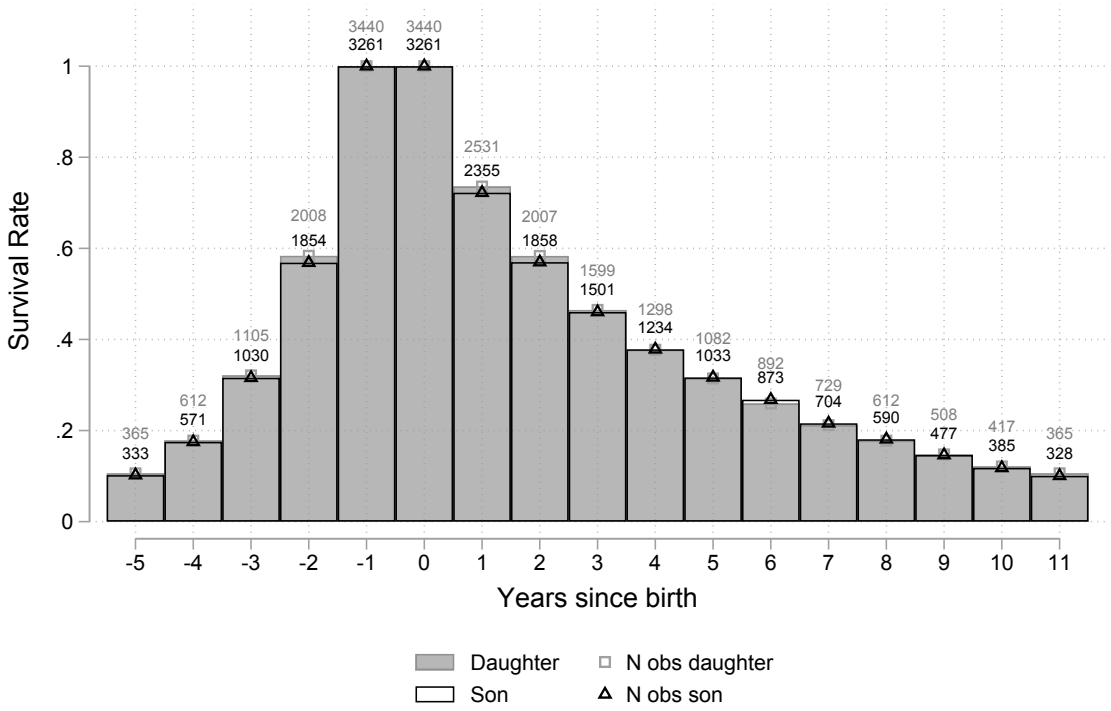
This Figure shows the share of single-manager establishment-year observations by industry and compares it to the corresponding share for the overall sample of establishments.

Figure 2: Relative daughter effect: sub-sample of first births



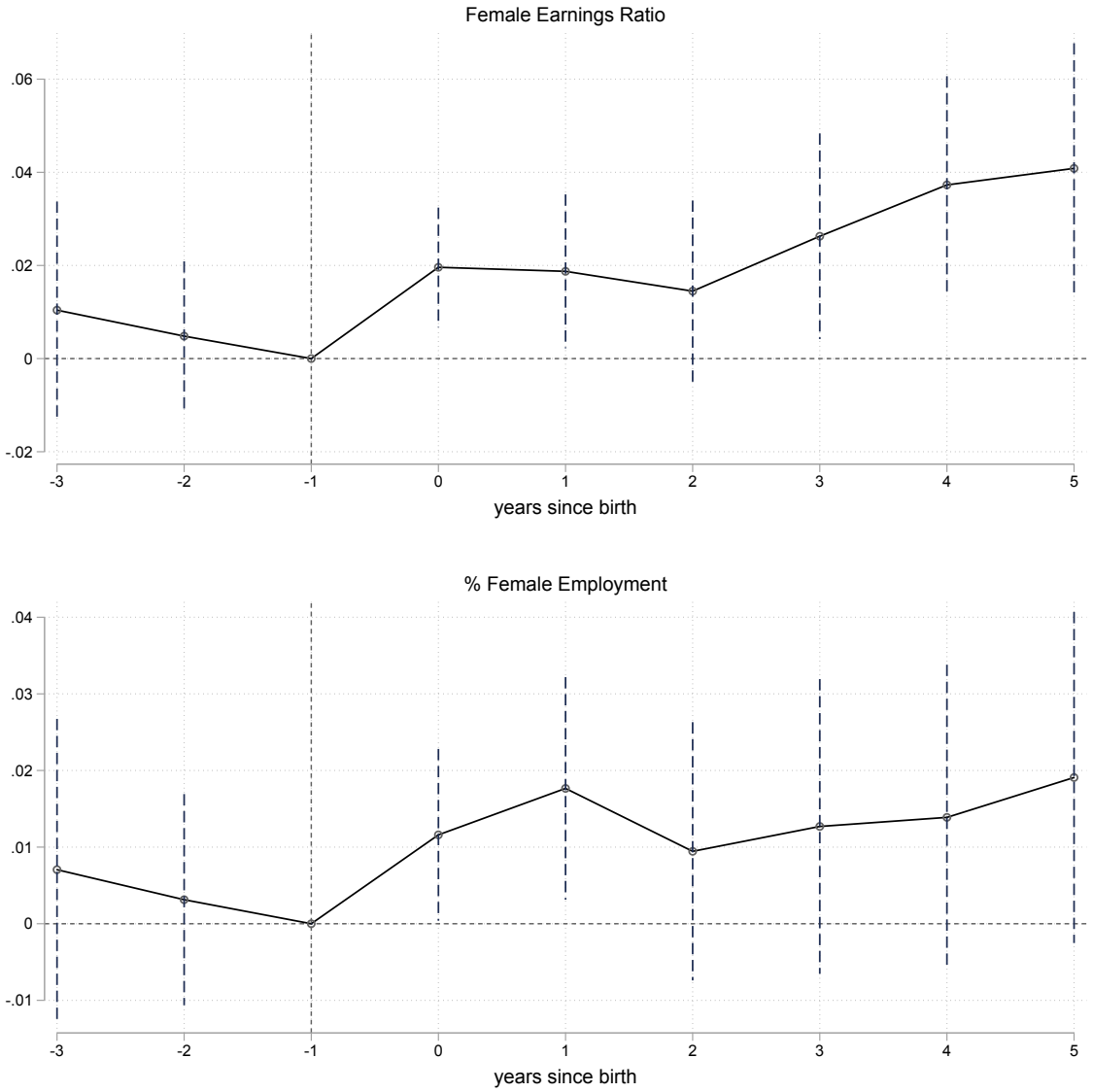
This Figure shows the magnitudes and the 95% confidence intervals of the coefficients obtained from two regressions estimated on the sub-sample of managers who have zero children and experience the birth of their first child. In particular, the dark and light gray bars shows changes in the female earnings ration and the share of female employment depending on the gender of the manager first-born. The relative daughter effect, captured by the coefficient β in equation (2), corresponds to the difference between the two coefficients represented by the bars. Standard errors are clustered at the establishment level.

Figure 3: Effect of newborn child's gender on the duration of manager-establishment spells



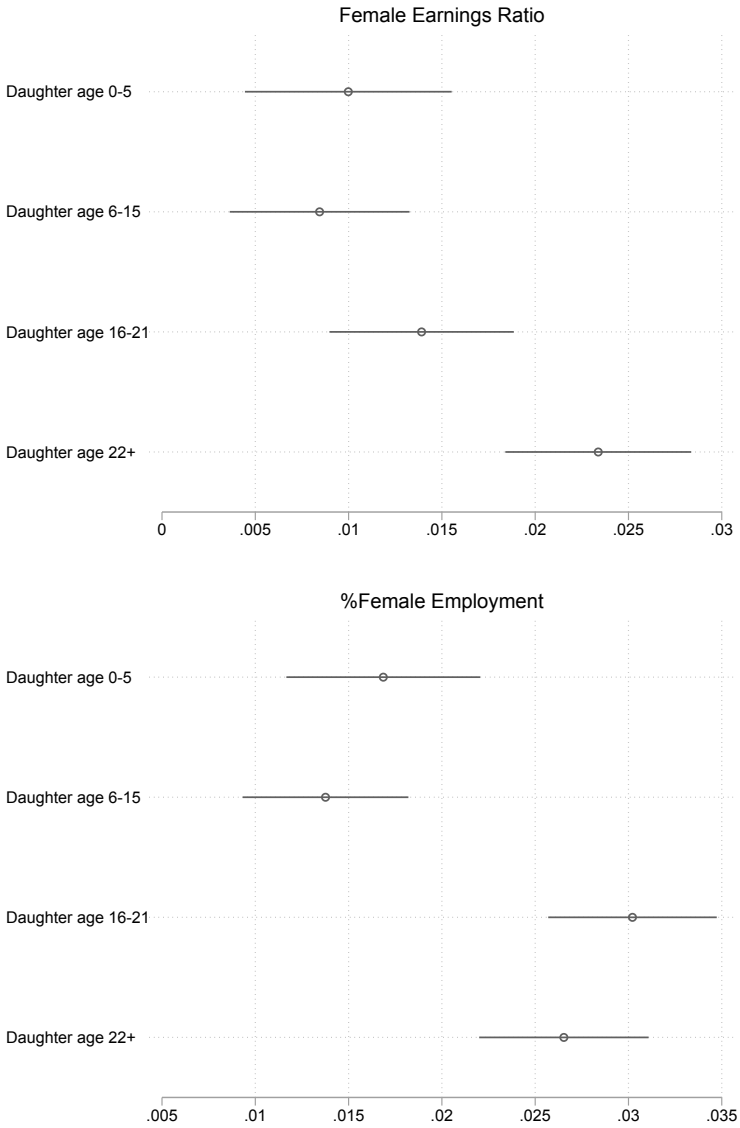
This Figure shows the inverse of the probability of observing a break in manager-establishment spells over time. More specifically, the y-axis shows the number of manager-establishment spells observed in a given year before/after the birth as a share of the total number of spells used for identification. Thus, by construction, the probability of observing all our spells is equal to one in the year of the birth and the year before. The gray (black) bars represent the survival rate of spells if the manager experienced the birth of a daughter (son). Similarly, the numbers on top of the bars represent the overall number of spells observed at each point in time. We stop showing survival probabilities when we observe less than 10% of the overall spells sample, namely 5 years before and 11 years after the birth. The differences between the two bars, which inform us about whether the probability that a spell is observed at a given point in time depends on the gender of the newborn child, are never statistically significant.

Figure 4: Event study estimates: baseline outcomes



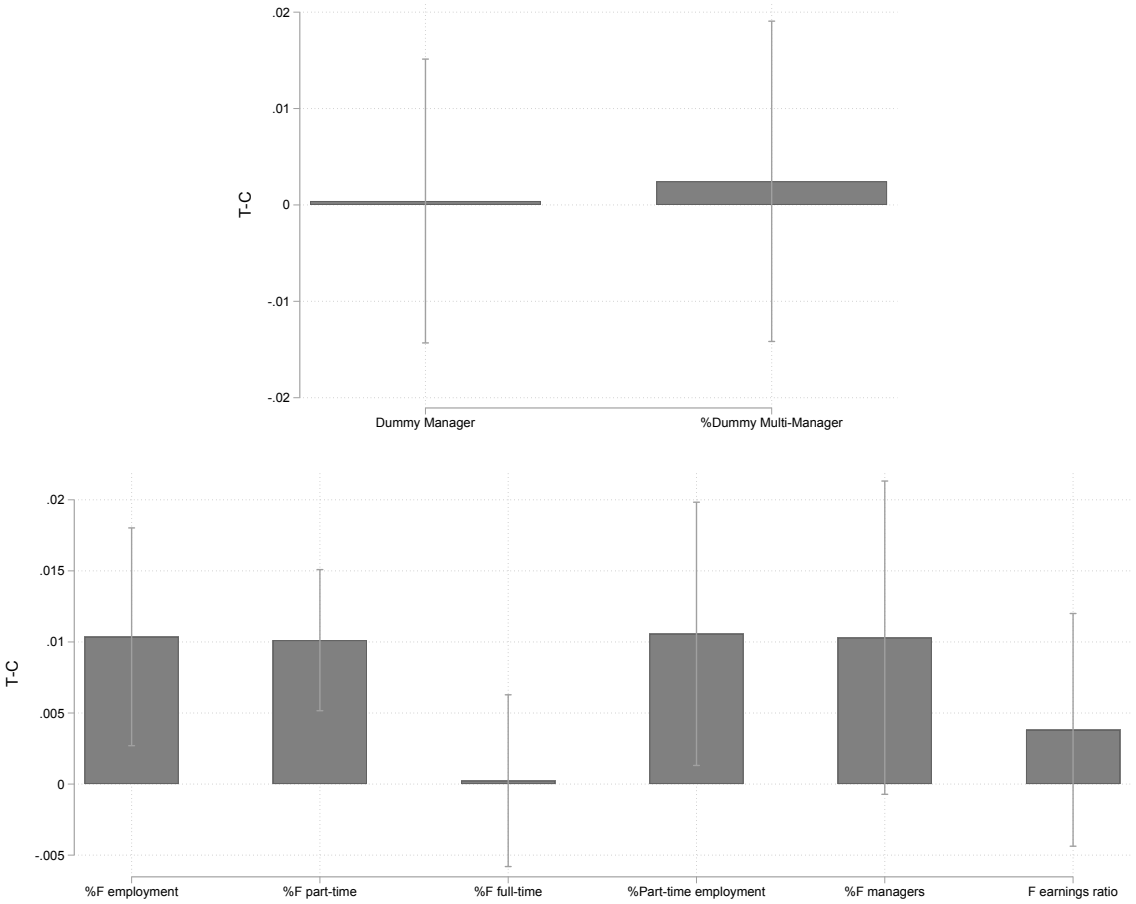
This Figure plots difference-in-difference coefficients and 95% confidence intervals from estimating equation 3 using the sample of establishments in which managers experienced the birth of their first daughter (treated group) and in which managers experience the birth of an extra son and do not have any daughter (control group). This definition of the control group accounts for the pitfalls of two-way fixed-effects estimators highlighted in recent studies (e.g. ?; ?) If, within a job spell, the manager experiences both the birth of his first daughter and the birth of an extra son, we consider him treated. The coefficients are plotted relative to the difference between the treated and control group the year before the birth (time $j = -1$), which is normalized to zero. Standard errors are clustered at the establishment level.

Figure 5: Effects by age of oldest daughter



This Figure plots the coefficients β_1, β_2, β_3, and β_4 from equation (4) and their 95% confidence intervals. The sample consists of all single-manager establishment-year observations. Controls include 10 dummies for managers' age groups (younger than 34, 34-38, 39-42, 43-45, 46-48, 49-51, 52-53, 54-57, 58-61, older than 61), managers' years of education and years of tenure in the establishment. The establishment-level controls include employees' average age, employees' average years of education, employees' average tenure, the share of employees working full-time, the share of employees who are married, the share of employees who have at least one child, and establishment size. Standard errors are clustered at the establishment level.

Figure 6: Long-run effects on the probability of being manager and to be in a multi-manager firm (top) and on firms characteristics (bottom)



This Figure is estimated on the sample of managers experiencing a birth event and uses data between 5 and 10 years after the break of the job spell during which managers experience the birth event. The Figure shows 95% confidence intervals and long-run average differences between managers who experienced the birth of their first daughter and managers who experienced the birth of an extra son and have no daughters. The outcome variables of the top Figure are defined in the following way: (i) a dummy equal to one if the individual is manager of the establishment and equal to zero otherwise; (ii) a dummy equal to one if the establishment has more than one manager and equal to zero otherwise. The outcome variables of the bottom Figure are defined in the following way:(i) share of female employment is measured as in equation (1), (ii) share of female employees who work part-time ((iii) full-time) is defined as the total number of female workers working part-time (full-time) over the total number of workers, (iv) share of part-time employment is defined as the total number of employees of either gender working part-time over the total number of workers, (v) share of female managers is defined as the total number of female managers divided by the total number of managers, (vi) female earnings ratio is defined as in equation (1). All regressions are computed using robust standard errors and include year and number of children fixed effects.

Tables

Table 1: Managers and employees' characteristics

	Managers	Male Employees	Female Employees	Difference	Establishments
	(1)	(2)	(3)	(4)	(5)
Age	38.50				
N of children	1.99				
N of daughters	0.96				
N of sons	1.03				
Age of oldest child	9.53				
Age of youngest child	4.12				
Observations	60,164				
Age		34.18	31.55	2.63	
Earnings		250,832	170,105	80,727	
% Full-time		0.75	0.60	0.151	
Tenure		3.83	3.32	0.510	
Years of education		11.58	11.36	0.218	
% High school		0.48	0.58	-0.102	
% Vocational		0.42	0.32	0.099	
% University		0.10	0.10	0.003	
% High-skilled occupations		0.17	0.17	-0.003	
% Medium-skilled occupations		0.67	0.69	-0.016	
% Low-skilled occupations		0.16	0.14	0.019	
Observations		1,044,571	668,034	1,712,605	
% Female employment					0.34
% Obs only male employees					0.25
% Obs only female employees					0.07
Female earnings ratio					0.39
Observations					48,766

This Table reports summary statistics for the sample of managers, employees, and establishments used in our analysis. Employees' earnings are shown in real Danish krone (as of August 2021, 1 Danish Krone corresponds to 0.13 euros and 0.16 US dollars). High-skilled, medium-skilled, and low-skilled occupations are defined following the ILO categorization. Specifically, high-skilled occupations include occupations whose ISCO code first digit is 1, 2, or 3 (respectively: managers, professionals, and technicians and associate professionals); medium-skilled occupations include occupations whose ISCO code first digit is 4, 5, 6, 7, or 8 (respectively: clerical support workers, service and sales workers, skilled agricultural, forestry and fishery workers, craft and related trades workers, plant and machine operators, and assemblers); low-skilled occupations include occupations whose ISCO code first digit is 9 (elementary occupations). The establishment-level variables *% Female Employment* and *Female earnings ratio* are defined as in equation 1. The standard deviation of the share of female employment and the female earnings ratio (not reported in the Table) are equal to 0.32 and 0.29 respectively.

Table 2: Effects on baseline outcomes

	Female Earnings Ratio		Share of Female Employment	
	(1)	(2)	(3)	(4)
		Panel A		
N of daughters	0.0095**	0.0098**	0.0075*	0.0079**
	(0.00458)	(0.00456)	(0.00387)	(0.00385)
		Panel B		
First Daughter	0.0168***	0.0172***	0.0102**	0.0100**
	(0.00596)	(0.00594)	(0.00500)	(0.00497)
Additional Daughters	0.0048	0.0051	0.0023	0.0031
	(0.00641)	(0.00633)	(0.00535)	(0.00528)
Observations	48,766	48,766	48,766	48,766
R-squared	0.73	0.73	0.84	0.84
N of Children FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES
Time-varying controls		YES		YES
Mean	0.39		0.34	

The variable *N of daughters* is a continuous variable indicating the total number of daughters a manager has. The variable *First Daughter* is a dummy equal to one if the number of a manager's daughters is positive and the variable *Additional Daughters* is a dummy equal to one if the number of a manager's daughters is greater than one. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Effects on female workforce characteristics

	Share of female employees that:															
	Top earner is a woman		Have earnins above the 90th pct		Are among the 3 highest paid		Are working full-time		Are working part-time		Have youngest child age 5 or less		Have post secondary education		Have lower education	
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
First Daughter	0.0218**	0.0216**	0.0099**	0.0093**	0.0218**	0.0216**	0.0083*	0.0076*	0.0019	0.0024	-5.52e-05	-1.80e-06	0.0091**	0.0082**	0.0011	0.0018
	(0.0102)	(0.0101)	(0.00418)	(0.00415)	(0.0102)	(0.0101)	(0.00467)	(0.00413)	(0.00409)	(0.00340)	(0.00346)	(0.00304)	(0.00400)	(0.00375)	(0.00470)	(0.00451)
Observations	48,766		48,766		48,766		48,766		48,766		48,766		48,766		48,766	
R-squared	0.619	0.620	0.661	0.666	0.619	0.620	0.76	0.81	0.75	0.82	0.56	0.63	0.74	0.77	0.78	0.79
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES		YES		YES		YES		YES		YES
Mean	0.274		0.0769		0.154		0.21		0.14		0.06		0.14		0.20	

Outcome variables from columns (2) to (8) are all defined as the total number of female workers with a certain characteristic divided by the total number of employees. The outcome variable in column (1) is defined as a dummy equal to 1 if the employee with the highest earnings in the establishment is a woman. We define employees with post-secondary education as those who completed either vocational education or university. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, fixed effects for the total number of children, and fixed effects for years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table 4: Effects on overall workforce characteristics

	Share of employees that:											
	Are working full-time		Have youngest child age 5 or less		Have post secondary education		Average age		Average tenure		Log labor costs per employee	
	(1)		(2)		(3)		(4)		(5)		(6)	
First Daughter	0.0013	-9.11e-05	-0.0008	-0.0004	-0.0007	-0.0014	0.0097	-0.0478	0.0171	0.0034	0.0030	0.0014
	(0.0054)	(0.0051)	(0.0056)	(0.0037)	(0.0060)	(0.0056)	(0.1476)	(0.1104)	(0.0429)	(0.0409)	(0.0094)	(0.0080)
Observations	48,766		48,766		48,766		48,766		48,766		48,766	
R-squared	0.72	0.78	0.43	0.73	0.69	0.72	0.78	0.88	0.78	0.88	0.801	0.847
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES		YES		YES		YES
Mean	0.71		0.18		0.47		32.3		3.3		12.19	

Outcome variables from column (1) to (3) are all defined as the total number of workers with a certain characteristic divided by the total number of employees. While the outcome variables in columns (4) and (5) are defined as the average age and tenure of the employees. We define employees with post-secondary education as those who completed either vocational education or university. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, fixed effects for the total number of children, and fixed effects for years. The full list of time-varying controls includes employees' average age (omitted in column (4)), employees' average years of education (omitted in column (3)), employees' average years of tenure in the establishment (omitted in column (5)), the share of employees working full-time (omitted in column (1)), the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table 5: Effects on hiring and separation rates

	(1)	(2)	(3)	(4)
	Panel A			
	% Female hirings		% Female separations	
First Daughter	0.0155**	0.0153**	-0.0105	-0.0107
	(0.0075)	(0.0075)	(0.0081)	(0.0081)
	Panel B			
	% Total hirings		% Total separations	
First Daughter	0.0062	0.0082	0.0014	0.0030
	(0.006)	(0.058)	(0.058)	(0.058)
Observations Panel A	38,648	38,648	36,682	36,682
Observations Panel B	48,766	48,766	48,766	48,766
Time-varying controls		YES		YES
Mean Panel A	0.34		0.35	
Mean Panel B	0.33		0.29	

The outcome variables in Panel A are defined as the total number of female hired over total hires - columns (1) and (2) - and as the total number of female separations over total separations - columns (3) and (4). The outcome variables in Panel B instead are defined as the total number of hires over the total number of workers - columns (1) and (2) - and as the total number of separations over the total number of workers - columns (3) and (4). An individual is considered hired if she receives remuneration from the establishment in a given year but not during the preceding 3 years. The separation variable is a dummy taking the value one if the worker leaves the firm in $t+1$ and does not return within 3 years. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, fixed effects for the total number of children, and fixed effects for years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** p<0.01, ** p<0.05, *p<0.1.

Table 6: Effects on the characteristics of female hires

	Share of female hires that:											
	Have earnings above the 90th pct		Are working full-time		Are working part-time		Have pre-school aged child		Have post secondary education		Have lower education	
	(1)		(2)		(3)		(4)		(5)		(6)	
First Daughter	0.0075***	0.0074***	0.0051*	0.0052*	0.0034	0.0039	0.0020	0.0020	0.0049**	0.0048**	0.0036	0.0043
	(0.0024)	(0.0024)	(0.0027)	(0.0027)	(0.0028)	(0.0027)	(0.0016)	(0.0015)	(0.0022)	(0.0021)	(0.0033)	(0.0032)
Observations	48,766		48,766		48,766		48,766		48,766		48,766	
R-squared	0.31	0.32	0.33	0.37	0.54	0.59	0.22	0.26	0.30	0.32	0.51	0.54
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES		YES		YES		YES

The outcome variables are defined as the ratio between the total number of female workers who are hired and have certain characteristics divided by the number of total workers. We define employees with post-secondary education as those who completed either vocational education or university. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, fixed effects for the total number of children, and fixed effects for years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table 7: Effects on the gender gap in the observable characteristics of new hires

	Establishments with positive F hired			Establishments with positive M hired			Establishments with positive M&F hired		
	% F Hired with H-Edu	% F Hired Full-time	F Hired Log Earnings	% M Hired with H-Edu	% M Hired Full-time	M Hired Log Earnings	Education Gap	Full-time Gap	Log Earnings Gap
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
First Daughter	0.0170**	0.0148*	0.0148	-0.0152*	-0.0207**	-0.0391*	-0.0212**	-0.0142	-0.0599
	(0.00855)	(0.00899)	(0.0291)	(0.00860)	(0.00855)	(0.0202)	(0.00980)	(0.0112)	(0.0402)
Observations	21,766	21,766	21,766	33,263	33,263	33,263	16,542	16,542	16,542
R-squared	0.448	0.516	0.561	0.446	0.604	0.625	0.423	0.521	0.359
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean	0.18	0.25	11.39	0.30	0.46	11.73	0.04	0.06	0.07

Estimates in columns (1) to (3) (columns (4) to (6)) are respectively based on the sample of manager-establishment spells experiencing positive hiring of female (male) workers both before and after the birth event. Estimates in columns (7) to (9) are based on the sample of manager-establishment hiring workers of both genders both before and after the birth event. The outcome variable in column (1) (column (4)) is defined as the number of female (male) hires with post-secondary education over the number of total hires, the outcome variable in column (2) (column (5)) is defined as the number of female (male) hires working full-time over the number of total hires, the outcome variable in column (3) (column (6)) is defined as the average earnings of female (male) hired, where earnings are expressed in logarithm. The outcome variable in columns (7) (column (8)) is defined as the difference between the share of male hires with post-secondary education (working full-time) and the share of female hires with post-secondary education (working full-time). The outcome variable in column (9) is defined as the difference between the average earnings of male and female hired. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, fixed effects for the total number of children, and fixed effects for years. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table 8: Effects on promotions of incumbents

	All establishments				Mixed-gender establishments			
	Female Log Earnings		Male Log Earnings		Female Log Earnings		Male Log Earnings	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First Daughter	0.0018	0.0006	-0.0010	0.0000	0.0006	-0.0011	-0.0119	-0.0109
	(0.0103)	(0.0104)	(0.0081)	(0.0081)	(0.0107)	(0.0108)	(0.0087)	(0.0086)
Observations	73,721	73,721	140,899	140,899	68,650	68,650	111,499	111,499
R-squared	0.885	0.886	0.884	0.885	0.889	0.889	0.898	0.898
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES		YES

The sample used to estimate the coefficients of Panel A consists in the population of male (female) workers employed at the firm the year before the birth event. In Panel B we restrict the sample to the pool of establishments that employed workers of both genders the year before the birth event. All regressions include a dummy for additional daughters, fixed effects for manager-employee pairs, manager's number of total children, and years. Time-varying controls include employee's age, tenure, a dummy for whether she/he is married and for whether she/he has at least one child, and establishment size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table 9: Effects on firm performance

	Log Employment		Log Sales per Employee		Value Added per Employee	
	(1)	(2)	(3)	(4)	(5)	(6)
First Daughter	0.0072	0.0086	0.0014	0.0004	9,301	8,761
	(0.0192)	(0.0187)	(0.0163)	(0.0158)	(7,005)	(6,892)
Observations	36,201	36,201	36,201	36,201	36,201	36,201
R-squared	0.86	0.87	0.79	0.81	0.66	0.68
N of Children FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES

This Table is computed on the sample of single-establishment firms who have non-missing information for value-added and sales. To account for outliers, we winsorize the outcomes below the 1st and above the 99th percentile to value of the 1st and 99th percentile respectively. The mean of employment is 12 employees, the mean of sales per workers is 1,264,000 Danish Kroner, and the mean of value added per employee is 386,952 Danish Kroner. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, manager's total number of children, and years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table 10: Heterogeneous effects depending on establishment- and industry-level employment

	(1)		(2)		(3)		(4)	
	Share of Female Employment				Female Earnings Ratio			
	Panel A: %F in the industry							
	Low		High		Low		High	
First Daughter	0.0040	0.0044	0.0180**	0.0176**	0.0160**	0.0169**	0.0194**	0.0186**
	(0.0056)	(0.0055)	(0.0078)	(0.0085)	(0.0073)	(0.0072)	(0.0095)	(0.0094)
	Panel B: %F pre-birth							
	Below industry average		Above industry average		Below industry average		Above industry average	
First Daughter	0.0112**	0.0114**	0.0080	0.0081	0.0192***	0.0204***	0.0121	0.0123
	(0.0054)	(0.0054)	(0.0089)	(0.0088)	(0.0075)	(0.0074)	(0.0093)	(0.0093)
Observations Panel A	28,767	28,767	19,926	19,926	28,767	28,767	19,926	19,926
Observations Panel B	28,406	28,406	20,181	20,181	28,406	28,406	20,181	20,181
Time-varying controls		YES		YES		YES		YES
Mean Panel A	0.22		0.52		0.31		0.51	
Mean Panel B	0.19		0.56		0.28		0.54	

Panel A: The sample used to compute results in columns (1) and (3) (columns (2) and (4)) consists of all establishments operating in industries whose share of female employment over the sample period is lower (equal or higher) than 50%. Panel B: The sample used to compute the results in column (1) and (3) (columns (2) and (4)) consists in all manager-establishment spells whose share of female employment was below (above) the average share of female employment in the industry of the establishment the year before the birth event. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, manager's number of total children, and years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment's size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

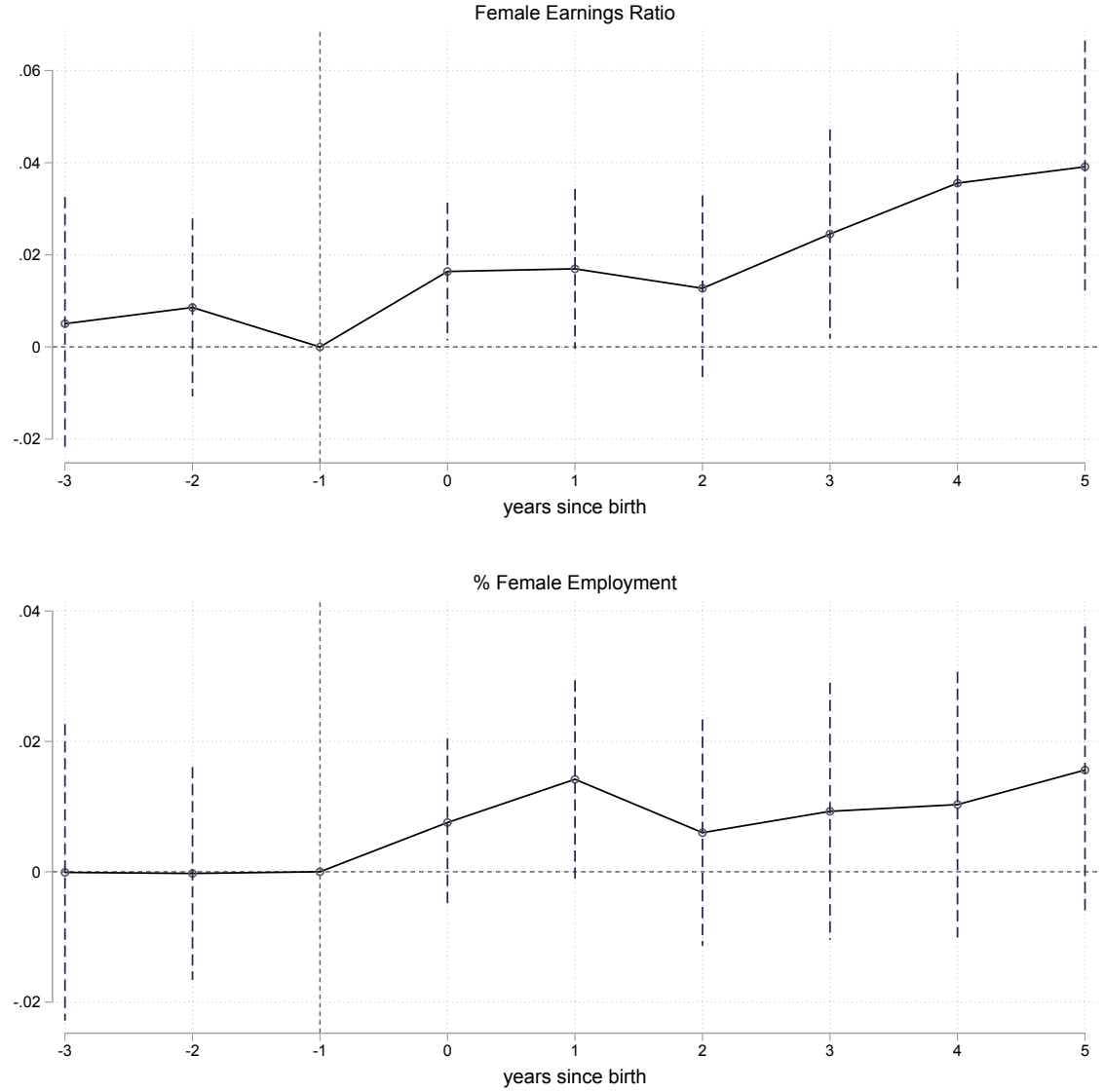
Table 11: Heterogeneous effects depending on managers cohort of birth

	Female Earnings Ratio				Share of Female Employment			
	Born Before 1965		Born from 1965		Born Before 1965		Born from 1965	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First Daughter	0.0087	0.0107	0.0221***	0.0208***	0.0004	0.0019	0.0172**	0.0153**
	(0.0098)	(0.0098)	(0.0074)	(0.0073)	(0.0080)	(0.0081)	(0.0063)	(0.0062)
Observations	24,866	24,866	23,899	23,899	24,866	24,866	23,899	23,899
R-squared	0.73	0.73	0.73	0.74	0.83	0.83	0.85	0.86
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES		YES
Mean	0.38		0.40		0.33		0.35	

This Table shows results depending on the manager's year of birth. Coefficients in columns (1)-(2) and (5)-(6) ((3)-(4) and (7)-(8)) are calculated on the sample of manager-establishment spells whose manager was born before (from) 1965, which is the median value of managers' cohort of birth. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, manager's number of total children, and years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment's size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

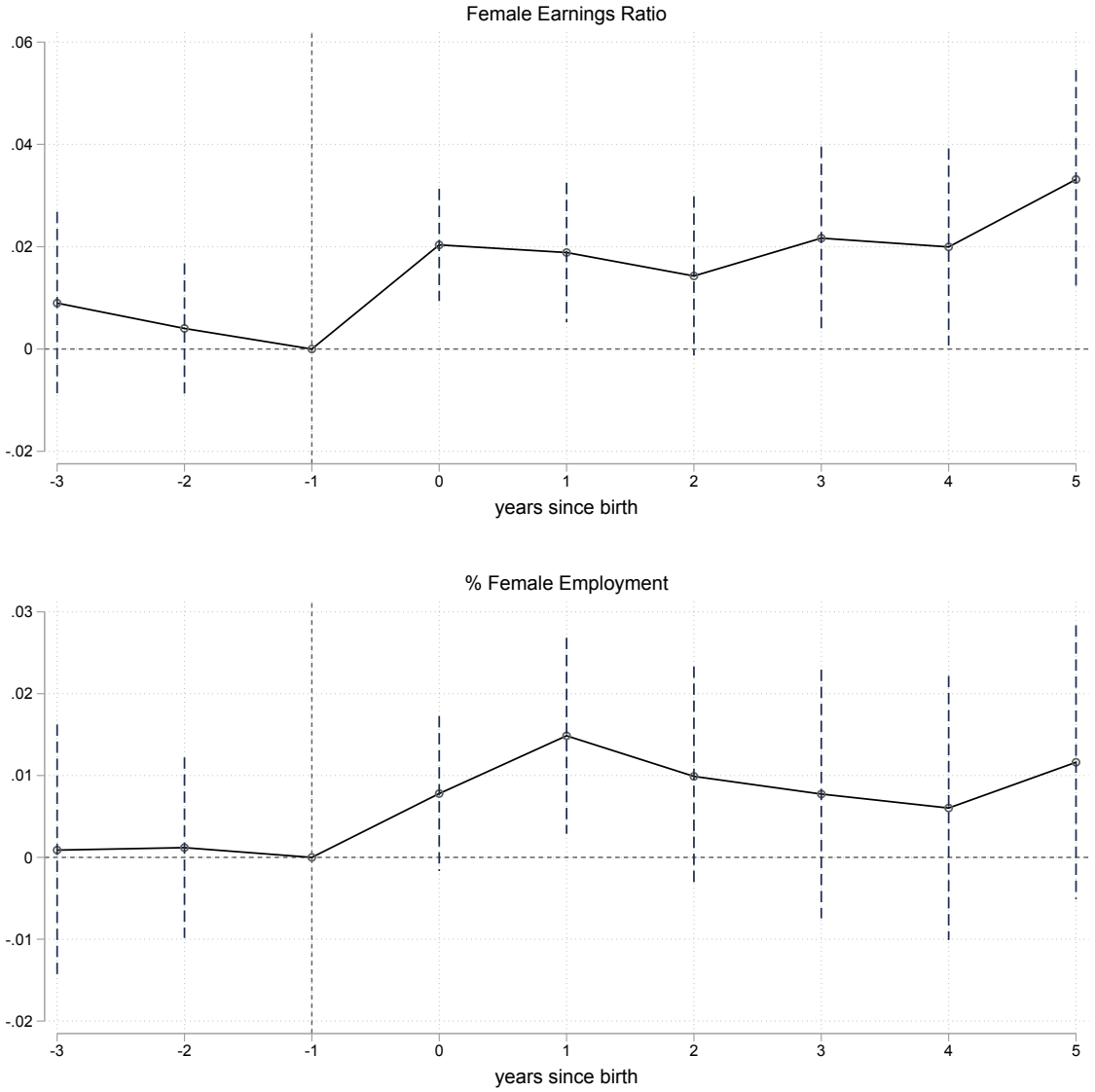
Appendix

Figure A1: Event study estimates: baseline outcomes and balanced sample



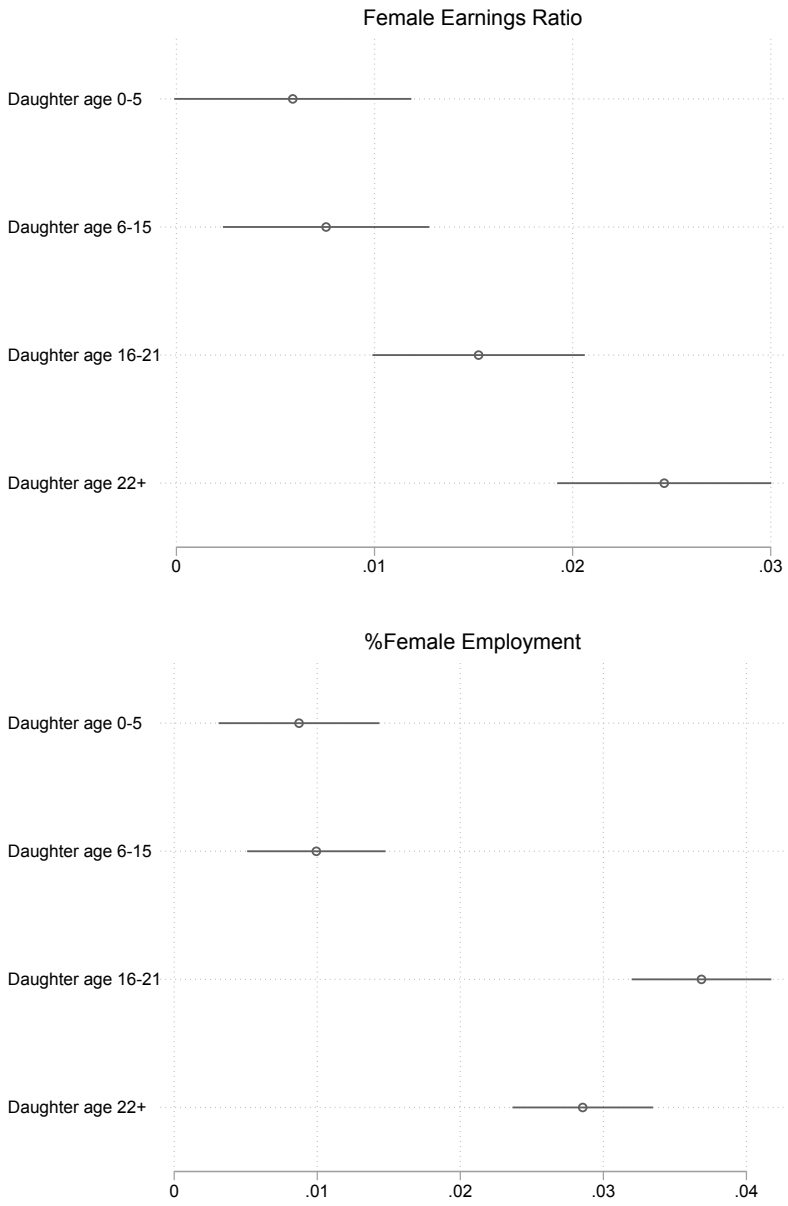
This Figure plots difference-in-difference coefficients and 95% confidence intervals from estimating equation 3 using the sample of establishments in which managers experienced the birth of their first daughter (treated group) and in which managers experience the birth of an extra son and do not have any daughter (control group). This definition of the control group accounts for the pitfalls of two-way fixed-effects estimators highlighted in recent studies (e.g. ?; ?). In case in one of these spells the manager experiences both the birth of his first daughter and the birth of an extra son, we consider him treated. The coefficients are estimated on a balanced sample of spells between -1 and +1. The coefficients are plotted relative to the difference between the treated and control group the year before the birth (time $j = -1$), which is normalized to zero. Standard errors are clustered at the establishment level.

Figure A2: Event study estimates: baseline outcomes and broader control group



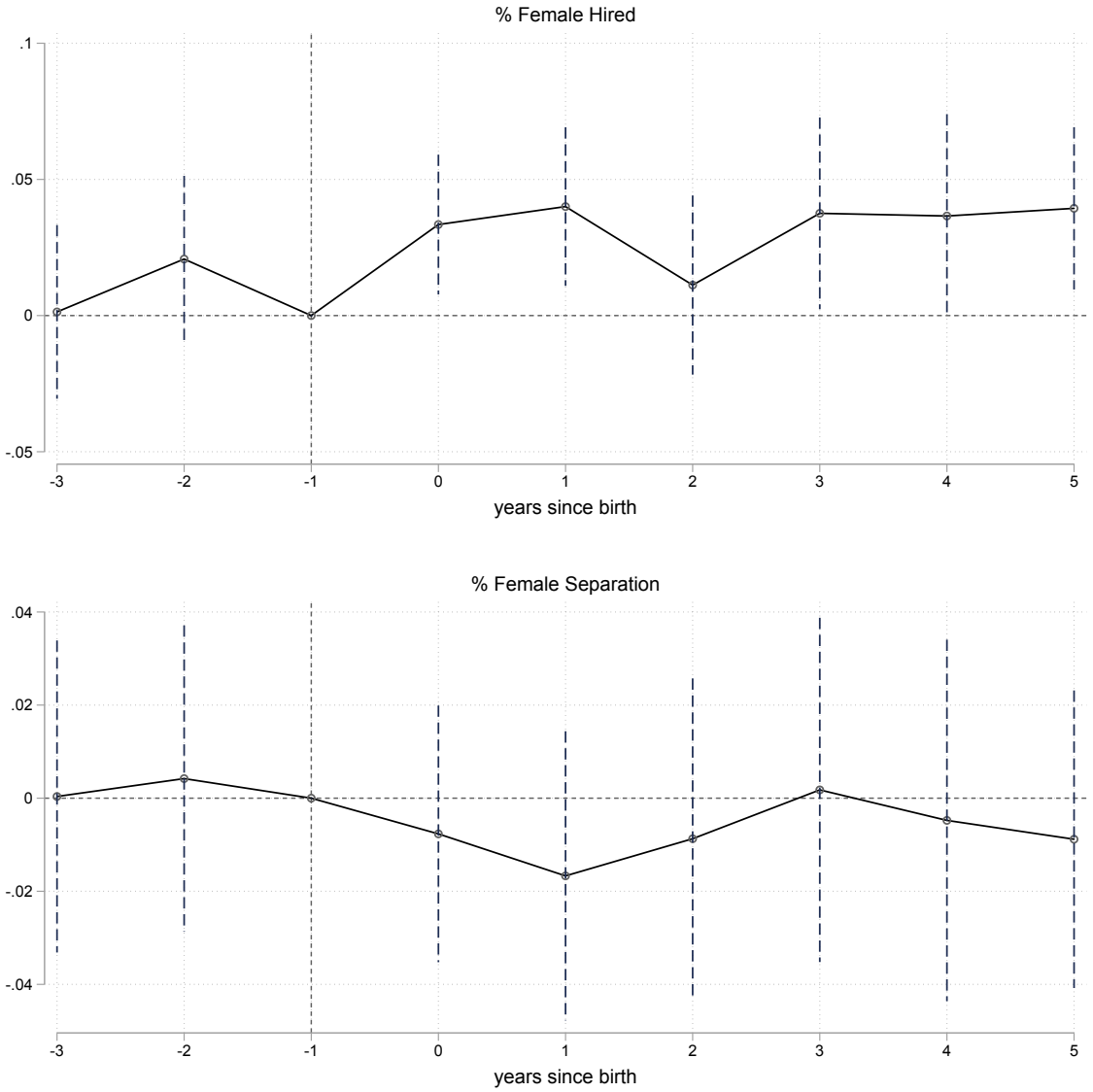
This Figure plots difference-in-difference coefficients and 95% confidence intervals from estimating equation 3 where we define as treated the group of managers who experienced the birth of their first daughter and as control everybody else, i.e. managers who already have a daughter an experience the birth of an extra child of wither gender and managers who do not have any female child and experience the birth of an extra son. In case in one of these spells the manager experiences both the birth of his first daughter and the birth of an extra son, we consider him treated. The coefficients are plotted relative to the difference between the treated and control group the year before the birth (time $j = -1$), which is normalized to zero. Standard errors are clustered at the establishment level.

Figure A3: Effects by age of oldest daughter - Robustness



This Figure plots the coefficients β_1, β_2, β_3, and β_4 from equation (4) and their 95% confidence intervals. Rather than controlling for managers' age distribution like we did in Figure 5, this figures includes dummies for whether the manager's oldest child is between age 0 and 5; 6-15; 16-21; 22 or more. We also control for managers' age and age squared, managers' years of education and years of tenure in the establishment. The establishment-level controls include employees' average age, employees' average years of education, employees' average tenure, the share of employees working full-time, the share of employees who are married, the share of employees who have at least one child, and establishment size. Standard errors are clustered at the establishment level.

Figure A4: Event study estimates: hirings and separations



This Figure plots difference-in-difference coefficients and 95% confidence intervals from estimating equation 3 using the sample of establishments in which managers experienced the birth of their first daughter (treated group) and in which managers experience the birth of an extra son and do not have any daughter (control group). This definition of the control group accounts for the pitfalls of two-way fixed-effects estimators highlighted in recent studies (e.g. ?; ?). In case in one of these spells the manager experiences both the birth of his first daughter and the birth of an extra son, we consider him treated. The coefficients are plotted relative to the difference between the treated and control group the year before the birth (time $j = -1$), which is normalized to zero. The outcomes of interest are measured as the total number of women hired (separations) over the total number of hires (separations). Standard errors are clustered at the establishment level.

Table A1: Evidence on Manager Child Gender Mix Selection

	All Managers		Subsample Age > 50			
	N Daughters	N Children	N Daughters	N Children	Two or more children	Three or more
	(1)	(2)	(3)	(4)	(5)	(6)
Female First-born	1.002***	0.0263	1.003***	0.0145	0.0104	-0.0212
	(0.0156)	(0.0230)	(0.0229)	(0.0325)	(0.00909)	(0.0151)
Observations	6,631	6,631	3,406	3,406	3,406	3,406
R-squared	0.572	0.229	0.571	0.297	0.201	0.241
Manager's controls	YES	YES	YES	YES	YES	YES
N Children FE	YES		YES			

This Table reports OLS estimates, with robust standard errors where each observation represents one of the managers of the birth sample the last time we observe them. Columns (1) and (3) show the effect of having a first child who is female on the total number of daughters, columns (2) and (4) show its effect on the total number of children, and columns (5) and (6) show its effect on the probability of having two or more children and three or more children respectively. To make sure that managers have completed their reproductive life when we measure the effects of the firs-born gender on the gender-mix of children, in columns (3) to (6) we select only managers who are above 50 years old the last time they are observed. In all columns, the set of controls includes managers age at first birth (also in quadratic term), dummies for managers' educational level, a dummy for whether the manager lives in the capital, and year fixed effects.

Table A2: Paternity-leave take up and child's gender

	Paternity Leave Probability of take-up		Paternity Leave Days of leave		Paternity Leave Days of leave if take-up	
	(1)	(2)	(3)	(4)	(5)	(6)
Female Child	0.0042	0.0041	-0.0538	-0.0545	-0.3562	-0.3879
	(0.0104)	(0.0104)	(0.2548)	(0.2538)	(0.5582)	(0.5620)
Observations	6,701	6,701	6,701	6,701	1,965	1,965
R-squared	0.124	0.136	0.045	0.046	0.140	0.141
N Children FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Time-Varying Controls		YES		YES		YES

This Table considers each job spell and tests whether the gender of the managers' newborn child predicts his probability of taking-up paternity leave. Specifically, we regress a dummy for whether the newborn child is a female on: a dummy for whether the manager takes-up paternity leave after the birth in columns (1)-(2), the number of days of paternity leave in columns (3)-(4), and the number of days of paternity leave for the sub-sample of managers taking up at least one day of leave in columns (5)-(6). All regressions include fixed effects for the total number of managers' children and year dummies. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A3: Effect of manager's gender in the cross-section of establishments

	Female Earnings Ratio		Share of Female Employment	
	(1)	(2)	(3)	(4)
Female Manager	0.0822***	0.0361***	0.101***	0.0496***
	(0.00214)	(0.00142)	(0.00206)	(0.00117)
Observations	622,894	622,894	622,894	622,894
R-squared	0.321	0.622	0.504	0.816
Year, municipality and industry FE	YES	YES	YES	YES
Controls for managers' characteristics	YES	YES	YES	YES
Controls for overall workforce characteristics	YES	YES	YES	YES
Controls for female workforce characteristics		YES		YES
Mean	0.458		0.430	

The Table is estimated on the entire sample of single-manager establishments. All regressions include year, municipality, and 5-digits industry fixed-effects. Time-varying controls include: (i) controls for the characteristics of the managers - namely managers' age and age squared, managers' years of experience, managers' years of tenure in the establishment, managers' years of education, and a dummy for whether managers do not have any children; (ii) controls for establishment size and for a number of characteristics of the workforce - namely employees' average age, employees' average years of experience, employees' average years of tenure in the establishment, employee's average years of education, the share of employees who are married, the share of employees who work full-time, the share of employees who do not have children. In columns (2) and (4) we include the following additional controls: the share of female employees who work full-time, the share of female employees with higher education, and the share of female employees whose youngest child is 5 years old or less. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A4: Effects on the characteristics of female separations

	Share of female separations that:											
	Have earnings above the 90th pct		Are working full-time		Are working part-time		Have pre-school aged child		Have post secondary education		Have lower education	
	(1)		(2)		(3)		(4)		(5)		(6)	
First Daughter	0.0028	0.0027	0.0029	0.0030	-0.0032	-0.0028	-0.0009	-0.0008	0.0006	0.0005	-0.0010	-0.0003
	(0.0024)	(0.0024)	(0.0028)	(0.0027)	(0.0026)	(0.0025)	(0.0016)	(0.0016)	(0.0022)	(0.0022)	(0.0031)	(0.0030)
Observations	48,766		48,766		48,766		48,766		48,766		48,766	
R-squared	0.33	0.33	0.34	0.36	0.54	0.58	0.24	0.27	0.29	0.31	0.51	0.53
N of Children FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Manager-Estab FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time-varying controls		YES		YES		YES		YES		YES		YES

The outcome variables are defined as the ratio between the total number of female workers who leave the firm in a given year and have certain characteristics divided by the number of total workers. All regressions include a dummy for additional daughters, fixed effects for manager-establishment spells, fixed effects for the total number of children, and fixed effects for years. Time-varying controls include employees' average age, employees' average years of education, employees' average years of tenure in the establishment, the share of employees working full-time, the share of employees who are married, the share of employees with children, and establishment size. Standard errors are clustered at the establishment level. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.