What Prevents Female Executives from Reaching the Top?*

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Abstract

Exceptionally rich data from Sweden makes it possible to study the gender gap in executives' career progression and to investigate its causes. In their forties, female executives are about one-half as likely to be large-company CEOs and about one-third less likely to be high earners than male executives. Abilities, skills, and education likely do not explain these gaps because female executives appear better qualified than males. Instead, slow career progression in the five years after the first childbirth explains most of the female disadvantage. During this period, female executives work on average shorter hours than male executives and are more often absent from work. These results suggest that aspiring women may not reach the executive site without trading off family life.

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1. Introduction

Women are less presented in the upper echelons of corporations than men. In S&P 500 companies, women account for 45% of the work force but hold only 25% of the executive and senior-level official and manager positions. The fraction of women is even smaller at the very top of the organization: women account for 4% of the CEO positions (Catalyst 2015). And when women are appointed to top executive positions, they tend to earn less than men. Bertrand and Hallock (2001) find that women earn 45% less than men among the highest-paid corporate executives. What explains these patterns?

Some argue that women are disadvantaged compared to men when it comes to leading corporations. Their preferences might make them shy away from competition and avoid risky environments.[1] The investments they have made to human capital and the career paths they have chosen might make them poorly equipped to reach the top.[2] Time spent with children can lead them to miss valuable opportunities, and standing by the family may prevent them being available when the firm needs them most.[3]

Others argue that the lack of women in top positions reflects negative stereotypes that hamper the rise of females on the corporate ladder.[4] One version of this argument appeals to the fact that women who have made it to the executive level (and are potentially just one step from the CEO

[1] See, for example, Croson and Gneezy (2009), Bertrand (2011), and Niederle (2016) for reviews of the gender differences in preferences.

[2] Bertrand et al. (2010) show that female MBA students are less likely than men to take finance courses. Because of the large returns to finance education, this selection contributes to the gender gap in earnings.

[3] Bertrand et al. (2010) and Azmat and Ferrer (2016) document that male MBAs and lawyers work longer hours than their female peers.

[4] Becker (1959) analyzes taste-based discrimination whereas Phelps (1972) and Arrow (1973) study statistical discrimination based on characteristics of the average member of a group.

position) are a highly selective group of individuals.[5] Their career success constitutes direct evidence of their talent, skills, and ambitions, and the income and career prospects that come with this success mean that their opportunity costs of dropping out of the labor force or reducing work hours to care for children are exceptionally high (Adams and Funk, 2012, Wood et al., 1993). These considerations speak against the possibility that there would be substantial performance differences between male and female executives. The large gender differences in career progression and pay documented in the literature would thus be more likely an outcome of negative stereotyping than of real performance differences between men and women.

Using comprehensive data on top executives of Swedish firms, we evaluate the merits of these explanations. We follow the careers of all future executives born between 1962 and 1971 in the 1990–2011 period and ask how their qualifications, career progression, and family matters explain their career success in 2011, i.e. when they are in their forties. Our data cover the entire adult population of Sweden and all its firms, including private ones, resulting in an exceptionally large sample. We collect a comprehensive battery of characteristics of the executives and their family and relatives, which allows us to analyze a host of gender differences, including those related to child rearing and preferences. We complement the data set with survey responses on the time use of executives in 2000–15. Almost all of our data come from official government registries and thus are likely more reliable than the biographical and self-reported data used by many studies on top executives.

We find that family matters play a crucial role in the formation of gender gaps. The gender gaps in top executive appointments arise primarily during the five years following the birth of the first child. During this period, female executives work on average shorter hours than male executives

[5] See Adams and Funk (2012) for a similar argument for board members

and are more often absent from work. Women are on similar career paths as men prior to childbirth but they earn substantially less than men five years after childbirth. This gender difference persists over the remaining course of the executives' careers.

Our results are consistent with family life putting a disproportionate burden on the careers of women. Female executives are less likely to marry than male executives, and their marriages end more often in divorce. They are less likely to have children and have on average fewer children. They may also not be in a position to put their own career first: they are much more likely to have partners who themselves are executives or who are more highly paid.

We also analyze the extent to which the gender gaps at age 40–49 can be accounted for by other characteristics of the executives. Our specifications suggest that a labor market that treats the basket of attributes of each executive without regard to gender would generate a gender gap of the opposite sign than that observed in the data. For example, female executives tend to have much higher levels of education, which is one of the strongest predictors of making it to the top. They are more likely to receive their degrees from tracks that produce a large number of top executives. They have worked in a larger number of firms and are more likely to have acquired experience from consulting or investment banking, an indication of their taste for competition and willingness to work long hours. Their male siblings also attain higher cognitive ability test scores in the military enlistment. These differences in qualifications go against the idea that female executives lack the necessary skills, training, and stamina to make it to the top. The higher female bar for reaching the top suggests instead that aspiring women may invest more in their basket of qualifications to prevent the adverse effects of child rearing.

Our paper contributes to the literature on gender differences in labor market outcomes, in particular at the top level of organizations. Bertrand and Hallock (2001) analyze gender differences in compensation among top executives. Matsa and Miller (2011) document that boards with a large

female representation are more likely to hire female executives. Adams and Funk (2012) study gender differences in the values and preferences of directors. Ahern and Dittmar (2012), Bertrand et al. (2014), Eckbo, Nygaard, and Thorburn (2016), Bagues and Campa (2017), and Besley et al. (2017) study the effects of imposing gender quotas in business and in politics. Smith, Smith, and Warner (2013) study gender differences in CEO appointments in Denmark. Wood, Corcoran, and Courant (1993) and Bertrand, Goldin, and Katz (2011) find significant gender differences in the earnings of elite-school trained lawyers and MBAs, which widen as their careers progress. Miller (2011), Azmat and Ferrer (2016), and Kunze and Miller (2017) study the career paths of women and gender differences in these paths. Albrecht, Björklund, and Vroman (2003) and Arulampalam, Booth, and Bryan (2007) document that the gender gap in earnings is the highest at the top of the wage distribution. Crozon and Gneezy (2009), Bertrand (2011), and Niederle (2016) review gender differences in individual characteristics. Blau and Kahn (2000) and Goldin (2014) offer reviews of the gender differences in pay.

Our paper differs from these studies in the following ways. First, we are to our knowledge the first to analyze gender gaps among top executives using data on their careers. Combining career information with data on childrearing allows us to identify the effect of family on an executive's career trajectory and later gender gaps. Information on working hours and absence from work provide evidence on underlying mechanisms. The focus on executives, whose career aspirations may make them willing to invest in easing the burden of child rearing, speaks to understanding how binding the family constraints are for the population at large. Adda, Dustmann, and Stevens (2017), Angelov, Johansson, and Lindahl (2016), and Kleven, Landais, and Søgaard (2016) analyze the impact of child rearing on the population gender gap. Second, we also document gender differences in executive characteristics in much more detail than the previous literature and can directly address the assumption that male and female executives hold similar qualifications. Our exceptionally large

battery of variables not only allows us to gain more insight into the differences between male and female executives, but also allows us to gain a better understanding of how various characteristics contribute to the gender gaps. Our result that female executives are more qualified than males and that these qualifications generate a counterfactual female advantage over males in executive appointments adds a new dimension to the literature.

Our paper proceeds as follows. The next section describes the data and the institutional setting. Section 3 analyzes gender differences in executives' qualifications and the extent to which these differences can explain differences in career outcomes. Section 4 studies gender differences in executives' family life and their contribution to working hours, absence from work, early career development, and later career outcomes. Section 5 concludes.

2. Data and institutional setting

2.1. Data

The sample consists of all individuals born between 1962 and 1971 who worked in 2011 as an executive in a Swedish limited-liability company with at least 10 employees and information on sales available. We follow the careers of these individuals in the 1990–2011 period and ask how their qualifications, career progression, and family matters explain their career success in 2011, i.e. when they are in their forties. For executives with children, we require that the first child was born in 1992–2001, i.e. 10–19 years (on average, 15 years) before the time when we assess their career success. Executives that have no children enter the sample if their imputed childbirth, which we assign based on the observed distribution of age at first childbirth, is in 1992–2001. These criteria trade off the sample subjects having made significant progress in their careers against our ability to observe their first childbirth. The average 15-year follow-up period following the first childbirth

further avoids mixing temporary career setbacks due to small children with long-term career outcomes. Our data set combines information on individuals and firms from three sources.[6]

Statistics Sweden. The bulk of these data come from the LISA database that covers the whole Swedish population of individuals who are at least 16 years old and resident in Sweden at the end of each year. This database integrates information from registers held by various government authorities and covers for most variables the years 1990–2011. We extract information on labor and total income, field and level of education, profession, career, and family relationships. The family records allow us to map each individual to their parents and siblings. We use information on the brothers of the executives to impute variables that are not observable for the executives themselves or that may be contaminated by gender (for example, school GPAs may reflect gender-biased grading). Except for the CEOs, who are classified separately by Statistics Sweden, we identify the executives based on their international ISCO-88 (COM) classification of occupations (codes 122 and 123).[7] The specialists are further divided into eight functions that include finance and administration, personnel and industrial relations, sales and marketing, advertising and public relations, supply and distribution, computing services, research and development, and specialists not classified to the above categories.

[6] The sensitive nature of the data necessitated an approval from the Ethical Review Board in Sweden and a data secrecy clearance from Statistics Sweden. The identifiers for individuals, firms, and other statistical units were replaced by anonymized identifiers and the key that links the anonymized identifier to the real identifiers was destroyed. The data are used through Microdata Online Access service provided by Statistics Sweden.

[7] The ISCO-88 (COM) code 122 corresponds to ”production and operations managers” and the code 123 to ”other specialist managers.” The occupation data available from the LISA database come mainly from the official wage statistics survey (Lönestrukturstatistiken). Statistics Sweden also undertakes surveys of smaller firms (primarily with 2–19 employees) that are not included in the official wage survey. The sampling design in the supplementary surveys is a rolling panel and all eligible firms are surveyed at least once every five years. Occupation information is available for each year, but the information may not be accurate for each year. To ensure that we have accurate occupation information for every year, we require that the information be collected in the relevant year or earlier and for the correct employer-employee link. Andersson and Andersson (2012) describe how Statistics Sweden identifies operative CEOs of firms. If an individual holds multiple executive positions, we assign the individual to the executive position in the firm with the highest sales.

In addition to our main sample, we study the time use of 9,300 corporate executives as measured by the Labour Force Survey in 2000–15. The survey asks a randomly selected sample of respondents to report on the number of hours worked, contracted, and absent in the week preceding the survey. We merge the survey responses with administrative data from the LISA database on the number of days in which the respondent has claimed compensation for absence due to parental reasons, and on selected socioeconomic characteristics. Among these characteristics is information on the number of children in various age categories for each executive. Our Labour Force Survey sample and the core executive sample are not linked to one another, so we cannot track the Labor Force Survey executives before or after the survey.

The Swedish Companies Registration Office. The Swedish Companies Registration Office keeps track of all companies, both public and private, and their CEOs and directors. The firm data are available for all corporate entities that have a limited liability structure ("aktiebolag") and that have appointed a CEO ("verkställande direktör"), excluding financial firms that operate as banks or insurance companies. These data record various financial statement items, including sales and the number of employees. By law, each firm has to supply this information to the registration office within seven months from the end of the fiscal year. Financial penalties and the threat of forced liquidation discourage late filing.

Military Archives. The Military Archives stores information on the service record, the health status, and the cognitive, non-cognitive, and physical characteristics of all conscripts. The purpose of the data collection is to assess whether conscripts are physically and mentally fit to serve in the military and suitable for training for leadership or specialist positions. The examination spans two days and takes place at age 18. Lindqvist and Vestman (2011) offer a comprehensive description of the testing procedure. These data are available for Swedish males who were drafted in 1970–1996.

Military service was mandatory in Sweden during this period, so the test pool includes virtually all Swedish men born between 1951−1978.

Our main sample encompasses over 24,000 executives. Given the sample size, most of our results are highly significant. Therefore, our reporting generally focuses on coefficient values and patterns rather than on their statistical significance.

2.2. Childcare system in Sweden

Sweden has a high-quality childcare system that has been in place from the mid-1960s. It guarantees each family twelve months of publicly paid parental leave amounting usually to 75% of prior income (before 1995, 90% of prior income), with an option of extending the leave with three months at a lower rate. Parents can use up to 90 days per year with publicly financed paid leave for care of a sick child, and they have the option of working shorter hours while keeping their full-time job. Since 1995, one month of parental leave needs to be taken by both parents to qualify for the maximum paid leave. This "daddy month" increased the use of paid parental leave by fathers, but reduced the use of the unpaid part, leading only to minor effects on labor supply (Ekberg et al. 2013). Day care is available at highly subsidized rates, although its service hours make it less flexible than the day care in the U.S. (Henrekson and Stenkula, 2009).

3. How do female executives differ from males?

3.1. Gender gaps in top executive appointments

Table 1 Panel A characterizes the career progression of female and male executives by focusing on top executive roles. We define these roles in three different yet overlapping ways, utilizing information on the executives' formal roles and on their pay. The three leftmost column report on

those executives who have become CEOs of large companies, defined here as companies with sales of at least SEK 500 million (SEK 1 ≈ USD 0.13). 0.8% of female executives (which account for 17% of the large-firm CEOs) make it this far, while the corresponding fraction among male executives is 1.2%. Despite of a relatively small number of top-executive observations (there are 302 large-company CEOs, of whom 51 are women), the gender gap in the likelihood to attain a top position is statistically highly significant with a *t*-value of –4.6. The three middle columns represent a broader definition of large-firm top executives that adds the four highest paid non-CEO executives. This group of people would typically coincide with the company's top management team. The fraction of men making it to the executive group in a large firm is 6.1%, while the corresponding fraction among women is 4.8%. Finally, the three columns on the right report on an even broader definition of a top executive that does not explicitly factor in firm size but focuses on pay instead. The cutoff for a top executive here is having a labor income of at least SEK 1 million, which roughly corresponds to the top decile in pay among all executives in Sweden. 9.4% of female executives (which account for 20% of all highly paid executives) belong to this group, while the corresponding fraction among male executives is 14.3%.

Table 1 Panel B reports the mean and median executive labor income by gender and position. Our income measure includes all income taxed as labor income in a given year; base salaries, stock option grants, bonus payments, and benefits received from the employer qualify as taxable labor income. The income measure does not include public benefits, providing a better proxy of the value of an executive's services to the company than a broader income measure. Tax authorities deem the taxable income to occur in the year when an employee or executive exercises her stock options or purchases her company's shares at a price that is less than their fair value.

The two leftmost columns report the pay of large-firm CEOs. The mean (median) pay of men is SEK 2.1 (1.8) million and that of women is SEK 2.0 (1.5) million. The CEOs' mean logged pay

gap, –4.9%, is not statistically significant, presumably because of the small sample size. The next two columns show that the large-firm executives are paid on average about two thirds of what CEOs make. Their mean logged pay gap is –8.9%. Columns 5 and 6 report on the pay of executives earning at least SEK 1 million. The mean logged pay gap between men and women is smaller than in the other specifications, –2.7%, likely because the outcome variable is a function of pay and truncated from below. The two leftmost columns report on the pay of all sample executives combined. They make on average about one-half of what large-firm executives make, and about one-third of what large-firm CEOs make. The mean logged pay gap is –11.6%.

Table IA1 in the Internet appendix reports descriptive statistics on the 11,091 sample companies. The mean sales are SEK 384 million and the mean number of employees is 126. The vast majority of the firms are privately held: only 1% are listed and 4% government owned.

3.2. Gender differences in executives' education, career, family background, and traits

Table 2 reports the means of all individual-level variables, separately for women, men, and the full sample. Of particular interest is the difference between women and men and the *t*-statistic for their difference. We report on 56 variables, which are divided into nine different groups. 21 of the variables are continuous and 35 dummy variables. We use these variables in regressions as such except for the dummies on the level and field of education and the executive functions, where we drop one of them. The variables for the first seven groups—level of education, educational specialization, career orientation and networks, career, functional experience, family background, and risk tolerance—are available for all sample subjects and are reported on in Panel A, B, C, and D. Panel E reports on the remaining two groups of variables, parents' socioeconomic status and personal traits. They are available only for subsets of the sample and are reported as robustness

checks (availability of parental variables depends on the parent being alive in 1990 and the personal traits can be imputed for executives whose brothers were enlisted to the military in 1970–1996).

Panel A reports on gender differences in the level of education, a classic predictor of pay (Mincer, 1958). We find that 47% of female corporate executives hold a degree from a university, while the corresponding fraction for men is 30%. Correspondingly, men are more likely to belong to any of the lower education level categories. For example, men are more than twice as likely as women to have an education level lower than high school.

Panel A further reports on the field of education, which measures differences in executives' skill sets and their propensity to specialize and remain specialists through their executive careers.[8] The field of education also is correlated with competitiveness, in which there are large gender differences (Gneezy et al., 2003 and Niederle and Westerlund, 2007). Buser, Niederle, and Oosterbeck (2014) find that competitive individuals are more likely to select the most prestigious study tracks, which tend to include more math and science classes. Kamas and Preston (2015) find that competitive individuals are more likely to specialize in engineering, natural sciences, and business as opposed to majoring in social sciences or the humanities. We find that men are much more likely to have an engineering degree (51% vs. 16%), while women are more likely to have a degree from all other backgrounds. For example, the fraction of female executives with a business degree is 43%, while the corresponding fraction for men is 24%.

Panel B finds that women are more likely to have chosen one of the top-5 education tracks (top-5 high schools) that produce the highest proportion (number) of large-firm top executives. Attending these education tracks may help build careers through better networks: Hwang and Kim (2009),

[8] The opposite of becoming a specialist is to become a generalist, a job description commonly associated with CEOs. Murphy and Zábojník (2004) and Custódio, Ferreira, and Matos (2013) analyze generalist CEOs.

Kramarz and Thesmar (2013), and Engelberg, Gao, and Parsons (2013) report evidence of the usefulness of networks for executive careers. In addition, these education tracks may reveal executives' career orientation and inform of their competitiveness. Despite of their greater likelihood of attending network-rich education tracks, female executives are less likely to select into the top-5 education tracks offering the highest income.

Panel B further studies gender differences in careers. The executives are on average 44 years old. Men are on average 0.3 years older than women but have two years longer labor market experience. The fact that the gap in work experience is larger than the age gap is consistent with the idea that men have experienced fewer career interruptions than women. Despite of their shorter career, women have experience from more companies and from more industries than men. This more varied experience helps build women's general human capital, while men's longer tenure in the firm helps build their firm-specific human capital.

Panel B also suggests that men and women have different work experience. On the one hand, women have on average longer work experience from consulting and investment banking. Both industries are known for their frequent use of tournament-type ("up or out") promotion structures and are likely to attract competitive individuals. Such experiences may also be valuable in building networks and acquiring generalist skills. On the other hand, women also have more experience from non-profit institutions. Work experience from a non-profit organization may accumulate a future executive's human capital in a different way than work experience from a company. In addition, working for not-for-profit firms or for the public sector may be an indication of altruistic preferences (Benz 2005 and Delfgaauw and Dur 2008), of which there is some evidence of gender differences.[9]

[9] Women are sometimes assumed to be more altruistic and cooperative than men. Niederle (2016) reviews the experimental and field evidence on altruism and cooperation and concludes that the evidence "is more mixed than what one might have expected."

Finally, Panel B studies gender differences in unemployment. Male executives have on average 24 days less unemployment experience than female executives. This difference may matter because unemployed individuals may lose some of the value of their human capital due to unemployment (Pissarides (1992)), or be scarred by the unemployment experience (Arulampalam (2001)). The difference in unemployment experience may at least partly be explained by the fact that female executives are more likely to have graduated during a recession. Oyer (2008), Custódio, Ferreira, and Matos (2013), and Schoar and Zuo (2017) find that starting a career at the time of a recession has a lasting impact on career success and pay.

Panel C reports on gender differences in past work experience in different executive functions. Given that specialization in a given function is likely to require a considerable human capital investment, past functional experience is likely to affect future executive assignments (in anecdotal accounts of gender gaps in business, this explanation is referred to as the pipeline hypothesis). Women outnumber men in finance and administration, personnel and industrial relations, and advertising and public relations.

Panel D reports on gender differences in family backgrounds. There are relatively small differences between male and female executives in their birth order, family size, number of male siblings, immigrant status, or whether they were born in a large city. The most important difference in background relates to female executives having a smaller propensity to work in their birth county (43% vs. 49%). Figure IA1 shows that the gender gap in executives' likelihood to live in their home county becomes apparent already in the early 20s when they typically study at college. These results are consistent with the idea that female executives are, if anything, more prone than male executives to move to opportunity.

Panel D further reports gender differences in risk tolerance, which we measure by using an indicator as to whether the executive is a stock market participant. Jianakoplos and Bernasek (1998)

and Sunden and Surette (1998) document that women typically hold lower proportions of risky assets than men. Reviews by Eckel and Grossman (2008) and Croson and Gneezy (2009) of the experimental literature come to the same conclusion: women tend to be more risk averse than men. Our results support the findings in this literature: 49% of women own stocks, while the corresponding fraction for men is 66%. These findings are at odds with the findings of Adams and Funk (2012), which suggest that female directors are more risk tolerant than male directors.

Panel E reports gender differences in variables that are not available for the entire sample. We first report on parents' socioeconomic status. Being born to a well-educated and affluent family can help a child in at least two ways. First, parents are likely to pass their human capital on to their children. Second, wealthy parents are also in a better position to offer the monetary resources needed to develop their children's human capital. We separately include both parents' socioeconomic status by including variables measuring whether they are (or were) university educated. We also measure their employment in 1990 (i.e. at the beginning of our sample period) and their position in the income distribution among individuals of the same gender and cohort. We find that female executives appear to come from higher socioeconomic strata than male executives. Female executives' both parents are on average better educated and have higher earnings.

Panel E also reports on personal traits. Except for GPA, all personal trait variables are measured by the Swedish military. Military service is mandatory only for men, so we have very few traits observations for women. Nevertheless, the family links in our data make it possible to impute these variables for an executive from the test scores of her randomly selected brother. This imputation assumes that the traits have a large family component, an assumption backed up by the evidence in Beauchamp et al. (2011) in Swedish data. We also impute the traits for men even though their traits are available. Given that executives have done well in life, their traits likely are better than those of their brothers (Adams et al., 2016 finds evidence consistent with this conjecture). Except for

imputed officer rank, all trait variables are expressed as differences in terms of standard deviations relative to the test takers in the same cohort. Benchmarking each individual against the same cohort allows us to control for secular trends in measured cognitive ability and height (see, e.g. Flynn (1984) and Floud, Wachter, and Gregory (1990)).

We find that all trait variables except for the body mass index are positive. This means that the brothers of executives have a higher cognitive and non-cognitive ability, are taller, slimmer, and in better physical condition than the population. Consistent with Adams, Keloharju and Knüpfer (2016), which reviews this literature, the differences relative to the population are relatively small, at most 0.36 standard deviations. Four gender differences are statistically significant at the 1% level. Women's brothers have a higher cognitive ability (0.14 standard deviation difference), are slimmer (0.08 standard deviation difference), and they are more likely to have achieved an officer rank than men's brothers. In addition, women's brothers have a 0.08 standard deviations higher GPA than men's brothers. We use imputed GPAs to account for potential gender differences in grading.

3.3. Contribution of executive characteristics to gender gaps in executive appointments

Table 3 evaluates how much of the gender gap in large-firm top executive appointments and pay can be attributed to gender differences in the executives' characteristics. The three leftmost columns of Table 3 Panel A report results from linear probability model regressions of the large-firm CEO dummy on female dummy and controls. The first row represents a regression that includes female dummy as the sole regressor. This regression corresponds to Table 2 that finds a coefficient on the female dummy of –0.65. The second row reports regressions that also control for the level and field of education. Given that women have on average better educational qualifications, the gender gap widens to –1.06. Adding career orientation and networks and career controls on the third row results in a gap of –0.98. Here, we use all the variables listed in Table 2 Panel B except for age,

which is highly correlated with the length of labor market experience. The fourth row adds dummies for past functional experience, which lowers the gap to –0.88. And finally, the fifth row adds family background and risk tolerance variables, bringing the gap to –0.75, i.e. relatively close to the unconditional gap in the first specification.

The three rightmost columns report on regressions where the left-hand side variable is a dummy for earning at least one million SEK. The unconditional probability for an executive to reach this income is higher than that for being a large-firm CEO, 13.0% vs. 1.2%. Here, the unconditional gender gap coefficient is –4.9, i.e. the same as in Table 1. Like for CEOs, the gap widens to –8.9 once we control for education, and then narrows again when we control for the other attributes. In the regression with all controls, the gap continues to be larger than the unconditional gap (–7.2). The three columns in the middle, which look at large-firm top executives, mirror the patterns we observe for the highly paid executives. Overall, the very large number of characteristics points towards the conclusion that the gender gaps do not arise from female executives' poorer qualifications.

Panel B includes additional controls to the regression equation. Given that these regressors are not available for all of the executives, the number of observations and the unconditional and conditional gender gaps are different than in our main specification. We consider three groups of variables: parents' socioeconomic status, personal traits, and imputed GPA, which we include to the regression one by one in addition to all the variables used in Panel A. We find that the gender gap widens with all of these variable groups in all specifications. If anything, these results strengthen our conclusion that the cumulative impact of all the characteristics we employ makes the gender gaps in top executive appointments and pay larger than those observed in the data.

Apart from the female dummy, the regression coefficients on the predictors of top executive appointments and pay are of interest. Table 3 Panel C reports on the large-firm CEO, large-firm top

executive, and high-earner coefficients for the specification that includes controls for individual characteristics.

The specifications on the three definitions of top executives largely agree on how the predictors are associated with executives' labor market success. The level of education has a positive and significant relation both with all the three definitions of top executives. For example, executives with a university degree are more likely to become large-firm CEOs and tend to be better paid, but those with a degree in health, natural science, teaching, or services tend to be less well paid than the executives on average (the omitted category are executives with no known specialization). More career-oriented executives reach better labor market outcomes, as is witnessed by the large positive coefficients for educational paths that are associated with high incomes. A longer labor market experience and experience from a larger number of companies are strongly positively related with a highly paid executive position, while longer unemployment spells are negatively related to labor market success. Functional experience from sales and marketing has the strongest association with high pay and future CEO appointments. Conditional on becoming executives and all the other controls, immigrants do better than native Swedes on average. Finally, stock market participation is strongly positively associated with executives' job market success.

Table IA2 performs a decomposition exercise that allows us to assess the joint contribution of all characteristics to executive gender gaps. This exercise offers identical estimates of unconditional and conditional gaps as do the regression coefficients reported in Table 3, but it has the added benefit of offering information on the contribution of each variable subset to the gap. We report both the Blinder-Oaxaca (1973, 1973) and Fairlie (1999) decompositions. The former uses the linear probability model whereas the latter takes into account the fact that the dependent variable is an indicator. The decompositions reveal that risk tolerance, functional experience, and family background help to explain the gaps whereas education, career orientation, and networks tend to

widen them. The gaps decompose similarly into explained and unexplained parts in the two specifications, suggesting that our results are robust to using a logit specification instead of a linear probability model.

4. Role of family life in explaining gender gaps in executive appointments

4.1. Gender differences in marital status and family formation

Table 4 Panel A reports on gender differences in family characteristics. Female executives are less likely to marry and more likely to be divorced than male executives. Female executives also are less likely to have children than male executives, and they have fewer children. These results are consistent with the idea that the executive role puts more strain on the family life of women than men. As a general rule, these gender differences are higher for large-firm top executives and other high earners. For example, the gender difference in the likelihood to be divorced is 4-11 percentage points higher for the top executive categories than for executives in general.

Table 4 Panel B reports on the characteristics of the executives' partners. Female executives' partners are much more likely to be executives themselves than male executives' partners (33% vs. 14%). The strain female executives experience from belonging to a dual-career family shows up also in other variables. Female executives' partners are more likely to be employed than those of male executives, and they are placed higher in the age-gender income distribution.

4.2. Contribution of children to early career development

Figure 1 depicts the labor income development of executives from age 19 to 49 by gender. Both genders start from about the same average annual income; at age 20, women even earn slightly more than men. The incomes start to diverge noticeably in the late twenties, and by age 34 the average

pay difference reaches its peak, 125,000 SEK in favor of men. After that the salaries for both genders change approximately by the same amount each year, though the female salaries increase relatively more as they start from a lower base. At age 49, the salary difference is 77,000 SEK and 9%.

The divergence in female and male pay coincides with the time people typically form their families. This observation motivates an analysis that explicitly considers the impact of childbirth on career progression of women and men. Figure 2 reports results from an event study that tracks executives' average annual labor income, labor force participation, and the probability of attaining a new job relative to the birth year of the executive's first child. For each of these outcome measures, we separately compare women with children against men with children (labeled 'Male benchmark' in the graphs) and against women without children ('Female benchmark'). When comparing female executives against male executives, we regress the outcome variables on indicators for females, each calendar year, each of the 15 years surrounding childbirth, and the interactions of the female indicator and the years surrounding childbirth. The figure reports the coefficient estimates along with their 95% confidence intervals for the interaction coefficients for each of the event years except for year $t - 5$, which serves as the omitted category. When comparing female executives with children against female executives without children, we replace the female indicator in the regression with an indicator for whether the executive has children. Because executives who never have children do not experience their first childbirth, we assign them an imputed childbirth by randomly drawing from future executives' observed age distribution within gender at first childbirth. This makes it possible to isolate the impact of childbirth from other possible gender-related income shocks that coincide with the typical timing of childbirth. The calendar year dummies control for annual trends in the outcome variable. Kleven et al. (2016) uses a similar method to estimate child penalties in the population of Danish workers.

Figure 2 Panel A shows that labor income of men and women develops very similarly until year $t - 1$. Then, in year 0, women's salary drops 129,000 SEK below that of men, likely because of reduced pay during the maternity leave. The drop continues to 175,000 SEK in year $t + 1$ because of the uneven timing of childbirths throughout the calendar year. After picking up in year $t + 2$ up to SEK 120,000, there is another drop in pay in year $t + 3$, to SEK 156,000. This drop appears to be driven by the birth of a second child, which tends to happen two years after the birth of the first child. Figure IA2 Panel A shows that female executives who only have one child do not experience a pay drop in year $t + 3$. Female pay starts to noticeably recover in year $t + 4$. Despite of its continuing recovery and higher growth rate compared to men, female executives' income is still in year $t + 10$ about 93,000 SEK lower than that of male executives.

Figure 2 Panel B illustrates the salary development of female executives with children using female executives without children as the benchmark. The coefficient pattern is similar to that reported in Panel A, except that women with children appear to be on a higher salary trajectory both before the first childbirth and after year $t + 4$. Consistent with the better trajectory, Table IA3 finds a significantly higher probability of becoming a top executive for female executives with children than without children and that this difference is partly attributable to the better qualifications of women with children. Low statistical power in some of the specifications in the table is a result of a small number of observations in the top executive categories. As a whole, these results suggest that if anything, female executives with children have higher qualifications than female executives who do not have children. This makes it more difficult for us to reject the null hypothesis of no outcome difference between these two groups after childbirth, and explains why the long-run child penalty is smaller here than with the male benchmark.

Figure 2 panels C and D show that female executives' labor market participation rate is, if anything, greater than that of their benchmarks before first childbirth. After a plunge in years 0 and $t + 1$, the participation rate recovers slowly and reaches the male participation rate in year $t + 10$.

Figure 2 panels E and F study the probability of attaining a new job around first childbirth. Relative to their benchmark groups, female executives' probability of attaining a new job decreases significantly in year $t - 1$ (and further in year 0), suggesting that they plan the childbirth and take it into account in their decision to search for a new job. The probability recovers quickly after that and reaches the male benchmark in year $t + 5$.

To sum up, all panels in Figure 2 tell the same story: the careers of future female executives tend to suffer at the time of childbirth, and it takes several years for them to recover from this career shock. Table 5 demonstrates this result formally in a regression table, whose specifications correspond to those of Figure 2 except for pooling the event years in four brackets (0–1, 2–5, and 6–10 years, and the omitted category of –5 – –1 years). Except for a dummy for 6–10 years in the probability of attaining a new job specification, all of the post-birth variables are significantly negative at the 5% level.

4.3. Gender differences in working hours and absence from work

Why does childbirth have an asymmetric effect on the career outcomes of the two genders? One plausible explanation for this asymmetry are gender differences in parental investment, which are likely to be reflected in executives' absence from work and in their working hours. We study these differences by using a sample of executives surveyed by the Labour Force Survey in 2000–15.[10] We separately regress four absence and working hour variables on indicators for years 0, 1–2, 3–6, 7–

[10] Table IA4 shows that these executives are broadly similar to our main sample executives in their characteristics. Our survey sample includes a set of characteristics narrower than the core sample.

10, 11–16, and 17–18 years following childbirth (17–18 is the omitted category), a female indicator, and their interactions, along with survey wave dummies. We report the coefficients for the interactions along with their *t*-values (95% confidence intervals) in Table 6 (Figure 3).

The first specification in Table 6 (Panel A of Figure 3) reports on gender differences in the annual number of days absent from work for parental reasons. In year 0, female executives are on average 106 days more away from work for parental reasons than male executives. This gap narrows as the children grow up, but it remains statistically significant at 6.6 days even 7–10 years after the first childbirth.

The second specification (Panel B of Figure 3) reports on gender differences in weekly hours absent from work. In year 0 female executives are on average 24 hours more absent from work than their male counterparts. The gap drops to three hours in years 3–6 after first childbirth, and disappears thereafter. The third specification (Panel C) shows that the gap in the number of working hours follows a similar but reverse pattern. This gap stems from actual hours, not from contracted hours. The fourth and final specification (Panel D) shows that the gender gap in contracted hours does not differ statistically significantly in any of the years from the benchmark category of 17–18 years after childbirth.

These results suggest that female executives are more absent from work and work shorter hours than male executives for many years after the birth of their first child. However, this gap largely fades away by the time the first child reaches school age.

4.4. Impact of early career development on top executive appointments

The burden of child rearing on female careers motivates us to analyze how much of the executive gender gaps at the age of 40–49 can be attributed to child rearing. Table 7 studies this question by investigating the extent to which labor income five years after first childbirth—a direct

measure of the impact of children on career progression—explain the top executive gender gaps. In this analysis, we separately account for labor income prior to childbirth, which captures other gender differences in career development that do not arise from childrearing. We measure childbirths in the 1991–2000 period, i.e. on average 15 years before observing the top executive positions.

The three leftmost columns report the specification that explains appointments to a large-firm CEO position. The first column serves as a benchmark and is identical to the specification with controls listed on the fifth row of Table 3 Panel A. The gender gap here is –0.77. Column 2 asks how the coefficient for the female dummy changes once we add income one year before the birth of the first child. The gender gap decreases only slightly to –0.73, which is consistent with the results in Figure 2 that show men and women are on similar career trajectories prior to first childbirth. The income variable itself is highly significant, which implies strong persistence in the career paths of aspiring executives.

Column 3 further adds income five years after first childbirth to the regression. The results in Column 3 are strikingly different from those is Column 2. Now, both the female dummy and the income one year before birth become insignificant, while the coefficient for income five years after first childbirth takes a highly significant value. This result suggests that for large-firm CEO appointments, the entire gender gap can be accounted for by the early career development in the five years following first childbirth.

We get qualitatively similar results also for the other top executive definitions. In the three middle columns, where we regress appointment to one of the top-5 executive positions in large firms on the female dummy and controls, the gender gap is –3.0 both in the baseline specification in Column 4 and in Column 5 where we additionally control for income two years before first

childbirth.[11] In Column 6, where we further add income in year $t + 5$, the coefficient for the female dummy drops to –1.3, while the coefficient for income in $t + 5$ is highly significant. Here, over one-half (1 – –1.3/–3.0) of the gender gap can be accounted for by the income development during the five years after first childbirth. This pattern repeats one more time in the three rightmost columns, where we regress a highly paid executive dummy on the female dummy and controls. In Column 9, which includes both income controls, we can account for 78% of the gender gap by the early career development following first childbirth.

Table IA5 explores how alternative definitions of top executive positions that modify the firm-size and pay cutoffs affect our results. Panel A replicates the results of Table 1 Panel A by doubling the total assets cutoff to SEK 1 billion and the pay cutoff to SEK 2 million. The number of top executives drops approximately to one-half in the firm-size based definitions (the six leftmost columns) and to one-seventh in the pay-based definition (the three rightmost columns). Panel B replicates the results of Table 7 using the more conservative cutoffs. The coefficient for the female dummy is negative and statistically significant in all specifications before controlling for income in year $t + 5$, but disappears or even reverses its sign once we add income in year $t + 5$.

All in all, these results are consistent with Figure 2 that suggests that most of the gender gap in executive pay develops shortly after the birth of the first child. This pay gap is indicative of the childbirth leading to a permanent setback to women's careers, as pay five years after the birth (but not before it) is a highly significant predictor of career outcomes years later.

[11] We use income from year $t – 2$ in lieu of $t – 1$ to avoid any effects arising from pregnancy.

5. Conclusion

Exceptionally rich data from Sweden makes it possible to study the gender gap in executives' career progression and to investigate its causes. We follow the careers of all future executives born between 1962 and 1971 in the 1992–2011 period and ask how their qualifications, career progression, and family matters explain their career success in 2011, i.e. when they are 40–49 years old.

We find that child rearing plays a crucial role in the formation of gender gaps in top executive appointments. Most of these gender gaps arise during the five years following the birth of the first child, a time when the gender gaps in executives' working hours and absence from work are at their largest. Women are on similar career paths prior to childbirth but they earn substantially less than men five years after childbirth. This child penalty remains large over the remaining course of the executives' careers. These results suggest that aspiring women may not reach the executive site without trading off family life.

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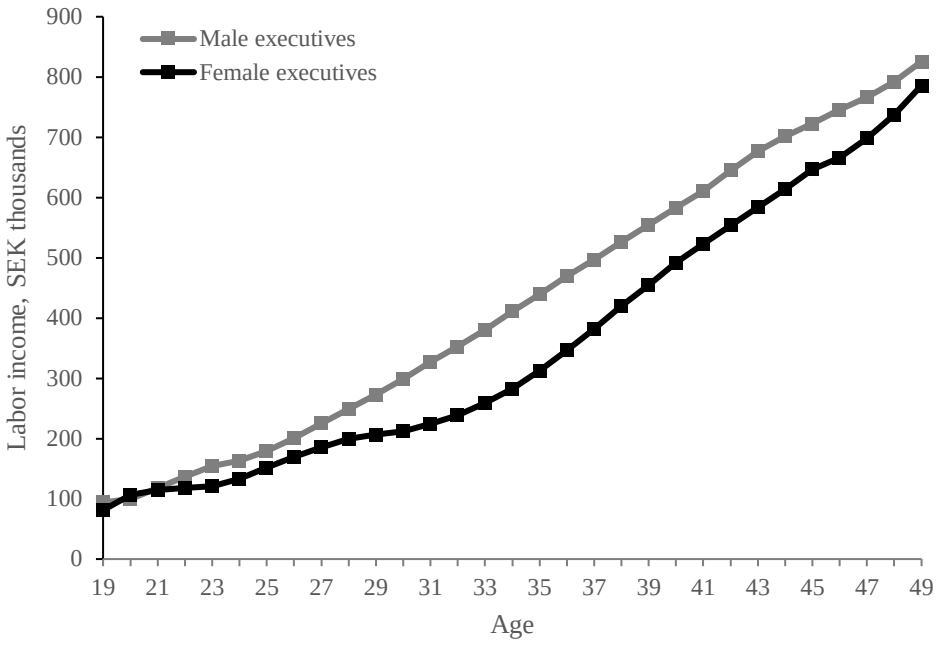

Figure 1. Female and male executives' labor income as a function of age
This graph depicts annual labor income of executives from the age 19 to 49 stratified by gender. Each data point in the graph corresponds to the average annual labor income (in 1000 SEK, SEK 1 ≈ USD 0.13) at a particular age for the sample of executives born in 1962–71 and observed in 1990–2011.

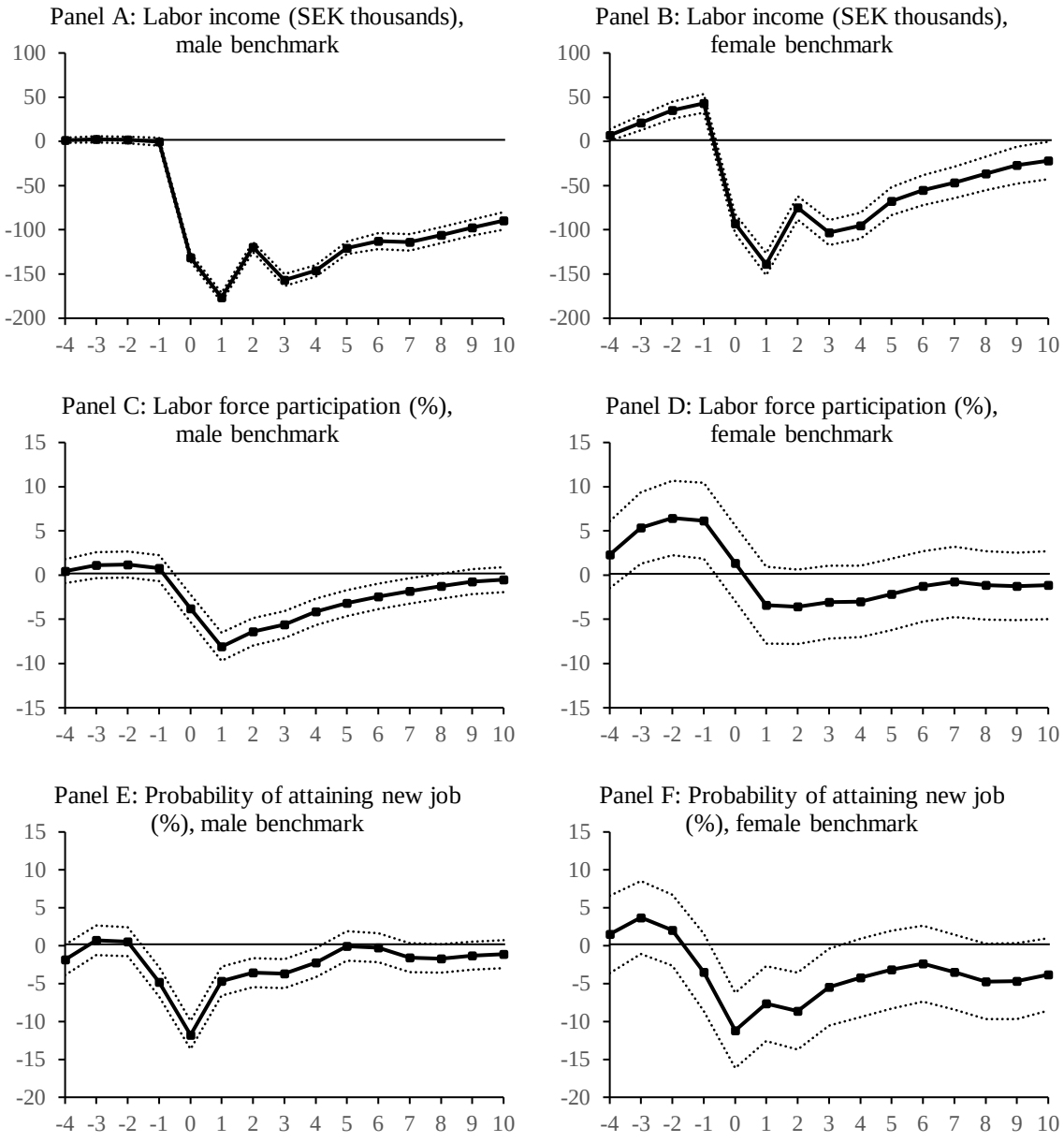

Figure 2. Impact of children on female executives' career progression

The panels in this graph plot annual labor income (panels A and B), labor force participation (C and D), and probability of attaining a new job (E and F) relative to the birth year of the executive's first child. The estimates (solid lines) and their 95% confidence intervals (dotted lines) are for the coefficients on interactions of female indicator with indicators for the 15 years surrounding the event of childbirth (–5 omitted). In addition, the regressions include a female dummy, dummies for each of the years surrounding the event, and dummies for each calendar year. The male benchmark compares female executives with male executives that have children whereas the female benchmark consists of female executives with no children. The imputed year of childbirth for women with no children randomly draws from the observed age distribution at first childbirth. The sample consists of executives who are born in 1962–71 and whose first childbirth (actual or imputed) is in 1992–2001. Confidence intervals are based on standard errors that assume clustering at the individual level.

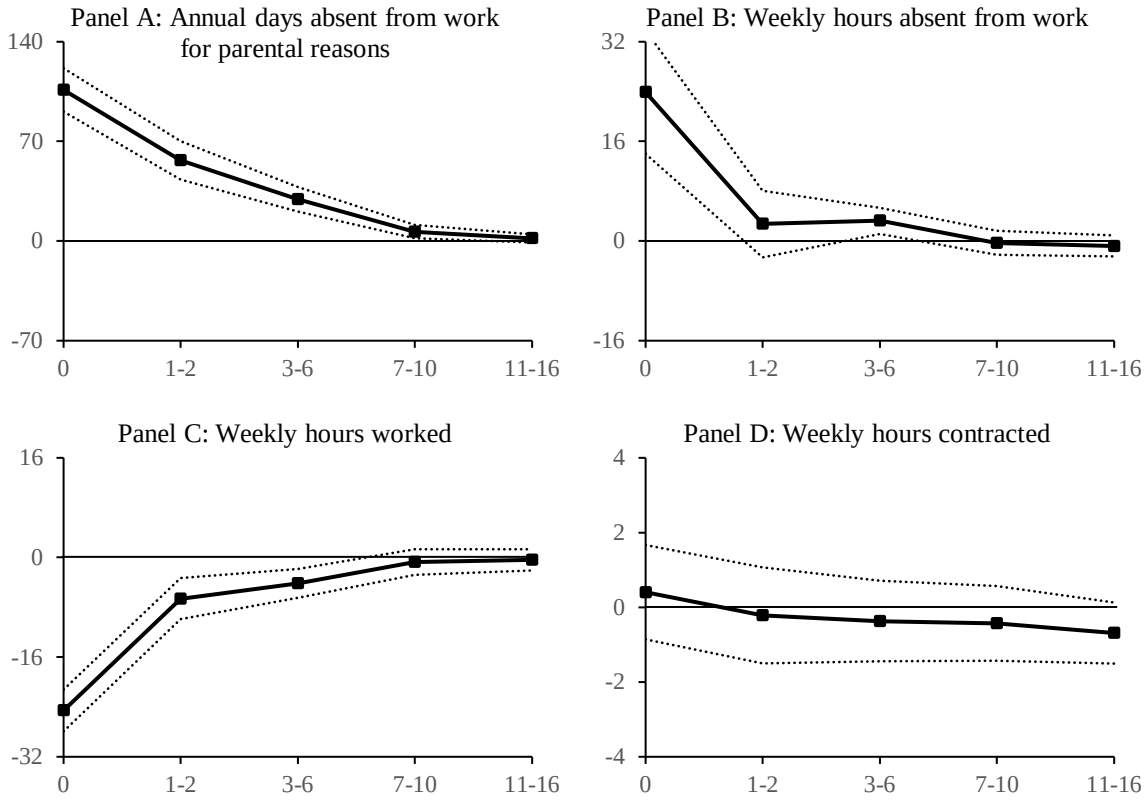

Figure 3. Impact of children on female executives' absence from work and working hours
The panels in this graph plot annual days absent from work for parental reasons (Panel A), weekly hours absent from work (B), weekly hours worked (C), and weekly hours contracted (D). The estimates (solid lines) and their 95% confidence intervals (dotted lines) are for the coefficients on interactions of female indicator with indicators for years 0, 1–2, 3–6, 7–10, 11–16, and 17–18 following child birth (17–18 omitted). In addition, the regressions include a female dummy, dummies for each of the years surrounding the event, and dummies for each survey year. The sample consists of executives surveyed in the Labour Force Survey in 2000–15. The annual days absent from work records the total number of days in which the individual has claimed compensation for absence due to parental reasons. This variable comes from the LISA database. The absent and work hours are from the survey questions that report on the week preceding the survey. Confidence intervals are based on standard errors that assume clustering at the individual level.

Table 1
Gender gaps in top executive appointments and pay

The sample consists of executives of all Swedish limited-liability companies in 2011 with at least 10 employees and information on sales available. Panel A reports the gender gaps in the probability of attaining a top executive position. We define top executives in three different and in much extent overlapping ways. *Large-firm CEOs* hold the CEO position in firms with sales of at least SEK 500 million whereas *large-firm top executives* are the CEO and the four highest paid executives in these large firms. *Highly paid executives* have an annual labor income of at least SEK 1 million. The gender gap equals the female-male difference in the probability of attaining a top executive position and the robust *t*-statistic tests whether the gender gap differs from zero. Panel B reports mean and median pay for the three definitions of top executives and all executives. The log gender gap is the female-male difference in logged labor income and the robust *t*-statistic tests whether the gender gap differs from zero. Labor income includes all income taxed as labor income in a given year; base salaries, stock option grants, bonus payments, and benefits received from the employer qualify as taxable labor income. Tax authorities deem the taxable income to occur in the year when an employee or executive exercises her stock options or purchases her company's shares at a price that is less than their fair value. The income is deflated to 2011 value and is expressed in million SEK.

Panel A: Probability of attaining a top executive position

	Large-firm CEOs			Large-firm top executives			Highly paid executives		
	Top executives	Other executives	Fraction top executives, %	Top executives	Other executives	Fraction top executives, %	Top executives	Other executives	Fraction top executives, %
All	302	24,103	1.24	1,489	22,916	6.10	3,172	21,233	13.00
Women	51	6,592	0.77	317	6,326	4.77	627	6,016	9.44
Men	251	17,511	1.41	1,172	16,590	6.60	2,545	15,217	14.33
Frac. women, %	16.89	27.35		21.29	27.61		19.77	28.33	
Gender gap			−0.65			−1.83			−4.89
t-value			(−4.64)			(−5.69)			(−10.99)

Panel B: Mean pay in SEK millions

	Large-firm CEOs		Large-firm top executives		Highly paid executives		All executives	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
All	2.07	1.71	1.34	1.09	1.55	1.29	0.69	0.58
Women	1.95	1.51	1.23	1.00	1.50	1.27	0.63	0.55
Men	2.09	1.78	1.37	1.10	1.56	1.30	0.72	0.59
Log gender gap, %	−4.92		−8.93		−2.66		−11.55	
t-value	(−0.60)		(−2.76)		(−1.78)		(−11.76)	

Table 2

Gender differences in executive attributes

This table reports gender differences in the sample executives' attributes. Panel A reports on the level of education and educational specialization. Panel B reports on career and networks. *Top income education track* takes the value of one if the combination of the level of education and educational specialization is among the top-5 specializations in 2011 in median total income and it has more than 100 graduates. *Top executive education* track takes the value of one if the combination of the level of education and educational specialization is among the top-5 specializations in 2011 in the number of large-firm top executives. *Top executive high school* takes the value of one if the high school is in the top-5 high schools in 2011 in terms of the fraction of graduates that become large-firm top executives and if it has more than 100 graduates. All the career variables except for unemployment are calculated using data from 1990 to 2011; the unemployment data is available from 1992. Unemployment is measured using information on the days the individual has collected unemployment benefits. *Consulting or IB experience* measures work experience from the following industries: Business and management consultancy activities (SNI2002, SNI1992=74140), Business and other management consultancy (SNI2007=70220), Security broking and fund management (SNI2002, SNI1992=67120), or Investment fund management activities (SNI2007=66301). *Graduated in recession* takes the value of one if the executive graduated in a year when Sweden experienced negative GDP growth (1977, 1991, 1992, or 1993). Panel C reports the means of indicators for having gained experience from different executive functions in 2004-2009. Function is not observed for executives who did not hold a functional role during this period. Panel D reports on family background and risk tolerance. *Birth order* and *Number of siblings* have been calculated using data on all individuals of at least 16 years of age since 1990. *Born in top-3 city* takes the value of one if the individual has been born in Stockholm, Göteborg, or Malmö. *Immigrant* takes the value of one if the individual has been born outside of Sweden. *Work in birth county* indicates executives whose county of work is the same as their place of birth. *Stock market participant* uses data on direct stock holdings and indirect holdings via mutual funds. Panel E reports on parents' socioeconomic status, and personal traits. Parents' socioeconomic status is measured using data from year 1990. Parent's rank in age-gender income distribution refers to their labor income rank among all individuals of the same gender in a given cohort. Labor income includes all income taxed as labor income in a given year; base salaries, stock option grants, bonus payments, and benefits received from the employer qualify as taxable labor income. Tax authorities deem the taxable income to occur in the year when an employee or executive exercises her stock options or purchases her company's shares at a price that is less than their fair value. Personal traits come from enlistment tests conducted on male conscripts around age 18. These data cover individuals born between 1951 and 1978. The traits are imputed using test scores of an executive's randomly selected brother. Except for *Imputed officer rank*, a dummy for the reserve officer rank, a summary measure of aptitude and performance in the military, the variables are expressed as differences in standard deviations from the cohort mean. *Imputed cognitive ability* is based on four different subtests of inductive reasoning, verbal comprehension, spatial ability, and technical comprehension. The summary result of these tests is on a stanine scale. *Imputed non-cognitive ability* is assessed using psychological test results and semi-structured interviews. This test evaluates each conscript's social maturity, intensity, psychological energy, and emotional stability and its summary result is on a stanine scale. *Imputed physical fitness* comes from a cycle ergometry test and *Imputed muscular strength* is a combination of knee extension, elbow flexion, and hand grip tests. *Imputed body mass index* is the ratio of weight in kilograms and squared height in meters. *Imputed high school GPA* is the grade point average in the final year of high school.

Panel A: Level of education and educational specialization						
	All	Women	Men	Diff.	*t*-value	*N*
Level of education						
Basic	0.040	0.020	0.047	−0.027	(−11.40)	24,405
High school	0.392	0.329	0.415	−0.087	(−12.69)	24,405
Vocational	0.223	0.179	0.240	−0.061	(−10.68)	24,405
University	0.345	0.472	0.298	0.174	(24.84)	24,405
Educational specialization						
No specialization	0.105	0.101	0.107	−0.006	(−1.36)	24,405
Law	0.010	0.015	0.008	0.007	(4.28)	24,405
Business and economics	0.289	0.434	0.236	0.198	(28.90)	24,405
Health and medicine	0.027	0.068	0.011	0.057	(17.90)	24,405
Natural science	0.030	0.039	0.027	0.013	(4.76)	24,405
Teaching	0.016	0.036	0.008	0.028	(11.85)	24,405
Engineering	0.418	0.162	0.514	−0.352	(−59.87)	24,405
Social sciences	0.020	0.042	0.012	0.031	(11.89)	24,405
Services	0.019	0.031	0.015	0.016	(7.11)	24,405
Other specialization	0.066	0.071	0.064	0.007	(1.87)	24,405

Panel B: Career and networks						
	All	Women	Men	Diff.	*t*-value	*N*
Career orientation and networks						
Top income education track	0.089	0.060	0.099	−0.040	(−10.81)	24,405
Top executive education track	0.164	0.216	0.145	0.071	(12.43)	24,405
Top executive high school	0.095	0.119	0.086	0.033	(7.31)	24,405
Career						
Age (years)	44.43	44.24	44.50	−0.27	(−7.10)	24,405
# years of labor market experience	21.74	20.27	22.29	−2.02	(−23.11)	24,405
# years in firm	6.834	6.013	7.141	−1.128	(−13.51)	24,405
# industries worked in	3.104	3.275	3.040	0.235	(10.32)	24,405
# firms worked at	4.494	4.884	4.348	0.537	(15.88)	24,405
# years of consulting or IB experience	0.368	0.506	0.317	0.189	(8.30)	24,405
# years of non-profit experience	0.100	0.152	0.081	0.071	(5.53)	24,405
# days unemployed	137.8	155.2	131.2	24.0	(6.19)	24,405
Graduated in recession	0.236	0.295	0.214	0.080	(12.56)	24,405

Panel C: Executive functions						
	All	Women	Men	Diff.	*t*-value	*N*
Functional experience						
Production and operations	0.161	0.132	0.172	−0.040	(−7.96)	24,405
Finance and administration	0.054	0.083	0.043	0.040	(10.81)	24,405
Personnel and industrial relations	0.015	0.036	0.008	0.029	(12.01)	24,405
Sales and marketing	0.066	0.046	0.074	−0.028	(−8.48)	24,405
Advertising and public relations	0.004	0.009	0.002	0.007	(5.98)	24,405
Supply and distribution	0.022	0.015	0.024	−0.010	(−5.13)	24,405
Computing and R&D	0.029	0.019	0.032	−0.014	(−6.45)	24,405
Other executive	0.084	0.071	0.088	−0.018	(−4.64)	24,405
Function not observed	0.778	0.798	0.770	0.029	(4.90)	24,405

Panel D: Family background and risk tolerance						
	All	Women	Men	Diff.	*t*-value	*N*
Family background						
Birth order	1.673	1.665	1.676	−0.011	(−0.89)	24,405
Family size	2.313	2.288	2.323	−0.034	(−2.30)	24,405
# male siblings	0.699	0.684	0.705	−0.021	(−1.89)	24,405
Born in top-3 city	0.470	0.488	0.463	0.025	(3.51)	24,405
Immigrant	0.102	0.106	0.101	0.006	(1.27)	24,405
Work in birth county	0.470	0.426	0.487	−0.061	(−8.53)	24,405
Risk tolerance						
Stock market participant	0.611	0.493	0.655	−0.161	(−22.71)	24,405

Panel E: Additional characteristics						
	All	Women	Men	Diff.	*t*-value	*N*
Parents' socioeconomic status						
Mother is university educated	0.243	0.277	0.231	0.046	(7.03)	23,160
Mother is employed in 1990	0.898	0.899	0.898	0.002	(0.43)	23,160
Mother in age-gender inc. distr. in 1990	0.562	0.584	0.553	0.031	(7.38)	23,160
Father is university educated	0.179	0.212	0.167	0.046	(7.58)	22,036
Father is employed in 1990	0.886	0.885	0.886	0.000	(−0.08)	22,036
Father in age-gender inc. distr. in 1990	0.604	0.617	0.599	0.019	(4.14)	22,036
Personal traits						
Imputed cognitive ability	0.285	0.384	0.247	0.137	(6.98)	11,540
Imputed non-cognitive ability	0.359	0.372	0.354	0.018	(0.88)	11,539
Imputed height	0.148	0.167	0.141	0.026	(1.26)	11,540
Imputed physical fitness	0.227	0.248	0.219	0.029	(1.39)	11,533
Imputed muscular strength	0.068	0.039	0.079	−0.041	(−1.99)	11,536
Imputed body mass index	−0.051	−0.105	−0.030	−0.075	(−4.05)	11,539
Imputed officer rank	0.171	0.202	0.159	0.043	(5.16)	11,076
Imputed high school GPA	0.026	0.086	0.003	0.082	(3.81)	11,132

Table 3

Gender gaps in top executive appointments

Panel A reports results from linear probability model regressions of top executive dummies on female dummy and controls. Large-firm CEOs hold the CEO position in firms with sales of at least SEK 500 million whereas large-firm top executives are the CEO and the four highest paid executives in these large firms. Highly paid executives have an annual labor income of at least SEK 1 million. The first row reports the unconditional gender gap from regressions that include the female dummy as the sole regressor. The next three rows report conditional gender gaps from regressions that sequentially add the set of variables listed on each row. These sets of variables refer to variables listed in Table 2 Panel A, B, C, and D. Panel B reports the unconditional and conditional gender gaps in samples for which additional characteristics are available. The conditional gender gaps are based on regressions that include the controls in the last row of Panel A and the set of variables from Table 2 Panel E listed on each row. Panel C reports the coefficients and *t*-values of the regressions in the last row of Panel A. The *t*-values are based on robust standard errors. Coefficients and *R*-squareds are reported in percentage points.

Panel A: Gender gaps in top executive appointments

Dependent variable	Large-firm CEO			Large-firm top executive			Highly paid executive		
Independent variables	Coeff., %	*t*	R^2, %	Coeff., %	*t*	R^2, %	Coeff., %	*t*	R^2, %
Female dummy	−0.65	(−4.64)	0.06	−1.83	(−5.69)	0.11	−4.89	(−10.99)	0.41
+ Education	−1.06	(−6.27)	0.61	−3.47	(−9.38)	2.03	−8.87	(−17.71)	7.77
+ Career and networks	−0.98	(−5.81)	1.06	−3.31	(−8.94)	3.08	−8.34	(−16.93)	11.42
+ Executive functions	−0.88	(−5.23)	1.32	−3.19	(−8.64)	4.02	−7.87	(−16.04)	12.97
+ Family back. and risk toler.	−0.75	(−4.46)	1.57	−3.00	(−8.03)	4.13	−7.15	(−14.46)	14.14
Mean LHS, %	1.24			6.10			13.00		

Panel B: Including additional characteristics

Dependent variable	Large-firm CEO			Large-firm top executive			Highly paid executive		
Independent variables	Coeff., %	*t*	R^2, %	Coeff., %	*t*	R^2, %	Coeff., %	*t*	R^2, %
Female dummy (N = 21,564)	−0.66	(−4.49)	0.07	−1.76	(−5.14)	0.10	−4.77	(−10.04)	0.39
+ Parents' sosioecon. status	−0.80	(−4.39)	1.54	−2.85	(−7.16)	4.04	−7.21	(−13.66)	14.56
Female dummy (N = 11,065)	−0.55	(−2.55)	0.04	−1.83	(−3.81)	0.11	−4.79	(−7.10)	0.38
+ Personal traits	−0.76	(−2.73)	1.64	−3.22	(−5.74)	4.53	−7.51	(−10.02)	14.78
Female dummy (N = 11,132)	−0.76	(−3.65)	0.08	−2.11	(−4.44)	0.14	−5.53	(−8.21)	0.50
+ High school GPA	−0.96	(−3.58)	1.55	−3.36	(−6.08)	4.30	−8.02	(−10.73)	14.58

Panel C: Regression coefficients from Panel A						
Dependent variable	Large-firm CEO		Large-firm top executive		Highly paid executive	
Independent variable	Coeff., %	*t*	Coeff., %	*t*	Coeff., %	*t*
Female	−0.75	(−4.46)	−3.00	(−8.03)	−7.15	(−14.46)
Level of education						
High school	1.01	(2.78)	2.64	(3.68)	4.77	(5.05)
Vocational	1.48	(3.60)	3.99	(4.66)	12.29	(10.78)
University	1.91	(4.02)	6.17	(6.37)	17.73	(13.73)
Educational specialization						
Law	−0.44	(−0.50)	0.67	(0.35)	3.39	(1.19)
Business and economics	−0.46	(−1.38)	0.39	(0.60)	0.53	(0.66)
Health and medicine	−1.11	(−2.59)	−3.64	(−4.09)	−5.56	(−4.23)
Natural science	−1.25	(−2.88)	−2.12	(−2.06)	−5.35	(−3.68)
Teaching	−0.88	(−1.69)	−4.10	(−3.90)	−8.45	(−5.96)
Engineering	−0.93	(−2.90)	−1.60	(−2.58)	−4.65	(−5.95)
Social sciences	0.23	(0.34)	1.55	(1.11)	1.30	(0.70)
Services	−1.00	(−2.78)	−1.51	(−1.56)	−5.87	(−6.17)
Other specialization	−0.70	(−1.82)	−0.81	(−1.00)	−4.63	(−4.67)
Career orientation and networks						
Top income education track	0.41	(0.99)	0.66	(0.82)	9.33	(7.79)
Top executive education track	1.51	(4.15)	3.40	(4.66)	4.14	(4.04)
Top executive high school	0.39	(1.36)	2.55	(4.13)	1.69	(2.24)
Career						
# years of labor market experience	0.04	(3.06)	0.08	(2.56)	0.44	(10.30)
# years in firm	−0.05	(−3.28)	−0.12	(−4.20)	−0.17	(−4.65)
# industries worked in	0.02	(0.32)	0.07	(0.55)	−0.13	(−0.78)
# firms worked at	0.08	(1.98)	0.33	(3.74)	0.90	(7.59)
# years of consulting or IB experience	−0.05	(−1.01)	−0.43	(−4.15)	1.53	(7.75)
# years of non-profit experience	−0.01	(−0.20)	−0.33	(−1.89)	−0.44	(−1.81)
# days unemployed	−0.002	(−10.60)	0.00	(−10.58)	−0.01	(−16.89)
Graduated in recession	−0.10	(−0.44)	−0.30	(−0.64)	0.31	(0.48)
Functional experience						
Production and operations	0.71	(3.20)	2.98	(6.55)	3.03	(5.41)
Finance and administration	−0.95	(−2.79)	5.47	(5.76)	7.26	(6.12)
Personnel and industrial relations	−1.38	(−4.52)	5.70	(3.38)	5.89	(2.95)
Sales and marketing	1.60	(3.64)	6.64	(7.79)	14.83	(13.30)
Advertising and public relations	0.59	(0.41)	8.42	(2.45)	13.66	(3.30)
Supply and distribution	0.30	(0.52)	5.50	(4.05)	6.15	(3.83)
Computing and R&D	−1.06	(−3.32)	−0.24	(−0.25)	5.16	(3.33)
Other executive	−0.54	(−2.20)	−0.24	(−0.42)	2.55	(3.02)

Panel C continued						
Dependent variable	Large-firm CEO		Large-firm top executive		Highly paid executive	
Independent variable	Coeff., %	*t*	Coeff., %	*t*	Coeff., %	*t*
Family background						
Birth order	−0.33	(−3.33)	−0.56	(−2.46)	−1.06	(−3.62)
Family size	0.32	(3.06)	0.72	(2.96)	1.51	(5.01)
# male siblings	−0.06	(−0.52)	−0.30	(−1.17)	−0.31	(−0.90)
Born in top-3 city	0.31	(2.03)	0.30	(0.93)	3.29	(7.94)
Immigrant	1.42	(4.21)	2.09	(3.50)	9.33	(11.21)
Work in birth county	−0.05	(−0.29)	−1.35	(−4.09)	−2.90	(−6.81)
Risk tolerance						
Stock market participant	0.67	(5.21)	1.00	(3.30)	4.05	(10.32)
Adjusted R^2, %	1.57		4.13		14.14	
Number of observations	24,405		24,405		24,405	

Table 4

Gender differences in family-related characteristics

This table reports gender differences in the sample executives' attributes that relate to their family. Panel A reports the marital status, number of children, and number of children who live in the executive's household in 2011. The married category includes both legal marriages and registered partnerships. The number of children has been calculated using data on all individuals of at least 16 years of age since 1990. Panel B reports on the education, employment status, occupation, and income of the partner of the executive. Only executives whose partner can be identified enter this sample. Partners' rank in age-gender income distribution refers to their labor income rank among all individuals of the same gender in a given cohort.

Panel A: Marital status and children								
	All executives	Women	Men	*N*	Women less men			
					All executives	Large-firm CEOs	Large-firm top executives	Highly paid executive
Married	0.699	0.658	0.714	24,405	−0.056	−0.178	−0.098	−0.085
					(−8.38)	(−2.59)	(−3.53)	(−4.46)
Divorced	0.074	0.105	0.063	24,405	0.042	0.105	0.080	0.039
					(10.09)	(1.98)	(4.00)	(3.00)
Single	0.227	0.237	0.223	24,405	0.014	0.073	0.018	0.046
					(2.34)	(1.36)	(0.80)	(2.91)
Has children	0.914	0.894	0.922	24,405	−0.027	0.008	−0.033	−0.048
					(−6.38)	(0.37)	(−1.95)	(−3.85)
# children	1.918	1.701	1.999	24,405	−0.299	−0.261	−0.358	−0.373
					(−23.58)	(−2.51)	(−7.06)	(−9.98)
# children at home	1.747	1.701	1.765	24,405	−0.064	−0.010	−0.128	−0.156
					(−4.99)	(−0.10)	(−2.46)	(−4.10)
First child born at age	29.62	29.48	29.68	22,314	−0.197	0.415	−0.015	−0.033
					(−4.09)	(1.19)	(−0.08)	(−0.26)
Panel B: Partner's characteristics								
Partner is university educated	0.450	0.392	0.470	16,850	−0.078	−0.047	−0.015	0.019
					(−8.97)	(−0.51)	(−0.40)	(0.73)
Partner is employed	0.951	0.967	0.946	16,850	0.020	0.030	0.047	0.034
					(5.98)	(0.57)	(3.08)	(2.89)
Partner is CEO or executive	0.188	0.329	0.140	16,850	0.189	0.196	0.183	0.197
					(24.27)	(2.27)	(5.27)	(8.05)
Partner in age-gender inc. distr.	0.643	0.729	0.613	16,850	0.116	0.188	0.192	0.170
					(24.70)	(3.46)	(9.71)	(11.62)

Table 5

Impact of children on female executives' career progression

This table reports career development following childbirth in the short term (0–1 years post childbirth), medium term (2–5 years), and long term (6–10 years). An indicator for each of the three periods and their interactions return the estimates and their associated *t*-statistics reported in the table. In addition, the regressions include a female dummy, dummies for each of the years surrounding the event, and dummies for each calendar year. The pre-birth period (–5 to –1 years) serves as the omitted category. The male benchmark in columns 1–3 compares female executives with male executives that have children whereas the female benchmark in columns 4–6 consists of female executives with no children. The imputed year of childbirth for women with no children randomly draws from the observed age distribution at first childbirth. The sample consists of executives who are born in 1962–71 and whose first childbirth (actual or imputed) is in 1992–2001. The *t*-statistics reported in parentheses are based on robust standard errors.

	Male benchmark			Female benchmark		
Dependent variable	Labor income	Labor force participation	Probability of obtaining a new job	Labor income	Labor force participation	Probability of obtaining a new job
Specification	(1)	(2)	(3)	(4)	(5)	(6)
0-1 years post childbirth	−153.61	−5.67	−6.82	−125.26	−0.60	−9.38
	(−95.36)	(−12.84)	(−14.06)	(−30.95)	(−0.52)	(−7.05)
2-5 years post childbirth	−135.21	−4.47	−0.94	−94.22	−2.42	−5.34
	(−57.40)	(−11.09)	(−2.32)	(−17.06)	(−2.26)	(−4.57)
6-10 years post childbirth	−103.47	−0.96	0.22	−46.34	−0.58	−3.78
	(−26.49)	(−2.61)	(0.59)	(−5.62)	(−0.56)	(−3.37)
Adjusted R^2	0.262	0.066	0.025	0.298	0.048	0.026
Number of observations	380,882	380,882	380,882	114,040	114,040	114,040

Table 6

Gender gaps in work absence and hours worked following childbirth

This table reports work absence and hours worked following childbirth in the short term (0–2 years post childbirth), medium term (3–10 years), and long term (11–16 years). The data source dictates the cutoffs of these periods and they thus differ from those in Table 5. An indicator for each of the three periods and their interactions return the estimates and the associated *t*-statistics reported in the table. In addition, the regressions include a female dummy, dummies for each of the years surrounding the event, and dummies for each survey year. The period from 17 to 18 years serves as the omitted category. The sample consists of executives who are surveyed in the Labour Force Survey in 2000-15 and who have at least one child living at her household at the time of taking the survey. The annual days absent from work records the total number of days in which the individual has claimed compensation for absence due to parental reasons. This variable emanates from the LISA database. The absent and work hours are from the survey questions that report on the week preceding the survey. The standard errors used to calculate the *t*-values reported in parentheses assume clustering at the individual level.

Dependent variable	Annual days absent from work for parental reasons	Weekly hours absent from work	Weekly hours worked	Weekly hours contracted
Specification	(1)	(2)	(3)	(4)
0 years post childbirth	106.17	23.89	−24.56	0.40
	(13.67)	(4.73)	(−14.36)	(0.63)
1-2 years post childbirth	56.64	2.74	−6.60	−0.22
	(8.27)	(1.00)	(−3.91)	(−0.33)
3-6 years post childbirth	29.18	3.23	−4.18	−0.37
	(6.64)	(3.00)	(−3.57)	(−0.68)
7-10 years post childbirth	6.62	−0.28	−0.74	−0.43
	(2.76)	(−0.29)	(−0.71)	(−0.84)
11-16 years post childbirth	1.84	−0.80	−0.38	−0.69
	(1.27)	(−0.92)	(−0.44)	(−1.65)
Adjusted R^2	0.292	0.037	0.093	0.049
Number of observations	9,285	9,285	9,285	9,285

Table 7

Role of children in explaining executive gender gaps

This table reports results from linear probability model regressions of top executive dummies on female dummy and controls. Large-firm CEOs hold the CEO position in firms with total assets of at least SEK 500 million whereas large-firm top executives are the CEO and the four highest paid executives in these large firms. Highly paid executives have an annual labor income of at least SEK 1 million. Columns (1), (4), and (7) repeat the specifications from the last row of Table 3 Panel A and the additional columns add controls for the executive's logged labor income measured two years prior and five years after first childbirth. The results reported in this table differ slightly from the corresponding results in Table 3 Panel A because here we exclude executives who do not have children. The *t*-values are based on robust standard errors. Coefficients and *R*-squareds are reported in percentage points.

Dependent variable	Large-firm CEO			Large-firm top executive			Highly paid executive		
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Female dummy	−0.77	−0.73	0.03	−3.04	−2.96	−1.30	−7.55	−7.24	−1.62
	(−4.15)	(−3.99)	(0.13)	(−7.61)	(−7.40)	(−2.59)	(−14.34)	(−13.86)	(−1.74)
Income at child birth – 2		0.04	−0.01		0.10	0.002		0.33	0.01
		(3.85)	(−0.72)		(6.25)	(0.10)		(16.24)	(0.36)
Income at child birth + 5			0.05			0.12			0.40
			(4.74)			(5.03)			(6.75)
Adjusted R^2, %	1.66	1.81	2.91	4.05	4.30	5.46	14.42	15.98	22.69
Number of observations	22,314	22,314	22,314	22,314	22,314	22,314	22,314	22,314	22,314

Internet Appendix for

What Prevents Female Executives from Reaching the Top?

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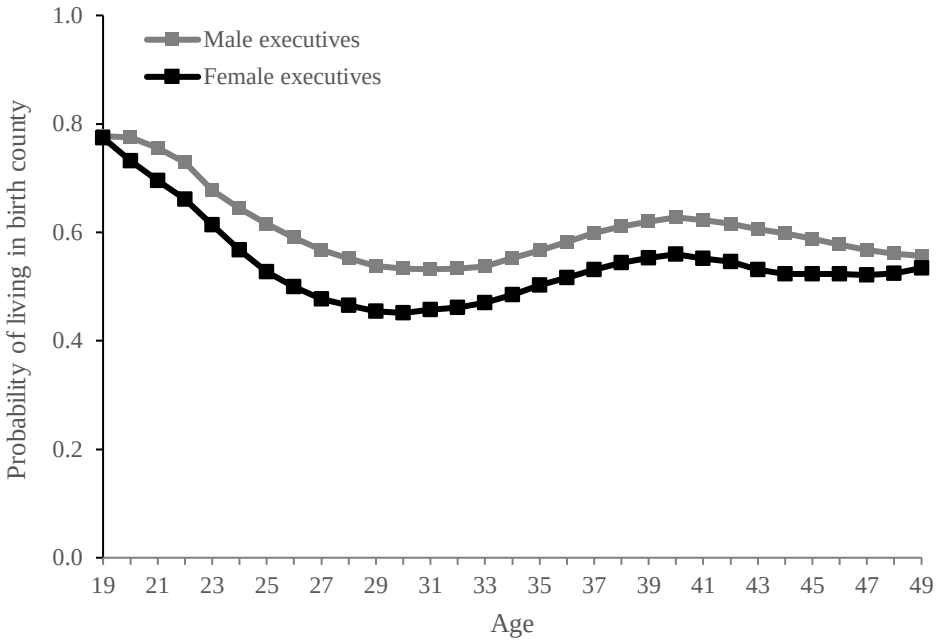

Figure IA1. Likelihood to live in birth county by gender and age
This figure displays the fraction of female and male executives that live in their birth county as a function of their age. The sample consists of executives who are born in 1962-1971.

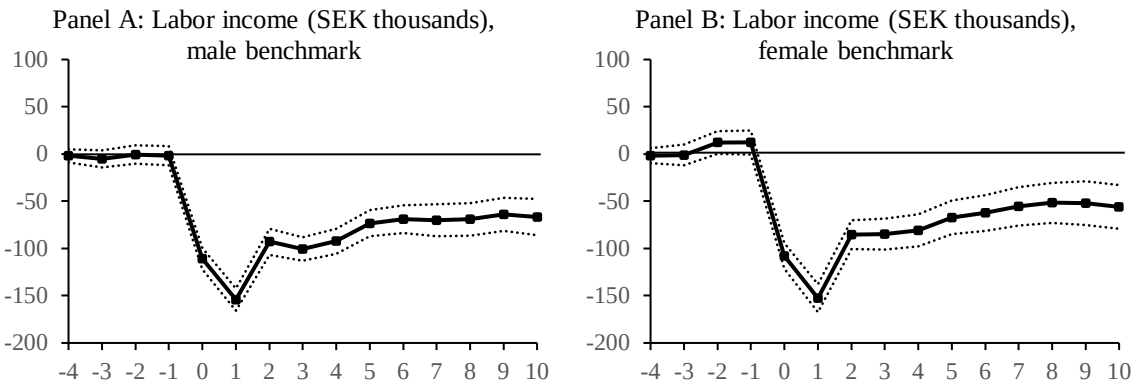

Figure IA2. Impact of children on female executives that have one child
The panels in this graph plot annual labor income relative to the birth year of the executive's first child. The estimates (solid lines) and their 95% confidence intervals (dotted lines) are for the coefficients on interactions of female indicator with indicators for the 15 years surrounding the event of childbirth (–5 omitted). The male benchmark compares female executives with male executives that have children whereas the female benchmark consists of female executives with no children. The imputed year of childbirth for women with no children randomly draws from the observed age distribution at first childbirth. The sample consists of executives who are born in 1962–1971 and whose first childbirth (actual or imputed) is in 1992–2001.

Table IA1

Descriptive statistics on sample firms

This table reports descriptive statistics on characteristics of sample firms in 2011. *Age* is computed by taking the difference between the current year of operation and the maximum of 1990 and the year of incorporation. *Return on assets* is the ratio of earnings before interest and taxes to total assets. *Sales growth* is calculated relative to the past fiscal year and winsorized at the 10th and 90th percentile. *Industries* follow the international NACE Rev.1.1 classification. *Government owned* is a dummy variable that takes the value of one if Statistics Sweden classifies the firm government owned and *Family firm* is a company whose shareholders and board members include at least two members from the same family.

	Mean	Sd	Median
Size, age, and profitability			
Sales (mil. SEK)	384	2,294	52
Number of employees	126	516	30
Age (from 1990)	14.2	6.9	16.0
Return on assets	0.053	0.220	0.044
5-year sd of return on assets	0.087	0.207	0.051
Sales growth	0.105	0.283	0.044
Industry			
Agriculture and fishing	0.010		
Mining, manufacturing, and utilities	0.243		
Construction	0.101		
Wholesale, retail, and repair	0.238		
Hotels and restaurants	0.049		
Transport, telecomm., and storage	0.061		
Business activities and financial intermediation	0.223		
Education	0.020		
Public administration, health, and social services	0.027		
Community, social and personal activities	0.028		
Ownership structure			
Government owned	0.038		
Listed firm	0.013		
Family firm	0.333		
Number of firms		11,091	

Table IA2

Blinder-Oaxaca and Fairlie decompositions of gender gaps in top executive appointments

This table reports results from Blinder-Oaxaca (1973, 1973) and Fairlie (1999) decompositions of the gender gap in top executive appointments. Top executive appointment dummies are decomposed using the individual characteristics listed in Table 2 Panel A, B, C, and D. The test statistics, reported in parentheses, are based on robust standard errors.

Dependent variable	Large-firm CEO		Large-firm top executive		Highly paid executive	
Specification	(1)		(2)		(3)	
Men	1.41		6.60		14.33	
Women	0.77		4.77		9.44	
Difference	0.65	(4.64)	1.83	(5.69)	4.89	(10.99)
Blinder-Oaxaca decomposition						
Total unexplained	0.75	(4.47)	3.00	(8.04)	7.15	(14.48)
Total explained	−0.11	(−1.46)	−1.17	(−6.44)	−2.26	(−7.90)
Level of education	−0.15	(−3.19)	−0.60	(−5.89)	−1.93	(−12.09)
Educational specialization	−0.11	(−1.80)	−0.31	(−2.24)	−1.05	(−5.38)
Career orientation and networks	−0.10	(−3.01)	−0.30	(−4.11)	0.02	(0.20)
Career	0.04	(1.17)	−0.02	(−0.20)	0.01	(0.08)
Functional experience	0.12	(4.34)	−0.10	(−1.15)	0.14	(1.29)
Family background	−0.01	(−1.14)	−0.01	(−0.47)	−0.10	(−2.14)
Risk tolerance	0.11	(5.08)	0.16	(3.27)	0.65	(9.40)
Fairlie decomposition						
Total unexplained	0.99		3.03		6.95	
Total explained	−0.34	(−2.77)	−1.20	(−5.63)	−2.06	(−7.33)
Level of education	−0.52	(−2.65)	−0.92	(−4.28)	−3.76	(−11.71)
Educational specialization	−0.51	(−3.85)	−0.61	(−2.93)	−1.05	(−3.57)
Career orientation and networks	−0.24	(−2.05)	−0.49	(−2.78)	0.30	(1.55)
Career	0.10	(1.02)	0.15	(1.11)	0.64	(3.52)
Functional experience	0.37	(4.73)	0.31	(2.07)	0.51	(3.10)
Family background	0.20	(4.92)	0.10	(3.89)	0.24	(10.10)
Risk tolerance	0.26	(3.74)	0.26	(2.98)	1.03	(8.53)
Number of observations	24,405		24,405		24,405	

Table IA3

Attributes of women who have and have not children

This table reports the difference in the probability of attaining a top executive position for women with and without children and decomposes it as in Table IA2 into the parts explained and unexplained by executive attributes.

Dependent variable	Large-firm CEO		Large-firm top executive		Highly paid executive	
Specification	(1)		(2)		(3)	
Women with children	0.84		4.90		9.56	
Women with no children	0.14		3.71		8.42	
Difference	0.70	(3.77)	1.19	(1.55)	1.14	(1.02)
Blinder-Oaxaca decomposition						
Total unexplained	0.59	(3.10)	0.65	(0.86)	−0.35	(−0.33)
Total explained	0.11	(1.99)	0.53	(2.88)	1.49	(3.61)
Level of education	−0.0001	(−0.002)	0.25	(2.11)	0.77	(3.77)
Educational specialization	0.04	(1.27)	−0.10	(−1.11)	−0.14	(−1.21)
Career orientation and networks	0.08	(1.93)	0.18	(2.11)	0.62	(3.94)
Career	0.01	(0.39)	0.22	(2.12)	0.38	(1.76)
Functional experience	−0.03	(−1.16)	−0.07	(−0.83)	−0.23	(−1.32)
Family background	0.01	(0.41)	0.06	(1.02)	0.11	(1.13)
Risk tolerance	−0.001	(−0.09)	−0.001	(−0.09)	−0.007	(−0.09)
Number of observations	6,336		6,336		6,336	

Table IA4

Comparison of the executives in the main sample and in the Labour Force Survey sample

This table compares selected executive characteristics in the core sample and in the Labour Force Survey sample. It reports the means of each characteristic, their difference, and the difference's robust *t*-statistic. The table covers annual waves of the survey in 2000-15.

	Core sample	Labour Force Survey	Diff.	*t*-value	*N* Core sample	*N* Labour Force Survey
Level of education						
Basic	0.040	0.053	0.013	(4.93)	24,405	9,275
High school	0.392	0.374	−0.018	(−3.00)	24,405	9,275
Vocational	0.223	0.233	0.009	(1.81)	24,405	9,275
University	0.345	0.341	−0.005	(−0.78)	24,405	9,275
Other characteristics						
Labor income (SEK millions)	0.693	0.607	−0.086	(−15.94)	24,405	9,285
Age (years)	44.43	42.31	−2.12	(−29.40)	24,405	9,285
Married	0.699	0.678	−0.021	(−3.69)	24,405	9,284

Table IA5

Gender gaps in top executive appointments with alternative definitions of top executive positions

This table explores alternative definitions of top executive positions that modify the firm-size and pay cutoffs**.** Panel A replicates the results of Table 1 Panel A by doubling the total assets cutoff to SEK 1 billion and the pay cutoff to SEK 2 million. Panel B replicates the results of Table 7 with these cutoffs.

Panel A: Probability of attaining a top executive position

	Large-firm CEOs			Large-firm top executives			Highly paid executives		
	Top executives	Other executives	Fraction top executives, %	Top executives	Other executives	Fraction top executives, %	Top executives	Other executives	Fraction top executives, %
All	145	24,260	0.59	796	23,609	3.26	471	23,934	1.93
Women	27	6,616	0.41	174	6,469	2.62	82	6,561	1.23
Men	118	17,644	0.66	622	17,140	3.50	389	17,373	2.19
Frac. women, %	18.62	27.27		21.86	27.40		17.41	27.41	
Gender gap			−0.26			−0.88			−0.96
t-value			(−2.60)			(−3.68)			(−5.48)

Panel B: Role of children in explaining executive gender gaps

Dependent variable	Large-firm CEO			Large-firm top executive			Highly paid executive		
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Female dummy	−0.30	−0.28	0.15	−1.63	−1.56	−0.34	−1.80	−1.69	0.87
	(−2.33)	(−2.16)	(0.98)	(−5.39)	(−5.16)	(−0.92)	(−7.76)	(−7.35)	(2.70)
Income at child birth – 2		0.02	0.0001		0.08	0.01		0.12	−0.03
		(3.22)	(0.02)		(6.29)	(0.62)		(8.04)	(−1.53)
Income at child birth + 5			0.03			0.09			0.18
			(4.29)			(4.94)			(9.43)
Adjusted R^2, %	0.86	1.01	1.72	2.75	3.05	4.17	3.69	4.86	12.92
Number of observations	22,314	22,314	22,314	22,314	22,314	22,314	22,314	22,314	22,314