# Gender differences in promotion into top-management jobs

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**Abstract**: In this paper the promotion process of top executive officers (CEOs) in Danish private firms is analysed. The main research question to be analysed is whether the lower chances for women to become promoted into top management jobs are mainly attributable to individual background characteristics and special focus is given to the effects of family related variables. The descriptive statistics suggest that the family background (marital status, number of children, spouse labour force participation, education and occupation) differs substantially by gender of individuals in top management. Furthermore, we will try to detect whether women in women-led companies are more likely to be promoted than women in firms managed by men only. The regression results show that the child variables have different effects for women (none) than for men (positive). This is interpreted as evidence of statistical discrimination of women, as the (potential) negative effect of children and parental leave behaviour is included in the constant term and hence applies to all women in the pool of potentials. Furthermore, males' career opportunities are declining if the wife is working, whereas the women's careers are only affected if their husbands have a high level occupation. The results also suggest the presence of gender homo-social reproduction, i.e. that women employed in women-led firms are more likely to be promoted than in the case of not women-led firms.

## 1. Introduction

During the latest decade, there has been an increasing focus on the gender of top executives and boards of directors of firms. The proportion of women reaching top positions is still very low in Denmark as in many other countries, including other Scandinavian countries. As a consequence, it is debated whether governments should regulate the gender composition of the boards of directors. In fact such rules exist in Norway, where the government has decided that at least 40% of the boards of directors of private larger firms must be women - in order to improve equal opportunities.

According to Smith et al. (2006), 4.3% of the CEOs in the largest Danish private firms were women in 2001. When extending the top management category to include vice-directors, this figure increases to 10.9%. Furthermore Smith et al. (2006, 2008) find empirical evidence that the proportion of females on executive board and board of directors has either no effect or a significantly positive effect on the performance of the largest Danish firms during the 1990s and beginning of the new century.

In this paper the promotion process of top executive officers (CEOs) in Danish private firms is analysed. The main research questions to be analysed are whether the lower chances for women to become promoted into top management jobs is mainly attributable to individual background characteristics and whether women pays a 'price of children' with respect to forgone promotion chances? Thus the next section discusses the existing literature on occupational segregation, promotion and selection into top management jobs. The following section deals with the data used in the empirical part of the paper. Section 4 brings in the empirical model to be used in our analysis and subsequently the estimation results of the promotion model are presented in section 5. Section 6 concludes.

## 2. Existing evidence.

There exists a large literature on occupational segregation, promotion and the selection into top-management jobs. Some mainly sociological theories focus on organizational structures, internal labour market and institutional factors, see for instance Jacobs (1989) and Beckman and Phillips (2005), in order to explain how observed discriminatory behaviour of firms. Other studies within the management literature describes the different factors which prevents women to obtain top position within the firm by different factors like entrepreneurial culture and firm specific norms, a number of factors which are often summarized in the notion of an invisible 'glass ceiling' in firms, see the survey in Meyerson and Fletcher (2000).

In this paper our starting point is an economic modelling of promotion behaviour in the firm. There are a number of economic theories on occupational differences between seemingly identical types of workers and also on the existence of permanent pay gaps between these groups, see the survey in Gibbons and Waldman (1999). One typical explanation is discrimination which can be defined as different treatment of workers from different groups based solely on group membership rather than on the workers' productivity, see the pioneering work in Becker (1957). According to Becker, discrimination is due to taste-based preferences against certain groups, women, minorities etc.

However, the Becker discrimination theory suffers from several problems. One is that it does not explain permanent discrimination against a given minority group, for instance women. Firms owned by individuals without negative taste preferences against the minority group will in the long run out perform discriminating firms by employing the more cheap labour from the minority group, or in our case, by hiring female executive officers, since these non-discriminating firms are able to get the same qualification at a lower price.

An alternative to the classical taste-based discrimination theories are theories based on information asymmetries and statistical discrimination. Imprecise knowledge about the productivity of young women or their career preferences may lead to systematic underestimation of the productivity of this group. The consequence is that women end up in flatter career profiles and are observed to have lower wages than their male peers, see the classical article in Phelps (1972) and Coate and Loury (1993).

These extensions of the classical economic discrimination theories have been formalized in a model on firm promotion by Milgrom and Oster (1987). They assume that individuals belonging to a minority group often have invisible abilities. Milgrom and Oster show that in the case of invisible abilities in a minority group, the average wages will be lower for the minority group, and a smaller proportion of the group will become promoted. Even in cases where the firm 'discovers' the true ability of a minority member (for instance a woman in a lower job level, i.e. the pool of potential CEOs), for instance because the woman is employed in the firm in more periods, the firm may have an incentive not to promote the person because promotion will make the abilities of the woman visible to other firms. These firms may hire the woman at a higher wage. Thus, the firm can earn a rent from not promoting women within the firm, and since the woman has fewer outside opportunities due to the invisibility of her abilities, she is likely to stay in the firm.

Another group of promotion theories are based on the work by Lazear and Rosen (1990). Lazear and Rosen assume that women in higher job levels have relative superior opportunities in non-market activities due to a higher productivity in household production compared to their male peers. Even though these women may be as qualified as men they will not be promoted to the same extent or earn as much as their male peers, because of these relative comparative advantages in home production which may induce women to have higher turnover rates, and thus, imply higher costs to the firms in case they are hired in CEO positions. However, for women who are eventually promoted, the observed average wage growth will according to the Lazear-Rosen model be higher than for male CEOs.

In a more recent paper, Booth et al. (2003), generalize or combine the existing models by Lazear-Rosen, Milgrom-Oster, and others. Booth et al. women and men in career tracks are assumed to be treated differently by the firm because women typically have less outside job offers. Booth et al. show that women may have higher or lower chances of becoming promoted, and in the first case, female wage increases will be lower compared to men subsequent upon promotion, while the opposite happens in the second case. Empirical evidence is needed in order to determine the exact career profiles and factors determining these profiles.

There exists a large empirical literature on the factors determining promotion within the firm, see for instance the survey in Gibbons and Waldman (1999). However, when it comes to studies focusing on gender differences in the promotion process into top positions (CEOs), and gender differences in earnings among top executives, the empirical evidence is scarce.

The empirical results concerning the promotion rates show a clear tendency that when controlling for other observed factors, women are less likely to get promoted in private firms, see for instance McCue (1996) and Cobb-Clark (2001). When focusing solely on promotion into top executive we know of no studies which directly estimate promotion probabilities. However, a number of international studies describe the gender distribution of CEOs, typically in larger firms. Bell (2005) finds 4.5% of top executives to be female in 2200 large US firms. Other studies focus in e.g. Fortune 500 firms in the US or listed firms, see the survey in Smith et al. (2006). Though it is rather difficult to compare the figures for different countries because of different ways in collecting the firms, the general impression from Smith et al. (2005) is that – somewhat surprisingly – the Scandinavian countries are lagging behind for instance the US with respect to getting women promoted into top executive positions.

There are a number of studies which focus on the earnings of newly hired CEOs, i.e. wage growth after promotion, and the earnings of the total group of CEOs, including CEOs with many years of tenure within a given position as CEOs. According to the theories described above, the implications with respect to gender differences in wage growth after a promotion were indeterminate. Also the existing empirical evidence is mixed. McCue (1996) finds no difference between wage growth for (white) men and women upon promotion, while Cobb-Clark (2001) finds that women who are promoted experience a higher wage growth than male colleagues after promotion. However, the opposite results are found in Hersch and Viscusi (1996) and Booth et al. (2003). As noted in Cobb-Clark (2001) many of the studies (except her own) analysing wage growth due to promotion do not control for the potential endogeneity of promotion, and thus these results may be biased (upwards), simply because of endogenity, see the section on methods below.

A few studies have analysed the earning gap between CEOs. For Denmark, Lausten (2001) finds a large raw gender gap among CEOs in a sample of the largest Danish firms. However, when controlling for a number of observable factors, virtually all of the gender wage gap is 'explained'. However, as noted by Lausten (2001), a number of these observed factors which are controlled for may in itself reflect discriminatory processes. A study by Bertrand and Hallock (2001) on the earnings of US CEOs finds parallel results, i.e. virtually all of the gender wage differential is 'explained' by observed factors. Bell (2005), finds that a significant gender gap exists also when controlling for a number of observables in a large recent sample of US firms. She also finds that the salaries of female executives (and also the likelihood of observing women among top executives) are significantly higher in women-led firms.

None of above studies control for the selection into the position as CEO. If women are promoted into CEO positions to a smaller extent than men, as theory predicts, those women who are observed in the position as CEOs are expected to be systematically more able or productive than male CEOs. In order to control for this selectivity, it is necessary to observe employees before they become promoted, i.e. to have access to data on 'the pool of potential candidates for promotion' within the firm (or outside the firm) and estimate a simultaneous model of CEO earnings and the probability of being a CEO, see the section on methods below.

3. Data

The data used in this project comes from a panel of large Danish firms observed during the period 1993-2003.[1] The data set is selected from registers in Statistics Denmark. The information on firms is merged with individual information on the employees of the firm, including information on background characteristics the CEOs and their spouses. Furthermore the register information from the administrative registers is merged with account information from a private Danish data register KOB (*Købmandsstandens Oplysningsbureau)*, which also gives information on the members of the board of directors.

The sample is selected from the administrative registers as the 5000 largest Danish firms, defined by total assets. We restrict the sample to firms which are observed at least 5 years during the gross period. Furthermore, noting that Denmark is a relatively small country with many small and medium sized firms the final data set used in the empirical analysis includes firms with more than 50 employees. i.e. we end up having an unbalanced panel of about 1500 firms.

Based on this selection of firms, we further select all the managers and potential managers who are observed as being employed at least one year in the selected firms during the period 1993-2003. The data set includes information on boards of directors as well as the CEOs. In this study the concept of managers (CEOs) is different from earlier Danish Studies, where occupational codes normally were used to identify the CEOs. In line with a number of US studies, see e.g. Bell (2005) we use the annual salary to identify the managers. Thus persons getting the highest salaries are assumed to be the persons who are the CEOs.

The most narrow definition of CEO's includes only the person with the highest wage, which is interpreted as *the* CEO of the firm (CEO-I). However, many firms have a leadership by a group of CEOs. Therefore we also expand the definition of management to include vice-directors as defined by the top 5 in the wage distribution. Thus managers and potential managers are defined as:

- CEO-I: Executive director =  The person with the highest earning within the firm.
- CEO-II: Vice-directors  = The top 5 persons in the earnings distribution

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[1] See Smith, Smith and Verner (2008). This data set was constructed in order to analyse the potential effects on firm performance of female CEOs and female board members.

- Pot-CEO: Pool of potential managers = Employees outside top 5 earnings, but at the same time persons with qualifications and occupations which means they are at 'risk' for getting promoted as CEOs.[2]

Figure 1 shows the share of female directors, CEO I and CEO II. While the former has been relatively stable over the time-period, since the late 1990s the share of female Vice Directors has increased continuously.

*Figure 1. Share of female Executive directors (CEO I) and Vice-directors (CEO II), 1994-2003*
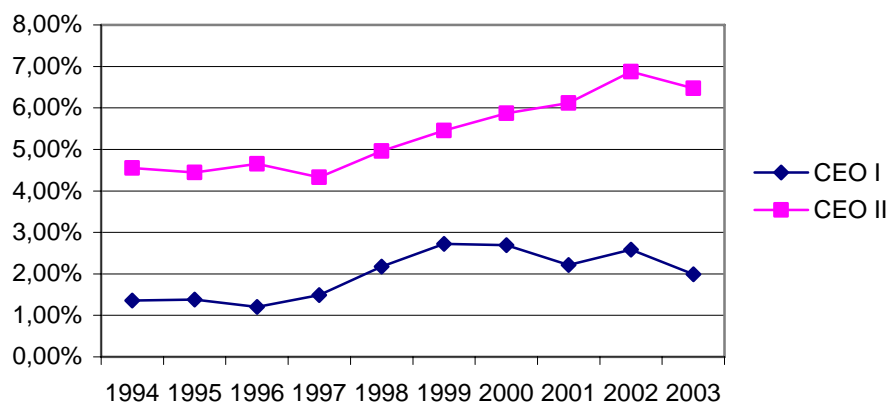


The selected employees, i.e. CEOs and potential CEOs are followed in the registers for the full period 1993-2003. This means that individuals are also included in the sample, before they become employed in one of the selected firms, and furthermore these persons are followed even if they leave the firms. Note that our sample consist of both firm information and information on individuals (managers and candidates for becoming promoted as a manager) as well as relevant information for the family situation of the individuals. This allows us to separate out firms/industry specific factors as well as individual/family specific factors. Table 1 gives means statistics of the variables used in the analysis

*Table 1. Sample descriptions*

|  | Mean | Std. Deviation |
|---|---|---|
| **Individual Characteristics** | | |
| Woman (0/1) | 0,218 | 0,413 |
| No education | 0,097 | 0,296 |
| High School | 0,064 | 0,244 |
| Vocational education | 0,373 | 0,484 |
| Short further education | 0,100 | 0,300 |
| Medium length education | 0,227 | 0,419 |

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[2] According to the occupational codes used by the Statistics Denmark 'DISCO-codes' CEO-I=Executive director. CEO-I and CEO-II=Vice-directors are DISCO code 1 persons. In accordance with that Pot-CEO=Potential managers, DISCO belongs to Disco code 2,3 and is above Disco code 4.

| | | |
|---|---|---|
| Long further education | 0,140 | 0,347 |
| Unemployed last year (0/1) | 0,031 | 0,174 |
| Work Experience | 19,031 | 9,344 |
| Partner (0/1) | 0,812 | 0,391 |
| Accumulated leave (days) | 3,507 | 31,093 |
| Accumulated leave (0/1) | 0,042 | 0,200 |
| No. Of children | 1,448 | 1,081 |
| Child aged 0-3 (0/1) | 0,153 | 0,360 |
| Child aged 4-10 (0/1) | 0,270 | 0,444 |
| Child aged 11-18 (0/1) | 0,219 | 0,414 |
| CEO | 0,000 | 0,022 |
| Top 1-5 | 0,012 | 0,107 |
| | | |
| **Firm Characteristics** | | |
| Female CEO in firm | 0,016 | 0,126 |
| Female in top 1-5 in firm | 0,037 | 0,189 |
| Woman in firm with a female CEO | 0,006 | 0,074 |
| Woman in firm with a female in top 1-5 | 0,012 | 0,110 |
| Manufacturing | 0,372 | 0,483 |
| Energy | 0,005 | 0,069 |
| Trade, hotels and restaurants | 0,035 | 0,185 |
| Transportation and telecommunication | 0,184 | 0,387 |
| Finance and other business service | 0,050 | 0,219 |
| | 0,354 | 0,478 |
| Ln(No. Of employees) | 6,580 | 1,478 |
| | | |
| **Spouse Characteristics** | | |
| Sp Work experience | 12,242 | 9,715 |
| No education | 0,135 | 0,341 |
| High School | 0,057 | 0,232 |
| Vocational education | 0,320 | 0,466 |
| Short education | 0,053 | 0,224 |
| Medium length education | 0,176 | 0,380 |
| Long further education | 0,072 | 0,258 |
| High level salaried worker | 0,174 | 0,363 |
| Low level salaried worker | 0,218 | 0,413 |
| Skilled worker | 0,223 | 0,416 |
| Unskilled worker | 0,038 | 0,191 |
| | | |
| N | 804593 | |

## 4. Empirical model

The models applied in this study are chosen in order to focus on the dynamic process by estimating the probability of becoming a top 5 manager. The simple approach most often used in the econometric literature is to model the promotion probabilities, by estimating probit or logit models. Hence, we estimate probit models of the probability of becoming promoted in a given year, from the pool of potentials to the top 5.

The model for the transition from the pool of potentials into top 5 is given as:

$$P(R_{it} = 1 \mid R_{it-1} = 0, X_{it-1}) = \Phi(\beta X_{it-1})$$

Where R denotes the rank of the individual (R=1 if top 5 manager an R=0 otherwise), $X_{it-1}$ is a matrix of individual specific covariates measured at time t-1, and $\Phi$ is the cumulative normal distribution. In order to be included in the estimations, individuals must be observed two subsequent years.

The explanatory variables (X) consist of standard human capital variables (education, work experience etc), demographic characteristics (age, marital status, children) and firm characteristics (firm size, industry codes). Furthermore, the individual information includes information on accumulated duration of previous parental leaves, which potentially may affect promotion probabilities differently for women and men.

In addition to individual characteristics, the unique nature of the register based information, allows us to include information on the spouses of the individuals. Hence, we can test whether the marital behaviour influence the individual careers. E.g. whether a high education or occupation of the spouse, increases or decreases the likelihood of promotion of the individual.

Another remarkable advantage of the dataset is that the gender of the CEO of the employing company of the individual is observed. Hence, we can identify, whether female CEOs are more likely to promote people, and eventually more likely to promote women, than their male counterparts in other companies.


5. Results

In Table 2 the marginal effects from the probit models are presented for women and men, respectively. In the lower part of the table, it can be seen that the "baseline" promotion probability for males is 0.010 and for women it is 0.002. Hence, before including the individual characteristics the likelihood of promotion for men is 5 times that of women. This (or part of this) can be interpreted as reflecting discrimination of women, but of cause it can also include unobservable factors that may differ systematically across gender.[3]

For both men and women the education variables have significant impact on the likelihood of promotion. Having a vocational or short further education decreases the likelihood op promotion, whereas having a long education increases the likelihood of promotion (compared to having upper secondary school as the highest education level). Note that having a long education increases the promotion probability significantly more for men than for women, which also seems to be in accordance with the theoretical discussion above. The marginal effect of having experienced

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[3] Note that according to the theoretical discussion the model specification includes all relevant explanatory variables, which suggest that the likelihood of unobservable factors that systematically varies across gender seems to be of minor importance.

unemployment in the previous year is negative for both women and men, however the size of the effect is substantially higher for men. Thus, in opposition to women unemployment has more severe consequences for men than women, probably because men are expected to have more straight careers.

The results for the family characteristics differ across gender. None of the included variables have a significant impact on the promotion probabilities of the women, which may be surprising. For males, having a partner (cohabiting or formally married) and having children increases the promotion probabilities significantly. This is in line with previous research on both promotion and wages, finding that family fathers tend to get positive returns to these characteristics. As expected the effect of having taken parental leave (0/1 variable), however is negative, i.e. taking parental leave may signal (especially for men) other preferences than aspirations for business career. Still, the duration effect is positive within the relevant range (up to 1300 days). But this influence may be due to selection, e.g. getting accept of longer periods of parental leave by the workplace is part the particular company's personal policy.

The fact that the family characteristics have no effects for women can be explained within the theory of statistical discrimination. In opposition to the case for males it is not the actual family characteristics and behaviour that affects promotion for women but the potential or expected family characteristics. Even though a particular potential female leader do not have any children she is worse off at the internal promotion market in her firm because decision makers except her to get them and ask for parental leave. Instead, the general level of the promotion probability is lower for *all* women.

The age profiles, for both males and females are inversely U-shaped with a declining probability of promotion in the relevant age interval. Age seems to matter more for men than women, which may be caused by the fact, that (the fewer) career oriented women are more visible in the business environment irrespective of age, whereas the males compete more directly with younger male potentials.

*Table 2. Estimation results. Probit models for promotion into top 5 positions*

| | Women | | Men | |
|---|---|---|---|---|
| | Marginal effect | Std. Dev. | Marginal effect | Std. Dev. |
| **Individual Characteristics** | | | | |
| High School | **0.0015** | **0.0006** | **0.0055** | **0.0008** |
| Vocational education | -0.0005 | 0.0003 | **-0.0009** | **0.0004** |
| Short further education | **-0.0006** | **0.0003** | **-0.0021** | **0.0005** |
| Medium length education | 0.0004 | 0.0004 | **0.0064** | **0.0006** |
| Long further education | **0.0017** | **0.0005** | **0.0109** | **0.0008** |
| Unemployed last year (0/1) | **-0.0008** | **0.0003** | **-0.0029** | **0.0006** |

| | | | | |
|---|---|---|---|---|
| Partner (0/1) | -0.0002 | 0.0004 | **0.0031** | **0.0004** |
| Accumulated leave (days) | 0.0000 | 0.0000 | **-0.0002** | **0.0001** |
| Accumulated leave -squared | 0.0000 | 0.0000 | **0.0000** | **0.0000** |
| Leave (0/1) | 0.0012 | 0.0016 | **-0.0020** | **0.0010** |
| No. Of children | -0.0001 | 0.0001 | **0.0015** | **0.0002** |
| Child aged 0-3 (0/1) | -0.0001 | 0.0003 | 0.0004 | 0.0004 |
| Child aged 4-10 (0/1) | -0.0001 | 0.0002 | 0.0004 | 0.0003 |
| Child aged 11-18 (0/1) | 0.0003 | 0.0003 | -0.0002 | 0.0003 |
| Age | **0.0004** | **0.0001** | **0.0022** | **0.0001** |
| Age Squared | **0.0000** | **0.0000** | **0.0000** | **0.0000** |
| **Firm Characteristics** | | | | |
| Female CEO in firm | **0.0040** | **0.0009** | 0.0016 | 0.0010 |
| Energy | - | - | -0.0079 | 0.0005 |
| Construction | **0.0054** | **0.0016** | **0.0033** | **0.0007** |
| Trade, hotels and restaurants | **0.0009** | **0.0003** | 0.0003 | 0.0003 |
| Transportation and telecommunication | **0.0016** | **0.0007** | **0.0016** | **0.0006** |
| Finance and other business service | **-0.0012** | **0.0002** | **-0.0046** | **0.0002** |
| ln(No. Of employees) | **-0.0018** | **-0.0001** | **-0.0072** | **0.0001** |
| **Spouse Characteristics** | | | | |
| High School | 0.0000 | 0.0005 | **0.0025** | **0.0007** |
| Vocational education | 0.0004 | 0.0004 | **0.0017** | **0.0004** |
| Short education | 0.0002 | 0.0005 | **0.0020** | **0.0006** |
| Medium length education | 0.0005 | 0.0005 | 0.0006 | 0.0005 |
| Long further education | 0.0008 | 0.0005 | 0.0012 | 0.0007 |
| High level salaried worker | **-0.0006** | **0.0003** | **-0.0017** | **0.0004** |
| Low level salaried worker | -0.0003 | 0.0003 | **-0.0015** | **0.0003** |
| Skilled worker | -0.0005 | 0.0003 | **-0.0021** | **0.0003** |
| Unskilled worker | -0.0001 | 0.0005 | **-0.0041** | **0.0005** |
| | | | | |
| Baseline (const) | 0.002 | | 0.010 | |
| Log likelihood | -4895 | | -47370 | |
| N | 174737 | | 629025 | |

*Note: Bold letters indicate significance at the 5% level. Year specific indicators are included in all models.*

As previously described, the unique nature of the data, allows us to identify the gender of the CEO in all the observed firms. Hence, we know whether the observed individuals work in a "women-led" firm and can test whether gender homo-social reproduction is present. The regression results point in direction i.e. shows that for women being employed in a women-led firm increases the probability of being promoted, which is not the case for men. Looking also at the size of the marginal effect (0.004), shows that it is a substantial increase in the promotion probability. This result is in line with what is found in Bell (2005)[4].

Another advantage of the data is that spouse characteristics can also be included in the regression. Generally we see that these have a very low explanatory power for women, whereas most come out significant for men. The general conclusion that can be drawn from these is that for males, having a

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[4] Furthermore, when the gender differences in top executive salaries are investigated, a substantial gain is found for women employed in women-led firms. This is also in line with the results in Bell (2005).

wife with a relatively short education tends to increase the likelihood of promotion, whereas a longer education has no significant effect. Generally, having a working wife decreases the promotion probability for males, whereas for women, it is only if the husband has a high level occupation that her promotion probability is decreased. Generally, this can be interpreted as evidence that the promotion likelihood of double working career families are lower (especially for men) and that women's opportunities for having a top-position decreases mainly if the husband has a relatively high position as well. Hence, the opportunities of individuals in double career families are less favourable and this can reflect that balancing work and family life in these families has some costs in terms of career prospects.

## 6. Interaction effects, firm size, female leadership and type of industry

Table 2 suggests the probability of promotion in the construction sector is higher for women than for men relatively to the manufacturing sector. The same is the case for trade, hotels and restaurants, but oppositely for finance, and other business service. However these results ignore that the average firm size may vary systematically across industries. Therefore interaction effects between firm size and industry are included in the model, see table 3. Focussing on finance and business service table 3 shows that for women as well as for men the probability of promotion increase by firm size. As expected the marginal effect is largest for men. However for other industries (trade, hotels, transportation and telecommunication) there are no significant gender specific differences caused by firm size effects, i.e. for the influence by firm size is positive which of cause reflects a relatively larger board turnover in large service companies.[5]

*Table 3. Interaction effects: firm size and industry*

|  | Women | | Men | |
|---|---|---|---|---|
|  | Marginal effect | Std. Dev. | Marginal effect | Std. Dev. |
| ln(No. Of employees) | **-0.0025** | **0.0003** | **-0.0079** | **0.0002** |
| Construction | 0.0414 | 0.0402 | **0.0103** | **0.0048** |
| Trade | **-0.0031** | **0.0004** | **-0.0056** | **0.0011** |
| Transportation | **-0.0022** | **0.0002** | **-0.0039** | **0.0017** |
| Finance | **-0.0066** | **0.0016** | **-0.112** | **0.0011** |
|  |  |  |  |  |
| **Interaction: industry*firm size** |  |  |  |  |
| Construction*firm size | -0.0009 | 0.0005 | -0.0008 | 0.0005 |
| Trade, hotels, rest.*firm size | **0.0012** | **0.0002** | **0.0013** | **0.0003** |
| Transport, communication*firm size | **0.0013** | **0.0003** | **0.0011** | **0.0004** |
| Finance, business service*firm size | **0.0009** | **0.0002** | **0.0014** | **0.0003** |
| N | 174737 |  | 629025 |  |

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[5] Experiments were also made with including interaction effects between industry and women-lead firms. However nearly all the parameters were insignificant.

Note: The basic model corresponds to the model in table 2.

The influence from women led firms may also vary across industries, i.e. the likelihood of being promoted in female dominated industries expectably should be higher if the top CEO is a women. However Experiments were also made with including interaction effects between industry and women-lead firms. However nearly all the parameters were nonsignificant.

## 6. Conclusion

Only 2-3% of the CEOs and less than 7% of the top 5 managers are women. Thus it seems relevant to ask why there are so few female managers? Some studies focus on the actual gender composition of the board of the firms but these kinds of analysis describe the actual gender distribution of the managers in a static way by ignoring the promotion processes into being a top manager. Therefore in this paper the process of becoming top executive officers (CEOs) in Danish private firms is analysed, i.e. whether there are lower chances for women than men to become promoted into top management jobs and whether firm specific factors or individual background characteristics plays a significant role.

By using a large data set covering the period 1993-2003, which includes more than 800.000 time-observations included we use a probit model for describing the transition from being in the pool of potentials to become a manager in the top 5 hierarchy in the group of CEOs.

The key findings in this article are that men have a factor 5 larger probability of becoming promoted to a top 5 job as compared to women. On the other hand, if the CEO is a woman, potential female candidates seem to have a significantly larger probability of becoming a top 5 manager, i.e. gender homo-social reproduction seems to be present within the promotion process.

Potential important individual factors like parental leave the number and age of the children and other family factors does not seem to be an important factor for the promotion opportunities for women (in contrast to men) but this may be due to statistical discrimination, i.e. the promotion probability for all women is lower than for men.

Finally males' career opportunities are declining if the wife is working, whereas the women's careers are affected only if their husbands have a high level occupation.

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