The Old Boy Network: Gender Differences in the Impact of Social Networks on Remuneration in Top Executive Jobs

Marie Lalanne*, Paul Seabright†

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Abstract

We investigate gender differences in the impact of social networks on earnings using a dataset of career histories of over 7,500 senior executives in the US and UK. Men's salaries are increasing in the number of currently influential individuals they have encountered in the past, while women's are not. These findings hold also for non-salaried remuneration. Individuals who are relatively central in the executive network thereby benefit, and women benefit from having networks composed of other women. In contrast to executives, non-executive board members do not display any gender difference in the effectiveness with which men and women leverage their links into remuneration. We explore mechanisms by which network effects matter for executives, and note that the firms which do most to integrate women into positions of executive power appear to rely less on networks for recruitment.

JEL codes: A14, J16, J31, J33
Keywords: social networks, gender wage gap, executive compensation

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1 Introduction

1.1 The puzzle: gender gaps in top executive positions

In spite of several decades of substantial increase in women's participation in the labor force in industrialized countries, the representation of women in senior corporate positions remains extremely marginal, and the phenomenon of the "glass ceiling" continues to puzzle researchers and lay commentators alike. Although women represent 51.4% of what the US Bureau of Labor Statistics calls "Management, professional and related occupations", in 2010 they made up only 15.7% of board members, and just 2.4% of chief executive officers, of Fortune 500 companies[1]. Apart from the underrepresentation of women at the very top, empirical studies have also shown that, even for those who reach the top, substantial gender differences in earnings still exist. Among the determinants of the gender gap in earnings in top corporate positions, various authors have proposed a gender difference in seniority and in career interruptions (Bertrand and Hallock, 2001; Noonan et al., 2006; Bertrand et al., 2010), a gender difference in the size of firms and their sector (Bertrand and Hallock, 2001; Skalpe, 2007), the existence of discrimination (Selody, 2010), the fact that women are less likely to hold the very top positions (Bertrand and Hallock, 2001; Elkinawy and Stater, 2011) or a gender difference in the structure of compensation (Albanesi and Olivetti, 2006; Yurtoglu and Zulehner, 2009; Kulich et al., 2009).

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[1]See Seabright, 2012, chapter 5. The figure of 51.4% is for 2009, the statistics on Fortune 500 companies are for 2010. In 2011 the proportion of women chief executives rose to 3.6%

1.2 A possible explanation: gender differences in the impact of social networks

Social networks and job-related benefits   One aspect that has not been sufficiently studied from the point of view of gender is the role of the elite network structure of the individuals holding top corporate positions. A person who sits on a company board may sit on several other boards and may be an executive in one (or several) of the corresponding firms (or may have been an executive at a previous time). Each such individual typically also has personal connections to board members in other companies. Recruitment to board positions often takes place through an informal process, typically involving the role of both professional headhunters and word of mouth recommendations. The pioneering work of Granovetter (1973) has highlighted the importance of social connections in obtaining both jobs and job-related advantages. Recruitment to board-level positions seems particularly likely to give value to such informal connections. According to Granovetter, the social connections that are the most valuable when looking for a job are not the closest ones but the more distant ones. Strong ties, such as close friends and relatives, are more likely to have similar information concerning job opportunities, while weak ties, such as acquaintances and coworkers, are more likely to move in different social circles and to have access to different information about job and other opportunities. It seems likely therefore, that the structure of social networks may affect the extent to which individuals may be able to use their connections for professional benefit. The value of such connections for individuals in top corporate positions has been confirmed empirically by a number of studies (Geletkancycz et al., 2001; Brown et al., 2008; Horton et al., 2009; Hwang and Kim, 2009; Engelberg et al., 2009; Liu, 2010; Renneboog and Zhao, 2011; Berardi and Seabright, 2011, Kramarz and Thesmar, 2011), though as far as we are aware ours is the first study to examine the impact of gender. As a result, if men and women differ in terms of the size or the composition of their networks (and particularly in terms of the relative importance of strong and weak ties), or in the way in which they use these networks for professional advancement, it seems plausible that

this may have a systematic impact on the gender composition of positions for which such networks are important in the recruitment process.

Gender differences in social networks The question whether men and women differ in the structure of their social networks has been investigated in the sociological and psychological literatures (Baumeister and Sommer, 1997; Benenson, 1993; Friebel and Seabright, 2011). However, there is little agreement about the extent of any systematic differences (see Seabright, 2012, chapter 7, for an overview). Scholars have also had difficulty distinguishing between the relative importance of gender differences in preferences, as opposed to difference in opportunities and constraints, for forming and using social connections (Moore, 1990; Fisher and Oliker, 1983). Nevertheless, there is suggestive evidence that women may tend to rely relatively more on small social networks of strong relationships, while men will tend to build larger groups with weaker types of relationship. This is consistent with evidence from primatology and evolutionary psychology, based on the hypothesis that coalitions reflect different reproductive strategies in prehistory (Low, 2000, chapter 11). However, even if the hypothesis that male and female networks differ systematically is empirically confirmed, this is compatible with other, cultural explanations for the origin of the divergence.

Gender differences in social networks within firms The idea that there might be gender differences in social network composition and use has received some support from the managerial literature. In the workplace, women's connections seem to be built in order to respond strategically to the different constraints they face, such as a legitimacy problem (Burt, 1998) or their underrepresentation in top positions (Ibarra, 1993, 1997). There is also evidence that preferences play a role, such as homophily (a preference for interacting with similar others, such as others of same sex - see McPherson and Smith-Lovin, 2001). It seems likely that homophily will compound the effect of female underrepresentation, leading women's networks to differ from

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males' ones. However, the crucial question is whether women reap different job-related benefits from their connections, or whether the differences from those of men are of little relevance to their career advancement.

Women's connections at the very top   Several studies based on interviews of top corporate individuals reveal that women appear lack the relevant informal connections to access top positions (Linehan and Scullion, 2008; Lyness and Thompson, 2000; Metz and Tharenou, 2001) and reap lower benefits in terms of career outcomes from their social networks (Bu and Roy, 2005; Tattersall and Keogh; Forret and Dougherty, 2004). However, studies in this literature mainly rely on surveys (and are thus inevitably subjective). The surveys are also of relatively few individuals, most of the time from a single organization. Our purpose in this paper is to investigate the influence of social networks for men and women in top corporate jobs from a statistical point of view using a substantially larger sample of individuals than has hitherto been possible.

1.3   Methodology, results and outline of the paper

In order to do so, our work is based on a large data set of more than 80 000 individuals working in high positions in almost 4 000 US and UK firms over a 12 year period (from 1997 to 2009). This original data set allows us to create social networks measures based on university ties, association ties and employment ties, contrary to the majority of studies on social networks which only rely on directorship links (Horton et al., 2009; Renneboog and Zhao, 2011). We want to understand whether individuals' links (the number of other individuals with whom they have previously been in contact) affect their career history.

We construct measures of the number of currently influential people each individual has encountered previously in his or her career, and we find ev-

idence that men and women make different use of links with such people. In particular, executive men leverage these links more effectively on average than women, in the sense that men's salaries are an increasing function of the number of such individuals they have encountered in the past while women's are not. These findings are robust to the use of salaried versus non-salaried remuneration. The proportion of other women among all links moderates the networking effect: women do benefit from links with other women. In contrast to executives, the salaries of non-executive board members do not display a significant gender wage gap, nor any gender difference in the relation of wages to links. This suggests that adoption of gender quotas for board membership, as has been enacted or proposed recently in several European countries, is unlikely to reduce the gender gap in earnings so long as such quotas do not distinguish between executive and non-executive board members.

The remainder of this paper is organized as follows. Section 2 provides information on the data set and the methodology used. Section 3 presents results, comparing executives and non-executives and investigating both what features of networks matter for the results and what mechanisms may be involved. Finally, Section 4 concludes.

2 Data and Methodology

2.1 Data Description

The analysis is based on an original dataset describing the career history of more than 80 000 executives and members of the non-executive board of US and UK companies between 1997 and 2009. The dataset was provided to us by BoardEx Ltd, a UK supplier of data to headhunting companies. BoardEx's own proprietary database (which we refer to hereafter as the "main" database) consists of information about some 380,000 individuals

who are current or past board members or senior executives of European and US companies. The database provided to us, however, consists of the subset of their main database for which salary data are available at least for some years between 1997 and 2009. For firms to be included in the BoardEx main database, they require a market capitalization above 1 million USD . There are roughly 4000 firms in our dataset, and for each firm we have information about all board members; for firms with fewer than five board members we have information on all board members plus the most highly salaried executives where salary information exists, up to a total of five individuals. The dataset contains information about individuals' demographic characteristics such as age, nationality and gender, about individuals' employment history such as earnings and position, about individuals' education characteristics such as degree obtained, field and university, and about firms' characteristics such as market capitalization, sector or number of employees.

The main originality of this data set is that we also have information relevant to individuals' social networks. However, it's important to clarify the characteristics of this information since they affect the inferences that can be drawn from our results. Ideally, in order to study the impact of top business people's social networks on their career, in terms of remuneration or promotion, we would like to have information on their active social contacts. Unfortunately, this kind of information is extremely difficult to obtain for significant numbers of individuals. Most studies of social networks in a business context (see Linehan and Scullion, 2008; Metz and Tharenou, 2001; Tattersall and Keogh, 2006; Forret and Dougherty, 2004) have conducted interviews and collected detailed information about a relatively small number of individuals and their active networks of contacts; these subjects are often employees of the same firm or users of the same professional network (which raises questions about selection). We do not have such data. Instead we have information, based on matching individuals' résumés, about which other members of the BoardEx main database a given individual has overlapped with in the course of his or her career. This is effectively a list of

"influential people" with whom any given individual has had an opportunity to interact; whether that interaction has been actively pursued is evidently not something we are in a position to observe. We can observe three categories of overlap: whether two individuals were at university at the same time, whether they worked for the same firm at the same time, and whether they have been involved in not-for-profit organizations at the same time. Definitions of our variables are given in Table 1 and summary statistics in Table 2 for the year 2007. In what follows we use the variable name "Links" to refer to the number of members of the BoardEx main database with whom an individual in our dataset has worked in the same firm at the same time. The main explanatory variable we shall use in the analysis that follows will be called "Weighted links" since we shall weight each link by the overlapping time during which two individuals worked together and the reciprocal of one plus the number of years since the two individuals worked together; when we do not use this weighting procedure we shall call our explanatory variable "Unweighted links". Notice that the links are not necessarily to other individuals in our dataset, which would arbitrarily restrict our measure of the size of individuals' networks by whether or not we have salary information about the members of that network.

Data on both salaries and links are frequently missing in our dataset. In particular, educational links and not-for-profit links are more often missing than employment links, so the regression results we report use only employment links. In addition we often find zero reported salaries for some years, and have difficulty knowing whether this means that the data are not available or that the individual concerned literally drew no salary in the year in question. Our main analysis is conducted on a subset of a little over 15000 individuals (the exact number varying according to specification) for whom all salary and employment network data are available in 2003 and 2007 and all salaries are strictly positive in 2007. We also explore the robustness of these findings on a larger sample of around 23,000 individuals for whom we have such data for those years or for one of the three previous years. Table

2 illustrates summary statistics for our sample compared to all individuals for whom we have observations for the variable in question. Our sample has a somewhat higher mean number of links and salary than the rest of the dataset, and a substantially lower proportion of women (8.65% as opposed to 12.71% in the whole dataset). While there is evidently a possibility of selection bias, including survivorship bias, we have no idea of its direction, and no reason to expect the bias to be different for men and women.

For our econometric estimations we use as explanatory variables measures of the overall numbers of links, our principal measure being a weighted sum of links in which each link is multiplied by the number of years two individuals overlapped and divided by the number of years since the individuals last overlapped plus one. However, a more complete understanding of the role of social networks on individuals' career, would involve computing more precise network measures such as degree (extent of interaction with other members of the whole network), betweenness (extent to which the individual is a key intermediary) and closeness (extend to which the individual is free from dependence on other members of the network), especially in terms of employment contacts. Studies that have used such measures include those reported in Geletkancycz et al. (2001), Liu (2010) and Renneboog and Zhao (2011). As we show in Table 10, closeness is indeed an important characteristic of networks in explaining executive compensation, though not one whose impact differs between men and women.

2.2   Independent and Control Variables

Our measures of individuals' career outcomes for the purposes of this paper are various indicators of remuneration. Individuals' earnings are represented by three components: salary (base annual pay in thousands of USD), liquid wealth (sum of the value of shares held and the intrinsic value of exercisable options in thousands of USD) and total wealth (sum of equity held,

estimated value of options held and long term incentive programs held in thousands of USD). For our main outcome regressions we focus on salary. More precisely, because individuals may have several jobs each year, we compute a variable "total salary", corresponding to the sum of salaries of all the jobs for each year for each individual. Total salary is the independent variable in the analysis, mainly because there are fewer ambiguities about its measurement. Nevertheless, we are also interested to know whether our findings are robust to the inclusion of non-salary measures of compensation. As we shall see, there are important differences between men and women in terms of the proportion of total remuneration provided via salary and other mechanisms, a finding that matches what has been reported previously in the literature (Albanesi and Olivetti, 2006; Yurtoglu and Zulehner, 2009; Kulich et al., 2009). As will be seen below, our conclusions are strengthened when the analysis is conducted on non-salary compensation measures.

As control variables, we use demographic variables (gender, age and age squared) and education variables (highest degree obtained and field of study). We describe below our estimation methods that attempt to control for unobserved heterogeneity among individuals.

3 Results

3.1 Descriptive Statistics

We report summary statistics and econometric results for two samples: first, those individuals for whom we have complete information for the year 2007 (the year that yields the largest number of individuals), and secondly, for all individuals for whom we have complete information for any of the years 2004-7, for their most recent complete year. The idea is to understand to what extent differences in individuals' links can explain differences in their

salaries, controlling for other explanatory variables. To avoid problems of reverse causality, the links are instrumented by the links lagged by four years. In the 2007 sample we restrict our analysis to the 15 094 individuals for whom we have complete salary and network data in 2003 and strictly positive salary in 2007. 8.65% of these individuals are women. 45.03% are executives and 78.07% held a directorship in 2007 (individuals may be executive board members, non-executive board members or executives who are not board members).

On average, women in the sample are younger than men (56 years old against 59 years old in 2007). They have similar educational background: 25% of women have a Bachelors degree, 38% have a Masters degree and 30% have a PhD; while the percentages for men are respectively 26%, 38% and 25%. Roughly 48% of men and 46% of women hold at least two degrees. The distribution of men's and women's degrees between business and science subjects are similar. Overall, the broad human capital of men and women does not seem very different among the individuals in our dataset. A slight educational difference in favor of women is offset by a difference in favor of men in terms of work experience: men have spent an average of just over 11.74 years in the organization as compared to 9.31 years for women. This is not more than would be expected, though, given the average difference in age.

Our measures of links reveal that women in 2007 have somewhat more of these on average than men - 238 links as against 197 for men (the same is true of the lagged values from 2003 we use in the regressions). This may be related to the fact that women tend to work in larger firms than men (a mean of 27 000 employees compared to a mean of 18 000 for men, and with a mean market capitalization almost 50% higher than that of the firms in which the men in our sample work)[2]. So women are clearly not at any

[2]The corresponding median figures are 6 900 employees for women as against 4 200 for

disadvantage in terms of their overall number of links. See the appendix for more detailed statistics on network measures by gender.

However, there are very striking differences in employment outcomes by gender. In terms of total salary (the sum of salaries from all jobs, where there was more than one), women earned on average $173,000 in 2007, while men earned on average $252,000 (the corresponding median earnings are $91,000 for women and $149,000 for men). Looking at Figure 1 we see that this difference in total salary narrows slightly but remains large over time. These earnings differences are even larger for liquid wealth and total wealth. In common with what has been previously found in the literature, women are less likely to hold executive positions, and very unlikely to hold senior positions such as CEO or Chairman of the Board. 4% of our women board members (already a small minority of the dataset) hold CEO positions as against 14% of the men.

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men, and $2.4 billion capitalization as against $1.5 billion for men.
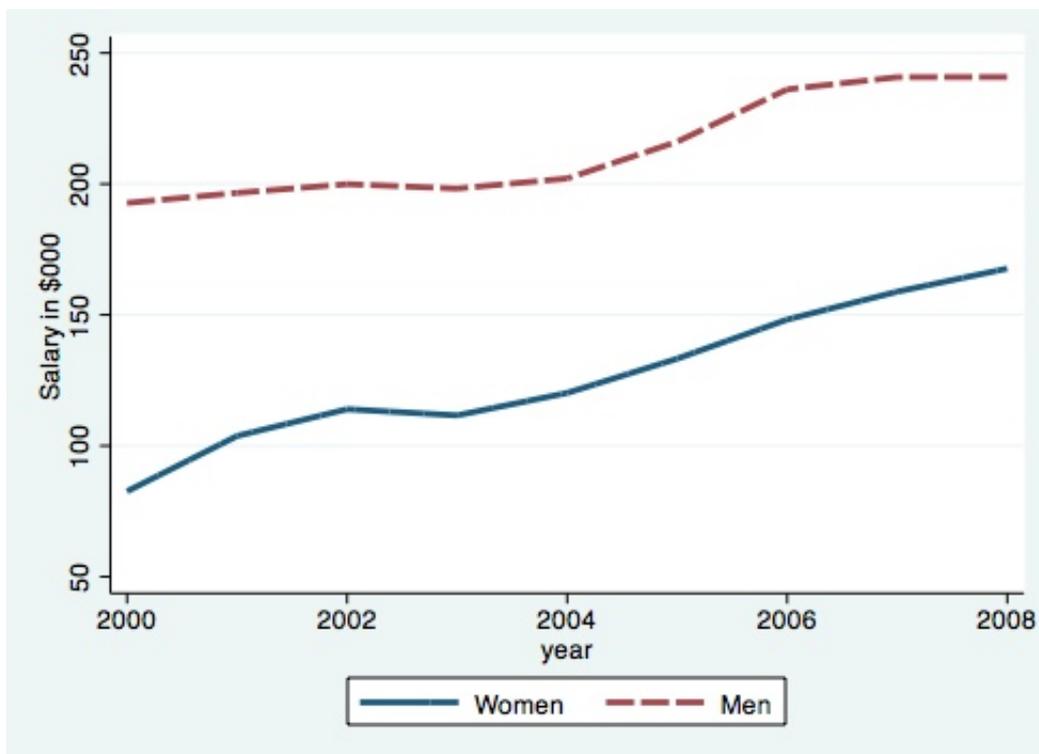
Figure 1: Total salary evolution by gender

Before we begin to explore the causes of this gender discrepancy, it's important to note that this level of aggregation hides a major difference between two types of individual in our data set: executives and non-executive board members. We now examine this difference in greater detail.

3.2 The Importance of Executive Status

Executives and non-executive directors are two very different populations among the senior employees of a company; they have very different roles within the company and also very different salaries. Non-executives typically work part-time and may often hold several directorships simultaneously. Although non-executive directors of one firm may hold executive positions in another, there is a substantial population (making up over 50% of our dataset in fact) of individuals who hold only non-executive positions. As Figure 2

reveals, they have much lower salaries on average than executives, and the gender gap looks very different for the two categories. Indeed, over the period 2000-8 the gender wage gap among non-executives diminishes and more or less disappears, while among executives it is large and remains so over the whole period[3].

Many more non-executives than executives are women. As Table 3 reveals, only 32% of women in our dataset in 2007 are executives while 46% of men are executives. Since non-executives earn only 22% as much on average as executives, it is essential to take into account the fact that part of the gender gap is a composition effect: women are more likely to be in the lower-paid category. We cannot, of course, determine using these data *why* women are more likely to be non-executives. It is possible that different preferences are involved, since non-executive positions typically involve much more flexible working conditions. It is also possible that discrimination is more significant in respect of executive positions, since it is here that real power is exercised in the firm.

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[3]It appears in Figure 2 as though the gender gap in earnings is declining over time for both executives and non-executives. Unfortunately it is difficult to test this rigorously since there are different numbers of individuals in different years due to missing observations. It is hard to know whether the apparent decline is a real effect or an artefact of sample composition (for instance because in later years firms are included that may have smaller gender gaps). We have tried plotting gender gaps for those individuals who are observed for all years over a given period, and it appears overall that there is a real decline in the gap for non-executives and no decline for executives. However, this is at the cost of substantially restricting the numbers of individuals, so we hesitate to generalize from these tentative findings.
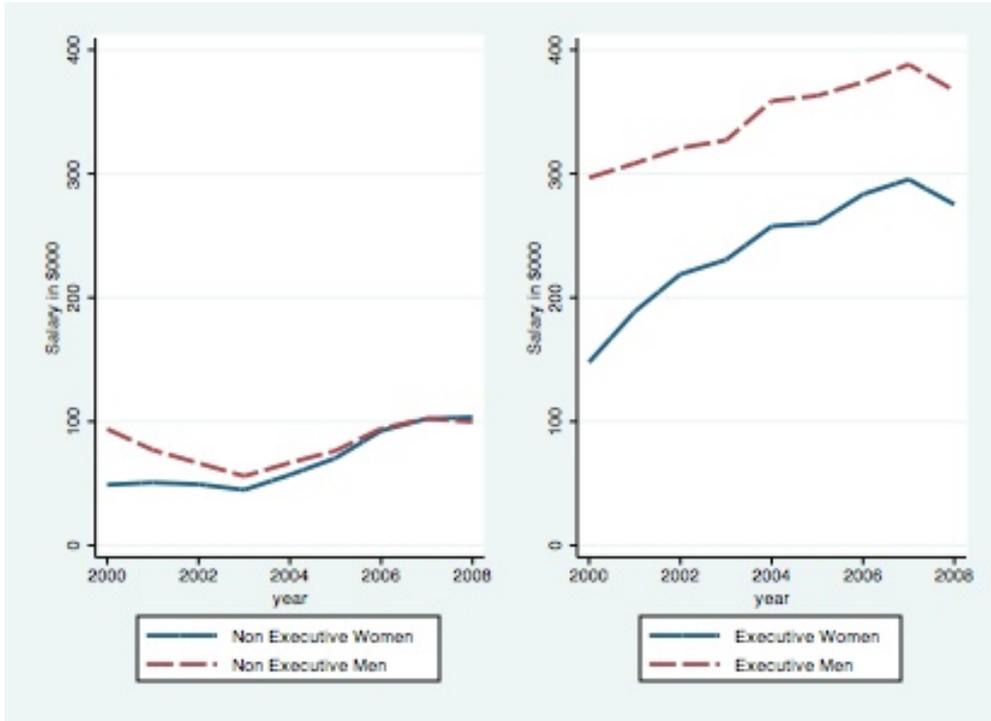
Figure 2: Total salary evolution by gender and executive status

The different nature of the gender wage gap for these two groups alerts us to the possibility that the determinants of wages may be different, and in particular that the influence of employment links on salaries might be very different for executives and non executives. If indeed they play a different role for men and women, it is among executives (where the real gender gap exists) that we should expect to find the evidence. Figure 3 provides a striking confirmation of this hypothesis. We have divided the sample of executive individuals first by gender and secondly according to their network size, with "Large Network" referring to those individuals who have weakly more than the median of the link distribution of all individuals in 2003, and "Small Network" referring to those who have strictly less than the median. For each group we plot the mean annual salary for each year from 2000 to 2008. First, for a given size of network, men always have higher salary than comparable women. Secondly, the size of networks makes much more difference to the salaries of men than to those of women. Women with large networks earn

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a little more than women with small networks, whereas men with large networks earn a lot more than men with small networks[4].
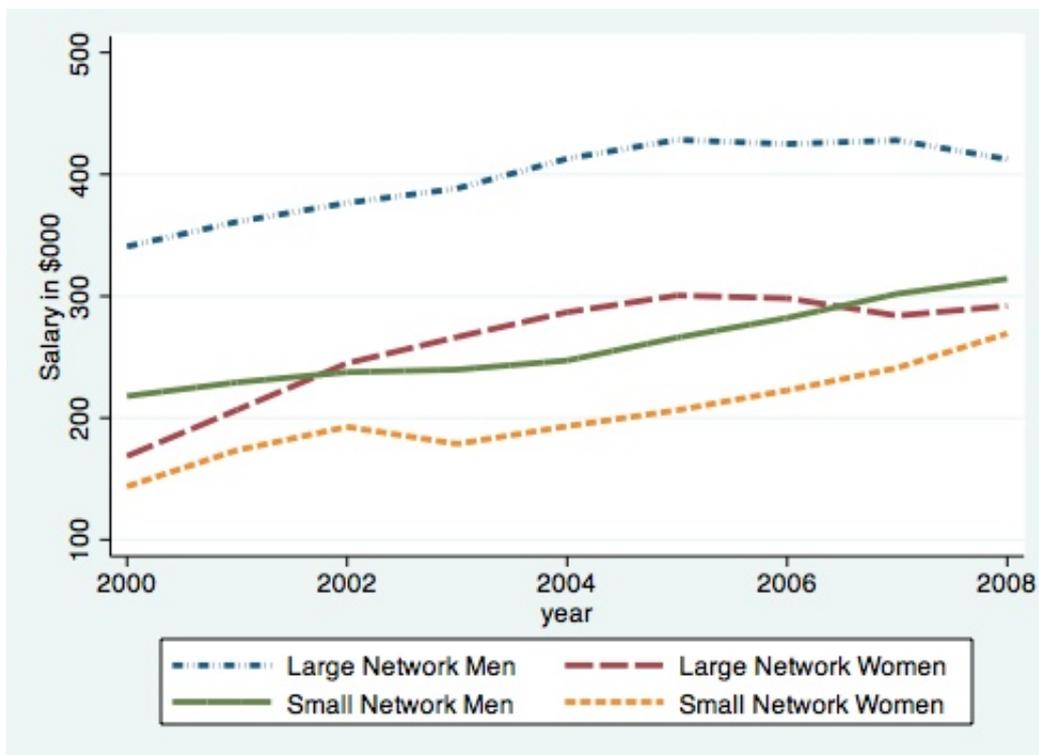
Figure 3: Salary evolution by network size and gender

We now examine whether this conjecture is corroborated by a more rigorous econometric analysis.

3.3 Impact of networks by gender for executives

We want to understand whether social networks have an impact on individuals' career outcomes. We focus initially on the year 2007, the year for which we have the largest sample of individuals with complete data. We focus also

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[4]In case these average salary figures are distorted by the presence of a few very large earners in the sample we have plotted the equivalent of Figure 3 (as well as Figures 4 and 5 below) using median earnings for each group. These are available from the authors on request and show qualitatively similar results.

on the impact of employment links on earnings, since we have more complete information about employment links than about other types. There is a risk of simultaneity bias because of reverse causality if we simply regress salaries on links in the current year. For example, while those individuals with more links in 2007 might as a result have higher salaries in 2007, it might also be true that individuals changing employment in pursuit of higher salaries in 2007 acquire a larger network of contacts in 2007. Instead of using employment links in 2007 as explanatory variables, we instrument them with their own lagged values in 2003.

Although our use of lagged links instead of current links should remove endogeneity problems due to reverse causality, we cannot rule out the possibility that there are unobserved characteristics of individuals that determine both the size of their networks and the size of their salary. Suppose, for instance, that job mobility is related to entrepreneurial dynamism: then individuals who accumulate more links through more frequent changes of job may also independently have the talent to earn higher salaries. There is no perfect way of dealing with this problem, which has not been fully resolved to our knowledge in previous studies of the impact of networks on labor market outcomes[5]. Our estimation strategy to deal with this problem, is to enter the lagged salary in 2003 as an independent control variable in the regression of salary in 2007, on the theory that the unobserved individual characteristics that affect salaries in 2007 will also have influenced salaries in 2007. There are disadvantages to this, which introduce possible biases. First, salaries in 2003 may already be influenced by individual networks, so using this as a control variable may remove too much of the influence of networks from the estimation, thereby biasing downward the coefficients. Secondly, even if

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[5]Of the papers that have recognized this difficulty, Hwang and Kim (2009) use past performance as a proxy for ability, which raises similar issues to our own procedure. Engelberg et al. (2009) use school and industry fixed-effects, but these are not equivalent to individual fixed-effects, and in any case would have little relevance to gender differences. Renneboog and Zhao (2011) use random effects estimation, which is unlikely to capture the unobserved talent differences we are concerned with here.

salaries in 2003 are related to unobserved characteristics, they contain sub-
stantial measurement error so they will be imperfect proxy variables. Third,
there may be separate dynamics of individual salaries over time (they might,
for instance, be mean-reverting because of idiosyncratic shocks), so using
lagged salary will not be able both to control for these dynamics and control
of unobserved individual heterogeneity. For this reason our procedure is best
seen as a diagnostic method rather than as a way of fully correcting for the
problem if it is important. We report specifications both with and without
controlling for lagged salaries in the results that follow; it will be seen that
the difference this makes to the estimated coefficient on links is very small,
and we conclude from this that any endogeneity bias due to omitted individ-
ual characteristics is likely also to be very small.

Table 4 reports, for executives only, regressions of total salary in 2007
on (instrumented) weighted links in 2003 plus a gender dummy and controls
for age, age squared, degree level and degree field (in fact, we use dummy
variables for bachelors, masters and PhD degrees and for the fields of busi-
ness, science, social science and finance). Our preference is for a specification
without sectoral or country controls, since these are likely to be endogenous
to individual choices and constitute part of the outcomes that we are seeking
to explain (if, for example, women earn lower salaries because they work for
firms in a certain sector we would like to know why they work for in relatively
low-paying sectors).

The model specification is then:

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\begin{aligned}
ln(salary_i) \;=\; & \beta_1 + \beta_2 ln(lagged\_salary_i) + \beta_3 ln(predicted\_links_i) + \beta_4 female_i \\
& + \; \beta_5 female_i * ln(predicted\_links_i) + \beta_6 age_i + \beta_7 age_i^2 + \beta_8 degree_i \\
& + \; \beta_9 degree\_field_i + \epsilon_i \qquad\qquad\qquad\qquad\qquad\qquad (1)
\end{aligned}
$$

The first column excludes lagged salary and the interaction of links with the gender dummy. The second column includes the lagged salary, while the third, our preferred specification, adds the lagged salary term and the interaction of links with the gender dummy. In all three specifications links are very significantly correlated with total salary.

The striking result of the specifications including the interaction term is that the coefficient is negative and equal in absolute magnitude to more than the uninteracted coefficient. The implication is that the impact of links on salary for executive women is thus negative.

Other compensation measures Liquid wealth is the sum of the value of shares held and the intrinsic value of exercisable options in thousands of USD. Total wealth is the sum of equity held, estimated value of options held and long term incentive programs held in thousands of USD. We consider here again the totals from all jobs held by individuals.

Figures 4 and 5 display the equivalents of Figure 3 for liquid and total wealth. Women with large networks are at essentially no advantage compared to women with small networks, and both are indistinguishable from men with small networks. For men with large networks, though, the advantage is huge.
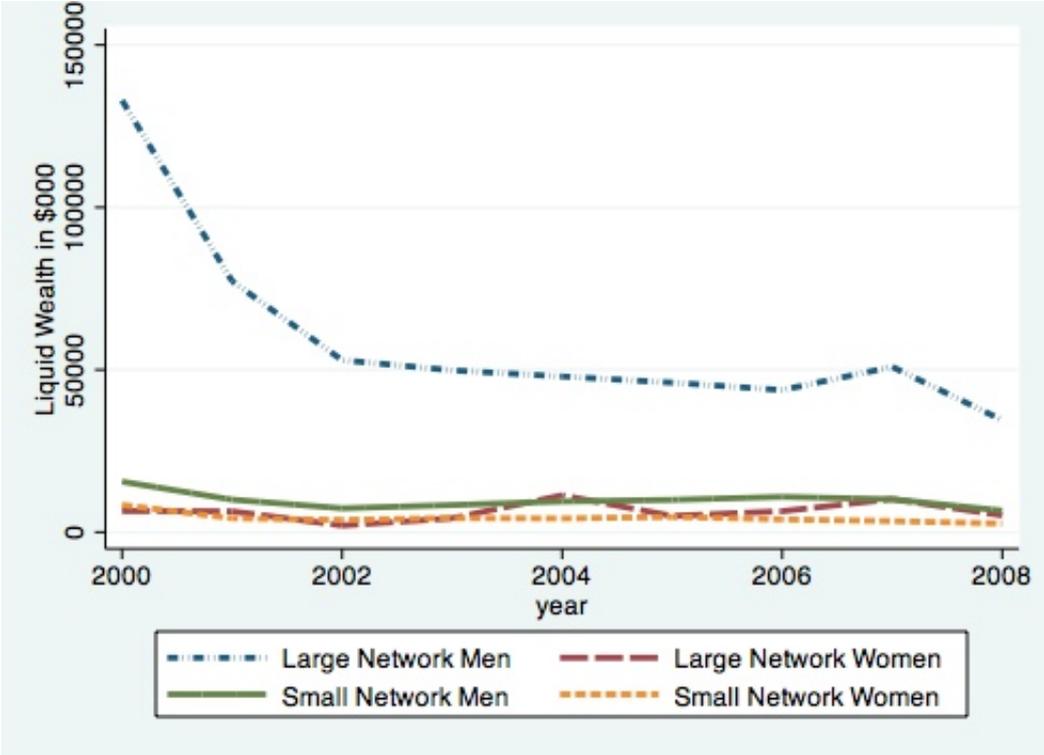
Figure 4: Liquid wealth evolution by network size and gender
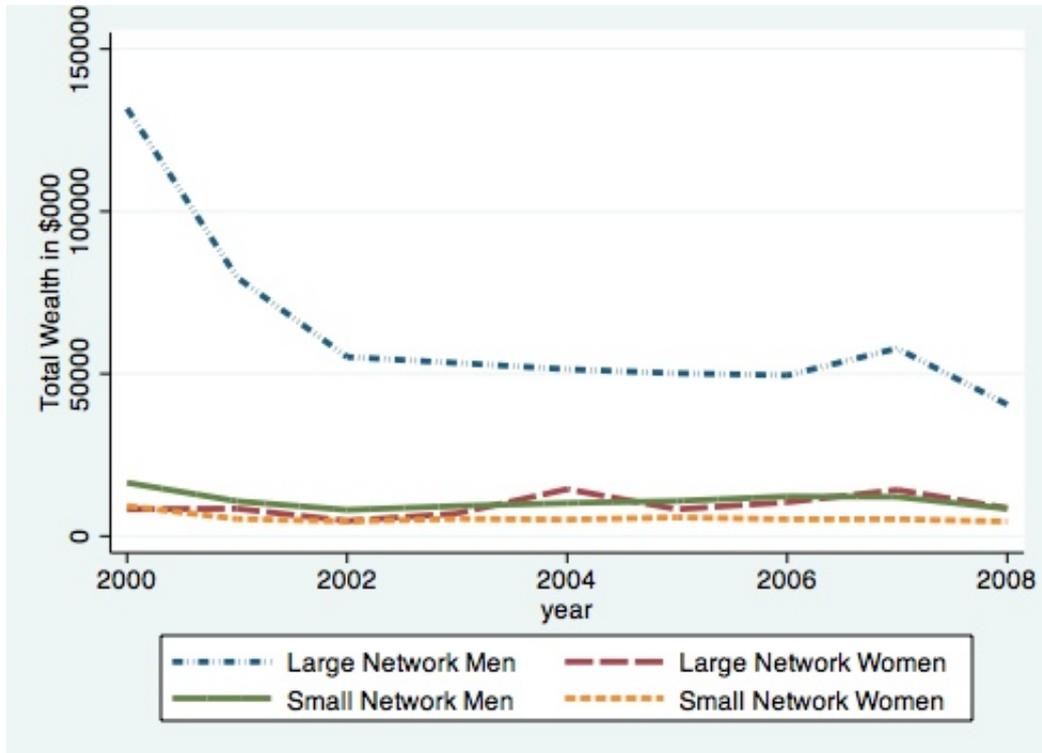
Figure 5: Total wealth evolution by network size and gender

Tables 5 and 6 test these findings econometrically; they show the equivalent of Table 4 for liquid and total wealth respectively. The regressions show that, for executive men, liquid wealth is even more highly responsive to links than are salaries, and total wealth even more responsive than liquid wealth; but the effect is considerably reduced for women. For executive men liquid wealth has an elasticity with respect to links of 54% while the coefficient on the interaction of the links variable with the gender dummy is -22.6%, but not significant. Total wealth has an elasticity of 62.5% for men, while the coefficient on the interaction of the links variable with the gender dummy is -33.5%, significant at 5%. So for both measures the impact of links on remuneration for executive women has a positive point estimate, but it is lower than the point estimate for men, significantly so in the case of total wealth.

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Pooled regression The findings we have shown are from 2007, the year for which we have the most data. Many individuals do not appear in the dataset in all years, either because of missing data or because their reported executive status changes. This therefore raises the question whether there is a systematic tendency across years that is masked by the variation in the coverage from year to year.

In order to answer this question we therefore report in Table 7 the coefficients from a pooled regression containing all observations that are available for any year. For each such individual we regress the salary in the year for which the most recent data are available on the salary lagged four years, and similarly instrument that individual's links in that year with their links lagged by four years. Year fixed effects are included to control for the fact that different individuals in the pooled regression may be included for different years. The findings indicate that men have a rather small average return on links (an elasticity of a little over 5%) while the coefficient on links interacted with the gender dummy is negative, more than enough to offset the impact for men, and significant at 5%. The second and third rows of Table 7 reveal the findings for liquid and total wealth; for male executives, links have a higher impact on non-salary remuneration than on salary. For female executives the effect is also positive but significantly lower than that for men (contrary to the 2007 sample, this difference is statistically significant for both non-salary remuneration measures).

One natural question is whether the effect of links is driven by either mobility or by the size of the board. In fact, the link variable is built such that one individual moving often or working in firms with larger boards or larger top management teams will have, by construction, a larger network. Table 8 reports the same specification as Table 7 but includes two extra variables

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to control for moving and board size. The findings indicate that including these two variables does not lower either the effect or the significance of the link variables.

3.4 Are non-executives different?

Tables 9 reports the same specification as Table 7 but for non-executives. Two features of the results stand out. First, even without taking different number of links into account, the gender dummy for non-executives is statistically insignificant. If there is a discrepancy between men and women in respect of salaries, it is concentrated among executives. Indeed, it seems possible that in the light of public discussion of gender imbalance in the boardroom, a number of firms may be actively recruiting and advancing women to non-executive positions, without doing so to anything like the same extent in respect of executive positions.

Secondly, the influence of links on salaries is somewhat more important for non-executives than for executives, with an estimated elasticity of 16.7%. Being a non-executive board member evidently requires and benefits from contacts to a somewhat greater extent than being an executive.

Overall, therefore, it seems as though the extent of individuals' networks makes a difference to their salaries in a way that is unaffected by gender among non-executives but among executives is beneficial only to men (consistently with the view that firms are making more efforts at recruitment and advancement of female board members in non-executive than in executive roles; see Daily et al.(1999) and Helfat et al.(2006)).

3.5 What features of networks matter?

One natural question is whether it makes a difference to what extent women have networks composed of other women. A number of studies have highlighted a positive impact of women in top positions on other women's positions and earnings (Bell, 2005; Cohen and Huffman, 2007; Cardoso and Winter-Ebmer, 2010), though they are not able to determine the mechanism by which such an impact occurs. It may be that women in top positions are mentoring and helping other women in lower positions).

Another important element that is likely to play a role is the structure of the network. We focus on one centrality measure called closeness which measures how close (in terms of number of links) an individual is from every other individual in the whole network. We believe that the larger the closeness measure, the more likely it will be rewarded in the individual's salary. Table 10 therefore reports, for executives, the same specification as column 1 of Table 7, but with the addition of a variable representing the ratio of women among each individual's links, measured separately for men and women, as well as the closeness measure.

The inclusion of these variables does not make much difference to the remaining coefficients (executive men's network opportunities still appear to benefit them while executive women's do not). Intriguingly, however, executives of either gender benefit from having women among their contacts. Women appear to benefit more than men from this effect and the magnitude of the effect is large, canceling out the negative effect of overall number of links. This may be further evidence of the mentoring and helping story. It may also be that individuals with more women among their links have for various reasons tended to work for firms that have a stronger team ethic and whose members are more likely to look after the interests of former colleagues. In the absence of further evidence this can only remain a conjecture. The sign of the coefficient on the closeness measure confirms our hypothesis; being close to the other individuals in the network increases the salary. And

it seems that there is no gender difference to that respect; both men and women benefit from closeness to others.

3.6   What are the mechanisms?

We now explore in more detail the effect of the sex ratio variable on salary. Is it having more women in your network or working for a female friendly firm (FFF) that matters? To answer this question, we build two new variables: a female friendly board variable measuring the percentage of women on the board, and a female friendly top management team variable measuring the percentage of women in the top management team. We include these two new variables in our main specification. Table 11 reports the same specification as column 1 of Table 7 but including first the female friendly board variable and secondly the female friendly top management team variable. Since these are evidently endogenous, we instrument each variable using its own lagged value. Table 12 reports the first stage regression results.

The results reveal a paradox: female-friendly firms also help men! More precisely, links help men to be recruited into so-called female friendly firms, which in turn boost their salary. However, for women, links help their recruitment into firms that have female friendly boards, but those firms do not boost women's salaries compared to other employers. Firms with female friendly top management teams do boost women's salaries, but links do not help women to be recruited into these kinds of firms. This seems to corroborate the "window dressing" theory of female non-executive appointments. It also suggests that there is a distinction between two broad types of firm: those that use more objective and systematic recruitment procedures, and those that use procedures based more on informal recruitment methods. The former are more likely to recruit on the basis of talent rather than connections, they are likely to pay more, and they are likely to employ more women

among their top management teams. It's good for women to be able to join these firms - but their connections are not particularly helpful to them in doing so.

4   Discussion and Conclusions

Using cross-section analysis and several robustness checks we have found substantial evidence that employment links matter for the remuneration of top executives and non-executive board members, in the sense that controlling for other factors, individuals who have overlapped professionally with a larger number of currently influential people have higher salaries and non-salary remuneration. We have further found evidence that this effect is very different for executives as compared to non-executive board members. For non-executives the impact of networks is large but there is no gender difference (and no apparent gender gap in remuneration). For executives, however, the effect of links is restricted to men. Broadly speaking, executive men in our sample do not have more links than women, but they manage to leverage the opportunities they do have into higher remuneration while women do not. Men's salaries are influenced by their links, with an elasticity lying between 5% and 10% according to specification, and their liquid and total wealth are influenced even more strongly, with elasticities of 54% for liquid wealth and 63% for total wealth. The effect of links on the remuneration of executive women, however, is significantly lower than that for men, and is statistically indistinguishable from zero as far as salaries are concerned (though positive for non-salary remuneration).

Two different types of phenomena might explain such results. First, there might exist gender differences in preferences for social contacts or for forms of interaction with those social contacts. For instance, as has previously been conjectured, women might be more inclined to build and rely on a few

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"strong ties", while men might have a preference for a large number of "weak ties". As a result, when considering career evolution, men will be aware of a larger number of job opportunities than comparable women and obtain better labor market outcomes (this is exactly the "strength of weak ties" hypothesis of Granovetter (1973)). Alternatively, even if the structure of men's and women's networks were the same, women might be less willing to approach their weak ties for help in seeking job opportunities (this would be a variant of the "women don't ask" hypothesis of Babcock and Laschever (2003)). Under either hypothesis men and women in similar initial position, and given similar numbers of opportunities to meet influential people, might end up with different current employment outcomes due to their different preferences. The second type of phenomenon might be exclusionary behavior on the part of men, whether consciously through a preference for not admitting women to positions of real power, or unconsciously as a side effect of the greater conspicuousness of other men among the networks of people that predominantly male recruiters turn to when seeking to fill such positions. Either way, old boy networks may exclude women, either through the explicit or implicit preferences of the women or the explicit or implicit preferences of the men.

We cannot conclude from these findings which of these two phenomena is more important in explaining our results. If the preferences of women were the sole explanation it would be hard to see why they should not apply to non-executive women as well, whereas we can clearly reject the hypothesis that non-executive men and women behave differently. But it does not follow that the preferences of men are therefore the sole cause. Much more likely is that the preferences and behaviors of women interact with those of men, and that men's networks are more likely to exclude women in respect of recruitment to positions of real power in the firm (there appears to be a deliberate "window-dressing" policy on the part of some firms, to appoint women to non-executive positions as a substitute for appointing them to executive jobs). If so this suggests that quota policies that fail to distinguish

between executive and non-executive positions may have little effect on the distribution of real power within firms. These suggestions remain conjectural, however, and are an important subject for further research.

5 Appendix

Table 1: Network variables

Variables	Description
Links-Employment	Number of employment contacts with whom the opportunity to link arose
Weighted Links-Employment	Links weighted by the reciprocal of one plus the number of years since the overlapping ended
Sex Ratio-Employment	Proportion of females contacts out of all male and female contacts
Average Job Level-Employment	Average job level for executive contacts
Std. Dev. Job Level-Employment	Standard deviation of job level for executive contacts
Higher Job Level Ratio -Employment	Proportion of higher job level executives out of all executive links
Higher Board Level Ratio -Employment	Proportion of higher board level board members out of all board members contacts
Executive Ratio-Employment	Proportion of executive contacts
Board Ratio-Employment	Proportion of board members contacts
Number of Colleagues -Employment	Number of current employment contacts
Links-Education	Number of education contacts with whom the opportunity to link arose
Number of Classmates-Education	Number of education contacts who graduated the same year in the same university for the same degree
Links-NFP	Number of non for profit organizations contacts with whom the opportunity to link arose

Table 2: Sample representativeness for 2007

Variables	Our sample		Whole dataset	
	Mean (Std. Dev.)	Obs.	Mean (Std. Dev.)	Obs.
Percentage women	8.65%	15 094	12.71%	87 501
Percentage executives	45.03%	15 069	69.56%	45 721
Percentage board members*	78.07%	15 069	44.16%	45 722
Age	58.34 (9.06)	15 094	54.59 (9.17)	87 732
Links*	200.48 (244.45)	15 094	131.78 (189.30)	81 872
Weighted links	329.85 (304.81)	15 094	184.28 (232.82)	81 872
Total salary	245.54 (280.11)	15 094	117.90 (218.35)	45 952
Total salary (excluding zero total salary)	245.54 (245.54)	15 094	227.80 (259.00)	23 783
Total liquid wealth*	17 494.51 (504 892.5)	15 094	8 402.96 (316 482.5)	45 952
Total liquid wealth* (excluding zero total (liquid wealth)	19 050.73 (526 843.8)	13 861	17 414.54 (455 439.4)	22 173
Total total wealth*	20 887.15 (505 665.9)	15 094	9 708.37 (316 836.2)	45 952
Total total wealth* (excluding zero total total wealth)	21 973.14 (518 622.9)	14 348	19 048.64 (443 610.6)	23 420
Number employees*	18 390.56 (59 989.67)	14 923	20 861.31 (69 296.31)	44 969
Market capitalization*	8 032.36 (24 323.65)	14 325	9 236.31 (27 408.67)	42 883

*not included in the main regressions (this is why the number of observations for our sample might differ)

Table 3: Gender by executive status in 2007

Gender	Non executives	Executives	Total
Men	7 392	6 373	13 765
	(53.70%)	(46.30%)	(91.35%)
Women	891	413	1 304
	(68.33%)	(31.67%)	(8.65%)
Total	8 283	6 786	15 069
	(54.97%)	(45.03%)	(100%)

Table 4: Determinants of salary in 2007 for executives

Variables	Coefficient (Std. Err.)	Coefficient (Std. Err.)	Coefficient (Std. Err.)
Ln salary (2003)		0.100***	0.100***
		(0.005)	(0.005)
Ln weighted links (2003)	0.099***	0.098***	0.106***
	(0.018)	(0.017)	(0.018)
Female*ln weighted links (2003)			-0.137**
			(0.068)
Female	-0.435***	-0.361***	0.388
	(0.045)	(0.044)	(0.373)
Intercept	-69.110***	-59.570***	-59.916***
	(5.905)	(5.754)	(5.754)
N	7 618	7 618	7 618
R^2	0.057	0.110	0.110

Significance levels : $*$: 10% $**$: 5% $***$: 1%

Control not reported: age, age squared, degree, degree field

Table 5: Determinants of liquid wealth in 2007 for executives

Variables	Coefficient (Std. Err.)	Coefficient (Std. Err.)	Coefficient (Std. Err.)
Ln liquid wealth (2003)		0.295***	0.295***
		(0.008)	(0.008)
Ln weighted links (2003)	0.710***	0.527***	0.540***
	(0.049)	(0.046)	(0.047)
Female*ln weighted links (2003)			-0.226
			(0.182)
Female	-0.856***	-0.571***	0.663
	(0.126)	(0.117)	(1.000)
Intercept	-32.055*	-37.422**	-37.931**
	(16.597)	(15.368)	(15.373)
N	7 618	7 618	7 618
R^2	0.059	0.193	0.193

Significance levels :   ∗ : 10%   ∗∗ : 5%   ∗ ∗ ∗ : 1%

Control not reported: age, age squared, degree, degree field

Table 6: Determinants of total wealth in 2007 for executives

Variables	Coefficient (Std. Err.)	Coefficient (Std. Err.)	Coefficient (Std. Err.)
Ln total wealth (2003)		0.197***	0.197***
		(0.007)	(0.007)
Ln weighted links (2003)	0.716***	0.606***	0.625***
	(0.043)	(0.041)	(0.042)
Female*ln weighted links (2003)			-0.335**
			(0.162)
Female	-0.824***	-0.613***	1.220
	(0.109)	(0.105)	(0.894)
Intercept	-63.065***	-58.766***	-59.565***
	(14.407)	(13.748)	(13.748)
N	7 618	7 618	7 618
R^2	0.075	0.158	0.159

Significance levels :   ∗ : 10%   ∗∗ : 5%   ∗ ∗ ∗ : 1%

Control not reported: age, age squared, degree, degree field

Table 7: Determinants of compensation for executives, pooled sample

Variables	Salary	Liquid Wealth	Total Wealth
Lagged compensation	0.091***	0.244***	0.168***
	(0.004)	(0.005)	(0.005)
Ln weighted links	0.051***	0.368***	0.538***
	(0.014)	(0.029)	(0.028)
Female*ln weighted links	-0.115**	-0.185*	-0.296***
	(0.051)	(0.101)	(0.097)
Female	0.328	0.569	1.124**
	(0.280)	(0.557)	(0.535)
Intercept	-66.038***	-2.345	-34.347***
	(4.509)	(9.033)	(8.706)
N	12 798	12 646	12 956
R^2	0.140	0.226	0.173

Significance levels : $*:10\%$ $**:5\%$ $***:1\%$

Control not reported: age, age squared, degree, degree field

Table 8: Impact of mobility and board-TMT size

	Salary	Salary	Salary
Lagged ln compensation	0.077***	0.069***	0.076***
	(0.005)	(0.004)	(0.005)
Ln weighted links	0.116***	0.079***	0.143***
	(0.018)	(0.022)	(0.024)
Female*ln weighted links	-0.157***	-0.170***	-0.156***
	(0.057)	(0.058)	(0.057)
Ln nb of moves	-0.187***		-0.196***
	(0.024)		(0.024)
Ln avg board size		-0.010	-0.029
		(0.019)	(0.019)
Female	0.545*	0.609*	0.537*
	(0.323)	(0.326)	(0.323)
N	9 470	9 470	9 470
R^2	0.149	0.130	0.151

Significance levels : $*:10\%$ $**:5\%$ $***:1\%$

Control not reported: age, age squared, degree, degree field

Table 9: Determinants of compensation for non executives, pooled sample

Variables	Salary	Liquid Wealth	Total Wealth
Lagged compensation	0.255***	0.392***	0.358***
	(0.006)	(0.006)	(0.006)
Ln weighted links	0.167***	0.248***	0.385***
	(0.012)	(0.027)	(0.026)
Female*ln weighted links	0.099***	0.004	0.035
	(0.036)	(0.078)	(0.077)
Female	-0.607***	-0.298	-0.402
	(0.209)	(0.459)	(0.454)
Intercept	-7.620*	61.115***	50.099***
	(4.268)	(9.725)	(9.385)
N	10 669	10 122	10 409
R^2	0.248	0.352	0.322

Significance levels : $*$: 10% $**$: 5% $***$: 1%

Control not reported: age, age squared, degree, degree field

Table 10: Impact of network composition and structure

	Salary	**Salary**	**Salary**
Lagged ln salary	0.091***	0.091***	0.091***
	(0.004)	(0.004)	(0.004)
Ln weighted links	0.037**	0.039***	0.026*
	(0.015)	(0.014)	(0.015)
Female*ln weighted links	-0.130**	-0.108**	-0.125**
	(0.052)	(0.051)	(0.052)
Sex ratio	0.622***		0.586***
	(0.159)		(0.159)
Female*sex ratio	1.118**		1.171**
	(0.509)		(0.509)
Closeness		93.874***	92.202***
		(22.114)	(22.110)
Female*closeness		-4.837	-5.068
		(3.774)	(3.776)
Female	0.235	0.373	0.282
	(0.280)	(0.281)	(0.281)
N	12 798	12 798	12 798
R^2	0.141	0.140	0.141

Significance levels : $\quad *: 10\% \quad **: 5\% \quad ***: 1\%$

Control not reported: age, age squared, degree, degree field

Table 11: Impact of female friendly firms

	Salary	**Salary**
Lagged ln compensation	0.092***	0.096***
	(0.004)	(0.004)
Ln weighted links	0.013	0.039***
	(0.016)	(0.015)
Female*ln weighted links	-0.071	-0.096*
	(0.053)	(0.053)
Female friendly board	1.014***	
	(0.174)	
Female*female friendly board	-1.303**	
	(0.601)	
Female friendly TMT		0.396**
		(0.178)
Female*female friendly TMT		0.140
		(0.691)
N	12 684	12 688
R^2	0.148	0.143

Significance levels : $*$: 10% $**$: 5% $***$: 1%

Control not reported: age, age squared, degree, degree field

Table 12: Impact of female friendly firms, first stage regressions

	Female friendly board	Female friendly TMT
Lagged ln weighted links	0.011***	0.011***
	(0.001)	(0.001)
Female*lagged ln weighted links	-0.001	-0.017***
	(0.003)	(0.004)
Lagged female friendly board	0.599***	
	(0.008)	
Female*lagged female friendly board	-0.062**	
	(0.026)	
Lagged female friendly TMT		0.489***
		(0.009)
Female*lagged female friendly TMT		-0.088***
		(0.029)
N	12 684	12 688
R^2	0.390	0.286

Significance levels : $*: 10\%$ $**: 5\%$ $***: 1\%$

Control not reported: age, age squared, degree, degree field

Table 13: Human capital characteristics by gender for 2007

Variables	Women			Men		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Age	55.83	7.74	1 302	58.59	9.14	13 757
Degree level: BA (percentage)	24.52%	-	1 101	26.45%	-	11 010
Degree level: MA (percentage)	37.60%	-	1 101	38.15%	-	11 010
Degree level: PhD (percentage)	29.79%	-	1 101	24.79%	-	11 010
Number of degrees	2.24	1.00	1 117	2.08	0.93	11 119
Degree speciality: Science (percentage)	1.52%	-	1 117	2.14%	-	11 119
Degree speciality: Social science (percentage)	15.49%	-	1 117	11.74%	-	11 119
Degree speciality: Business (percentage)	26.41%	-	1 117	30.45%	-	11 119
Degree speciality: Finance (percentage)	4.30%	-	1 117	6.52%	-	11 119

Table 14: Network characteristics by gender for 2007

Variables	Women			Men		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Links - Employment	238.39	258.49	1 305	196.89	242.79	13 789
Mean overlap - Employment	4.67	1.71	1 305	4.89	1.94	13 789
Mean oldness - Employment	5.40	3.92	1 305	5.95	4.55	13 789
Weighted links - Employment	402.31	369.82	1 305	322.99	297.03	13 789
Sex ratio - Employment	0.14	0.07	1 240	0.11	0.07	12 690
Executive ratio - Employment	0.82	0.10	1 305	0.80	0.11	13 770
Board ratio - Employment	0.37	0.15	1 305	0.41	0.16	13 789
Number of colleagues - Employment	63.68	55.77	1 305	49.24	47.06	13 789
Closeness - Employment	$9.498.10^{-3}$	$0.031.10^{-3}$	1 305	$9.483.10^{-3}$	$0.244.10^{-3}$	13 789
Betweenness - Employment	$0.104.10^{-3}$	$0.190.10^{-3}$	1 305	$0.073.10^{-3}$	$0.150.10^{-3}$	13 789
Eigenvector - Employment	0.015	0.082	1 305	0.010	0.071	13 789
Eigenvector Position - Employment	0.126	0.127	1 305	0.095	0.107	13 789
Links - Education	60.98	64.77	933	52.31	55.98	8 539
Number of classmates - Education	4.67	6.21	933	4.42	6.05	8 539

Table 15: Job characteristics by gender for 2007

Variables	Women				Men			
	Median	Mean	Std. Dev.	N	Median	Mean	Std. Dev.	N
Total salary (in thousands USD)	91.36	172.80	200.69	1 305	149.49	252.42	285.54	13 789
Total liquid wealth (in thousands USD)	352.14	9 371.18	153 279.9	1 305	685.17	18 263.31	526 131.9	13 789
Total total wealth (in thousands USD)	711.75	11 140.67	153 478.5	1 305	1 425.16	21 809.56	526 936	13 789
Executive status (percentage)	-	31.67%	-	1 304	-	46.30%	-	13 765
Board status (percentage)	-	79.68%	-	1 304	-	77.92%	-	13 765
Years in Organization	7.6	9.31	6.89	1 304	9.3	11.74	8.76	13 765
Years in Role	5.3	6.69	5.36	1 304	5.3	6.79	6.00	13 765
Years on Board	6.5	8.16	6.11	1 054	7.9	10.02	7.77	10 930
Number of moves*	7	8.20	5.98	3 630	6	7.53	5.39	34 093
Job level: CEO (percentage)	-	4.29%	-	1 304	-	13.55%	-	13 765
Job level: CFO (percentage)	-	5.37%	-	1 304	-	6.66%	-	13 765
Job level: Chairman (percentage)	-	1.53%	-	1304	-	7.57%	-	13 765
Job level: Board Director(percentage)	-	66.03%	-	1 304	-	45.58%	-	13 765
Job level: Director (percentage)	-	4.98%	-	1 304	-	6.57%	-	13 765
Job level: Vice President (percentage)	-	9.66%	-	1 304	-	9.75%	-	13 765
Job function: Board (percentage)	-	68.33%	-	1 304	-	53.06%	-	13 765
Job function: Finance (percentage)	-	7.36%	-	1 304	-	9.79%	-	13 765
Job function: Law (percentage)	-	4.37%	-	1 304	-	2.78%	-	13 765
Job function: Operations (percentage)	-	1.76%	-	1 304	-	4.44%	-	13 765
Job function: Sales (percentage)	-	3.53%	-	1 304	-	2.97%	-	13 765

* from beginning of career until 2007

Table 16: Firm characteristics by gender for 2007

Variables	Women				Men			
	Median	Mean	Std. Dev.	N	Median	Mean	Std. Dev.	N
Number of Employees	6 921	26 647.56	72 779.41	1 291	4 159	17 608.59	58 576.9	13 632
Market Capitalization	2 395	12 087.67	32 853.29	1 250	1 526	7 644.67	23 310.32	13 075
Number of members on board	11	10.80	2.78	4 046	10	10.02	2.85	38 463
Female friendly board	0.18	0.19	0.09	4 046	0.10	0.11	0.09	38 463
Number of members in tmt	15	16.38	8.22	4 046	13	14.39	7.87	38 463
Female friendly tmt	0.17	0.18	0.12	4 046	0.12	0.13	0.11	38 463
Sector: Finance (percentage)	-	18.71%	-	1 304	-	15.88%	-	13 765
Sector: Manufacturing (percentage)	-	26.23%	-	1 304	-	28.14%	-	13 765
Sector: Information (percentage)	-	11.50%	-	1 304	-	11.08%	-	13 765
Sector: Trade (percentage)	-	9.05%	-	1 304	-	6.10%	-	13 765
Sector: Services (percentage)	-	6.44%	-	1 304	-	7.13%	-	13 765

Table 17: Human capital characteristics by executive status for 2007

Variables	Executives			Non executives		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Age	53.36	7.58	6 759	62.43	8.09	8 275
Degree level: BA (percentage)	27.14%	-	5 244	25.63%	-	6 851
Degree level: MA (percentage)	37.34%	-	5 244	38.64%	-	6 851
Degree level: PhD (percentage)	21.55%	-	5 244	28.08%	-	6 851
Number of degrees	1.98	0.82	5 296	2.18	1.00	6 924
Degree speciality: Science (percentage)	1.81%	-	5 296	2.28%	-	6 924
Degree speciality: Social science (percentage)	11.67%	-	5 296	12.42%	-	6 924
Degree speciality: Business (percentage)	31.31%	-	5 296	29.15%	-	6 924
Degree speciality: Finance (percentage)	8.63%	-	5 296	4.55%	-	6 924

Table 18: Network characteristics by executive status for 2007

Variables	Executives			Non executives		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Links - Employment	156.99	197.44	6 786	236.30	272.16	8 283
Mean overlap- Employment	4.96	2.08	6 786	4.79	1.78	8 283
Mean oldness - Employment	5.81	4.54	6 786	5.97	4.46	8 283
Weighted links - Employment	257.25	221.85	6 786	389.80	347.84	8 283
Sex ratio - Employment	0.11	0.07	6 472	0.12	0.06	7 435
Executive ratio - Employment	0.79	0.12	6 781	0.81	0.10	8 269
Board ratio - Employment	0.41	0.17	6 786	0.40	0.15	8 283
Number of colleagues - Employment	38.98	35.90	6 786	59.99	54.31	8 283
Closeness - Employment	$9.476.10^{-3}$	$0.283.10^{-3}$	6 786	$9.491.10^{-3}$	$0.183.10^{-3}$	8 283
Betweenness - Employment	$0.041.10^{-3}$	$0.091.10^{-3}$	6 786	$0.104.10^{-3}$	$0.186.10^{-3}$	8 283
Eigenvector - Employment	0.008	0.061	6 786	0.013	0.080	8 283
Eigenvector Position - Employment	0.078	0.091	6 786	0.115	0.120	8 283
Links - Education	50.16	51.44	3 836	55.19	60.37	5 624
Number of classmates - Education	4.07	5.39	3 836	4.70	6.47	5 624

Table 19: Job characteristics by executive status for 2007

Variables	Executives				Non executives			
	Median	Mean	Std. Dev.	N	Median	Mean	Std. Dev.	N
Total salary (in thousands USD)	357.12	430.15	305.40	6 786	59.80	94.41	125.25	8 283
Total liquid wealth (in thousands USD)	2 022.71	26 476.67	685 281.5	6 786	285.70	10 181.1	282 327.1	8 283
Total total wealth (in thousands USD)	5 227.24	33 370.55	686 378.2	6 786	431.87	10 707.66	282 468.1	8 283
Years in Organization	10.5	13.29	9.20	6 786	7.9	10.09	7.86	8 283
Years in Role	4.6	5.62	5.23	6 786	6	7.74	6.32	8 283
Years on Board	7.8	9.99	8.31	3 715	7.8	9.80	7.34	8 269
Number of moves*	4	5.09	4.11	14 018	8	9.07	5.61	23 673

* from beginning of career until 2007

Table 20: Firm characteristics by executive status for 2007

Variables	Executives				Non executives			
	Median	Mean	Std. Dev.	N	Median	Mean	Std. Dev.	N
Number of Employees	4 200	17 995.59	64 586.32	6 727	4 560	18 714.73	55 937.3	8 196
Market Capitalization	1 507	7 453.89	22 885.84	6 466	1 645	8 508.31	25 437.35	7 859
Number of members on board	10	10.03	2.79	15 878	10	10.13	2.88	26 631
Female friendly board	0.11	0.11	0.09	15 878	0.11	0.11	0.09	26 631
Number of members in tmt	14	14.65	7.84	15 878	14	14.54	7.97	26 631
Female friendly tmt	0.12	0.13	0.11	15 878	0.13	0.13	0.11	26 631
Sector: Finance (percentage)	-	14.63%	-	6 786	-	17.35%	-	8 283
Sector: Manufacturing (percentage)	-	28.38%	-	6 786	-	27.63%	-	8 283
Sector: Information (percentage)	-	11.54%	-	6 786	-	10.77%	-	8 283

Table 21: Human capital characteristics by gender and executive status for 2007

Variables	Women			Men		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Executives						
Age	51.25	6.79	411	53.50	7.61	6 348
Degree level: BA (percentage)	30.37%	-	326	26.92%	-	4 918
Degree level: MA (percentage)	31.60%	-	326	37.37%	-	4 198
Degree level: PhD (percentage)	23.93%	-	326	21.39%	-	4 918
Number of degrees	1.99	0.84	329	1.98	0.82	4 967
Degree speciality: Science (percentage)	1.82%	-	329	1.81%	-	4 967
Degree speciality: Social science (percentage)	18.24%	-	329	11.23%	-	4 967
Degree speciality: Business (percentage)	28.27%	-	329	31.51%	-	4 967
Degree speciality: Finance (percentage)	7.90%	-	329	8.68%	-	4 967
Non executives						
Age	57.95	7.22	890	62.97	8.02	7 385
Degree level: BA (percentage)	22.06%	-	775	26.09%	-	6 076
Degree level: MA (percentage)	40.13%	-	775	38.45%	-	6 076
Degree level: PhD (percentage)	32.26%	-	775	27.55%	-	6 076
Number of degrees	2.35	1.05	788	2.16	1.00	6 136
Degree speciality: Science (percentage)	1.40%	-	788	2.40%	-	6 136
Degree speciality: Social science (percentage)	14.34%	-	788	12.17%	-	6 136
Degree speciality: Business (percentage)	25.63%	-	788	29.60%	-	6 136
Degree speciality: Finance (percentage)	2.79%	-	788	4.78%	-	6 136

Table 22: Network characteristics by gender and executive status for 2007

Variables	Women			Men		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Executives						
Links - Employment	198.82	243.63	413	154.28	193.78	6 373
Mean overlap - Employment	4.88	1.88	413	4.96	2.09	6 373
Mean oldness - Employment	5.52	4.07	413	5.83	4.57	6 373
Weighted links - Employment	298.28	278.40	413	254.59	217.44	6 373
Sex ratio - Employment	0.15	0.08	392	0.11	0.07	6 080
Executive ratio - Employment	0.82	0.11	413	0.79	0.12	6 368
Board ratio - Employment	0.38	0.16	413	0.41	0.18	6 373
Number of colleagues - Employment	45.20	43.66	413	38.58	35.30	6 373
Links - Education	47.49	49.57	253	50.35	51.57	3 583
Number of classmates - Education	3.69	5.24	253	4.10	5.40	3 583
Non executives						
Links - Employment	256.84	263.33	891	233.83	273.11	7 392
Mean overlap - Employment	4.58	1.62	891	4.82	1.80	7 392
Mean oldness - Employment	5.34	3.85	891	6.04	4.52	7 392
Weighted links - Employment	450.67	396.39	891	382.46	340.82	7 392
Sex ratio - Employment	0.14	0.06	847	0.11	0.06	6 588
Executive ratio - Employment	0.82	0.09	891	0.81	0.10	7 378
Board ratio - Employment	0.37	0.15	891	0.41	0.16	7 392
Number of colleagues - Employment	72.29	58.66	891	58.51	53.57	7 392
Links - Education	66.00	68.94	680	53.70	58.95	4 944
Number of classmates - Education	5.03	6.50	680	4.65	6.47	4 944

Table 23: Job characteristics by gender and executive status for 2007

Variables	Women				Men			
	Median	Mean	Std. Dev.	N	Median	Mean	Std. Dev.	N
Executives								
Total salary (in thousands USD)	303.97	363.00	251.24	413	361.27	434.50	308.09	6 373
Total liquid wealth (in thousands USD)	1 386.96	8 574.79	52 820.21	413	2 082.92	27 636.79	706 997.8	6 373
Total total wealth (in thousands USD)	3 528.01	13 490.89	54 641.21	413	5 336.87	34 658.84	708 117.2	6 373
Years in Organization	9.8	11.90	7.96	413	10.6	13.37	9.27	6 373
Years in Role	4.3	5.29	5.00	413	4.6	5.65	5.24	6 373
Years on Board	7	9.17	7.83	163	7.8	10.03	8.33	3 552
Number of moves*	4	5.25	3.62	882	4	5.08	4.15	13 136
Non executives								
Total salary (in thousands USD)	62.29	84.79	72.33	891	58.97	95.57	130.14	7 392
Total liquid wealth (in thousands USD)	210.95	9 750.85	182 021.1	891	300.65	10 232.96	292 109.5	7 392
Total total wealth (in thousands USD)	397.82	10 063.79	182 008.4	891	438.095	10 785.27	292 263.2	7 392
Years in Organization	6.5	8.11	5.96	891	8.1	10.33	8.02	7 392
Years in Role	5.9	7.35	5.40	891	6	7.78	6.42	7 392
Years on Board	6.4	7.98	5.73	891	8	10.01	7.48	7 378
Number of moves*	8	9.14	6.27	2 748	8	9.07	5.51	20 925

* from beginning of career until 2007

Table 24: Firm characteristics by gender and executive status for 2007

Variables	Women				Men			
	Median	Mean	Std. Dev.	N	Median	Mean	Std. Dev.	N
Executives								
Number of Employees	5 179	20 877.82	44 556.89	411	4 110	17 808.04	65 676.54	6 316
Market Capitalization	1 537.5	8 721.10	26 953.24	394	1 495.5	7 371.66	22 596.78	6 072
Number of members on board	10	10.42	2.90	994	10	10.00	2.78	14 884
Female friendly board	0.15	0.18	0.10	994	0.11	0.11	0.09	14 884
Number of members in tmt	15	16.25	10.06	994	13	14.54	7.66	14 884
Female friendly tmt	0.25	0.25	0.11	994	0.11	0.12	0.11	14 884
Sector: Finance (percentage)	-	15.50%	-	413	-	14.58%	-	6 373
Sector: Manufacturing (percentage)	-	22.76%	-	413	-	28.75%	-	6 373
Sector: Information (percentage)	-	15.50%	-	413	-	11.28%	-	6 373
Sector: Trade (percentage)	-	13.56%	-	413	-	6.34%	-	6 373
Sector: Services (percentage)	-	7.26%	-	413	-	7.31%	-	6 373
Non executives								
Number of Employees	8 298.5	29 342.29	82 611.49	880	4 200	17 436.4	51 673.01	7 316
Market Capitalization	2 842	13 637.24	35 144.93	856	1 558	7 881.38	23 910.87	7 003
Number of members on board	11	10.92	2.73	3 052	10	10.03	2.89	23 579
Female friendly board	0.18	0.19	0.08	3 052	0.10	0.10	0.09	23 579
Number of members in tmt	15	16.42	7.52	3 052	13	14.29	7.99	23 579
Female friendly tmt	0.15	0.16	0.11	3 052	0.12	0.13	0.11	23 579
Sector: Finance (percentage)	-	20.20%	-	891	-	17.00%	-	7 392
Sector: Manufacturing (percentage)	-	27.83%	-	891	-	27.61%	-	7 392
Sector: Information (percentage)	-	9.65%	-	891	-	10.90%	-	7 392
Sector: Trade (percentage)	-	6.96%	-	891	-	5.90%	-	7 392
Sector: Services (percentage)	-	6.06%	-	891	-	6.98%	-	7 392