Differences in CEO Compensation between Family and Non-Family Closely Held Firms in Israel

by

Beni Lauterbach* and Revital Yoseph**

June 2018

Abstract

The study examines CEO compensation practices in 220 concentrated-ownership companies traded on the Tel-Aviv Stock Exchange during 2008-2015, focusing on differences between owner and non-owner CEOs and between family-firms and partnership-controlled firms (firms controlled by a coalition of 2-3 members without any family ties). Our only statistically significant finding is that owner CEOs in family firms receive on average about 15% higher total compensation than owner CEOs in partnership firms. These findings illustrate that the large differences between owner and non-owner CEOs recorded in previous studies (e.g. Cohen and Lauterbach, 2008) were largely eliminated in recent years, perhaps due to the extensive corporate governance regulation efforts and media pressure in the past decade.

* Corresponding author: School of Business Administration, Bar-Ilan University, Ramat-Gan 52900, ISRAEL, and ECGI. E-mail: beni.lauterbach@biu.ac.il. Telefax: +972-3-5318901.

** School of Business Administration, Bar-Ilan University, Ramat Gan 52900, ISRAEL. E-mail: revital.yoseph@biu.ac.il.

Financial support by the Raya Strauss Center for Family Business Research at Tel Aviv University and by the Raymond Ackerman Family Chair in Israeli Corporate Governance is gratefully acknowledged.

Differences in CEO Compensation between Family and Non-Family Closely Held Firms in Israel

Abstract

The study examines CEO compensation practices in 220 concentrated-ownership companies traded on the Tel-Aviv Stock Exchange during 2008-2015, focusing on differences between owner and non-owner CEOs and between family-firms and partnership-controlled firms (firms controlled by a coalition of 2-3 members without any family ties). Our only statistically significant finding is that owner CEOs in family firms receive on average about 15% higher total compensation than owner CEOs in partnership firms. These findings illustrate that the large differences between owner and non-owner CEOs recorded in previous studies (e.g. Cohen and Lauterbach, 2008) were largely eliminated in recent years, perhaps due to the extensive corporate governance regulation efforts and media pressure in the past decade.

JEL classification: G32 G34 M12

Keywords: CEO Compensation; Ownership Structure; Owner CEO; Family firms; Benchmarking

1. Introduction

In this study we examine differences in CEO compensation level, pay-performance elasticity and benchmarking practice between owner and non-owner CEOs in closely held firms and between owner CEOs in family firms and partnership-controlled firms. Existing evidence on these issues are scarce. Cohen and Lauterbach (2008) study Israeli CEO pay in 1994-2001 and find that: 1) CEO compensation is significantly higher for owner CEOs (relative to non-owner professional CEOs); 2) Owner CEOs have lower pay performance elasticity than non-owner CEOs, yet this difference is statistically insignificant; and 3) Among owner CEOs, pay and pay-performance sensitivity are slightly higher in family firms (relative to partnership-controlled firms).

Our study replicates Cohen and Lauterbach (2008) research in the recent period (2008-2015), after the extensive regulation on CEO pay in the recent decade (specifically the regulation on CEO pay disclosure in 2008, and Amendments 16 and 20 to the Corporate Law). It is interesting to explore the impact of this increased regulation. Further, we also examine differences in compensation benchmarking practices. Compensation benchmarking has become prevalent in CEO pay determination in the recent decade.

We do not find significant differences in total compensation level and pay-performance sensitivity between owner and non-owner CEOs. These findings differ from Cohen and Lauterbach (2008) and may reflect the effects of the recent tighter regulation on CEO pay. Our only statistically significant finding is that owner CEO in a family firm earns about 15% more than owner CEO in a partnership firm. We

cannot find a difference in the pay-performance sensitivity between owner CEOs in family and partnership firms.

The remainder of this paper is organized as follows. Section 2 outlines the basic approaches to executive compensation, reviews the relevant literature and develops the testable hypotheses. Section 3 presents the data and sample, Section 4 reports the results, and Section 5 concludes.

2. CEO compensation in closely-held firms

2.1. General theoretical approaches to executive compensation

Executive compensation is one of the most hotly-debated topics in corporate governance. It draws great attention and interest among academics, regulators and the general public. All seek to understand and advocate different explanations for the level and composition of CEO pay.

There exist at least three theoretical approaches to executive compensation. The traditional approach of labor economics proposes that each worker (including the senior workers) earns according to her marginal contribution to the firm. This approach focuses on CEOs skill and ability and on the potential influence of executives on their organizational outcomes (Hambrick and Finkelstein, 1987). Finkelstein and Boyd (1998) define the managerial discretion as the latitude of actions executives have in making strategic choices. They find that high discretion contexts increase the potential marginal product of CEOs and, hence, their impact on firm performance. As a result, CEO compensation is expected to be higher the greater CEO’s skills and the wider is CEO's discretion.

The main modification of this traditional labor economics theory is termed "agency theory". It focuses on the conflict of interests between publicly traded firm shareholders and firm's senior executives. In most cases, shareholders do not have the ability to observe if and when the CEO deviates from their interests as shareholders. Shareholders have two options: 1) to obtain more information about the CEO's actions and efforts through monitoring the CEO; and 2) to offer the CEO incentives to alleviate the existing conflicts of interest. According to this approach CEO pay arrangements are "optimal contracts" designed as (a partial) remedy to agency problems (e.g., Core and Larcker, 2002). The optimal contract theory is primarily relevant to non-owner CEOs in closely held firms.

The third competing theory is the "managerial power" approach. According to it, the executive compensation contract is not a remedy to agency problems, but rather a serious agency problem by itself (Bebchuk and Fried, 2003, 2004, 2005; Morse, Nanda, and Seru, 2011). CEOs and in particular owner CEOs have power and are able to influence their pay level and extract "rents", and the greater is CEOs' power, the greater are their rents. This theory is particularly pertinent to owner CEOs in closely held firms.

2.2. Owner vs. Non-owner CEO Pay

Owner CEOs may utilize their power to extract excessive pay from their firms at the expense of public. The extra pay is essentially part of the controlling shareholder private benefits of control. Atanasov, Black, and Ciccotello (2011) define and describe the various forms of private benefits. We hypothesize that the self-serving behavior of owner CEOs leads to a higher compensation to owner CEOs relative to non-owner CEOs.

Higher compensation is, however, not a proof of agency problems. Traditional labor market theory also predicts higher compensation to owner CEOs. According to it, owner CEOs have more discretion and impact on their firm performance (relatively to professional non-owner CEOs in closely held firms). Professional non-owner CEOs' discretion is limited, as they are continuously monitored by firm's controlling shareholders (Core, Holthausen and Larcker, 1999).

Holderness and Sheehan (1988) find that in the U.S., CEOs holding more than 50% of firm's shares receive higher salaries and bonuses than other CEOs. Similarly, Cohen and Lauterbach (2008) examine owner and non-owner CEO pay in 124 Israeli closely held firms in the period 1994–2001, and find that CEOs who belong to a family or a business group that owns most of the firm shares receive significantly (about 50%) higher pay than professional CEOs who do not belong to the control group.

The above theoretical arguments and empirical evidence suggest

Hypothesis 1: Owner CEOs receive higher total compensation than non-owner CEOs.

Regarding non-owner CEO pay in closely held firms, the agency approach proposes that the presence of controlling shareholders in the company can serve as an effective form of monitoring CEOs. Thus, incentive pay is less needed for professional CEOs in closely held firms (Core et al., 1999; Hartzell and Starks, 2003; Bebchuk and Fried, 2003).

However, owner CEOs may also prefer to receive low performance pay, as their wealth is already highly dependent on firm and stock performance. Owner CEOs typically have most of their wealth invested in the firm and are subject to return

fluctuations. Thus, an owner CEO will often prefer a pay package with predominantly fixed compensation.

It is difficult to determine who (owner or non-owner CEO) will receive lower performance pay. Thus,

Hypothesis 2: The pay performance sensitivity of owner CEOs equals that of professional non-owner CEOs.

Cohen and Lauterbach (2008) who study 124 Israeli firms in 1994–2001, find that owner CEOs' pay performance sensitivity is (insignificantly) lower than that of non-owner CEOs. Mehran (1995) also find lower pay performance sensitivity of owner CEOs in a sample of U.S. firms.

2.3. Owner CEOs pay in family firms and partnership firms

The private benefits' problem may vary across different sorts of closely-held firms. For example, in family firms, the control group (the family) appears relatively cohesive and well-coordinated, which might facilitate private benefits extraction. Relative to family firms, closely-held partnership firms, controlled by a coalition of business partners, may find it more difficult to coordinate private benefits extraction. This may transpire into a less efficient pay structure (excessive pay, for example) for owner CEOs in family firms, relative to owner CEOs in partnership firms.

Traditional labor market theory also predicts higher compensation to family CEOs. Family CEOs appear to have more discretion and impact on their firm performance (relative to owner CEOs in partnership firms). This is because in partnership firms the owner CEO is monitored and restricted by her partner or partners (see Finkelstein and Boyd, 1998) while family owner CEOs are perhaps more

trusted. If the marginal and total contribution of family owner CEO to firm value is higher than in partnership firms then family owner CEOs deserve a higher pay.

The discussion above alludes:

Hypothesis 3: Owner CEOs in family firms receive higher total compensation than owner CEOs in partnership firms.

It is difficult to predict how pay performance sensitivity would vary among owner CEOs. Existing empirical evidence on differences in compensation between owner CEOs in family and partnership firms is scarce. Cohen and Lauterbach (2008) find that in Israel CEOs' pay level and pay-performance sensitivity are slightly yet insignificantly higher in family firms (relative to partnership firms). Thus, we will test

Hypothesis 4: There is no difference in the pay performance sensitivity between owner CEOs in family and partnership firms.

2.4. CEO compensation benchmarking in family and partnership firms

A ubiquitous stage in determining CEO pay is the comparison of her compensation with that of similar CEOs (a peer CEO group). Existing empirical literature on the practice of compensation benchmarking demonstrates its important role in understanding the observed variation in CEO pay (Bizjak, Lemmon, and Naveen, 2008; Faulkender and Yang, 2010; Bizjak, Lemmon, and Nguyen, 2011; Albuquerque, De Franco, and Verdi, 2013; Laschever, 2013).

Owner CEOs may exploit their power to influence the selection of their peer group. Faulkender and Yang (2010) show that higher paid CEOs at potential peer companies are more likely to be chosen to the peer group. Alternatively, some owner CEOs may be benchmarked against higher-paid CEOs due to their higher skill and

impact. Albuquerque et al. (2013) find evidence in favor of the alternative explanation that the choice of highly-paid peers is a reward for CEO talent.

Given owner CEOs power they may also require a relatively aggressive pay adjustment if their pay is below peer group median and a relatively modest pay correction if their pay is above peer group median. This implies:

Hypothesis 5: Owner CEOs whose total pay is below (above) their peer group median in year t-1, will receive an higher (lower) "adjustment towards the median" change in total pay in year t, relative to professional non-owner CEOs.

Differences may exist also between family and partnership owner CEOs. If family firms are more extreme in their private benefits extraction, the asymmetric (below vs. above the median) pay correction phenomenon may be accentuated in the subsample of family owner CEOs. We will examine

Hypothesis 6: Family owner CEOs whose total pay is below (above) their peer group median in year t-1, will receive an higher (lower) "adjustment towards the median" change in total pay in year t, relative to partnership owner CEOs.

3. Sample and Data

The sample comprises all publically-traded companies in Israel whose stocks belong to the Tel Aviv 100 (=large cap) and Tel Aviv Yeter (= small cap) indices of the Tel Aviv Stock Exchange (TASE) in the years 2008 through 2015. We start in 2008, because on that year the Israel Securities Authority's (ISA) added article 21 which requires public companies to disclose in a tabular form all pay components received by their five top-compensation executives.

Our initial sample includes 1,771 firm-year observations. However, we exclude: 1) 286 observations of dually-listed companies (where compensation reporting is for the five top executives together, and corporate governance may correspond better to the foreign listing exchange); 2) 81 observations of partnerships in the oil and gas sector (where standard compensation data is unavailable); 3) 209 observations of firms that replaced their CEO during the year (where CEO compensation is for part of the year only); 4) 50 observations where CEO pay is not separable (management fees for a group of executives is reported); 5) 39 observation with no available CEO compensation data (their CEOs were not among the five highest-paid executives of the company); 6) 15 observations of part-time CEOs; 7) 11 observations with unclear compensation tables; and 8) 17 observations of "other" cases such as CEOs who did not receive compensation, CEOs of companies with no available financial report (companies in distress).

Since we are interested in closely-held firms we further drop: 1) 100 observations of dispersed ownership firms; 2) 106 observations of firms with non-standard ownership structures (mainly companies that belong to a collective group such as a Kibbutz, and companies where the ultimate controlling group comprises dispersed ownership entities); and 3) 32 observations where the firm control group structure changed during the year;

Our final sample consists of an unbalanced panel of 220 concentrated-ownership companies with 825 firm-year observations. The number of observations drops further in some of our multivariate analyses because of additional financial data requirements.

The composition of the sample by year and sector is summarized in Panels A and B of Table 1, respectively. As shown in Panel A, the observations are distributed

almost uniformly across the sample years. Panel B shows close resemblance between the proportions of a sector in TASE and in our sample (except perhaps the Finance sector).

[Insert Table 1 here]

For each firm we collect data as follows:

1. CEO name, age, and compensation data are retrieved from the companies' annual reports available on the TASE site (www.tase.co.il). The company ownership structure is also based on information from the annual reports –see below.
2. Historical stock prices and industry classification of the sample companies are obtained from the TASE database and a commercial data vendor ("Predicta").
3. Financial data (total assets and leverage) of the sample companies are extracted from a local commercial database ("Super Analyst").

Our ownership structure classification is based on Article 24 of company annual reports. When controlling shareholders possess over 25% of the voting rights, we classify the firm as closely held. (According to the Israeli Corporate Law, a person, group of individuals or entity is considered as a controlling shareholder if they hold 25% or more of the voting rights). Further, we distinguish between family-controlled and partnership-controlled companies. Family firms are firms that are controlled by a single individual or a group of several individuals, all belonging to the same family. Partnership firms are firms where two or more individuals (that do not belong to the same family) form a coalition to control the firm. Last, within each firm type (family or partnership), we distinguish between owner and non-owner CEOs. Owner CEOs belong to the family or partnership that controls the firm, while non-owner CEOS are professional managers without any family relations to the control group.

Table 2 presents descriptive statistics for our sample, including the mean, median, standard deviation, minimum and maximum values, and number of observations for each variable. The mean total compensation of CEOs in our sample is 3,565 thousand New Israeli Shekels (NIS), and the median is 2,593 thousand NIS.

The mean (median) total assets of our companies is 12,143 (1,593) million NIS with a minimum of 7 million NIS and a maximum of 209,158 million NIS. The standard deviation of the company daily stock returns over the preceding three year period is our proxy for firm risk, and it has a mean (median) of 0.03 (0.02). Financial leverage is defined as book debt over total equity and it has a mean (median) of 2.63 (1.83) with a standard deviation of 5.15. The mean (median) logarithmic annual stock return is 3.7% (10.1%). The sample period includes both the Great Global Recession (years with negative stock returns) and years of recovery.

The mean and median CEO age is 54 and about 89% of the CEOs have academic degrees. Our sample is almost balanced between family and partnership firms, with family firms comprising 52% of the sample. Owner CEOs govern in about a third of our sample. Specifically, of our 825 firm-year observations, 130 are categorized as owner CEOs in family firms, 143 are owner CEOs in partnership firms, 300 CEOs are non-owner CEOs in family firms, and 252 CEOs are non-owner CEOs in partnership firms.

[Insert Table 2 here]

Our study hypotheses focus on differences between owner and non-owner CEOs and on differences between owner CEOs in family and partnership firms. In the Appendix we outline the characteristics of and differences between our main compared subsamples.

Table 3 reviews the variation in CEO compensation over the sample years (2008-2015). The mean CEO total compensations at the beginning and end of the sample period are about equal. However, the less volatile median total compensation reveals a gradual increase over the sample period. Median CEO total compensation increases from about 2.3 million NIS in 2008 to about 2.8 million NIS in 2015, a rate of about 3% per year.

[Insert Table 3 here]

4. Empirical Results

4.1. Estimating the benchmark model for CEO compensation

We employ the following benchmark model of the level of CEO total compensation in closely held firms – see Cohen and Lauterbach (2008):

$$
\begin{aligned}
(1)\ \mathrm{Ln}\left(\text{CEO total compensation}_{i,t}\right) &= \alpha_0 + \alpha_1\left(\text{Stock return}_{i,t}\right) + \alpha_2\left(\text{Stock return}_{i,t-1}\right) \\
&+ \alpha_3 \mathrm{Ln}\left(\text{Total assets}_{i,t}\right) + \alpha_4 \mathrm{Ln}\left(\text{Risk}_{i,t}\right) + \alpha_5 \mathrm{Ln}\left(\text{Financial Leverage}_{i,t}\right) \\
&+ \alpha_6\left(\text{Education}_{i,t}\right) + \alpha_7 \mathrm{Ln}\left(\text{Age}_{i,t}\right) + \alpha_8(\text{IndustryDum}_i) + \alpha_{9_t}(\text{YearDum}_t) \\
&+ e_{i,t}
\end{aligned}
$$

The dependent variable is the natural logarithm of CEO's total compensation in year t; the logarithmic stock returns in years t and t-1 are firm's performance indicators; total assets approximates firm's size; financial leverage is calculated as the ratio of book value of debt to total equity; the standard deviation of the daily stock return in the thirty-six months preceding the end of the firm's fiscal year represents firm's risk; age and education represent CEO's personal traits.

Some econometrically-motivated adjustments of regression (1) are adopted. First, to mitigate the effects of outliers, CEO's total compensation is winsorized at 2.5% and 97.5%. Second, to mitigate skewness, we transform total assets, leverage and risk into their natural logarithm. Next, because of multicollinearity problems, the transformed risk and leverage are regressed on the transformed total assets, and the residuals of these regressions serve as independent variables in the benchmark pay regression specified in equation (1) above. Last, we include in our pay regression industry and year dummies.

Table 4 reports the results of estimating the full model and a parsimonious form. Consistent with existing evidence on the relation between CEO compensation and firm size (Tosi, Werner, Katz and Gomez-Mejia, 2000; Cohen and Lauterbach, 2008; Gabaix, Landier, and Sauvagnat, 2014; Edmans, Gabaix and Jenter, 2017) the coefficient of Ln (Total assets) is positive and highly significant. Firm size is always the most important determinant of CEO pay, and its positive coefficient may indicate that the managerial talent and skills needed for running larger and more complex firms are scarce and command a higher compensation.

The coefficients of stock return and lagged stock return in Table 4 are positive and statistically significant at 1% and 10% levels, respectively. This illustrates that the CEO is rewarded (punished) for good (poor) firm performance. The pay performance relation is documented and widely studied in previous research - see Edmans et al. (2017).

The negative coefficient of firm's risk appears in previous studies - see Cohen and Lauterbach (2008) and Faulkender and Yang (2012), for example. It implies that CEOs in risky firms earn less. Lambert Larcker, and Verrecchia (1991), Beatty and

Zajac (1994) and Meulbroek (2001) suggest that for risky firms lower total compensation with lower pay performance sensitivity may be optimal. Finally, similarly to some previous studies (Cohen and Lauterbach, 2008; Laschever, 2013), we find that CEO total compensation is positively and significantly correlated with CEO age, perhaps reflecting the value of work experience.

[Insert Table 4 here]

4.2. Differences in compensation between owner and non-owner CEOs

We examine the difference in total compensation between owner and non-owner CEOs by adding a dummy variable for owner CEO to our parsimonious benchmark compensation model (regression 2 of Table 4). The coefficient of the "Owner CEO" dummy variable is positive yet statistically insignificant. According to our estimated coefficients, owner CEOs earn on average 6-7% more than non-owner CEOs ceteris paribus, which is within the margin of error. Thus, we conclude that our evidence does not support Hypothesis 1.

The findings in Table 5 contrast previous evidence by Cohen and Lauterbach (2008). Cohen and Lauterbach (2008) find that in an earlier period (1994-2001) Israeli owner CEOs receive significantly (about 50%) higher compensation than non-owner CEOs. The difference in results may be due to progress in corporate governance regulation and in particular, progress in executive compensation regulation since 2001. We find a few relevant and important regulatory changes. In 2008 the Israel Securities Authority (ISA) required significantly more detailed disclosure of executive compensation. In 2011 Amendment No. 16 to the Corporate Law was enacted. It reinforces the power of external directors and the independence of the board. In addition, it requires the approval of owner CEO compensation by the audit

committee and by minority shareholders vote once every three years. In December 2012 Amendment No. 20 came into effect. This amendment requires the establishment of a compensation committee, and grants the minority public shareholders a non-binding "say on pay". The above-reviewed regulatory measures, probably along with the increasing media attention and public opinion pressure, potentially eliminated most of the 50% owner-CEO pay premium identified by Cohen and Lauterbach (2008).

In the regression summarized in column 2 of Table 5, we examine if owner CEOs' pay performance sensitivity is lower than that of professional non-owner CEOs. The average total compensation performance elasticity of professional non-owner CEOs (the sum of the coefficients of stock return and one-year lagged stock return) is 0.28 and the average total compensation performance elasticity of owner CEOs (the sum of the coefficients of stock return, one-year lagged stock return, Stock return*Owner CEO and One-year lagged stock return*Owner CEO) is 0.17. Similar evidence can be found in Cohen and Lauterbach (2008) who report a pay performance elasticity of owner CEOs (non-owner CEOs) of 0.15 (0.30, respectively). It appears that owner CEOs have lower pay performance sensitivity. This result is reasonable because given that owner CEOs' wealth is invested in the firm and sensitive to its performance, it is clear that owners would demand (and get) a pay that is less sensitive to performance.

However, formally, both in Table 5 and in Cohen and Lauterbach (2008) the difference in pay performance elasticity between owner and non-owner CEOs is statistically insignificant. Thus, Hypothesis 2, proposing that the pay performance sensitivity of owner and non-owner CEO are about equal, cannot be rejected by the data.

[Insert Table 5 here]

4.3. Differences in pay between owner CEOs in family and partnership firms

To examine whether owner CEOs in family firms earn a higher total compensation than owner CEOs in partnership firms, we add an interaction term, the dummy variable for an owner CEO multiplied by a dummy variable for a family firm, to our former regressions. Table 6 reports that the coefficient of the interaction term "Owner CEO*Family" is positive and significant at 10% level. Apparently, an owner CEO in family firms receives 15-16% higher total compensation than an owner CEO in partnership firms. This finding is consistent with our Hypothesis 3 that viewed family firms as more cohesive control groups in which the extraction of private benefits in the form of excessive pay is facilitated (relative to partnership firms).

The interesting finding in Table 6 is that the coefficient of "owner CEO" is close to nil. Again, the 50% pay premium of owner CEOs in Israel, identified by Cohen and Lauterbach (2008) in the late 20th century, apparently evaporated over the recent two decades. In fact, our finding in Table 6 of a 15% premium for family owner CEOs suggests a small correction to this conclusion. The 50% pay premium for owner CEOs (over non-owner CEOs) evaporated in partnership-controlled firms, and was cut into 15% in family firms.

In column 2 of Table 6 we examine the difference in pay performance sensitivity between owner CEOs in family and partnership firms. We find no such difference: pay performance elasticity of owner CEOs in family firms is 0.5% lower than in partnership firms. This insignificant difference supports our conservative Hypothesis 4.

[Insert Table 6 here]

4.4. Differences in CEO pay benchmarking practices amongst closely held firms

Our hypotheses 5 and 6 regard the benchmarking process of CEO pay. It is well known that CEO pay is benchmarked to that of her peers. In this section we examine divergences in the extent of compensation benchmarking between owner and non-owner CEOs, and between owner CEOs in family and partnership firms, taking into account also possible asymmetries in benchmarking when pay is above or below industry median pay.

To examine how CEO total pay in year t is affected by the ratio of CEO's pay to that of her peers, we focus on the change in CEO pay between year t and year t-1. Differencing our parsimonious model we get:

$$(2)\ \mathrm{Ln}\left(\frac{\text{CEO total compensation}_{i,t}}{\text{CEO total compensation}_{i,t-1}}\right) = \alpha_0 + \alpha_1(\text{Stock return}_{i,t}) + \alpha_2(\text{stock return}_{i,t-1}) - \alpha_3(\text{stock return}_{i,t-1}) - \alpha_4(\text{stock return}_{i,t-2}) + \alpha_5 \mathrm{Ln}\left(\frac{\text{Total assets}_{i,t}}{\text{Total assets}_{i,t-1}}\right) + \alpha_6 \mathrm{Ln}\left(\frac{\text{Risk}_{i,t}}{\text{Risk}_{i,t-1}}\right) + +\alpha_8(\text{IndustryDum}_i) + \alpha_{9_t}(\text{YearDum}_t) + e_{i,t}$$

Then, we add a benchmarking measure, $\mathrm{Ln}(\text{Relative compensation}_{i,t-1})$, to equation (2). Following Bizjak et al. (2011), our benchmarking variable is defined as the natural logarithm of the industry median CEO total compensation divided by firm's CEO total compensation, both in year t-1. Unlike in the U.S., in Israel, firms do not disclose the list of peer firms; hence, we employ firm's industry median pay as the benchmark pay.

Our benchmarking model is:

$$(3)\ \mathrm{Ln}\left(\frac{\text{CEO total compensation}_{i,t}}{\text{CEO total compensation}_{i,t-1}}\right)$$
$$= \alpha_0 + \alpha_1(\text{Stock return}_{i,t}) + \alpha_2(\text{stock return}_{i,t-1})$$
$$- \alpha_3(\text{stock return}_{i,t-1}) - \alpha_4(\text{stock return}_{i,t-2}) + \alpha_5 \mathrm{Ln}\left(\frac{\text{Total assets}_{i,t}}{\text{Total assets}_{i,t-1}}\right)$$
$$+ \alpha_6 \mathrm{Ln}\left(\frac{\text{Risk}_{i,t}}{\text{Risk}_{i,t-1}}\right) + \alpha_7 \mathrm{Ln}(\text{Relative compensation}_{i,t-1})$$
$$+ \alpha_8(\text{IndustryDum}_i) + \alpha_{9_t}(\text{YearDum}_t) + e_{i,t}$$

Table 7 presents the results of fitting equation (3) to the data. In column 1 of Table 7, the coefficient of Ln(relative compensation) is positive and highly statistically significant, supporting the existence of benchmarking in Israeli CEOs' pay. The size of the coefficient implies that a CEO with a total compensation that is 1% below (above) the industry median in year t-1 receives ceteris paribus a pay increase in year t that is 0.11% larger (smaller) than that of a CEO whose year t-1 pay equals industry's median.

In order to examine whether owner CEOs get a larger adjustment to their total compensation when they are below industry's median, we add two interaction terms to equation (3): 1) $\mathrm{Ln}(\text{Relative compensation}_{i,t-1})$ multiplied by a dummy variable for owner CEO, and 2) $\mathrm{Ln}(\text{Relative compensation}_{i,t-1})$ multiplied by a dummy variable for owner CEO and a dummy variable for CEO pay below industry's median. The coefficient of the first interaction term is positive, yet statistically insignificant - see column (2). Thus, we do not identify significant differences in compensation benchmarking between owner and non-owner CEOs. Also, the coefficient of the second interaction term is negative and statistically insignificant (column 3), rejecting our Hypothesis 5 which proposes asymmetry in owner CEO pay adjustment,

depending on the pay being above or below the median. If anything, our estimates suggest a more aggressive pay adjustment when owner CEO pay is above median.

Next, we test whether the total compensation of owner CEOs in family firms is benchmarked to a greater extent than owner CEOs in partnership firms when CEO compensation is below median (Hypothesis 6). For this purpose, we add to the specifications used for the tests of Hypothesis 5, the following interaction terms: 1) $\text{Ln}(\text{Relative compensation}_{i,t-1})$ multiplied by a dummy variable for owner CEO and by a dummy variable for family firms; and 2) $\text{Ln}(\text{Relative compensation}_{i,t-1})$ multiplied by a dummy variable for owner CEO, by a dummy variable for family firms, and by a dummy variable for CEO pay below industry's median.

The coefficient of the first added interaction term is positive, yet statistically insignificant – see column (4) of Table 7. Thus, we do not identify significant differences in compensation benchmarking between family and partnership owner CEOs. Likewise, the coefficient of the second added interaction term is positive and statistically insignificant – see column (5) of Table 7. This evidence rejects our Hypothesis 6 on the asymmetry of pay in family vs. partnership firms.

In sum, the evidence in Table 7 shows that owner CEOs and family owner CEOs do not exploit their power to secure more aggressive adjustments of their total compensation when it is below industry's median. This finding appears to contradict the predictions of the managerial power approach. Nevertheless, given the relatively small sample size (the differencing needed for the test shrinks sample size to 563 firm-year observations only), it is possible that we simply lack power to reject the Null hypotheses of equal and symmetric pay adjustment across all CEO types.

[Insert Table 7 here]

5. Conclusions

This study examines differences in CEO compensation practices between owner and non-owner CEOs within closely-held firms, and between owner CEOs in family and partnership firms. Using a sample of closely-held companies traded on the Tel-Aviv Stock Exchange during 2008-2015, we cannot reject the hypothesis that ceteris paribus owner-CEOs receive the same total compensation as non-owner CEOs. This finding contradicts previous evidence, e.g. Cohen and Lauterbach (2008) that shows that at the end of the previous century Israeli owner CEOs received about 50% higher total compensation than non-owner CEOs. We speculate that the big progress in corporate governance standards and in CEO pay regulation since the beginning of this century, along with media and public opinion pressures, largely eliminated the owner-CEO premium.

Finer tests reveal that owner CEOs in family firms receive a 15% higher total compensation than owner CEOs in partnership firms who in turn receive about equal compensation as non-owner CEOs. Owner CEOs in family firms receive higher compensation perhaps due to the cohesiveness and coordination among family members that facilitate some rents (i.e. pay premium) preservation. On the other hand, this family-owner-CEOs pay premium evidence is also consistent with labor economic theory, which attributes the higher pay to the relatively high discretion and relatively large impact of family-owner-CEOs on their company performance.

In other tests we find strong and reliable pay benchmarking evidence. Each year CEO's pay is adjusted towards the median pay of CEOs in its industry. Further, we testes and failed to find any significant differences in the extent of compensation benchmarking between owner and non-owner CEOs and between family and

partnership owner CEOs. Future research should further examine this point as our sample size in these tests was small.

Overall, our evidence suggests that owner CEOs in family and other closely held firms in Israel receive in recent years “about fair” compensation. Regulation and media pressure appear to have largely eliminated the rents in owner-CEO pay documented by last century studies. Tunneling in the form of excessive CEO pay is probably no longer a common practice in Israeli closely held firms.

Appendix: Further description of our main tests subsamples

Table A1
Comparison of owner and non-owner CEO firms (Panel A) and comparison of family and partnership owner CEO firms (Panel B).

CEO total compensation is the sum of salary, bonus, option awards and other annual compensation in thousands NIS. We winsorize *CEO total compensation* at the 2.5th and 97.5th percentiles. *Stock return (logarithmic)* is the change in Ln(stock price) over the calendar year; *Total assets* is the book value of firm's total assets in millions NIS; *Risk* is the standard deviation of the daily stock returns in the thirty-six months prior to the end of the firm's fiscal year; *Financial leverage* is total debt divided by the book value of equity; *and Education* is a dummy variable equal to 1 when the CEO has an academic degree and 0 otherwise. The number of observations is reported below the mean.

Panel A
Mean comparison of owner and non-owner CEOs firms

	Owner vs. non-owner CEO		
	Mean for owner CEO	Mean for non-owner CEO	p-Value for difference (based on t-tests)
Compensation:			
CEO total compensation in thousands NIS	2,896	3,732	<.0001
Number of observations	*273*	*552*	
Firm characteristic:			
Stock return (logarithmic)	0.053	0.030	0.6580
Number of observations	*270*	*542*	
Total assets in million NIS	2,578	16,970	<.0001
Number of observations	*273*	*541*	
Risk	0.027	0.028	0.6173
Number of observations	*270*	*542*	
Financial leverage	2.048	2.960	0.0036
Number of observations	*269*	*473*	
CEO characteristic:			
CEO age in years	56.4	53.0	<.0001
Number of observations	*273*	*552*	
CEO education	0.73	0.97	<.0001
Number of observations	*273*	*552*	

Panel B

Mean comparison of family owner and partnership owner CEOs firms

	Owner CEO in Family vs. partnership firm		
	Mean for Family firm	Mean for partnership firm	*p* -Value for difference (based on *t* -tests)
Compensation:			
CEO total compensation in thousands NIS	3,383	2,454	0.0002
Number of observations	*130*	*143*	
Firm characteristic:			
Stock return (logarithmic)	0.140	-0.027	0.0668
Number of observations	*129*	*141*	
Total assets in million NIS	2,194	2,928	0.4059
Number of observations	*130*	*143*	
Risk	0.026	0.028	0.0475
Number of observations	*129*	*141*	
Financial leverage	2.526	1.600	0.0002
Number of observations	*130*	*139*	
CEO characteristic:			
CEO age in years	57.3	55.3	0.0570
Number of observations	*130*	*143*	
CEO education	0.58	0.87	<.0001
Number of observations	*130*	*143*	

References

Albuquerque, A.M., De Franco, G., Verdi, R.S., 2013. Peer choice in CEO compensation. Journal of Financial Economics, 108 (1), 160-181.

Atanasov, V., Black, B., Ciccotello, C. S., 2011. Law and tunneling. Journal of Corporate Law, 37, 1-49.

Barontini, R., Bozzi, S., 2011. Board composition and ownership structure: Empirical evidence for Italian listed companies. Journal of Management and Governance, 15, 59-89.

Beatty, R. P., Zajac, E.J., 1994. Managerial incentives, monitoring, and risk bearing: a study of executive compensation, ownership, and board structure in initial public offerings. Administrative Science Quarterly, 39, 313–335.

Bebchuk, L. A., Fried, J. M., 2003. Executive compensation as an agency problem. Journal of Economic Perspectives, 17, 71–92.

Bebchuk, L.A., Fried, J. M., 2004. Pay Without Performance: The Unfulfilled Promise of Executive Compensation. The Harvard University Press, Cambridge.

Bebchuk, L. A., Fried, J. M., 2005. Pay without performance: overview of the issues. Journal of Applied Corporate Finance, 17, 8–23.

Bizjak, J.M., Lemmon, M.L., Naveen, L., 2008. Does the use of peer groups contribute to higher pay and less efficient compensation? Journal of Financial Economics , 90(2), 152–168.

Bizjak, J.M., Lemmon, M., Nguyen, T., 2011. Are all CEOs above average? An empirical analysis of compensation peer groups and pay design. Journal of Financial Economics, 100 (3), 538–555.

Cohen, S., Lauterbach, B., 2008. Differences in pay between owner and non-owner CEOs: Evidence from Israel. Journal of Multinational Financial Management, 18, 4-15.

Core, J. E., Holthausen, R. W., Larcker, D. F., 1999. Corporate governance, chief executive officer compensation, and firm performance. Journal of Financial Economics, 51, 371-406.

Core, J. E., Larcker, D. F., 2002. Performance consequences of mandatory increases in executive stock ownership. Journal of Financial Economics, 64, 317–340.

Cheung, Y., Stouraitis, A., Wong, A., 2005. Ownership concentration and executive compensation in closely held firms: evidence from Hong Kong. Journal of Empirical Finance, 12, 511–532.

Dyck, A., Zingales, L., 2004. Private benefits of control: an international comparison. Journal of Finance, 59, 537–600.

Edmans, A., Gabaix, X., Jenter, D., 2017. Executive Compensation: a Survey of Theory and Evidence. ECGI Working Paper Series in Finance.

Faulkender, M., Yang, J., 2010. Inside the black box: The role and composition of compensation peer groups. Journal of Financial Economics, 96(2), 257–270.

Faulkender, M., Yang, J., 2012. Is disclosure an effective cleansing mechanism? The dynamics of compensation peer benchmarking. Review of Financial Studies, 26(3), 806-839.

Finkelstein, S., Boyd, B. K., 1998. How much does the CEO matter? The role of managerial discretion in the setting of CEO compensation. Academy of Management Journal, 41(2), 179-199.

Gabaix, X., Landier, A., Sauvagnat, J., 2014. CEO pay and firm size: An update after the crisis. Economic Journal, 124(574), 40-59.

Hambrick, D. C., Finkelstein, S., 1987. Managerial discretion: A bridge between polar views of organizations. Research in Organizational Behavior, 9, 369-406.

Hartzell, J.C., Starks, L.T., 2003. Institutional investors and executive compensation. Journal of Finance, 58, 2351–2374.

Holderness, C., Sheehan, D., 1988. The role of majority shareholders in publicly-held corporations. Journal of Financial Economics, 20, 317–346.

Jensen, M.C., Murphy, K. J., 2004. Remuneration: where we've been, how we got to here, what are the problems, and how to fix them. ECGI Working Paper Series in Finance.

Lambert, R., Larcker, D., Verrecchia , R., 1991. Portfolio considerations in valuing executive compensation. Journal of Accounting Research, 29, 129–149.

Laschever, R.A., 2013. Keeping up with CEO Jones: Benchmarking and executive compensation. Journal of Economic Behavior and Organization, 93, 78–100.

Mehran, H., 1995. Executive compensation structure, ownership, and firm performance. Journal of Financial Economics, 38, 163–184.

Meulbroek, L.K., 2001. The efficiency of equity-linked compensation: understanding the full cost of awarding executive stock options. Financial Management, 30, 5–44.

Morgan, A., Poulsen, A., 2001. Linking pay to performance—compensation proposals in the S&P 500. Journal of Financial Economics, 62, 489–523.

Morse, A., Nanda, V., Seru, A., 2011. Are incentive contracts rigged by powerful CEOs? Journal of Finance, 66, 1779–1821.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance. Journal of Finance, 52, 737–783.

Thomas, R., Martin, K., 2000. The determinants of shareholder voting on stock option plans. Wake Forest Law Review, 35, 31–82.

Tosi, H.L., Werner, S., Katz, J.P., Gomez-Mejia, L.R., 2000. How much does Performance Matter? A Meta-Analysis of CEO Pay Studies. Journal of Management, 26(2), 301-339.

Table 1: Sample composition by year and sector.

The sample comprises 825 firm-year observations between 2008 and 2015. Sector is classified based on the sector classification of the Tel Aviv Stock Exchange (TASE). Given the small number of firms in the Banks, Insurance and Financial Services sectors, we have merged them into one sector called Finance.

Panel A
Composition by year

Year	2008	2009	2010	2011	2012	2013	2014	2015	Total
Number of Obs.	110	108	113	102	82	103	102	105	825
Percentage	13.33%	13.09%	13.70%	12.36%	9.94%	12.48%	12.36%	12.73%	100.00%

Panel B
Composition by sector

Sector	Obsverations	Percentage (Sample)	Percentage (All TASE firms)
Biomed[a]	18	2.18%	5.14%
Technology[a]	37	4.48%	7.37%
Investment and Holdings	119	14.42%	15.94%
Commerce and Services	158	19.15%	20.50%
Real-Estate and Construction	198	24.00%	21.89%
Finance	88	10.67%	4.14%
Industry	207	25.09%	25.03%
Total	825	100.00%	100.00%

[a.] The Biomed and Technology sectors were first launched by the TASE in 2012.

Table 2: Sample descriptive statistics.

The sample period is 2008–2015. *CEO Total compensation* is the sum of salary, bonus, option awards and other annual compensation in thousands NIS; *Annual stock return (logarithmic)* is the change in Ln(stock price) from calendar year beginning to its end; *Total assets* is the book value of firm's total assets in millions NIS; *Risk* is the standard deviation of the daily stock returns in the thirty-six months preceding the end of the firm's fiscal year; *Financial leverage* is total debt divided by the book value of equity; *Education* is a dummy variable equal to 1 when the CEO has an academic degree and 0 otherwise; *Family firm* is a dummy variable equal to 1 for family firms and 0 for partnership firms; and *Owner CEO* is a dummy variable equal to 1 if the CEO belongs to the control group and 0 otherwise.

	Mean	Standard deviation	Median	Minimum	Maximum	Number of observations
Compensation:						
CEO total compensation in thousands NIS	3,565	3,323	2,593	309	43,373	825
CEO total compensation in thousands NIS (Tel-Aviv 100 index)	5,186	4,192	4,134	453	43,373	358
CEO total compensation in thousands NIS (Tel-Aviv Yeter index)	2,322	1,578	1,943	309	10,475	467
Firm characteristic:						
Annual stock return (logarithmic)	0.04	0.65	0.10	-2.44	2.40	812
Total assets in millions NIS	12,143	28,957	1,592	7	209,158	814
Risk	0.03	0.06	0.02	0.01	1.62	812
Financial leverage	2.63	5.15	1.83	0.02	125.56	742
CEO characteristic:						
CEO age in years	54.1	8.3	54.3	34.6	80.0	825
CEO education	0.89	0.31	1	0	1	825
Ownership structure:						
Family firm	0.52	0.50	1	0	1	825
Owner CEO	0.33	0.47	0	0	1	825

Table 3: CEO total compensation along the sample period.

Total compensation is in thousands New Israeli Shekels (NIS) and is winsorized at the 2.5th and 97.5th percentiles.

Year	Mean	Standard deviation	Median	Minimum	Maximum	Number of observations
2008	3,268	2,734	2,265	498	12,416	110
2009	3,114	2,486	2,244	532	10,414	108
2010	3,752	3,292	2,509	656	14,313	113
2011	3,677	2,910	2,543	808	13,369	102
2012	3,443	2,310	2,679	826	10,169	82
2013	3,780	3,259	2,948	870	16,468	103
2014	3,373	2,269	2,812	965	9,723	102
2015	3,239	2,120	2,789	804	10,475	105

Table 4: Determinants of CEO compensation.

The table reports regression estimates of our benchmark compensation model (equation 1). The dependent variable is the *natural logarithm of CEO total compensation*. *CEO Total compensation* is the sum of salary, bonus, option awards and other annual compensation in thousands NIS. We winsorize CEO total compensation at the 2.5th and 97.5th percentiles. *Stock return* (logarithmic) is the change in Ln(stock price) over the calendar year; *Ln(Total assets)* is the natural logarithm of total assets in thousands NIS; *Ln(Risk)* is the natural logarithm of the standard deviation of the daily stock returns in the thirty-six months prior to the end of the firm's calendar year; *Ln(Financial leverage)* is the natural logarithm of the ratio of total debt to the book value of equity; *Ln(Risk)* and *Ln(Financial leverage)* are first regressed on *Ln(total assets)*, and the residuals are used as the risk and leverage independent variables in the regression; *Education* is a dummy variable equal to 1 when the CEO has an academic degree and 0 otherwise. *Age* is CEO's age (in years). Robust standard errors are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	ln (CEO total compensation)	
Model	(1)	(2)
Intercept	3.68***	4.10***
	(0.37)	(0.33)
Stock return (logarithmic)	0.13***	0.13***
	(0.05)	(0.05)
One-year lagged stock return (logarithmic)	0.08*	0.10**
	(0.05)	(0.05)
Ln(Total assets)	0.23***	0.20***
	(0.02)	(0.01)
Ln(Risk)	-0.19**	-0.16**
	(0.09)	(0.08)
Ln(Financial leverage)	-0.01	
	(0.03)	
Education	-0.02	
	(0.08)	
Age	0.0046*	0.0063**
	(0.003)	(0.003)
Industry and year fixed effects	Yes	Yes
Number of observations	713	783
Adjusted R-squared	0.290	0.295

Table 5: Differences in pay between owner and non-owner CEOs.

The table reports regression results. The dependent variable is the *natural logarithm of CEO total compensation* (the sum of salary, bonus, option awards and other annual compensation in thousands NIS), winsorized at the 2.5th and 97.5th percentiles. *Stock return (logarithmic)* is the change in Ln(stock price) over the calendar year; *Ln(Total assets)* is the natural logarithm of total assets in thousands NIS; *Ln(Risk)* is the natural logarithm of the standard deviation of the daily stock returns in the thirty-six months prior to the end of the firm's calendar year; *Ln(Risk)* is first regressed on *Ln(total assets)* and the residuals are used as a risk measure; *Age* is CEO's age in years; *Owner CEO* is a dummy variable equal to 1 if the CEO belongs to the control group and 0 otherwise. *Stock return*Owner CEO* is an interaction term between *stock return* and *Owner CEO*. *One-year lagged stock return*Owner CEO* is an interaction term between *one-year lagged stock return* and *Owner CEO*. Robust standard errors are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	ln (CEO total compensation)	
Model	(1)	(2)
Intercept	4.02***	4.04***
	(0.34)	(0.34)
Stock return (logarithmic)	0.13***	0.17***
	(0.05)	(0.06)
One-year lagged stock return (logarithmic)	0.10**	0.11**
	(0.046)	(0.05)
Ln(Total assets)	0.21***	0.21***
	(0.01)	(0.01)
Ln(Risk)	-0.16**	-0.15**
	(0.08)	(0.08)
Age	0.0058**	0.0058**
	(0.003)	(0.003)
Owner CEO	0.06	0.07
	(0.05)	(0.05)
Stock return*Owner CEO		-0.07
		(0.07)
One-year lagged stock return*Owner CEO		-0.04
		(0.07)
Industry and year fixed effects	Yes	Yes
Number of observations	783	783
Adjusted R-squared	0.295	0.295

Table 6: Differences in pay between owner CEOs in family and partnership-controlled firms.

The table reports regression results. The dependent variable is the *natural logarithm of CEO total compensation* (the sum of salary, bonus, option awards and other annual compensation in thousands NIS), winsorized at the 2.5th and 97.5th percentiles. *Stock return (logarithmic)* is the change in Ln(stock price) over the calendar year; *Ln(Total assets)* is the natural logarithm of total assets in thousands NIS; *Ln(Risk)* is the natural logarithm of the standard deviation of the daily stock returns in the thirty-six months prior to the end of the firm's calendar year; *Ln(Risk)* is first regressed on *Ln(total assets)* and the residuals are used as a risk measure; *Age* is CEO's age in years; *Owner CEO* is a dummy variable equal to 1 if the CEO belongs to the control group and 0 otherwise. *Stock return*Owner CEO* is an interaction term between *stock return* and *Owner CEO*. *One-year lagged stock return*Owner CEO* is an interaction term between *one-year lagged stock return* and *Owner CEO*. Robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	ln (CEO total compensation)	
Model	(1)	(2)
Intercept	4.01***	4.02***
	(0.34)	(0.34)
Stock return (logarithmic)	0.13**	0.17***
	(0.05)	(0.06)
One-year lagged stock return (logarithmic)	0.09**	0.11**
	(0.05)	(0.05)
Ln(Total assets)	0.21***	0.21***
	(0.01)	(0.01)
Ln(Risk)	-0.16**	-0.16**
	(0.08)	(0.08)
Age	0.0063**	0.0063**
	(0.003)	(0.003)
Owner CEO	-0.01	-0.01
	(0.06)	(0.06)
Owner CEO*Family	0.13*	0.14**
	(0.07)	(0.07)
Stock return*Owner CEO		-0.08
		(0.08)
One-year lagged stock return*Owner CEO		-0.06
		(0.08)
Stock return*Owner CEO*Family		-0.01
		(0.09)
One-year lagged stock return*Owner CEO*Family		0.01
		(0.11)
Industry and year fixed effects	Yes	Yes
Number of observations	783	783
Adjusted R-squared	0.297	0.295

Table 7: Compensation benchmarking practices in closely held firms and their variation with CEO type.

The table reports regression results. The dependent variable is the *Change in Ln(CEO total compensation*) from year t-1 to year t. *CEO Total compensation* is the sum of salary, bonus, option awards and other annual compensation in thousands NIS. We winsorize the dependent variable at the 2.5th and 97.5th percentiles. *Stock return (logarithmic)* is the change in Ln(stock price) over the calendar year; *Change in Ln(Total assets)* is *Ln(Total assets)* at the year-end minus *Ln(Total assets)* at the previous year end; *Change in Ln(Risk)* is *Ln(Risk)* at year end minus *Ln(Risk)* at the previous year end. *Ln(Risk)* is the natural logarithm of the standard deviation of the daily stock returns in the thirty-six months prior to the end of the firm's calendar year. *Ln(Risk)* is regressed first on *Ln(total assets),* and the residuals are used for calculating the *Change in Ln(Risk)*; *Ln(Relative compensation)* is a benchmark measure and is defined as the difference between *Ln(industry median of CEO total compensation*) and *Ln(CEO total compensation*), both in the prior year. Industry classification of the companies is obtained from the TASE database; *Ln(Relative compensation)*Owner CEO* is an interaction term between *Ln(Relative compensation)* and *Owner CEO* (a dummy variable equal to 1 if the CEO belongs to the control group and 0 otherwise); *Ln(Relative compensation)*Owner CEO*Family* is an interaction term of *Ln(Relative compensation), Owner CEO* and *Family* (a dummy variable equal to 1 for family firms and 0 for partnership firms); *Ln(Relative compensation)*Owner CEO*Below median* is an interaction term of *Ln(Relative compensation), Owner CEO,* and *Below median* (a dummy variable equal to 1 if the CEO earns below the industry median pay in year t-1 and 0 otherwise); and *Ln(Relative compensation)*Owner CEO*Family*Below median* is an interaction term of *Ln(Relative compensation), Owner CEO, Family* and *Below median.* Robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Change in Ln(CEO total compensation)				
Model	(1)	(2)	(3)	(4)	(5)
Intercept	-0.04	-0.04	-0.03	-0.04	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Stock return (logarithmic)	0.15***	0.15***	0.15***	0.15***	0.15***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
One-year lagged stock return (logarithmic)	0.01	0.01	0.01	0.01	0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Two-year lagged stock return	-0.04	-0.04	-0.04	-0.04	-0.04
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Change in Ln(Total assets)	0.13***	0.13***	0.13***	0.13***	0.13***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Change in Ln(Risk)	0.25***	0.25***	0.25***	0.25***	0.25***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Ln(Relative compensation)	0.11***	0.10***	0.10***	0.10***	0.10***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ln(Relative compensation)*Owner CEO		0.02	0.04	0.02	0.06
		(0.04)	(0.05)	(0.05)	(0.05)
Ln(Relative compensation)*Owner CEO*Family				0.01	-0.03
				(0.06)	(0.08)
Ln(Relative compensation)*Owner CEO*Below median			-0.02		-0.07
			(0.07)		(0.10)
Ln(Relative compensation)*Owner CEO*Family*Below median					0.08
					(0.12)
Industry and year fixed effects	Yes	Yes	Yes	Yes	Yes
Number of observations	563	563	563	563	563
Adjusted R-squared	0.137	0.136	0.134	0.134	0.133