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Corporate Governance Progress and the Pay Premium of Owner CEOs: Evidence from Israel

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by

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Research Findings/Insights: We examine CEO pay in 202 concentrated-ownership companies traded on the Tel-Aviv Stock Exchange during 2008-2015, and compare it to earlier evidence from 1994-2001. We find that following the significant advance in Israeli corporate governance since the beginning of the 21st century the owner CEO pay premium dropped by about three-quarters, primarily in partnership-controlled firms (firms controlled by a coalition of business partners).

Theoretical/Academic Implications: In some concentrated ownership firms controlling shareholders extract private benefits in the form of excessive owner CEO pay. This form of private benefits can be trimmed via corporate governance reforms and investor protection advance. Research should also distinguish between partnership-controlled and family-controlled firms.

Practitioner/Policy Implications: Private benefits in the form of excessive pay to owner CEOs can be curtailed by corporate governance improvements. The excessive pay problem is most evident and persistent in family-controlled firms.

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1. Introduction

Extant evidence on the pay of owner CEOs (CEOs who are also members of firm's control group) is mixed. Studies of large family firms in the U.S. and Europe (e.g. Gomez-Mejia et al., 2003; Croci et al., 2012) find a negative pay premium for owner CEOs, i.e., that owner CEOs earn less than CEOs in non-family firms. One possible interpretation of these findings is that family CEOs are more emotionally attached to their firms than professional CEOs; thus they need less pay incentives to serve as firm stewards (Davis et al., 1997).

However, other studies, examining circumstances in which controlling shareholders are relatively powerful and/or economies where investor protection is relatively weak, find a significantly positive pay premium for owner CEOs and interpret it as evidence of private benefits extraction by controlling shareholders. In the U.S., Masulis et al. (2009) find that owner CEOs in dual class firms receive a significant pay premium, and Combs et al. (2010) find that when there exists a "lone" individual that controls the firm (i.e., no other family members are in control), the lone owner CEO extracts on average a significant (over 50%) pay premium. In Israel, where controlling shareholders typically hold over half of the public company shares, Cohen & Lauterbach (2008) find that owner CEOs receive an about 52% higher total compensation than professional CEOs in similar firms, and in Korea, Kim & Han (2018) document that CEOs who are family members receive approximately 60% higher total compensation than professional CEOs. The phenomenon of excessive pay (a positive pay premium) for owner CEOs, when it exists, poses a non-trivial corporate governance problem.

Our purpose is to examine whether a progress in corporate governance can trim the pay premium of owner CEOs. We study CEO pay in closely held public firms in Israel because of two reasons: (i) there exists previous evidence on owner CEO pay premium in Israel, and (ii) Israeli corporate governance advanced markedly and steadily since the beginning of the 21st century. This progress encompassed a new and modern Israeli Corporate Law enacted in 2000, regulation on CEO pay disclosure in 2008, the establishment of a specialized economic court in 2010, Amendments 16 and 20 to the Israeli Corporate Law fortifying minority rights, and various precedent-setting court rulings protecting small public shareholders. It is interesting to explore the cumulative impact of this continuous corporate governance progress on owner CEO compensation.

We study the owner CEO pay premium in Israel during 2008-2015, and find a 14% pay premium in owner CEO's total compensation. This pay premium is significantly lower than the approximately 52% owner CEO pay premium documented in Israel (by Cohen & Lauterbach, 2008) on the eve of the 21st century (during 1994-2001). Interestingly, the pay premium of owner CEOs in partnership-controlled firms (firms controlled by several business partners that do not have family ties) evaporated completely – we do not find any pay differences between owner and non-owner CEOs in partnership-controlled firms. On the other hand, family-controlled firms preserve a statistically and economically significant pay premium for their owner CEOs.

The remainder of this paper is organized as follows. Section 2 overviews the basic theoretical approaches to executive compensation in closely held firms, reviews the corporate governance progress in Israel and presents the research hypothesis. Section 3 describes the data and sample, Section 4 reports our empirical results, and Section 5 concludes.

2. Corporate Governance and Owner CEO Compensation

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, shareholders and even 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 executives) 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 & Finkelstein, 1987). Finkelstein & 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, i.e., their impact on firm performance. In sum, basic labor economics predicts that CEOs with greater skills and more discretion earn more.

The main modification of this classic labor economics theory is termed "agency theory". It focuses on the conflicts of interest 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 & Larcker, 2002). The optimal contract theory is primarily relevant to non-owner CEOs.

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 & Fried, 2003, 2004, 2005; Morse et al., 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. Pay Premiums of Owner CEOs

2.2.1. Existing evidence on owner CEO pay premiums

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 et al. (2011) define and describe the various forms of private benefits.

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 et al., 1999).

Masulis et al. (2009) document pay premiums for owner CEOs in dual class firms, and Combs et al. (2010) report pay premiums for owner CEOs when they are the sole owners (with no family partners). However, other U.S. and continental Europe studies such as Gomez-Mejia et al. (2003) and Croci et al. (2012) report that owner CEOs in family firms earn less than non-owner CEOs. It appears that a pay premium for owner CEOs exists or at least is associated with cases of weaker corporate governance.

Evidence from economies with relatively weaker investor protection also identifies an owner CEO pay premium. Cohen & Lauterbach (2008) compare owner and non-owner CEO pay in 124 Israeli closely held firms during 1994–2001. They find that in closely held firms CEOs who belong to the family or the partnership that owns most of the firm shares receive significantly (about 52%) higher pay than professional CEOs who serve in similar firms and do not belong to the control group. Kim & Han (2018) examine Korean family business groups (Chaebols), and find that family CEOs receive a 60% pay premium relative to professional CEOs. Given that the corporate governance in Israel and Korea is weaker (and private benefits are higher) than in the U.S. (e.g. Dyck & Zingales, 2004), our conclusion is that the pay premium of owner CEOs also depends on the corporate governance quality of the economy and the firm.

It is noteworthy that the pay of owner CEO depends also on "softer" factors such as their socio-emotional relations and identification with the firm. CEOs who are more emotionally-tied to their firms are paid (and probably demand) lower monetary compensation (Mueller & Flickinger, 2021). We lack data that can monitor and account for such ties, hence in our study the socio-emotional impact is part of the residual.

We can also discuss possible differences in the pay performance sensitivities of owner and 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 & Starks, 2003; Bebchuk & Fried, 2003).

However, owner CEOs may also prefer to receive a 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 its 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 a lower performance pay. Thus, we do not expect any significant differences in the pay-performance sensitivities between owner and non-owner CEOs. Cohen & 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 finds a somewhat lower pay performance sensitivity for owner CEOs in a sample of U.S. firms.

2.2.2. The effect of ownership structure on owner CEO pay

The private benefits problem may vary across different forms 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 (i.e., excessive pay) for owner CEOs in family firms, relative to owner CEOs in partnership-controlled 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 & Boyd, 1998) while family owner CEOs are perhaps more trusted. If the marginal and total contribution of family owner CEO to firm value is on average higher than in partnership firms, then family owner CEOs deserve a higher pay.

Existing empirical evidence on differences in compensation between owner CEOs in family and partnership-controlled firms is scarce. Cohen & 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).

2.3. The Corporate Governance Advance of Israel and our Research Hypothesis

Over the past two decades Israel has made considerable progress in its corporate governance, designed to cut the agency costs of executives and controlling shareholders. The first major corporate reform was launched in 2000 with the adoption of a modern Israeli Corporate Law, replacing the old Corporations Ordinance. One of the main objectives of the Corporate Law was to strengthen minority shareholders' protection and to restrain controlling shareholders' power. The new law included stricter restrictions on self-dealing with controlling shareholders and on external (independent) directors' nominations. During the first decade of the 21st century the courts interpreted the new law and generated many precedents, including administrating jail sentences to several fraudulent controlling shareholders.

At the same time, the Israeli Securities Authority (Israeli SEC) targeted the transparency of the CEO pay reports, issuing in 2008 explicit formats and tables for standard reporting of public firm's CEO pay. The new detailed compensation tables, including also information on various pay components such as equity pay, afford comparison of CEO pay in different firms. Before that regulation, each firm used its own interpretation of what is included in "compensation", and some firms did not name the executive whose pay is reported or provided aggregate figures for their top five executive compensation. The 2008 regulation afforded more informed public debates on CEO pay.

At the beginning of the second decade of the 21st century, a second significant corporate governance reform-wave took place, following the Great Recession of 2008. On December 2010 the "Economic Court" of Israel was established as a special department within the Tel Aviv District Court, to adjudicate corporate and securities law violations. This led to a significant surge in private enforcement of the law, boosting the use of the derivative claim and class-action mechanisms by minority shareholders. As a result, the economic court (and additional courts in other districts) set a large number of important legal precedents, most of which aim to improve the protection of minority shareholders.

On May 14, 2011, Amendment No. 16 to the Companies Law came into effect. This Amendment implemented most of the recommendations of the committee for the review of the Israeli corporate governance code, headed by Professor Zohar Goshen. The primary purpose of Amendment No. 16 was to increase the power of minority shareholders in closely held firms and to cut private benefits consumption by controlling shareholders. The Amendment stipulated that the Audit Committee, in which external directors appointed by the public have a majority, would discuss and decide on transactions with controlling shareholders. The Amendment further demands that: 1) the pay terms of owner CEOs would be approved by the Audit Committee and Board of Directors once every three years; and 2) a majority of the minority (shareholders) would approve any transaction with controlling shareholders, including the pay contract of owner CEOs.

Amendment 16 was followed by Amendment 20 that became effective on December 12, 2012. The objectives of Amendment 20 were to regulate the compensation setting process for senior executives in public firms and to introduce the use of the "Say on Pay" procedure for non-owner CEOs. (Note that owner-CEOs' pay

remain subject to the stricter regulation standards of Amendment 16.) According to Amendment 20 a public company must establish a Compensation Committee that formulates the general compensation policy of the firm and practically negotiates CEO's and other top executives' compensation contracts. The general compensation policy has to be approved at least once every three years by a majority of the minority shareholders. This amendment lead to a more structured and thorough process for setting CEO's pay.

The above review describes the significant progress in Israeli corporate governance between the end of the Cohen & Lauterbach (2008) sample in 2001 and the end of our sample in 2015. The ensuing question is: What effect did this steady advance have on the pay premium of owner CEOs?

We propose

Hypothesis 1: Improvements in corporate governance cut the total compensation premium of owner CEOs (relative to non-owner CEOs).

We will test Hypothesis 1 using CEO compensation data from Israel. Testing this hypothesis on Israeli data is proper and instructive because extant literature documents significant owner CEO pay premiums in Israel on the eve of the 21st century and because a significant corporate governance progress has been made in Israel since then. We are unaware of any other pre-21st century owner CEO pay premium study on a developing (and relatively weak) corporate governance economy, hence revisiting the Israeli pay premium evidence is also the convenient and viable route for testing Hypothesis 1.

3. Sample Collection and Description

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 (ISA) added Article 21 that requires public companies to disclose (and defines exactly how to disclose) the total compensation of each of the firm's five top-compensation executives.

Our initial sample includes 1,771 firm-year observations. However, we exclude: 1) 286 observations of dually-listed companies that report according the rules of the foreign exchange at which they also list, and where corporate governance standards may correspond better to those of the foreign exchange; 2) 81 observations of partnerships in the oil and gas sector (where standard compensation data is unavailable); 3) 88 observations of firms from the regulated banking and finance industry; 4) 209 observations of firms that replaced their CEO during the year (where CEO compensation is for part of the year only); 5) 50 observations where CEO pay is not separable (management fees for a group of executives is reported); 6) 39 observation with no available CEO compensation data (their CEOs were not among the five highest-paid executives of the company); 7) 15 observations of part-time CEOs; 8) 11 observations with unclear compensation tables; and 9) 17 observations of "other" cases such as CEOs who did not receive compensation, and CEOs of companies with no available financial reports (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 is a dispersed ownership entity); and 3) 32 observations where the firm control group structure changed during the year. Notably, all our exclusion criteria are identical to those of Cohen & Lauterbach (2008), the earlier-period study that we are going to compare our findings to.

Our final sample consists of an unbalanced panel of 202 concentrated-ownership companies with 737 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.

[Insert Table 1 here]

For each firm we collect the following data:

1. The 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 the industry classification of the sample companies are obtained from the TASE database.
3. Financial data (total assets and leverage) on the sample companies are extracted from a local commercial database ("Super Analyst").

Our ownership structure classification is based on Article 24 of the 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 3,260 thousand New Israeli Shekels (NIS), and the median is 2,495 thousand NIS. (During the sample period the average exchange rate was about 4 NIS per U.S. Dollar.)

The mean (median) total assets of our companies is 6,337 (1,388) million NIS with a minimum of 7 million NIS and a maximum of 131,177 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 2.65 (1.84) with a standard deviation of 5.20. The mean (median) logarithmic annual stock return is 4.4% (10.2%). The sample period includes both the Great Global Recession (years with negative stock returns) and the following years of recovery.

The mean and median CEO age is 54 years, and about 89% of the CEOs have academic degrees. Our sample is almost balanced between family and partnership

firms, with family firms comprising 54% of the sample. Owner CEOs govern in about a third of our sample. Specifically, of our 737 firm-year observations, 126 belong to owner CEOs in family firms, 137 are owner CEOs in partnership firms, 275 are non-owner CEOs in family firms, and 199 are non-owner CEOs in partnership firms.

[Insert Table 2 here]

Last, the increase in CEO compensation over the sample years (2008-2015) is modest. The mean CEO total compensations at the beginning and end of the sample period are about equal. However, median CEO total compensation increases from about 2.2 million NIS in 2008 to about 2.7 million NIS in 2015, a rate of about 3% per year.

4. Empirical Results

A simple comparison of owner- and non-owner-CEO total compensation in our sample reveals that the mean annual compensation of a non-owner CEO is 3.441 million NIS, whereas the mean annual compensation of an owner CEO is 2.933 million NIS only (3.412 million NIS for owner CEOs in family firms, and 2.491 million NIS for owner CEOs in partnership firms). This is a misleading simple-comparison result because professional non-owner CEOs serve primarily in relatively large closely-held firms. In such large firms the control group (family or partnership) resorts to the services of skilled professional managers to run the company. Indeed, in our sample, the mean total assets of firms with non-owner CEOs is 8,601 million NIS, almost 4 folds the mean total assets of firms with owner CEOs. Given this finding and existing evidence that CEO pay increases with firm size, a simple comparison of average total compensation of owner and non-owner firms is meaningless and improper. A more-elaborated and controlled examination of the pay differences between owner and non-owner CEOs is warranted and offered next.

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. This model is used by Cohen & Lauterbach (2008) as well, and will facilitate comparison of our results to them:

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

The dependent variable is the natural logarithm of CEO's total compensation in year t. Among explanatory variables, the logarithmic stock returns in years t and t-1 are firm's performance indicators; total assets approximates firm's size; firm's risk is approximated by the standard deviation of the daily stock return in the thirty-six months preceding the end of the firm's fiscal year; financial leverage is measured as the ratio of book value of debt to total equity; and 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 its 2.5% and 97.5% levels. 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 explanatory variables in the pay regression specified in Equation (1) above. Last, we add industry and calendar-year fixed effects to the pay regression.

Table 3 reports the results of estimating the full model and a parsimonious form of it. Consistent with existing evidence on the relation between CEO compensation and firm size (Tosi et al., 2000; Cohen & Lauterbach, 2008; Gabaix et al., 2014; Edmans et al., 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 3 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 the survey of Edmans et al. (2017).

The negative coefficient of firm's risk appears in previous studies - see Cohen & Lauterbach (2008) and Faulkender & Yang (2012), for example. It implies that CEOs in risky firms earn less. Lambert et al. (1991), Beatty & 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 & Lauterbach, 2008; Laschever, 2013), we find that CEO's total compensation is positively and significantly correlated with CEO's age, perhaps reflecting the value of work experience.

[Insert Table 3 here]

4.2. The Owner CEO Pay Premium Following a Corporate Governance Advance

We examine the difference in total compensation between owner and non-owner CEOs by adding dummy variables for owner CEO to our parsimonious benchmark

compensation model (regression 2 of Table 3). The results are presented in Column (1) of Table 4. The coefficient of the "Owner CEO" dummy variable is positive and statistically significant. According to our fitted coefficient, 0.13, owner CEOs earn on average 14% more than non-owner CEOs ceteris paribus. (Note that here and in the rest of the paper the pay premium is assessed as the exponent of the fitted coefficient.)

[Insert Table 4 here]

The regression also examines differences in pay-performance sensitivities. The average pay performance elasticity of professional non-owner CEOs (the sum of the coefficients of stock return and one-year lagged stock return) is 0.25 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 & 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 sensitivities. This result is reasonable. 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 4 and in Cohen & Lauterbach (2008) the difference between the pay performance elasticities of owner and non-owner CEOs is statistically insignificant. Thus, we refrain from inferring anything about pay performance elasticities. In addition, the rest of our analysis ignores any pay performance elasticity differences between owner and non-owner CEOs, and focuses on the significant pay premium of owner CEOs.

The pay premium findings in Table 4 can be compared to previous evidence by Cohen & Lauterbach (2008). Note that in order to afford such comparability with

earlier-period results, we followed the same sample extraction and cleaning rules and the same empirical methodology as Cohen & Lauterbach (2008). The comparison reveals that the pay premium of owner CEOs declined from approximately 52% in 1994-2001 to approximately 14% in 2008-2015, an impressive and economically significant drop of about three-quarters.

We can test now our research hypothesis, Hypothesis 1, proposing that the pay premium in our sample is lower than that documented in Cohen & Lauterbach (2008). The coefficient of Owner CEO in our Table 4, 0.13, is about six standard errors lower from its counterpart, 0.42, reported in Table 4 of Cohen & Lauterbach (2008). Thus, a conservative null hypothesis that the pay premium in our sample equals that found by Cohen & Lauterbach (2008) is rejected by the data (t-statistic of 5.92, p-value lower than 0.0001). The conclusion is that in our sample period (2008-2015) the pay premium of Israeli owner CEOs was markedly lower that in the Cohen & Lauterbach (2008) sample period, 1994-2001. This evidence is consistent with Hypothesis 1's prediction that following the corporate governance advance in Israel, owner CEO pay premium would be cut.

The drastic cut in owner CEO's pay premium is not surprising. There are other Israeli findings consistent with it. Blum et al. (2020) study the value of control in Israeli closely-held firms, as reflected by the prices of large-block control-transfer transactions. They use the Barclay & Holderness (1989) and Barak & Lauterbach (2011) methodologies, and conclude that the value of control in Israeli firms has decreased by about two-thirds since the beginning of the 21st century. Since the value of control approximates the level of the private benefits extracted by the controlling shareholders, Blum et al. (2020)'s results imply that private benefits dropped by about

two-thirds following the Israeli corporate governance reforms and progress, a similar trimming rate to that of the owner CEO's pay premium.

4.3. Differences in Owner CEO Pay between Family and Partnership Firms

To explore how owner CEOs' pay in family firms differs from that of owner CEOs in partnership firms, we add two explanatory variables to our regression specification. The first, Family, is a dummy variable equal to 1 when the firm is a family firm, and equal to 0 when it is controlled by a partnership. The second is Family multiplied by the dummy variable for an owner CEO.

In the regression summarized in column (2) of Table 4 there are three important coefficients. First, the coefficient of Owner CEO is close to zero and statistically insignificant. Given that the baseline of the regression (the intercept) is the compensation level of non-owner CEOs at partnership-controlled firms, the close to zero coefficient of Owner CEO implies that in our sample period owner CEOs at partnership-controlled firm receive no pay premium over professional non-owner CEOs in similar firms. This finding illustrates that all the pay premium of owner CEOs in partnership firms found in Cohen & Lauterbach (2008)'s study of Israel evaporated over time, perhaps due to the significant corporate governance reforms and advance in beginning of the 21st century.

Next, the coefficient of Family is negative, -0.14, and statistically significant. This implies that professional non-owner CEOs in family firms earn less than professional non-owner CEOs in partnership-controlled firms. One possible reason for such a finding is that in family firms the professional CEO's discretion is lower, as the family controls the firm activity more closely. In partnership firms the professional CEOs may have more latitude for action and higher impact, thus their pay is higher.

Last and most important, the coefficient of the interaction term between Family and Owner CEO is positive, 0.24, and statistically significant. It means that owner CEO's pay in family firms is about 27% higher than professional CEO's pay at such firms. This pay premium of owner CEOs at family firms is about half of the pay premium of about 53% for owner CEOs in family firms recorded in Table 4 (Model 2) of Cohen & Lauterbach (2008). Thus, evidently, the pay premium of family CEOs shrunk over time, consistent with our research hypothesis that the corporate governance advance over time trims owner CEOs pay premium. Nevertheless, whereas the pay premium of owner CEOs in partnership-controlled firms dissipated entirely over time, Israeli family firms and their owner CEOs managed to preserve a non-trivial pay premium.

Given the remaining pay premium of family owner CEOs, we can further examine our research hypothesis by dividing the sample into two equal subperiods, 2008-2011 and 2012-2015. If corporate governance progress is continuous as we argue, the family owner CEO pay premium in the later subperiod should be lower than in the first subperiod. To test for such a possible drop we construct a dummy variable, Later_subperiod that equals 1 for the later subperiod of our sample (2012-2015) and equals 0 otherwise. Then, we add to our list of explanatory variables a variable, Owner CEO*Family*Later-subperiod, multiplying the Owner CEO*Family dummy variable with this new dummy variable. Note that given that we use calendar-year fixed effects, we do not have to add to the regression the dummy variable Later-subperiod accounting for the general CEO pay level change between the two subperiods.

The results of the regression are reported in Column (3) of Table 4. The coefficient of Owner CEO*Family in the earlier subperiod is 0.3, and the coefficient of Family*Owner CEO*Later-subperiod is -0.11. This implies that the family owner CEO

pay premium decreased from 35% in the first subperiod of our sample period to 21% in the second. This impressive drop in family owner CEO's pay premium is statistically insignificant, yet it supports Hypothesis 1. Two major reforms in Israel, the establishment of the economic (specialized) court in 2010 and Amendment 16 to the Corporate Law (reinforcing minority protection) probably contributed to the documented pay premium cut. (The reforms are reviewed in Section 2.3 above.) In any case, our evidence suggests that the steady progress in Israeli corporate governance trimmed family owner CEO pay premium even within our sample period.

5. Conclusions

This study examines how the owner CEO pay premium in closely held firms changes following extensive reforms and progress in corporate governance. We find that the pay premium of owner CEOs in Israel was drastically cut following the advance in Israeli corporate governance since the beginning of the 21st century: from approximately 52% in 1994-2001 to about 14% in 2008-2015. Even within our sample period we document a decline in family owner CEOs pay premium between the first and second half of our sample period.

Finer tests reveal that owner CEOs in partnership-controlled firms lost all their pay premium, while owner CEOs in family firms preserved approximately half of their pay premium. Apparently family structures are better in protecting their controlling shareholders' private benefits.

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Table 1: Sample composition by year and sector

The sample comprises 737 firm-year observations between 2008 and 2015. Sector is classified based on the sector classification of the Tel Aviv Stock Exchange (TASE).

Panel A
Composition by year

Year	2008	2009	2010	2011	2012	2013	2014	2015	Total
Frequency	98	99	104	91	71	91	91	92	737
Percentage	13.30%	13.43%	14.11%	12.35%	9.63%	12.35%	12.35%	12.48%	100.00%

Panel B
Composition by sector

Sector	Observations	Percentage (Sample)	Percentage (Firms traded on the TASE)
Biomed[a]	18	2.44%	5.36%
Technology[a]	37	5.02%	7.68%
Investment and Holdings	119	16.15%	16.63%
Commerce and Services	158	21.44%	21.38%
Real-Estate and Construction	198	26.87%	22.84%
Industry	207	28.09%	26.11%
Total	737	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	3,260	2,501	2,495	498	16,468	737
CEO total compensation in thousands NIS (Tel-Aviv 100 index)	4,689	2,919	3,873	498	16,468	295
CEO total compensation in thousands NIS (Tel-Aviv Yeter index)	2,306	1,575	1,925	498	10,475	442
Firm characteristics:						
Stock return	0.04	0.66	0.10	-2.44	2.40	725
Total assets in millions NIS	6,337	15,487	1,388	7	131,177	728
Risk	0.03	0.06	0.02	0.01	1.62	725
Financial leverage	2.65	5.20	1.84	0.02	125.56	717

Table 2 (Continued)

	Mean	Standard deviation	Median	Minimum	Maximum	Number of observations
CEO characteristics:						
CEO age in years	54.4	8.4	55.0	34.6	80.0	737
CEO education (=1 for academic degree, and 0 otherwise)	0.89	0.31	1	0	1	737
Ownership structure:						
Family firm (=1 for family firm, and 0 for partnership firm)	0.54	0.50	1	0	1	737
Owner CEO (=1 for owner CEO, and 0 for non-owner CEO)	0.36	0.48	0	0	1	737

Table 3: 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*, where total compensation is in thousands of New Israeli Shekels (NIS) and is 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(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***	3.68***
	(0.37)	(0.36)
Stock return (logarithmic)	0.13**	0.13***
	(0.052)	(0.049)
One-year lagged stock return (logarithmic)	0.076	0.08*
	(0.049)	(0.047)
Ln(Total assets)	0.24***	0.23***
	(0.017)	(0.014)
Ln(Risk)	-0.19**	-0.2**
	(0.086)	(0.082)
Ln(Financial leverage)	-0.0093	
	(0.027)	
Education	-0.056	
	(0.075)	
Age	0.0045*	0.0043*
	(0.0026)	(0.0025)
Industry and year fixed effects	Yes	Yes
Number of observations	689	700
Adjusted R-squared	0.297	0.304

Table 4: The pay premium of owner CEOs

The table reports regression results. The dependent variable is the *natural logarithm of CEO total compensation* where total compensation is in thousands of New Israeli Shekels (NIS) and is winsorized at the 2.5th and 97.5th percentiles. *Stock return* 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 our 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 the interaction term between *stock return* and *Owner CEO*; *One-year lagged stock return*Owner CEO* is the interaction term between *one-year lagged stock return* and *Owner CEO; Family* is a dummy variable equal to 1 for family firms and 0 for partnership-controlled firms; *Owner CEO*Family* is the interaction term between *Owner CEO* and *Family*; *Owner CEO*Family*Later-subperiod* is the interaction term among these three dummy variables and it equals 1 for owner CEOs in family firms in the 2012-2015 subperiod and equals 0 otherwise. 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)	(3)
Intercept	3.50***	3.55***	3.57***
	(0.38)	(0.38)	(0.38)
Stock return (logarithmic)	0.16**	0.12**	0.12**
	(0.063)	(0.05)	(0.05)
One-year lagged stock return (logarithmic)	0.09	0.078	0.083*
	(0.056)	(0.048)	(0.048)
Ln(Total assets)	0.25***	0.25***	0.25***
	(0.015)	(0.015)	(0.015)
Ln(Risk)	-0.2**	-0.19**	-0.19**
	(0.085)	(0.087)	(0.086)
Age	0.0033	0.0041	0.0042
	(0.0026)	(0.0026)	(0.0026)

Table 4 (Continued)

Owner CEO	0.13***	-0.0049	-0.006
	(0.049)	(0.058)	(0.058)
Stock return*Owner CEO	-0.057		
	(0.071)		
One-year lagged stock return*Owner CEO	-0.025		
	(0.072)		
Family		-0.14***	-0.14***
		(0.052)	(0.052)
Owner CEO*Family		0.24***	0.3***
		(0.087)	(0.11)
Owner CEO*Family*Later-subperiod			-0.11
			(0.12)
Industry and year fixed effects	Yes	Yes	Yes
Number of observations	700	700	700
Adjusted R-squared	0.308	0.316	0.316