The Effect of CEO Pay on Firm Valuation in Closely Held Firms

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January 2008

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EFMA classification: 190 ; 150 ; 210

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Abstract

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EFMA classification: 190 ; 150 ; 210

JEL classification: G30, G32, G34

Keywords: CEO compensation; excess compensation; ownership structure; owner CEO; family firms

1. Introduction

Existing research on CEO pay focuses on disperse ownership firms. In such firms the main compensation-related problem is the design of a pay contract that would motivate the professional CEO to exert efforts and would align CEO interests with those of the shareholders. The widely adopted theoretical and practical solution is to offer the CEO a relatively high level of compensation (see Rosen, 1982), and make CEO pay performance sensitive, that is directly dependent on the company stock price performance (Jensen and Meckling, 1976).

In practice, however, these optimal pay solutions had dubious effects. The professional CEOs accumulated power, and maneuvered the Board of Directors into awarding them extremely generous pay contracts – see Bebchuk and Fried (2004) and "too large" option grants that occasionally perplexed the CEOs and led them to immoral behavior – see Jensen (2004).

This study focuses on CEOs in closely-held firms. In such firms, the problem of a misbehaving professional CEO is mitigated because the firm owners closely monitor the professional CEO actions. However, a new agency problem emerges. When an owner that controls the firm serves also as its CEO, this owner-CEO can pay himself inflated unjustified pay. Any such excessive compensation to the owner CEO decreases the market value of the firm at the expense of small public investors.[1] The final outcome, in an economy where excessive pay to owner CEO is possible and common, is lack of investors trust in the publicly traded companies, difficulties in capital raising, shrinking investments and less economic growth. Castro, Clementi and

[1] Other members of the family or coalition that controls the company together with the owner-CEO can also receive some pay from the company or be compensated in other forms. Thus, they won't object the excessive owner-CEO pay.

MacDonald (2004) provide theory and evidence on the positive effect of investor protection on economic growth.

There is little previous research on CEO pay in closely held firms. There exists evidence that owner CEOs earn higher pay (Holderness and Sheehan, 1988), and that owners (termed "large shareholders" or "principals" in some of the previous literature) restrict non-owner CEO pay (Core, Holthausen and Larcker, 1999) and decrease the "pay for luck" component (Bertrand and Mullainathan, 2001). However, we could not find any study on the impact of CEO pay on firm valuation in closely held firms.

In a sample of 122 Israeli CEOs who served their closely-held publicly traded firms continuously during 1995-2001, we find that: 1) in family-controlled firms, firm market valuation is significantly hurt when owner CEO pay is excessive, and 2) in closely held firms, incentives to non-owner professional CEOs are effective - the higher is the non-owner CEO pay performance sensitivity, the higher is firm's market value.

The paper is organized as follows. Section 2 reviews the literature and develops the hypotheses. Section 3 describes the data and methodology. Of particular interest is our procedure for estimating "excess pay". Section 4 presents the empirical results and section 5 concludes.

2. Literature Review and Hypotheses

2.1. Factors affecting professional CEO pay

Some closely held firms are run by professional non-owner CEOs. In this subsection we review existing evidence on factors affecting professional CEO pay. Most of the evidence is based on professional CEOs' pay in disperse ownership firms. Under the assumption that professional CEOs in closely held and disperse ownership

firms share some common basic determinants of pay, the disperse ownership evidence becomes pertinent for our study as well.

2.1.1. Firm size

Firm size is the single most important variable affecting CEO pay. CEO pay increases with firm size. Large firms are more complex and difficult to run, hence only capable and experienced CEOs are appointed to run them. These CEOs demand and receive higher compensation. Gabaix and Landier (2007) contend that firm size alone can almost fully explain the level of CEO pay.[2]

2.1.2. Firm performance

Agency theory emphasizes the need for linking CEO compensation to firm market value as a measure for aligning CEO and shareholders interests. This theoretical prescription has been readily adopted in practice. Murphy (1999) and Core et al (2003) report that CEOs' pay sensitivity to performance more than tripled during the last two decades of the 20th century. Thus, firm performance became a nontrivial determinant of CEO pay.

Interestingly, Bebchuk and Fried (2003) warn against excessive CEO pay sensitivity to performance (ibid pages 88-89), suggesting that extreme pay performance sensitivity and especially large equity and options compensation could tempt the CEO to prefer short term value maximizing decisions that would definitely end up in long term crises – see also Jensen (2004).

[2] For example, Gabaix and Landiers (2007) argue that the six-fold increase in U.S. CEO pay in the period 1980-2003 simply reflects the six-fold increase in the size (market valuation) of large U.S. companies during the same period.

2.1.3. Monitoring intensity

Several outside groups monitor the firm and CEO pay. First, large institutional investors, such as pension and mutual funds, are considered "active" monitors. Hartzell and Starks (2003) find that CEO's pay decreases and pay sensitivity increases with the percentage ownership of institutional investors.

Second, outside directors on the Board of Directors may protect public shareholders' interests. Conyon and Peck (1998) find that pay performance sensitivity increases with the proportion of outside directors on the Board.

Third, banks and other creditors may monitor the firm. It is believed (Denis, 2001) that restrictions and covenants prescribed by banks restrain CEO pay. Bank power increases with financial leverage. Thus, in more highly leveraged firms, CEO pay should be lower.

In firms that are closely held, we observe, in addition to the above, internal (i.e., firm owner) monitoring of the professional CEO actions and pay. Firm controlholders' supervision reduces the need for high CEO pay and large incentives, as the responsibility and discretion of the professional CEO are diminished. Bertrand and Mullainathan (2001) document that when professional CEOs have principals (firm controlholders) CEO pay structure is more rational and there is less "pay for luck". This result is also consistent with the recently popular "CEO power" view (Bebchuck and Fried, 2003). When professional CEOs have company controlholders' above them, their ability to "extort" excessive pay from the firm diminishes.

2.1.4. Other firm characteristics

CEO pay is also affected by the firm industrial and business environment. Smith and Watts (1992) find that the level of compensation and pay performance

sensitivity are significantly higher in more sophisticated and/or difficult to monitor industries. Industry affiliation may also proxy for omitted variables that are similar within the industry.

Last, CEO pay may be related to firm risk. At first glance it appears that more risky companies should elect more talented and experienced CEOs whose pay is commensurately higher. However, a more complete theoretical analysis of this potential relation and the empirical evidence are inconclusive. Cyret, Kang, Kumar and Shah (1997) find a positive correlation between company risk and CEO pay, while Core, Holthausen and Larcker (1999) find a negative relation. Aggarwal and Samwick (1999) report a negative relation between CEO pay performance sensitivity and firm risk.

2.1.5. CEO personal characteristics

CEO pay may also be related to CEO personal characteristics such as age (a proxy for managerial experience?) and education. More generally, it can be argued that CEO quality is rewarded. Existing research does not find any significant effect of age (Finkelstein and Boyd, 1998) or education. However, Ang, Lauterbach and Vu (2003) contend that their evidence supports the proposition that higher quality CEOs receive higher compensation and increase firm market value simultaneously. According to Ang et al the economic surplus generated by a higher quality CEO is divided between CEO and firm.

2.2. Owner CEO pay

In principle, owner CEOs (who together with their families or partners control the firms and the Board of Directors) may pay themselves almost any compensation they wish, and their pay may be completely detached of any economic reason.

However, some reasonable restrictions exist. First, owner CEOs have to compensate their partners for any excessive CEO pay, because excessive pay is practically a form of private benefits that accrues to the CEO alone. Owner CEOs must accommodate inflated pay by simultaneous generous transfers to their partners and family members, who are also entitled to their "fair share" of private benefits. Thus, grossly exaggerated pay requires extreme private benefits to other controlling members, which can easily destabilize the firm. Jeopardizing their own firm stability is not in the owner CEOs' best interest. Thus, it is likely that owner-CEOs limit their pay. The same logic also suggests that an owner CEO would make her pay sensitive to firm performance. When firm performance is poor, owner CEO would receive relatively modest compensation, in order to help the firm out of the crisis, and when firm performance is good, owner CEOs can afford to withdraw superfluous compensation.

The whole argument above rests on the assumption that owner CEOs care about their firms. This appears reasonable because many CEOs, and especially owner CEOs in family firms, are publicly identified with their firms, i.e. the firms provide reputation, pride and social status to these CEOs, which are as important to the CEOs as their private benefits. In fact, the private benefits literature (Ehrhardt and Nowak, 2003) identifies pride and social status as part of the CEO's private benefits. Hence, the arguments developed above rely on the owner CEOs balancing and maximizing their private benefits.

Besides the internal and self-inflicted control on owner CEO pay level, the "disinfecting sunlight", i.e. the publication of CEO pay, also serves to restrain owner CEO appetite for pay. Dyck and Zingales (2004) highlight the media role in restricting private benefits. Owner CEOs must consider the hostile media reports on their unjustified high pay. Such negative publication about the firm could hurt the

firm market value (in fact, owner CEO wealth) and the owner CEO reputation. Thus, owner CEOs are reluctant to stand out, which restricts them to a "socially acceptable" pay that is commensurate with that of their peer CEOs.

The above analysis suggests that owner CEO would receive higher compensation than professional non-owner CEOs. However, it is uncertain whether their pay performance sensitivity would be lower or higher that that of non-owner CEOs. If owner CEOs set their own pay, they probably prefer low pay performance sensitivity. This is because a considerable portion of their wealth (their stock holdings in the firm) is already tied to firm performance. However, owner CEOs partners in control may object a low CEO pay performance sensitivity, and, as explained above, the natural fluctuations of the firm between poor and bad business conditions dictate some CEO pay adjustments that generate pay performance sensitivity. Hence, we cannot predict whether or not owner CEO pay performance sensitivity would be markedly lower than that of non-owner professional CEO.

Last, it is likely that most of the factors governing the pay of professional non-owner CEOs also impact to some extent owner-CEO pay. Accordingly, owner CEO would receive higher pay for running larger firms, pay would be sensitive to performance, and pay would fit industry standards and be restricted by the external monitoring activity of banks and institutional investors.

2.3. CEO compensation and firm value

The main purpose of this research is to study the effect of CEO pay contract on firm valuation in closely held firms. Prior evidence exists only on disperse ownership firms. This evidence is important because it may be relevant for

professional non-owner CEOs in closely held firms, and it could be instructive for methodological design.

Core, Holthausen and Larcker (1999) study a sample of 205 U.S. companies during 1982-1984, and estimate "excess compensation" as the contribution of Board of Directors properties and ownership structure characteristics to CEO pay. This excess compensation estimate has a significantly negative impact on future accounting measures (ROA) as well as on market performance (stock's return). Their conclusion is that weak governance affords excess compensation to CEOs at the expense of firm public shareholders.

Brick, Palmon and Wald (2006) estimate excess compensation in a different way, as the residual in the CEO pay equation. Yet, their conclusions are similar to that of Core et al. – excess CEO compensation is associated with firm stock price underperformance. Brick et al also find a positive correlation between CEO and directors excess pay, which suggests that Directors and CEO cooperate in expropriating firm shareholders.[3]

An opposite view also exists. According to this view, excess compensation reflects CEO quality. Our models for CEO pay are incomplete and the explanatory variables we use cannot capture the full compensation for CEO quality. Hence, the residual in the CEO pay equation (CEO excess pay) embeds a pay for quality component. Higher quality CEOs would tend to have positive residuals (= extra pay), and vice-versa for lower quality CEOs. Further, if the CEO labor market is efficient, CEO pay for quality should be equal or less than CEO contribution to firm value.

[3] Faulkender and Yang (2007) document that in firms with weak internal governance, CEOs are most able to establish self-serving compensation benchmarks for their own pay. In weak governance firms the CEOs, together with the Board's compensation committee, construct a "compensation peer group" that is biased towards highly paid CEOs. As a result, CEO's pay is raised and becomes inflated.

Thus, "excess" CEO compensation may just indicate a superior quality CEO who should improve (rather than hurt) firm performance and market valuation. Excess pay CEOs help promote firm value.

Ang, Lauterbach and Vu (2003) study the impact of excess compensation to newly-appointed CEOs. They define excess compensation as the unexplainable (residual) component in a predictive CEO equation, and document a significant positive relation between this excess compensation measure and stock price response to the new CEO appointment. Firm future accounting performance measures, such as return on total assets (ROA) and return on equity (ROE) are also positively correlated with excess pay. Ang et al conclude that the CEO labor market is efficient - it offers better qualified CEOs more generous pay contracts, which eventually improves firm's long run performance.

Hayes and Schaefer (2000) develop a formal framework for examining the effects of "unobservable" CEO performance, where "unobservable" denotes performance that was not reflected in current year accounting numbers and went unnoticed by the market. In fact, "unobservable" CEO performance is synonym with CEO quality. If the Board of Directors recognizes and rewards the CEO for her "unobservable" performance (quality), then a positive correlation emerges between the current unexplained CEO pay ("excess" pay) and future firm performance. This is because "unobservable" CEO performance or quality should pay off in the future. Hayes and Schafer (2000) document such a significant positive relation (between CEO "excess" pay and future firm ROE) in a sample of U.S. firms collected from the Forbes Executive Compensation Surveys (1974-1995).

Finally, Falato (2006) documents that highly paid CEOs appear more successful in corporate acquisitions. Acquiring firms, led by CEOs who receive

excess pay, exhibit larger stock revaluations (higher excess returns) at the announcement of the acquisition. According to Falato (2006) these results are strongly consistent with a model of executive pay based on CEO talent rather than CEO power.

Another positive view on the effect of CEO compensation package on firm value is found in Morgan and Poulsen (2001). They report that in the 1990s proxy statements of S&P 500 firms proposing pay for performance compensation schemes were favorably received by the stock market, especially when the plan were directed towards the firm's top executives. Providing incentives to top management appears to promote executives' efforts and increases shareholders' wealth. This conclusion is supported by Mehran (1995) who documents that firm's Q is positively correlated with the percentage of CEO pay that is equity–based. Apparently, non-owner CEOs in the U.S. with a more performance sensitive pay (higher proportion of equity based compensation) have better incentives and are more successful in increasing firm value.

2.4. Hypotheses

In closely held firms, it is likely that the owner CEO extracts some excess compensation as part of her private benefits' consumption. This excess compensation most probably decreases firm market value and long term valuation (Tobin's Q). Thus,

*Hypothesis 1***:** In closely held firms, "excess" owner CEO compensation decreases firm's long run market value (end of period Tobin's Q).

Differences may exist between owner CEOs in family firms and owner CEOs in "partnership" firms (where a few partners together control the firm). This is because it appears easier to coordinate private benefits divisions within families - families appear more cohesive and more stable than "partnerships". In a "partnership" there might be more mutual "monitoring" and less leeway for generous excessive pay to the

owner CEO. In the empirical work we will examine differences between family and non-family owner CEOs.

Also interesting are the valuation effects of "excess" non owner CEOs' pay. In closely held firms the hired professional CEOs are closely monitored by firm controlholders who most probably pursue some optimal contracting schemes for them. Efficient contracting of professional CEOs dictates some extra pay for CEOs with superior quality. In turn, these superior quality professional CEOs reward their firms by enhancing firms' long term value.[4] In sum, it is likely that the surplus generated by a superior quality professional CEO is divided between CEO (receiving "excess" pay) and the firm (whose value increases). Hence,

Hypothesis 2: In closely held firms "excess" non-owner CEO compensation increases firm's long run market value (end of period Tobin's Q).

Economic logic also suggests that (all other things equal) competent professional CEOs would receive larger incentives – a relatively high pay performance sensitivity commensurate with their higher marginal product. Thus,

Hypothesis 3: In closely held firms, non owner CEO pay sensitivity to performance is positively associated with firm's long run market value (end of period Tobin's Q).

Hypothesis 3 can also be derived without the assumptions of economic efficiency and equilibrium. Suppose firm owners are reluctant (psychologically or for other reason) to large bonuses and generous pay for performance to their hired CEOs. In such inefficient environments, increasing pay for performance would stimulate non-owner CEOs to work harder which contributes to firm value. We should remember that large

[4] We assume that the contracting superior quality professional CEO does not extract the full value of her contribution to the firm via excessive pay. That is, we assume both firm and CEO share the surplus.

pay for performance for CEOs has become popular and prevalent only in the recent decade or two. Before the 1990's pay performance sensitivity appeared low – see Jensen and Murphy (1990). Thus, we cannot be sure that we are or were at the optimal pay for performance level. If CEOs in our sample were not yet at the adequate pay for performance levels, then Hypothesis 3 holds, i.e., firms that dared providing their professional CEOs higher pay performance sensitivity achieved higher market valuations (all other things equal).

Last, trying to make predictions about the effect of owner CEO pay performance sensitivity is treacherous. The owner CEO has a substantial exposure to firm performance due to her large holdings in company stocks, which overwhelm her pay sensitivity as CEO. Pay (received from the firm) performance sensitivity may be inconsequential. In addition, firm success also most probably affords higher (non-measurable) private benefits extraction by the owner CEO which reduces firm's market value. Thus, even if pay performance sensitivity induces owner CEO to work and increase firm value, the market value of the firm may decrease because of larger private benefits consumption. We refrain from putting forth any hypothesis regarding the impact of owner CEO pay sensitivity on firm's Tobin Q.

3. Data and methodology

3.1. Sample selection and variable construction

The sample includes all the Tel Aviv Stock Exchange (TASE) companies that: 1) continuously traded during 1994-2001[5], 2) did not replace their CEO during that period, 3) published CEO pay in each year during the sample period, and 4) did not

[5] Although we focus on the 1995-2001 period, two lagged variables are used in our analysis: previous year stock return and previous year CEO pay. Thus, we have to collect data for 1994 as well.

undergo any substantial ownership change during the period.[6] These exclusions should reduce measurement noise, assuring that firm's terminal value (Q) is caused by a particular CEO acting under a certain stable ownership structure.

Our clean final sample comprises 122 firms.[7] For those firms we collect data from several commercial databases. Financial data (total assets, market value, equity, net income and leverage) are from "Super-Analyst"; ownership and board of directors' composition are from the company reports, electronically available on "IFAT"; and stock return data are from "PREDICTA." Last, CEO pay, age and education are retrieved from annual tables published by Globes (a leading business newspaper in Israel).

In order to estimate the long run impact of CEO pay on firm valuation, we need a measure of end of period valuation. Thus, we calculate for each firm its Tobin Q at the end of 2001 (the last year in our sample), where Q is defined as follows:

(1) Q = (market value of equity + book value of debt) / (book value of total assets)

Also noteworthy are our ownership structure classifications. Based on the company ownership reports (Article 24 in its Annual report), which are relatively detailed in Israel and reveal all relations and agreements between firm large shareholders, we classify a CEO as owner CEO (non-owner CEO) if she belongs (does not belong) to the family or coalition that controls the firm, where control means possession of more than 50% of the vote. Within the owner CEO category we further distinguish between an owner CEO in a family-controlled firm and owner CEO in a firm controlled by several (usually two or three) business partners.

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[6] We define substantial change as a change of 5% or more in control group's equity holdings.

[7] After the exclusions detailed above we had 124 firms. However, we decided to omit two more firms with outlying Q ratios of 0.17 and 19.2 .

The standard deviation of the company daily stock returns during 1995-2001 is our proxy for firm risk. Financial leverage is defined as book debt over total assets. The CEO education dummy variable equals 1 when the CEO has an official academic degree, and zero otherwise. Return on equity is net profits divided by total assets. Last, firm's growth potential is approximated by annual average growth rate in firm's Total Assets (TA) during 1995-2001, calculated as $\text{Ln}(TA_{2001}/TA_{1994})/7$.

3.2. Methodology

Our main goal is to investigate the impact of CEO compensation on firm long run valuation. We focus on two central aspects of compensation contracts: the CEO pay level and its sensitivity to performance.

3.2.1. "Excess pay" and pay sensitivity estimation

To study the impact of CEO pay level, we adopt Ang et al (2003) and Brick et al (2006) approach and define "excess compensation" as the residual in a predictive CEO pay equation. There are two possible interpretations of such a residual. First, the residual may stem from CEO extra quality. It is difficult to parametrically define and measure CEO quality. Some important qualitative factors, observed only by firm insiders and firm Board of Directors, considerably affect CEO appointment and pay level. These soft qualitative factors cannot be described in a regression equation; hence, they are captured by the regression residuals. The second possible interpretation of the regression residual is that it represents a governance failure - the residual is the overpayment to the CEO, and it should have a long run value-diminishing effect.[8]

[8] We employ both these interpretations. Our Hypothesis 1 relies on the second interpretation (CEO overpayment), while Hypothesis 2 relies on the first interpretation (CEO quality).

The predictive CEO pay equation we use is:

$$(2)\ \ Ln(W_{it}) = \beta_0 + \beta_1 \cdot Ret_{it} + \beta_2 \cdot Ret_{it-1} + \beta_3 \cdot Lnsize_{it} + \beta_4 \cdot Ln(W_{it-1}) + \beta_5 \cdot Non\text{-}owner_i$$
$$+ \beta_6 \cdot (Non\text{-}owner_i \cdot Ret_{it-1}) + \beta_7 \cdot (Non\text{-}owner_i \cdot Ret_{it}) + \beta_8 \cdot Lev_{it}$$
$$+ \beta_9 \cdot Director_i + \beta_{10} \cdot Risk_i + \beta_{11} \cdot Institution_i + \beta_{12} \cdot Age_i + \beta_{13} \cdot Education_i$$
$$+ \Psi_{ind} \cdot Dumindustry_i + \tau_{year} \cdot Dumyear_t + \varepsilon_{it}$$

where W_{it} is the annual pay of firm i CEO in year t; RET_{it} and $RET_{i,t-1}$ are the annual stock returns in years t and t-1, respectively; $Non\text{-}owner_i$ is a dummy variable equal to 1 for non-owner CEOs, and 0 otherwise; Lev_{it} and $Lnsize_{it}$ are firm leverage and natural logarithm of firm total assets at the end of year t respectively; $Director_i$ is the proportion of the external directors on the firm's board; $Risk_i$ is the standard deviation of the daily stock return over 1995-2001; $Institution_i$ is the institutional investor holdings; Age_i is the average CEO age, and $Education_i$ is a dummy variable equal to 1 when the CEO has an academic degree and 0 otherwise; Ψ_{ind}*$Dumindustry_i$ represents the industry fixed effect of firm i, and τ_{year}*$Dumyear_t$ controls for each calendar year fixed effect.

Regression (2) is a "pooled" time-series cross-section ("panel data") regression with fixed effects for industry and calendar year. It controls for the host of variables that affect CEO pay (see section 2.1) including current and previous year stock return, CEO type (owner vs. non-owner CEO), governance factors (external directors and institutional holdings), firm size and risk, and CEO age and education. It also includes the previous-year CEO pay as a "catch-all" explanatory variable, designed to proxy for the impact of the omitted (unknown to us) pertinent explanatory variables.

After controlling for all above specified variables, we estimate the "excess" CEO pay in firm i as the average residual of firm i in regression (2), i.e., as the average ε_{it} across the sample years (average across t).

An alternative to the above estimation method is to estimate "excess pay" in firm i as the residual (η_i) in the following regression of average CEO pay:

$$(3)\quad \text{Ln}(\overline{W}_i) = \beta_0 + \beta_1 \cdot \overline{\text{Ret}}_i + \beta_2 \cdot \overline{\text{Lnsize}}_i + \beta_3 \cdot \text{Non-owner}_i + \beta_4 \cdot \text{Director}_i + \beta_5 \cdot \text{Risk}_i$$
$$+ \beta_6 \cdot \text{Institution}_i + \beta_7 \cdot \text{Age}_i + \beta_8 \cdot \text{Education}_i + \beta_9 \cdot \overline{\text{Lev}}_i + \Psi_{ind} \cdot \text{Dumindustry}_i + \eta_i$$

Regression (3) is a standard cross sectional regression, with one observation for each firm – each firm is represented by its average values over 1995-2001, i.e., $\overline{W}_i$ is the mean CEO pay in firm i over 1995-2001, and so forth. The estimation of excess pay via regression (3) serves for robustness purposes.

Our next goal is to estimate each CEO's pay performance sensitivity. We adopt Murphy's (1999) methodology and fit, for each firm i, the following time-series regression:

$$(4)\quad (W_t / W_{t-1}) = a_i + b_i \cdot RET_{t-1} + c_i \cdot RET_t + e_i$$

where W_t is firm's i CEO pay in year t and RET_t is firm's i stock return[9] in year t. The sum of coefficient $b_i + c_i$ measure the elasticity of CEO pay with respect to share price, which is the percentage increase in CEO pay in year t in response to a 1% increase in firm's share price in year t and t+1.

3.2.2. Tobin's Q analysis

Before examining the effect of pay characteristics on Q, we identify some control variables, i.e., variables that are customary in explaining firm's Tobin's Q.

[9] As a robustness test, we attempted accounting performance measures such as ROE, and found their coefficients to be positive yet statistically insignificant. This result is consistent with prior empirical evidence (see Core et al, 1999) indicating that CEO pay depends primarily on stock performance.

Based on prior literature we use the following control variables: firm ownership structure, size, growth rate, financial leverage, risk, and the percentage of external directors on the Board. The list of controls used is not exhaustive – see Himmelberg, Hubbard and Palia (1999), for example, for some additional variables based on firm's R&D activity, advertising expenses and capital intensity, which are not available to us. Nevertheless, the controls employed should help in achieving a more credible inference on the effect of pay characteristics on firm's end of period Q.

The Q regression we run is:

$$(5)\quad \text{Ln}(Q_i) = \alpha_1 * \text{Family}_i + \alpha_2 * \text{Partner}_i + \alpha_3 * \text{Non-owner}_i + \alpha_4 * \text{Family}_i * \text{Excess\_Comp}_i + \alpha_5 * \text{Partner}_i * \text{Excess\_Comp}_i + \alpha_6 * \text{Non-owner}_i * \text{Excess\_Comp}_i + \alpha_7 * \text{Family}_i * \text{Pay\_sensitivity}_i + \alpha_8 * \text{Partner}_i * \text{Pay\_sensitivity}_i + \alpha_9 * \text{Non-owner}_i * \text{Pay\_sensitivity}_i + \alpha_{10} * \overline{\text{Lnsize}}_i + \alpha_{11} * \overline{\text{Lev}}_i + \alpha_{12} * \text{Growth}_i + \alpha_{13} * \text{Director}_i + \alpha_{14} * \text{Risk}_i + \Psi_{ind} * \text{Dumindustry}_i + e_i$$

where $\text{Ln}(Q_i)$ is the natural logarithm of firm's Tobin's Q at the end of the sample period (2001); Family is a dummy variable equal to 1 if the CEO family has full control (hold more than 50% of voting power) in the firm (otherwise Family=0); Partner is a dummy variable equal to 1 if the CEO and her/his business partners together control the firm (otherwise Partner=0); Non-owner is a dummy variable equal to 1 if the CEO is an employee, owns less than 5% of firm equity and does not belong to the control group (otherwise Non-owner=0); Excess_Comp is an estimate of CEO excess compensation using equation (2) or (3) above; Pay_Sensitivity is CEO pay sensitivity estimated using equation (4); Lev is total debt to total assets ratio; Lnsize is the natural logarithm of total assets; Growth is the average yearly growth in firm size (total assets) over 1995-2001, computed as $(\text{LnSize}_{i2001} - \text{LnSize}_{i1994})/7$; Director is the percentage of external directors on the Board; Risk is the daily stock

return standard deviation over 1995-2001; and Dumindustry is a dummy variable for the industry sector of the firm.

4. Empirical results

Table 1 describes the sample. The mean (median) annual CEO pay is 1.25 (1.03) millions New Israeli Shekels (NIS) - about $314,000 ($259,000) given the average NIS/US$ exchange rate of 3.978 over the sample period. The sample comprises 54 owner-CEOs in family controlled firms, 35 owner-CEOs in partnership firms and 33 non-owner CEOs. Hence, about 73% of the sample firms are run by owner CEOs.

The mean total assets is 428 million NIS, with observations ranging from 4.34 millions NIS (lowest) to about 34.5 Billion NIS. Our sample firms are also heterogeneous in their industry affiliation, and in a formal test (not shown) we find that their cross-industry distribution represents well the corresponding distribution of all companies traded on the TASE.

(Insert Table 1 about here)

The average (median) return on equity and annual stock return are 4% (5%) and 9% (6%) respectively. These relatively modest profitability indicators stem from the fact that most of the sample years were poor performance years in Israel. The mean company risk (approximated by the daily standard deviation of company stock) is 3.1%.

External directors comprise, on average, close to 30% of firms' boards. The average (median) institutional investors' holdings is only 2.4% (0%), hence in more than half of the sample firms there are no institutional investors at all. Firms' debt is,

on average, more than 50% of total assets. The mean CEO age is 54, and about two thirds of CEOs have an academic degree.

Table 2 presents the results of predictive CEO pay regressions, which we use for estimating CEO excess compensation. For a few variables, most notably the CEO compensation, we use the natural logarithm transformation, in order to mitigate deviations from the Normal distribution. In addition, since firm risk, leverage and external directors' proportion are highly correlated with firm size (Pearson correlations higher than 0.5), we regress these 3 variables (separately) on Ln(size), and use the residuals of these 3 regressions as explanatory variables in the predictive CEO pay regressions (equation (2) above).

(Insert Table 2 about here)

Panel A documents the pooled cross sectional time series panel data regression results with industry and calendar year fixed effect. We start with a full model controlling for the various economic and governance determinants of CEO compensation discussed in previous literature and section 2.1 above. As expected, CEO pay is positively correlated with firm size (CEOs in larger firms receive higher pay), and stock return performance (CEO pay is performance sensitive). The positive correlation with previous year CEO pay emanate, in our opinion, from some determinants of CEO pay (such as firm and CEO characteristics), which we miss or do not measure optimally in our predictive equation. These omitted or mis-specified factors may not change much from year to year, hence may be represented by prior year CEO pay. Previous year pay may also represent some stickiness of CEO pay, namely phenomena like partial or "slow" adjustments of CEO pay.

Another important finding in Table 2 is the significant negative coefficient of the non-owner dummy variable. Ceteris-paribus, owner CEOs receive higher compensation than non-owner professional CEOs. This result is hardly surprising, given the larger responsibility and discretion of owner CEOs over their firms, and given the stronger ability of owner CEOs to extract inflated pay.

The other explanatory variables in our predictive pay equation do not contribute to the explanatory power. As Table 2 documents, a parsimonious model including only the above-specified significant variables scores the same "respectable" adjusted R^2 of 0.782 as the full model.

Panel B presents results of cross sectional regressions of average CEO pay. The average CEO pay regression serve for robustness tests, i.e., to check whether results obtained via the more elaborate panel data regression methodology persist. As in the panel regression, CEO pay increases with company size and stock performance, and is significantly lower for non-owner CEOs. However, due to the omission of lagged CEO compensation, that cannot serve as an explanatory variable in the average CEO pay regressions: a) the magnitude of the coefficients change, b) the explanatory power of the regression falls (adjusted-R^2 is 0.465), and c) two new explanatory variables, the proportion of external directors and firm risk, become significant.

The positive coefficient of the proportion of external directors is somewhat puzzling, given the monitoring duties that external directors presumably deliver. Similarly, the negative coefficient of firm risk is surprising, given that riskier firms are presumably run by more experienced and better qualified CEOs. Nevertheless, positive coefficients for external directors and negative coefficients for firm risk are common in prior empirical research of U.S. firms - see Core et al (1999), for example. Hence, our evidence and CEO pay models are consistent with existing research.

Before moving on, our pay sensitivity estimates should be reviewed. The average CEO pay elasticity in our sample, estimated using equation (4), is 0.17% - on average, each 1% rise in stock price increases CEO compensation by 0.17%. This pay elasticity is positive and statistically significant, yet, it is lower than in the U.S. Murphy (1999) estimates an average pay elasticity of 0.38% for U.S. CEOs.

The central task of our research is to assess the impact of CEO excess compensation and pay sensitivity on firm's long run valuation. We run a cross sectional regression of end of period (year 2001) Q on CEO excess pay and pay sensitivity using various controls including also industry and calendar year fixed effects – see equation (5). The results are shown in Table 3.

(Insert Table 3 about here)

The first column of Table 3 (labeled version A) documents regression results for the full Q model, controlling for a host of potential determinants of Q found in previous research. In this regression, the excess pay proxy is the residual of the parsimonious panel data regression reported in Panel A of Table 2. We find that excess compensation to owner CEOs in family firms, hurts end of period Q. This finding supports our Hypothesis 1. Excess compensation to owner CEOs in family firms appears like a form of private benefits extracted from the firm by its owner at the expense of small public investors. Apparently, some family CEOs exploit the firm and hurt its market valuation by withdrawing excessive pay.

It is interesting that in partnership controlled firms the coefficient of owner CEO excess pay is statistically insignificant (and even positive). This suggests that in partnership controlled firms there might be some mutual monitoring, and some internal objections to one partner (the CEO) withdrawing inflated pay. Partners in a

voting coalition appear to cooperate less successfully than families in extracting private benefits. The conclusion that partnership controlled owners extract less private benefits is consistent with prior evidence such as Volpin (2002) that document a higher Q for partnership controlled firms (relative to family controlled firms).

Hypothesis 2 of our paper is rejected by the data. Excess compensation to non-owner professional CEOs does not impact firm valuation. Its coefficient in the Q regressions is minute and statistically insignificant. Excess pay to non-owner CEOs appears random and inconsequential. Non-owner professional CEOs who receive positive (negative) excess pay do not appear to be of higher (lower) quality, as they do not, on average, increase (decrease) firm valuation. This evidence contrasts with previous findings in the U.S. (e.g. Ang et al, 2003 and Schaffer et al, 2000) where excess pay is positively correlated with firm future performance. Possible reasons for the difference are: a) the performance variable we investigate, Tobin's Q, is not related to excess pay – previous "excess pay" studies in the U.S. do not report results for Q, and b) the market for professional CEOs in Israel is less developed and less efficient than in the U.S.

Hypothesis 3 of the study is weakly supported by Version A of our regressions. Non-owner CEO pay elasticity has a positive effect on firm Q, and its coefficient is almost significant at the 5% level (p-value of 0.07). Hired CEOs in Israeli firms appear more successful in promoting firm value when their compensation schemes are better aligned with firm stock performance.

Further empirical tests reinforce the support for Hypothesis 3. For example, Version B in Table 3 presents results of a parsimonious Q regression, after omission of all control variables that lack statistical significance in Version A. In version B, the coefficient of non-owner CEO pay sensitivity is positive and even closer to statistical

significance (p-value of 0.055). Interestingly, when we omit the industry dummy variables from the parsimonious (Version B) regression, the coefficient of non-owner CEO pay elasticity becomes significant at the 1% level.[10] Finally, in our robustness test, that is based on alternative estimates of excess CEO pay, the coefficient of non-owner CEO pay elasticity is positive and statistically significant (p-value of 0.03) – see Version C in Table 3.[11]

The economic interpretation of the support for Hypothesis 3 is not simple. Originally we suggested that higher skill professional CEOs receive higher pay (excess pay) and more performance sensitive employment contracts, and deliver, in return, higher firm valuations. However, given our rejection of Hypothesis 2, i.e., given our finding of no relation between professional CEO "excess pay" and future firm valuations, we have to withdraw from the view that in Israel, during the sample period, professional CEO pay contracts were efficient. It appears that the proper interpretation of the support for Hypothesis 3 must rely on the alternative reasoning for it offered before in Section 2.4 – during the sample period closely-held-firm owners were reluctant to provide adequate "performance pay" to their hired professional CEOs. (Perhaps these owners relied too much on their ability to monitor the hired CEO.) The less than optimal incentives generate the cross-sectional relation between professional CEO pay performance sensitivity and firm valuation. Firms and owners that dared providing their hired CEO more generous incentives benefited from it, as presumably their CEOs exerted more efforts and increased firm valuations.

[10] In the regressions without industry dummies (not shown on Table 3), the negative coefficient of "excess pay to family owner CEOs" also becomes more statistically significant (p-value of 0.014), reinforcing the support for Hypothesis 1 as well.

[11] Version C also supports Hypothesis 1. The coefficient of excess pay to family CEO is negative and statistically significant. The essence of the robustness test attempted is to estimate excess compensation in an alternative way. In Version C we use the residuals of a cross-sectional regression of average (1995-2001) CEO pay, as our estimates of excess CEO pay.

5. Summary and conclusions

We examine the effects of CEO pay performance sensitivity and CEO "excess pay" on end of period firm valuation. Using a sample of 122 closely held Israeli firms that did not replace their CEO during the entire 1994-2001 sample period, we find that: a) in family firms, excess pay to an owner CEO (a CEO from the controlling family) decreases firm's end of period (year 2001) Tobin's Q; and b) in closely held firms that hire a professional non-owner CEO, the higher the pay performance sensitivity of the professional non-owner CEO, the higher is firm's end of period Q. Both these findings are novel in the literature.

The first finding above supports the view that excessive pay to a family-member CEO hurts public shareholders by reducing the market value of public holdings. There is ample evidence (starting with Holderness and Sheehan, 1988) that owner CEOs receive higher pay than professional CEOs. Combining this evidence with our findings, the conclusion is that some family CEOs exploit their firms and extract private benefits in the form of excessive pay.

The finding of a positive relation between the pay performance sensitivity of a non-owner CEO and firm's end of period valuation may indicate that in closely held firms the owners do not provide enough incentives to their hired professional CEOs. Consequently, a natural cross-sectional distribution emerges - professional CEOs who receive more performance-based pay exert more efforts and further increase firm valuation. We do not find evidence that professional non-owner CEOs with high incentives also receive an "excess pay" – the correlation between excess pay and pay performance elasticity is negative and statistically insignificant in the subsample of professional CEOs. Thus, it appears that the higher firm valuation achieved by non-owner CEOs with high incentives does not emanate from these CEO's recognized

superior skills, but rather from the mere fact that they received higher incentives. An interesting related question is why owners do not provide adequate incentives to their hired CEOs. One possible answer is that firm owners may be overconfident in their ability to supervise and monitor the hired CEO. Hence, owners may underestimate the true necessity and economic value of incentives. Future studies should examine this conjecture.

Finally, it is interesting that we cannot find any relation between owner CEO excess pay in partnership-controlled firms (firms controlled by a coalition of two or more business partners) and end of period Q. It is possible that the partners in a partnership-controlled firm monitor each other and monitor the partner appointed as CEO. Hence, less "excess pay" can be withdrawn by the CEO, and CEO's excess pay is less indicative of exploitation. This "lower private benefits" interpretation is consistent with previous findings and contentions (see Volpin, 2002, for example) that Q in higher in partnership firms because under the partnership coalition structure less private benefits are consumed. Alternatively, the insignificant valuation effect of excess pay to owner CEOs in partnership controlled firms may be a sample specific aberration. The ritual call for further research is reiterated.

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Table 1
Sample descriptive statistics

The sample comprises 122 publicly traded Israeli firms that did not replace their CEO over 1995-2001.

	Average	Standard deviation	Median	Minimum	Maximum	Number of obs.
Annual CEO pay (in million NIS) [a]	1.25	0.85	1.03	0.32	5.97	122
Owner CEO (=1 for owner CEO, and 0 otherwise)[b,d]	0.73	0.45	1	0	1	122
Partner CEO (=1 for partner CEO, and 0 otherwise)[b,d]	0.28	0.45	0	0	1	122
Firm book value of equity (in million NIS)[a]	198	835	55	-6.23	8,888	122
Firm market value of equity (in million NIS)[a]	227	857	59.3	5.64	9,009	122
Q ratio [e]	1.097	0.322	1.009	0.389	2.248	122
Annual growth rate of firm's Total Assets [a]	0.107	0.13	0.09	-0.217	0.553	122
Net profit (in million NIS) [a]	18.25	91.01	3.11	-8.44	979	122
Return on equity [a,f]	0.04	0.17	0.05	-1.14	0.69	122
Annual stock return [a]	0.09	0.26	0.06	-0.25	1.97	122
Total assets (in million NIS) [a]	428	3184	22.6	4.34	34,444	122
Daily stock return standard deviation (%)[c]	3.14	0.65	3.11	1.77	5.89	122
External directors proportion on firm's Board of Directors [b]	0.29	0.03	0.30	0.12	0.33	122
Leverage (book debt over total assets ratio) [a]	0.56	0.11	0.54	0.41	1.09	122
Institutional investor holdings [b]	0.024	0.037	0	0	0.19	122

Table 1 (continued)

	Average	Standard deviation	Median	Minimum	Maximum	Number of obs.
CEO age (in years) [a]	54	8	54	34	78	122
CEO education (=1 for an academic degree, and 0 otherwise)[b]	0.67	0.47	1	0	1	122

[a] Calculated over 7 years (1995-2001).

[b] Calculated over two years (1995 and 2001).

[c] The standard deviation of a daily stock return during 1995-2001.

[d] The sample comprises 54 family owner CEOs, 35 partnership owner CEOs, and 33 non-owner CEOs.

[e] Calculated at the end of 2001, as market value of equity + book value of debt over book value of assets.

[f] Calculated as net profits divided by book value of equity..

Table 2
Predictive CEO pay equations – estimating CEO excess compensation

We estimate two regression models:

$$(1)\ \ln(W_{it}) = \beta_0 + \beta_1 * Ret_{it} + \beta_2 * Ret_{it-1} + \beta_3 * Lnsize_{it} + \beta_4 * Ln(W_{it-1}) + \beta_5 * Non\text{-}owner_i + \beta_6 * (Non\text{-}owner_i * Ret_{it-1}) + \beta_7 * (Non\text{-}owner_i * Ret_{it}) + \beta_8 * Lev_{it} + \beta_9 * Director_i + \beta_{10} * Risk_i + \beta_{11} * Institution_i + \beta_{12} * Age_i + \beta_{13} * Education_i + \Psi_{ind} * Dumindustry_i + \tau_{year} * Dumyear_t + \varepsilon_{it}$$

where W_{it} is the annual pay of firm i CEO in year t. RET_{it} and $RET_{i,t-1}$ are the annual stock returns in years t and t-1, respectively ; $Non\text{-}owner_i$ is a dummy variable equal to 1 for non-owner CEOs, and 0 otherwise; Lev_{it} and $Lnsize_{it}$ are firm leverage and natural logarithm of firm total assets at the end of year t respectively; $Director_i$ is the proportion of the external directors on the firm's board; $Risk_i$ is the standard deviation of the daily stock return over 1995-2001; $Institution_i$ is the institutional investor holdings; Age_i is the average CEO age, and $Education_i$ is a dummy variable equal to 1 when the CEO has an academic degree and 0 otherwise; $\Psi_{ind} * Dumindustry_i$ represents the industry fixed effect of firm i, and $\tau_{year} * Dumyear_t$ controls for each calendar year fixed effect. Regression (1) is a "pooled" time-series cross-section ("panel data") regression.

$$(2)\ \ln(\overline{W_i}) = \beta_0 + \beta_1 * \overline{Ret_i} + \beta_2 * \overline{Lnsize_i} + \beta_3 * Non\text{-}owner_i + \beta_4 * Director_i + \beta_5 * Risk_i + \beta_6 * Institution_i + \beta_7 * Age_i + \beta_8 * Education_i + \beta_9 * \overline{Lev_i} + \Psi_{ind} * Dumindustry_i + \eta_i$$

Regression (2) is a standard cross sectional regression, with one observation for each firm – each firm is represented by its average values over 1995-2001, i.e., $\overline{W_i}$ is the mean CEO pay in firm i over 1995-2001, etc…

The sample includes annual data on 122 publicly traded Israeli firms in the 1995-2001 period. The number of observations is 854 (=122*7) and 122 in regression (1) and (2), respectively. In order to reduce multicolinearity, $Risk_i$, Lev_i, and $Director_i$ were regressed first on $Lnsize_i$ and the residuals of these regressions serve as explanatory variables in this table regressions. t-statistics are shown in parentheses. ** denotes significance at the 5% level, and *** at the 1% level.

Panel A: Regression (1) estimates

	Full model	**Parsimonious version**
Intercept	0.749***	0.752***
	(6.49)	(9.28)
RET_{t-1}	0.057***	0.059***
	(4.08)	(4.27)
RET_t	0.058***	0.059***
	(4.18)	(4.31)
$Lnsize_t$	0.071***	0.070***
	(6.51)	(6.45)
$Ln(W_{it-1})$	0.725***	0.739***
	(31.90)	(33.67)
Non-owner	-0.098***	-0.086***
	(-3.30)	(-3.16)

Table 2 (continued)

Panel A: Regression (1) estimates (continued)

	Full model	**Parsimonious version**
Director	0.182 (1.22)	
Risk	-0.037 (-1.61)	
Lev_t	-0.060 (-0.81)	
Institution	0.269 (0.86)	
Age	-0.00055 (-0.37)	
Education	0.0092 (0.37)	
Non-owner * RET_{t-1}	0.063 (1.34)	
Non-owner * RET_t	0.032 (0.66)	
Adjusted- R^2	0.782	0.782

Panel B: Regression (2) estimates

	Full model	**Parsimonious version**
Intercept	-2.555*** (-7.58)	-2.399*** (-11.42)
RET	0.515*** (2.76)	0.491*** (2.72)
Lnsize	0.269*** (7.02)	0.274*** (7.55)
Non-owner	-0.437** (-4.09)	-0.389*** (-3.99)
Director	1.069** (2.12)	1.028** (2.00)
Risk	-0.168** (-2.06)	-0.200*** (-2.74)

Table 2 (continued)

Panel B: Regression (2) estimates (continued)

	Full model	**Parsimonious version**
Age	0.0018 (0.33)	
Education	0.126 (1.36)	
Lev_t	-0.277 (-1.04)	
Institution	0.065 (0.06)	
Adjusted- R^2	0.465	0.467

Table 3

The effect of CEO excess compensation and pay performance sensitivity on closely held firms' valuation

The sample includes yearly data on 122 publicly traded closely held Israeli firms in the 1995-2001 period.

We present results of the following regression:

$$\begin{aligned}(1)\ \text{Ln}(Q_i) = {} & \alpha_1 * \text{Family}_i + \alpha_2 * \text{Partner}_i + \alpha_3 * \text{Non-owner}_i \\ & + \alpha_4 * \text{Family}_i * \text{Excess\_Comp}_i + \alpha_5 * \text{Partner}_i * \text{Excess\_Comp}_i \\ & + \alpha_6 * \text{Non-owner}_i * \text{Excess\_Comp}_i + \\ & + \alpha_7 * \text{Family}_i * \text{Pay\_sensitivity}_i + \alpha_8 * \text{Partner}_i * \overline{\text{Pay\_sensitivity}_i} \\ & + \alpha_9 * \text{Non-owner}_i * \text{Pay\_sensitivity}_i + \alpha_{10} * \overline{\text{Lnsize}_i} + \alpha_{11} * \overline{\text{Lev}_i} \\ & + \alpha_{12} * \text{Growth}_i + \alpha_{13} * \text{Director}_i + \alpha_{14} * \text{Risk}_i + \Psi_{ind} * \text{Dumindustry}_i + e_i\end{aligned}$$

where Excess_Comp_i is the average (across 1995-2001) of each company ε_{it} in the following CEO compensation panel data regression (see Table 2):

$$\begin{aligned}(2)\ \text{Ln}(W_{it}) = {} & \beta_0 + \beta_1 * \text{Ret}_{it} + \beta_2 * \text{Ret}_{it-1} + \beta_3 * \text{Lnsize}_{it} + \beta_4 * \text{Ln}(W_{it-1}) + \beta_5 * \text{Non-owner}_{it} \\ & + \Psi_{ind} * \text{Dumindustry}_i + \tau_{year} * \text{Dumyear}_t + \varepsilon_{it}\end{aligned}$$

$\text{Ln}(Q_i)$ is the natural logarithm of firm's Tobin's Q at the end of the sample period (2001), and $\text{Ln}(W_{it})$ is the natural logarithm of firm i CEO pay in year t. Family is a dummy variable equal to 1 if the CEO family has full control (hold more than 50% of voting power) in the firm (otherwise Family=0); Partner is a dummy variable equal to 1 if the CEO and her/his business partners together control the firm (otherwise Partner=0); Non-owner is a dummy variable equal to 1 if the CEO is an employee, owns less than 5% of firm equity and does not belong to the control group (otherwise Non-owner=0); Excess_Comp (in versions A-B below) is each company's (average) residual in panel regression (2); Pay_Sensitivity is the sum of coefficients of current and preceding year stock return (Ret_{it} and Ret_{it-1} respectively) in firm i (time series) regression: $(W_{it} - W_{it-1}) / W_{it-1} = a_i + b_i * \text{Ret}_{it} + c_i * \text{Ret}_{it-1} + e_{it}$; Lev is debt to total assets ratio; Lnsize is the natural logarithm of total assets; Growth is the average yearly growth in firm size (total assets) over 1995-2001, computed as $(\text{LnSize}_{i2001} - \text{LnSize}_{i1994})/7$; Director is the percentage of external directors on the board; Risk is the daily stock return standard deviation over 1995-2001; Dumindustry is a dummy variable for the industry sector of the firm; and Dumyear is a dummy variable for the calendar year . To avoid multicollinearity problems, Lev, Risk and Director are "cleaned" from Lnsize effects, i.e., in the regressions of this table we use the residuals of regressions of Lev, Risk and Director on Lnsize, instead of the raw variables themselves.

Three versions of regression (1) are presented in the table. Version A uses the full Q model - regression (1) above, and Excess_Comp based on the parsimonious CEO compensation model - regression (2); Version B is the same as A except that it uses a parsimonious Q model. Version C resembles B, except that in it, Excess_Comp is the residual η_i in the following cross-sectional <u>average</u> CEO pay regression, where both dependent and independent variables are averages of yearly observations in the 1995-2001 period (see Table 2):

$$\begin{aligned}\text{Ln}\ \overline{(W_i)} = {} & \beta_0 + \beta_1 * \overline{\text{Ret}_i} + \beta_2 * \overline{\text{Lnsize}_i} + \beta_3 * \text{Non-owner}_i + \beta_4 * \text{Director}_i + \beta_5 * \text{Risk}_i \\ & + \Psi_{ind} * \text{Dumindustry}_i + \eta_i\end{aligned}$$

t-statistics, corrected for heteroscedasticity using the White method, are presented in parentheses below the coefficients. **, and *** indicate significance at the 5% and 1% levels, respectively.

Table 3 (continued)

	Regression 1 version A	Regression 1 version B	Regression 1 version C
Family	0.215*** (2.69)	0.184*** (2.78)	0.216*** (3.24)
Partner	0.254*** (2.95)	0.206*** (2.83)	0.237*** (3.17)
Non-owner	0.204** (2.50)	0.120 (1.72)	0.140** (1.97)
Family * Excess_Comp	-0.469** (-2.03)	-0.520** (-2.10)	-0.178** (-2.21)
Partner* Excess_Comp	0.328 (0.77)	0.284 (0.69)	0.186 (1.23)
Non-owner * Excess_Comp	-0.024 (-0.03)	0.120 (0.24)	0.019 (0.14)
Family * Pay_Sensitivity	0.023 (0.53)	0.037 (0.96)	0.048 (1.25)
Partner* Pay_Sensitivity	-0.077 (-1.03)	-0.084 (-1.06)	-0.088 (-1.25)
Non-owner * Pay_Sensitivity	0.169 (1.81)	0.186 (1.92)	0.187** (2.12)
Lnsize	-0.018 (-0.93)		
Lev	0.294 (1.46)		
Growth	0.026 (0.14)		
Director	0.296 (0.87)		
Risk	-0.053 (-1.66)		
Adjusted R^2	0.082	0.085	0.097