THE DETERMINANTS OF EXECUTIVE COMPENSATION IN
FAMILY-OWNED FIRMS

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ABSTRACT

Family-owned firms use different executive compensation policies depending on whether or not the CEO is a family member. Family CEOs receive less total income. While family CEOs receive lower compensation, their pay tends to be more insulated from risk and increases faster than that of their non-family counterparts as systematic (less controllable) business risk increases. The presence of institutional investors and R&D intensity play an important moderating role in these relationships. The amount and mix of long-term income for family CEOs decrease as the ownership position of institutional investors improves. R&D intensity has less impact on compensation level and pay mix for family vis-à-vis professional CEOs.

Key words: executive compensation, agency relationship, family ownership

Despite a wealth of research on CEO pay, largely grounded in agency or managerialist perspectives, little is known about its determinants in family-owned firms (Tosi, Werner, Katz & Gomez-Mejia, 2000). We address this gap by examining a variant of the traditional executive compensation contract, one that involves family ties between principal and agent, and contrast it to situations where such ties are absent. To this end, we collected data during a four-year period on 253 family-owned firms; 148 (59%) of these were led by a family CEO and 105 (41%) had a non-family CEO at the helm. We find that the presence of CEO family ties influences the magnitude and composition of the executive pay package. We also observe strong interaction effects on CEO pay design between CEO family ties and three contextual factors, namely the presence of institutional blockholders, R&D investments, and the firm's systematic risk exposure. Our results confirm that principal-agent family ties exert a major influence on how much and how executives are paid, but these effects are complex.

This study offers several contributions to the literature on executive pay. First, we extend agency theory in a new and meaningful way to better understand incentive alignment issues that are unique to CEO pay in family-owned firms. Second, we use a population that is inherently interesting given the pervasiveness of family controled firms, and the lack of information on their executive pay practices. While estimates may vary, in the United States (where the corporate form described by Berle & Means [1932] and subsequent "managerialists" is most prevalent), families own approximately 80% of firms, with some estimates being as high as 95% (Beehr, Drexler & Faulkner, 1997; Daily & Dollinger, 1992). While the vast majority are small businesses with less than 500 workers, family-owned firms are often found among the largest corporations across a broad range of industries, both in terms of sales volume and number of employees (James, 1999; La Porta, Lopez-de-Silanes, & Shleifer, 1999). By some estimates, these businesses employ more than 85% of the American labor force (Oster, 1999). Third, we contribute to the theoretical and empirical

literature on corporate governance by showing how a wide array of agency relations within family owned firms (involving family CEOs, professional managers, family shareholders, and external investors) differentially affect CEO pay design. Lastly, we argue and empirically support the notion that important variables that have been shown in the past to predict CEO pay (namely R&D intensity and business risk) behave differently as a function of family ties at the top.

<div align="center">THEORETICAL FRAMEWORK AND HYPOTHESES</div>

Family Ties and Executive Pay

We expect that the family CEO should receive a lower level of total compensation than a professional CEO. There are several reasons for this expectation. First, both anecdotal (Applegate, 1994; Kets de Vries, 1993) and empirical (Allen & Panian, 1982; Gomez-Mejia et al., 2001; Schulze et al., 2001) evidence suggest that incumbents with family ties to owners enjoy greater employment security than professional managers. The latter are not sheltered by common family bonds as would be the case when the executive is related to the firm's owners. As argued by Beehr et al. (1997), the family executive inherently plays two overlapping and interdependent roles: a work role (as steward of the company) and a non-work role (fulfillment of family obligations). In reciprocity for this role duality, the family CEO is rewarded with a relatively assured job (Allen & Panian, 1982; Kets de Vries, 1993; Gomez-Mejia et al., 2001). Moreover, the performance expectations of family CEOs are probably less demanding than those of professional managers who are often asked to play the role of "turnaround artists." As noted by Smith and Amoako-Adu (1999: 342), "a poorly performing family firm looking for a turnaround would rank its choice of CEOs as first being an outsider, second a non-family insider, and third a family member." Thus, professional CEOs tend to be at the helm when the firm faces difficult prospects, implying a more challenging assignment for the incumbent, with a greater probability of failure.

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The performance appraisal literature also suggests that evaluators are more likely to make positive performance attributions to employees when there are emotional ties between monitors and those being judged. The reverse is also true: scapegoating is more likely to occur when there are weak affective ties between supervisors and subordinates (see review by Cardy & Dobbins, 1993). By implication, one would expect that in family-owned firms board members in their role as monitors may be less inclined to attribute disappointing results to the family CEO vis-a-vis a professional executive. The board may also respond more forcefully against the professional manager when interpreting ambiguous performance data giving the benefit of the doubt to the family CEO (e.g., bad luck or unfortunate circumstances) but not to the outsider (who may be judged to be incompetent).

Applying agency theory's logic, the above scenario suggests that in family owned firms risk averse agents would trade higher job security for lower earnings if they are related to principals. Conversely, professional executives would exchange higher pay for lower employment security and the greater performance expectations placed on them. Other attributes of the family agency contract also contribute to this pay gap. The family CEO is more likely to be emotionally attached to the firm than its professional counterpart so the agency contract should be more calculative and utilitarian for the latter than the former (Gomez-Mejia, et al., 2001; James, 1999). Another way of looking at this is that pecuniary "quid pro quo" motives in the agency relation should not loom as large for family executives. Consequently, they should be willing to accept a lower remuneration package in return for their services. This tendency is reinforced by the fact that family CEOs are unlikely to compete in the external market, while professional executives are free to chose the best offer among available alternatives open to them. This "family handcuff" lessens the need to reward the family CEO with a pay package that is comparable to that of a professional executive. As a result, their pay is likely to remain depressed. The preceding arguments lead to our first hypothesis:

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Hypothesis 1a: Family CEOs receive lower total compensation than professional CEOs.

As a corollary to Hypothesis 1a, it seems reasonable to expect that the greater the concentration of ownership in the hands of the family, the more protection can be afforded to a family CEO, and conversely the greater the risk exposure of a professional CEO. In other words, unencumbered family members should be able to offer greater employment security to one of its members and act more decisively and unilaterally to discipline the professional CEO for real or alleged incompetence. Agency theory logic would again suggest that this should depress the relative compensation of the family CEO (who would be more sheltered from employment risk by powerful family members), and increase it for the professional CEO (who should require a pay premium to take on the riskier assignment). Thus:

> **Hypothesis 1b:** The greater the concentration of ownership in the hands of family members, the greater the compensation gap between family CEOs (who are paid less) and professional CEOs (who are paid more).

The Moderating Role of Institutional Investors

Recent research suggests that agency problems may be substantial in family owned firms and that these manifest in different forms depending on CEO family ties (e.g., Gomez-Mejia et al., 2001; Schulze et al., 2001). Consistent with prior literature (Tosi et al., 1999), institutional investors should play an active policing role to reduce these agency problems for family firms in their portfolio. Accordingly, as discussed next, we believe that the design of the CEO compensation package will vary by family status as a function of the ownership position of institutional investors.

One important factor for institutional investors to consider in CEO compensation design is the timeframe for decision making. The broader literature on corporate governance suggests that institutional investors are particularly concerned with agency costs associated with "managerial myopia" (Hansen & Hill, 1991; see also review by Laverty, 1996). These investors are interested in long-term value (Davis & Thompson, 1994), while "managers may favor short-term results and lack

commitment to long-term investments" (David, Hitt, & Gimeno, 2001: 144). The reason for these conflicting goals lie in the fact that CEOs often have a more immediate time horizon for decision making than that of institutional investors. As noted by David et al. (2001: 145) "although long-term investments can increase firm value for owners, such investments may be suboptimal from the perspective of managers…managers are likely to enjoy larger personal benefits from investments with faster payoffs that enable them to enhance their reputations speedily and thereby hasten career advancement." Consistent with this view, several studies have shown a positive impact of institutional ownership on the use of equity-based compensation to foster a long-term managerial perspective (e.g., Tosi & Gomez-Mejia, 1989; David, Kochhar & Levitas, 1998).

Family relationships at the top are likely to change this picture. For family CEOs, "family ties, loyalty, [employment] insurance, and stability are expected to be effective in lengthening the horizons of managers, and in providing the incentives for family managers to make efficient long-term investments in the family business" (James, 1999: 41). Based on in-depth interviews with over 300 executives associated with family firms, Kets de Vries (1993: 62) notes that a key distinguishing feature between family CEOs and professional executives is that the former "…are not hunted by quarterly results. They are under less pressure…they worry less about takeover threats. There is less need to create elaborate schemes with poison pills and golden parachutes. They are more willing to plow profits back into the business…" Given that a long-term perspective of family managers is a natural outgrowth of membership in the family system, from the point of view of institutional investors the advantages of long-term pay (i.e., the creation of a "common fate" between the CEO and the firm; Murphy, 2000) are greatly diminished for family CEOs.

Emphasizing long-term pay for family CEOs may not only provide dubious benefits to shareholders, but may inadvertently promote agency problems associated with managerial entrenchment. An ever present danger with family CEOs is that the executive may stay in power

even though continued tenure may not be justified based on performance results (Kets de Vries, 1993). Unfortunately, "because ownership rights and the formal authority of office combine with family status to reduce turnover…the CEOs of most family firms are firmly entrenched" (Shulze et al., 2001: 104).[1] Emotional ties between the CEO and the board (Schroeder, 2001), and family altruism (Casson, 1999) tend to prolong this tenure. Gomez-Mejia et al. (2001) document how entrenched family CEOs set in motion sub-optimal risk taking and lower performance. This same study also suggests that those family firms that have procedures in place to prevent this from happening (e.g., appointing professional CEOs when profitability falls below industry norms) perform better and survive longer. In other words, entrenched family CEOs either through incompetence or the pursuit of non-economically motivated preferences (e.g., vetoing a new venture because it threatens the status quo, investing in pet projects, or showing favoritism for particular relatives) "may take actions that do not advance the common (economic) good and still remain at the helm" (Schulze et al., 2001: 101).

Designing a compensation package for the family CEO that is heavily oriented towards long-term incentives augments the incumbent's already high equity position (e.g. in the present study it exceeds 17% of the firm's equity). This should enhance his/her ownership rights vis-à-vis other stakeholders in the firm, increasing the possibility of entrenchment (Shulze et al., 2001). Thus, any agency benefits that may be potentially gained through increased equity ownership for family CEOs (e.g., greater performance accountability) could be offset by excessive control and moral hazard problems. Compounding this problem, family ownership tends to shield the firm from the disciplinary pressure of the market for corporate control and it is more difficult for the stock market to appropriately value the firm's stock prices in response to "hidden actions" (Stulz, 1988). This provides family executives with greater latitude of action to pursue their own agendas sheltered

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[1] Three data sets using very different samples indicate that the tenure of family CEOs is on average more than double

from market pressures. Given closer monitoring by the family, entrenchment is a less serious pitfall for the non-family CEO. Thus, in addition to fostering a longer time horizon, greater ownership rights for the professional CEO should strengthen the incumbent's leverage position vis-à-vis that of influential family members.

In summary, the instrumentality of long-term income to reduce potential agency problems in family owned firms depends on the family status of the CEO. If the CEO is a professional manager, long-term income may help tie the fortunes of the CEO to those of the firm, helping resolve the problems of managerial myopia, information asymmetry and potential conflict of interest between principal-agent. In the case of family CEOs, strengthening the ownership rights of the incumbent may reinforce a natural tendency toward entrenchment, thereby having a negative impact on shareholders' welfare. Thus, we posit that institutional shareholders who are vigilant of their interests should press for lower emphasis on long-term income in the case of family CEOs, with the opposite being the case for professional managers. This leads to our second hypothesis:

> **Hypothesis 2a:** The greater the percent of stock ownership in the hands of institutional investors, the lower the long-term income received by family CEOs.

> **Hypothesis 2b:** The greater the percent of stock ownership in the hands of institutional investors, the lower the proportion of long-term income as a percent of the total compensation package for family CEOs.

The Moderating Role of R&D Intensity

Several empirical studies in the compensation strategy literature (Balkin & Gomez-Mejia, 1987, 1990; Mikovich, Gerhart & Hannon, 1991) report that firms which invest heavily in R&D pay more to their executives but tend to emphasize the variable components of pay, particularly long-term income. In this manner, these firms compensate executives for the higher risks involved in R&D activities (due to greater ambiguity in cause-effect relations, greater uncertainty of longer

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that of professional CEOs (Gomez-Mejia et al., 2001; Schulze et al., 2001; and the present study).

term R&D investments, more dependence on trial and error and such, cf. Balkin, Markman & Gomez-Mejia, 2000). Long-term pay in turn forges a common destiny between the executive and shareholders. In these firms "self-monitoring" rather than external monitoring becomes very important as information asymmetries between professional managers and shareholders increase on a par with R&D investments (due to specialized knowledge required, greater complexity of processes, difficulty in judging the appropriateness of managerial decisions within a short-time frame, and the like, cf., Milkovich et al., 1991; Balkin et al., 2000). Thus, long-term incentives that tie the executive's financial gains to shareholders' welfare through appreciation of stock holdings, "serve a crucial self-monitoring control function for CEOs of firms with high R&D intensity" (Balkin et al., 2000: 1120). This is buttressed by the fact that most of these firms are dependent on entrepreneurial talent that is attracted to this type of compensation scheme (Chandler, 1993).

Among family-owned firms, we expect to find a different situation. That is, we anticipate uncovering an interaction effect between CEO family membership status, R&D intensity and both level and mix of the executive compensation package. Specifically, we predict that the positive influence of R&D intensity on CEO's total pay, and long-term income as a proportion of total pay should be lower for family CEOs. There are several reasons for this expectation as noted below.

Firms with high R&D intensity are more dependent on specialized managerial talent where management of innovation, knowledge generation and boundary spanning activities become an integral part of the executive's job (Duysters & Hagedoorn, 2000; Gopalakrishman, 2000). As argued by Henderson and Fredrikson (2001:100), "as R&D activity increases, the number of investment projects grows and/or the size and complexity of the average project increases…the long multiyear lags between technology expenditures and potential future revenues further complicates [managerial] decisions...to make informed choices among competing projects, executives need a deep understanding of technological and competitive risks…[and] the emerging contingencies that

may demand large scale redirection of resources across projects." Lifetime CEO family experience is not as valuable an asset in firms facing these challenges and could even be a drawback. As noted by Casson (1999) "…the advantage of the dynastic firm lies in the special training that it gives to family members, who have the opportunity to learn about all the different aspects of the production process…it is assumed that this family training is of greatest value in traditional industries… by contrast, dynastic firms are likely to suffer most in science based industries, since the family training is of little value, whilst the sacrifice of foregone professional expertise is high."

In other words, as R&D intensity increases the advantages of CEO family ties (e.g., greater loyalty and commitment) may not overcome two serious potential liabilities. One is a more limited set of managerial skills for the firm to choose from. The other is that a "home-grown" family executive may face greater cognitive constraints resulting from a narrower market exposure, more parochial work experience, and a firm-specific knowledge base. To insist on retaining direct managerial control by a family member, the firm may have to opt for a lesser qualified CEO, a policy that would not be very rational for a situation that demands technical savvy and in some cases may call for esoteric acumen that can only be drawn from a competitive labor market. Relatedly, the economic value of a personal style of management in which trust, loyalty, service and reciprocity are heavily weighted, as is usually the case for family CEOs, is likely to diminish as knowledge creation and innovation are key to achieving a sustainable competitive advantage in these firms (Gopalakrishman, 2000). Moreover, family CEOs are typically selected several years prior to the founder or current CEO's departure so that they are carefully groomed to take over the position (Vancil, 1987). This internal training may be of little use in firms with very short life cycles, exposed to very rapid change, and dependent on innovation for their survival.

As an extension of the above arguments, it seems reasonable that as R&D intensity increases the family-owned firm should offer a greater pay premium to the non-family CEO in order to enable

the firm to compete for talent in an open labor market. At the same time, the firm is more likely to convert a greater share of the professional CEO's pay into a long-term income form as R&D intensity rises. Such a pay strategy would make more sense in this situation when a family outsider is at the helm. Relying on an agency logic, Milkovich et al. (1991: 137) noted that: "R&D intensive firms are subject to an exacerbation of the owner-manager information asymmetry…managers' behavior and information cannot be as readily observed and controlled in R&D intensive firms due to the very nature of the innovative process. R&D inputs at one time period may not show readily observable results for several periods. Furthermore, interim [short-term] performance measures may be misguided…" Thus, long-term incentives as a proportion of total pay should be lower for family versus professional CEOs as R&D intensity increases given that information asymmetries would be greater for the latter than the former. The next set of hypotheses follow from the preceding arguments:

> **Hypothesis 3a:** The positive effect of R&D intensity on CEO compensation level will be lower for family CEOs than professional CEOs.

> **Hypothesis 3b:** Long-term income as a proportion of total pay will rise slower as a function of a firm's R&D intensity for family than professional CEOs.

The Moderating Role of Business Risk

Given the assumption of agent's risk aversion, agency theory predicts that as uncontrollable business risk increases, the total pay of the CEO should increase accordingly. But we expect that the risk-pay relations will depend on CEO family ties. Simply put, we predict that family CEOs will experience greater sensitivity of their compensation to business risk.

Unlike their non-family counterparts, family CEOs face additional personal risks as business risk increases, and this means that their remuneration should increase accordingly. The failure rate of family-owned firms tends to be higher when faced with greater business risks because the firm is often precluded from obtaining funds from outside sources, which means that more internal sources

are used, and often exclusively rely on reinvestment of profit (Casson, 1999). This implies limited portfolio diversification and a higher cost of capital due to higher risk premium which exacerbate the probability of business failure (Galve-Gorriz & Salas-Fumas, 1996). The family executive, unlike an outsider who works for a fee, has concentrated all his/her risks into one business. These risks are not only financial, but also socio-emotional as the family's name is at stake, a living symbol of its generational or multigenerational achievement. Family CEOs are likely to "have made the firm the true object of their devotion and have spent most of their working lives within the company" (James, 1999: 44). If the company fails, their external employment prospects are likely to be limited as their human capital is firm-specific and other firms are unlikely to offer a similar or better job to the family ex-CEO of a demised company.

Unlike the family CEO, the professional executive is not intrinsically tied to one firm neither financially nor emotionally. This CEO will hold the position as long as it is personally advantageous, and would receive a pay premium over a family CEO while at the helm (as argued in Hypothesis 1a). Further, the non-family executive has more employment options outside the firm and has more freedom to exit the firm unencumbered long before the possibility of business failure materializes. As noted by Daily and Dollinger (1993: 120) "professional (non-family) managers seldom maintain loyalty to any organization. Therefore, the loss of one's job, or more importantly the failure of the business, are not as catastrophic to the professional manager."

Given the above considerations, at the same time that the family firm will pay a compensation premium to the non-family CEO (as per Hypothesis 1a), as evidence of business risk beyond the executive's control increases, the compensation of the family CEO will increase faster than that of a professional CEO. Altruistic motives are likely to play a role here as the family firm would lean towards rewarding the "underpaid" CEO family member for business risks that lie beyond his/her control and that may lead to great personal hardships. Formally, stated:

Hypothesis 4a: The overall compensation of family CEOs will rise faster than that of professional CEOs as business risk increases.

We believe that the stronger hypothesized relationship between total compensation level of family executives and business risk will be more pronounced in the case of environmental (systematic) than firm specific (unsystematic) risk. The reason for this is that systematic risk, by definition, exposes the CEO to performance uncertainty that is exogenous to the firm and over which the executive exerts very little if any influence, particularly in family owned firms where the opportunities for diversification are rather limited. While family CEOs may be "underpaid" (as per Hypothesis 1a), their compensation should be more closely pegged to external (systematic) risk following the logic that underlies Hypothesis 4a (lack of employment options, commitment to a single firm, altruistic motives on the part of family members and such). Thus:

Hypothesis 4b: The overall compensation of family CEOs vis-à-vis that of professional CEOs will rise faster as a function of exogenous (systematic) than firm specific (unsystematic) business risk.

METHODS

Sample and Data Collection

We tested our hypotheses with a sample of 253 family-owned firms during a four-year period (1995-1998). These firms were identified through a painstaking and tedious process that involved manual inspection of a randomly selected set of 3000 proxies of publicly traded companies included in the COMPUSTAT database. While not exhaustive, this large randomized sample was considered adequate given the labor intensity involved in data collection. Following standard criteria in the literature on family businesses, a firm was considered as "family-owned" if both of the following two conditions are met: two or more directors must have a family

relationship[2] (Daily & Dollinger, 1993), and family members must own or control at least 5% of the voting stocks (Allen & Panian, 1982). For 148 (59%) of those firms, the CEO was also a family member, while for the remaining firms he/she was not.[3] Information for each firm was obtained from two sources during the period 1995-1998. Firms' proxy statements were used to collect data about CEO and firm characteristics, ownership structure, board composition, and CEO pay. Financial information for the same period was downloaded from the COMPUSTAT database.

Measures

CEO Compensation. We include measures of both compensation level (total compensation, salary, bonuses and long-term income [LTI]), and compensation mix (salary/total compensation, bonus/total compensation and LTI/total compensation) for the 1995-1998 period.[4]

CEO Family Status. This is a dummy variable that has a value of 1 when the CEO belongs to the family that "controls" the firm (N = 148, as per our definition of family ties in footnote 2). This variable takes a value of 0 when the CEO is not a member of the family (N = 105).

Ownership structure. We used firms' proxy statements to measure the percent of stock owned by the CEO, the percent of stock owned by family members (excluding the CEO), and the percent of stock owned by institutional investors.[5]

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[2] Two individuals are considered to have a family relationship if they are members of the same descendent group (Zeitlin, 1974; Gomez-Mejia et. al., 2001; Schulze et.al., 2001; Daily & Dollinger, 1993). This would include father, mother, sister, brother, son, daughter, spouse, in-laws, aunt, uncle, niece, nephew and cousin.

[3] Sample statistics indicate that the median for firms led by a family CEO was 45.6% smaller in annual dollar sales, 69.3% smaller in workforce, one and a half years younger, 5.8 times lower in R&D investments, 18.2% lower in the systematic risk (beta) measure, and 7 years longer (2.8 times higher) in terms of CEO tenure, as compared to firms led by a professional CEO. None of the industry sectors at the 4 digit SIC code account for more than 5% of the firms. No industry differences were detected by family status. As a whole, these statistics suggest that family owned firms tend to hire professional executives as the complexity of the managerial task increases (i.e., greater scale of operations, more R&D intensity, increased systematic risk and the like); and that family CEOs tend to remain at the helm much longer.

[4] The cash compensation components (i.e., salary, bonuses) are valued in U.S. dollars. Following previous work (e.g., Finkelstein and Boyd, 1998), the value of stock options is calculated as the number of options granted to the CEO multiplied by 25 percent of the exercise price.

[5] Institutional investors include public pension funds, mutual funds, insurance companies, banks, non-banks trusts, and corporate pension funds (David et al., 1998). Family trusts and/or foundations are not considered as institutional

Firm Risk. Consistent with much of prior work, we defined business risk as variability in firms' stock market returns and measured it in two ways: as systematic and unsystematic risk (Bloom & Milkovich, 1998), using monthly adjusted stock data from 1995 through 1998. Monthly adjusted data on the S&P 500 index was used to capture the market portfolio return.

R&D Intensity. This was measured as the ratio of R&D expenditures during the 1995-1998 period divided by sales.

Control Variables. Several measures were used as control variables as many of these have been found in prior studies to relate to CEO pay (see review by Tosi et al., 2000; Gomez-Mejia & Wiseman, 1997). Firm size was measured as the average value of firm sales for the 1995-1998 period. Firm performance was measured as average ROA and average Excess Stock Returns (relative to Standard and Poor's 500) during the period 1995-1998. Miscellaneous firm characteristics include industry, firm age, and extent of international diversification.[6] CEO Characteristics include CEO tenure, and a set of dummy variables to denote whether the CEO was also the chair of the board of directors (CEO Chair), the founder of the firm (CEO Founder), or a member of the compensation committee (CEO Compensation Committee). We also controlled for other family-related characteristics, including the proportion of family members on the board and whether or not a family member (who is not the CEO) is also a member of the compensation committee (1 = yes, 0 = no).

Based on each firm's SIC code, we included a dummy variable that differentiates between manufacturing (1) and non-manufacturing firms (0) (Tosi & Gomez-Mejia, 1994). We did not use

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investors. Due to limitations in the information available, we could only identify institutional investors that own 5% or more of the company stock.

[6] International diversification was measured using a dummy variable (1 if the firm has at least one foreign subsidiary, 0 otherwise). We used a dummy variable because only 76 (out of 253) firms in the sample had a foreign subsidiary. Among those 76 firms, 42 had a family CEO (55%) and 34 (45%) had a non-family CEO. The median number of subsidiaries was slightly higher for firms with a non-family CEO (four) than a family CEO (three) at the helm.

finer industry breakdowns in the analysis because given that no significant differences were found, we opted to conserve degrees of freedom in the regression equations.

Analysis

The hypotheses were tested via regression analysis, with the CEO pay measures as dependent variables.[7] First, all the control variables and main effects were entered as a block. Next, the interaction terms were entered. These included the multiplicative terms for CEO family membership and: % family ownership (hypothesis 1b), % institutional ownership (Hypotheses 2a and 2b), R&D intensity (Hypothesis 3a and 3b), and both business risk measures (Hypotheses 4a and 4b). A positive sign for the interaction term means that the effect of that variable on CEO pay is stronger for the family CEO (and vice versa in the case of a negative coefficient).

RESULTS

Table 1 shows the correlation matrix, while Table 2 summarizes the regression results. The correlation coefficients for family CEOs in Table 1 indicate that their compensation tends to be lower than that of professional CEOs. This is corroborated by the regression results in Table 2, which shows that family CEOs receive lower total compensation than professional CEOs (beta = - .25, P ≤ .10), providing moderate support for Hypothesis 1a. In support of Hypothesis 1b, the pay disadvantage of the family CEO grows as family ownership increases (beta = - .21, P ≤ .05). Table 2 also shows that as the percent of stock ownership in the hands of institutional investors increases, both the relative amount (beta = - .36, P ≤ .05) and mix (beta = - .58, P ≤ .01) of long-term income decreases for family CEOs supporting hypotheses 2a and 2b. Turning our attention to R&D as a moderator in Table 2, the effect of R&D investments on total CEO pay is lower for family CEOs

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[7] Some authors report that agency problems are associated with ownership in a non-linear fashion. For example, Morck, Shleifer, and Vishny (1998) found that Tobin's Q tends to decrease under moderate CEO stock ownership (5-25% range) due to entrenchment, and increases under high ownership (greater than 25%) due to the symmetrical consonance of interest between the CEO and the firm. In the present sample of family owned firms, none of the non-linear terms for

(beta = - .93, P ≤ .001), and these family CEOs are paid in cash (beta= .47, P ≤ .05) rather than through long-term pay (beta = -.90, P ≤ .001) as a proportion of total compensation as R&D rises supporting hypotheses 3a-3b. Lastly, the results in Table 2 indicate that systematic risk has a much stronger positive effect on the total compensation of family CEOs (beta = .69, P ≤ .001), while unsystematic risk seems to make no difference, supporting hypotheses 4a and 4b. With the exception of firm size, the control variables as a whole had little effect on CEO pay.

While not shown in Table 2, the "practical" differences associated with the statistically significant interaction terms tend to be rather large. For example, professional CEOs on average receive almost four times more income in the form of long-term pay if they work for a family owned firm that falls in the top versus the lowest quartile in institutional investments. For family CEOs, we find exactly the opposite, with family CEOs receiving less than half as much in long-term pay if their firm falls in the top versus the lowest quartile of the institutional investment distribution. Among firms in the top quartile of R&D intensity, family CEOs earn approximately one fourth of their professional CEO counterparts, with the difference reaching a 9 to 1 ratio in the case of long-term income. Lastly, the pay gap narrows considerably between the family CEO and the professional CEO in the top versus the low quartile of the systematic (beta) risk distribution, with the family CEO earning approximately one half of the professional CEO's earnings in the top beta quartile versus approximately one-third in the lowest beta quartile. All things considered the family CEO earns slightly less than half the annual income of a non-family CEO ($635 thousand versus $1.3 million on average).

CONCLUSIONS AND DISCUSSION

Our results indicate that executives with family ties to owners receive lower total pay than professional managers. This relative pay disadvantage increases as the family ownership position

CEO, family and institutional ownership variables were found to be significantly related to the dependent variables.

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improves and R&D investments increase, conditions which induce these firms to pay more to outsiders in order to secure their services. On the other hand, family ties protect the CEO from bearing excessive pay risk as indicated by a greater compensation premium as uncontrollable (systematic) business risk increases. These results point towards an interesting and complex agency dynamics –where altruistic family motives are at work when family CEOs are at the helm, but these motives manifest themselves not in higher pay but rather in risk protection.

This study also suggests that institutional investors play a major role in the compensation policies of family owned firms. The evidence is consistent with theoretical expectations that agency problems from the point of view of external investors differ depending on family ties at the top. Managerial myopia in the case of professional managers may be reduced through long-term income. On the other hand, managerial entrenchment in the case of family CEOs may be held in check by failing to provide these executives with greater equity based compensation (which would strengthen their ownership position). These findings indicate that prior research showing a positive impact of institutional ownership on CEO performance contingent pay (see Tosi et al., 1999) should be reconsidered in family owned firms. In other words, institutional investors seem to express different preferences as to how incentive alignment systems are designed depending on CEO family relations.

The results noted above present an interesting theoretical challenge. The literature on agency theory suggests that performance contingent pay systems could become a two-edge sword: on the one hand, they create greater incentive alignment between principal and agent but on the other hand they may accentuate a natural propensity toward risk adversity on the part of the agent leading to suboptimal returns to shareholders. (For an extended discussion of this issue, see Gomez-Mejia & Wiseman, 1997). This dilemma acquires special significance to institutional shareholders of family

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Therefore, only linear regression models are calculated and shown in this study.

owned firms seeking to maximize investors' returns. Given that both family shareholders and family CEOs bear greater risks from the consequences of executive actions (i.e., their wealth is closely tied to one firm and external employment possibilities are limited), it seems reasonable that institutional investors would avoid paying the family executive with equity based income as this would give them greater influence to make conservative decisions in an already risk averse, family business context. This is an exciting area for future research.

Three prior studies using non-family firms report that unsystematic rather than systematic risk is related to executive pay (Gray & Cannella, 1997; Bloom & Milkovich, 1998; Miller, et al., in press). Instead, we find the opposite results in the case of family CEOs and a lack of significance for unsystematic risk in general as a predictor of CEO pay. This suggest that how firm risk influences CEO compensation design depends not only on how we measure risk, but also on family ownership and CEO family ties. As argued here, while family CEOs tend to earn less they are compensated for assuming greater uncontrollable risks given their fewer employment options in an open labor market. The unexpected absence of connection between firm specific (unsystematic) risk and CEO pay in this study, in contrast to prior studies, may be the result of two counterveiling tendencies among family-owned firms. On the one hand, the innate conservatism of family firms (Galve-Gorriz & Salas-Fumas, 1996) may bias CEO compensation contracts to reinforce conservative managerial decisions. On the other hand, some CEO risk taking is needed in order to ensure survival and to achieve a minimum return of shareholders. Therefore, family firms wouldn't use incentives to promote risk taking, but neither can they afford to dissuade CEOs for adopting necessary risks. The existence of these two opposite forces could explain the lack of a significant relationship between unsystematic risk and CEO pay in our study. Again, the role of family ownership on CEO compensation risk bearing offers an interesting avenue for future theory development and empirical research on corporate governance.

This study raises some other exciting issues that may be pursued in future research. The "so what" question immediately comes to mind in terms of the implications of these executive pay policies for family-owned firms: Do these pay strategies make a difference in terms of observed firm performance? How do these policies affect decision making for family versus non-family CEOs?. There is also a growing literature on trust that may be extended to analyze the pay related consequences of familiarity between principals and the CEO. Broadening the scope of this study beyond compensation per se, given that the competitive success of firms depends more and more on innovation, rapid response time, ability to survive in fast cycle markets and the like, is the family CEO losing ground as a potentially viable strategic leader in this type of environment? Our data hints that this may be true as the median R&D intensity of firms led by a professional CEO is more than seven times greater than those with a family CEO at the helm. Similarly, the median systematic (beta) risk measure is more than a third higher under a professional versus a family CEO. Do the "best" family CEOs survive under these conditions? Other areas that may be pursued in the future would include, for example, an examination of the profile of non-family executives that are attracted to family-owned firms (e.g., are they more risk prone?) and the characteristics of those family CEOs that survive in the challenging environments noted above. Simply put, family owned firms still represent a black box in the scholarly management literature, opening the door to much needed pioneering research.

In closing, it is important to note that this study has relied on family owned firms that are publicly traded. Thus, there is a possibility that the results may not generalize to privately held family owned firms. This presents both an opportunity and a challenge to future research as access to data from a large sample of these firms is severely limited. Another caution worth noting is that the years for this study (1995-1998) corresponds to an unprecedented period of economic

prosperity, a bull market, and the so called "internet buble." Further research may try to ascertain if some of our findings reflect these unique market conditions.

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TABLE 1
Correlation Matrix (N = 253)

ID	Variable Name	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12
1	Sales (millions)[a]	675.46	1900.01	1.00											
2	Return On Assets[b]	0.06	24.09	.35***	1.00										
3	Excess Returns	-0.01	0.04	-.03	.05	1.00									
4	Industry	0.44	0.50	.00	.06	.12	1.00								
5	Firm Age	29.50	28.34	.40***	.17**	.06	.30***	1.00							
6	International Diver.	0.30	0.46	.30***	-.01	-.09	.17**	.17**	1.00						
7	CEO Board Chair	0.56	0.50	.00	-.03	.04	.13*	-.07	.13*	1.00					
8	CEO Founder	0.23	0.42	-.16**	-.01	-.05	-.18**	-.27***	-.01	.22**	1.00				
9	CEO Tenure	10.54	9.51	-.08	.14*	.02	.07	.03	-.05	.31***	.19**	1.00			
10	Family In Board	0.32	0.12	-.31***	.07	.05	.04	-.12	-.14*	-.02	.16*	.14*	1.00		
11	% Family Owners.	18.07	18.44	.02	-.01	-.03	-.01	.10	-.04	-.27***	-.15*	-.29***	.16*	1.00	
12	% Institutional Owners.	17.22	15.15	.10	-.04	-.11	-.16*	.06	.04	-.06	-.04	-.15	-.20*	-.11	1.00
13	% CEO Owners.	13.81	15.30	-.20***	.07	.09	.01	-.15*	-.04	.39***	.28***	.29***	.25***	-.25***	-.18*
14	CEO Comp. Comm.	0.09	0.28	-.11	-.03	-.04	.03	-.04	-.05	.07	.14*	.14*	.20**	-.01	.00
15	Family Comp. Comm.	0.30	0.46	-.01	.03	-.06	-.04	.08	-.04	-.22***	-.10	-.11	.16*	.26***	-.01
16	Family CEO	0.58	0.49	-.22***	-.03	-.05	-.06	-.20**	-.04	.32***	.27***	.39***	.25***	-.44***	-.06
17	Systematic Risk	6.44E-05	7.16E-05	.48***	.19**	.00	-.05	.28***	.14*	-.05	-.13*	.06	-.25***	-.01	.07
18	Unsystematic Risk	0.04	0.15	-.16*	-.15*	.69***	.00	.01	-.08	.03	.01	-.06	.11	.02	-.03
19	R & D (millions)[c]	7.21	19.99	.37***	.27**	-.02	-.01	.20*	.28**	-.01	.11	.10	-.04	-.04	-.11
20	Total Compensation[d]	941953.9	1600556	.48***	.11	.04	-.06	.16*	.19**	-.05	-.07	-.08	-.17**	-.03	.14
21	Salary	337796.6	251659.7	.65***	.16*	-.03	-.09	.19**	.26***	.04	-.04	-.01	-.16*	-.02	.19*

[a] The logarithm of annual dollar sales is used in all analyses, a standard practice in the executive compensation literature.

[b] The median for ROA is 3.6%. Excluding two outliers with high negative ROA values results in average ROA of 1.79%, SD of 14.1. As this made no difference in regression results, all firms were used in subsequent analysis.

[c] The ratio of R&D expenditures divided by the logarithm of annual dollar sales is used in all analyses as an indicator or R&D intensity, a standard practice in the executive compensation literature.

[d] Total compensation is the sum of salary, bonus, long -term income, and "other" compensation (which would include fringe benefits and perks).

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22	Bonus	213513.0	455125.0	.41***	.12*	.05	.01	.13*	.12	-.04	-.04	.00	-.12	-.05	.14
23	Long Term Income (LTI)	325470.3	1113301	.34***	.06	.05	-.06	.09	.16*	-.07	-.07	-.11	-.14*	-.01	.05
24	Salary / Total Comp.	0.59	0.25	-.49***	-.13*	-.03	-.02	-.20**	-.10	.07	.13*	.16**	.21***	.00	-.15
25	Bonus / Total Comp.	0.17	0.16	.34***	.17**	.02	.13*	.16*	.07	.03	.00	.06	-.06	-.07	.07
26	LTI / Total Comp.	0.17	0.22	.32***	-.01	.03	-.05	.06	.10	-.13*	-.14*	-.32***	-.21***	.02	.10

TABLE 1 (cont.)
Correlation Matrix (N = 253)

ID	Variable Name	13	14	15	16	17	18	19	20	21	22	23	24	25	26
13	% CEO Owners.	1.00													
14	CEO Comp. Comm.	.11	1.00												
15	Family Comp Comm.	-.16**	.15*	1.00											
16	Family CEO	.52**	.14*	-.26***	1.00										
17	Systematic Risk	-.15*	-.05	.01	-.09	1.00									
18	Unsystematic Risk	.13*	-.01	.03	.02	-.16*	1.00								
19	R & D	-.07	.04	-.01	-.08	.23*	-.11	1.00							
20	Total Compensation	-.16*	-.06	-.06	-.20**	.37***	-.07	.22*	1.00						
21	Salary	-.10	-.05	-.04	-.11	.38***	-.10	.28***	.70***	1.00					
22	Bonus	-.08	-.03	-.06	-.11	.29***	-.07	.24**	.71***	.60***	1.00				
23	Long Term Income (LTI)	-.17**	-.07	-.03	-.19**	.30***	-.05	.17	.90***	.49***	.37***	1.00			
24	Salary / Total Comp.	.23***	.12	-.03	.28***	-.31***	.11	-.25**	-.57***	-.39***	-.50***	-.45***	1.00		
25	Bonus / Total Comp.	.02	-.06	.00	-.03	.22***	-.10	.21*	.21***	.33***	.57***	-.03	-.47***	1.00	
26	LTI / Total Comp.	-.32***	-.14*	.01	-.31***	.19**	-.03	.15	.47***	.21***	.14*	.56***	-.70***	-.15*	1.00

* $P \leq .05$
** $P \leq .01$
***$P \leq .001$

TABLE 2
PREDICTORS OF CEO PAY LEVEL AND PAY MIX

	Main Effects	Total Pay	Salary		Bonus		LTI	
			Amount	% Mix	Amount	% Mix	Amount	% Mix
1	Sales	.37**	.44**	-.59***	.48***	.50**	.19	.33+
2	Return on Assets	-.12	-.05	.10	-.12	.01	-.11	-.18
3	Excess Returns	.06	.08	.03	.11	.06	.03	.02
4	Industry	-.10	-.20+	-.08	.04	.11	-.09	.05
5	Firm Age	-.24*	-.19*	.04	-.21+	-.04	-.19	-.03
6	International Diversification	-.06	-.04	-.08	.18	.15	-.14	-.04
7	CEO Board Chair	-.07	.08	.06	-.11	-.12	-.08	.01
8	CEO Founder	-.01	-.18	-.09	-.20	.02	.09	.06
9	CEO Tenure	.15	.35**	.22	.28*	-.12	.02	-.16
10	Family in Board	.05	-.02	-.00	-.01	-.11	.05	.07
11	% Family Ownership	.01	.04	.06	-.01	-.22	-.01	.05
12	Institutional Ownership	-.05	.14	.14	.06	.04	-.10	-.15
13	% CEO Ownership	.01	.01	.01	.02	.09	.01	-.05
14	CEO Com. Committee	-.04	.06	.10	.07	.08	-.09	-.24
15	Family Comp. Committee	-.06	-.08	-.11	.03	.16	-.07	.03
16	Family CEO	-.25+	-.15	.19	-.16	-.03	-.22+	-.13
17	Systematic Risk	.37**	.20*	-.08	.12	-.16	.38*	.20
18	Unsystematic Risk	-.03	-.00	-.02	-.03	-.09	-.03	.08
19	Research & Development	.22+	.13	-.06	.03	-.00	.23+	.07
	Adj. R^2	.33***	.43***	.28***	.31***	.03	.08	.02
	Interaction with CEO Family							
	Systematic Risk (17*16)	.69***	.25	-.27	-.10	-.38	.81***	.52*
	Unsystematic Risk (18*16)	.32	.10	-.23	-.33	-.45	.41	.20
	R&D (14*16)	-.93***	-.18	.47*	-.15	.38	-.46***	-.90***
	% Inst. Ownership (12*16)	-.19	.23	.14	.15	.45+	-.36*	-.58**
	% Family Ownership (11*16)	-.21*	-.32**	.27+	-.26+	-.36*	.10	-.05
	Δ Adj. R^2	.39***	.05*	.05*	.00	.08*	.53***	.17**

+P $\leq$ .10
*P $\leq$ .05
**P $\leq$ .01
***P $\leq$ .001

Standardized regression coefficients are shown in the table