Top Management Team Pay Dispersion: The Role of Environment and Corporate Governance

A Thesis in John Molson School of Business

Presented in Partial Fulfillment of the Requirements

For the Degree of Master of Science (Administration) at

John Molson School of Business

Concordia University

Montreal, Quebec, Canada

December 2016

CONCORDIA UNIVERSITY
School of Graduate Studies

This is to certify that the thesis prepared

By: Marilou Rozé Bianchi

Entitled: Top Management Team Pay Dispersion: The Role of Environment and Corporate Governance

and submitted in partial fulfillment of the requirements for the degree of

Master of Science (Finance)

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the final examining committee:

Navneet Vidyarthi_____ Chair

Dr. Sandra Betton_____ Examiner

Dr. Denis Schweizer_____ Examiner

Dr. Rahul Ravi, Dr. Peter Jaskiewicz_____ Supervisors

Approved by Dr. Thomas Walker_____ Chair of Department or Graduate Program Director

Dr. Stéphane Brutus_____ Dean of Faculty

Date December 8th, 2016_____

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Abstract

This paper explores TMT pay dispersion in lone founder firms. The scarcity of the literature on this topic provides an opportunity to study the influence of extra- and intra-organizational factors on TMT pay dispersion. Knowing that high pay dispersion hurts firm performance, it is important to understand its antecedents. Based on panel data analyses of all S&P500 firms from 2008-2013, my results demonstrate that lone founder firms exhibit less pay dispersion than other firms. It seems that when founders are present on their firms' board of directors, the effective monitoring of firm managers makes it redundant to offer the latter high incentive pay that would fuel pay dispersion. Regarding extra-organizational factors, recession appears to increase TMT pay dispersion, particularly in lone founder firms – possibly because lone founder firms regularly use attractive pay packages to hire talent from competitors during economic downturns and thereby foster pay dispersion. Finally, high-tech industries are negatively related to pay dispersion. The complexity of managerial tasks in such industries makes it necessary to pay all (rather than some) managers relatively high compensation, limiting pay dispersion.

Acknowledgments

Jean-Paul Sartre said “L’enfer, c’est les autres”. However, great achievements are not possible without the help of others. In my M.Sc. student journey, many people helped me and I want to take this opportunity to acknowledge them. I would like to thank my family for their unconditional support throughout my graduate program. This also includes all my friends in Montreal, particularly my two roommates without whom I would not be in John Molson. I am also thankful to my team in the M.Sc. Society (2015-2016) who made my experience complete. Last but not least, I cannot thank enough both my supervisors Dr. Peter Jaskiewicz and Dr. Rahul Ravi who helped me in each and every step of my thesis as well as my committee members Dr. Sandra Betton and Dr. Denis Schweizer.

Contribution of authors

This thesis is based on an initial dataset provided by Dr. Peter Jaskiewicz. It contains data concerning the ownership of corporations in the S&P 500 as well as some data concerning the Top Management Team members.

CONTENTS

Introduction

Recently, a growing body of research has emerged, looking at Top Management Team (TMT) compensation. According to Mintzberg (1973), TMT members are considered the "apex" of an organization. Indeed, they are in charge of predetermining the direction of the strategies undertaken by the company. Hence, they have a substantial influence on the performance of a firm. An intriguing concept in this context is TMT pay dispersion. It alludes to the variation of total compensation among the CEO's top management team (Schafer, 2016; Gupta et al., 2012). This study draws upon Festinger's (1954) social comparison theory to argue that disparity among the TMT members' compensation should influence their behaviour, and hence will have implications for the firm's performance. Social comparison theory states that human beings have a high propensity to compare themselves to others. This behaviour is even more pronounced among individuals perceived as having similar social status. To the extent that, within the TMT – excluding the CEO – members have the same hierarchical rank, their social status within the organization is deemed comparable. Moreover, at the TMT level, individual tasks are intrinsically interdependent with others' (Hambrick, 1995). Therefore, the individual performance is likely to be relatively less important than group performance. In such a setting, social comparison theory would suggest that any disparity in an easily comparable attribute, such as compensation, is likely to influence the behaviour of the TMT members in a way that executives will be envious and withdraw collaborative efforts that are important for the performance of the firm.

It can be noted, however, that extant studies exploring the link between TMT member's pay dispersion and firm performance have provided mixed evidence so far. Jaskiewicz et al. (2014) and Fredrickson et al. (2010) find that pay dispersion is negatively related to firm performance. However, other studies such as Sanchez-Marin and Baixauli-

Soler (2015) find results suggesting that TMT pay dispersion might be positively related to firm performance. They explain their findings on the basis of tournament theory. Tournament theory refers to the motivation of employees to increase their performance to "win" over others (Lazear and Rosen, 1981). The findings of Sanchez-Marin and Baixauli-Soler (2015) illustrate that in large companies, TMT members operate in a very competitive environment. This is conducive to their motivation to perform better than other top executives. A possible source of this seeming lack of consensus in the literature may be the difference in the types of firms studied across papers. Jaskiewicz et al. (2014) distinguish family and founder businesses and find different results for these types of firms. In contrast, Sanchez-Marin and Baixauli-Soler (2015) do not differentiate them.

It appears important to investigate founder and family firms in more depth because they make up a third of the S&P 500 (Anderson and Reeb, 2004). Moreover, as shown by Miller et al., (2011) and Cannella et al., (2015), founder firms, family firms, and "other" firms operate differently. According to Miller et al. (2011), family firms are those where the family owns at least 5% of the shares. Moreover, in the management and/or on the board of directors, family members of at least the second generation are regularly involved (Aalten et al., 2009). In lone founder firms (also referred to as founder firms), only the founder or co-founders are active; no other family member is involved in the business ownership, management or the board of directors.

Regarding family firms, there is a wealth of literature on their behavior and its consequences. Most importantly, they do not necessarily have shareholders' profit maximization as their primary goal. They often place socioemotional wealth (SEW) as their primary objective (Gomez-Mejia et al., 2007). SEW refers to non-economic benefits of family firms (Kalm and Gomez-Mejia, 2016). They protect their image as a family and as a company within the community. Bingham et al. (2011) show that they tend to participate

in corporate socio-responsible activities more than founder or other firms. This leads to decisions that might not be favourable to firm performance (Gomez-Mejia et al., 2010; Villalonga and Amit, 2006). On the contrary, founder firms have a reputation for focusing on financial performance (Villalonga and Amit, 2006). Founders typically enjoy job security within their organization, so they focus on long-term performance and firm survival (He, 2008; James, 1999). He (2008) points out that founders are diligent in the monitoring of their company in which they participate actively on the board.

Concerning lone founder firms, studies on them are scarce. One reason for this paucity being the conventional logic of combining family and founder firms into one category (Lopez-Delgado and Dieguez-Soto, 2015; Nelson, 2003). However, as mentioned above, they are different, which extends to their levels of TMT pay dispersion. Thus, it is essential to distinguish founder and family firms in analysis. Only one study makes this distinction (Jaskiewicz et al. 2014). However, they focus on the outcomes of TMT pay dispersion. Indeed, several other articles similarly focus on the consequences of pay dispersion (Bloom, 1999; Shaw, 2014; Yang and Klass, 2011). Yet, an intriguing question that does not have a clear answer is how TMT pay dispersion occurs (Schafer, 2016). Little is known about its antecedents. Schafer (2016) notes in his book that pay dispersion is considerably influenced by inter-organizational and extra-organizational factors. This is in alignment with the article by Gupta et al. (2012). With this study, I aim to fill this gap in the literature and investigate inter-organizational and extra-organizational factors that could influence pay dispersion in the TMT. Regarding the former, I will build upon the few existing studies and test to what extent the involvement of founders in firm ownership and/ or their firm's board of directors might reduce the need to offer to TMT members elevated levels of incentive pay that regularly fuel pay dispersion. Moreover, I will study the role of board members' ethnic and gender diversity in setting TMT members' compensation and, hence, their effect on pay

dispersion. A growing number of studies point to the benefits of diverse boards for monitoring managers and enhancing firm performance (Torchia et al., 2011). Applied to the context of my study, I therefore expect that more heterogeneous boards of directors – in terms of gender and ethnic diversity – will be more effective monitors and should lead to reduced pay dispersion. Put differently, diverse boards might foster firm performance by setting less diverse compensation. Regarding extra-organizational factors, I will look at the role of the economic cycle and high-tech industries. To my best knowledge, no previous research empirically investigates the temporal aspects driving pay dispersion. Several studies found that family and founder firms might behave differently than other firms during a recession. For instance, family firms are less likely to fire employees (Block, 2010) and founder and other firms are more likely to hire during an economic downturn (Navarro et al., 2010). The different human resource management practices at founder and family firms might therefore also translate into different levels of pay dispersion at different stages of the economic cycle, and as such, influence firm performance. In addition to the temporal aspect, I also look at a contextual antecedent of TMT pay dispersion by studying the influence of high- versus low-tech industries. Studies such as Gavious et al. (2015) indicate the distinctiveness of compensation between high-tech and low-tech industries. The former is characterized by heavy investment in R&D and rely on innovation. TMT members are required to work even more closely together than in low-tech industry. Comparison of compensation can arise easily. It transpires the importance of analyzing the potential impact on TMT pay dispersion and thus firm performance.

Empirical analyses to test this relationship are performed based on a sample drawn from the S&P 500. The data covers the period from 2008 to 2013 as of 2008. Due to the structure of the data, a simple linear regression would lead to high multicollinearity issues. Therefore, panel data regressions are used. I confirm that TMT pay dispersion is negatively related to firm performance using a fixed-effects regression on the whole sample. The years considered allow studying both a

recession and an expansion cycle (National Bureau of Economic Research, 2010). To expose the uniqueness of lone founder companies, matching samples are constructed. One is composed of lone founder corporations matching family corporations; the other one is constructed with matched lone founder and non-family corporations, making direct comparisons between the types of firms possible. With random-effects regressions, the influence of the economic and industry environment, the corporate governance – through the role of founder and the diversity of the board of directors on TMT pay dispersion is analyzed.

The analyses enable me to contribute to the limited literature on lone founder corporations by contrasting them with family and non-family organizations. Indeed, I demonstrate that they are disposed to exhibit less TMT pay dispersion than other firms. However, as far as pay dispersion is concerned, family and founder companies are not significantly different. In summary, these results highlight the role of the founder which is consistent with previous studies. Moreover, this paper supplements that the founder's effective role in monitoring managers implies the use of fewer incentives that would otherwise inflate pay dispersion. Gupta et al. (2012) explore factors that bear consequences for TMT pay dispersion. I contribute by testing some of these factors. I reveal that a recession and a high-tech industry context are important drivers of TMT pay dispersion. In the same manner, this study enriches the wealth of literature on corporate governance by exploring the effect of gender and ethnic diversity among board members on the pay dispersion in the TMT. This issue is of interest because compensation is decided by directors sitting on the compensation committee (Hermanson et al., 2012). Although several studies find an effect of board diversity on firm performance, I do not find an apparent impact on pay dispersion itself. As a result, I conclude that the diversity of boards does not have an influence on firm performance because of its pay dispersion policies.

The remainder of the paper is organized as follow: Section I will highlight the relevant literature that will allow inferring the hypotheses. Section II will explain the methodology and the data used. The results will be shown in Section III. Finally, Section IV will present the discussion and conclusion, revealing the limitations and potential for further research of the study.

I. LITERATURE REVIEW AND HYPOTHESES

Consequences of TMT pay dispersion on firm performance

High TMT pay dispersion arises when compensations among top managers are notably different. This study identifies the four highest paid executives in an organization excluding the CEO as the TMT following the procedure of Jaskiewicz et al. (2014). Previous research has shown that TMT pay dispersion substantially influences firm performance (Fredrickson et al., 2010; Shaw, 2015; Siegel and Hambrick, 2005). Several explanations can be found in behavioral studies (Ensley et al., 2007). Two adverse views exist on the direction of the relationship, however. On one hand, Carpenter and Sander (2004) argue that high pay dispersion among TMT members should influence their behaviour in a detrimental manner for firm performance because it will fuel envy and reduced collaboration. On the other hand, other researchers, for instance Sanchez-Marin and Baixauli-Soler (2015) and Lee, Lev and Yeo (2008), present arguments in support of the contrary. According to them, "TMT pay dispersion should be positively associated with firm performance" because higher dispersion will give the lowest-paid executives incentives to achieve higher performance (Sanchez-Marin and Baixauli-Soler, 2015: 440). This brings out an important distinction between vertical and horizontal pay dispersion. On one hand, vertical pay dispersion takes place across hierarchical levels. The idea stems from tournament theory which was

established by Lazear and Rosen in 1981. According to that theory, top managers will be motivated to work more and achieve better performance to "win a series of hierarchical tournaments" (Siegel and Hambrick, 2005). Horizontal pay dispersion, on the other hand, refers to the dispersion among executives on the same hierarchical level. Furthermore, as defined by Kepes et al. (2009), horizontal pay dispersion refers to the variation of compensation of people undertaking the same tasks. I focus on the latter since TMT members (excluding the CEO) operate on the same hierarchical level and have overlapping tasks aimed at enhancing firm performance.

The TMT members play a crucial role in determining the strategic direction of the firm and thereby its performance (Kettenring, 2012; Mintzberg, 1973). As underlined by Finkelstein and Hambrick (1996), CEO's top team members are typically achievers, high performers, goal-oriented and ambitious individuals. Drawing upon the social comparison theory of Festinger (1954), I argue that executives in the TMT are inclined to compare themselves to others at the same hierarchical level. The disparity in compensation is likely to accentuate comparison and thus compromise these attributes. As stated by Bloom and Michel (2002), people tend to care more about their perceived organizational value and status linked to their reward than their actual level of rewards. Siegel and Hambrick (2005) demonstrate that this is particularly true for horizontal pay dispersion because strong collaboration and cooperation are required within the team. This is supported by Main et al. (1993: 619) who mention that "at the level of the top management team, it can be argued that the nature of work requires a large amount of task interdependence; hence, significant cooperation". The CEO's top team members are likely to believe that their work and contribution to performance is equivalent or even superior to their peers. In this regard, they feel that they pay should be equivalent. If the pay dispersion is too large, it is likely to adversely affect collaboration (Siegel and Hambrick, 2005).

Fredrickson et al. (2010) demonstrate that some disparity in compensation is appropriate and all TMT members do not need to have exactly the same pay. For instance, members that occupy several roles in the company have heavier work load than those who have only one position; therefore, it is acceptable that their pay tend to be higher. In addition, tenure appears to be important for collaboration. It is tolerated that employees with longer tenure are paid more than newly hired ones. Moreover, teams with higher average tenure present more social integration. In this context, social comparison will manifest itself more extensively in the sense that TMT members will compare themselves more often to those whom they have known and worked with for an extended period of time. As a result, pay dispersion should be small among these team members to not undermine their collaboration and, in turn, firm performance. A crucial notion in Fredrickson et al.'s article is *Explained TMT pay dispersion*. Top managers would accept variation in compensation if they understand that it is justified (Fredrickson et al., 2010; Shaw, 2014). If the pay gap cannot be rationalized, however, envy is likely to occur. Furthermore, building upon equity theory, executives need a sense of fairness which they can be generated from transparent organizational policies (Shaw, 2015). Equity theory, developed by Adams (1963), suggests that employees would not be fully committed if they felt that their rewards are less valuable than their inputs when compared to their peers. It can be noted that this notion is based on executives' perception, therefore very subjective (Gupta et al., 2012; Shafer, 2016). If the organization does not offer sufficient transparency and consistency in its compensation policies, Shaw et al. (2002) contend that unjustified variation will demotivate executives. In turn, they will collaborate less effectively leading to sup-optimal organizational decision that, subsequently will hurt firm performance. Therefore:

Hypothesis 1: Pay dispersion is negatively linked to firm performance.

Considering that TMT pay dispersion is expected to hurt firm performance, I will develop theories to better understand potential antecedents of pay dispersion. I distinguish extra- and intra-organizational factors. I will start developing theory on the former in the following.

Extra-organizational factors and pay dispersion: The role of the economic cycle and of industry

Gupta et al. (2012) suggest that external and/or internal environment can influence pay variation. My study is among the first to empirically test that TMT pay dispersion is likely to be influenced by the business cycles and industry environment (Werner and Ward, 2004). The National Bureau of Economic Research (NBER) defines business cycles as successive periods of economic recession and expansion. Navarro et al. (2010) conjecture that companies will adapt their hiring strategy in response to economic periods. For instance, they would prefer to hire in a recession because they would benefit from lower wages. To the extent that compensation costs constitute a substantial part of a firm's expenditures, studies such as Gavious et al. (2015) and Werner and Ward (2004) suggest that companies are likely to increase their compensation costs when the economy is expanding and reduce in recessionary periods. Moreover, in an expansion phase, it is generally expected that a company's productivity and sales will increase. Roberts (1956) demonstrate that executive compensation is related to a company's sales and profit. If the company performance increases, top managers will receive higher pay as reward for their work (Hayes and Schaefer, 2000). In every type of firm, expansion would result on average in higher level of total compensation. Consequently, TMT pay dispersion would not change.

Contrastively, when the economy is in recession companies will earn less revenue and may have to decrease the total compensation of executives. Regarding staffing, Greer et al. (2001) find proof that firms can hire at lower wages during recession, which can enhance pay variation.

This may also be contended from the standpoint that some individuals may be more valuable to the firm than others. The compensation committee may, for instance, offer some managers increased compensation (Conyon, 2006), which should fuel pay dispersion.

In comparing lone founder with family and other firms, different behaviors can be expected in this context. Because lone founders are focused on performance, they would emphasize retaining talent in their teams. This would translate into consistently high compensation for talented TMT members and thus relatively low pay dispersion while less talented executives are fired. Contrastingly, family firms' hiring and firing would be less sensitive to economic cycles because of emotional ties to employees. Executives would likely be offered to stay in the firm with reduced pay than be fired. Although this translates into job safety (Steenbakkers, 2009), it also indicates potentially higher pay dispersion.

Concerning the industry environment, some studies indicate a difference in compensation between high-tech and low-tech industries (Gavious et al., 2015; Hambrick and Finkelstein, 1987). High-technology industries are characterized by more investments in research and development – especially among founder firms. Not surprisingly, founder businesses are more likely to be in high-tech industries. High-tech firms operate in an uncertain environment, however. It appears that the creation and success of new products are instrumental for in firm survival in high-tech industries. In contrast, low-technology firms are not as innovative, and they operate in a more stable environment characterized by less uncertainty. According to Galbraith (1973), uncertainty entails high task interdependence because a continuously large flow of information is needed to deal with prevalent uncertainty. Thus, TMTs in high-tech industries require a high level of executives' collaboration and risk sharing (Diaz Saura and Gomez-Mejia, 1997; Siegel and Hambrick, 2005). In the absence of such collaboration, TMTs cannot function effectively, hurting new product development, decision-making quality, and ultimately firm performance. As a result, high-tech

businesses require relatively lower pay dispersion than low-tech business in order to ensure collaboration in and effective functioning of the TMT. I derive the following hypothesis:

Hypothesis 2a: Recessions increase pay dispersion among all firms

Hypothesis 2b: Recessions will lead to stronger increases in pay dispersion in lone founder when compared to family firms.

Hypothesis 2c: High-tech firms compared to low-tech firms enjoy lower TMT pay dispersion.

In addition to the extra-organizational environment, the intra-organizational environment can affect TMT pay dispersion. In the following, I will focus on lone founder firms, lone founder involvement in firms, and board diversity as potential drivers of pay dispersion.

Intra-organizational factors and pay dispersion: The role of lone founder versus family and other firms

Few researchers have observed TMT pay dispersion in family firms. Barring Jaskiewicz et al. (2014), all other studies have ignored the issue of pay dispersion in lone founder firms. This can be traced to their failure to differentiate family from founder firms. However, founder and family firms operate differently and hence it is important to study them separately. As previously noted, family businesses are pursuing non-economic goals while founder businesses are focused on financial performance (Cannella et al., 2015; Gomez-Mejia et al., 2007). Extending this line of reasoning to the issue of TMT pay dispersion, I expect that family and founder firms are likely to differ in both compensation policies and TMT pay dispersion. Likewise, the prevalence of a dominant owners separates them from other firms that are characterized by dispersed ownership. I expect these three categories of firms to have different approach to compensation.

As previously mentioned, founder firms refer to companies where only founders are present with no other family members involved. It is generally accepted that founders are high performers (Begley and Boyd, 1987; Ginn and Sexton, 1990). They are inclined to focus more on performance than family members who pursue socio-economical goals – even if the latter adversely affect the economic performance of the family firm (Gomez-Mejia et al., 2010; Miller et al., 2011). A striking example is Wang Laboratories. This computer hardware manufacturer firm was a high profit-making business under the direction of its founder An Wang. However, once it was passed on to Wang's son, firm performance declined. In response to the declining performance, Wang fired his son and hired Miller, an outsider, to run the firm. Miller subsequently established a successful partnership with IBM to ensure the survival of the firm (Anderson and Reeb, 2003; Ziegler, 1992).

To the extent that founders concentrate on "measurable performance outcomes" (Jaskiewicz et al., 2014: 6), they do not require high compensation because of their firm ownership stake. However, other TMT members may not have a similar stake in the firm and therefore not have their goals aligned with the founder's goal (Block, 2008). To control this agency problem, compensation will play a substantial role. In addition, a founder identifies strongly with his/her company (Dutton et al., 2004). He/she would take it personally if tensions were to exist because of pay dispersion among the top management team. Hence, s/he will try to reduce pay dispersion.

In comparison, when looking at family and other companies, pay dispersion should be higher than in founder companies. The majority of public companies in the S&P 500 are non-family firms. They have often diffuse ownership, indicating poor monitoring that provides management with opportunities to engage in self-interested behaviors (Jensen and Meckling, 1976). To prevent management from acting at their own discretion, shareholders tie executive compensation to performance using stock options and bonuses (Fahlenbrach, 2009; Hall and

Murphy, 2003). Miller et al. (2010) show that such pay components result in higher level of executive compensation. In addition, bonuses and stock options are set individually. Chen, Hsu and Chen (2014) further suggest that non-family businesses favor variable compensation over fixed compensation. Therefore, it might be expected that pay policies in non-family firms increase pay dispersion in the TMT.

Concerning family firms, the omnipresence of the family is visible in different dimensions of the organization (e.g. presence of family members in management, pursuit of socio-emotional goals) (Berrone et al., 2012; Zellweger and Nelson, 2008). Many of these dimensions may not be aligned with firm performance goals. Thus, family firm may experience owner-owner agency issues (Chen et al., 2014). At the same time, however, the traditional agency problem between managers and owners might be less prevalent because vigilant family owners can limit hired managers' opportunism – for example by tying managers' pay closely to firm performance (Anderson et al., 2003; Chen et al., 2014). One possible way to achieve this goal is the use of variable compensation package, especially short-term incentives instead of for example fixed bonuses or high bas pay (Makri et al., 2006). In line with prior research, however, this type of incentives can increase pay dispersion among TMT members.

Furthermore, there is a fair amount of literature highlighting the fact that family firms may not focus on firm performance. Zellweger and Nason (2008: 203) state that "family firms often display a strong preference toward noneconomic outcomes". This impacts the level of executives' compensation as well as the compensation mix (Schafer, 2016). Family firms often focus on socioemotional wealth (SEW) which can diverge from economic goals (Gomez-Mejia et al., 2010). A further approach decomposes the SEW concept into several goals: FIBER (Berrone et al., 2012). Berrone et al., (2012) state that the family wants to keep control over the firm (F), its identity is strongly attached to the firm (I), it socially binds with stakeholders (B), it has a strong emotional

involvement with the firm (E), and the family wants to accomplish a successful succession (R). Le Breton-Miller, Miller, and Lester (2011) sustain that the family may pressure management to pursue their family goals which may not be beneficial for the firm. To make top executives comply with their goals, top management should receive higher incentive-based compensation that will be tied to family rather than firm goals (Jaskiewicz et al., 2014; Miller et al., 2011).

Taken together, it appears that agency problem among family and non-family owners would result in higher TMT pay dispersion because of the substantial use of variable compensation. In other firms, I also expect high TMT pay dispersion – mainly because some managers will be good at finding opportunistic ways to increase their pay independent of firm performance. In comparison, lone founder firms are less sensitive to the owner-owner and owner-manager agency conflict, limiting the use of variable compensation and hence reducing dangers of high pay dispersion among TMT members. Replicating Jaskiewicz et al. (2014), I posit:

Hypothesis 3: Pay dispersion in founder firms will be lower than in family firms and other firms.

If lone founder firms exhibit lower TMT pay dispersion, the question whether the founder himself has a role to play to reduce it is worth exploring.

Founder involvement on the board

Arguably, the founder's role on the board should diminish TMT pay dispersion, encouraging firm performance. According to Li and Srinivasan (2011), about 25% of the largest US corporations today display active involvement of their founders. A founder can be active either as a manager or as a director. Suggested by the same authors, 13% of founders were CEO and 12%

were active members of the Board of Directors[1]. This claim is also supported by Villalonga and Amit (2006). They find that on average, the value of the company declines as soon as the founder ceases to be actively involved with it. This thesis is attempting to study the influences and antecedents of pay dispersion among the TMT members. To the extent that the differing role of the Founder (as CEO vs. non-CEO board member) could potentially confound the effect, we have omitted founder CEOs from the sample.

The benefit of an active founder is reflected in the financial market. Investors feel reassured when the founder is in the company (Fahlenbrach, 2009; Finkelstein and Hambrick, 1996). The market seems to recognize this as early as the initial public offering with higher valuation than other firms (Fisher and Pollock, 2004; He, 2008). Although generally, the presence of the founder improves performance because of their firm-specific knowledge, it is also expected that founder-director do a better job.

With respect to the effect of founder's board involvement on the firm's performance, extant research suggests that on average, founder involvement is beneficial for firm performance and value (De Angelo and De Angelo, 1985; Fama and Jensen, 1983; James, 1999). There are several rationales that can justify this. According to Li and Srinivasan (2011), founder-directors can attenuate three problems. First, they can reduce owner-manager and owner-owner agency problems by reducing information asymmetry. Their effect is twofold: they improve the information uniformity between shareholders and board members and between managers and board members (Achleitner et al., 2012; Li and Srinivasan, 2011). Second, they tie CEO pay more closely to firm performance than all other businesses. They do not hesitate to replace a CEO in case of poor performance. Third, they decrease absenteeism on BoD. When placed in a supervisory

[1] Founder-CEO and founder-director are mutually exclusive

role on the board, they are more meticulous in choosing the right board members (Li and Srinivasan, 2011). As the founder of the firm, their skill sets are specialized for the purpose of that firm and not easily transferable to another firm (Wasserman, 2003). Founder-directors' knowledge of their companies is perceived as an asset by the firm and the market (Anderson and Reeb, 2003). This could explain the effective decision-making by boards in such firms. Since the Board of Directors is responsible of setting executives' compensation (Shin, 2012), better decision-making would also encompass more effective compensation policies. More diligence and fairness in pay could thus be expected, leading to lower unexplained TMT pay dispersion. Consequently, I postulate the following:

> *Hypothesis 4a: The founder presence on the board of directors should decrease pay dispersion.*

As mentioned previously, founders can be more efficient at selecting effective Board of Directors' members. Who is included in the boardroom is substantial for firm performance. I therefore explore one dimension of the composition of the board which can influence TMT pay dispersion: diversity.

Board of Directors and TMT pay dispersion

The agency problem between shareholders and managers is perceived as one of the greatest impediments to the efficient performance of a firm (Jensen and Meckling, 1976). An efficient board of directors should reduce this agency problem (Main et al., 1995). Ranft and O'Neill (2001) assert that lone founder companies may have a different board composition. One potential explanation for this could be that active founders are likely to have a say in determining the board's composition. These founders would have a substantial influence on selecting other

board members. Founders often find themselves to be the major owners of their companies (Denis and Denis, 1994); therefore, they have incentives to reduce conflicts between management and shareholders. For this purpose, they tend to hire more diligent members (Li and Srinivasan, 2011). If founder firms have more efficient boards than other firms, it is crucial in the context of this paper to understand whether and how these differences also translate into reduced pay dispersion. Shin (2012) state that members of the board are legally responsible for top executives' compensation. Hermanson et al. (2012) highlight the decision-making process for setting executive compensation. There are three major components influencing the level of pay: individual performance, peer group, and company performance. Hermanson et al. (2012) also find that there are two recurring concepts in setting compensation: balance and fairness. Balance refers to the divergence of interests of shareholders and management. Fairness refers to the compensation an executive should receive as regards of his performance. At the same time, however, not a single individual is responsible for making decisions but a group. There is no consensus in the literature on the impact of group homogeneity on firm performance (Adams and Ferreira, 2004; Eisenhardt et al., 1997; Higgs, 2003). However, a number of studies suggest that diversity improves the effective settlement of employees' compensation because heterogeneous groups have more cognitive abilities to properly evaluate a complex situation. Put differently, the differences of perspectives among the individuals in the group allow achieving a better outcome (Ensley et al., 2007; Milliken and Martins, 1996). On the contrary, homogeneous boards may experience group think (Marimuthu, 2008; Torchia et al., 2011), which leads to biased decisions.

Numerous articles on corporate governance have analyzed the role of the board of directors for firm performance whether it concerns family or non-family firms. However, no previous research, to my best knowledge, analyses how board diversity affects TMT pay dispersion. I will look at two particular aspects of board diversity: gender diversity and ethnic diversity.

Influence of gender diversity of the BoD on TMT pay dispersion

There is an increasing number of studies that focus on female board membership. Despite the increased presence of women on the board of large corporations, boards are still dominated by males. Surprisingly, according to a MSCI report, lone founder and family businesses are lagging in including women on their boards. Moreover, their boards are aging because they are slow at replacing their directors.

Many studies explore the relationship between the presence of women in the boardroom and firm performance (Carter et al., 2010; Fondas and Sassalos, 2000). There is a gap in the literature linking executives' compensation to gender diversity on the board. It would seem that the presence of women improves the decision-making process of boards. According to Post and Byron (2015), the presence of skilled women on the board of directors can bring different opinions and new ideas to the table. They also decrease absenteeism at board meetings (Adams and Ferreira, 2009). Thus, the inclusion of women directors on the corporate boards improves board monitoring. Therefore, it can be argued that gender diversity on the board of directors should also lead to reduced pay dispersion because improved monitoring should go hand in hand with fewer incentives that fuel pay dispersion. Several studies find supportive evidence: Shin (2012) demonstrates that the presence of females on the board of directors decreases the gender gap in compensation. Women board members are more inclined to acknowledge the performance of women executives than men would do. It is possible, however, that instead of being favorable to women executives, women on the board are simply more sceptical of men's performance. This could result not in an increase in females' compensation but a decrease in males' compensation. Both arguments suggest that the presence of women board members leads to reduced pay disparity. If pay dispersion results from gender difference, then the presence of women in the boardroom

should decrease pay dispersion. However, several studies warn that only one woman on the board does not make yet a difference (Campbell and Minguez-Vera, 2008). Joecks, Pull, and Vetter (2013) put the threshold at three women. Thus, it can be inferred that what makes a difference is not the mere presence of one woman but rather a coalition of women or even parity between men and women. As a consequence, I hypothesize:

Hypothesis 5a: Gender diversity on the Board of Directors should reduce TMT pay dispersion.

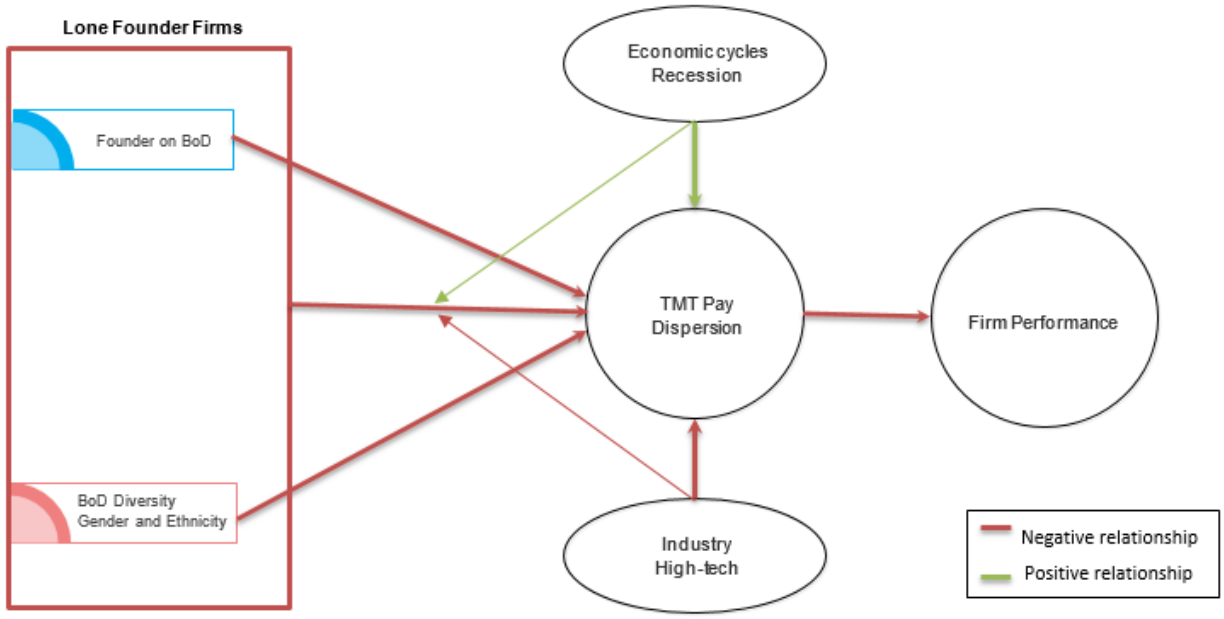
Influence of board ethnicity diversity on TMT pay dispersion

Similar to the rationale regarding gender diversity, ethnicity induces visible heterogeneity in a group. McLeod and Lobel (1992) show evidence that when performing cognitive tasks, boards with higher ethnic diversity achieve better outcomes. For instance, they are better at bringing new ideas to the table. Moreover, groups composed of diverse ethnicities are more collaborative than purely undiversified board (Milliken and Martins, 1996) and less individualistic. The article of Marimuthu (2008) is one of the few exploring the repercussions of ethnic diversity on boards. His study of Malaysian companies exhibits evidence that ethnic diversity improves firm performance. This is also confirmed by Carter et al. (2007), who find that the presence of ethnic minority directors on the board improves firm performance. They also find weaker evidence that the presence of ethnic minority directors on the compensation committee improves financial performance. However, diversity is most beneficial in structured settings (Hambrick and Mason, 1984; Marimuthu, 2008), while group homogeneity is preferred in unstructured setting because it can help avoid conflicts (Hambrick and Mason, 1984). As advanced by Hermason et al. (2012), the compensation committee follows a specific procedure to determine executives' pay. Rules are

clearly established; therefore different points of view can be a source of improvement. Hence, it can be expected that more ethnically diverse boards can be more efficient at setting executives' pay, leading to reduced TMT pay dispersion. Correspondingly, I conjecture:

Hypothesis 5b: Ethnic diversity on the Board of Directors should reduce TMT pay dispersion.

Figure 1: Conceptual model hypotheses summary



II. METHODOLOGY

Sample

The data sample consists of firms from the S&P 500 covering the years from 2008 to 2013. Family and founder businesses composed over one-third of the S&P 500, 24% of the present sample. Ownership and family relationships, members, and board membership are collected

through proxy statements from the U.S. Securities and Exchange Commission. Executive compensation and demographic data are collected from ExecuComp. They are completed with the data from Mergent Online, and Bloomberg. For board members' gender and ethnicity, data are downloaded from ISS and BoardEx respectively. The missing entries were completed with LinkedIn, NNDB and Google searches. Other control variables stem from the EDGAR, CRSP and COMPUSTAT databases. The final sample is composed of 1,714 observations covering the years 2008 to 2013.

In his article from 1973, Rubin demonstrates that using a matched sample produces less bias regarding confounding. Moreover, matched samples have the advantage that it enables a clearer comparability between samples (Heinze and Juni, 2011). Hence, I create two matched samples, one for founder and family firms and one for founder and non-family firms. The control group is matched with respect to the base year 2008, industry (using 2-digit SIC codes), firm size (total assets), and finally, if two or more firms matched, revenue. Thus, the founder and family matched sample is composed of 17 founder firms and 17 family firms totalling 121 observations while the founder and regular matched sample 45 founder firms and 45 control firms totalling 311 observations.

Variables

Dependent variables: To test the effect of pay dispersion on firm performance, I use *return on assets* (ROA) calculated as net income over the total assets of a firm. This is one of the most recurrent measures of performance in the top management and performance literatures (Fredrickson et al., 2010; Jaskiewicz et al., 2014).

For the remaining hypotheses 2 through 5, the dependent variable is the Top Management Team pay dispersion (*TMT pay dispersion*) excluding the CEO. It is calculated as the coefficient

of variation of the total compensation of the top 4 highest-paid TMT members (Jaskiewicz et al., 2014; Mondello and Maxcy, 2009; Pfeffer and Langton, 1993). The total compensation definition is given in Execucomp and follows the regulation of the SEC. It includes salary, bonus, stock awards, option awards, non-equity incentive plan, pension plan changes, and other components such as perquisites and other personal benefits, termination or change-in-control payments, contributions to defined contribution plans (e.g. 401K plans), life insurance premiums, gross-ups and other tax reimbursements, discounted share purchases and others.

Independent variables: In regards of the first hypothesis, *TMT pay dispersion* is the independent variable. A lag is used for TMT pay dispersion because for most companies the compensation is disclosed for the previous year. It can also be argued that incentive compensation constitutes the major part of executives' total pay (Hayes and Schaefer, 2000). To address this concern, the variable is used with no lag as well. The environment variables are *recession* and *high-tech.* Economic cycles in the U.S. are defined by the National Bureau of Economic Research (NBER) as consecutive periods of one expansion and one contraction. The years 2008 to 2010 represent a recession phase and 2010-2013 an expansion phase in the period 2008-2013. High-technology firms are commonly defined in the literature (Siegel and Hambrick, 2005) as firms with high R&D expenditures (see Table 1 for the list of high-tech SIC codes) meaning investments in R&D leading to significant innovation in new products or designs. To determine whether a firm is a founder businesses, a dummy variable *Founder firm* is created that takes a value of 1 if the corporation is a founder firm and 0 otherwise; founder firms have at least 5% of founder ownership with no other family members being involved as owners, manager, or directors. *BoD founder* refers to the founder's role within the organization. *BoD founder* relates to the founder's involvement in the Board of Directors. Most of the founder firms in the sample only have one founder though some

companies (e.g. Google/Alphabet) have two (or more) co-founders. With respect to the analyses on the relationship between board diversity and CEO's top team pay dispersion, the variables *BIGender* and *BIEthni* are created using the Blau Index of heterogeneity (Blau, 1977; Richard et al., 2004). This Index is calculated in the following manner:

$$Blau\ Index = 1 - \sum_{i=1}^{n} P_i^2$$

where:

- P_i represents the percentage of group members in each category
- n represents the number of different categories.

BIGender is the Blau index for gender diversity and *BIEthni* is the Blau index for ethnic diversity in the boardroom (Campbell and Minguez-Vera, 2007; Richard et al., 2004). Higher values of the Blau index approaching 1 indicate that every group member of a group is different.

To have a better understanding of the differences among the three types of firms, I incorporate interaction terms in the environment and diversity models. *RecessionFounder* corresponds to the interaction of the two dummy variables *Founder firm* and *Recession*. *HighTechFounder*, *GenderFounder*, and *EthniFounder* are based on the same construct and represent the interaction between *Founder firm* and, respectively, *HighTech*, *BIGender*, and *BIEthni*.

Control variables: Individual companies are directly controlled as separate entities. To control for time, a time component represented by year dummies (2008 to 2013) is added to the model. The impact of time can change the value of dependent variable (*ROA* or *TMT pay dispersion*) for all firms. Year dummies also allow controlling for macroeconomic changes after the financial crisis.

The control variables are lagged 1 year to prevent reverse causality problems (Jaskiewicz et al., 2014).

The control variables can be divided into three groups: firm level attributes, compensation aspects, and top management team characteristics.

The first category of variables relates to firm characteristics and governance. *Firm size* is calculated as the logarithm of total assets. In the performance regressions, it controls for large companies because they benefit from economies of scale (Jaskiewicz et al., 2014). In the pay dispersion regressions, the size captures the increase in job variety. TMT members face more job complexity in larger companies because they may be responsible for larger teams, more substantial investments, and more TMT functions. Their tasks will therefore also be more interdependent, requiring more joint effort and teamwork than would be the case in smaller companies. High TMT pay dispersion would consequently have a greater negative impact on the performance of large firms. *Firm age* represents the logarithm of the year since the company was founded. By definition, lone founder firms are younger than family firms and may also be younger than non-family firms. Thus, it can be presupposed that they may not be at the same stage of their life-cycle (Jaskiewicz et al. 2014), in which case firm performance can differ. Lee, Lin, and Chuang (2006) explain that firm age also affect TMT compensation, thus it is also included in the pay dispersion models. *The Market-to-book* ratio is computed as the sum of total debt and equity over total assets. It serves as a control for company growth (Fredrickson et al., 2010; Siegel and Hambrick, 2005). It highlights new opportunities for firm performance. Concerning TMT pay dispersion, more firm growth suggests that corporations may hire more talented managers with higher compensation. This phenomenon would increase TMT pay dispersion. Per Fredrickson et al. (2010), diversification impacts the collaboration required among team members; the higher diversification, the more detrimental should be the effect of pay dispersion on firm performance. *Product diversification*

designates the number of business segments a firm operates while *international diversification* represents the number of geographical segments a firm has (Talman and Li, 1996). The more diversified the organization, the more managerial discretion top executives have concerning the management of different segments (Lee et al., 2008). Because of cultural differences, segments will not be necessarily managed in the same manner. Hence more disparity in the pay of executives running different segments can be expected. The decision to invest in new/additional business segments can fuel firm performance (Gomez-Mejia, 1992). The level of teamwork needed is also indicated by two variables *R&D Intensity* – defined as the logarithm of R&D expenses divided by total capital, and *Advertising Intensity* – defined as the logarithm of advertising expenses over total capital (Almazan et al., 2005; Jaskiewicz et al., 2014). The choice of investing more in R&D and in advertising will impact the future performance of the corporation. Deciding to invest in project development and new marketing campaigns are decisions that impact the whole business. However, the success of both R&D and advertising investment is dependent on collaboration among TMT members and their employees. Thus, the top management team members need to co-operate to a greater extent than in firms that invest less in those two areas (Siegel and Hambrick, 2005). Lastly, *CEO duality* is another control variable. It has been established that CEO duality may reduce the objectivity of the Board of Directors in setting executives' compensation (Hermanson et al., 2012; Jensen, 1993; Sanchez-Marin and Baixauli-Soler, 2015). Moreover, CEO duality controls for the CEO's power to act for her/his own benefit and thus to the potential detriment of the firm (Lee et al., 2008). CEO duality should thus be positively related to pay dispersion and negatively related to firm performance.

When testing the founder involvement hypotheses, I also control for the presence of the founder in the top management team (*FoundersTMT*). Looking at the compensation data, some founders who are involved in the management of their own company pay themselves less than

other executives (e.g. Steve Jobs). Thus, founder presence would automatically increase TMT pay dispersion and hence needs to be controlled for.

The second category of control variables is linked to the aspects of compensation for both regressions. First, *Industry pay dispersion* is used to control for industry-specific attributes. Indeed, some industries have standards concerning executives' compensation that affect pay dispersion (Finkelstein and Hambrick, 1989), which in turn can influence performance. *Industry pay dispersion* is calculated as the average pay dispersion of other firms in the same industry in a given year. Industry membership is given by SIC 2-digit codes obtained from the COMPUSTAT-CAPITAL IQ database. Many articles have substantiated that elevated levels of executive compensation are positively related to firm performance because it aligns shareholders and managers' interests (Carpenter and Sanders, 2002; Jaskiewicz et al., 2014; Kettenring, 2012). *Average TMT compensation* is thus added to the regressions. Concerning the TMT pay dispersion models, Fredrickson et al. (2010) document that higher pay can be related to higher TMT pay dispersion.

Lastly, it can be argued that compensation depends on the executive team characteristics. The following variables are therefore added to the models with TMT pay dispersion as the dependent variable: The executive's age plays a role in her/his compensation. The rationale is that the older the manager, the more experience s/he is presumed to have. As a consequence, *age dispersion* is incorporated into the model. It is computed as the coefficient of variation of age among the TMT members excluding the CEO. *TMT tenure dispersion* is also accounted for in the models; it is determined by the coefficient of variation of team members' tenure. Leonard (1990) states that the years of experience that managers accumulated within a firm matter, indicating their firm-specific knowledge and social capital. Moreover, executives with longer tenure are supposed to have more power (Jaskiewicz et al., 2014). This might be positively linked to TMT pay

dispersion (Fredrickson et al., 2010) because more powerful and better networked executives might be able to negotiate better salaries for themselves. Finally, as reported by Fredrickson et al. (2010), *functional background* of executives is considered as an important control variable. It is calculated as the mean of the number of ranks TMT members possess. It has a direct impact on total compensation since executives with a higher number of titles are likely to receive a higher pay because of additional responsibility.

Empirical Models

The S&P500 firms are analyzed across six years. Per Fredrickson et al. (2010), correlations across years for a given firm are very common in panel data. Therefore, an OLS regression is not the most appropriate method. The present structure of the data suggests applying panel data regressions with both entity and time effects. After performing the Hausman test (Table 2), fixed effects are favored over random-effects in the performance regression. The sample of all companies is used in this context. On the contrary, for the founder and non-family matched and founder and family matched samples, random effects are preferred. In both random- and fixed-effect models, robust standard errors are used for heterogeneity purposes.

Insert Table 2 about here

The fixed-effect model containing cross-sectional and time variables can be expressed with the subsequent regression function:

$$Y_{it} = \alpha + \beta x_{it} + \mu_1 D1_i + \mu_2 D2_i + \cdots + \mu_n Dn_i + \lambda_1 D1_t + \lambda_2 D2_t + \cdots + \lambda_T DT_t + \mu_i + \upsilon_{it}$$

Where:

- Y is the dependent variable with i=entity and t=time;
- α is the intercept term;
- x_{it} represents the independent variables;
- β_k is the coefficient estimated for the independent variables;
- μ_{it} is the coefficient of binary variables;
- D_t is a binary time regressors;
- λ_t is the coefficient for the binary time regressors;
- μ_i is the individual specific effect;
- υ_{it} is the error term that varies over time and entities.

The random-effect model used in subsamples can be expressed as follow:

$$Y_{it} = \alpha + \beta x_{it} + \epsilon_i + \upsilon_{it}$$

Where:

- α is the intercept term;
- x_{it} represents the independent variables;
- β_k is the coefficient estimated for the independent variables;
- ϵ_i is the random deviation from α;
- υ_{it} is the error term.

With respect to gender and ethnic diversity, four comparison-of-means tests are performed. These tests help understand how founder businesses manage diversity in their boardroom compared to family and other firms. The two-sample t-test's null hypothesis states that the two

means are equal while the alternative hypothesis suggests that the two means are different. The level of significance applied is 5%.

$$H_0: \mu_1 = \mu_2$$

$$H_a: \mu_1 \neq \mu_2$$

Descriptive statistics

The descriptive statistics and the pairwise Pearson correlations are provided in Table 3. The mean pay dispersion appears to be higher in the matched samples (0.37) and lower when the whole sample is considered (0.35). In the founder-matched sample, the mean of founder presence on the board is 0.32 and 0.40 in the founder-family matched sample, which signifies that most founders are present on the board of their companies. Executives' average compensation is lower in the founder-family compared to the founder-matched sample. Besides, a source of differences among both samples is the variable representing ethnic diversity. The average Blau Index for ethnicity in the founder-matched sample is 0.19 while it is only 0.13 in the family- founder matched sample. This means that most of the companies have quite homogenous boards.

When looking at Pearson pairwise correlations, there are no high correlations among variables. The average compensation tends to be correlated with the firm size (ρ=0.47 for founder matched firms; ρ=0.48 for founder and family matched firms; ρ=0.44 for other firms). In addition, the high-tech variable is correlated with the R&D intensity for all samples, especially in founder family matched (ρ=0.62). In the founder and family matched sample, the dummy variable founder firm is negatively correlated with the firm age (-0.50) while it is only (-0.24) in the founder-matched sample, confirming that family firms are older than founder firms. In the founder-matched sample, founder presence on the BoD is correlated at 70% with founder presence in the TMT.

Moreover, there is also a high correlation between founder firms and the presence of the founder on the BoD (0.59).

III. RESULTS

The results of the relationship of firm performance and TMT pay dispersion are presented in Table 4. Both the lagged and non-lagged coefficients of pay dispersion exhibit a negative relationship, though it appears to be only significant at the 10% level (beta: -0.02; $p<0.1$) when the non-lagged TMT pay dispersion variable is used. One explanation for this difference be might that most of the compensation is known in advance and is therefore used as an incentive instead of a reward (Hayes and Schaefer, 2000). This seems particularly true for non-family firms (Chen et al., 2014), which represent 70% of the firms in the S&P 500. Overall, these findings are consistent with the first hypothesis: higher pay dispersion hurts firm performance.

Insert Table 4 about here

The models analyzing the environmental antecedents for TMT pay dispersion are shown in Table 5 for the founder and non-family matched (Panel a) and the founder-family (Panel b) samples. The variable *Recession* is significantly positive in the founder-family matched sample (beta: 0.08; $p <0.1$). It is also positive in the founder matched sample (beta: 0.02) but non-significant. In summary, these results support hypothesis 2a which stated that recession should increase TMT pay dispersion. The interaction term between lone founder firms and recession is positive in both sample but only significant at the 5% level in the founder matched sample (beta: 0.09; $p<0.05$). It means that lone founder corporations are more likely than non-family corporations to experience TMT pay dispersion in a recession period. Family and lone founder

firms are not significantly different in this matter, not supporting H2b. The regressions relative to the industry environment are conducted with the dummy variable *HighTech*. The coefficient for the dummy variable is as predicted negative and significant (beta: -0.10; $p<0.1$) in the founder matched sample. The negative relationship is also found in the founder family matched sample with no significance. The coefficient for HighTech is negatively significant (beta: -0.13; $p<0.1$) when included as a control in the interaction regression for founder matched firms. *HighTechFounder*, however, is not significant. It is interesting to note that the coefficient for the interaction term is positive when founder companies are compared with non-family companies (beta:0.06) and negative compared to family companies (beta: -0.02).

Insert Table 5 about here

To determine if lone founder companies are linked with higher pay dispersion, the regression is run in both samples with the dummy variable for founder businesses as an independent variable (Table 6). Matching founder firms with others (family or non-family) enable to achieve less biased outcomes. There is no evidence of a significant relationship between founder firms and pay dispersion. H3 cannot be confirmed. When founder corporations are compared to regular organizations the coefficient for founder firm is positive (beta: 0.03) whereas it is negative when founder firms are compared with family firms (beta: -0.11). The results are expected in the founder and family sample but are unforeseen in the non-family and founder sample. Concerning the founder's role on the board of directors, it appears to be linked to less TMT pay dispersion. The coefficient of is negative and significant at the 1% level in the founder matched sample (beta: -0.11: $p<0.01$). In the other, the coefficient is also negative (beta: -0.05) but not significant. The coefficient of founder presence in the TMT is positively significant (beta: 0.16; $p<0.05$) in the

founder matched sample and positive but not significant when founder businesses are compared to family businesses (beta: 0.05). These estimates are congruous with the H4.

Insert Table 6 about here

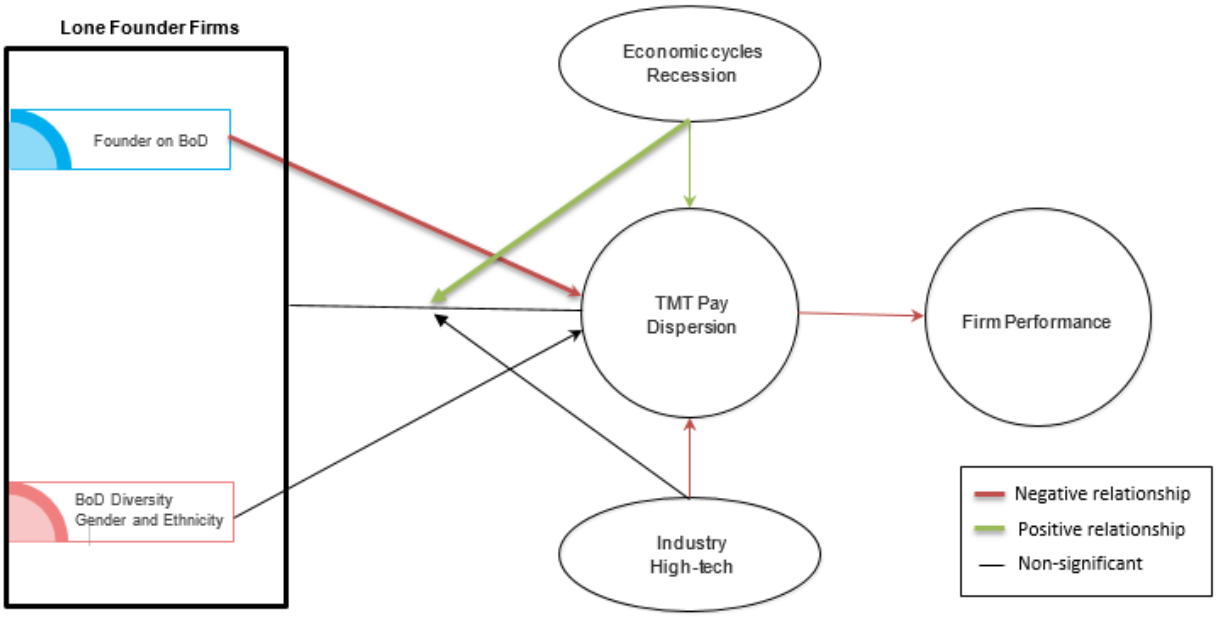
Table 7 illustrates the two-sample t-tests for diversity in the boardroom. In the founder matched sample group, 0 refers to matched firms and 1 refers to founder firms. In the founder and family matched sample, group 0 refers to family corporations and group 1 refers to founder corporations. As regards to the gender diversity within the board of directors, the means of founder and regular firms are not significantly different (23.4% and 21.4% respectively). The one-tail test, however, indicates that the difference is strictly positive at the 10% level. It presupposes that non-family firms have more women in the among the four highest paid executives than lone founder firms. On the contrary, when looking at founder and family businesses, the two-tail t-test is significant at the 1% level. This is confirmed by the one-tail t-test; family firms have more women on their board than founder firms (26% vs 19%).

Concerning ethnicity, the two-sample t-tests are not statistically significant. Analyzing non-family versus lone founder corporations, the mean is higher for non-family firms than for lone founder firms (16.4% vs 15.8%). Comparing lone founder and family businesses, the mean of ethnic directors is higher in families than in founder firms (14% vs 11.7%). However, due to the lack of significance, it is not possible to state that founder firms are less ethnically heterogeneous.

Insert Table 7 about here

After exploring the difference in gender and ethnic presence in the boardroom, I perform random-effects regressions with the Blau Index variables in the two samples. The coefficient appears to be non-significant. In the two samples the coefficient for the Blau Index of gender is negative (beta: -0.18 in founder/family; beta: -0.06 for founder matched). Peculiarly, the coefficient for the Blau Index of ethnicity is negative for the founder and family sample (beta: -0.20) and positive for the founder matched sample (beta: 0.09). The addition of the interaction terms in the models does not change the results. The findings are not conclusive; heterogeneity on the board of directors does not appear to impact TMT pay dispersion. Moreover, the results imply that the type of ownership does not make any difference.

Insert Table 8 about here



Robustness tests

In order to see if the main results obtained are robust, I perform fixed-effects analysis. According to Bell and Jones (2015), fixed-effects modeling is more conservative than random-effects. In such a case, the results might lose their significance. However, I focus particularly on the direction of the results. Concerning the economic cycle impact on pay dispersion, the coefficient for recession stays positive and significant for the lone founder and family matched sample (beta:0.10; $p<0.1$). For the founder and other matched firms, the direction of the coefficient has changed but is still non-significant (beta: -0.010). However, the interaction *RecessionFounder* is positive and significant (beta: 0.09; $p<0.1$). The fixed-effect regressions cannot be performed with the *HighTech* variable; it is omitted because of high collinearity. Referring to the corporate governance analyses, the coefficient for the presence of the founder on the board remains negative in both samples but it is only statistically significant when comparing founder and other firms (beta: -0.303; $p<0.05$). Nonetheless, the direction of the coefficients is robust in the fixed-effects regression. Finally, the results concerning the BoD diversity and TMT pay dispersion relationship are consistently non-significant.

Insert Table 9 about here

An issue arising while performing the analyses regarding the industrial environment is the numerous presence of lone founder firms in high-technology industries. It is difficult to state if the results gathered are driven mainly by the industry or by the type of firms. The significance may be

driven only because of lone founder companies rather than the industry. Using the three-level hierarchical model presented in Figure 3, I examine the variance based on a restricted maximum likelihood (REML) configuration which gives information on the fit of the variance estimate on the data (Aguinis et al., 2013). The level 3 decomposed the data into two groups: high-technology firms and low-technology firms. Then in each group, the level 2 separates them further into two subgroups: lone founder firms or other firms. Level 1 represents the unit of analysis. The results presented suggest that most of the variance is driven by the type of firm rather than the industry in the founder family sample. Although the chi-square coefficient is not significant (0.8920), the variance lying in between industry is closer to 0. In order to see the grouping-effect clustering, the Intraclass Correlation Coefficients (ICCs) are computed (West et al., 2015). It can be noted that the ICC is higher at the type-within-industry level (1.58%) than at the industry level (3.92e-12 %). In comparing lone founder firms to non-family firms, however, the results are different. It appears that the variance is mostly driven by the industry rather than the type of firms. The coefficient estimate of variance is 0.4%. The ICC demonstrates that the correlation is the same between the industries as type-within-industry (5.85%). This tends to be consistent with the significant results found for hypothesis 2b in the founder vs. non-family firm sample.

Insert Table 10 about here

IV. DISCUSSION AND IMPLICATIONS

Confirming the theory of Fredrickson et al. (2010) and Jaskiewicz et al. (2014), my findings show that TMT pay dispersion seems to hurt performance. It is most prominent when incentive-

based compensation is used for TMTs. Indeed, pay-for-performance compensation implies more variability among top executives' pay which is detrimental to financial firm performance. This finding emanates the need to understand the antecedents of TMT pay dispersion. Notably, I paid attention to extra- and intra-organizational factors.

Regarding the former, the main evidence of economic cycles' impact on pay dispersion is shown in the family-founder matched sample. The variable *Recession* is positively related to TMT pay dispersion. The rationale behind it might be that companies want to retain their talent during a crisis and are willing to increase their compensation. This is particularly the case for lone founder firms compared to other firms, denoted by the significance of interaction between the recession dummy and the founder firm dummy. Lone founder firms want to keep talented executives within their management team increasing the willingness to pay high compensation. In contrast, other firms might not be inclined to increase their top executives' compensation. It could similarly be the case that lone founder companies recruit executives from other companies during recessions and offer them relatively high compensation. Although I find that recession also increases the TMT pay dispersion of family firms, the rationale for these firms is probably different. Possibly, family firms cut some but not other managers' pay during recession, increasing pay dispersion.

Looking at TMT pay dispersion in the context of industry environment, high-technology firms are negatively related to TMT pay dispersion. However, this only applies to the lone founder-matched pair sample. Many founder firms operate in high-technology industries. Even though the companies are matched based on industry, careful interpretation is needed. A multilevel modeling analysis of variance suggests that it is indeed high-tech industries and not the lone founder firm as a type of firm that drives the observed effect (Siegel and Hambrick, 2005). Companies in high-technology industries operate in a riskier environment, thus requiring strong collaboration among TMT members (Galbraith, 1973).

The results of the comparison of pay disparity in founder firms versus other types of firms are not conclusive. Regarding the governance regressions, the founder's role as a director is indeed important: In the lone founder-matched sample, the findings are consistent with the explanation that founders pay particular attention to the effective monitoring of their managers. Indeed, when they act as directors, pay dispersion among managers is reduced. In contrast, when they are part of the management themselves, they do not pay themselves a high compensation because of their ownership stake in the company (e.g., Steve Jobs' salary was 1$). These findings reinforce the view that lone founder businesses are focused on firm growth and financial performance.

When inspecting the mean differences of board diversity across firms, only lone founder and family corporations display significant differences. Family businesses display more diversity on the board than lone founder firms. In the random-effects regressions, gender and ethnic diversity in the boardroom have no effect on pay dispersion, however. This may be due to the choice of the measure of diversity (Richard et al., 2004). The Blau Index reflects the representation of various groups but also the evenness of size of these groups (Bear et al., 2010). It is possible that having several groups with only few members is sufficient to influence managerial pay and hence pay dispersion (Torchia et al., 2011). Yet, it would not be captured by the Blau Index if one group were to largely outnumber other smaller groups.

However, a difference is noticed between family and founder firms: Gender diversity on the BoD has a non-significant relationship with TMT pay dispersion in founder firms. The same relationship is non-significant and positive when founder firms are compared with other firms. Inversely, ethnic diversity has a positive non-significant relationship with TMT pay dispersion in founder firms when compared to family firms but a negative relationship when compared to other firms.

In summary, my study shows that a) TMT pay dispersion harms firm performance and b) some extra- (e.g., recession) and intra-organizational factors (e.g., founder presence on the board) influence TMT pay dispersion, and as such give firms a competitive advantage or disadvantage. My paper therefore contributes to the scarce literature on pay dispersion in top management teams. Building upon the articles of Frederickson et al. (2010) and Jaskiewicz et al. (2014), it explores the role of several novel extra- as well as intra-organizational factors influencing pay dispersion. However, this study cannot make inference regarding the causality of the relationships established. One possible way to highlight causal relationships would be to observe changes among TMT members. Indeed, external additions to the TMT would help identify if new members impact TMT pay dispersion. However, quite few cases in my sample exist. As a result, future research will need to test for causality.

My paper also has practical implications for corporate governance and investments decision-making. First, my study raises awareness regarding the negative effect of TMT pay dispersion on firms' financial performance. Its harmful effect should be a matter of attention for board members and their compensation committees. However, it might only be in firms with large and hence vigilant owners that substantial changes to TMT pay dispersion can be expected. Second, knowing about TMT pay dispersion might be important for firm investors. Earlier this year, an article in the Globe and Mail suggested the value of analyzing companies' top management teams (Mo and Brink, 2016). Minztberg's research on the importance of TMT members shows that it is important to understand how the TMT is likely to perform in the future and what might drive its performance. My thesis suggests that TMT pay dispersion can be a factor fueling top management team conflict and underperformance and thereby decreasing share value.

My empirical results are based on large public companies in the US. However, privately owned firms may not have the same governance and compensation practices. The difficulty in

accessing the data for those companies, however, makes it a challenge to study them. Moreover, examining the relationships between the economic cycle, corporate governance and board diversity in other countries could lead to interesting results. Heyman (2005), for instance, find a positive impact of pay dispersion on the performance for Swedish managers. Lin and Lu (2009) show that organizational behavior in Chinese corporation can be explained by tournament theory. It could be due to cultural differences (e.g., individualism vs. collectivism). High pay dispersion might harm firm performance more strongly in more collectivist countries because even small pay differences might be deemed unfair and as such foster team conflicts. Finally, one other avenue for future research is to study pay dispersion on the firm level. A corporation with an individualistic organizational culture might not experience the same effects of TMT pay dispersion as one with a more collectivist culture. It may even be possible that the former might benefit from moderate TMT pay dispersion. All of the above points should be considered by further research to enrich the literature on TMT pay dispersion.

V. CONCLUSION

In closing, this thesis explored the antecedents and influences of TMT pay dispersion, specifically in lone founder firms. Using panel data modelling with matching companies' samples allows to compare founder corporations with family and non-family ones. As theoretically suggested by Gupta et al. (2012), external and internal environment seems to influence TMT pay dispersion. I find that TMT pay dispersion in lone founder firms is more sensitive to recession than non-family firms. Moreover high-technology industry is linked with reduced TMT pay dispersion. However, I shall be cautious in interpreting the causality; the type of firms might drive the results more than the industry. A three-level models reveal that the variance is partly due to the industry

indeed. In analyzing corporate governance, the findings presented imply that it may be due to the presence of the founder on the Board of Directors. Finally, though often criticized for their lack of diversity, it appears that heterogeneity of the Board of Directors does not impact TMT pay dispersion. Nonetheless, as noted by Zaichkowsky (2014), it may be the case that actual benefits from diversity occur only with the presence of several "diverse" members. One or two may not be powerful enough to weight in the discussion. If this is the case, one may wonder how many persons are required to make a difference. At last, the results illustrate the lack of tangible difference between founder and family organizations concerning TMT pay dispersion. It stems that, in future studies, researchers need to pay attention to the circumstances around TMT pay dispersion. This paper aims to explore some possible component affecting pay dispersion. Yet, there can be a multitude of factors taken into consideration within the organization as well as external.

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APPENDICES

Table 1: High technology industry SIC codes description

2-digit SIC code	Industry description
28	Chemicals and Allied Products
35	Industrial and Commercial Machinery and Computer Equipment
36	Electronic and other Electrical Equipment and Components, except Computer Equipment
37	Transportation Equipment
38	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks
48	Communications

Table 2: Hausman tests

Panel a: Founder and non-family matched sample

Variables	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_V_B)) S.E.
Firm size	0.08	0.00	0.08	0.09
RD intensity	18.67	-3.22	21.89	25.38
Advertising Intensity	-9.03	6.15	-15.18	63.65
Product diversification	0.08	0.02	0.06	0.04
International diversification	0.01	0.03	-0.03	0.07
Firm Age	-0.92	-0.11	-0.81	0.65
Market-to-book	0.04	0.04	0.00	0.22
Duality	0.06	0.02	0.04	0.06
TMT Average compensation	0.00	0.00	0.00	0.00
Age dispersion	0.15	1.00	-0.84	0.87
Tenure dispersion	-0.51	0.03	-0.53	0.20
Functional background	0.03	0.05	-0.02	0.02
Industry pay dispersion	0.01	-0.02	0.03	0.11

chi2(12) =	(b-B)'[(V_b-V_B)^(-1)](b-B)
chi2(12) =	19.61
Prob>chi2 =	0.0749

Panel b: Founder and family matched sample

Variables	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_V_B)) S.E.
Firm size	-0.02	-0.02	0.00	0.18
RD intensity	10.43	-38.99	49.42	144.62
Advertising Intensity	-169.00	-15.21	-153.79	148.06
Product diversification	0.03	-0.01	0.04	0.06
International diversification	0.34	0.01	0.33	0.25
Firm Age	-1.91	0.26	-2.17	1.35
Market-to-book	-0.75	0.23	-0.98	0.69
Duality	0.00	-0.03	0.03	0.09
TMT Average compensation	0.00	0.00	0.00	0.00
Age dispersion	2.43	1.30	1.13	1.49
Tenure dispersion	-1.06	0.27	-1.33	0.68
Functional background	0.01	0.02	-0.01	0.04
Industry pay dispersion	-0.04	0.11	-0.15	0.30

chi2(12) =	(b-B)'[(V_b-V_B)^(-1)](b-B)
chi2(12) =	9.48
Prob>chi2 =	0.6612

Panel c: Whole sample

Variables	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Firm_size	-0.02	-0.01	-0.01	0.01
RD_intensity	5.06	6.68	-1.61	3.39
Advertising_Intensity	-5.04	7.48	-12.52	3.82
Productdiv	0.00	0.00	0.01	0.00
Internationaldiv	0.00	0.01	-0.01	0.01
Age_firm	0.03	0.02	0.01	0.02
mtb	-0.21	-0.01	-0.20	0.03
Duality	0.01	0.01	0.00	0.00
TMT_Average_compensation	0.00	0.00	0.00	0.00
Industry_pay_dispersion	-0.01	-0.02	0.01	0.01

chi2(12) =	(b-B)'[(V_b-V_B)^(-1)](b-B)
chi2(12) =	79.98
Prob>chi2 =	0.0000

Table 3: Descriptive statistics and Pearson correlation matrices

Panel a:Non-family and founder matched sample

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1 Firm size	9.32	1.12	1.00																								
2 RD intensity	0.0007	0.0013	-0.52	1.00																							
3 Advertising Intensity	0.0005	0.0007	-0.36	0.30	1.00																						
4 Product diversification	0.86	0.73	0.19	0.03	-0.02	1.00																					
5 International diversification	1.04	0.68	-0.07	0.18	-0.15	0.16	1.00																				
6 Firm Age	1.49	0.32	0.20	-0.18	-0.11	0.27	0.16	1.00																			
7 Market-to-book	0.64	0.19	-0.22	-0.05	-0.14	-0.06	0.06	-0.11	1.00																		
8 Duality	0.46	0.50	0.17	-0.24	0.08	-0.02	-0.15	-0.13	-0.19	1.00																	
9 TMT Average compensation	4709.30	4460.31	0.47	-0.20	-0.13	0.09	0.02	0.12	-0.05	0.04	1.00																
10 Age dispersion	0.04	0.02	-0.17	-0.05	0.06	-0.18	-0.18	-0.04	0.04	0.05	0.00	1.00															
11 Tenure dispersion	0.53	0.07	-0.11	0.10	0.10	-0.03	0.01	0.14	-0.02	-0.12	0.09	0.15	1.00														
12 Functional background	1.86	0.51	-0.09	-0.01	-0.01	-0.05	-0.07	-0.03	0.05	0.08	-0.01	0.29	-0.06	1.00													
13 Industry pay dispersion	0.39	0.13	0.01	-0.04	0.07	0.04	-0.08	0.13	0.03	-0.05	-0.06	0.00	0.05	-0.09	1.00												
14 TMT Pay dispersion	0.37	0.28	0.06	-0.03	-0.01	0.01	0.06	-0.09	0.01	0.03	0.35	0.12	0.09	0.18	-0.08	1.00											
15 Recession	0.50	0.50	-0.07	0.08	0.04	-0.06	-0.04	-0.09	0.03	-0.01	-0.16	-0.02	0.09	-0.11	-0.01	0.02	1.00										
16 RecessionFounder	0.24	0.43	-0.03	0.01	0.05	-0.08	-0.13	-0.16	0.04	-0.07	-0.07	0.04	0.03	-0.04	-0.04	0.08	0.53	1.00									
17 HighTech	0.22	0.41	-0.05	0.32	-0.23	0.00	0.24	-0.09	0.14	0.05	-0.03	-0.15	0.04	-0.03	-0.27	-0.10	0.04	0.01	1.00								
18 HighTechFounder	0.10	0.30	-0.01	0.14	-0.11	0.01	0.14	-0.11	0.11	-0.08	0.07	-0.17	0.06	-0.09	-0.17	-0.04	0.05	0.27	0.63	1.00							
19 Founder firm	0.48	0.50	-0.02	-0.08	0.06	-0.02	-0.22	-0.24	0.10	-0.15	0.03	0.11	-0.07	0.03	-0.06	0.05	0.01	0.67	-0.04	0.34	1.00						
20 FoundersTMT	0.23	0.50	0.05	-0.06	0.02	-0.11	-0.24	-0.22	0.14	-0.02	0.17	0.32	0.04	0.19	-0.04	0.18	0.03	0.34	-0.02	0.15	0.47	1.00					
21 BoD Founder	0.32	0.54	0.06	-0.07	0.06	0.03	-0.29	-0.17	0.08	-0.14	0.08	0.15	-0.05	0.05	-0.02	0.04	0.00	0.39	0.01	0.24	0.59	0.70	1.00				
22 BIGender	0.23	0.13	0.18	-0.05	-0.01	0.06	-0.06	0.25	-0.10	-0.02	0.08	-0.16	0.04	0.04	0.18	-0.05	-0.17	-0.13	-0.23	-0.04	-0.08	0.04	0.07	1.00			
23 GenderFounder	0.11	0.14	0.04	-0.04	0.06	-0.02	-0.26	-0.19	0.05	-0.10	0.05	0.06	0.02	0.05	-0.03	0.06	-0.05	0.45	-0.04	0.25	0.78	0.44	0.57	0.36	1.00		
24 BIEthni	0.19	0.16	0.00	-0.05	0.02	0.07	0.05	0.12	-0.06	0.11	0.07	-0.14	0.02	0.06	-0.03	0.04	-0.13	-0.17	-0.05	-0.12	-0.15	-0.06	-0.10	0.24	-0.04	1.00	
25 EthniFounder	0.08	0.14	-0.07	-0.12	0.07	0.03	-0.05	-0.09	-0.02	-0.04	0.02	0.03	-0.01	0.05	0.01	0.04	-0.06	0.32	-0.08	0.12	0.60	0.30	0.34	0.04	0.55	0.46	1.00

Panel b: Founder and family matched sample

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1 Firm size	9.52	0.95	1.00																								
2 RD intensity	0.0004	0.0006	-0.35	1.00																							
3 Advertising Intensity	0.0003	0.0006	-0.31	-0.05	1.00																						
4 Product diversification	0.86	0.75	0.07	0.07	0.10	1.00																					
5 International diversification	0.87	0.74	-0.12	0.58	0.05	0.21	1.00																				
6 Firm Age	1.47	0.23	-0.10	-0.25	0.34	0.29	0.32	1.00																			
7 Market-to-book	0.71	0.19	-0.43	-0.03	-0.21	-0.09	-0.20	-0.15	1.00																		
8 Duality	0.47	0.50	0.26	-0.04	-0.12	0.09	-0.15	-0.13	-0.20	1.00																	
9 TMT Average compensation	4171.67	2536.70	0.48	-0.07	0.03	0.20	0.04	0.11	-0.34	0.00	1.00																
10 Age dispersion	0.04	0.02	-0.03	-0.12	-0.24	-0.13	-0.25	-0.34	0.06	0.09	-0.04	1.00															
11 Tenure dispersion	0.51	0.06	-0.05	0.15	-0.04	-0.05	-0.12	-0.09	0.01	0.20	0.08	-0.07	1.00														
12 Functional background	1.89	0.52	-0.15	-0.05	-0.17	-0.21	-0.14	-0.28	0.39	-0.04	-0.16	0.19	-0.11	1.00													
13 Industry pay dispersion	0.38	0.12	0.00	-0.28	-0.02	-0.07	-0.48	0.03	0.14	-0.02	0.00	0.07	0.04	-0.11	1.00												
14 TMT Pay dispersion	0.37	0.26	-0.10	-0.17	0.02	0.01	-0.05	0.23	0.24	-0.16	0.06	-0.01	0.09	0.10	0.10	1.00											
15 Recession	0.46	0.50	-0.05	0.15	0.04	-0.17	0.01	-0.11	0.04	0.03	-0.12	-0.05	0.09	-0.12	0.15	0.08	1.00										
16 RecessionFounder	0.23	0.42	-0.05	0.25	-0.01	-0.21	-0.07	-0.33	0.01	-0.08	-0.13	0.08	0.01	-0.09	0.12	-0.12	0.55	1.00									
17 HighTech	0.45	0.50	-0.23	0.62	0.14	0.36	0.71	0.26	-0.10	-0.14	0.25	-0.15	0.02	-0.14	-0.44	-0.11	0.04	-0.02	1.00								
18 HighTechFounder	0.19	0.39	-0.14	0.65	0.00	0.02	0.42	-0.24	-0.03	-0.20	0.05	-0.13	0.24	-0.09	-0.19	-0.23	0.06	0.38	0.55	1.00							
19 Founder firm	0.48	0.50	-0.07	0.19	-0.06	-0.25	-0.12	-0.50	-0.02	-0.22	-0.21	0.23	-0.09	-0.02	0.08	-0.24	0.04	0.65	-0.09	0.50	1.00						
20 FoundersTMT	0.25	0.45	-0.07	0.14	-0.08	0.12	-0.26	-0.55	0.16	0.00	0.07	0.43	0.00	0.16	0.09	-0.09	0.05	0.24	-0.09	0.22	0.36	1.00					
21 BoD Founder	0.40	0.59	0.09	0.05	-0.20	0.07	-0.14	-0.38	0.24	-0.05	0.14	0.16	0.13	0.08	-0.01	-0.02	0.08	0.11	0.03	0.25	0.18	0.52	1.00				
22 BIGender	0.23	0.12	0.07	-0.13	0.26	-0.07	0.14	0.26	-0.08	0.04	0.20	0.01	-0.02	0.02	-0.23	-0.02	-0.16	-0.35	0.16	-0.11	-0.29	-0.21	-0.08	1.00			
23 GenderFounder	0.10	0.13	-0.02	0.10	-0.11	-0.28	-0.07	-0.27	-0.05	-0.12	-0.13	0.18	-0.04	-0.01	0.06	-0.24	-0.11	0.33	-0.04	0.41	0.75	0.12	0.02	0.23	1.00		
24 BIEthni	0.13	0.15	0.12	-0.16	0.37	0.00	0.24	0.38	-0.47	-0.06	0.06	-0.14	-0.04	-0.08	-0.21	-0.11	-0.16	-0.17	0.12	0.02	-0.08	-0.19	-0.14	0.23	-0.03	1.00	
25 EthniFounder	0.06	0.10	0.01	0.15	0.16	-0.17	0.09	-0.19	-0.24	-0.13	-0.02	0.01	0.02	-0.02	0.05	-0.17	-0.13	0.21	0.01	0.37	0.58	0.11	0.05	-0.13	0.48	0.42	1.00

Panel c: Whole sample

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 ROA	0.05	0.08	1.00												
2 Firm size	9.75	1.37	-0.27	1.00											
3 RD intensity	0.0004	0.00	0.17	-0.40	1.00										
4 Advertising Intensity	0.0004	0.00	0.25	-0.41	0.10	1.00									
5 Product diversification	1.04	0.71	-0.10	0.21	-0.13	-0.13	1.00								
6 International diversification	0.94	0.75	0.16	-0.12	0.21	-0.05	0.10	1.00							
7 Firm Age	1.63	0.37	0.08	0.05	-0.12	0.07	0.12	0.15	1.00						
8 Market-to-book	0.61	0.19	0.18	-0.41	0.11	0.02	-0.16	0.20	0.01	1.00					
9 Duality	0.63	0.48	0.00	0.15	-0.14	-0.02	0.06	-0.05	0.08	-0.11	1.00				
10 TMT Average compensation	4573.00	4072.00	0.06	0.44	-0.14	-0.11	0.13	0.11	0.06	-0.04	0.01	1.00			
11 Industry pay dispersion	0.36	0.12	-0.05	-0.06	-0.04	0.02	0.00	-0.05	-0.02	0.10	-0.03	0.01	1.00		
12 TMT_Pay_dispersion	0.35	0.24	-0.05	-0.07	-0.01	0.05	-0.05	0.00	-0.07	0.11	-0.07	0.12	0.06	1.00	
13 lagTMT_Pay_dispersion	0.35	0.25	-0.02	-0.05	-0.01	0.04	-0.04	0.02	-0.08	0.12	-0.08	0.20	0.06	0.49	1.00

Table 4: Fixed-effects performance regressions in S&P 500 sample

Variables	ROA	ROA
Firm size	-0.0225**	-0.0217**
	(0.018)	(0.019)
RD Intensity	4.963	5.197
	(0.601)	(0.584)
Advertising Intensity	-5.011	-4.651
	(0.381)	(0.425)
Product diversification	0.00476	0.00436
	(0.301)	(0.351)
International diversification	-0.00318	-0.00344
	(0.707)	(0.683)
Firm Age	0.0285	0.0282
	(0.251)	(0.254)
Market-to-book	-0.212***	-0.212***
	(0.000)	(0.000)
Duality	0.00603	0.00750
	(0.467)	(0.375)
TMT Average compensation	8.64e-08	-3.89e-08
	(0.819)	(0.918)
Industry pay dispersion	-0.00913	-0.00884
	(0.448)	(0.465)
lagTMT Pay dispersion	-0.0101	
	(0.118)	
TMT Pay dispersion		-0.0189*
		(0.071)
Intercept	0.361***	0.357***
	(0.000)	(0.000)
N	1714	1714
Effects	FE	FE
R-sq	0.063	0.067

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.001*

Table 5: Random-effects environment regressions

Panel a: Founder and non-family matched sample				
Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	0.000445	0.00296	-0.000295	0.00251
	(0.989)	(0.910)	(0.993)	(0.939)
RD Intensity	-3.771	8.125	-4.004	10.63
	(0.799)	(0.678)	(0.784)	(0.504)
Advertising Intensity	5.642	-8.029	5.427	-11.03
	(0.860)	(0.805)	(0.867)	(0.738)
Product diversification	0.0205	0.0183	0.0248	0.0182
	(0.428)	(0.498)	(0.334)	(0.476)
International diversification	0.0367	0.0414	0.0367	0.0445
	(0.279)	(0.187)	(0.287)	(0.216)
Firm Age	-0.110*	-0.120*	-0.104	-0.109*
	(0.068)	(0.079)	(0.102)	(0.060)
Market-to-book	0.0320	0.0779	0.0440	0.0771
	(0.819)	(0.517)	(0.758)	(0.591)
Duality	0.0197	0.0351	0.0211	0.0446
	(0.650)	(0.401)	(0.652)	(0.352)
TMT Average compensation	0.0000150*	0.0000145***	0.0000150*	0.0000140*
	(0.077)	(0.000)	(0.081)	(0.087)
Age dispersion	1.028	0.805	1.034	0.795
	(0.164)	(0.400)	(0.166)	(0.271)
Tenure dispersion	-0.0106	0.0584	-0.0343	0.0511
	(0.965)	(0.811)	(0.884)	(0.837)
Functional background	0.0520	0.0463	0.0512	0.0466
	(0.113)	(0.132)	(0.116)	(0.142)
Industry pay dispersion	-0.0202	-0.0691	-0.0192	-0.0635
	(0.835)	(0.599)	(0.841)	(0.518)
Founder_firm			-0.0167	0.0242
			(0.787)	(0.687)
Recession	0.0223		-0.0198	
	(0.378)		(0.612)	
RecessionFounder			0.0886**	
			(0.046)	
HighTech		-0.0966*		-0.127*
		(0.099)		(0.070)
HighTechFounder				0.0591
				(0.586)
Intercept	0.232	0.222	0.239	0.195
	(0.581)	(0.530)	(0.569)	(0.638)
N	311	311	311	311
Effects	RE	RE	RE	RE
R-sq within	0.0174	0.017	0.0282	0.0177
R-sq between	0.3231	0.331	0.3348	0.3311
R-sq overall	0.1833	0.1919	0.186	0.1876

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.001*

Panel b: Founder and family matched sample				
Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	-0.0182	-0.0257	-0.0269	-0.0336
	(0.769)	(0.711)	(0.668)	(0.626)
RD Intensity	-47.78	-29.38	-51.42	-29.65
	(0.614)	(0.753)	(0.607)	(0.749)
Advertising Intensity	-31.55	-14.6	-33.42	-15.77
	(0.560)	(0.753)	(0.569)	(0.773)
Product diversification	0.00723	-0.00953	0.00445	-0.0133
	(0.834)	(0.812)	(0.900)	(0.738)
International diversification	0.00189	0.0195	0.00604	0.0194
	(0.981)	(0.820)	(0.940)	(0.836)
Firm Age	0.316	0.275	0.204	0.139
	(0.146)	(0.219)	(0.314)	(0.554)
Market-to-book	0.222	0.232	0.157	0.160
	(0.270)	(0.225)	(0.462)	(0.446)
Duality	-0.0394	-0.0318	-0.0554	-0.0546
	(0.414)	(0.536)	(0.290)	(0.347)
TMT Average compensation	0.0000125	0.0000121	0.0000106	0.0000100
	(0.225)	(0.357)	(0.325)	(0.450)
Age dispersion	1.446	1.343	1.601	1.485
	(0.231)	(0.253)	(0.185)	(0.181)
Tenure dispersion	0.184	0.267	0.0892	0.195
	(0.640)	(0.488)	(0.833)	(0.693)
Functional background	0.0367	0.0193	0.0294	0.0125
	(0.533)	(0.686)	(0.647)	(0.810)
Industry pay dispersion	0.00403	0.0998	0.0353	0.134
	(0.986)	(0.711)	(0.884)	(0.628)
Founder_firm			-0.0913	-0.0986
			(0.299)	(0.293)
Recession	0.0776*		0.0654	
	(0.065)		(0.293)	
RecessionFounder			0.0124	
			(0.876)	
HighTech		-0.0363		-0.0200
		(0.825)		(0.916)
HighTechFounder				-0.0233
				(0.881)
Intercept	-0.355	-0.236	0.0454	0.190
	(0.676)	(0.789)	(0.956)	(0.822)
N	121	121	121	121
Effects	RE	RE	RE	RE
R-sq within	0.0256	0.0013	0.0303	0.0036
R-sq between	0.3331	0.3507	0.344	0.3745
R-sq overall	0.1848	0.1765	0.1914	0.1901

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.001*

Table 6: Random-effects lone founder regressions

Sample	Founder Family matched		Founder and non-family matched	
Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	-0.0323	-0.00948	-0.000667	0.00000953
	(0.594)	(0.858)	(0.984)	(1.000)
RD Intensity	-39.35	-40.08	-1.712	-3.018
	(0.680)	(0.679)	(0.909)	(0.836)
Advertising Intensity	-16.62	-14.49	4.060	7.308
	(0.758)	(0.753)	(0.899)	(0.820)
Product diversification	-0.0156	-0.0161	0.0179	0.0265
	(0.629)	(0.634)	(0.481)	(0.318)
International diversification	0.0101	0.0204	0.0375	0.0349
	(0.899)	(0.803)	(0.272)	(0.310)
Firm Age	0.135	0.269	-0.102	-0.0929
	(0.524)	(0.325)	(0.106)	(0.148)
Market-to-book	0.154	0.285	0.0326	0.0281
	(0.461)	(0.147)	(0.821)	(0.841)
Duality	-0.0556	-0.029	0.0268	0.0148
	(0.322)	(0.593)	(0.562)	(0.743)
TMT Average compensation	0.00000907	0.0000102	0.0000143*	0.0000129*
	(0.385)	(0.331)	(0.081)	(0.084)
Age dispersion	1.485	1.14	0.921	0.473
	(0.201)	(0.405)	(0.219)	(0.572)
Tenure dispersion	0.184	0.291	0.0293	-0.0158
	(0.648)	(0.429)	(0.903)	(0.947)
Functional background	0.0137	0.0201	0.0472	0.0393
	(0.801)	(0.676)	(0.141)	(0.243)
Industry pay dispersion	0.143	0.111	-0.0147	-0.0261
	(0.567)	(0.660)	(0.880)	(0.798)
Founder_firm	-0.109		0.0343	
	(0.164)		(0.525)	
FoundersTMT		0.0503		0.158**
		(0.686)		(0.027)
BoD Founder		-0.052		-0.108**
		(0.652)		(0.009)
Intercept	0.198	-0.421	0.217	0.282
	(0.806)	(0.609)	(0.596)	(0.486)
N	121	121	311	311
Effects	RE	RE	RE	RE
R-sq within	0.0033	0.006	0.017	0.0267
R-sq between	0.3739	0.3179	0.3272	0.2883
R-sq overall	0.1884	0.1672	0.1554	0.1835

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.001

Table 7: Two-sample T-test for board diversity

Panel a: Founder and non-family matched sample

Gender

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0 Non-family	205	0.23	0.01	0.13	0.22	0.25
1 Founder	202	0.21	0.01	0.12	0.20	0.23
combined	407	0.22	0.01	0.13	0.21	0.24
diff		0.02	0.01		0.00	0.05

diff = mean(0) - mean(1) t = 1.6013

Ho: diff = 0 Satterthwaite's degrees of freedom = 402.994

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.9450 Pr(T > t) = 0.1101 Pr(T > t) = 0.0550

Ethnicity

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0 Non-family	205	0.21	0.01	0.16	0.18	0.23
1 Founder	202	0.16	0.01	0.15	0.14	0.18
combined	407	0.18	0.01	0.16	0.17	0.20
diff		0.05	0.02		0.02	0.08

diff = mean(0) - mean(1) t = 3.0949

Ho: diff = 0 Satterthwaite's degrees of freedom = 381.711

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.9989 Pr(T > t) = 0.0021 Pr(T > t) = 0.0011

Panel b: Founder and family matched sample

Gender

Group	Obs	Mean	Std. Err.	Std. Dev.	95% Conf.	Interval]
0 Family	78	0.26	0.01	0.11	0.23	0.28
1 Founder	75	0.19	0.01	0.12	0.16	0.22
combined	153	0.23	0.01	0.12	0.21	0.24
diff		0.07	0.02		0.03	0.11

diff = mean(0)- mean(1) t = 3.7422

Ho: diff = 0 Satterthwaite's degrees of freedom = 149.261

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.9999 Pr(T > t) = 0.0003 Pr(T > t) = 0.0001

Ethnicity

Group	Obs	Mean	Std. Err.	Std. Dev.	95% Conf.	Interval]
0 Family	78	0.14	0.02	0.16	0.10	0.18
1 Founder	75	0.12	0.01	0.12	0.09	0.14
combined	153	0.13	0.01	0.14	0.11	0.15
diff		0.02	0.02		-0.02	0.07

diff = mean(0) - mean(1) t = 1.0044

Ho: diff = 0 Satterthwaite's degrees of freedom = 140.069

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.8416 Pr(T > t) = 0.3169 Pr(T > t) = 0.1584

Table 8: Random-effects diversity regressions

Panel a: Founder and non-family matched sample				
Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	0.00132	0.00176	0.000350	0.000368
	(0.968)	(0.956)	(0.992)	(0.991)
RD Intensity	-2.694	-2.494	-1.449	-1.409
	(0.857)	(0.870)	(0.922)	(0.930)
Advertising Intensity	6.560	6.906	4.458	4.352
	(0.839)	(0.826)	(0.890)	(0.887)
Product diversification	0.0190	0.0184	0.0182	0.0175
	(0.462)	(0.469)	(0.480)	(0.478)
International diversification	0.0328	0.0346	0.0364	0.0389
	(0.332)	(0.304)	(0.284)	(0.272)
Firm Age	-0.109*	-0.120**	-0.0947	-0.108*
	(0.084)	(0.047)	(0.164)	(0.088)
Market-to-book	0.0353	0.0460	0.0298	0.0382
	(0.805)	(0.744)	(0.836)	(0.786)
Duality	0.0195	0.0187	0.0264	0.0260
	(0.654)	(0.671)	(0.568)	(0.578)
TMT Average compensation	0.0000145*	0.0000144*	0.0000142*	0.0000141*
	(0.080)	(0.083)	(0.083)	(0.087)
Age dispersion	0.958	1.077	0.875	1.006
	(0.206)	(0.157)	(0.244)	(0.178)
Tenure dispersion	0.0286	0.0230	0.0271	0.0272
	(0.907)	(0.925)	(0.911)	(0.910)
Functional background	0.0488	0.0451	0.0481	0.0444
	(0.134)	(0.164)	(0.141)	(0.172)
Industry pay dispersion	-0.0188	-0.0168	-0.00850	-0.00623
	(0.849)	(0.868)	(0.932)	(0.950)
Founder_firm			0.0222	0.0466
			(0.751)	(0.429)
BIGender	-0.0554		-0.0833	
	(0.625)		(0.601)	
GenderFounder			0.0551	
			(0.798)	
BIEthni		0.0942		0.123
		(0.452)		(0.450)
EthniFounder				-0.0513
				(0.840)
Intercept	0.239	0.218	0.217	0.187
	(0.571)	(0.596)	(0.599)	(0.638)
N	311	311	311	311
Effects	RE	RE	RE	RE
R-sq within	0.0174	0.0158	0.0176	0.0159
R-sq between	0.3196	0.3381	0.3205	0.3414
R-sq overall	0.1793	0.1855	0.1756	0.1811

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.001*

Panel b: Founder and family matched sample				
Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	-0.0152	-0.0188	-0.0280	-0.0329
	(0.803)	(0.758)	(0.650)	(0.596)
RD Intensity	-39.15	-51.27	-37.16	-53.58
	(0.672)	(0.580)	(0.708)	(0.593)
Advertising Intensity	-1.801	-6.389	-16.27	-13.06
	(0.969)	(0.894)	(0.790)	(0.804)
Product diversification	-0.019	-0.0147	-0.0209	-0.0170
	(0.561)	(0.642)	(0.531)	(0.602)
International diversification	0.0154	0.0216	0.0119	0.0132
	(0.851)	(0.792)	(0.884)	(0.874)
Firm Age	0.293	0.29	0.182	0.174
	(0.204)	(0.201)	(0.412)	(0.435)
Market-to-book	0.255	0.18	0.158	0.0785
	(0.177)	(0.387)	(0.432)	(0.729)
Duality	-0.0284	-0.0385	-0.0498	-0.0658
	(0.573)	(0.460)	(0.360)	(0.253)
TMT Average compensation	0.0000114	0.00000984	0.00000944	0.00000695
	(0.265)	(0.349)	(0.380)	(0.504)
Age dispersion	1.435	1.297	1.648	1.525
	(0.232)	(0.283)	(0.165)	(0.208)
Tenure dispersion	0.268	0.305	0.185	0.169
	(0.496)	(0.425)	(0.673)	(0.705)
Functional background	0.023	0.03	0.0170	0.0168
	(0.663)	(0.585)	(0.766)	(0.783)
Industry pay dispersion	0.0815	0.1	0.119	0.0961
	(0.737)	(0.689)	(0.624)	(0.712)
Founder_firm			-0.0591	-0.151
			(0.694)	(0.104)
BIGender	-0.177		-0.0512	
	(0.315)		(0.907)	
GenderFounder			-0.217	
			(0.670)	
BIEthni		-0.201		-0.347
		(0.196)		(0.192)
EthniFounder				0.367
				(0.207)
Intercept	-0.345	-0.294	0.0872	0.279
	(0.689)	(0.738)	(0.919)	(0.758)
N	121	121	121	121
Effects	RE	RE	RE	RE
R-sq within	0.0023	0.0007	0.0066	0.0036
R-sq between	0.355	0.3728	0.384	0.41
R-sq overall	0.1813	0.1862	0.1969	0.211

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.001*

Table 9: Fixed-effects regressions on TMT pay dispersion

Panel a: Founder and non-family matched firms

Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	0.0771	0.0968	0.102	0.0799	0.0819	0.0809	0.0810
	(0.457)	(0.327)	(0.337)	(0.437)	(0.424)	(0.428)	(0.436)
RD Intensity	19.58	14.51	13.87	18.52	18.95	19.90	19.91
	(0.403)	(0.553)	(0.538)	(0.417)	(0.416)	(0.387)	(0.392)
Advertising Intensity	-8.459	1.077	4.954	-7.314	-6.500	-11.70	-11.71
	(0.902)	(0.988)	(0.944)	(0.914)	(0.923)	(0.866)	(0.866)
Product diversification	0.0751	0.0849	0.0559	0.0768	0.0747	0.0776	0.0776
	(0.229)	(0.173)	(0.314)	(0.229)	(0.247)	(0.218)	(0.217)
International diversification	0.00595	-0.0174	0.0186	0.00581	0.00877	0.00817	0.00817
	(0.936)	(0.831)	(0.802)	(0.937)	(0.907)	(0.911)	(0.912)
Firm Age	-1.060	-0.944	-1.028	-0.891	-0.901	-0.918	-0.918
	(0.259)	(0.294)	(0.193)	(0.247)	(0.238)	(0.231)	(0.231)
Market-to-book	0.0488	0.0968	0.0402	0.0328	0.0417	0.0356	0.0357
	(0.855)	(0.711)	(0.884)	(0.906)	(0.881)	(0.898)	(0.899)
Duality	0.0617	0.0490	0.0596	0.0636	0.0641	0.0616	0.0616
	(0.244)	(0.383)	(0.272)	(0.243)	(0.242)	(0.262)	(0.263)
TMT Average compensation	0.00000547	0.00000538	0.00000328	0.00000557	0.00000561	0.00000557	0.00000557
	(0.419)	(0.434)	(0.513)	(0.403)	(0.399)	(0.403)	(0.404)
Age dispersion	0.177	0.310	0.308	0.164	0.138	0.175	0.175
	(0.880)	(0.791)	(0.805)	(0.888)	(0.907)	(0.882)	(0.882)
Tenure dispersion	-0.500	-0.530	-0.533	-0.502	-0.505	-0.515	-0.515
	(0.210)	(0.173)	(0.201)	(0.210)	(0.209)	(0.203)	(0.204)
Functional background	0.0261	0.0255	0.0297	0.0264	0.0261	0.0275	0.0275
	(0.521)	(0.535)	(0.463)	(0.521)	(0.526)	(0.509)	(0.510)
Industry pay dispersion	0.00155	-0.00158	-0.0107	0.00418	-0.00166	0.000532	0.000555
	(0.989)	(0.989)	(0.921)	(0.969)	(0.987)	(0.996)	(0.996)
Recession	-0.00984	-0.0452					
	(0.796)	(0.328)					
Founder_firm		0			0		0
		(.)			(.)		(.)
RecessionFounder		0.0862*					
		(0.075)					
foundersTMT			0.183				
			(0.192)				
BoD Founder			-0.303**				
			(0.048)				
BIGender				-0.0380	0.0381		
				(0.763)	(0.851)		
GenderFounder					-0.111		
					(0.669)		
BIEthni						-0.0743	-0.0738
						(0.691)	(0.805)
EthniFounder							-0.00107
							(0.997)
Intercept	1.277	0.920	1.072	1.011	0.998	1.049	1.049
	(0.389)	(0.528)	(0.335)	(0.362)	(0.373)	(0.340)	(0.349)
N	311	311	311	311	311	311	311
Effects	FE	FE	FE	FE	FE	FE	FE
R-sq	0.055	0.070	0.076	0.055	0.056	0.056	0.056

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.01*

Panel b: Founder and family matched firms

Variables	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion	TMT Pay dispersion
Firm size	0.0266	0.0261	0.0345	-0.0194	-0.0218	-0.0132	0.0101
	(0.910)	(0.912)	(0.891)	(0.938)	(0.930)	(0.958)	(0.968)
RD Intensity	20.69	24.07	-11.54	11.85	7.758	12.99	28.79
	(0.890)	(0.870)	(0.946)	(0.941)	(0.962)	(0.937)	(0.858)
Advertising Intensity	-207.0*	-208.5	-158.1	-155.7	-156.5	-185.4	-208.6
	(0.091)	(0.103)	(0.214)	(0.157)	(0.152)	(0.199)	(0.162)
Product diversification	0.0574	0.0578	0.0196	0.0216	0.0189	0.0258	0.0264
	(0.366)	(0.374)	(0.749)	(0.729)	(0.761)	(0.681)	(0.682)
International diversification	0.348	0.345	0.334	0.361	0.357	0.361	0.362
	(0.437)	(0.452)	(0.499)	(0.464)	(0.480)	(0.484)	(0.470)
Firm Age	-0.305	-0.340	-2.033	-1.735	-1.778	-1.846	-2.040
	(0.854)	(0.842)	(0.144)	(0.240)	(0.256)	(0.196)	(0.162)
Market-to-book	-0.966	-0.971	-0.647	-0.780	-0.783	-0.713	-0.758
	(0.153)	(0.152)	(0.344)	(0.278)	(0.284)	(0.319)	(0.290)
Duality	-0.0302	-0.0288	0.00998	-0.00844	-0.00822	-0.00548	-0.0199
	(0.332)	(0.424)	(0.785)	(0.761)	(0.770)	(0.857)	(0.600)
TMT Average compensation	0.00000406	0.00000431	0.00000199	0.00000353	0.00000334	0.00000363	0.00000258
	(0.773)	(0.743)	(0.856)	(0.774)	(0.789)	(0.772)	(0.840)
Age dispersion	2.134	2.148	2.336	2.458	2.419	2.422	2.343
	(0.257)	(0.245)	(0.156)	(0.187)	(0.204)	(0.191)	(0.206)
Tenure dispersion	-1.105	-1.113	-0.694	-1.062	-1.098	-1.045	-1.126
	(0.327)	(0.322)	(0.461)	(0.339)	(0.324)	(0.349)	(0.325)
Functional background	0.0106	0.0108	0.0321	0.0137	0.0137	0.0156	0.0129
	(0.877)	(0.874)	(0.639)	(0.834)	(0.835)	(0.813)	(0.847)
Industry pay dispersion	-0.0182	-0.0200	-0.0193	-0.0328	-0.0358	-0.0302	-0.0785
	(0.956)	(0.952)	(0.952)	(0.921)	(0.915)	(0.929)	(0.820)
Recession	0.106*	0.108					
	(0.079)	(0.105)					
Founder_firm		0			0		0
		(.)			(.)		(.)
RecessionFounder		-0.00658					
		(0.939)					
foundersTMT			0.137				
			(0.377)				
BoD Founder			-0.164				
			(0.378)				
BIGender				-0.124	-0.218		
				(0.686)	(0.651)		
GenderFounder					0.134		
					(0.860)		
BIEthni						-0.152	-0.711
						(0.776)	(0.237)
EthniFounder							0.686
							(0.319)
Intercept	1.376	1.440	3.470	3.828	3.955	3.866	4.078
	(0.645)	(0.632)	(0.229)	(0.201)	(0.208)	(0.200)	(0.181)
N	121	121	121	121	121	121	121
Effects	FE	FE	FE	FE	FE	FE	FE
R-sq	0.104	0.104	0.098	0.082	0.083	0.082	0.088

p-values in parentheses

** p<0.10 ** p<0.05 *** p<0.01*

FIGURE 3: HIERARCHY FOR THREE-LEVEL MODELLING

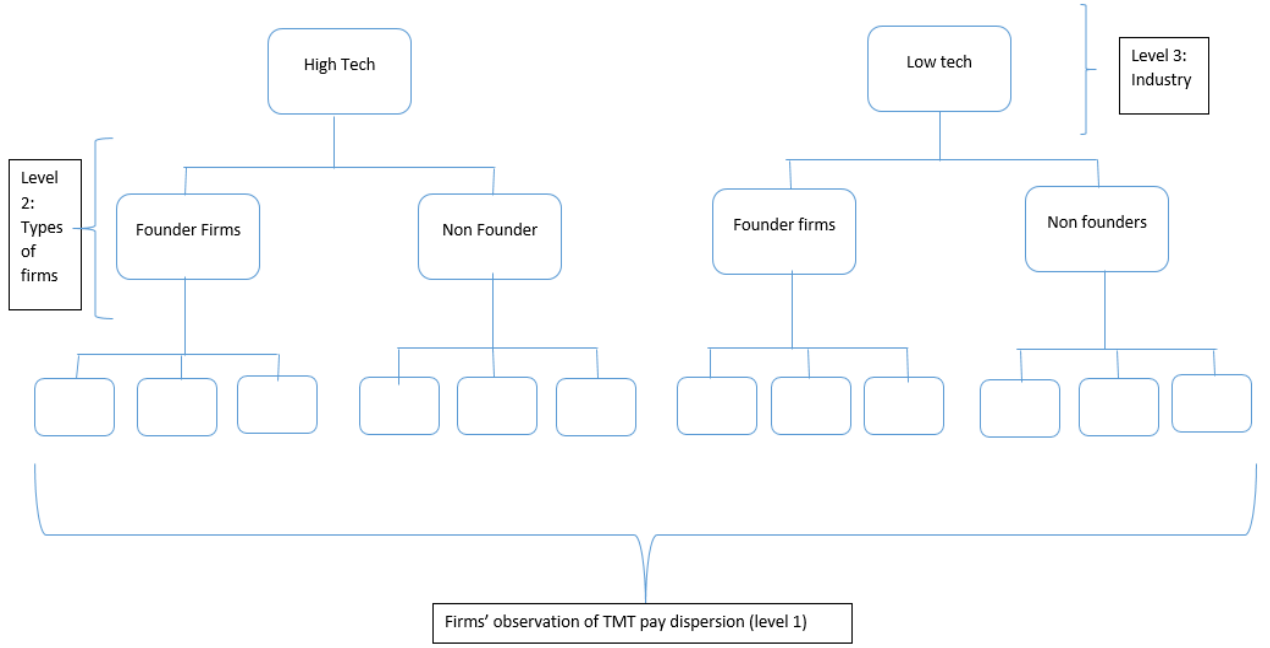

Table 10: Three-level modeling based on type of firms and industry

Panel a: Founder and non-family matched sample

TMT Pay dispersion	Coef.	Std. Err.	z	P>z	[95% Con	Interval]
Firm size	-0.02	0.02	-0.84	0.40	-0.06	0.02
RD intensity	-0.24	16.47	-0.01	0.99	-32.52	32.03
Advertising Intensity	-6.90	24.85	-0.28	0.78	-55.61	41.80
Product diversification	0.01	0.02	0.64	0.52	-0.03	0.06
International diversification	0.04	0.02	1.86	0.06	0.00	0.09
Firm Age	-0.14	0.05	-2.77	0.01	-0.24	-0.04
Market-to-book	0.01	0.09	0.08	0.94	-0.18	0.19
Duality	0.01	0.03	0.27	0.79	-0.06	0.07
TMT Average compensation	0.00	0.00	6.30	0.00	0.00	0.00
Age dispersion	1.02	0.85	1.20	0.23	-0.65	2.69
Tenure dispersion	0.32	0.22	1.46	0.14	-0.11	0.75
Functional background	0.08	0.03	2.66	0.01	0.02	0.14
Industry pay dispersion	-0.11	0.12	-0.90	0.37	-0.33	0.12
Intercept	0.22	0.29	0.75	0.45	-0.35	0.79

Random-effects Parameters	Estimate	Std. Err.	[95% Con	Interval]
HighTech: Identity				
var(Intercept)	0.004028	0.007077	0.000129	0.126096
Founder_firm: Identity				
var(Intercept)	1.02E-16	9.78E-13	0	.
var(Residual)	0.064875	0.005333	0.055222	0.076216

chi2(2) = 2.46

Prob > chi2 = 0.2918

Residual Intraclass correlation

Level	ICC	Std. Err.	[95% Con	Interval]
HighTech	0.058	0.097	0.002	0.662
Founder_firmHighTech	0.058	0.097	0.002	0.662

Panel b: Founder and family matched sample

TMT Pay dispersion	Coef.	Std. Err.	z	P>z	[95% Con	Interval]
Firm size	-0.02	0.05	-0.30	0.77	-0.12	0.09
RD intensity	-42.37	74.60	-0.57	0.57	-188.59	103.85
Advertising Intensity	-12.35	55.03	-0.22	0.82	-120.20	95.50
Product diversification	-0.01	0.03	-0.22	0.83	-0.07	0.06
International diversification	0.00	0.06	-0.03	0.98	-0.12	0.12
Firm Age	0.31	0.18	1.74	0.08	-0.04	0.66
Market-to-book	0.27	0.20	1.36	0.17	-0.12	0.66
Duality	-0.06	0.05	-1.13	0.26	-0.16	0.04
TMT Average compensation	0.00	0.00	1.19	0.23	0.00	0.00
Age dispersion	0.90	1.15	0.79	0.43	-1.35	3.15
Tenure dispersion	0.66	0.41	1.61	0.11	-0.14	1.46
Functional background	0.05	0.05	0.86	0.39	-0.06	0.15
Industry pay dispersion	0.08	0.23	0.36	0.72	-0.36	0.53
Intercept	-0.63	0.78	-0.80	0.42	-2.16	0.91

Random-effects Parameters	Estimate	Std. Err.	[95% Conf	Interval]
HighTech: Identity				
var(Intercept)	6.77E-17			
Founder_firm: Identity				
var(Intercept)	2.39E-05	0.004181	3.9E-154	1.5E+144
var(Residual)	0.063341	0.0088133	0.0482224	0.0831997

chi2(2) = 3.1e-05
Prob > chi2 = 1.0000

Residual Intraclass correlation

Level	ICC	Std. Err.	[95% Conf	Interval]
HighTech	1.07E-15	0	1.07E-15	1.07E-15
Founder_firmHighTech	0.000378	0.0659699	5.7E-153	1