

## **How Does the Influence of Founders and Investors Relate to Employee Compensation in Entrepreneurial Firms?**

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### **Abstract**

Employment in entrepreneurial firms is often associated with non-pecuniary benefits and access to unique technologies. We provide evidence that these work motivators are higher when the founder has more (and outside investors have less) influence over the firm's decision-making. In particular, we show that the degree of control exerted by venture capital investors helps explain the design of non-CEO employee compensation contracts. Across 18,935 employee compensation contracts from 1,809 U.S. firms, we find that those with more VC / less founder dominance pay their employees higher cash salaries, provide stronger cash and equity incentives, and have more formal pay policies in place. However, the differences in cash pay and incentives only apply to hired-on employees and not to founders. Founders are special in that they receive similar compensation contracts regardless of the company's degree of founder/VC dominance. Our results are consistent with the argument that investor control changes the nature of hired-on employment in innovative, high-potential small businesses. We thereby shed new light on how innovative small businesses evolve into professionalized companies, the role that venture capitalists play in this evolution, and the determinants of entrepreneurial compensation.

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## 1. Introduction

Entrepreneurial firms are important promoters of innovation and economic growth (Schumpeter, 1934; Baumol, Litan and Schramm, 2007). A vital milestone in the life of an entrepreneurial firm is the point that the founder cedes decision-making control to outside investors. Until this time, the firm is a startup enterprise with goals that are closely tied to the founder's personal tastes, preferences and needs. However, if and when outside investors change the balance of power by gaining voting control and appointing outside managers, the firm's goal shifts to maximizing shareholder value (Spulber, 2009). To solidify the new corporate regime, outside investors often make major adjustments to the company's strategy, senior personnel and operations, and seek to professionalize its internal structure (Burton, 1999; Hellmann and Puri, 2002a, 2002b).

In this paper, we document that the relative balance of power between founders and outside investors is a significant factor in explaining differences in non-CEO employee compensation for entrepreneurial firms. We show that more investor control is associated with higher employee cash compensation and stronger employee incentives. However, these differences are asymmetric in that they only apply to hired-on employees, not to founders—founders' compensation contracts do not vary with the degree of founder/investor dominance. We argue that these patterns arise because investor control diminishes non-pecuniary work benefits of hired-on employees, and lessening their access to unique technologies. As direct evidence of this explanation, we also show that investor-dominated entrepreneurial firms have a greater number of formal compensation policies in place.

Our findings highlight that employment in small innovative firms is similar to self-employment in the sense that there are important work motivators besides salary, bonus and equity-based compensation. For founders—who by definition are self-employed—these work motivators remain unchanged after outside investors take control. In contrast, hired-on employees receive more valuable non-pecuniary benefits and access to unique technologies the less their job environment is dominated by outside investors. From a compensation perspective, hired-on employment in entrepreneurial firms resembles with self-employment even after the founder cedes decision-making control.

Our data come from privately held firms that receive financing from venture capitalist (VC) investors. Venture-backed firms begin as a business plan and, if successful, grow rapidly to become professionalized companies that are either taken public or acquired. Embedded in this

prototypical trajectory is not only the shifting of corporate power away from the firm's founder, but the matching of supply of employee skills and preferences with the demands of the firm's production function. By offering compensation contracts that optimally this demand/supply equation, venture-backed firms have historically been well positioned to attract, retain and utilize the distinctive human capital they need. Moreover, by carefully adjusting pay incentives, venture-backed firms have been able to motivate their employees to put their best efforts into value-maximizing activities (Holmström, 1979; Holmström and Milgrom, 1991). Despite the real-world importance of compensation contracts in venture-backed firms, relatively little is known about these arrangements. Bengtsson and Hand (2010) study the determinants of CEO compensation, and find that operating performance and successful VC fundraising are the main determinants of the CEO's cash pay. We take a different tack in this paper by studying how non-CEO employee compensation contracts depends on the degree of founder/investor dominance.

Our empirical analysis is based on proprietary surveys collected by VentureOne, a leading data provider in the venture industry, during the period 2002-2007. Our sample covers 1,809 different firms and contains longitudinal data on business performance, ownership structure, organizational design, and VC financing. For each firm in a given survey, and for up to 50 employees per firm, we have detailed information on employee salary, bonus, and equity holdings. In total, we study the compensation contracts for 18,935 executives who hold the rank of non-CEO chief (CFO, COO, CIO, CSO, etc.), vice president, or director (hereafter referred to in total as simply "employees"). We do not study lowest-level employees because their work tasks are more standardized, and are therefore likely insensitive to the degree of founder/investor dominance (our data supports this argument).

The large and unusually detailed sample of compensation contracts that we analyze allows us to take detailed "look under the hood" of private entrepreneurial firms in a unique way. Although the firms we study are small at the time we study them (the typical firm is 4 years old, has 47 employees and \$10 million in revenues), our data frequently covers every employee working at the firm. This "entire organization" perspective contrasts with much prior compensation research in economics and finance that has focused on large public companies, where the compensation disclosures required by the SEC limit analyses to the five most highly paid management team members—clearly but a tiny fraction of the total set of employees for such companies.

We conduct cross-sectional analyses on three aspects of non-CEO employee pay: The firm-wide use of formal compensation policies; the level of employees' cash pay; and the strength of employees' cash and equity incentives. We contrast these across firm-years in which firms are founder-dominated versus VC-dominated. In this regard, we construct two proxies for founder/VC dominance, which we define as the degree of influence founders have over critical decisions relative to that of the firm's VC investors. Our first proxy is whether one of the firm's founders is the CEO, which is the case for about four in ten firms in our sample. Our second proxy is whether the VCs control only a minority of the outstanding shares (hereafter, minority VCs), which is the case in about four of five firms. We recognize that VCs with a minority of ownership stake sometimes could have influence over the board and hold other contractual rights. However, as noted by Kaplan and Stromberg (2003), voting control and other control mechanisms often—but not always—go together.<sup>1</sup> We do not have access to detailed data on contractual terms, so our identification is based on the argument that VCs in general have more influence over the firm's decision-making when they hold a majority ownership stake than when they hold a minority stake. As expected, we find a positive correlation between these two proxies in that firms with founder CEOs have raised less VC financing and therefore ceded less ownership to VCs.

We begin our analyses by leveraging prior work that has shown that VCs often professionalize their portfolio companies by formalizing those firms' internal organization (Burton, 1999; Hellmann and Puri, 2002a, 2002b). Because VCs and founders have different motivations for involving themselves in the startup, they are likely to disagree on the speed and scope of this professionalization. VCs seek to maximize the present value of their financial returns by rapidly creating an organizationally mature firm that can be sold or taken public within a five to ten year period (Gompers & Lerner, 2001). In contrast, founders may resist this professionalization because it could diminish the non-pecuniary benefits they derive from making the firm's critical decisions (Hamilton, 2000). Accordingly, we expect that a venture-backed firm dominated more its founder (i.e., less by the VC) will manifest a less professionalized internal organization and less formalized compensation policies.

We confirm this prediction by comparing the number of formal compensation policies in place at founder-dominated and VC-dominated venture-backed firms. VentureOne's surveys

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<sup>1</sup> Kaplan and Stromberg (2003, p.308) find that “when VCs control the board, they typically also have a voting majority; when founders control the board, the founder group tends to control a voting majority.”

include information about the presence or absence of compensation policies, such a formal compensation plan, a formal bonus plan, an option grant guide, the existence of sales commissions, and whether hire-on bonuses are provided. We find that these policies are significantly less likely to be in place for firms with a founder CEO, and significantly less likely to be in place for firms with minority VCs. Our results also hold after controlling for various firm characteristics including industry, size, operating performance, and headquarter location.

We then investigate the association between founder/VC dominance and the level of employee cash pay, and find that employees of VC-dominated firms receive higher cash pay than do employees of founder-dominated firms. A univariate comparison indicates that the average cash (salary + bonus) pay is about \$20,000 (or 14%) higher for employees who work for firms run by non-founder CEOs or minority VCs. This result robustly holds in subsamples formed on employee rank, firm characteristics, and time period. It also survives a battery of firm-specific controls, including the number of employees which prior studies have shown to correlate positively with the level of employee cash compensation (Brown and Medoff, 1989; Groshen, 1991; Idson and Oi, 1999; Fox, 2009). We further use the number of formal compensation policies as an explanatory variable in analyzing employee pay, and show that employees receive higher cash pay in firms with more policies. This is direct evidence that the design of employee pay contracts is associated with the degree of professionalization the firm has in place.

Beyond these high-level results from our comparison across venture-backed companies, we uncover notably asymmetric differences in cash pay between founder employees who helped launched the startup and hired-on employees who joined the firm thereafter. Specifically, we find that founder employees on average earn lower cash compensation than do non-founder employees, and the association between cash pay and the degree of founder/VC dominance is present only for hired-on employees. That is, founder employees appear to be “special” in that they receive similar cash pay regardless of whether a firm is founder-dominated or VC-dominated. This result refines and augments the findings of earlier studies that observe that founders differ from non-founders with regards to cash compensation and equity ownership (Wasserman, 2003; Hellmann and Wasserman, 2010).

Lastly, we study the strength of employee incentives. Our first test in this area investigates whether founder/VC dominance is related to performance-based employee incentives in the form of cash bonuses. We find that pay to employees is more likely to include a cash bonus in more VC-dominated firms. Our second test examines whether founder/VC

dominance is related to employees' equity incentives. Equity holdings can generate substantial payoffs for employees if their firm is sold or goes public. We show that employees in VC-dominated firms have larger equity holdings. And similar to our results on cash pay, the relationships between employee incentives and founder/VC dominance hold only for hired-on employees, not for founder employees.

A plausible explanation for our findings is that the degree to which employees enjoy their work in a small, entrepreneurial firm depends on whether the founder or outside investors is in control. Consistent with the idea that self-employment carries with it valuable non-pecuniary benefits, several studies have documented that self-employed individuals earn less than salaried workers (Carrington, McCue and Pierce, 1996; Hamilton, 2000; Wasserman, 2003; Hurst and Pugsley, 2010). Indeed, Hurst and Pugsley (2010) report that 50 percent of new business owners say that non-pecuniary benefits are the main reason they started their businesses. Potential non-pecuniary benefits include being one's own boss, social status, flexible hours and working conditions, and the intellectual and emotional satisfaction of successfully creating and selling a new product or service. Our results suggest that employees in venture-backed firms derive such benefits because their jobs are more similar to self-employment than they are to working in a traditional non-venture-backed firm. Employees in startups may also increase the value of their human capital by gaining access to the firm's unique technology, which we define as one or more of the employer's founders, innovative ideas, and innovative physical or intellectual assets, thereby better equipping and enabling them to successfully launch their own ventures at a later date (Rajan and Zingales, 1998, 2001).

We argue that by virtue of having a less professionalized work environment, founder-dominated firms provide their workers with more non-pecuniary benefits and better access to the firm's unique technology than will VC-dominated firms. As such, founder-dominated firms will optimally offer, and hired-on employees will willingly accept, lower cash pay—and this is indeed what we observe in our empirical analysis. At the same time, however, founder-dominated firms will require more monetary incentives for hired-on employees because the non-pecuniary benefits and access that motivates founder employees to exert effort are not as highly valued by hired-on employees. This too is what we find in our sample. Finally, because founder employees receive similar non-pecuniary self-employment benefits and access even when the VC has decision-making control, their pay and incentives should not depend on the degree of founder/VC dominance, as we also find to be the case in our sample.

Figures 1–4 visually summarize the key features of our findings. In each employee-year for which we have data, employees place into one of four cells depending on the degree of their firm’s founder/VC dominance and the employee’s status as founder or hired-on employee. Figure 1 encapsulates the cross-sectional differences on employee cash pay that we find; Figure 2 shows the differences for cash incentives (i.e., bonuses); Figure 3 details the differences for equity incentives (i.e., holdings of stock options or common stock); and Figure 4 presents the differences in non-pecuniary benefits and access that we argue exist in entrepreneurial firms. Inspection of these Figures illustrates how compensation contracts with “high” cash pay and “high” incentives mirror “low” non-pecuniary benefits and access.

An alternative explanation for our findings is that VC-dominated firms have more demanding work tasks requiring employees to have more skilled human capital, put in more effort, and work longer hours. If so, then founder employees may receive similar compensation contracts regardless of the degree of professionalization because the marginal product of their human capital varies with the level of founder/VC dominance. We are unable to rule out this possibility since we do not have data on employees’ personal and professional characteristics such as gender, age, education and work experience, nor do we have data on how many hours a given employee works on different types of tasks. However, in our empirical tests, much of the heterogeneity in worker backgrounds and work hours is implicitly taken into account through our controls for firm performance, size, location and industry, as well as employee rank.

Our paper sheds new light on how VCs, by virtue of being active investors, shape the internal environment of entrepreneurial firms. Gorman and Sahlman (1989), Sapienza (1992), Sapienza, Manigart and Vermeir (1996) and Hsu (2004) report survey evidence that such activities are viewed as being valuable. As validation of this perception, Puri and Zarutskie (2009) and Chemmanur, Krishnan, and Nandy (2008) find in their Census-based analyses that venture-backed firms grow more rapidly and have higher productivity than do their non-venture-backed counterparts. Our study adds to this literature by bringing to light the role that the compensation of non-CEO employees plays in the VC professionalization of young technology-intensive startups. The paper closest to ours is Hellmann and Puri (2002b) who, like us, present empirical evidence on how VCs professionalize the internal organization of entrepreneurial firms. Our analysis complements and builds on theirs in three ways. First, we study a more recent sample that is ten times larger and includes not only Silicon Valley firms but firms from all over the U.S. Second, we examine employee compensation contracts in place of team

building and CEO turnover. Third, we study differences within venture-backed firms rather than across venture-backed versus non-venture-backed firms.

We also add to papers that show that reputable VCs can provide better assistance to entrepreneurial firms (Hsu, 2004; Sorensen, 2007; Puri and Zarutskie, 2010). In our analysis, we find that the association between the founder/VC dominance and employee compensation contracts is stronger for younger and less experienced VCs. One interpretation of our finding is that reputable VCs are able to preserve non-pecuniary benefits and access to unique technologies after they take control of the entrepreneurial firm. This suggests an advantage of such reputable VCs that thus far has not been explored in the VC literature.

Our study also complements papers in the finance literature by Bertrand and Mullainathan (1999, 2003) and Cronqvist et al. (2008) which relate the structure of employee compensation contracts in public firms to the balance of power between investors and managers. They show that workers are paid more when investors are less powerful, consistent with CEOs of mature firms having a taste for the “quiet life” that comes with less aggressive bargaining with workers. In sharp contrast, we find the opposite relation for private entrepreneurial firms. Because the young venture-backed firms we study only survive by growing and innovating, their compensation contracts are not susceptible to “quiet life” concerns, but rather a function of employee non-pecuniary benefits and access.

The remainder of our study proceeds as follows. In Section 2 we describe the sample, present our proxies for founder/VC dominance, and discuss the limitations of our approach. Section 3 presents empirical results on formal compensation policies, while Sections 4 and 5 report our analyses of employee cash compensation levels and on employee incentives, respectively. In Section 6, we discuss how our results vary with the VC’s experience and age. Section 7 discusses several different implications of our findings. We end the paper with a short summary of our results.

## **2. Data**

### *2.1 Company-Year Sample*

The dataset we use comes from detailed surveys conducted bi-annually between 2002 and 2007 by VentureOne, a primary worldwide provider of information about VC investments and funds.<sup>2</sup>

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<sup>2</sup> The authors were generously granted access to VentureOne’s data after signing strict nondisclosure agreements.

In each proprietary CompensationPro<sup>TM</sup> survey, VentureOne emailed a multipage, web-based compensation questionnaire to the roughly 7,000 venture-backed U.S. firms in its financing database that at the time it classified as being private and independent. The questionnaire asked firms to report a broad set of compensation and business-related data. For example, companies were asked to report the dollar values of the base salary, bonuses, and other cash compensation of every employee (up to a maximum of 50 people from the most senior person down); the total shares of founders' stock and exercised and unexercised options that each held; and the total fully diluted preferred and common shares the companies had outstanding. In terms of business information, VentureOne asked each company to provide information about its formal compensation policies, actual revenues for its most recent fiscal year, expected revenues for its current fiscal year, the number of employees at the end of its most recent fiscal year, and the number of employees it expected to have at the end of its current fiscal year.

Ten CompensationPro<sup>TM</sup> surveys covering the period 2002–2007 make up our sample. For firms that responded to both spring and fall surveys in a given year we use only the spring survey to avoid over-sampling firm responses. We then integrate this compensation information with VentureOne's financing and general support databases. To be included in the final sample, a company needed to provide information about its location (U.S. state), industry, prior year revenues and employees, and equity ownership for both individual employees and VCs as a group. Also, each firm must have closed at least one seed or VC financing round prior to the survey date. A small number of firms were excluded because the company had raised more than 7 financing rounds, or the financing amount of the last round was not disclosed, or the data were obviously incorrect, or the firm was founded before 1980 (before which VC data become less reliable). As reported in Panels A and B of Table 1, the total sample includes 3,105 company-years derived from 1,809 unique venture-backed firms.

## 2.2 *Employee-Year Sample*

The main units of observation in our tests of compensation contracts are a unique employee in a given survey, which we define as an employee-year, and a unique company in a given survey, which we define as a company-year. Because our goal is to study non-CEO employee

compensation we exclude all CEOs and Presidents from our sample.<sup>3</sup> We also exclude any employee who did not at least hold the rank of Director because lower rank employees conduct more straightforward tasks for which compensation contracts are a priori likely to be standardized across companies and therefore not influenced by whether the firm is dominated more by founders or by VCs.

As reported in Panel C of Table 1, the surveys collectively provide compensation data for 18,936 employee-years, about 23% of which are Chiefs (e.g., Chief Financial Officer, Chief Operating Officer or Chief Medical Officer), 44% are Vice Presidents and 33% are Directors. About one in ten employees is a company founder, and founders are more likely than other employees to hold a senior rank.

### 2.3 Proxies for Founder/VC Dominance

Panel D of Table 1 presents summary statistics on the two proxies we use to measure the founder/VC dominance in a venture-backed company. We define both proxies so they take the value 1 if the company is founder-dominated and 0 if it is not.

The first proxy, *CEO Founder*, captures whether one of the company's founders is currently the CEO. About 40% of all company-years have a founder CEO. The CEO of a venture-backed company is responsible for a range of operational decisions, including those related to hiring and firing, compensation, and the nature of the company's internal environment.

Our second proxy, *VC Minority Ownership*, captures whether the VC owns a minority or majority of the outstanding equity (preferred and common shares combined). About 77% of all company-years have a VC minority. While holding a minority of the outstanding shares makes it difficult for VCs to impose their will via a shareholders' vote, VCs often also exercise control via the Board (Lerner, 1995; Baker and Gompers, 2003; Kaplan and Strömberg, 2003; Wongsunwai, 2010) and by including protective provisions in the contract, according to which the CEO is forced to seek VC approval before making important business decisions (Gompers, 1988; Bengtsson, 2010). Our data do not allow us to empirically measure the exact allocation of board seat, protective provisions and other contractual rights. However, as shown by Kaplan and Stromberg (2003), companies where VCs hold a majority of the shares are more likely to more

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<sup>3</sup> Bengtsson and Hand (2010) analyze CEO compensation in venture-backed companies using a sample similar to that used in this paper. Their main findings in that paper are that CEOs receive higher cash compensation when the company achieves operating success and/or successfully attracts more VC financing.

VC board control. Thus, our identification is based on the argument that VCs exert more decision-making control when they have a greater equity ownership stake.<sup>4</sup>

Although our two proxies capture different conceptual aspects of founder/VC dominance, they are positively correlated. Appendix Table A presents a detailed analysis of this empirical association. For example, we find that companies with a founder CEO have lower VC equity ownership and raise smaller amounts of VC financing, partly because they raise fewer rounds of financing and partly because they raise smaller amounts per round. On the whole, the results in Appendix Table A supports the argument that there is a tension between the founders and the VCs with regard to relative influence over the company. However, our results do not reveal the underlying mechanism for this tension because they show correlations and not causalities. We note that one possibility is that a founder CEO is less willing to cede power to VCs and thereby lose his non-pecuniary work benefits. Alternatively, VCs with more influence over the firm's decision making may be more likely to replace the founder CEO with a more professional CEO.

#### 2.4 Selection Bias

Our sample of 1,809 companies covers approximately 20% of all U.S. venture-backed companies in the period 2002-2007, and is several orders of magnitude larger than the samples used by existing studies of the inner workings of venture-backed companies.<sup>5</sup> As reported in Panel E of Table 1, our sample is well represented with regards to company industries and geographical locations, with almost two thirds of all survey responses coming from the large VC clusters in California, Massachusetts and Texas. The average company has 47 employees, \$10 million in revenues, is 4.1 years old and has raised an aggregate \$17.4 million in VC funding. The large standard deviations associated with these company characteristics indicate that our sample represents a broad cross-section of venture-backed firms.

Any study based on a survey with less than a 100% response rate may be subject to a sample selection bias. Importantly, any selection bias pertaining to the observable dimensions in the above paragraph are absorbed in our main regression specifications which include controls for company characteristics and a full set of industry, state and survey year dummies. It is

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<sup>4</sup> In untabulated regressions we replace *VC Minority Ownership* with a continuous variable that capture the VC's equity ownership. We obtain qualitatively very similar results.

<sup>5</sup> The number of sample companies is 170 in Hellman and Puri (2002), 119 in Kaplan and Strömberg (2003), 51 in Hsu (2004), 132 in Cumming (2008), 50 in Kaplan, Strömberg and Sensoy (2009), and 50 in Broughman and Fried (2010).

possible that our study is influenced by selection bias pertaining to unobserved dimensions. For example, VentureOne surveys may oversample successful companies because they are more willing to report information their superior performance and more generous compensation contracts. The presence of such oversampling means that the reported summary statistics on company performance and employee compensation contracts should be interpreted with caution. However, such oversampling does not mean that our derived correlations between compensation contracts and the founder/VC dominance are biased, unless the oversampling exactly follows the detailed empirical patterns we uncover in our analysis. Thus, it is possible but hard to see why a more VC-dominated company which has higher cash compensation only for its hired-on employees would be more likely to respond to the VentureOne survey than a VC-dominated company with lower cash compensation to such employees, and that this response likelihood would be the reverse for founder-dominated companies. Furthermore, such delicate oversampling has to apply to most important subsample of venture-backed companies – as part of our analysis we show that our results are robust to different subsample specifications.

## 2.5 *Data Limitations*

Before proceeding with our tests, we acknowledge two limitations to our study that follow from features of the data we analyze. The first is that we have no information on employees' personal characteristics, education or work history. We are therefore unable to directly control for differences in human capital in our regressions of employee compensation and incentives. We are, however, able to control for differences in human capital that follow from the part of the employee-company matching that stems from company characteristics such as company industry, location, size, operating performance and VC fundraising success. We are also able to control for differences in human capital that manifest themselves in the employee's rank (Chief, Vice President or Director). However, even in the presence of such controls, it remains possible that some of the results we derive could be explained by differences in employee human capital.

The second limitation we face is that we are unable to present time-series evidence on how employee compensation contracts change as venture-backed companies become more VC-dominated. Our dataset is an unbalanced panel with the majority of companies (56%) responding to only one survey. A time-series analysis would considerably reduce the sample size and introduce additional selection bias problems. Moreover, there is no theoretical guidance on how fast employee compensation contracts should adjust following a change in the founder/VC

dominance. If such adjustment were to take several years then would not be identified through a time-series test that focused on one-year changes. For these reasons we restrict our attention to cross-sectional tests. All our regressions cluster residual by company in order to overcome the potential problem of underreported standard errors which could arise when two consecutive surveys from the same company report similar information. In our OLS regressions on employee cash pay, discussed in Section 4, we also cluster residuals on year following Petersen (2009).

### **3. Results on Compensation Policies**

Our first set of tests examines whether formal compensation policies relate to the founder/VC dominance in a venture-backed company. VentureOne's surveys ask respondents to report the presence of the following five policies: a formal compensation policy, a formal bonus policy, an option grant policy, a sales commission policy, and a hire-on bonus policy. Table 1 Panel F reports that average number of policies our sample firms have in place is 2.6.

Table 2 presents regression results where the dependent variable is the *Number of Formal Compensation Policies*. The sample is 3,105 company-years. The estimation method is ordered logit with residuals clustered by company. Specification 1 is a univariate regression with our first proxy for founder-dominance, *CEO Founder*, as the explanatory variable. We find that companies with a founder CEO have 0.24 fewer policies in place than companies with a non-founder CEO. Specification 2 is a univariate regression with our second proxy for founder-dominance, *VC Minority Ownership*, as the explanatory variable. Companies with a VC minority have 0.29 fewer policies than companies with a VC majority. Specification 3 includes both proxies and controls for company characteristics, industry dummies (based on VentureOne 15-segment classification), location (U.S. state) and the survey year. We note that the negative correlations between each of our proxies for founder-dominance and the number of formal compensation policies remain significant in this specification. Examining the coefficients on the control variables in Specification 3 we also observe that companies with a greater number of employees and larger revenues include a greater number of formal compensation policies. We interpret this as supporting the idea that the use of formal compensation policies reflects a professionalized company.

In summary, we find that more VC-dominated companies exhibit a greater degree of professionalization in the sense that they have more formal compensation policies in place. This finding complements that of Hellmann and Puri (2002b) who show that venture-backed

companies introduce a stock option plan faster than do non-venture-backed companies. Hellmann and Puri also show that that VCs influence the introduction of a human resource policy more than other types of financiers.

#### **4. Results on Employee Cash Compensation Levels**

##### *4.1 VC- Dominated versus Founder-Dominated Companies*

A greater degree of professionalization is indicative of a more structured and hierarchical firm. This has two potential implications for how employees assess their work situation. First, employees may receive fewer non-pecuniary benefits from their perceived self-employment (Hamilton, 2000). Second, they may lose access to the firm's unique technologies, making it harder for them to enhance their human capital to where they can later launch their own ventures (Rajan and Zingales, 1998, 2001). Because cash compensation is a substitute for these highly relevant but "irregular" employment benefits, we expect that greater VC-dominance will be associated with lower employee cash pay. Our second set of tests confirm this expectation.

As reported in Panel G of Table 1, the average non-CEO employee salary is about \$145,000 and the average bonus is about \$14,000. Total cash compensation averages \$161,000 but exhibits considerable variation, with ranging between \$5,000 and \$2,350,000.<sup>6</sup>

Table 3 reports the results of OLS regressions where the sample includes a total of 18,935 employee compensation contracts. We use the log of the *Employee's Total Cash Compensation* as the dependent variable so we can make inference about percentage changes, and cluster residuals by company and year to overcome the potential problem of cross-correlated standard errors.

In Specification 1 we include only our first proxy for founder-dominance, *CEO Founder*, as an explanatory variable. In this univariate regression employee compensation is about 5% lower if the company has a founder CEO. In Specification 2 we include only our second proxy for founder-dominance, *VC Minority Ownership*, and find that employee cash pay is about 9% lower for companies in which VCs hold a minority of the outstanding equity. In specification 3 we include both proxies and control for company characteristics and fixed effects for company industry (based on VentureOne's 15-segment classification), location (U.S. state) and the survey

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<sup>6</sup> In addition to salary and bonus, total cash compensation includes other forms of compensation. This explains why the sum of average salary and average bonus (\$145,000 + \$14,000 = \$159,000) does not add up to average total cash compensation.

year. Location fixed effects are important because they absorb variation in cash compensation due to differences in the cost of living. We also include dummies to capture the rank (Chief, Vice President or Director) of the employee and thereby the associated differences in the employee's work responsibilities and human capital. We find that the negative association between founder-dominance and employee cash compensation remain significant, albeit with smaller coefficient magnitudes, in this specification. The adjusted regression R-squared of 0.37 suggests that our battery of controls and dummies captures well the determinants of employee cash compensation.

We note that employee pay is higher for older companies, companies with higher revenues, companies that have raised more VC financing, and companies with more employees. Although a similar result is found in Brown and Medoff, (1989), Groshen (1991), Idson and Oi (1999) and Fox (2009), our study is the first to show this positive correlation in an exclusive sample of venture-backed companies.

In Specification 4 we include the *Number of Formal Compensation Policies* as an explanatory variable. We observe that the number of such policies is positively correlated with higher employee cash compensation. Among other reasons, this may be because increases in cash compensation follow the introduction of formal compensation policies, or firms that pay their employees higher cash pay are more prone to introducing formal compensation policies.

In summary, our results on cash compensation support the argument that founder-dominance in entrepreneurial firms is associated with lower cash compensation due to more valuable non-pecuniary benefits and access to critical technologies.<sup>7</sup>

#### 4.2 *Founder Employees versus Hired-On Employees*

The VentureOne surveys identify whether an employee is a company founder or a hired-on employee. We next turn to including this variable in our regressions of employee cash compensation. Results of these OLS regressions are presented in Table 4.

Specification 1 is a univariate regression with only *Employee is Founder* as an explanatory variable. We find that founder employees receive on average about 8% lower cash

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<sup>7</sup> In Appendix Table B we report the results of extensive robustness tests of the results documented in Section 4.1. We run regressions identical to Specification 3 of Table 4 for different subsamples formed on employee rank, company characteristics or survey year respectively. For brevity Table B reports only the estimated coefficients on CEO Founder, VC Minority Ownership and Employee is Founder. We find that our two main results—namely, that employee cash compensation is lower for founder-dominated companies, and lower for employees who themselves are founders—hold robustly in these subsample regressions.

compensation, which is consistent with Wasserman (2003). In Specification 2 we show that this difference remains, albeit with smaller magnitude, after we include our battery of continuous and dummy control variables. Specification 3 is identical to Specification 2 but also includes our two proxies for founder/VC dominance. We find that the difference between founder and hired-on employees remains significant after controlling for the founder/VC dominance. Similarly, the difference between founder-dominated and VC-dominated companies remains significant after controlling for whether the employee was a founder. Thus, these two results reflect two separate factors that explain employee cash compensation.

We next explore whether our results on founder/VC dominance hold equally for founders and hired-on employees. The theoretical expectation for this subsample analysis is ambiguous. On the one hand, a founder employee could be more sensitive to the founder/VC dominance because VC-dominance would remove her non-pecuniary work benefits. If this argument is correct then we would expect to observe that cash compensation increases with VC-dominance more for founder than for hired-on employees. On the other hand, a founder employee could be less sensitive founder/VC dominance because his non-pecuniary work benefits make them unwilling to work for another company. Due to their lack of mobility, founder employees could be offered lower cash compensation even after VCs dominate the companies which they started. If this argument is correct then we would expect to observe that cash compensation increases with VC-dominance more for hired-on than for founder employees.

We find marked empirical support for the latter argument. As shown in Specification 4, hired-on employees receive higher cash compensation in firms where VC influence is high. However, as shown in Specification 5, founder employees receive the similar cash compensation regardless of the degree of founder/VC dominance.

In summary, our results on cash compensation support the argument that founders receive non-pecuniary benefits and valuable access to critical technologies, but these benefits are similar regardless of the founder/VC dominance.

## **5. Results on Employee Incentives**

Our third and final set of tests investigates how the founder/VC dominance relates to employee incentives. We expect to find that VC-dominated firms offer stronger monetary incentives as a substitute to the work motivation that comes from non-pecuniary benefits and access. We begin

by testing this expectation for cash incentives, in the form of bonus, and then turn to testing it for equity incentives in the form of ownership of options and shares.

### 5.1 Cash Bonus

Panel G of Table 1 indicates that 38% of all employees receive a cash bonus. We therefore test to see how the likelihood of receiving a cash bonus is related to our two proxies for founder-dominance. Table 5 presents the result of probit regressions where the dependent variable takes the value 1 if the employee received a cash bonus and 0 otherwise. Specification 1 is a univariate regression that uses our first proxy for founder-dominance, *CEO Founder*, as its explanatory variable. We find that employees in companies with a founder CEO have 4% lower likelihood of receiving a bonus. This contrasts with specification 2 that uses *VC Minority Ownership* as the proxy for founder-dominance. In specification 2 there is no association between founder-dominance and the likelihood of a bonus. However, when in Specification 3 we include both proxies and control for company characteristics, industry dummies (based on VentureOne's 15-segment classification), location (U.S. state) and survey year, we find that each proxy for founder-dominance is negatively related to the likelihood of employees receiving a bonus. Examining the coefficients on the control variables we also find that companies with higher revenues and profitable companies are more likely to have employee cash bonuses.

Specification 3 includes *Employee is Founder* as an explanatory variable. We note that the theoretical prediction for the sign of this variable is ambiguous. On the one hand, if founder employees derive large non-pecuniary benefits from their employment then they may need stronger monetary incentives to focus them on tasks that maximize shareholder value. On the other hand, however, the presence of non-pecuniary benefits may imply that founder employees respond only weakly to monetary incentives, making such arrangements inefficient and costly. Our results support for the latter and not the former argument—that is, founder employees are significantly less likely to receive a bonus as compared to hired-on employees.

Following the same approach as for our tests on employee cash compensation, we further test whether the association between founder-dominance and likelihood of bonus is symmetric for hired-on and founder employees. Specification 4 shows that hired-on employees are significantly less likely to receive a bonus in a founder-dominated company. Specification 5 shows that this pattern is smaller and not statistically significant for founder employees. This is

further evidence that founder employees receive a similar compensation contract regardless of whether VCs or founders dominate the company.

## 5.2 *Equity Ownership*

We turn next to examine employees' equity incentives. VentureOne surveys do not ask respondents to provide data on each employee's yearly allocation of options and stock, but rather to report each employee's aggregate ownership of the outstanding firm's equity (preferred plus common).

Table 6 is identical to Table 5 with the exception that the dependent variable is the *Employee's Percentage Equity Ownership* and the estimation method is tobit. In the univariate comparisons using the full employee sample, we find no significant association between the equity ownership stake and *CEO Founder* (Specification 1), and a significantly positive association between the equity ownership stake and *VC Minority Ownership* (Specification 2). These patterns are different in Specification 3 where we include both proxies and our battery of control variables. In Specification 3's multivariate comparison, employees hold lower equity ownership stakes if the company has a founder CEO, but the same ownership stakes no matter whether the VCs have a minority or a majority ownership. We interpret this as mildly supporting the proposition that founder-dominated companies give their employees weaker equity incentives than VC-dominated companies. The coefficients on the control variables indicate that each employee receives a smaller ownership stake in larger companies (measured by number of employees) and companies which have raised larger amounts of VC financing. These correlations reflect the dilution which occurs mechanically as more employees and more VCs receive equity ownership stakes. We also show that employees working for companies with higher revenues hold larger equity ownership stakes.

Specification 3 also includes the variable *Employee is Founder* which manifests a significantly positive coefficient estimate. This indicates that founder employees hold larger equity ownership stakes than hired-on employees. In Specification 4 we find that hired-on employees hold significantly smaller ownership stakes in founder-dominated companies than in VC-dominated firms. This result is significant for both proxies of founder-dominance. In Specification 5 we observe that this pattern is very different for founder employees—they hold a significantly higher equity ownership when the VCs hold a minority of the outstanding shares.

In summary, our results regarding cash bonus and equity ownership support the argument that employment in entrepreneurial firms is associated with and/or affected by non-pecuniary

benefits. Employees in VC-dominated companies seem to need stronger monetary incentives to put in the same effort on value-enhancing tasks as employees in founder-dominated companies who derive non-pecuniary benefits and receive valuable access from their work. Moreover, because founders derive such benefits regardless of the founder/VC dominance, their monetary incentives are insensitive to this balance.

## **6. Results Based on Subsample Sorts on VC Experience and Age**

We conclude our empirical analyses by exploring whether our results depend on the reputation of the lead VC. We do so because a growing number of studies show that more reputable VCs do a better job of supporting the entrepreneurial firms they finance (Hsu, 2004; Sorensen, 2007; Puri and Zarutskie, 2010). One channel for such superior support is that more experienced and older VCs are more able to preserve a job environment that gives employees more valuable non-pecuniary benefits and access to unique technologies, even after taking control of the firm. If so, then we would expect that the relation between employee compensation and the degree of founder/VC dominance will be less pronounced in more experienced and in older VCs.

We test this prediction by dividing our sample into two groups based on the investment experience (and in separate tests, the age) of the lead VC in the most recent financing round.<sup>8</sup> Results are presented in table 7. We estimate regressions where the dependent variable is the number of formal compensation policies (specifications 1-4), the level of employee cash compensation (specifications 5-8), the presence of cash bonus (specifications 9-12), and the employee's equity incentives (specifications 13-16). In each regression we include the full set of control variables but for the sake of brevity we only report the coefficients on the focal variables of our analysis *CEO Founder*, *VC Minority Owner* and *Employee is Founder*.

The results of the subsample analysis do not show any consistent pattern for the firm-wide use of formal compensation policies. However, we do document a broad-reaching pattern for the design of employee compensation contracts—namely, that the coefficients on *CEO Founder* and *VC Minority Owner* have higher economic and statistical significance for companies where the lead VC's experience (or age) is below the sample median. Thus, we find evidence that somewhat supports the view that for reputable VCs, the design of employee compensation contracts does not greatly depend on the degree of VC control. This finding

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<sup>8</sup> Investment experience is a count of how many unique portfolio companies the VC has invested in previously.

supports the argument discussed above that such VCs are able to maintain a job environment that gives employees more valuable non-pecuniary benefits and access to unique technologies.

## **7. Discussion**

In total, our empirical analyses uncover several novel findings pertaining to employee compensation in entrepreneurial private firms. We find that the relative founder/VC dominance can explain marked cross-sectional differences in the use of firm-wide compensation policies, the level of employee cash compensation, and the strength of employee incentives. Importantly, we find that founder employees receive similar compensation contracts regardless of the relative founder/VC dominance. These findings contribute to the field entrepreneurial finance. In particular, we shed new light on how entrepreneurship can be viewed as a transformational process, and provide insights on what motivates employment in entrepreneurial firms, how employees match with venture-backed firms, and what the negative consequences are of the professionalization that VCs impose. We now turn to briefly discuss these contributions.

### *7.1 A Nexus of Contracts View of Entrepreneurship*

There is little consensus among researchers as how best to define entrepreneurship. Common definitions are that entrepreneurship is the risky act of founding a company, or the condition of being self-employed, or the development of a new product or service. Another characterization, pioneered by Spulber (2009), is that entrepreneurship is the process by which a startup project transforms itself to a professionalized firm with production goals separate from the founder's preferences. A critical aspect of Spulber's view of entrepreneurship is how the major decision rights are allocated between the startup's founder and its outside investors.

Our evidence suggests that the allocation of decision rights helps explain the structure of employee compensation contracts. This agrees with Fama (1980) and others who argue that the firm is usefully seen as a nexus of contracts. Beyond this, however, our results indicate that at least one type of contract in the nexus—contracts dealing with employee compensation—adjusts in anticipation of, and in response to, the financial and non-financial preferences of the controlling shareholders. Specifically, the firm must make such adjustment because the preferences of the decision-maker affect the employees' work motivations, as well as the severity of various agency problems inside the firm. Empirical analyses of entrepreneurial companies

must therefore account not only for company size, maturity and other lifecycle dimensions, but also for the allocation of decision rights.

## 7.2 *Non-Pecuniary Benefits*

A growing labor literature—reviewed in Section 1—discusses how non-pecuniary benefits can be a primary motivator for self-employment. In most existing studies, however, self-employment is viewed as binary: either the individual is employed by himself, or he is employed by someone else. We suggest that this viewpoint is limiting in that it precludes self-employment in the sense that an individual may technically employed by someone else but performs tasks as if he were employed by himself (e.g., the job of a college professor). One could speculate that this employee group is of growing real-world importance, as many 21<sup>st</sup> century workplaces offer their employees flat hierarchies, considerable job flexibility, and project-based work that spans long time periods.

One advantage to our analysis is that we are able to advance beyond the binary lens of self-employment. In particular, we divide employees into three different groups: those who are practically self-employed (i.e., founders), those who are technically employed but practically self-employed (i.e., hired-on employees in founder-dominated companies), and those who are both technically and practically employed. By comparing the structure of compensation contracts across these groups, our evidence suggests that non-pecuniary benefits extend to employees who technically are not self-employed. However, such non-pecuniary benefits appear smaller than those incurred by technically self-employed individuals.

## 7.3 *Matching Between Employees and Venture-Backed Firms*

The presence of non-pecuniary benefits should affect not only the structure of compensation contracts, but also the matching between employees and venture-backed firms. An implication of our analysis is that an entrepreneurial firm should employ individuals whose preferences mirror those of its main decision-maker. By maximizing the value of non-pecuniary benefits, such matching will reduce the firm's labor costs. Labor costs can be further reduced if the firm also employs individuals who put a high value on gaining access to the company's founders and/or unique technologies.

Although lower labor costs are advantageous for a cash-constrained entrepreneurial firm, matching based on non-pecuniary benefits and access does make it harder for the firm to find

suitable employees. This follows from the firm-employee matching being based not only on the monetary criterion but on additional criteria which are more difficult to define and measure. Thus, a prediction arising from our analysis is that founder-dominated companies will find it harder to find suitable employees than will VC-dominated companies because the former type offers more valuable non-pecuniary benefits and access. This argument is an endogenous reason—distinct from the capital constraint explanation—why greater VC influence can make it easier for entrepreneurial firms to attract human capital.

#### *7.4 The Cost of VC Professionalization*

Finally, prior work by Hellmann and Puri (2002a, 2002b) has established that venture capitalists professionalize the companies they invest in, thereby adding corporate value beyond merely supplying financial capital. Our paper adds to Hellmann and Puri’s findings by establishing that there is also a potential cost side to professionalization—namely that hired-on employees need to be paid more in salary and cash bonus than founders because hired-on employees value the non-pecuniary benefits offered by the firm less than do founders, and because hired-on employees have less access to the valuable resource or technology that led to the firm being started in the first place. This cost of professionalization has not been highlighted before, but is important because it must be incurred for the firm to grow and be successful, since it is highly likely that the size and scale needed for the firm to reach a successful IPO or acquisition exit cannot be achieved by founder employees only. Our subsample analysis indicates that our results are more pronounced for less reputable VCs, suggesting that reputable VCs are able to professionalize entrepreneurial firms without changing the job environment in such a way that hired-on employees demand higher cash compensation and need stronger cash and equity incentives.

## **8. Conclusion**

In this paper we provide a number of novel results as to how and why employee compensation contracts are structured in entrepreneurial firms. Analyzing the compensation determinants for a novel sample of 1,809 U.S. venture-backed companies, we show that hired-on employees in VC-dominated companies have significantly higher cash compensation and stronger incentives. These differences are economically meaningful, and survive a battery of company characteristic controls. We also show that founder employees not only receive lower cash compensation than

hired-on employees but their compensation contracts are insensitive to the degree founder/VC dominance in the company they work for.

Our findings are consistent with employees—both those who found the company and those who are hired-on later—deriving non-pecuniary work benefits and enjoying access to valuable technologies and resources. Whereas hired-on employees lose some of these benefits when VCs become more dominant, founders receive similar benefits regardless of the founder/VC dominance. Our paper adds to the literatures on venture capital and entrepreneurship, and also intersects with the field of labor economics.

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**Figure 1. Empirical Results on Employee Cash Compensation**

	Founder-Dominated	VC-Dominated
Founder Employee	<i>Low</i>	<i>Low</i>
Hired-On Employee	<i>Medium</i>	<i>High</i>

**Figure 2. Empirical Results on Employee Cash Incentives (Bonus)**

	Founder-Dominated	VC-Dominated
Founder Employee	<i>Low</i>	<i>Low</i>
Hired-On Employee	<i>Medium</i>	<i>High</i>

**Figure 3. Empirical Results on Employee Equity Incentives (Ownership Percentage)**

	Founder-Dominated	VC-Dominated
Founder Employee	<i>Highest</i> *	<i>Highest</i> *
Hired-On Employee	<i>Medium</i>	<i>High</i>

\* “Highest” for founder employees does not necessarily reflect compensation contracts being deliberately designed with stronger equity incentives. It also reflects the fact that founder employees retain ownership stakes that are given to them when they founded the company.

**Figure 4. Employee Non-Pecuniary Benefits and Access to the Unique Technologies**

	Founder-Dominated	VC-Dominated
Founder Employee	<i>High</i>	<i>High</i>
Hired-On Employee	<i>Medium</i>	<i>Low</i>

**Table 1 - Sample Overview and Summary Statistics**

Sample comes from surveys of venture-backed U.S. companies conducted by VentureOne from 2002-2007. Each survey asks the company to provide data on firm performance and employee compensation. We limit our analysis to non-CEOs and employees with the rank of Director or above, and keep only one survey per firm per year. We match our sample with information on company characteristics, VC ownership, and financing from VentureOne's general databases. Observations with missing or obviously incorrect data are excluded. The final baseline sample consists of 3,105 company-years from 1,809 different firms and represents 18,935 employee-year-observations. Panel A tabulates the sample by survey, Panel B by the number of surveys per company, and Panel C by employee rank and employee founder status. Summary statistics are presented in Panel D for company characteristics, Panel E for our two proxies of relative founder-VC dominance, Panel F for formal compensation policies, and Panel G for employee cash compensation and equity holdings.

**Panel A: Tabulation by Survey (company-year observations)**

Year	Total	Spring	Fall
2002	438 (14%)	438 (14%)	0 (0%)
2003	365 (12%)	365 (12%)	0 (0%)
2004	769 (25%)	573 (18%)	196 (6%)
2005	555 (18%)	371 (12%)	184 (6%)
2006	586 (19%)	490 (16%)	96 (3%)
2007	392 (13%)	392 (13%)	0 (0%)
Total	3,105 (100%)	2,629 (85%)	476 (15%)

**Panel B: Tabulation by Number of Company-Years per Company**

Surveys per Company	Company-Years	Companies
1	1,010 (33%)	1,010 (56%)
2	902 (29%)	451 (25%)
3	702 (23%)	234 (13%)
4	332 (11%)	83 (5%)
5	135 (4%)	27 (1%)
6	24 (1%)	4 (0%)
Total	3,105 (100%)	1,809 (100%)

**Panel C: Tabulation by Employee Rank, and Founder vs. Hired-On Status (employee-year observations)**

Employee Rank	All	Hired-On	Founder
Chief (CFO, COO, CIO, etc)	4,349 (23%)	3,019 (16%)	1,330 (7%)
Vice President	8,291 (44%)	7,466 (39%)	825 (4%)
Director	6,295 (33%)	6,114 (32%)	181 (1%)
Total	18,935 (100%)	16,599 (88%)	2,336 (12%)

**Table 1 - continued****Panel D: Statistics on Proxies for Relative Founder-VC Dominance (company-year observations)**

	Mean	Std. Dev.	Min	Max
CEO Founder (1=yes 0=no)	40.2%	49.0%	0.0%	100.0%
VC Minority Ownership (1=yes 0=no)	77.1%	42.0%	0.0%	100.0%

**Panel E: Summary Statistics on Company Characteristics (company-year observations)**

	Mean	Std. Dev.	Min	Max
Industry: Biopharmaceuticals	10.3%	30.4%	0.0%	100.0%
Industry: Communications	11.7%	32.1%	0.0%	100.0%
Industry: Cons/Bus Services	13.0%	33.7%	0.0%	100.0%
Industry: Medical Devices	10.1%	30.1%	0.0%	100.0%
Industry: Software	28.9%	45.3%	0.0%	100.0%
Industry: Other	26.0%	43.9%	0.0%	100.0%
Location: California	42.5%	49.4%	0.0%	100.0%
Location: Massachussetts	12.9%	33.5%	0.0%	100.0%
Location: Texas	6.3%	24.3%	0.0%	100.0%
Location: Other	38.3%	48.6%	0.0%	100.0%
#Employees at End of Previous Year	47	40	6	131
Revenues in Previous Year in \$000s	\$9,952	\$18,931	\$250	\$65,000
Profitable (1=yes 0=no)	6.8%	25.1%	0.0%	100.0%
Company Age in Years)	4.1	3.1	0.0	24.0
Company at Seed Stage	1.3%	11.4%	0.0%	100.0%
# of VC Rounds	3.5	1.3	1.0	7.0
VC Financing in \$000s	\$17,350	\$27,368	\$0	\$320,280
VC Experience (Number of Investments)	133.3	173.1	0.0	500.0
VC Age (years)	8.5	7.7	0.0	25.0

**Panel F: Summary Statistics on Formal Compensation Policies (company-year observations)**

	Mean	Std. Dev.	Min	Max
Formal Compensation (1=yes 0=no)	54.8%	49.8%	0.0%	100.0%
Formal Bonus (1=yes 0=no)	44.1%	49.7%	0.0%	100.0%
Option Grant (1=yes 0=no)	74.8%	43.4%	0.0%	100.0%
Sales Commission (1=yes 0=no)	63.3%	48.2%	0.0%	100.0%
Hire-On Bonus (1=yes 0=no)	20.3%	40.2%	0.0%	100.0%
# of Formal Compensation Policies	2.6	1.3	0.0	5.0

**Panel G: Summary Statistics on Employee Compensation (employee-year observations)**

	Mean	Std. Dev.	Min	Max
Cash Compensation in \$000s	\$161	\$72	\$5	\$2,350
Salary in \$000s	\$145	\$57	\$0	\$1,950
Bonus in \$000s	\$14	\$28	\$0	\$700
Bonus (1=yes 0=no)	37.9%	48.5%	0.0%	100.0%
Percentage Equity Ownership	1.8%	3.5%	0.0%	96.2%

**Table 2 - Formal Compensation Policies**

See Table 1 for description of sample. Each observation is a unique company-year. Regressions are ordered logit. Dependent variable is the Number of Formal Compensation Policies, defined as the sum of the five polices that are described in Table 1, Panel F. Specification 3 includes fixed effects for company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company, are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Specification	1	2	3
Dependent Variable	Number of Formal Compensation Policies		
CEO Founder (1=yes 0=no)	-0.241*** [0.081]		-0.212** [0.087]
VC Minority Ownership (1=yes 0=no)		-0.286*** [0.092]	-0.272*** [0.095]
log (1 + #Employees at End of Previous Year)			0.569*** [0.070]
log (1 + Revenues in Previous Year in \$000s)			0.108*** [0.034]
Company Profitable (1=yes 0=no)			0.084 [0.233]
log (1 + Company Age in Years)			0.013 [0.087]
Company at Seed Stage			-0.457* [0.268]
# of VC Rounds			-0.034 [0.047]
log (1 + VC Financing in \$000s)			-0.001 [0.013]
Observations	3,105	3,105	3,105
Pseudo R2	0.00	0.00	0.07
Location, Industry and Year FEs	No	No	Yes
Estimation Method	Ordered Logit		
Sample	Full Company-Year Sample		

**Table 3 - Employee Cash Compensation**

See Table 1 for description of sample. Each observation is a unique employee-year. Regressions are OLS. Dependent variable is  $\log(1 + \text{Employee's Total Cash Compensation in } \$000s)$ , defined as the sum of Base Salary, Bonus, and Other Compensation. Specifications 3 and 4 include fixed effects for employee rank (Chief, Vice President or Director), company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company and year (Petersen, 2009), are reported in square brackets. A constant is estimated but not reported. Two-tailed test significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Specification	1	2	3	4
Dependent Variable	$\log(1 + \text{Employee Cash Compensation in } \$000s)$			
CEO Founder (1=yes 0=no)	-0.053*** [0.018]		-0.036*** [0.012]	-0.032*** [0.011]
VC Minority Ownership (1=yes 0=no)		-0.092*** [0.012]	-0.048*** [0.011]	-0.044*** [0.011]
# of Formal Compensation Policies				0.028*** [0.005]
$\log(1 + \text{\#Employees at End of Previous Year})$			0.073*** [0.008]	0.065*** [0.007]
$\log(1 + \text{Revenues in Previous Year in } \$000s)$			0.008** [0.003]	0.005 [0.003]
Company Profitable (1=yes 0=no)			0.000 [0.016]	-0.001 [0.015]
$\log(1 + \text{Company Age in Years})$			-0.027*** [0.007]	-0.027*** [0.007]
Company at Seed Stage			-0.066 [0.041]	-0.061 [0.041]
# of VC Rounds			-0.002 [0.004]	-0.002 [0.004]
$\log(1 + \text{VC Financing in } \$000s)$			0.006*** [0.001]	0.006*** [0.001]
Observations	18,935	18,935	18,935	18,935
R-squared	0.01	0.01	0.37	0.37
Employee Rank Fixed Effects	No	No	Yes	Yes
Location, Industry and Year Fixed Effects	No	No	Yes	Yes
Estimation Method	OLS			
Sample	Full Employee Sample			

**Table 4 - Employee Cash Compensation, Hired-On versus Founder**

See Table 1 for description of sample. Each observation is a unique employee-year. Regressions are OLS. Dependent variable is  $\log(1 + \text{Employee's Total Cash Compensation in } \$000\text{s})$ , defined as the sum of Base Salary, Bonus, and Other Compensation. In specification 4, sample is restricted to employees who are hired-on rather than founders. In specification 5, sample is restricted to employees who are founders. All specifications include fixed effects for employee rank (Chief, Vice President or Director). Specifications 2-5 include fixed effects for company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company and year (Petersen, 2009), are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Specification	1	2	3	4	5
Dependent Variable	$\log(1 + \text{Employee Cash Compensation in } \$000\text{s})$				
CEO Founder (1=yes 0=no)			-0.033*** [0.011]	-0.039*** [0.013]	0.010 [0.013]
VC Minority Ownership (1=yes 0=no)			-0.049*** [0.011]	-0.053*** [0.011]	-0.010 [0.015]
Employee is Founder (1=yes 0=no)	-0.080*** [0.017]	-0.054*** [0.016]	-0.050*** [0.014]		
$\log(1 + \text{\#Employees at End of Previous Year})$		0.071*** [0.007]	0.072*** [0.008]	0.069*** [0.007]	0.091*** [0.017]
$\log(1 + \text{Revenues in Previous Year in } \$000\text{s})$		0.006** [0.003]	0.007** [0.003]	0.006* [0.003]	0.021*** [0.005]
Company Profitable (1=yes 0=no)		-0.009 [0.015]	0.001 [0.016]	-0.006 [0.019]	0.069 [0.047]
$\log(1 + \text{Company Age in Years})$		-0.027*** [0.007]	-0.029*** [0.007]	-0.028*** [0.006]	-0.029 [0.029]
Company at Seed Stage		-0.074* [0.042]	-0.063 [0.042]	-0.045 [0.045]	-0.120 [0.110]
# of VC Rounds		0.002 [0.004]	-0.002 [0.004]	-0.003 [0.003]	0.000 [0.014]
$\log(1 + \text{VC Financing in } \$000\text{s})$		0.006*** [0.001]	0.006*** [0.001]	0.006*** [0.001]	0.004 [0.002]
Observations	18,935	18,935	18,935	16,605	2,330
R-squared	0.25	0.36	0.37	0.38	0.31
Employee Rank Fixed Effects	Yes	Yes	Yes	Yes	Yes
Location, Industry and Year Fixed Effects	No	Yes	Yes	Yes	Yes
Estimation Method	OLS	OLS	OLS	OLS	OLS
Sample	Full Employee Sample			Hired-On	Founder

**Table 5 - Employee Cash Bonus**

See Table 1 for description of sample. Each observation is a unique employee-year. Regressions are probit, where estimated coefficients are adjusted to reflect variable means. Dependent variable is Employee Receives a Cash Bonus (1=yes, 0=no). In specification 4, sample is restricted to employees who are hired-on. In specification 5, sample is restricted to employees who are founders. Specifications 3-5 include fixed effects for employee rank (Chief, Vice President or Director), company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company, are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Specification	1	2	3	4	5
Dependent Variable	Employee Receives Cash Bonus (1=yes 0=no)				
CEO Founder (1=yes 0=no)	-0.041** [0.019]		-0.040* [0.022]	-0.044* [0.023]	-0.017 [0.035]
VC Minority Ownership (1=yes 0=no)		0.006 [0.023]	-0.054** [0.026]	-0.054** [0.027]	-0.053 [0.042]
Employee is Founder (1=yes 0=no)			-0.051*** [0.017]		
log (1 + #Employees at End of Previous Year)			0.020 [0.019]	0.020 [0.020]	0.026 [0.028]
log (1 + Revenues in Previous Year in \$000s)			0.052*** [0.009]	0.051*** [0.010]	0.065*** [0.015]
Company Profitable (1=yes 0=no)			0.095** [0.048]	0.090* [0.048]	0.151 [0.092]
log (1 + Company Age in Years)			0.014 [0.022]	0.008 [0.022]	0.048 [0.033]
Company at Seed Stage			-0.003 [0.078]	0.031 [0.085]	-0.106 [0.086]
# of VC Rounds			-0.027** [0.012]	-0.024* [0.012]	-0.058** [0.026]
log (1 + VC Financing in \$000s)			0.006* [0.003]	0.005 [0.003]	0.011* [0.006]
Observations	18,935	18,935	18,935	16,605	2,330
Pseudo R2	0.00	0.00	0.09	0.09	0.15
Employee Rank Fixed Effects	No	No	Yes	Yes	Yes
Location, Industry and Year Fixed Effects	No	No	Yes	Yes	Yes
Estimation Method	Probit	Probit	Probit	Probit	Probit
Sample	Full Employee Sample			Hired-On	Founder

**Table 6 - Employee Equity Incentives**

See Table 1 for description of sample. Each observation is a unique employee-year. Regressions are Tobit. Dependent variable is Employee's Percentage Equity Ownership. In specification 4, sample is restricted to employees who are hired on. In specification 5, sample is restricted to employees who are founders. Specifications 3-5 include fixed effects for employee rank (Chief, Vice President or Director), company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company, are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Specification	1	2	3	4	5
Dependent Variable	Employee's Percentage Equity Ownership				
CEO Founder (1=yes 0=no)	0.001 [0.001]		-0.002*** [0.000]	-0.002*** [0.000]	-0.004 [0.003]
VC Minority Ownership (1=yes 0=no)		0.004*** [0.001]	0.000 [0.001]	-0.002*** [0.000]	0.011*** [0.003]
Employee is Founder (1=yes 0=no)			0.032*** [0.001]		
log (1 + #Employees at End of Previous Year)			-0.005*** [0.000]	-0.004*** [0.000]	-0.010*** [0.002]
log (1 + Revenues in Previous Year in \$000s)			0.001*** [0.000]	0.000** [0.000]	0.002* [0.001]
Company Profitable (1=yes 0=no)			0.000 [0.001]	0.000 [0.001]	0.011* [0.006]
log (1 + Company Age in Years)			-0.001* [0.000]	-0.001*** [0.000]	0.002 [0.003]
Company at Seed Stage			0.003 [0.002]	0.000 [0.002]	0.000 [0.008]
# of VC Rounds			0.000 [0.000]	0.000 [0.000]	-0.007*** [0.002]
log (1 + VC Financing in \$000s)			-0.000*** [0.000]	-0.000*** [0.000]	-0.001** [0.000]
Observations	18,935	18,935	18,935	16,605	2,330
Employee Rank Fixed Effects	No	No	Yes	Yes	Yes
Location, Industry and Year Fixed Effects	No	No	Yes	Yes	Yes
Estimation Method	Tobit	Tobit	Tobit	Tobit	Tobit
Sample	Full Employee Sample			Hired-On	Founder

**Table 7 - Subsamples Formed on VC Experience and VC Age**

See Table 1 for description of sample. In specification 1-4, each observation is a unique company-year, regressions are ordered logit, and the dependent variable is the Number of Formal Compensation Policies, defined as the sum of the five polices that are described in Table 1, Panel F. In specification 5-8, each observation is a unique employee-year, regressions are OLS, and the dependent variable is  $\log(1 + \text{Employee's Total Cash Compensation in } \$000s)$ , defined as the sum of Base Salary, Bonus, and Other Compensation. In specification 9-12, each observation is a unique employee-year, regressions are probit, and the dependent variable is Employee Receives a Cash Bonus (1=yes, 0=no). In specification 13-16, each observation is a unique employee-year, regressions are tobit, and the dependent variable is Employee's Percentage Equity Ownership. All specifications control for Round Number, #Employees at End of Previous Year, Revenues in Previous Year in \$000s, Profitable (1=yes 0=no), Company Age in Years), Company at Seed Stage, and VC Financing in \$000s, and include fixed effects for employee rank (Chief, Vice President or Director), company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company (and year in specifications 5-8, (Petersen, 2009)), are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

	Dependent Variable	Sample	CEO Founder	VC Minority Owner.	Employee is Founder	# Obs.	R-squared
1	Formal Compensation Policies	VC Experience Below Median	-0.228* [0.120]	-0.327** [0.131]		1,556	0.08
2		VC Age Below Median	-0.121 [0.120]	-0.182 [0.135]		1,583	0.07
3		VC Experience Above Median	-0.183 [0.125]	-0.158 [0.144]		1,549	0.08
4		VC Age Above Median	-0.269** [0.123]	-0.378*** [0.137]		1,522	0.08
5	Employee Cash Compensation	VC Experience Below Median	-0.047*** [0.017]	-0.052*** [0.008]	-0.060*** [0.013]	9,496	0.38
6		VC Age Below Median	-0.053*** [0.015]	-0.058*** [0.012]	-0.055*** [0.014]	10,098	0.38
7		VC Experience Above Median	-0.009 [0.013]	-0.018 [0.017]	-0.040*** [0.015]	9,439	0.40
8		VC Age Above Median	0.004 [0.014]	-0.013 [0.020]	-0.041** [0.018]	8,837	0.39
9	Employee Cash Bonus	VC Experience Below Median	-0.069** [0.029]	-0.046 [0.032]	-0.071*** [0.022]	9,496	0.12
10		VC Age Below Median	-0.068** [0.029]	-0.068** [0.034]	-0.068*** [0.023]	10,098	0.13
11		VC Experience Above Median	0.005 [0.033]	-0.072* [0.042]	-0.033 [0.024]	9,439	0.08
12		VC Age Above Median	-0.005 [0.033]	-0.039 [0.039]	-0.033 [0.023]	8,837	0.09
13	Employee Equity Incentives	VC Experience Below Median	-0.003*** [0.001]	-0.001 [0.001]	0.033*** [0.001]	9,496	
14		VC Age Below Median	-0.002*** [0.001]	-0.001 [0.001]	0.031*** [0.001]	10,098	
15		VC Experience Above Median	-0.001 [0.001]	0.002*** [0.001]	0.031*** [0.001]	9,439	
16		VC Age Above Median	-0.001 [0.001]	0.002* [0.001]	0.032*** [0.001]	8,837	

### Appendix Table A - VC Fundraising

See Table 1 for description of sample. Each observation is a unique company-year. Specification 1 is ordered logit regression, and specifications 2-4 are OLS regressions. Dependent variables are VC % Ownership in specification 1, log (1+total amount of VC financing raised in all rounds) in specification 2, Number of VC Rounds in specification 3, and log (1+VC financing) / Number of VC Rounds in specification 4. All specifications includes fixed effects for company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company, are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Specification	1	2	3	4
Dependent Variable	VC % Ownership	log (1+VC financing)	# of VC Rounds	log (1+VC financing) / # of VC Rounds
CEO Founder (1=yes 0=no)	-0.043*** [0.010]	-0.658*** [0.169]	-0.187*** [0.047]	-0.484*** [0.126]
log (1 + #Employees at End of Previous Year)	0.052*** [0.008]	1.495*** [0.134]	0.332*** [0.039]	1.159*** [0.101]
log (1 + Revenues in Previous Year in \$000s)	-0.023*** [0.004]	-0.207*** [0.067]	0.044** [0.021]	-0.161*** [0.050]
Company Profitable (1=yes 0=no)	-0.097*** [0.026]	-1.032*** [0.381]	-0.219 [0.150]	-0.864*** [0.279]
log (1 + Company Age in Years)	0.019** [0.009]	2.915*** [0.155]	0.800*** [0.048]	2.110*** [0.116]
Company at Seed Stage	-0.235*** [0.043]	-1.612*** [0.624]	-1.323*** [0.132]	-0.875* [0.507]
Observations	3,105	3,105	3,105	3,105
R-squared		0.37	0.43	0.36
Employee Rank Fixed Effects	N.A.	N.A.	N.A.	N.A.
Location, Industry and Year Fixed Effects	Yes	Yes	Yes	Yes
Estimation Method	Tobit	OLS	OLS	OLS
Sample	Full Company-Year Sample			

**Appendix Table B - Employee Cash Compensation, Robustness**

See Table 1 for description of sample. Each observation is a unique employee-year. Regressions are OLS. Dependent variable is  $\log(1 + \text{Employee's Total Cash Compensation in } \$000s)$ , defined as the sum of Base Salary, Bonus, and Other Compensation. All specifications control for Round Number, #Employees at End of Previous Year, Revenues in Previous Year in \$000s, Profitable (1=yes 0=no), Company Age in Years, Company at Seed Stage, and VC Financing in \$000s, and include fixed effects for employee rank (Chief, Vice President or Director), company location (U.S. state), company industry (VentureOne 16 groups), and survey year. Standard errors, clustered by company and year (Petersen, 2009), are reported in square brackets. A constant is estimated but not reported. Two-tailed significance relative to zero is marked with \* for 10%, \*\* for 5% and \*\*\* for 1%.

Explanatory Variable:	CEO Founder	VC Minority Ownership	Employee is Founder	# Obs.	R-squared
Employee Rank: Chief	-0.026*** [0.009]	-0.025** [0.011]	-0.046* [0.028]	4,349	0.25
Employee Rank: Vice President	-0.037*** [0.010]	-0.056*** [0.013]	-0.045*** [0.012]	8,291	0.19
Employee Rank: Director	-0.035* [0.020]	-0.049*** [0.014]	0.034 [0.031]	6,295	0.15
Location: California	-0.030** [0.014]	-0.063*** [0.017]	-0.048*** [0.017]	8,044	0.38
Location: Massachussetts	0.005 [0.012]	0.011 [0.025]	-0.058** [0.029]	2,442	0.41
Location: Texas	-0.019 [0.025]	-0.007 [0.049]	-0.059* [0.033]	1,188	0.30
Location: Other	-0.051*** [0.016]	-0.057* [0.029]	-0.045*** [0.013]	7,261	0.37
Industry: Communications	-0.005 [0.014]	-0.064* [0.033]	-0.042 [0.026]	2,212	0.36
Industry: Biopharmaceuticals	-0.013 [0.028]	-0.117*** [0.043]	0.021 [0.028]	1,954	0.43
Industry: Cons/Bus Services	-0.009 [0.021]	-0.025 [0.022]	-0.058* [0.031]	2,469	0.47
Industry: Medical Devices	-0.066*** [0.014]	0.001 [0.026]	-0.032 [0.026]	1,904	0.44
Industry: Software	-0.032* [0.019]	-0.057*** [0.017]	-0.066*** [0.025]	5,465	0.36
Industry: Other	-0.046*** [0.009]	-0.028*** [0.011]	-0.042*** [0.012]	4,931	0.41
Survey Year: 2002-2003	-0.016*** [0.005]	-0.047*** [0.010]	-0.050*** [0.010]	4,640	0.38
Survey Year: 2004-2005	-0.053*** [0.019]	-0.069*** [0.009]	-0.066** [0.027]	8,182	0.35
Survey Year: 2006-2007	-0.021 [0.019]	-0.028 [0.032]	-0.034 [0.022]	6,113	0.43
Employees: Below Sample Median	-0.046*** [0.015]	-0.065*** [0.011]	-0.060*** [0.016]	9,461	0.32
Employees: Above or at Sample Median	-0.026** [0.012]	-0.025 [0.019]	-0.027* [0.014]	9,474	0.42
Revenues: Below Sample Median	-0.043*** [0.014]	-0.086*** [0.019]	-0.059*** [0.013]	7,734	0.34
Revenues: Above or at Sample Median	-0.030*** [0.012]	-0.026 [0.018]	-0.038** [0.018]	11,201	0.41
Company Age: Below Sample Median	-0.021*** [0.007]	-0.071*** [0.008]	-0.058*** [0.011]	9,168	0.38
Company Age: Above or at Sample Median	-0.047*** [0.017]	-0.022 [0.015]	-0.039 [0.028]	9,767	0.38
VC Financing: Below Sample Median	-0.033*** [0.012]	-0.068*** [0.008]	-0.052*** [0.016]	9,476	0.35
VC Financing: Above Sample Median	-0.038* [0.023]	-0.019 [0.023]	-0.040*** [0.012]	9,459	0.40