THE EFFECT OF FIRM COMPENSATION STRUCTURES ON THE MOBILITY AND ENTREPRENEURSHIP OF EXTREME PERFORMERS[1]

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ABSTRACT

Examining how compensation structure affects mobility and entrepreneurship decisions of employees, particularly those at the extreme ends of the performance distribution, we find that employees with high performance are less likely to leave firms with highly dispersed compensation. However, if these "high performers" do leave these employers, they are more likely to create or join new firms. Employees with lower performance are more likely to leave firms with high pay dispersion, but less likely to move to new ventures. Additionally, we show that mobility and entrepreneurship result in employees' receiving higher compensation, regardless of their performance level.

Scholars examining employee entrepreneurship have established that individuals who leave current employers to create competing organizations (called "spin-out" firms) are typically employees with high performance (Campbell, Ganco, Franco, & Agarwal, 2010; Elfenbein, Hamilton, & Zenger, 2010; Groysberg, Nanda, & Prats, 2009). Armed with superior human capital (Bragusinksy & Ohyama, 2009) and social capital (Sorenson & Stuart, 2001), which help attract financial resources (Shane & Cable, 2002) and other complementary assets (Teece, 1986), these "high-performing" individuals are well positioned to succeed in their new ventures (Agarwal, Campbell, Franco, & Ganco, 2010). Researchers have also examined parent firm characteristics as antecedents to spin-out generation and success, highlighting the roles of parent size (Elfenbein et al., 2010; Parker, 2009), entrepreneurial incentives (Anton & Yao, 1995), learning through apprenticeships (Franco & Filson, 2006;), organizational culture (Burton, Sørenson, & Beckman, 2002; Gompers, Lerner, & Scharfstein, 2005), and underexploited knowledge (Agarwal, Echambadi, Franco, & Sarkar, 2004) in determining the rate of spin-outs' generation and their subsequent success. However, research on the characteristics of entrepreneurs who go to spin-outs and research on characteristics of spin-outs' parent firms have been separated in their respective "silos."

In this study, we sought to address this gap by integrating the two bodies of research. We examined how a firm's compensation structure, a crucial factor studied by human resource management scholars (Bloom, 1999; Bloom & Michel, 2002; Gerhardt & Rynes, 2003; Shaw & Gupta, 2007; Shaw, Gupta, & Delery, 2002), influences the mobility and entrepreneurship decisions of employees who vary in individual performance. We linked individual performance heterogeneity to compensation structure heterogeneity and examined the effect of their interactions on employees' mobility or entrepreneurship. Given our dual focus on individual- and firm-level characteristics, we drew upon work in labor economics, human resource (HR) management, and strategy for hypotheses development. We tested our hypotheses using unique and comprehensive data drawn from the U.S. Census Bureau's Longitudinal Establishment Household Database (LEHD).

Our study hypothesizes and shows that high-performing individuals are less likely to leave firms with more dispersed compensation structures than firms with less dispersed structures and,

conditional on mobility, they are more likely to form or join new firms than join existing ones. In contrast, we hypothesize and show that "low-performing" employees are more likely to leave firms with highly dispersed compensation but, conditional on mobility, less likely to form new firms. We also find that high and low performers alike earn higher compensation after mobility, evidence that employees seek settings that provide them with greater rewards, given their performance.

In undertaking this study of micro and macro determinants of employee mobility and entrepreneurship, we hope to contribute to multiple research streams addressing strategic human capital. The study contributes to the literature on the strategic management of knowledge by linking firm compensation structure, an important macro-level firm characteristic, to the micro-level mobility and entrepreneurship behavior of employees. Previous studies linking firm-level contingencies to individual decisions have mainly focused on how firms' technical and market knowledge (Agarwal et al., 2004; Franco & Filson, 2006) and cultures (Gompers et al., 2005) determine the likelihood of their employees starting new ventures, without giving much attention to how such firm-level characteristics may influence heterogeneous employees differently. We not only provide the complementary insight that a firm's compensation structure also matters, but also highlight the differential effect of firm compensation structures on employees varying in performance. High-performing employees may exit established firms for entrepreneurial ventures to capitalize on underexploited opportunities (Agarwal et al., 2004; Klepper & Thompson, 2010), but they may also stay at firms that allow them to maximize returns to their ability.

We also contribute to the strategic human resource management literature on turnover by highlighting that not all mobility events are the same: destination matters in employee mobility. Although firm policies that reward extreme performance help retain high performers, they may be less effective in curtailing employee entrepreneurship. Also, compensation structures that are less closely tied to performance may retain low and average performers disproportionately more than high performers, who may prefer entrepreneurial venturing and firms offering higher pay.

Finally, we contribute to the entrepreneurship literature by systematically comparing the decision to form an entrepreneurial venture with the entire set of options that individuals have,

including staying at a current organization or moving to an alternative established firm. Importantly, we highlight the interaction of individual performance heterogeneity with compensation structure heterogeneity in affecting employees' decisions. In doing so, we integrate employee entrepreneurship research with employee mobility research and provide a more holistic view of how individual and firm characteristics affect exit decisions in tandem rather than in isolation.

THEORY AND HYPOTHESES

Heterogeneity in Individual Performance

Firms are composed of heterogeneous individuals who, because of differences both observable (e.g., education) and unobservable (e.g., motivation), achieve differing levels of performance. Prior research has linked performance differences to differences in innate ability or talent, education, or experience; in motivation to work; and in social networks (Castanias & Helfat, 1991, 2001; Elfenbein et al., 2010; Shaw, Duffy, Johnson, & Lockhart, 2006; Zenger, 1992). An important strategic human capital issue is how firms deal with this heterogeneity in individual performance to identify and then retain or discard extreme performers (those whose demonstrated performance is either remarkably higher or remarkably lower than that of referent individuals; Zenger, 1992). Firms work to identify and retain high performers not only because these individuals drive firm success (Ernst & Vitt, 2000; Mindurta, 2008; Zucker, Darby, & Armstrong, 2002), but also because they may leave and use their talents to create new ventures that compete directly with their former employers (Campbell et al., 2010; Groysberg et al., 2009). On the other hand, low performers can reduce firm profitability (Krackhardt & Porter, 1981; Williams & Livingstone, 1994).

Previous studies of extreme performers have identified them by comparing their performance to that of different reference groups. HR studies have used firm-level comparisons with coworkers (e.g., Pfeffer & Davis-Blake, 1992; Shaw & Gupta, 2007; Zenger, 1992), and industry dynamics studies have made industry-level comparisons (e.g., Audretsch & Stephen, 1996; Zucker, Darby, & Brewer, 1998). Given our interest in the interaction of individual heterogeneity with firm-level differences in compensation structure, we adopted the firm level of analysis and identified extreme performers by comparing the individuals in single firms. Because a firm's compensation

structure is key to its ability to attract, identify, and retain or discard extreme performers, we next consider this important structural attribute.

Compensation Structures and Value Appropriation by Heterogeneous Employees

Both pay level and pay structure define a firm's compensation policy (Gerhart & Rynes, 2003). Pay level decisions dictate how much employees are paid for different jobs (Gerhart & Rynes, 2003); pay structure decisions determine the potential variance in employee pay. When this variance stems from hierarchical differences, it is referred to as "vertical pay dispersion." Alternatively, when the variance occurs within the same job group or level and is dictated by factors such as performance or seniority (Powell, Montgomery, & Cosgrove, 1994), it is "horizontal pay dispersion" (Shaw & Gupta, 2007).

When a firm provides differential rewards on the basis of either or both types of pay dispersion (Gerhart & Rynes, 2003), its compensation structure exhibits higher skewness and variance. Put differently, compensation structure has an impact on employees' ability to appropriate the value generated in their firm (Coff, 1999). A firm with a high-variance compensation structure provides higher rewards to the employees perceived to create more value (Blyler & Coff, 2003). Doing so increases the satisfaction of these high performers, whose superior ability is recognized and rewarded under both horizontal and vertical pay dispersion, because they either earn greater within-job-group rewards or climb the job ladder more quickly (Bloom & Michel, 2002; Campbell et al., 2010). Low performers, on the other hand, appropriate less of firm value.

The situation is different in organizations where high and low performers are likely to earn similar wages. This lack of differentiation may result when individual contributions to firm performance are difficult to measure (Alchian & Demsetz, 1972), and it may limit jealousy (Lazear, 1989) and costly comparison behavior (Nickerson & Zenger, 2008) and engender cooperation (Frank, 1984; Shaw et al., 2002). It may, however, also result in an implicit cross-subsidization of low performers by high performers. Lower variance in compensation structures thus may decrease satisfaction for high performers but increase it for low performers.

Figure 1 illustrates the relationship between individual value appropriation and individual performance. The solid line (steeper slope) represents a firm in which pay is more sensitive to employees' relative performance; the dashed line (flatter slope), one in which pay is less sensitive. If the underlying distribution of individual performance were the same in both contexts, the firms with performance-sensitive pay would allow high performers to appropriate more value and thus, the firms demonstrate greater pay dispersion. Conversely, firms in which individual performance and pay have a weaker relationship have more compressed wage structures for the same underlying distribution of individual performance.

(Insert Figure 1 about here)

Compensation structure differences affect in different ways employees who vary in performance, particularly as they contemplate their employment options outside firm boundaries. We examine this relationship in the following section.

Compensation Structures and the Mobility of Extreme Performers

A firm's compensation structure dictates the ability of its employees to earn value commensurate with their talents within its boundaries, and accordingly compensation structure has a strong influence on employee mobility (Bloom & Michel, 2002; Lazear, 1999; Lazear & Rosen, 1981; Pfeffer & Davis-Blake, 1992; Shaw & Gupta, 2007). As Figure 1 shows, a firm whose compensation structure exhibits more dispersion and extreme rewards permits higher-performing individuals to appropriate more value (Coff, 1997; Weiss, 1990) and earn wages that correspond to their performance (Zenger, 1992).[2] The presence of extreme rewards, whether due to vertical or horizontal pay dispersion, should discourage high performers from exiting. A firm's vertical pay dispersion reduces employee mobility by permitting high performers to ascend to ever more senior positions and by providing compensation that is well aligned with these promotions (Bloom & Michel, 2002). Similarly, horizontal pay dispersion reduces mobility since high-performing employees perceive themselves to be well compensated (Parsons, 1977; Powell et al., 1994) relative

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[2] It is important to note that because we are discussing high- and low-performing employees in the context of firm-level differences in compensation structures, we follow previous research (Pfeffer & Davis-Blake, 1992; Shaw & Gupta, 2007) and define high and low performers by their position in a firm-level performance distribution.

to their coworkers (Pfeffer & Davis-Blake, 1992; Shaw & Gupta, 2007). Even if the high performers are rising stars who have not yet reached the highest absolute pay levels, their higher compensation relative to peers (Shaw & Gupta, 2007) provides positive social comparisons and decreases their likelihood of exit (Berkowitz, Fraser, Treasure, & Cochran, 1987; Festinger, 1954).

In addition, firms may offer extreme rewards to provide a wage premium that encourages employees to make firm-specific investments in human capital (Becker, 1962; Lazear & Rosen, 1981). Employees who make these investments may achieve high performance within their firm, but their productivity may not be easily replicated at a different employer, which reduces their probability of exit. In sum, a dispersed compensation structure should allow high-performing employees to appropriate more value and discourage their exit. Thus:

Hypothesis 1. The probability that high performers will exit is negatively related to the wage dispersion of their firm.

The opposite is likely true for low performers in firms that offer extreme rewards. If a firm implements a vertically dispersed compensation structure, low performers are unlikely to meet the rigorous standards necessary to ascend the organizational hierarchy (Bloom & Michel, 2002). Since individuals value the increases in recognition (Stumpf & Dawley, 1981) and responsibility (Dwyer & Ganster, 1991) that usually accompany a promotion, a reduction in both actual promotions or perceptions of promotion likelihood reduces the job satisfaction of low performers in firms with vertically dispersed compensation structures (Marsh & Mannari, 1977). In addition, low performers in such firms are at greater risk of involuntary termination as their employers make room for better performers' hierarchical ascent (Lazear & Rosen, 1981).

If a firm has a horizontally dispersed compensation structure, low performers cannot achieve the same rewards as their most proximate peers (Shaw & Gupta, 2007). Particularly if the firm bases differential rewards on increased marginal effort (Bloom & Michel, 2002; Lazear & Rosen, 1981), employees who fall into the low performer category because they prefer to exert less effort—as a result of work-family conflict or personal preferences—may prefer the more stable levels of earnings available to all employees in firms with less disperse pay structures (Batt & Valcour, 2003;

Greenhaus & Beutell, 1985; Kossek & Ozeki, 1998). This scenario is indicated by the higher y-intercept and relatively flat slope of the dashed line in Figure 1.

Low performers may also be unable to ascend the organizational hierarchy or earn performance-based rewards because of factors unrelated to their own effort, such as a poor fit with their organization's culture (Chatman, 1989) or job designs (Holmstrom & Milgrom, 1991). Equity theorists (e.g., Adams, 1963) have suggested that low performers in firms with more dispersed compensation may suffer negative social comparisons (Festinger, 1954) or envy (Nickerson & Zenger, 2008; Salovey, 1991), which will likely lower job satisfaction (Berkowitz et al., 1987), a key predictor of exit intentions (see Griffeth, Hom, and Gaertner (2000) for a meta-analytic review).

In sum, to increase pecuniary returns to a given level of effort, alleviate negative comparisons, and increase job satisfaction, low performers may prefer to leave a more dispersed firm for an employer that does not tightly link promotions and pay to relative performance (Miyazaki, 1975; Pfeffer & Davis-Blake, 1992). Thus:

Hypothesis 2. The probability that low performers will exit is positively related to the wage dispersion of their firm.

Compensation Structures and New Venture Creation by Extreme Performers

Having examined the mobility behavior of extreme performers based on variation in compensation structures, we next focus on the question of where these individuals are likely to go upon exit from firms. Specifically, we examine the incidence of moves to new ventures versus moves to established competitors, given both individual-level performance heterogeneity and firm-level compensation structure heterogeneity.

The literature on employee entrepreneurship provides valuable insights regarding the effect of either firm-level characteristics or individual attributes but has not addressed the two factors in tandem. In the context of parent firm characteristics, scholars have examined how a firm's performance (Klepper & Sleeper, 2005), size (Elfenbein et al., 2010; Parker, 2009), and configuration of knowledge assets (Agarwal et al., 2004; Franco & Filson, 2006) affect the likelihood of its employees starting new ventures. Findings have generally indicated that smaller firms (Boden, 1996;

Sørenson, 2007) and firms with underexploited knowledge (Agarwal, et al. 2004) or entrepreneurial cultures (Burton et al., 2002; Gompers et al., 2005) produce more spin-outs. Unaddressed, however, has been how differences in firms' compensation practices impact employee entrepreneurship.

In the context of individual characteristics, scholars have noted that high-performing (Groysberg et al., 2009) or high-earning (Campbell et al., 2010; Elfenbein et al., 2010) individuals are more likely to start spin-outs than move to established firms. Researchers have primarily attributed these differences to the maximization of performance-contingent rewards for entrepreneurial founders (Bragusinksy & Ohyama, 2009) and to the ability of high performers and high earners to transfer the complementary assets needed to start new ventures (Campbell et al., 2010). An unanswered question in this research stream is the contingent effect of parent firm compensation structure on entrepreneurial decisions among employees who differ in performance.

A firm's compensation structure, we posit, interacts with heterogeneity in employee performance to determine what firm type exiting extreme performers choose to join. Our view is that high performers in firms with disperse pay structures are likely to form or join spin-outs. First, if a current firm already provides extreme rewards, a high performer would appear to have little reason to move to a different established firm. Further, such a well-rewarded high performer may have few options among established competitors to increase appropriation of firm value. An entrepreneurial venture may be attractive to him/her because a firm's founders are residual claimants who can appropriate maximum performance-based rewards, in a manner similar to working entirely on commission (Harrison, Virick, & William, 1996).

Second, to the extent that dispersed compensation structures result from higher rewards for making firm-specific investments (Becker, 1962; Lazear & Rosen, 1981), a high performer under a dispersed structure may be discouraged from moving to established competitors because the value of the firm-specific human capital investments may significantly diminish. In contrast, creating a new venture permits a high performer to replicate parental routines and transfer complementary assets (Campbell et al., 2010; Wezel, Cattani, & Pennings, 2006), thus allowing the firm-specific component of human capital to retain more of its value than if the employee moved to an

established competitor (Ganco, 2009). For both reasons, exiting to start a new venture rather than to join another firm may yield higher performance-contingent rewards (Bragusinksy & Ohyama, 2009) for a high performer who is already earning extreme rewards at an existing organization.

Additionally, nonpecuniary aspirations may influence high performers' decisions to start their own firms. At firms that offer extreme rewards, they may face diminishing marginal pecuniary returns and consequently they may value nonpecuniary factors, such as job satisfaction and autonomy, more highly than do high performers at firms that do not provide extreme rewards (Blanchflower & Oswald, 1998; Gompers et al., 2005; Hamilton, 2000; Puri & Robinson, 2006; Teece, 2003). Klepper and Thompson (2010) highlighted strategic disagreements as the cause of high performers' entrepreneurship. As these individuals may perceive the same autonomy and satisfaction deficits they experience at their current firm at other established organizations, they may find a new venture to be their best alternative. Thus, high performers at firms with dispersed compensation structures have both pecuniary and nonpecuniary incentives to exit to new ventures rather than established firms. Accordingly,

> *Hypothesis 3. Conditional on mobility, the probability that high performers form or join new ventures is positively related to the wage dispersion of their former firms at their times of exit.*

We next consider the likelihood of entrepreneurial behavior by low performers leaving firms with different types of compensation structures. As mentioned earlier, low performers in a firm with greater pay dispersion may envy their colleagues and suffer negative social comparisons (Lambert, Larcker, & Weigelt, 1993), or they may be averse to the high marginal costs of the level of effort necessary to earn rewards. However, starting a new venture is not likely to be the value-maximizing decision for these individuals. Instead, an employee on the low end of a firm's pay distribution can alleviate negative social comparison effects by joining a different established firm with a less dispersed wage structure (Pfeffer & Davis-Blake, 1992).

Also, low performers are less likely to have the human and social capital (Bragusinksy & Ohyama, 2009; Sorenson & Stuart, 2001) needed to attract resources for a new venture (Shane & Cable, 2002), or complementary assets necessary for new venture success (Agarwal, Campbell,

Franco & Ganco, 2010; Campbell et al., 2010). Further, the effort necessary for entrepreneurial success is likely to exceed that needed as an employee of an established firm (Zenger, 1994), given the maximal contingency of rewards for the employees of new firms. Consequently, the same characteristics that prevent low performers from succeeding in firms that provide extreme rewards also decrease their chances of succeeding in entrepreneurship. Joining a different existing firm may not entail the same risks, making it a relatively more desirable option to entrepreneurship. Thus:

> *Hypothesis 4. Conditional on mobility, the probability that low performers form or join new ventures is negatively related to the wage dispersion of their former firms at their times of exit.*

Postmobility Earnings of Extreme Performers

The preceding hypotheses highlight the importance of a "fit" between individual performance and firm compensation structures, as does related research on the organization-individual matching process (Mindruta, 2008; Roth & Sotomayor, 1992). A poor match between individual characteristics and firm structure may result in either voluntary or involuntary exit[3].

Prior job experience provides valuable information to both an individual and alternative employers, information that may not have existed when the prior employment relationship was formed (Agarwal, Campbell, Carnahan, & Franco, 2010; Jovanovic, 1979). Such information concerns true skills and abilities, ability to compete, and professional preferences (Jovanovic, 1979). Relatedly, experience confers understanding of task and work environments that may permit increased productivity (Chatman, 1989). Increased tenure in an industry may also provide an employee with better information about alternative employment options and compensation structures, either via direct observation or discussions with colleagues (Borgatti & Cross, 2003). Thus, the likelihood of a good employee-employer match increases with employee experience (Agarwal, Campbell, Carnahan & Franco, 2010).

As a result, opportunities exist to enhance individual performance (movement along the x-axis in Figure 1) or value appropriation (movement along the y-axis). High performers may increase their earnings after job exit, given their quest for ever more extreme rewards in alternative settings

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[3] In particular, low performers who exit their firms, rather than being unhirable "lemons" (Akerlof, 1970) may simply need a better fit between their individual characteristics and those of their employer.

(including new ventures). Low performers may also increase their postmobility earnings, given their quest for a firm in which compensation is less closely tied to performance. To the extent that employee mobility results in higher productivity in an employer-employee dyad and, consequently, higher earnings for the employee, we posit:

Hypothesis 5. Postmobility earnings are higher than premobility earnings for both types of extreme performers.

METHODS

Empirical Setting

We tested our hypotheses in the U.S. legal services industry, an appropriate setting for several reasons. First, it is representative of professional services, a large and growing sector of the U.S. economy that constituted 46.5 percent of the gross domestic product (GDP) in 2007.[4] In spite of this sector's importance to economic output, and employees' importance as conduits of knowledge diffusion and transfer in this sector, disproportionately few studies have used professional services as an empirical context, a gap that we address in this study. Second, the structure of the industry facilitates studies of employee mobility and new firm generation. Professional services industries are human capital intensive, in that critical complementary assets are more likely to be embodied in people than in physical plants or firm-owned intellectual property (Teece, 2003). Employment contracts in legal services exclude noncompete clauses and, for lawyers who have passed relevant bar exams, the barriers to mobility and entry are low. Hence, the costs associated with mobility (within the borders of a state) are relatively low for employees, and new firm creation rates are high.[5]

Importantly, the heterogeneity in legal services firms' compensation structures facilitates the study of structural effects on employee mobility. Both vertical and horizontal pay dispersion are utilized, concomitant with wide variation in personnel hiring/retention strategies (Malos & Campion, 1995; Parkin & Baker, 2006). One common personnel strategy is the well-known

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[4] Statistics on GDP by industry are from the Industry Economic Accounts Program at the Bureau of Economic Analysis. (http://www.bea.gov/industry/xls/GDPbyInd_VA_NAICS_1998-2008.xls).
[5] Lawyers' credentials are state-specific and easily transferrable within, but not across state borders. So mobility costs are low within states and high between states.

tournament model, wherein a firm employs many associates and a few highly paid partners. The firm pays associates lower salaries, holds out prospects of future partnership (Malos & Campion, 1995), and practices "up-or-out," whereby associates who do not make partner generally leave (Parkin & Baker, 2006). Another common personnel strategy in law firms is recruitment of partners from both inside and outside, which reduces associates' opportunities to make partner (Malos & Campion, 1995). To compensate for the poorer partnership prospects, associates' salaries are generally higher in firms that recruit heavily from outside and less reliance on the up-or-out model generally leads to lower associate turnover.

In summary, the legal services industry was an ideal context for our study: it is economically important, has rich variation in individual performance and firm compensation structures, and a high incidence of both employee mobility and entrepreneurship.

Data

We analyzed data from the Longitudinal Employer-Household Dynamics (LEHD) Project. This project constructs linked employer-employee data from state-level unemployment insurance (UI) records and other data products from the U.S. Census Bureau.[6] The data contain quarterly records of all employee-employer dyads covered by the UI system. For each dyad, we observed quarterly employee earnings, employee characteristics, and employer characteristics. Our extract of the data included all individuals who worked in legal services in any of ten large states between 1990 and 2004. The data were administrative and universal, which facilitated tracking employee mobility and identifying start-ups and spin-outs.

We restricted our sample to individuals with strong ties to the labor market and firms large enough to yield a meaningful measure of compensation structure. Specifically, these were individuals making at least $25,000 in a given year and firms with more than five people making at least $25,000. Additionally, we included only firms that survived for at least two more years after a focal year. This last restriction, which allowed us to focus on employee exits from healthy firms,

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[6] See http://lehd.did.census.gov/led/library/tech_user_guides/overview_master_zero_obs_103008.pdf.

was needed because employees who leave dying firms are making a fundamentally different decision than those leaving healthy firms.

Estimation Strategy

In testing Hypotheses 1–4, for each employee-year we estimated linear probability models with dependent variables that indicated exit and exit to a new venture. Inclusion of firm-year fixed effects absorbed any variation attributable to constant unobserved characteristics within firm-years. We included robust standard errors (clustered by firm-year) to account for heteroskedasticity inherent in the specification. Computing constraints restricted our ability to use a conditional logit model, since confidentiality concerns required all analyses to be performed on-site at a Census Research Data Center, using their computing resources. However, out-of-sample predictions of the linear probability model were very rare, providing evidence that the models were performing acceptably. Further, estimates from conditional logit specifications on a random subsample of our data were not materially different from those presented below.

For Hypothesis 5, we estimated a wage equation of the following form using ordinary least squares (OLS) regression analysis:[7]

$$\text{Log } w_{it} = \alpha_i + \beta_1 \textit{years since mobility}_{it} + \beta_2 \textit{years since mobility}_{it}{}^2 + \gamma \boldsymbol{Z}_{jt} + \delta \boldsymbol{X}_{it} + \boldsymbol{\eta}_t$$
$$+ \lambda_{\text{MSA}} + \varepsilon_{it} \;, \tag{1}$$

where w_{it} is individual i's earnings at time t, α_i is an individual fixed effect, $\boldsymbol{Z}_{jt}$ is a vector of characteristics of firm j at time t, $\boldsymbol{X}_{it}$ is a vector of time-varying individual characteristics, $\boldsymbol{\eta}_t$ is a vector of year dummies, λ_{MSA} is a dummy indicating the metropolitan statistical area in which individual i is employed, and ε_{it} is a robust standard error clustered by individual.[8]

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[7] We also estimated a log-log model in which the right-hand-side variables were also transformed by logarithms, and results were materially the same as those presented below.

[8] Note that we did not employ a firm or firm-year fixed effect in this specification because we wanted to measure how an individual's wages changed relative to his or her mean wages across time as he or she moved between firms. Because a firm or firm-year fixed effect would compare the individual's wages with those of others in the new firm, the effect would remove precisely the variation we were trying to capture—the wage increase or decrease stemming from a switch to a different employer.

Variables

Employee mobility. In the tests of Hypotheses 1 and 2, the dependent variable is *employee mobility*, coded 1 if an individual had changed employment since a previous year and 0 otherwise. For individuals who worked at multiple firms in a given year, we focused on the dominant employer, defined as the firm at which the employee earned the most during the year.

Our data did not permit us to identify if employees' exits were voluntary or involuntary. We expected that, given their exceptional abilities, on the average, high performers would not be involuntarily terminated. We were agnostic as to whether low performers were likely to experience voluntary or involuntary termination. However, since one of the objects of a dispersed wage distribution is to allow incentives to sort highly skilled from less-skilled employees with relatively little managerial intervention (Lazear & Rosen, 1981; Rasmussen & Zenger, 1990), low performers should be spurred to seek different employment options when they do not obtain the performance-based incentives or promotions necessary to earn rents in a dispersed wage distribution. Thus, involuntary mobility on the part of low performers should occur more often in firms with more equitable wage distributions. As a result, the presence of involuntary mobility in our data would have biased results away from the confirmation of our hypotheses and provided conservative tests.

Employee exit to spin-out. In the tests of Hypotheses 3 and 4, the dependent variable was a dummy variable that took the value 1 if an employee's dominant employer had changed since the previous year, and the subsequent employer was a new firm in the data. We note that this measure of exit to spin-out includes not just firm founders but also nonfounding employees in the first year.

Firm's wage dispersion. We followed other studies of compensation dispersion (Bloom, 1999; Bloom & Michel, 2002; Shaw et al., 2002) and used the gini coefficient to measure compensation structure. A measure of income inequality commonly used in labor economics (Bloom, 1999; Donaldson & Waymark, 1980), gini ranges between 0 and 1 and measures half the relative mean difference of the wages of any two employees selected at random from a firm's wage distribution. A gini of 1 indicates absolute inequality, wherein one person in the firm earns 100

percent of the wages; a gini of 0 indicates absolute equality, under which everyone in the firm makes the exact same wage. The gini coefficient (G) can be calculated as

$$G = \frac{2\sum_{i=1}^{n} iy_i}{n\sum_{i=1}^{n} y_i} - \frac{n+1}{n}$$

(2)

where y_i is the salary of the ith ranked individual in a firm and is indexed in nondecreasing order—that is, $i = 1$ indicates the lowest-paid person, and n is the number of people in the firm.

High- and low-performing employees. We followed prior work documenting a high correlation of earnings with individual performance (cf. Castanias & Helfat, 1991, 2001; Parsons, 1977) and relied on objective wage data to identify high and low performers (e.g., Elfenbein et al., 2010). In keeping with our theoretical framework and with previous research (Pfeffer & Davis-Blake, 1992; Shaw & Gupta, 2007; Zenger, 1992), we identified high and low performers using employees in their own firms as referents (Zenger, 1992). Elfenbein et al. (2010) accounted for individual characteristics (e.g., educational levels) and then defined high and low performers as individuals in the top and bottom 10 percents of a firm's wage distribution. Extending their framework to our context, we employed a wage residual approach in identifying extreme performers, to control for pay differences associated with observable characteristics. For example, using a raw wage distribution rather than the wage residual distribution might cause younger individuals to be identified as low performers when in fact they are high performers in their cohort. We developed our measure using two steps. First, we estimated the following OLS wage equation for each person-year in our untrimmed sample:

$$\text{Log } w_{it} = \beta_0 + \beta_1 X_{it} + \gamma Z_{jt} + \delta_{\text{STATE}} + \lambda_{\text{MSA}} + \eta_t + u_{it} ,$$

(3)

where w_{it} is i's total taxable compensation in year t (including salary, bonuses and other reported taxable income), X_{it} is a vector of individual characteristics, including continuous variables for age and tenure (and their squares) and dummy variables for race, gender, education (see details below), and whether tenure is left-censored (this control was important because our data began in the middle of the careers of some employees). Z_{jt} is a vector of firm-level characteristics including a yes/no dummy for location in an MSA, its interaction with a continuous measure of the number of

firms in the MSA, and a continuous term measuring the number of in-state competitors. We also included dummy variables (δ_{STATE}, λ_{MSA}, η_t) capturing the ten states in our sample, MSA (over 150 in our sample), and year (15 in our sample) for each observation. The error term is captured by u_{it}.

In the second step, we used the residual u_{it} distribution from the estimated equation to identify high and low performers as those individuals in the top 10 percent and the bottom 10 percent, respectively, of a focal individual's current firm. Doing so permitted us to identify those whose compensation was notably higher or notably lower than predicted for colleagues with similar observable characteristics in the same firm. We then created two dummy variables. The first takes a value of 1 if individual i was identified as a high performer at time t. The second took 1 if i was identified as a low performer at time t.

Defining high and low performers based on their wage residual had two primary advantages. First, identification via comparison with colleagues with similar observable characteristics was important for our hypotheses, which focus on firm-level social comparisons as relevant to employee exit. Second, Hypotheses 3 and 4 focus on individual performance differences as impacting moves to entrepreneurial ventures or established firms. Using the wage residual instead of raw wages to identify high and low performers allowed us to avoid confounding variables, such as age and tenure, that may drive earnings but not a penchant for entrepreneurship.

Years since mobility. To test Hypothesis 5, we created a continuous variable that counts the number of years since an individual last exited a firm. This "clock" is reset whenever an individual changes dominant employers. For example, if an individual left a firm in 1999, years since mobility was coded 1 in the 2000 and a value of 2 in 2001.

Control variables. For Hypothesis 1–4, we included quadratic term controls for annual earnings, age, and firm tenure. Additionally, we included gender and race dummy variables, coded 1 for male and white, respectively. Since education may have a discontinuous effect on earnings, we included dummies for educational attainment (12 years, between 12 and 15 years, 16 years, and greater than 16 years), with the baseline group consisting of individuals with less than 12 years of education. To control for individuals with weak ties to their employer, we included a dummy for

individuals with less than one year of tenure at their firm. We also included a dummy that indicated if individuals' observed tenures were potentially left-censored because they began working at their firms before they entered the data.

For Hypothesis 5, we included quadratic terms for three time-varying individual-level variables: tenure with current firm, tenure in industry, and age. We also included firm-level averages of the demographic control variables utilized in testing Hypotheses 1–4. Since we had no firm-year fixed effects in this specification, we used the employer's gini coefficient and average payroll per worker to control for differences in compensation structure and firm performance.

RESULTS

Tables 1 and 2 contain sample means and correlations. Approximately 8 percent of individuals changed employers in any given year, and 18 percent of these were exits for new venture creation. On average, employees who changed employment earned less, were younger, and had less tenure than employees who stayed with their current employers. Other demographic variables also revealed strong similarities among individuals that choose to stay rather than exit.

(Insert Tables 1 & 2 about here)

Table 3 presents results of our tests of Hypotheses 1–4. The reference (baseline) group of employees is in the middle of the wage distribution at the firm level (employees in the 20–90 percent range).[9] Model 1 is the estimate of the impact of the interaction between employee performance and firm compensation structure on employee mobility (Hypotheses 1 and 2). The relationship of the control variables to the mobility of employees observed is consistent with extant literature: Age and being male are negatively related with mobility, and firm tenure has a U-shaped relationship with mobility. Education has a discontinuous effect on mobility, with only workers possessing some college education being more likely to be mobile relative to the reference group.

(Insert Table 3 about here)

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[9] We note that the main effect of the gini coefficient of firm wage dispersion is not reported in the tables because it was calculated at the firm-year level and, as a result, was absorbed by the firm-year fixed effects in the models. Given that our hypothesized relationships focus on the interactions of the gini coefficient with high and low performance, hypothesis testing focused on these interaction terms.

Hypothesis 1 posits that the likelihood of mobility decreases for high performers who are employed at firms with higher wage dispersion. The negative and significant interaction with firm gini supports this hypothesis: high performers are less likely to exit if they are employed at firms with higher values on the gini coefficient. A one standard deviation increase (decrease) in a firm's gini coefficient decreases (increases) the probability that a high performer will exit their current employer by 22%. Hypothesis 2, in contrast, posits that the likelihood of mobility increases for low performers who are employed at firms with higher wage dispersion. The coefficients for the interaction effects support this relationship too: low performers are more likely to exit when working for firms with high values of gini (i.e., the interaction term is positive and significant). A one standard deviation increase (decrease) in employer's gini from mean levels leads to a 4 percent increase (decrease) in the probability that a low performer exited a current employer.

Model 2, Table 3, provides the results of the tests for Hypotheses 3 and 4, which examine the likelihood, conditional on mobility, of an employee founding or joining a new firm rather than becoming employed at a different existing firm. Among the control variables, age, education, and maleness are positively related to entrepreneurship. Firm tenure has an inverted U-shaped relationship with it. As for our main variables of interest, in Hypothesis 3, we predict that high performers are more likely to be entrepreneurs if they are employed in firms with high wage dispersion The interaction between high performance and the gini is positive and significant, supporting Hypothesis 3. High performers at firms with high wage dispersion are more likely to found/join new firms than high performers at firms that do not offer extreme rewards. Performing similar calculations as described above for economic significance, we found that a one standard deviation increase (decrease) in employer pay dispersion resulted in a 6.7 percent increase (decrease) in the probability of joining a start-up. Hypothesis 4 predicts a decrease in that probability for low performers at firms with higher wage dispersion. This hypothesis was not supported, as the interaction term between low performance and firm gini is not significantly different from zero.

Finally, Table 4 depicts results of testing Hypothesis 5, which predicts an increase in an individual's earnings after an exit. Controlling for the effects of experience and prior firm tenure, we

found that the coefficient for years since mobility and its square are, respectively, positively and negatively significant, thus supporting Hypothesis 5. The economic significance of these coefficients is discussed in detail below (also see Figure 2), but we note here that an increase in mobility of one standard deviation above the mean results in a 3 percent increase in employee earnings. Given the negative and significant quadratic term, the positive trend in earnings after mobility starts to decline at 12 years, but very few observations fell in this range in our sample.

(Insert Table 4 about here)

Robustness Checks

We now turn to a series of robustness checks conducted to examine the sensitivity of our results to alternative definitions of high and low performers, alternative measures of firms' wage dispersion, alternative methods of sample trimming, and reverse causality.

Alternative definitions of high and low performers. Since our hypotheses examine high- and low-performing individuals in the context of interfirm mobility and new firm creation, it was potentially relevant to measure individual performance at the industry rather than firm level. When we defined high and low performers as individuals in the top and bottom 10 percents of the wage residual distribution of all individuals in an MSA or state, we affirmed Hypotheses 1–3 and additionally found support for Hypothesis 4 (see Table 5, panels 1 and 2).[10] Although use of wage residuals allowed us to control for observable characteristics, a potential alternative definition of high and low performers is those individuals in the top and bottom 10 percent of their firms' raw wage distributions. In Table 5, panel 3, Hypotheses 1–4 are again supported with this specification.

(Insert Table 5 about here)

Alternative measures of firm's wage distribution. To check the consistency of our results with findings based on other measures of compensation dispersion from prior research (e.g., Donaldson & Waymark, 1980; Pfeffer & Davis-Blake 1992; Shaw et al., 2002), we tested our hypotheses using the ratio of the 75th to 25th percentile of a firm's wage distribution, the ratio of firm gini to the

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[10] Given the high barriers to cross-state mobility created by bar exams, reference sets beyond state levels can be misleading due to state level differences in legal services industry characteristics variation.

average gini in a focal state, and the standard deviation of wage residuals. Computing the earnings of the individuals at the 75th and 25th percentiles of firm-level wage distribution, and using the ratio to account for greater dispersion (Cahuc & Zyllerberg, 2004), we found support for Hypothesis 1–3 (Table 6, panel 1). To account for differences in the compensation structure of a focal firm relative to other firms competing in proximate labor markets (Lippman & McCall, 1976; Topel & Ward, 1992), we divided the focal firm gini coefficient by the average gini of all legal services firms in that firm's state. The results of this specification, presented in Table 6, panel 2, again support Hypotheses 1–4. Finally, it may be argued that to truly measure performance-based incentives, dispersion in compensation structures should account for observable differences in employee characteristics such as seniority and tenure (Powell et al., 1994; Shaw & Gupta, 2007). To address this concern, we measured compensation structure using the standard deviation of a firm's employees' wage residuals (calculated via Equation 3).[11] Results of this analysis, presented in Table 6, panel 3, once again support Hypotheses 1–3.

<div align="center">(Insert Table 6 about here)</div>

Redefining the sample. We repeated the analysis while restricting the sample to only those with at least 16 years of education, to ensure that inclusion of employees with lower human capital (such as secretaries and paralegals) did not drive our results for low performers. The results (not reported because of subsampling and subsequent disclosure considerations) supported all five hypotheses.

Reverse causality. Our estimation method minimized reverse causality concerns. Given that we measured firm compensation structure at $t-1$ and mobility at t, departing employees' wages were included in the compensation structure measurement posited as influencing their exit decisions. But a legitimate concern is that departures of extreme performers might have distinct effects on our measurement of compensation structure—that is, when a firm loses a high or low performer, its compensation structure may automatically become more compressed. Our data, however, seem to

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[11] We used the standard deviation of wage residuals instead of the gini because approximately half of the wage residuals had negative values, and computation of a either a gini or a coefficient of variation using these values is not feasible (Chen, Tsaur, & Rai, 1982).

support the theoretical conjecture that compensation structures are institutionalized over time (Doeringer & Piore, 1971) and show little variation as a result of mobility events. The correlation between a firm's gini coefficient at t and at $t-1$ is .86. To address any remaining concerns, we also ran supplemental regressions (not reported to conserve space) of the Granger causality relationship between a firm's gini coefficient and the number of high performers it lost in one-, two-, three-, and four-year windows. We then performed the same analysis replacing the number of lost high performers with the number of lost low performers. Lack of significance for the lagged number of departing high or low performers in all of the models indicated that these exits did not "Granger cause" changes in the firm's gini coefficient.

In sum, we tested our hypotheses with eight different models. Support for Hypotheses 1–3 was robust across all specifications, and support for Hypothesis 4 was robust in half of them. In addition, reverse causality did not appear to drive our results.

DISCUSSION AND CONCLUSION

We analyzed how an important macro-level firm characteristic—compensation structure—interacts with micro-level differences in employee performance to explain individual decisions to stay with a current employer, move to a different existing firm, or create or join a new firm. This interaction is key to studying strategic human capital, and we have integrated work in human resource management, labor economics, strategy, and entrepreneurship to contribute new insights regarding employee mobility and entrepreneurship. We found that individuals who perform better than their peers are less likely to leave firms with more dispersed compensation structures (Hypothesis 1). However, high performers who exit more dispersed compensation structures are more likely to go to start-ups than to established firms (Hypothesis 3). As expected, our results differ for individuals on the other end of the spectrum. Those who perform less well than their peers are more likely to exit firms with more dispersed compensation structures (Hypothesis 2). In contrast to the results for high performers, results are mixed for Hypothesis 4, which predicts that as the pay dispersion of his/her former employer increases, a low performer is less likely to start/join a new firm. Finally, we find support for the conjecture that employees make these exit decisions in

order to go to the organizational setting that allows them to earn the highest returns to their combinations of skills, ability, and motivation to perform (Hypothesis 5).

To further explore the relationship between individual performance and mobile employees' preferred compensation structures, we examined transition matrices. Specifically, we assessed whether high performers were more likely to switch employment to more dispersed firms (either established ones or new ventures) to increase the match between their pay and performance, and conversely, if low performers were likely to switch employment to less dispersed firms to receive pay less closely tied to performance. Tables 7 and 8 show the compensation structures of the source and destination firms of mobile high and low performers, respectively, in our sample. We defined compressed firms as those with gini coefficients in the bottom 33 percent of the state-level distribution of firm compensation structures; average firms, as in the middle 33 percent; and dispersed firms, as in the top 33 percent.

(Insert Tables 7 & 8 about here)

Tables 7 and 8 conform to the pattern suggested by Hypotheses 1–4: high performers seek performance contingent rewards, and low performers move to firms with less emphasis on relative performance. From Table 7, mobility patterns of high performers reveals their preference for more dispersed compensation and venture creation: only 4 percent of high performers leave a dispersed compensation structure for a firm with compressed compensation, and only 20 percent leave dispersed firms for employment at firms with average compensation dispersion. Further, 68 percent of high performers leaving compressed firms are likely to either join firms that exhibit higher dispersion or engage in entrepreneurial activity. Table 8 reveals a contrasting mobility pattern for low performers; 46 percent of low performers leave dispersed firms for firms with less dispersion. Further, although 40 percent of the high performers leaving dispersed firms are likely to join start-ups, only 22 percent of the low performers leaving dispersed firms are likely to do the same.

Do these mobility patterns result in higher compensation for each type of individual after exit? Figure 2 helps illustrate the results suggested by Hypothesis 5, by showing the pre- and

postmobility wages of high and low performers in our sample categorized by the compensation structures of the firms that they left. The wages are adjusted for inflation to 2004 levels.

(Insert Figure 2 about here)

Panel 2A depicts the absolute wage levels, and panel 2B provides the percent change in earnings from two years before a mobility event. These graphs show several notable patterns. First, regardless of firm wage dispersion level, the average earnings of each group significantly differ. Within-group variation in the wages of low performers across firms with different compensation structures is low, but the wages of high performers in more dispersed firms are almost five times higher than those of high performers in compressed firms, as is consistent with the notion that more dispersed firms permit greater value appropriation by high performers (Figure 1; cf. Bloom & Michel, 2002; Coff, 1999). Second, mobility appears to enhance the earnings of high performers by 20–25 percent when they leave firms with compressed or average dispersion. Notably, this is not the case for high performers exiting dispersed firms. The rise in earnings just prior to mobility is consistent with a rise in individual prestige that permits these high performers to "cash out" of their current firms (Salamin & Hom, 2005). Given that the incidence of exits to new firms is highest for this group (40%, Table 7), the postmobility dip in earnings is consistent with a "hockey-stick" decline in compensation occurring with new venture creation as a result of reconfiguring or transferring human capital, routines, and complementary assets (Campbell, 2010). Since high performers from dispersed firms are already receiving extreme rewards, the slight decline in their earnings two years after mobility may also indicate that for this group, nonpecuniary considerations trump pecuniary ones. We note, however, that the earnings for high performers exiting dispersed firms recover and increase consistently over the next four years; this pattern fits the coefficient estimates in Table 4. Finally, low performers experience an almost 20 percent decline in earnings the year of their mobility but recover almost immediately, gaining a 10 percent increase two years after the event, regardless of their source firm's compensation structure. This pattern is consistent with

Hypothesis 5, which indicates that mobility creates a better fit between individual performance and organizational environment, even for low performers.

Limitations and Future Research

This study has several limitations that open avenues for future research. The first is the generalizability of our context. Although empirical work (Malos & Campion, 1995; Parkin & Baker, 2006) has shown that legal services firms are not exclusively tournament-based, it is probable that the legal services setting contains more of these types of firms than other industries. In addition, the mechanisms for employee entrepreneurship are likely to be different in professional services than they are in manufacturing (Teece, 2003) because of the lower overhead and greater ease of taking complementary human assets from parents to spin-outs (Campbell et al., 2010). Most importantly, law firms (like any partnership) are different from publicly traded corporations in that the same individuals who have residual claimancy also have residual rights of control. Thus, in a law firm, the same people who will benefit from the compensation structure also choose it. This is different from a public company, where at least one independent director must be on the compensation committee. Thus, further research is necessary to see if our results apply in other industry settings.

Data limitations also affect our analyses. We are unable to differentiate between vertical and horizontal pay dispersion, because we could not discern the job groups of the employees in our sample. Although a firm can implement differential rewards using either type of pay dispersion (Gerhart & Rynes, 2003), interesting questions for future work are whether vertical or horizontal pay variance more strongly influences the exit decisions of extreme performers and whether the different types of pay dispersion affect decisions to join entrepreneurial firms. Additionally, because employees are not exogenously distributed across firms with different compensation structures, our theoretical discussion and empirical results do not attribute or establish a causal relationship between compensation structures and mobility. However, this does not diminish the importance of the strong correlations found in our study.

Relying on prior literature, we assumed that entrepreneurship offers skilled employees higher rewards than working for established firms (Braguinsky & Ohyama, 2009; Gort & Lee, 2007). An

interesting topic for future research would be to examine the type of wage distribution implemented by start-ups to further refine understanding of the relationship between start-up rewards and established firm rewards. For example, do start-ups create compensation structures that are radically different from their parent firms'? How does the presence of a high performer affect the compensation structure of a start-up? Answering these questions would further illuminate employees' motivations for starting new firms.

The finding that high performers are less likely to leave firms with more dispersed compensation structures suggests several puzzles worthy of further attention. If more dispersed firms are more likely to retain high-performing employees, why don't all firms adopt dispersed wage structures? Alternatively, do mobility events cause "birds of a feather to flock together," so that firms have compressed compensation structures around lower and higher average earning levels? The two questions relate to the optimality of designing compensation structures that encompass the multiple issues related to recruitment, retention, and replenishment of talent. Firms may choose flatter wage structures to encourage cooperation and reduce envy (Lazear, 1989; Nickerson & Zenger, 2008), especially when employees are engaged in interdependent tasks (Bloom, 1999; Shaw et al., 2002). Or compensation structures may exhibit inertia resulting from institutionalization (Doeringer & Piore, 1971). Alternatively, compensation structures need to account for the differing levels of information available in rookie and senior labor markets (Agarwal, Campbell, Carnahan, & Franco, 2010; Jovanovic, 1979). These questions underscore the need for future research on the effects of recruitment/retention factors on heterogeneity in compensation structures.

In a similar vein, another topic for future research is the persistence of extreme individual performance and firms' compensation structures after different types of mobility events have occurred. Do high performers remain high performers after joining a start-up? Do low performers? Are average performers more likely to become high performers at a start-up or at an established firm? Under what conditions does employee mobility affect firm wage structure? Further research on these questions would add to understanding of the interaction between individual characteristics and decisions and firm characteristics and strategies.

Contributions

This study makes a number of contributions to the fields of research that are concerned with the strategic management of human capital. To scholars interested in the strategic management of knowledge, our evidence suggests that firm compensation structure has important consequences for the diffusion and transfer of knowledge to competing organizations and that practices for the management of human resources and knowledge are inextricably linked (Coff, 1997). To the extent that skilled employees possess disproportionate amounts of a firm's knowledge (Zucker et al., 2002), providing access to extreme rewards helps limit exits of these individuals and keeps their knowledge inside firm boundaries. However, providing extreme rewards is not a panacea for minimizing the potentially adverse effects of knowledge leakage resulting from employee exit. High performers are more likely to create or join new firms when leaving parents that provide extreme rewards, and the presence of these start-ups—competitive doppelgangers in which the parents' best former employees utilize knowledge (Agarwal et al., 2004), routines (Wezel et. al., 2006), and complementary assets (Campbell et al., 2010) transferred from the parents—has worse consequences for parent firm performance than the exits of high performers to established competitors (Campbell et al., 2010; Phillips, 2002; Wezel et al., 2006).

Research on employees as important conduits of knowledge has generally examined mobility and entrepreneurship in isolation. We contribute to the growing literature on the interrelation of these two phenomena (Campbell et al., 2010; Groysberg et al., 2009; Phillips, 2002) by identifying the availability of extreme rewards in a firm as a key contingency to employees' decision to move to an established competitor or form a new firm. Our insight that compensation structure affects the exit decisions of employees differently depending on their performance is particularly important because it helps illuminate why high performers are more likely to found or join start-ups—they may have already maximized the performance-contingent rewards available in the existing labor market.

We contribute to the HR literature on turnover by highlighting that not all mobility events are created equal—the destination of a departing employee is important to consider when studying voluntary turnover. Research on turnover often does not distinguish between exits to established vs.

new firms, but the motives for and competitive outcomes of these two types of mobility vary considerably (Campbell et al., 2010; Klepper & Thompson, 2010). Managers need to know that they are competing with both new and established competitors for the services of high-performing employees and design their HR practices accordingly. Our results suggest that firms may need to complement compensation structures that provide for extreme rewards with other HR practices that encourage the retention of potential entrepreneurs.

We make several contributions to the strategic entrepreneurship literature. A significant body of work examines the correlations of individual characteristics with entrepreneurial decisions (Campbell et al., 2010; Lazear, 2005; Nicolau et al., 2008; Robinson & Sexton, 1994). A parallel body examines the relationships between firm-level technology and knowledge configuration strategies (Agarwal et al., 2004; Franco & Filson, 2006) and entrepreneurial decisions. In combination, these studies suggest that good parents make good progeny (Agarwal et al., 2004), partly because good employees are more likely to be progenitors (Campbell et al., 2010; Groysberg et al., 2009).   We integrated across these research streams to show how by a parent firm's structure does not uniformly affect the entrepreneurial exit decisions, because employees vary in their aspirations and ability to create new ventures. Our study highlights the importance of compensation structures of parents, and that future work should address HR and knowledge management practices when examining spin-outs.

We also provide some preliminary links between research on employee capabilities (Campbell et al., 2010; Groysberg et al., 2009; Phillips, 2002) and research on incentives for entrepreneurship (Hamilton, 2000). Our results suggest that while firms can structure compensation to retain high performers, sometimes wage policies are not enough. High performers in a firm that provides extreme rewards can likely already earn wages closely commensurate with the value of their talents. Our finding that high performers who leave firms with highly dispersed compensation are more likely to go to new ventures, sometimes forsaking pecuniary rewards in the short term, suggests that these individuals may not be satisfied with the nonpecuniary returns to their ability at their old firms. Consequently, our results suggest that a firm's highest performers—the employees

most capable of transferring routines and complementary assets——may also have the strongest nonpecuniary incentives for entrepreneurship.

In summary, analyzing extreme performers' exit decisions and firms' compensation structures yielded strong support for the idea that high performers are less likely to leave firms that offer extreme rewards, but if they do leave, they are more likely to create or join new ventures. Our results also strongly indicate that low performers are more likely to leave firms with extreme rewards and to some extent indicate that these low performers are less likely to create or join new ventures on exiting firms with extreme rewards. In addition, we found that employees joined firms that provided the best returns to their skills, ability, and motivation. In total, our findings suggest that individuals choose the compensation structure that is the best fit to their pecuniary and nonpecuniary expectations and that firms can influence the mobility behavior of their employees through their choice of compensation structure. Thus, our study illuminates the relationship between individual decisions and firm structures. Scholars of employee mobility and entrepreneurship have understudied this relationship. We hope this study stimulates further discussion and examination of how individuals' decisions and firm structure operate in concert and influence each other.

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TABLE 1: Descriptive Statistics

		Full Sample		Mobility-Only Sample	
		Mean	SD	Mean	SD
v1	Mobility?	0.08	0.27	1.00	0.00
v2	Mobility to startup?	0.01	0.12	0.18	0.38
v3	Annual earnings	80373.43	387849.00	62004.18	86642.53
v4	Age	40.90	10.48	38.39	9.52
v5	Education = 12 years?	0.13	0.34	0.14	0.35
v6	Education >12, <15	0.26	0.44	0.28	0.45
v7	Education =16 years	0.30	0.46	0.30	0.46
v8	Education>16 years	0.26	0.44	0.25	0.43
v9	Tenure	3.29	2.72	2.41	2.09
v10	Tenure < 1 year?	0.28	0.45	0.40	0.49
v11	Tenure is censored?	0.19	0.40	0.11	0.31
v12	Male?	0.38	0.49	0.33	0.47
v13	High performer? (Top 10% firm wage residual)	0.09	0.29	0.06	0.24
v14	Low performer? (Bottom 10% firm wage residual)	0.07	0.26	0.08	0.28
v15	High peform*Gini of firm's wage distribution	0.03	0.10	0.02	0.08
v16	Low peform*Gini of firm's wage distribution	0.02	0.09	0.03	0.10
v17	Years of experience	4.21	3.02	3.77	2.66
v18	Years since mobility	0.70	1.66	0.00	0.00

Note: n=1,869,633 in the full sample and n=149,392 in the mobility-only sample.

TABLE 2: Correlation Matrix

		v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16	v17	v18
								Correlations for Full Sample											
v1	Mobility?	1.00																	
v2	Mobility to startup?	0.41	1.00																
v3	Annual earnings	-0.01	0.00	1.00															
v4	Age	-0.07	-0.01	0.04	1.00														
v5	Education = 12 years?	0.00	-0.01	-0.02	-0.07	1.00													
v6	Education >12, <15	0.01	0.00	-0.02	0.01	-0.24	1.00												
v7	Education =16 years	0.00	0.00	0.00	0.05	-0.26	-0.39	1.00											
v8	Education>16 years	-0.01	0.00	0.03	0.03	-0.24	-0.36	-0.39	1.00										
v9	Tenure	-0.10	-0.02	0.03	0.26	-0.04	-0.02	0.02	0.05	1.00									
v10	Tenure < 1 year?	0.08	0.00	-0.02	-0.14	0.03	0.02	-0.01	-0.04	-0.58	1.00								
v11	Tenure is censored?	-0.07	-0.03	0.01	0.08	-0.07	-0.05	0.03	0.10	0.34	-0.31	1.00							
v12	Male?	-0.03	-0.01	0.09	0.01	0.02	-0.05	-0.05	0.07	-0.01	0.01	-0.02	1.00						
v13	High performer? (Top 10% firm wage residual)	-0.03	-0.01	0.12	0.04	0.01	0.01	0.00	-0.02	0.01	0.00	0.00	0.09	1.00					
v14	Low performer? (Bottom 10% firm wage residual)	0.01	0.00	-0.03	0.05	-0.04	-0.04	0.00	0.08	0.06	-0.05	0.02	0.06	-0.09	1.00				
v15	High peform*Gini of firm's wage distribution	-0.04	-0.01	0.17	0.07	0.00	0.00	0.00	0.00	0.03	-0.02	0.01	0.12	0.95	-0.08	1.00			
v16	Low peform*Gini of firm's wage distribution	0.01	0.00	-0.03	0.05	-0.04	-0.04	0.00	0.07	0.06	-0.05	0.01	0.04	-0.08	0.95	-0.08	1.00		
v17	Years of experience	-0.04	-0.02	0.03	0.30	-0.08	-0.03	0.04	0.09	0.67	-0.30	0.13	-0.04	0.02	-0.01	0.04	0.00	1.00	
v18	Years since mobility	-0.12	-0.05	0.01	0.04	-0.03	0.00	0.01	0.02	0.03	-0.03	-0.20	-0.03	0.01	-0.03	0.01	-0.02	0.40	1.00

TABLE 3: Mobility and Entrepreneurship for High and Low Performers

	Model 1 DV: Mobility		Model 2 DV: Mobility to Spin-out | Mobility	
High performer? (Top 10% firm wage residuals)	-0.0067 **	(0.0024)	-0.0092	(0.0143)
Low performer? (Bottom 10% firm wage residuals)	0.0087 **	(0.0026)	-0.0155	(0.0108)
High peform*Gini of firm's wage distribution	-0.0458 **	(0.0066)	0.1304 **	(0.0455)
Low peform*Gini of firm's wage distribution	0.0349 **	(0.0076)	-0.0474	(0.0313)
Age	-0.0011 **	(0.0001)	0.0020 **	(0.0007)
Age^2	0.0000	(0.0000)	0.0000 *	(0.0000)
Years of Education = 12	0.0007	(0.0011)	-0.0038	(0.0042)
Years of Education>12 and <15	0.0030 **	(0.0011)	0.0016	(0.0039)
Years of Education = 16	0.0018	(0.0011)	0.0063	(0.0040)
Years of Education >16	-0.0004	(0.0011)	0.0116 **	(0.0041)
Tenure	-0.0208 **	(0.0005)	0.0178 **	(0.0020)
Tenure^2	0.0013 **	(0.0000)	-0.0011 **	(0.0002)
Tenure is less than one year?	0.0000	(0.0013)	0.0051	(0.0037)
Tenure is censored?	-0.0136 **	(0.0011)	0.0061	(0.0054)
Male	-0.0155 **	(0.0005)	0.0236 **	(0.0021)
Constant	0.1832 **	(0.0032)	0.0731 **	(0.0138)
N Observations	1869633		149392	
N Groups	87273		41306	
R^2	0.0148		0.0218	

Note: Models control for race and include firm-year fixed effects. Models use robust standard errors (clustered by firm-year)
** Significant at the 1% level; * Significant at the 5% level; † Significant at the 10% level

TABLE 4: Post-Mobility Employee Wages

	Model 1 DV: Ln(Earnings)	
Individual Level Variables		
Years since mobility	0.0243 **	(0.0007)
Years since mobility^2	-0.0010 **	(0.0001)
Years of experience	0.0524 **	(0.0005)
Years of experience^2	-0.0024 **	(0.0000)
Tenure	0.0169 **	(0.0006)
Tenure^2	-0.0014 **	(0.0001)
Tenure is less than one year?	-0.0114 **	(0.0007)
Tenure is censored?	0.0293 **	(0.0029)
Firm Level Controls		
Average age	0.0208 **	(0.0011)
Average age^2	-0.0003 **	(0.0000)
Average education =12	-0.0458 **	(0.0103)
Average education >12,<15	-0.0882 **	(0.0099)
Average education=16	-0.1178 **	(0.0100)
Average Education >16	-0.1449 **	(0.0104)
Average tenure	-0.0666 **	(0.0008)
Average tenure^2	0.0050 **	(0.0001)
Average male	-0.1353 **	(0.0050)
Average earnings	0.0000 **	(0.0000)
Average earnings^2	0.0000	(0.0000)
Gini	0.5553 **	(0.0126)
N observations	1,869,633	
N Groups	488,284	
R^2	0.09	

Note: Models control for race and include individual, year, and MSA fixed effects.
Models use robust standard errors (clustered by firm-year)
** Significant at the 1% level; * Significant at the 5% level; [†] Significant at the 10% level

TABLE 5: Robustness Check: Alternative Measures of High and Low Performers

	Model 1 DV: Mobility		Model 2 DV: Mobility to Spin-out | Mobility	
Panel 1: Wage Residual at MSA Level				
High performer? (Top 10% MSA wage residual)	0.0122 **	(0.0031)	-0.0275 †	(0.0145)
Low performer? (Bottom 10% MSA wage residual)	0.0125 **	(0.0022)	0.0093	(0.0086)
High Performer*Gini of firm's wage dist	-0.0849 **	(0.0075)	0.1097 **	(0.0414)
Low Performer*Gini of firm's wage dist	0.0315 **	(0.0066)	-0.0889 **	(0.0255)
Panel 2: Wage Residual at State Level				
High performer? (Top 10% State wage residual)	-0.0043	(0.0032)	-0.0076	(0.0170)
Low performer? (Bottom 10% State wage residual)	0.0167 **	(0.0021)	-0.0048	(0.0091)
High Performer*Gini of firm's wage dist	-0.0588 **	(0.0074)	0.1039 *	(0.0466)
Low Performer*Gini of firm's wage dist	0.0332 **	(0.0063)	-0.0672 **	(0.0257)
Panel 3: Raw Wages at the Firm Level				
High performer? (Top 10% firm raw wages)	0.0108 **	(0.0025)	-0.0112	(0.0162)
Low performer? (Bottom 10% firm raw wages)	0.0064 *	(0.0028)	0.0014	(0.0100)
High peform*Gini of firm's wage distribution	-0.0810 **	(0.0071)	0.1477 **	(0.0507)
Low peform*Gini of firm's wage distribution	0.0743 **	(0.0084)	-0.0876 **	(0.0292)

Note: Models include all controls (including race and firm-year fixed effects) as in Table 3
Models use robust standard errors (clustered by firm-year)
** Significant at the 1% level; * Significant at the 5% level; † Significant at the 10% level

TABLE 6: Robustness Checks: Alternative Measures of the Firm's Wage Structure

	Model 1 DV: Mobility		Model 2 DV: Mobility to Spin-out | Mobility	
Panel 1: 75th percentile / 25th percentile				
High performer? (Top 10% firm wage residuals)	-0.0159 **	(0.0018)	0.0117	(0.0108)
Low performer? (Bottom 10% firm wage residuals)	0.0105 **	(0.0025)	-0.0261 **	(0.0079)
High Performer*75/25 of firm's wage dist	-0.0027 **	(0.0007)	0.0092 *	(0.0046)
Low Performer*75/25 of firm's wage dist	0.0042 **	(0.0010)	-0.0025	(0.0031)
Panel 2: Gini / Average Gini in state				
High performer? (Top 10% firm wage residuals)	-0.0043 †	(0.0024)	-0.0123	(0.0147)
Low performer? (Bottom 10% firm wage residuals)	0.0075 **	(0.0026)	-0.0113	(0.0110)
High Performer*Gini/Avg State Gini	-0.0166 **	(0.0021)	0.0441 **	(0.0147)
Low Performer*Gini/Avg State Gini	0.0121 **	(0.0024)	-0.0188 †	(0.0101)
Panel 3: Standard Deviation of Employees' Wage Residuals				
High performer? (Top 10% firm wage residuals)	-0.0103 **	(0.0025)	-0.0108	(0.0164)
Low performer? (Bottom 10% firm wage residuals)	0.0118 **	(0.0030)	-0.0179	(0.0125)
High Performer*SD of firm's wage residuals	-0.0249 **	(0.0052)	0.0933 **	(0.0355)
Low Performer*SD of firm's wage residuals	0.0182 **	(0.0063)	-0.0291	(0.0257)

Note: Models include all controls (including race and firm-year fixed effects) as in Table 3
Models use robust standard errors (clustered by firm-year)
** Significant at the 1% level; * Significant at the 5% level; † Significant at the 10% level

TABLE 7:**Transition Matrix for High Performers**

		Exits What Type of Pay Structure?								
		Compressed		Average		Dispersed		Total	
Joins What Type of Pay Structure?	Compressed	739	32%	356	8%	70	4%	1,165	13%
	Average	746	32%	2,503	54%	386	20%	3,635	41%
	Dispersed	380	16%	961	21%	690	36%	2,031	23%
	Startup	447	19%	823	18%	762	40%	2,032	23%
	Total	2,312	26%	4,643	52%	1,908	22%	8,863	100%

TABLE 8: Transition Matrix for Low Performers

		Exits What Type of Pay Structure?								
		Compressed		Average		Dispersed		Total	
Joins What Type of Pay Structure?	Compressed	480	29%	560	8%	466	13%	1,506	12%
	Average	518	31%	4,926	69%	1,157	33%	6,601	53%
	Dispersed	343	21%	1,068	15%	1,133	32%	2,544	21%
	Startup	312	19%	632	9%	776	22%	1,720	14%
	Total	1,653	13%	7,186	58%	3,532	29%	12,371	100%

FIGURE 1
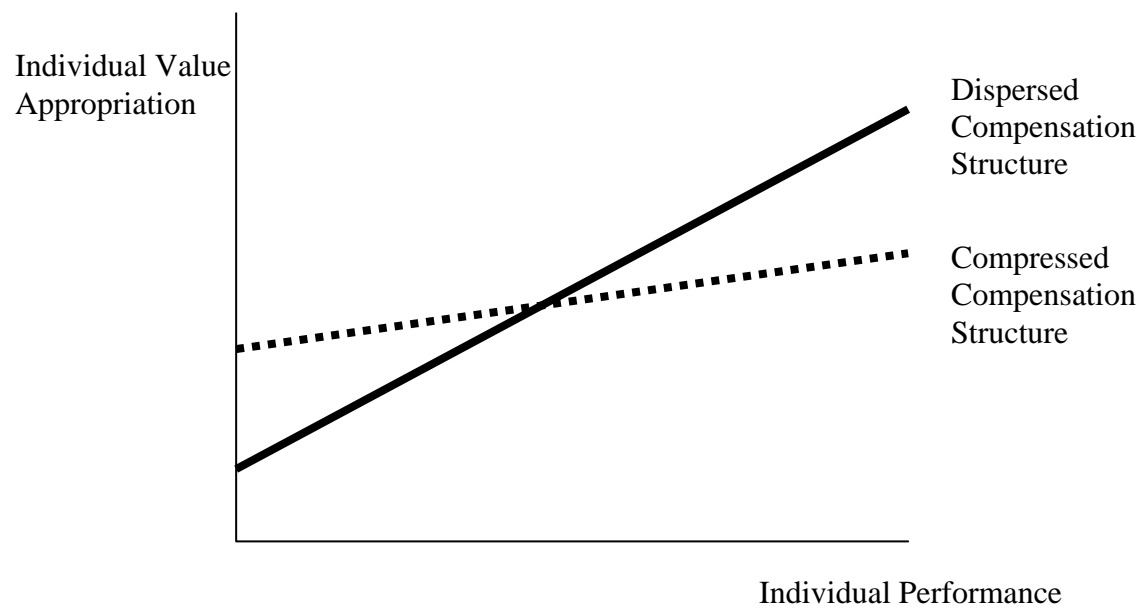**Compensation Structures, Individual Performance and Value Appropriation**

FIGURE 2: Earnings Patterns for Mobile Extreme Performers