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**Human Resource Slack, Human Capital  
Risk, and Firm Performance: Should Firms  
Grow Employees Faster Than Sales?**

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## **Human Resource Slack, Human Capital Risk, and Firm Performance: Should firms grow employees faster than sales?**

### **ABSTRACT**

Human resource slack is increasingly recognized as an important form of slack that influences organizational outcomes. However, the construct itself is still unclear, particularly in regards to its relationship with different forms of firm growth. We address this by conceptualizing HR slack as growing employees at a faster rate than growing sales. We utilize a sample of firms that are at a critical moment of growth: after going public. Analysis of 1,437 firm-year observations comprised of 330 initial public offerings (IPO) tracked over the course of five years indicates that the relationship between HR slack and profitability is curvilinear (inverted-U shape), and that this curvilinear relationship is moderated by human capital risk factors faced by the firm.

## INTRODUCTION

Organizational slack is an important and well explored topic in the entrepreneurship and strategic management literatures (Bradley, Wiklund, & Shepherd, 2011; George, 2005). The concept of slack is articulated in the classic works of Penrose (1959) and Cyert and March (1963). Collectively, these works proposed that slack resources spur organizational growth (Penrose, 1959) and organizational search processes that facilitate experimentation and change (Cyert & March, 1963; Greve, 1998). Indeed, a meta-analysis by Daniel, Lohrke, Fornaciari, and Turner (2004) found that firms with greater slack resources typically experience higher levels of firm performance than their lower-slack counterparts. Nevertheless, the benefits of slack are not entirely clear. For example, some research indicates that innovation is spurred by resource constraint, rather than resource abundance (Baker & Nelson, 2005; Keupp & Gassmann, 2013). Others have noted that financial slack is a “double-edged sword,” concurrently facilitating growth and stifling entrepreneurial management styles which lead to growth (Bradley et al., 2011).

In this paper, we focus on a particular form of slack that has steadily generated scholarly attention—*human resource (HR) slack*. We suggest that HR slack is a unique form of organizational slack that is the result of *how* firms grow. The work of Welbourne, Neck, and Meyer (1999) and Mishina, Pollock, and Porac (2004) provide a grounding for the concept of HR slack, and more recent work further develops the HR slack construct (Lecuona & Reitzig, 2014; Vanacker, Collewaert, & Paeleman, 2013; Wang, Choi, Wan, & Dong, 2013). Despite the significant contributions of prior research, important knowledge gaps exist. Some suggest that HR slack has a generally

negative impact on firm performance (Lecuona & Reitzig, 2014), while others indicate that HR slack can improve firm performance above other, more traditional forms of slack, such as financial slack (Vanacker et al., 2013). Missing in this literature are three critical issues: (1) a clear discussion of what HR slack is; (2) when HR slack is beneficial; (3) and, conversely, when it may be detrimental.

On the first point, it is noteworthy that the most common conceptualization of HR slack in the extant literature relates to employee productivity—e.g., the number of employees needed to generate a given unit of sales (Mishina et al., 2004). However, we follow the initial conceptualization of HR slack as outlined by Welbourne et al. (1999)—that is, HR slack relates to growing the number of employees at a faster rate than growing sales. To provide greater nomological clarity on the HR slack construct, we will situate HR slack within the slack and organizational growth literatures. We believe it is necessary to clarify the HR slack construct to facilitate clearer theorizing on its consequences, which relates to the second and third points listed above—that is, when HR slack may be helpful or detrimental to an organization.

The lack of develop on these critical issues is significant. Given that employees are an organizational resource that are valuable and can be a source of competitive advantage (Barney, 1991; Shaw, Park, & Kim, 2013), further development of the human resource slack construct is a natural and needed extension of the organizational slack literature. As such, a clear discussion of *how* firms grow will contribute to the development of the slack literature. We tie together the organizational growth and slack literatures by addressing the following research question: what is the relationship between HR slack and profitability? We explore this issue at a time of significant

organization change that places unique and important demands on resources: after an initial public offering (IPO). IPOs are a particularly useful context in which to study HR slack, as firms are undergoing significant organizational change that typically ushers in a time of pressure to substantially grow the organization (Arend, Patel, & Park, 2014).

Our analysis points to the possibility that pursuing an employee growth strategy for the purposes of acquiring human resource slack can improve firm profitability up to a point, though excess levels are detrimental to profitability. In other words, there is a curvilinear (inverted U) relationship between HR slack and performance. Moreover, our research indicates that the nature of this relationship is contingent on risks associated with a firm's human capital (e.g., dependence on employees, labor market conditions, etc.).

We make three principal contributions with our research. First, we contribute to the organizational slack literature by further developing and clarifying the concept of HR slack. While this concept has recently received scholarly attention, its nomological network is still unclear. For example, does HR slack *result* in organizational growth (Mishina et al., 2004), or is it caused by *how* organizations grow? We also contribute to the slack literature by investigating the performance consequences of HR slack.

Organizational slack research has moved from the question of “whether slack is good for performance to a more complex set of questions: How much of what form of slack is good for performance? and When is slack good for performance?” (George, 2005: 672).

Our proposition that HR slack's relation to performance is non-linear, and that the nature of the relationship is contingent on human capital related risk factors, addresses both of George's (2005) comments. Finally, our research contributes to the growth literature by

looking at antecedents (growth in employees and growth in sales) that are normally viewed as dependent variables in the entrepreneurship literature (Gilbert, McDougall, & Audretsch, 2006). In other words, growth in employees vs. growth in sales represents a growth strategy that can impact firm performance.

We begin with a review of the growth literature followed by a theoretical discussion on organizational slack, and specifically focus on the concept of human resource slack. Human resource slack has recently received scholarly attention, though we believe that a clear discussion of the construct and its importance to growth-oriented organizations is warranted. Our empirical observations presented in this paper raise new questions and offer new insights for the organizational slack literature and for the field of entrepreneurship.

## **THEORY AND HYPOTHESES**

### **Venture Growth**

Despite significant research on the topic, firm growth is an organizational outcome that eludes many entrepreneurial ventures (Khair, 2010). Much of the growth literature has emphasized the problems faced by high-growth firms (Bruton & Prasad, 1997; Hambrick & Crozier, 1985; Kazanjian, 1988). For example, Hambrick and Crozier (1985) cited instant size, a sense of infallibility, internal turmoil, and extraordinary research needs as challenges of growth. Other growth studies have systematically identified differences between high and low growth firms (Barringer, Jones, & Neubaum, 2005; McDougall, Covin, Robinson, & Herron, 1994; Siegel, Siegel, & Macmillan, 1993). For example, high-growth firms tend to engage in more inter-organizational relationships and place greater emphasis on employee training and development than

low-growth firms (Barringer et al., 2005). Though existing studies make strong contributions to the literature, research is sparse on the effectiveness of strategies employed by high-growth firms (Gilbert et al., 2006; Hoy, McDougall, & Dsouza, 1992), and accumulated knowledge remains scattered and limited (Shepherd & Wiklund, 2009).

Shepherd and Wiklund (2009) reviewed growth studies and found that growth studies utilized a variety of measures of growth, with sales growth and employee growth as the two most common. Indeed, the complex, multi-dimensional nature of venture growth may contribute to the lack of understanding regarding the *consequences* of growth, as most scholarship focuses on the antecedents of growth (Leitch, Hill, & Neergaard, 2010).

Because high-growth is indicative of fast-paced change and firms must continue to perform yet remain flexible and adaptable in the face of frequent change and further growth (Brown & Eisenhardt, 1997), the organizational slack literature provides an appropriate foundation from which to build. In the following section, the organizational slack literature is reviewed, and the established construct of human resource slack (Mishina et al., 2004) will be expanded upon and conceptualized as a strategic asset for high-growth entrepreneurial firms.

### **Organizational Slack**

Organizational slack scholars predict that “slack resources provide the means for achieving flexibility in developing strategic options” (Greenley and Oktemgil, 1998: 377). Bourgeois’ (1981) definition of slack, adapted from Cyert and March (1963), is the predominant definition in the organizational slack literature (Daniel et al., 2004; Marino & Lange, 1983; Meyer, 1982; Sharfman, Wolf, Chase, & Tansik, 1988). He defines



organizational slack as "...that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment" (Bourgeois, 1981:30).

Slack is not an environmental endowment per se, but rather it is a strategic choice (Bradley, Shepherd, & Wiklund, 2010) that is facilitated by environmental conditions (Dess & Beard, 1984). The primary benefits of slack are to act as a buffer to protect a firm from its environment (Marino & Lange, 1983; Thompson, 1967), and enable a firm to engage in search processes that may yield new innovations (Cyert & March, 1963; Greve, 2003).

Most of the existing research pertaining to organizational slack emphasizes financial measures of slack. Greenley and Oktemgil (1998) measured two types of slack, generated slack and invested slack, as suggested by Chakravarthy (1986). Within these two categories various financial ratios were used to measure organizational slack (e.g. debt/equity, sales per employee, cash flow/investment, current assets/current liabilities). A meta-analysis of studies utilizing financial-based measures of slack indicates that firms generating and investing in slack resources have stronger performance than their counterparts with lower slack, even when controlling for industry-relative performance (Daniel et al., 2004).

Though the meta-analysis provides excellent empirical evidence to the *financial* benefits of slack, other outcomes from organizational slack are not entirely benign. Nohria and Gulati (1996) note that the presence of slack resources can lead to inefficient and undisciplined organizational processes. Similarly, Keupp and Gassmann (2013)

found that resource constraints encourage experimentation, and are therefore more likely to lead to a radical innovation. The variety of slack resources, and their different implications for different organizational outcomes, lead George (2005) to suggest that questions of “how much of what form of slack” are especially important (George, 2005: 672). We therefore now focus our attention on human resource slack.

### **Human Resource Slack**

Employees can be a strategic investment, as the accumulation of high quality employees may be able to benefit organizational competitiveness (Coff & Kryscynski, 2011; Shaw et al., 2013). While extant work on HR slack tends to operationalize it as an industry-adjusted ratio of employees to sales (Mellahi & Wilkinson, 2010; Mishina et al., 2004), we conceptualize HR slack as a firm growing its employee base faster than its sales. This distinction is important, as a static ratio of employees to sales is reflective of employee productivity, rather than the accumulation of human resources in excess of sales growth, and it is the issue of employee growth that is particularly relevant to the firm value-creation conversation (Davila, Foster, & Gupta, 2003). We will discuss measurement related issues in more detail in the Methods section, though it is important to note that we are utilizing a measure that compares rates of change rather than a static measure of HR slack.

HR slack can be viewed as an investment that can prepare an organization for growth at critical periods, and is especially effective in facilitating exploitative learning and growth (Voss, Sirdeshmukh, & Voss, 2008). The pressures placed on high-growth firms, including extensive resource needs and tumultuous pressures that result from “instant size,” are well documented in the entrepreneurship literature (Bruton & Prasad,

1997; Covin & Slevin, 2000; Hambrick & Crozier, 1985). We suggest that human resource slack can relieve some of these pressures of high growth and enable firms to achieve higher levels of profitability. Growing employees faster than sales enables firms to create “contingent labor” that can smooth out some of the unexpected demands placed on firms during times of expansion and diversification, such as an IPO (Cardon, 2003). Indeed, startups that grow their “headcount” tend to have higher valuations than their peers (Davila et al., 2003).

However, HR slack is subject to the same limitations as other forms of slack. Prior research indicates that excess levels of slack resources promotes inefficiencies and undisciplined R&D investments in “pet projects” rather than opportunities closely-aligned with organizational competencies (Nohria & Gulati, 1996). Further, slack resources fuel a firm’s ability to experiment with different growth initiatives, yet simultaneously, and paradoxically, discourages entrepreneurial management styles, which in turn have a direct effect on firm growth (Bradley et al., 2011). In the specific case of HR slack, an excessive amount of growth in employees relative to sales may diminish the organization’s overall “sense of urgency,” which is a particularly salient issue during times of significant organizational change, such as an IPO event (Kotter, 1995; Welbourne & Cyr, 1999)

Taken together, there is a tension between the potential benefits and the potential liabilities entailed with HR slack. To reconcile the benefits and liabilities of slack, prior research indicates that the relationship between different forms of slack and various forms of performance (e.g., innovative or financial performance) is curvilinear (inverted U-shape) such that the *optimization* of slack, not simply maximization or minimization,

has the strongest performance outcomes (George, 2005; Nohria & Gulati, 1996; Tan & Peng, 2003).

Similarly, we posit that HR slack needs to be optimized to promote firm performance. After an IPO, firms with HR slack can (1) build a “cushion” to allow for flexibility and adaptability during its stage of high growth, (2) invest and prepare for future growth to remain ahead of the competition, and (3) build knowledge for product and service innovation. However, HR slack is best suited to certain forms of growth; while it facilitates predictable market expansion, it is less effective in addressing unpredictable product expansion (Mishina et al., 2004). Further, excess levels of HR slack may diminish the overall sense of urgency, and also may diminish employee rewards—and therefore incentives—for innovative activities. Given the preceding observations, we posit that firms need to optimize their level of HR slack soon after an IPO. We hypothesize the following:

*Hypothesis 1: The relationship between HR slack and profitability is curvilinear (inverted U-shape).*

### **The Moderating Role of Human Capital Risk Factors**

Though going public is seen as a successful organizational outcome, firms undergoing an IPO face numerous and significant forms of risk (Welbourne & Andrews, 1996). One form of risk that is particularly salient to the study of HR slack is human capital related risk. This includes a firm’s dependence on its employees, its usage of union employees, or the competitiveness of the labor market. These factors each influence a firm’s ability to flexibly deploy, or easily acquire and/or divest, human resources. As such, firms that face high levels of human capital risk possess “sticky” and “non-fungible” (interchangeable) human resources (Mishina et al., 2004).

Organizations that face high human capital risk are particularly likely to benefit from HR slack. Just as financial slack buffers firms in hostile environments (Bradley et al., 2010), HR slack is beneficial for firms that face competitive pressures that make it difficult to hire employees *ad hoc* (Lecuona & Reitzig, 2014). Due to the difficulty of quickly acquiring and deploying human resources, caused by issues such as unionization or a competitive labor market, a firm may benefit from possessing higher levels of HR slack with which it can act.

Despite the difficulty of applying HR slack to novel forms of explorative learning (Voss et al., 2008), firms with high levels of human capital risk face greater hazard by turning to a potentially unfriendly labor market to acquire new human resources. For example, they may engage in unproductive “bidding wars” for HR talent, or be unable to attract the appropriate employees in the desired timeline to execute a given task. In other words, firms facing high levels of human capital related risk may benefit from having higher levels of HR slack to act as a “buffer” against the risk. As such, the inverted U relationship we previously hypothesized will exhibit more of a positive and linear trend with profitability when human capital risk factors are high. We therefore hypothesize the following:

*Hypothesis 2: Human capital risk factors positively moderate the relationship between HR slack and profitability, such that the inverted U-shape relationship between HR slack and profitability reverses and exhibits a more positive linear trend at high levels of human capital risk factors, and exhibits a more negative trend at low levels of human capital risk factors.*

## **RESEARCH METHODS**

### **Sample and Data**

The sample frame used in our analysis consists of firms that implemented their IPO in 1993. We collected financial data on these firms for the following five years, until

1998. Although approximately 700 firms implemented their IPO in 1993, the sample was narrowed after deleting those firms that (1) did not have a product/service, employees, or were real estate trusts; or (2) did not have data in Compustat. Our final sample size for this study is 330 IPO firms and 1,437 firm-year observations. As some firms are delisted during the period of our study, we have an unbalanced panel. Data sources include COMPUSTAT, firm prospectuses, and *The IPO Reporter*.

The average firm in the sample was 8.4 years old (s.d. 9.62) at the time of the IPO with an average total employment of 847 (s.d. 2,450.56). Using the Standard Industrial Classification (SIC) index, the highest concentration of new ventures was in manufacturing (53.33%). A total of 19.70% were in the service industry and 8.48% in retail trade. Other industries mining (1.82%), construction (1.52%), transportation and communication (7.27%), wholesale trade (4.55%), and financial services (3.33%).

### **Dependent Variable**

We use return on assets (ROA) as our measure for profitability, calculated as the ratio of net income to total assets. ROA is an indicator of firm profitability, earnings power, and efficiency (Brigham & Ehrhardt, 1994). Due to the presence of outliers, we winsorized ROA at the 1<sup>st</sup> and 99<sup>th</sup> percentiles to minimize the influence of outliers.

### **Independent Variables**

***Human resource slack.*** HR slack is measured as the ratio of change in employees over change in sales. While simple difference equations are the most popular way to measure change scores, Bergh and Fairbank (2002) highlight numerous issues with utilizing this approach, the most salient of which is correlation between the change score and the original measure. This is particularly problematic because it “might lead

researchers to make false conclusions about their data; they could easily attribute a finding to some hypothesized effect when it is actually due to regression effects caused by the correlation between [the change score and the initial measurement]” (Bergh and Fairbank, 2002: 361).

We therefore employ a residual change score method as discussed by Berg and Fairbank (2002), which addresses the potential issues related to correlation between the change score and the initial measurement. First, we calculated change scores by regressing employees at time  $t-1$  on employees at time  $t$ , and then saved the standardized residuals (creating a “predicted change” score). We then subtract the predicted change in employees from the actual observed change in employees (which was previously standardized). We repeat the process to calculate a change score for sales. Our HR slack variable is equal to the ratio of change in employees over changes in sales.

Our measure can be contrasted with Mishina et al. (2004), who calculate human resource slack as the industry-adjusted ratio of employees to sales. Our residual change score approach for human resource slack is appropriate for this study as we are exploring growth in employees *compared to* growth in sales. Mishina et al. (2004), on the other hand, sought to test the different influence two different kinds of slack, financial and human resource (both measured at a single period of time), have on firm sales growth.

**Human capital risk factors.** We utilize a procedure discussed by Welbourne and Andrews (1996) to assess the level of risk faced by an organization when it goes public. Briefly, each firm files a prospectus with the Securities and Exchange Commission (SEC) that outlines the firm’s internal structure and financial situation (Andrews & Welbourne, 2000). Most salient to our study, the prospectus also identifies

and discusses various risks, both internal and external to the organization, the firm faces. While it might seem that firms are likely to positively bias and understate the risks they face in their prospectus, it is important to note that firms are held legally liable for the information contained in the prospectus (O'Flaherty, 1984).

Similar to Welbourne and Andrews (1996), the following items were coded as “1” if the firm mentions facing the risk in its prospectus, and “0” if it does not: all employees mentioned as important (i.e., not just the top management team); employees mentioned as a strategic element of business; unionized employees mentioned; dependence on employees mentioned; and the firm faces a competitive labor market. We then summed the results, which created our “human capital risk factors” measure.

### **Control variables**

We utilize a series of control variables to address alternative explanations of the relationship between HR slack and ROA. We control for both industry and year effects by including industry and year dummies. We also control for the total expected proceeds from the IPO, the book value per share prior to the IPO, whether or not the firm was backed by a venture capitalist, and the age of the company at the time of IPO. Finally, we control for the anticipated risk of technological change by utilizing the same procedure we used for creating the “human capital risk factors” variable. Table 1 provides a summary of the means, standard deviations, and correlations of the variables used in the analysis.

### **Analysis and results**

We utilize a random-effects generalized least squares (GLS) estimator to test the hypotheses. Due to the fact that our measure for human capital risk factors was taken



from the prospectus, it is a time-invariant measure. Since a fixed-effects estimator does not allow for time-invariant measures, a random-effects estimator is needed. Our results are presented in Table 2. Model 1 includes only the control variables, Model 2 includes the linear form of both independent variables, Model 3 includes the squared HR slack variable, and Model 4 includes the interaction of the squared HR slack variable and human capital risk factors. Note that all variables were standardized to ease interpretation (Cohen, Cohen, West, & Aiken, 2003).

The negative and significant ( $p < 0.05$ ) coefficient for the HR slack squared term in Model 3 indicates support for hypothesis 1. The positive and significant ( $p < 0.01$ ) coefficient for the interaction of HR slack squared and human capital risk factors indicates support for hypothesis 2. To facilitate interpretation, both results are plotted at  $\pm 1$  s.d. and presented in Figures 1-2.

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## **DISCUSSION AND IMPLICATIONS**

The heterogeneity of growth rates across and within industries indicates that some firms are more skilled than others in developing the necessary strategies to fuel growth. If strategy can be interpreted as allocating resources to build competitive advantage (Barney, 1991), an important consideration for the “skill” of growing firms is in their ability to allocate resources to achieve the superior firm performance. Studying IPO firms is particularly salient to the issue of HR slack as IPO firms receive a large cash infusion at the time of the IPO. Many firms implement an IPO because they are cash

deprived—a considerable resource constraint limiting growth (Arkebauer & Schultz, 1991; Pagano, Panetta, & Zingales, 1998)—or have otherwise hit a growth ceiling given the firm’s current resource base (Welbourne, Neck, & Meyer, 2012). This begs the question: should firms strategically allocate their cash proceeds from the IPO to build the employee base of the firm rather than concentrate on sales growth?

Despite robust literatures on both entrepreneurial growth and organizational slack, we are unaware of a study which examines HR slack as a function of how a firm grows and the performance outcomes therein. Our conceptualization of HR slack as growing employees faster than sales contrasts with research which measures HR slack as a ratio of employees to sales (i.e., the number of employees necessary to generate a particular sales volume) (Mishina et al., 2004). Though the latter measure is important and has generated useful insights, we believe that there is a critical gap in the entrepreneurship literature regarding whether growing employees faster than sales has any relationship with a firm’s profitability.

There are several implications to our study. While downsizing—a process that aggressively reduces HR slack—has been linked to diminished firm profitability, particularly in high-tech and high-growth industries (Guthrie & Datta, 2008), our research provides additional depth to the importance of human resources. Specifically, our findings indicate that optimizing the apparently *inefficient* generation HR slack can actually improve a firm’s *efficiency* (profitability). The rate at which a firm grows its employee base compared to its revenue base is an important part of the venture growth conversation that has hitherto been overlooked.

It is important to note that our findings indicate the importance of optimization, not maximization, of HR slack. Firms that generated high levels of HR slack exhibited lower levels of profitability than firms with intermediate levels. Similar to the arguments advanced by Nohria and Gulati (1996), we suggest that very high levels of HR slack facilitate an undisciplined and unfocused environment, while very low levels of HR slack can lead to work overload (Cheng & Kesner, 1997).

A final implication of our study relates to conditions under which firms need a greater “cushion” to face challenges. We look at the influence of human capital risk factors—a salient form of risk to the people-oriented HR slack construct—on the relationship between HR slack and firm performance. Our findings suggest that the need for HR slack is higher when a firm faces risk factors that weaken its ability to quickly and efficiently hire or amplify the consequences for not hiring when more employees are needed—for example, a competitive labor market, dependence on employees, employing unionized workers, and other human capital related factors. The greater the human capital risk, the more beneficial the “buffer” or “cushion” of HR slack.

### **Implications for Practice**

In consideration of the findings from our research, we have several implications for practice. Though there is no lack of demands on the scarce resources acquired during an initial public offering, managers should carefully consider the benefits of acquiring a low to moderate level of HR slack. There is considerable discussion surrounding the ubiquity—and dangers—of employee burnout in the popular press, and this issue is particularly pronounced in young, high-growth firms. A moderate level of HR slack may help alleviate the increased workload inherent in times of significant organizational

change. It is nevertheless important to remain cognizant of the deleterious effects of too much HR slack. During periods of organizational change, a sense of urgency can move organizational resources in the direction needed to successfully grown and utilize the change. Excessive levels of HR slack may hinder this sense of urgency and movement, thereby making the firm inefficient and unprofitable.

There is a potentially precarious line between “too much” and “too little” HR slack. This makes consideration of human capital related risk factors both imperative and beneficial. Organizations that face high risk related to human capital are more strongly benefit from HR slack. These organizations can make better use of a buffer between the organization and, for example, a competitive labor market (or other reasons that may make the human resources non-fungible). On the other hand, firms that face few human capital risks are best served by running efficiently—i.e., with little HR slack. The ease of acquiring, redeploying, or divesting human resources diminishes the need for HR slack. By accounting for the influence of human capital risk factors, the aforementioned “precarious line” between too little and too much HR slack becomes less precarious: consideration of critical human capital risk factors essentially widens the breadth of that line, making it easier to walk.

### **Limitations & Directions for Future Research**

The results must be considered in light of the limitations of this research. First, it cannot be conclusively stated that the outcomes of this data are based on *intentional* strategic initiatives of the top management teams. Future research should focus on further investigating the results of this analysis by interviewing top management members of the IPO firms. Second, the sample of IPO firms may represent a source of

sampling bias. An IPO firm represents a special type of high-growth firm that is constantly under the watchful eye of the public. We believe that the time of IPO is particularly appropriate to studying how the nature of firm growth influences firm profitability, given that various pressures, both internal and external, arise during the IPO event. However, given the uniqueness of this sample, caution should be used in generalizing the findings to all entrepreneurial firms.

## **Conclusion**

Hoy et al. (1992) suggest that growth is a “sustainable entrepreneurial activity” (p. 345) as opposed to a stage in the life of firm. This view gives credence to the notion of growth as a strategy (Covin, Slevin, & Covin, 1990; Ireland & Hitt, 1997; Sexton & Bowman-Upton, 1991) and a source of competitive advantage. However, high-growth is indicative of fast-paced change, and firms must continue to perform yet remain flexible and adaptable in the face of continuous change and growth (Brown & Eisenhardt, 1997).

Our analysis points to the possibility that pursuing an employee growth strategy for the purpose of acquiring human resource slack may enable a firm to be better prepared for future growth, though the level of HR slack needs to be optimized rather than maximized. A critical consideration are the human capital related risk factors: waiting until employees are needed to then hire those employees is a risky strategy for managers of companies that face high human capital risks, though it is a less risky policy for firms that face little human capital risk. Ultimately, the speed of industry and organizational change can leave a company in a precarious position of playing catch-up. Organizations must carefully consider how they can optimize their slack resources to in consideration of the unique risks they face.

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**TABLE 1**  
**Correlation matrix and descriptive statistics<sup>a</sup>**

	<b>mean</b>	<b>s.d.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. ROA	-0.09	0.43							
2. Total expected proceeds	27.60	36.70	0.11						
3. Risk of technological change	0.42	0.49	-0.15	-0.18					
4. VC backed?	0.34	0.47	-0.04	-0.10	0.39				
5. Age	8.40	10.13	0.11	0.20	-0.13	-0.06			
6. Book value/share	0.43	5.59	0.03	-0.14	-0.02	0.01	0.06		
7. Human capital risk factors	2.35	0.93	-0.03	-0.25	0.28	0.17	-0.07	0.07	
8. HR slack	1.01	12.64	-0.10	-0.02	-0.03	-0.06	-0.02	-0.03	0.00

n = 1,437

<sup>a</sup> Non-standardized descriptive statistics reported. Total expected proceeds in millions. Correlations  $\pm 0.056$  and greater significant at a minimum  $p < .05$  level.

**Table 2**  
**Regression results<sup>a</sup>**

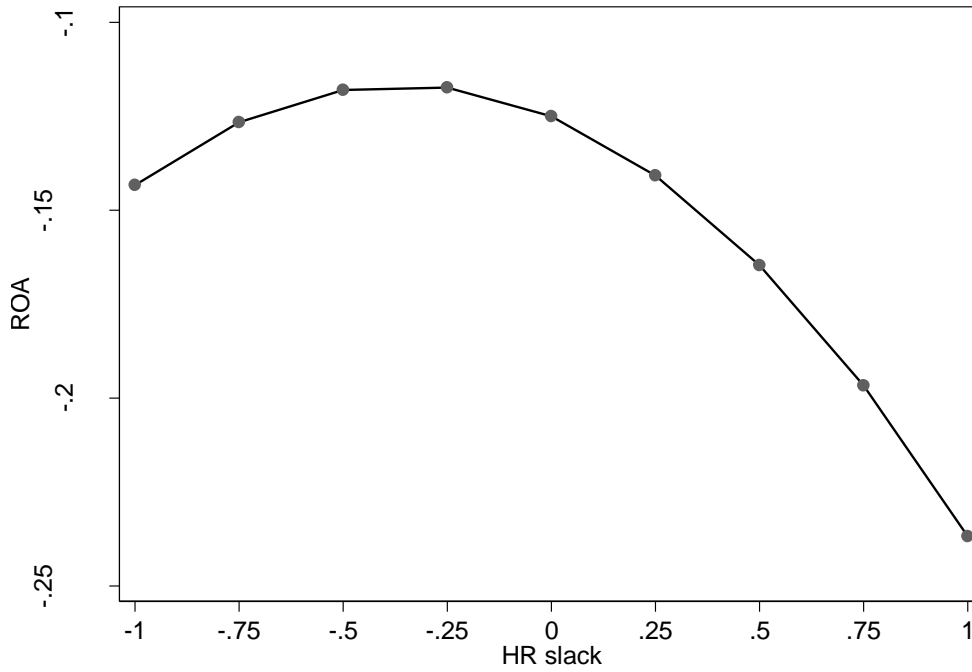
	Model 1	Model 2	Model 3	Model 4
	b/se	b/se	b/se	b/se
Total expected proceeds	0.09*** (0.02)	0.09*** (0.02)	0.09*** (0.02)	0.08*** (0.02)
Risk of technological change	-0.06† (0.03)	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.03)
VC backed?	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Age	0.04** (0.01)	0.04** (0.01)	0.04** (0.01)	0.04** (0.01)
Book value per share prior to offering	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Human capital risk factors		0.02 (0.02)	0.02 (0.02)	0.01 (0.02)
HR slack		-0.078 (0.09)	-0.05 (0.09)	-0.08 (0.10)
HR slack <sup>2</sup>			-0.07* (0.03)	-0.07** (0.03)
HR slack x Human capital risk factors				0.13 (0.10)
HR slack <sup>2</sup> x Human capital risk factors				0.09** (0.03)
constant	0.00***	0.00***	-0.00†	-0.00†
$R^2_{(Within)}$	0.01	0.01	0.01	0.01
$R^2_{(Between)}$	0.09	0.10	0.12	0.14
$R^2_{(Overall)}$	0.05	0.06	0.07	0.07

n = 1,437

<sup>a</sup> Robust standard errors reported in parentheses. Year and industry dummies omitted for parsimony.

† p<0.10, \* p<0.05, \*\* p<0.010, \*\*\* p<0.001

**Figure 1**  
**Relationship between HR slack and ROA**



**Figure 2**  
**Interaction between HR slack squared and human capital risk factors**

