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# THE INTERACTION BETWEEN FINANCIAL AND HUMAN RESOURCE SLACK AND ITS EFFECT ON FIRM PERFORMANCE



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## ABSTRACT

Extant research has largely focused on the independent performance consequences of different types of resource slack. In this paper, we study how the interaction between financial and human resource slack affects firm performance and this for firms in different stages of development. For this purpose, we use a longitudinal database of 733 French firms active in the Information and Communication Technology industry. Our results show that having both high levels of financial and human resource slack is detrimental for firm performance. This is especially the case for firms that have moved beyond the emergent stage into later stages of development.

## INTRODUCTION

Entrepreneurial firms differ significantly in their early resource endowments (Shane & Stuart, 2002). Nevertheless, the question whether it is the abundance or scarcity of resources that is most beneficial to firm performance has divided management and entrepreneurship scholars for many years. Resource slack or “potentially utilizable resources that can be diverted or redeployed for the achievement of organizational goals” (George 2005: 661) has been argued to either solve many organizational problems in the behavioral theory of the firm (Cyert & March, 1963; Bromiley, 1991; Greve, 2003) or act as a facilitator of inefficient behavior in resource constraint theories (Baker & Nelson, 2005; Mosakowski, 2002). Scholars have generally sought to reconcile these opposing views by suggesting that the relationship between slack and performance is dependent upon the level of slack (George, 2005; Tan & Peng, 2003). Others have shown that industry conditions and firm specific factors moderate the relationship between slack resources and firm performance (Bradley et al., 2011a; George, 2005).

To date, scholars have almost exclusively focused on one particular type of slack, most often financial slack, or focused on the independent performance consequences of different types of slack resources. Mishina and colleagues (2004), for instance, focused on the performance consequences of financial and human resource slack for firms pursuing different strategies. Unfortunately, they did not address whether slack in different types of resources may act in concert. Resource management theory, however, highlights that resources must not only be accumulated, but also bundled, and leveraged to create competitive advantages (Sirmon et al., 2007; Sirmon et al., 2011). Hence, the availability of resource slack in one particular type of resource may trigger a more (or less) effective use of resource slack in other types of resources. With the current study, we move beyond the often implicit but overly simplistic assumption in most research that slack in different types of resources function independently from each other.

Resource management theory further indicates that the challenges of managing resources change as firms move through the life cycle (Sirmon et al., 2011). For instance, during the early emergence of firms it is especially challenging to obtain outside resources due to the lack of legitimacy of new firms (Brush et al., 2001). In this case, slack resources may be particularly valuable, because they allow the pursuit of new opportunities without raising additional resources from outside the firm (Bradley et al., 2011a; Hayton, 2003). With this study, we focus on the role of slack resources in different phases of the life cycle of entrepreneurial firms including their emergence and early development. This is important, because data availability has pushed scholars towards studying the performance consequences of slack resources in public firms (Bromiley, 1991; Mishina et al., 2004), large or established privately-held firms (George, 2005) and multinational firms (Nohria & Gulati, 1996). Studies on the role of slack resources in entrepreneurial firms have emerged only more recently, but typically focus on financial slack in isolation (Bradley et al., 2011a).

In this study, we address the following related research questions: (a) *how does the interaction between financial and human resource slack influence firm performance* and (b) *how does this interaction effect change as firms move through their life cycle from emergence to early development?* For the purpose of this study, we use a longitudinal database comprising 733 French firms active in the Information and Communication Technology industry. We focus on slack in financial and human resources, as these relate to the most critical resources for firm emergence and early development (Cooper et al., 1994; Ndofor & Levitas 2004). The results support our hypotheses. Specifically, too much slack in both financial and human resources harms firm performance. Moreover, the interaction effect between financial slack and human resource slack is especially negative for firm performance when firms move through the life cycle from emergence to early development.

The rest of the paper is structured as follows. In the next section, we develop our hypotheses. Then, we discuss the method, including the sample, measures and method of analysis. Next, we present our results. Finally, we summarize these results and discuss their theoretical implications.

## THEORY

### **The Interaction Effect of Financial Slack and Human Resource Slack on Firm Performance**

The behavioral theory of the firm indicates that despite the costs of holding slack resources, the performance consequences of these resources will be largely positive (Cyert & March, 1963). Financial slack, for instance, is expected to increase innovation, risk-taking and experimentation, which may benefit firm performance (Bromiley, 1991; George, 2005; Kim et al., 2008). Furthermore, financial slack is important to firms competing on the basis of innovation because it provides a buffer against cash flow volatility and ensures that R&D investments are maintained even during bad times (O'Brien, 2003). In a similar vein, human resource slack has been argued to protect firms from their environment, helps them to prepare for future growth and builds a knowledge base all of which is important for firm performance (Welbourne et al., 1999).

Nevertheless, firms with slack in one particular resource may still be constrained in the pursuit of new investment projects and exploration of new solutions when they lack slack in another resource. Resource management theory indicates that it is not enough to possess a particular resource to realize a competitive advantage (e.g., Sirmon et al., 2007). Rather, a firm's available resources must also be bundled and leveraged before resources can be transformed in performance

benefits (Sirmon et al., 2007; Sirmon et al., 2011). Resource management theory, hence, points towards the critical nature of studying combinations of available resources, rather than studying the independent performance consequences of slack resources.

Especially for privately-held entrepreneurial firms the combination of buffers in both financial and human resources may be critical for firm performance. Simply possessing financial slack may not be enough for firms to effectively pursue new opportunities, because it is unlikely that privately-held firms with financial slack can just buy-in other critical resources, such as human resources, to quickly pursue new opportunities when they emerge. The main reason is that many entrepreneurial firms generally suffer from significant information asymmetries (Davila et al., 2003). The prospects of young entrepreneurial firms are highly uncertain and difficult for potential employees to evaluate. Moreover, young and small entrepreneurial firms often lack the visibility and reputation vis-à-vis their more established counterparts, which is often the first prerequisite to mobilize employees (Davila et al., 2003; Williamson, 2000). Overall, the value of financial slack for firm performance may become limited, when firms lack human resource slack, and are unable to productively use their financial slack due to other resource constraints.

The same counts for entrepreneurial firms with human resource slack but which lack sufficient financial slack. For these firms, it may be difficult to pursue new opportunities and finance investments when internal buffers of financial slack are missing. The alternative is to mobilize outside financial resources from financiers, such as banks or private equity investors, but this is typically a time-consuming exercise (Winborg, 2009) if it is a realistic option at all. Many entrepreneurs are simply unwilling to attract outside financing (Manigart & Struyf, 1997) and traditional outside investors are often very hesitant to provide funds to informationally opaque firms (Berger & Udell, 1998).

Being able to act quickly to new opportunities is important, however, since it is associated with long-term advantages including dominant and enduring market positions that originate from a firm's competitive head start over its peers (Kerin et al., 1992). Firms with financial (or human resource) slack, but limited human resource (or financial) slack, will be less able to rapidly pursue new opportunities. This may negatively impact firm performance compared to firms where there is both financial and human resource slack. This because firms with both financial and human resource slack may be able to pursue more new opportunities, more quickly, as they do not face resource constraints. Thus,

*Hypothesis 1a: The interaction effect of financial slack and human resource slack on firm performance will be positive.*

Resource constraint theorists, however, argue that firms with fewer resources are more likely to leverage their resources more efficiently compared to firms with more resources (Mosakowski, 2002). Especially in an entrepreneurial setting, firm success may be derived from using the limited resources at hand and using techniques to reduce as much as possible additional resources needed (Katila & Shane, 2005; Mishina et al., 2004). Holding too many resources may be inefficient. Scholars have shown that entrepreneurs who have access to too many resources may become complacent, risk averse and inward looking, because they wish to protect their current positions (Debruyne et al., 2010; Stevenson & Jarillo, 1990). Bradley et al. (2011b), for instance, showed that financial slack has a negative impact on entrepreneurial management in firms.

The entrepreneurship literature indicates how resource-constrained firms may resort to more or less creative techniques allowing them to pursue new opportunities despite these constraints (Baker & Nelson, 2005). Firms which lack sufficient internal funds and without access to traditional sources of outside finance, for instance, are likely to engage in financial bootstrapping techniques (Ebben & Johnson, 2006; Winborg & Landström, 2001). These techniques include strategies that minimize the need for cash by securing resources at little or no cost. Entrepreneurs may, for instance, rely on their social contacts to obtain free access to specific resources (Starr & MacMillan, 1990). Through bootstrapping, entrepreneurs may also tackle human resource shortages. Young, small entrepreneurial firms are known to frequently employ family members, students or share employees with other businesses (Winborg & Landström, 2001).

When firms are resource constrained and hence have to make do with whatever is available in too many domains at the same time this may be problematic. Such firms are often isolated from richer markets and find it difficult to develop organizational focus and routines that might support firm growth and profitability (Baker & Nelson, 2005). When entrepreneurs have to tackle constraints in multiple domains at the same time they may have no sufficient time left for other valuable entrepreneurial tasks, including the identification and exploitation of new opportunities (Vanacker et al., 2011). Other firms also try to create something from nothing, but instead of doing so consistently and repeatedly across multiple domains, they are able to use it more selectively (Baker & Nelson, 2005). These firms are often more successful and often avoid some of the constraints experienced by firms that are thin on resources in multiple domains (Baker & Nelson, 2005).

Overall, resource constraint theorists argue that it may be particularly beneficial when firms are constrained in one particular domain, which implies firms either have limited financial or human resource slack. This will drive firms to use their resources more effectively. Thus,

*Hypothesis 1b: The interaction effect of financial slack and human resource slack on firm performance will be negative.*

### **Combinations of Resource Slack in the Emergent Stage versus Later Stages of Development**

A life cycle models depicts the process of change in a firm as progressing through a necessary sequence of stages (Van de Ven, 2007), including emergence, early growth, later growth, maturity, and often death (e.g., Jawahar & McLaughlin, 2001; Kazanjian & Drazin, 1989). Firms are likely to have different resource needs across their life cycle (Jawahar & McLaughlin, 2001) and resource management challenges are likely to change as well (Sirmon et al., 2011). Maurer and Ebers (2006), for instance, identified two distinct phases of firm development: the early start-up phase (which ended when the funds from the initial financing were nearly exhausted) and the subsequent business development phase (which extended from the first activities aimed at securing further financing until the end of their study period). These authors showed how the configuration of social capital for the more successful and the less successful firms in these two phases showed markedly different patterns. Each stage in a firm's life cycle hence represents a unique and strategic context that influences the extent and nature of a firm's resource needs and resource management challenges (Hite & Hesterly, 2001; Sirmon et al., 2011).

The emergent stage of firms starts when the firm is legally created (Gartner et al. 1992). Firms in the emergent stage experience rapid changes and downward pressures on their profits. Therefore,

resources play a major role in these firms (George, 2005). Yet, it is often impossible for newly created firms to buy all the resources needed to fully develop over time (Baker & Nelson, 2005). The emergent firm initially lacks legitimacy in both capital and labor markets (Katz & Gartner, 1988). As a result, emergent firms often experience limited access to capital and labor markets due to market imperfections, such as information asymmetries and high transaction costs (Berger & Udell, 1998; Cassar, 2004; Williamson, 2000). Combinations of slack resources are hence expected to be more valuable for emergent firms, compared to firms in later stages. It allows them to invest in developing capabilities to overcome liabilities of newness and will give them the highest levels of flexibility (Sharfman et al., 1988).

Firms in later stages, however, have established more legitimacy and, therefore, are expected to have higher access to resources (Hite & Hesterly, 2001). For such firms, large buffers of resources may be less critical, as resources can be acquired more easily from factor and capital markets. The danger may even arise that entrepreneurs, who have moved beyond the emergent phase, become complacent and feel overly optimistic when having too much of different types of slack resources. Debruyne et al. (2010), for instance, showed that the presence of high buffers of resources may make decision makers believe they are able to react effectively to competitive attacks while making them less motivated to counter such attacks.

Overall, combinations of both financial and human resource slack may be more valuable in the emergent stage as opposed to later stage of development, because emergent firms lack legitimacy in capital and labor markets. When it is difficult to acquire resources from the environment, internal buffers of resources become an important way for firms to pursue opportunities. Thus,

*Hypothesis 2: The interaction effect of financial slack and human resource slack on firm performance is more positive (or alternatively less negative) in firms in the emergent stage compared with firms in later stages of development.*

## METHOD

### Sample and Data

We use a sample of 733 French firms active in the Information and Communication Technology (ICT) industry. The advantage of focusing on firms operating in one particular country and industry is that it reduces the unobserved heterogeneity among firms resulting from variance in environmental and industry conditions. We thereby also address the call by George (2005) for further studies that examine multiple forms of resource slack in a single industry. For all firms in the sample, we obtained access to yearly financial accounts data, which resulted in a final sample of 4,251 firm-years.

### Dependent Variable

Performance is operationalized as Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA). This measure is highly correlated with alternative performance measures, such as gross profit (0.570;  $p < 0.001$ ) and EBIT (0.875;  $p < 0.001$ ). As a robustness check, we also used a scaled performance measure (EBITDA on total assets) to take into account difference in firm size. We found qualitative similar results.

## Independent Variables

The key independent variables measure financial slack, human resource slack, and their interaction. We use one-year lagged measures for the independent and control variables to minimize concerns of reverse causality.

We measure *financial slack* as the amount of cash resources available within a firm scaled by total assets (e.g., Greve, 2003; Kim et al., 2008; Voss et al., 2008). Slack is generally measured relative to a target level rather than an absolute level of resources (Bromiley, 1991) and scholars have typically defined financial slack as excess cash resources held by firms compared to industry norms (George, 2005). Although we focus on one particular industry, the ICT industry also comprises multiple sub-industries, including ICT manufacturing, telecommunications, web publishing, Internet and software. Following extant research, we calculate financial slack as the deviation from the median cash to total assets ratio of the sub-industry in which a particular firm operates. We also calculate financial slack squared to capture any curvilinear effect as suggested by prior work (Bourgeois, 1981; George, 2005; Sharfman et al., 1988).

Following extant research, we measure *human resource slack* as the number of employees (in FTE) relative to sales (Mellahi & Wilkinson, 2010; Mishina et al., 2004; Voss et al., 2008). The measure is adjusted for sub-industry norms by subtracting the median ratio of employment to sales for all firms in the same sub-industry in which the focal firm operates (Mellahi & Wilkinson 2010; Mishina et al., 2004). We additionally calculate human resource slack squared to capture any curvilinear effect in the relationship between human resource slack and performance.

Finally, we calculate the interaction between financial slack and human resource slack (*financial slack x human resource slack*) by multiplying both measures.

## Control Variables

Firm size may influence both the performance generating potential of a firm and its ability to accumulate slack resources. We therefore control for firm size, measured as the natural logarithm of total assets. Because slack is time-dependent in its accumulation, we also control for firm age. Firm age is measured as the years since formal incorporation. The intangible assets ratio, defined as the ratio of intangible assets on total assets, is used as a measure for the growth potential of firms (Villalonga, 2004). Although we are interested in the impact of financial and human resource slack on firm performance, we also control for the effect of potential slack. Potential slack is measured as the debt to total asset ratio adjusted for sub-industry norms (George, 2005; Kim et al., 2008). To account for possible persistence in firm performance, we included a lagged performance measure. This has also been recommended as a means to control for unobserved heterogeneity (Heckman & Borjas, 1980). We further include a dummy variable to control for the presence of venture capital investors as shareholders in a firm. We coded the dummy variable as 1 if a firm has at least one venture capital investor as a shareholder and zero otherwise. We further include sub-industry dummy variables to capture subtle differences within the ICT industry. Finally, we include year dummy variables to control for the effects of any general economic trend.

## Method of Analysis

We use the Generalized Estimating Equation (GEE) approach to estimate efficient and unbiased regression parameters for longitudinal data (Ballinger, 2004). GEEs permit the specification of a working correlation matrix that explicitly accounts for within-firm correlation of responses. GEE regression models have two distinct advantages compared to fixed- or random-effect models (Ndofor et al., 2011). First, GEE models make no distributional assumptions (Long et al., 2009). Second, GEE models are more robust, because they offer specific correlation structures to best match the data (Liang & Zeger, 1986). We use an autoregressive correlation structure to take into account the time structured nature of our data (Ballinger, 2004). The GEE method is gaining increasing attention by scholars and recent applications in the management and entrepreneurship literature are widely available (e.g., Ballinger, 2004; Ndofor et al., 2011).<sup>1</sup>

Because we include multiple squared terms and interactions within our regression models, multicollinearity was a potential concern. This concern was confirmed by high variance inflation factors (VIF). To deal with the multicollinearity problem, we orthogonalized the collinear variables by “partialing out” the common variance (Cohen & Cohen, 1983). The transformed variables are uncorrelated with one another but still correlated with the dependent variable (see Bradley et al., 2011a; Pollock & Rindova, 2003). Using these transformed variables, the maximum VIF score equals 3.49, which lies well below the critical value of 10, and indicates multicollinearity is unlikely to unduly influence our results (Kutner et al., 2005).

## RESULTS

Table 1 reports the descriptive statistics and correlations. Table 2 reports the GEE regression models with levels of significance reported for conservative two-tailed tests. Model 1 includes the control variables, the main effects of financial slack and human resource slack, their squared terms and the interaction between financial slack and human resource slack. While the coefficient for the financial slack term is negative and marginally significant ( $\beta = -0.012$ ;  $p < 0.10$ ), its squared term is negative and statistically significant ( $\beta = -0.014$ ;  $p < 0.05$ ). For human resource slack, however, we find negative effects on firm performance ( $\beta = -0.041$ ;  $p < 0.001$ ). The results for the main effects of financial and human resource slack are largely in line with prior studies (Bradley et al, 2011a; George, 2005; Mishina et al., 2004). Further, we found a negative and significant interaction between financial slack and human resource slack ( $\beta = -0.021$ ;  $p < 0.01$ ). This provides support for Hypothesis 1b. The implications of the significant interaction effect between financial and human resource slack are visualized in Figure 1. The negative performance consequences of financial slack emerge much quicker for firms with high levels of human resource slack compared to firms with low levels of human resource slack.

To test hypothesis 2, we face a challenge to identify in which stage a firm is operating as well as the boundaries between stages (Hite & Hesterly, 2001). We split the sample in emergent firms, defined as firms that are less than three years old, and firms in later stages of development, defined as firms that are at least three years old. We subsequently reran model 1 on both sub-samples and then compared the regression coefficients for the interaction between financial slack and human resource slack. For the emergent firms (model 2A), we found a positive but insignificant interaction effect between financial slack and human resource slack on firm performance. However, for firms in later stages of development (model 2B), we found a negative and significant interaction

between financial slack and human resource slack ( $\beta = -0.022$ ;  $p < 0.01$ ). A Z-test was used to confirm that the difference in coefficients of the interaction effect between the two sub-samples were statistically significant (Clogg et al., 1995). We found a significant Z-score of 2.00 ( $p < 0.05$ ; two-tailed) which confirms that the interaction effect between financial slack and human resource slack is more negative for firms in later stages of development compared to emergent firms. This provides support for Hypothesis 2. Figure 2 and 3 illustrate the relation between financial slack and performance for firms with high or low levels of human resource slack in the emergent stage and in later stages of development. In Figure 2 we fail to find evidence for an interaction effect between financial and human resource slack. Specifically, both for emergent firms with high and low levels of human resource slack, increasing financial slack will have negative performance effects. Figure 3, however, shows that for firms in later stages of development with low levels of human resource slack, increasing financial slack will have largely positive performance consequences. For firms in later stages of development with high levels of human resource slack, increasing financial slack will more quickly lead to lower performance.

To avoid that the previous results are driven by an arbitrary definition of emergent firms versus firms in later stages of development, we also split the sample in emergent firms, now defined as firms that are maximum five years old, and firms in later stages of development, now defined as firms that are older than five years. The results are reported in Model 3A and 3B. Results remain qualitatively similar. The interaction effect between financial and human resource slack on firm performance is more negative for firms in later stages compared to emergent firms (Z-score = 1.29;  $p < 0.05$ ; one-tailed). This provides additional supporting evidence for Hypothesis 2.

## CONCLUSION

The goal of this study was to investigate whether and how the interaction between financial and human resource slack influences firm performance. The few scholars who have examined multiple types of slack resources (Mishina et al., 2004) have only focused on the individual effects of slack resources on firm performance while ignoring potential interactions. However, firms must accumulate, bundle and leverage resources to capture value from their resource (Sirmon et al., 2011). To examine the interaction between both financial slack and human resource slack, we used a unique longitudinal database comprising data on 733 French firms active in the ICT industry. The results show that the interaction between financial slack and human resource slack is negative. We demonstrate that in our sample, having both high levels of financial and human resource slack (or low levels of financial and human resource slack) are detrimental for firm performance. Rather a combination of resource abundance in one domain and resource scarcity in another domain is most beneficial for firm performance. Further, we found that the interaction effect of financial and human resource slack on firm performance is especially negative for firms that have moved beyond the emergent stage towards later stages of development.

Our study has important academic implications. Based on the resource-based view of the firm, many scholars have focused on the possession of idiosyncratic resources by firms and their independent consequence for firm performance (Barney, 1991). However, resource management theories indicate that simply possessing resources may not be sufficient to extract value from these resources (Sirmon et al., 2007; Sirmon et al., 2011). Our study supports this view and shows how slack in human resources (which are typically considered to be strategic resources) is not uniformly positive for firm performance. Rather the effect of human resource slack on

firm performance depends upon the level of slack in other resources. Contrary to common wisdom, we do not find evidence that firms with large buffers in financial and human resources are outperforming their resource-poor counterparts. Nor do we find evidence that firms with resource constraints in multiple domains are the most successful. Rather, it is the fine balance between being resource-constrained in one domain and having resource slack in another domain that seems most beneficial for firm performance. Overall, this paper calls for more future studies that examine the interaction effect between different types of resources and how these resources may work in concert.

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## NOTES

1. We tested the robustness of our findings by using alternative econometric approaches, including FGLS regression models and system GMM models. Results remained qualitatively similar to the ones reported.

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**Table 1: Descriptive Statistics and Correlations**

Variables <sup>a</sup>	Mean	s.d.	1	2	3	4	5	6	7	8
1 Firm size <sup>b</sup>	7.14	1.66	1							
2 Firm age	8.72	5.19	<b>0.084</b>	1						
3 Intangible asset ratio	0.10	0.16	<b>0.072</b>	<b>-0.139</b>	1					
4 Potential slack <sup>c,e</sup>	-0.02	0.28	<b>0.162</b>	<b>0.081</b>	-0.014	1				
5 Lagged performance <sup>d</sup>	0.08	0.62	<b>0.203</b>	<b>0.234</b>	-0.016	<b>0.083</b>	1			
6 VC Dummy	0.08	0.27	<b>0.180</b>	<b>-0.156</b>	<b>0.041</b>	<b>0.073</b>	<b>-0.247</b>	1		
7 Financial slack <sup>c</sup>	0.05	0.21	-0.018	-0.018	<b>-0.273</b>	<b>0.379</b>	<b>-0.073</b>	<b>0.110</b>	1	
8 Human resource slack <sup>c</sup>	0.43	1.41	<b>-0.115</b>	<b>-0.282</b>	<b>0.204</b>	0.021	<b>-0.408</b>	<b>0.265</b>	<b>0.071</b>	1
9 Performance (EBITDA) <sup>d</sup>	0.09	0.63	<b>0.209</b>	<b>0.206</b>	-0.003	0.018	<b>0.764</b>	<b>-0.255</b>	<b>-0.101</b>	<b>-0.388</b>

<sup>a</sup>Number of observations = 4251. Correlations significant at 0.05 level are in bold. Sub-industry dummies and year dummies are not reported.

<sup>b</sup> Log-transformed variable

<sup>c</sup> Debt-to-total asset ratio.

<sup>d</sup> Millions of euros.

<sup>e</sup> Indexed to industry median.

Table 2: GEE regression results

Variable	Model 1 (All observations)		Model 2A Firms < 3 years old		Model 2B Firms ≥ 3 years old		Model 3A Firms < 6 years old		Model 3B Firms ≥ 6 years old	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Intercept	-0.206 ***	0.043	0.526 †	0.291	-0.217 ***	0.046	-0.217 **	0.068	-0.251 ***	0.060
Firm size	0.031 ***	0.004	-0.091 **	0.031	0.035 ***	0.004	0.024 **	0.007	0.041 ***	0.005
Firm age	0.002	0.001	0.211 *	0.084	0.002	0.001	0.015 †	0.009	0.002	0.002
Intangible asset ratio	0.037	0.041	0.297	0.271	0.024	0.043	0.072	0.056	0.036	0.057
Potential slack	-0.117 ***	0.028	0.044	0.167	-0.119 ***	0.029	-0.142 ***	0.040	-0.111 **	0.037
Potential slack squared	-0.138 *	0.059	-0.122	0.379	-0.115 †	0.060	-0.188 *	0.083	-0.100	0.079
Lagged performance	0.728 ***	0.011	0.733 ***	0.107	0.729 ***	0.011	0.804 ***	0.020	0.671 ***	0.014
VC Dummy	-0.147 ***	0.023	-0.157	0.115	-0.149 ***	0.025	-0.096 **	0.030	-0.189 ***	0.034
Financial slack	-0.012 †	0.007	-0.081	0.052	-0.009	0.007	-0.014	0.011	-0.010	0.009
Financial slack squared	-0.014 *	0.006	-0.003	0.035	-0.013 *	0.006	-0.019 *	0.009	-0.013	0.008
Human resource slack	-0.041 ***	0.007	-0.098 **	0.035	-0.041 ***	0.008	-0.030 ***	0.008	-0.049 ***	0.013
Human resource slack squared	-0.004	0.006	0.082 *	0.032	-0.005	0.007	-0.009	0.008	-0.004	0.009
Financial slack x Human resource slack	0.021 ***	0.006	0.036	0.028	-0.022 **	0.007	-0.009	0.007	-0.026 *	0.011
Wald chi-square	7595.76***		220.76***		7302.25***		3063.57***		4156.74***	
N (Company-years)	4251		118		4004		1415		2996	
Number of companies	733		59		721		429		597	

Year and sub-industry controls are included but not reported.

Where † p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001, conservative, two-tailed tests.  
 Unstandardized regression coefficients are shown.

Figure 1: The interaction effect of financial slack and human resource slack on firm performance (All observations)

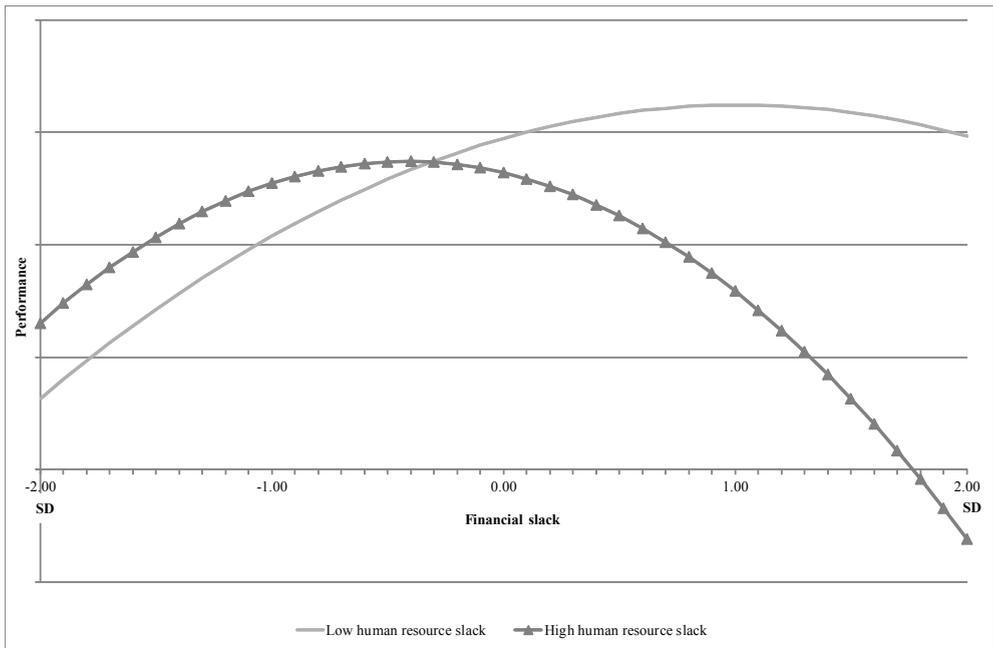


Figure 2: The relation between financial slack and performance with high or low levels of human resource slack in emergent firms

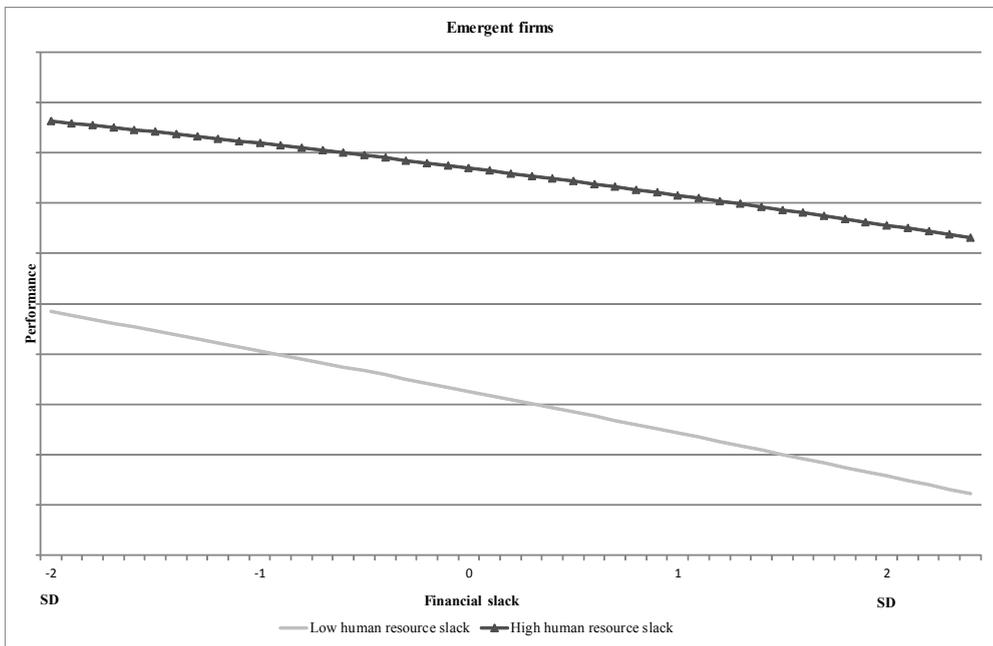


Figure 3: The relation between financial slack and performance with high or low levels of human resource slack in firms in later stages of development

