SLACK RESOURCES, FIRM PERFORMANCE AND THE INSTITUTIONAL CONTEXT: EVIDENCE FROM PRIVATELY HELD EUROPEAN FIRMS

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ABSTRACT

Research summary: Integrating the behavioral and institutional perspectives, we propose that a country's formal institutions, particularly its legal frameworks, affect managers' deployment of slack resources. Specifically, we explore the moderating effects of creditor and employee rights on the performance effects of slack. Using longitudinal data from 162,633 European private firms in 26 countries, we find that financial slack enhances firm performance at diminishing rates whereas human resource (HR) slack lowers performance at diminishing rates. However, financial slack has a more positive effect on firm performance in countries with weaker creditor rights whereas HR slack has a more negative effect on performance in countries with stronger employee rights. The results provide a richer view of the relationship between slack and firm performance than currently assumed in the literature.

Managerial summary: A key dilemma managers often encounter is whether, on the one hand, they should build in excess resources to buffer their firms from internal and external shocks and to pursue new opportunities or whether, on the other hand, they should develop "lean" firms. Our study suggests that excess cash resources—which are usually viewed as easy to redeploy— benefit firm performance, especially when firms operate in countries with weaker creditor rights. However, excess human resources—which are usually viewed as more difficult to redeploy— hamper firm performance, particularly when firms operate in countries with stronger labor protection laws. Thus, the management of slack resources critically depends on the characteristics of these resources (e.g., redeployability) and the institutional context in which managers operate.

INTRODUCTION

Slack—the pool of resources in an organization that is in excess of the minimum necessary to sustain routine operations—is a central concept in a behavioral theory of the firm (Argote and Greve, 2007; Bromiley, 2005; Cyert and March, 1963). How managers use slack and slack's performance effects have long been debated in the strategy literature (e.g., Bourgeois, 1981; Bradley *et al.*, 2011a, b, c; Bromiley, 1991; George, 2005; Kim and Bettis, 2014; Lecuona and Reitzig, 2014; Mousa and Reed, 2013; Natividad, 2013; Tan and Peng, 2003; Wiseman and Bromiley, 1996). Managers can use slack to stabilize their firms' core activities and foster strategic behavior that creates value (Cyert and March, 1963; Thompson, 1967). Alternatively,

managers can also use slack for inefficient and value-destroying purposes (Jensen and Meckling, 1976; Leibenstein, 1966; Williamson, 1963). Empirical research has been similarly equivocal about the performance effects of slack, even when considering the existence of distinct types of slack resources (e.g., unabsorbed versus absorbed) and their differential redeployability.

Prior conflicting findings may stem from researchers' lack of attention to the environment in which managers allocate and use slack resources. Yet, as Gavetti *et al.* (2012: 24) note, "the environmental influence on [managers'] goals appears to be stronger now than when Cyert and March (1963) was written". Conceptually, this environment is broader than the firm's industry. It also includes for instance the cultural, economic, legal and political institutions that influence how managers make decisions on the deployment and use of resources (North, 1990). Most prior studies, however, have examined individual countries, without examining their institutional environments, which are crucial to explaining managerial behavior (Meyer and Rowan, 1977; Oliver, 1991). Likewise, existing research has ignored cross-country differences that impinge on managers' motivation and discretion as they allocate and use resources (e.g., Crossland and Hambrick, 2011; Wu and Tihanyi, 2013). However, legal frameworks in particular vary significantly across countries in the extent to which they protect different stakeholders, placing limits on managers' discretion in allocating and using their firms' resources as they attempt to meet the expectations of their stakeholders (Schneper and Guillén, 2004). These differences suggest a need to empirically examine the effect of variations in the institutional environment on managers' use of slack resources and the performance effects of these resources across countries.

To this end, we integrate the behavioral perspective (e.g., Cyert and March, 1963) with the neo-institutional perspective (e.g., DiMaggio and Powell, 1983; Meyer and Rowan, 1977). The behavioral perspective focuses on the allocation of slack within firms. It suggests that slack plays a positive stabilizing and adaptive function and thus contributes to firm performance,

although too much slack also has its costs and can lower performance (Bromiley, 2005). Examining whether and how stakeholders' powers, as enshrined in national laws, moderate the slack-performance relationship allows us to determine the efficacy of institutional theory in explaining differences found in this relationship for firms operating in different countries.[1] Thus, we propose and test the argument that the relationship between a firm's slack resources and its performance is moderated by country-level institutions. This focus recognizes the need to consider the firm's broader external environment when studying slack resources, as suggested in the literature (Bradley *et al.*, 2011b; George, 2005; Lecuona and Reitzig, 2014). Still, this literature has tended to equate a firm's external environment with its industry (see Capron and Guillén, 2009; Crossland and Hambrick, 2007, for a similar observation in the broader strategy literature), ignoring the broader institutional setting which provides the framework that managers use in making resource allocation decisions.

We focus on the performance effects of financial and HR slack in privately held firms. Though prior empirical studies have primarily focused on the performance effects of financial slack (e.g., Bradley *et al.*, 2011b; George, 2005), it is important to test a behavioral perspective on a broader set of slack resources—including those slack resources (such as HR slack) that have been less rigorously investigated—to determine its generalizability. A priori, the differential performance effects of distinct slack resources are unclear (Tan and Peng, 2003). However, behavioral theorists have noted that "slack should not be considered in a generic sense" (Wiseman and Bromiley, 1996: 539). Indeed, financial resources are managed differently from human resources. For instance, these resources are different in terms of their divisibility and fungibility and hence their stickiness (Mishina *et al.*, 2004). Such differences could affect the

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[1] The absolute level of a given resource a firm has could depend on the national institutional framework in which it operates. However, we look at slack resources available in a firm adjusted for industry *and* country norms. This implies that the level of slack is not dependent on the country-level institutions or any country-level variable.

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ability of managers to (re)deploy these resources (Bourgeois and Singh, 1983; Wang *et al.*, 2016). In addition, different national institutions are more (or less) likely to affect managers' (re)deployment of distinct types of slack resources. Overall, these complexities suggest a need to examine the effects of distinct types of slack resources and the power of distinct stakeholders, who provide the firm with these critical resources.

Privately held firms offer an interesting setting in which to investigate an integrated behavioral and institutional perspective on the slack-performance relationship. Theoretically, the allocation and deployment of slack resources are likely to dominate managerial decision making in privately held firms (George, 2005). Moreover, focusing on private firms allows for a cleaner identification of the relevant external environments and stakeholder protection laws. Indeed, managers in large, geographically diversified, public firms are likely to be confronted more with "diverse, nonmonolithic, fragmented, and possibly conflicting sets of external environments" relative to the generally small and medium sized, private firms we study (Kostova *et al.*, 2008: 997). In addition, not all stakeholders and stakeholder protection laws are equally relevant for public and private firms. For instance, the shareholder laws that are relevant for public firms differ from those that are relevant for private firms (Bebchuk and Hamdani, 2009). More significantly, private firms are often unable or unwilling to raise new equity financing, making external shareholders less critical and creditors more critical stakeholders (Brav, 2009). Practically, private firms are the dominant organizational form across the globe (Faccio *et al.*, 2011; George, 2005). For instance, even in the UK—a market based financial system—private firms represent 97.5% of all incorporated entities (Brav, 2009).

We use a dataset comprising 604,462 firm-year observations, which represent 162,633 European privately held firms. This sample is substantially larger and broader than those employed in prior studies in terms of industries (56 industries), macroeconomic conditions

(periods of economic growth and decline) and countries (26 countries) covered. Our sample is particularly suitable to investigate an integrated behavioral-institutional perspective on the slack-performance relationship. First, the broad legal institutions that exist around the globe today originated in Europe. To date, significant variability remains in the legal institutions across European countries despite their geographical proximity and membership in common institutions such as the European Union (EU) (although not all the countries we study are EU member states). Second, private firms follow the same accounting standards as public firms in Europe, providing us with a large-scale dataset with high-quality data on private firms (Faccio *et al.*, 2011).

Our paper contributes to the slack literature by adopting an integrated behavioral-institutional perspective aiming to bring "order" to the mixed evidence reported in previous research on the performance effects of slack resources (e.g., Daniel *et al.*, 2004). Testing our integrated theory on a multi-country sample allows us to provide a robust assessment of the external validity of prior results, an important concern in the strategy literature (Bettis *et al.*, 2016). It also forms the starting point for a broader contribution. We respond to calls for more research on the effects of institutions on fundamental managerial decisions (such as resource allocation) and firm outcomes (e.g., Gavetti *et al.* 2012; Greenwood *et al.*, 2008). We do so by focusing on the effects of national legal institutions that protect creditors' and employees' interests on the slack-performance relationship in private firms. Overall, our study clarifies a key source of conflicting findings in the nature of the slack-performance relationship while allowing a rigorous test of the generalizability of past findings (Tsang and Kwan, 1999).

SLACK RESOURCES AND FIRM PERFORMANCE

Slack resources form a continuum, ranging from unabsorbed to absorbed slack (Singh, 1986). Unabsorbed slack consists of those resources which are currently uncommitted and are readily

available for redeployment within firms (Bourgeois and Singh, 1983). Cash resources represent the most easily redeployable resources and therefore managers have the greatest discretion in allocating them to alternative uses (George, 2005; Greve, 2003). Absorbed slack consists of those resources that are already tied to current operations, but may be recovered, with more managerial effort and time. Examples are HR, accounts receivables and overhead expenses (Bourgeois and Singh, 1983; Greve, 2003; Voss *et al.*, 2008). We focus on unabsorbed financial slack and absorbed HR slack to capture both opposing ends of the continuum. Both types of slack also refer to resources that are critical for *any* firm and have been studied in prior research (e.g., Bradley *et al.*, 2011b; Lecuona and Reitzig, 2014; Mishina *et al.*, 2004; Mousa and Reed, 2013; Paeleman and Vanacker, 2015; Vanacker *et al.*, 2013; Voss *et al.*, 2008), albeit with conflicting results.

The allocation and deployment of slack resources are likely to dominate managerial decision making in privately held firms (George, 2005). Typically, these firms lack access to—and are often unwilling to access—external capital markets (Brav, 2009). Consequently, though managers in public firms can smooth their activities and invest when appropriate and hence often do not stockpile cash in response to an improvement in performance, private firms often stockpile cash whenever they have an opportunity to do so (Brav, 2009). Small and medium sized private firms are also usually constrained in their access to the labor market. They frequently face more difficulties when recruiting employees because they are often unknown and lack legitimacy as an employer-of-choice compared to larger, public firms (Williamson, 2000). Creating a buffer of human resources may then be a central concern for managers of privately held firms which may find it more difficult to hire employees on demand (e.g., Welbourne *et al.*, 1999).

Strategy researchers, however, observe that having resources alone does not make much difference for firm performance, but how managers allocate and deploy resources has a great impact on firm performance (Penrose, 1959). Recent work indeed shows that how managers

orchestrate the use of resources can make a significant difference in managers' strategic choices and firm performance (Sirmon *et al.*, 2007). As such, this literature highlights the critical role that managers play in managing and deploying resources in pursuit of their firms' goals.

In the behavioral theory of the firm, slack should mainly positively affect firm performance as it plays "both a stabilizing and adaptive role" (Cyert and March, 1963: 38) by providing managers with the necessary resources to tackle many organizational challenges. Indeed, slack plays a stabilizing role in several ways (Bourgeois, 1981). It enables managers to induce key stakeholders (e.g., employees, suppliers) to stick with the organization by allowing "payments to members of the coalition in excess of what is required to maintain the organization" (Cyert and March, 1963: 36). Without slack there is significantly less leeway to, for instance, provide key employees perquisites (e.g., extra financial incentives and slack time) to keep them tied to the organization. When key stakeholders cease their relationships with the organization, such disruptions can adversely impact firm performance. Campbell *et al.* (2012), for instance, show that in knowledge intensive settings, employee mobility negatively influences firm performance, particularly when former employees create new ventures rather than join established firms. Moreover, such exits often result in the loss of valuable knowledge. Managers can valuably use slack resources to avoid such relationships being ended prematurely.

Slack also enables managers to reduce potentially dysfunctional conflicts that arise between organizational subunits because of competition over scarce resources (Pondy, 1967). Given bounded rationality, complex organizations function by splitting work into subunits or groups which focus on smaller, more manageable problems (Bromiley, 2005). Subunits, however, face different organizational problems, perceive the same problems differently and may have different and even conflicting goals (Cyert and March, 1963). With sufficient slack, managers can satisfy divergent subunit goals without subunits turning into contending factions.

Moreover, for those problems that do arise, slack allows for those problems to be aired and solved more easily; indeed, with sufficient slack managers can come up with "a solution for every problem" (Moch and Pondy, 1977: 356).

Managers may also employ slack to buffer the technical core of the organization from disruptions arising from competition over resources (Bromiley, 1991; Cyert and March, 1963; Thompson, 1967). Without any slack or "internal shock absorbers" built into their workflow (Bourgeois, 1981: 30), organizations will experience breakdowns in their routine operations, even with the smallest possible internal disruption. Thus, slack buffers interdependent organizational units, which, in a boundedly rational world, cannot perfectly coordinate their activities (Bourgeois, 1981). Without HR slack, for instance, the unexpected illness of an employee will make it impossible for an organizational unit to provide basic services and will eventually cause delivery delays to other units and customers. Slack resources further protect organizations from external pressures or environmental shocks. Wan and Yiu (2009), for example, show that slack resources contributed more to firm performance during the Asian Economic Crisis—an environmental jolt that suddenly and unexpectedly increased environmental uncertainty.

Slack resources also play an adaptive role as a facilitator of strategic behavior in organizations, fostering innovation and experimentation (Bourgeois, 1981). They allow organizations to more safely experiment with highly uncertain (but potentially lucrative) projects, fostering "a culture of experimentation" (Nohria and Gulati, 1996: 1247). Slack further enables slack search; i.e., it allows managers to explore projects which have strong support from scientists or other corporate champions, but which would not have been approved in the face of resource scarcity (Cyert and March, 1963; Greve, 2003; Nohria and Gulati, 1996).[2] Consistent

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[2] Another key concept in the behavioral theory of the firm is problemistic search (Cyert and March, 1963) or search that is triggered by managers "when organizational performance is below their aspiration level" (Greve, 2003: 687).

with these ideas, O'Brien (2003) shows that slack helps firms to sustain their competitive position by providing the resources needed for continuous investments in R&D and new product launch.

However, while slack "serves a positive function", a behavioral perspective also recognizes that "maintaining slack costs money so too much slack can lower profitability" (Bromiley, 2005: 31). Building on the idea coined by Cyert and March (1963) that conflicts over budgets are less intense and managers are less stringent when slack is abundant, Nohria and Gulati (1996) further argue that too much slack diminishes discipline over innovative projects. Finally, managers who control too much slack may become complacent and feel overly optimistic and as a consequence become less likely to experiment or take strategic actions (Kim *et al.*, 2008). Indeed, Debruyne *et al.* (2010) show that the presence of more resources leads decision makers to believe they are able to react effectively to competitive attacks, but also makes them less motivated to do so.

Overall, organizations are expected to have a desirable level of slack, where too little slack creates many organizational problems and too much slack is equally untenable (Bourgeois, 1981; Sharfman *et al.*, 1988). In a similar vein, Bromiley (2005: 31) states "just as individuals have some desirable level of fat, organizations can have too little or too much slack". Thus,[3]

Hypothesis 1a: The relationship between financial slack and firm performance takes the form of a quadratic function with a positive linear term and a negative squared term.

A lack of support for the innovation-in-the-face-of-adversity hypothesis, however, prompted Cyert and March (1963) to propose that slack, rather than 'necessity', fosters innovation (e.g., Bourgeois, 1981; O'Brien, 2003). Problemistic search and slack search have "distinct and separable effects" (Greve, 2003: 688). Indeed, Greve (2003) argues that slack and performance do not necessarily co-vary much and that performance (adjusted by aspiration levels) is more subjective, short-term and volatile than slack. Moreover, contrary to slack search which facilitates bold strategic behaviors, problemistic search is expected to be local (Bromiley, 2005). Prior research also suggests that problemistic search in declining organizations contributes to a further decline in performance (Wiseman and Bromiley, 1996). Our focus is on the relationship between slack and firm performance, but as we describe later, we do empirically control for past firm performance and industry performance, as performance aspirations generally come from one's own performance and the performance of similar others (Bromiley, 2005).

[3] These quadratic relationships are often referred to in the literature as inverted U-shaped (e.g., Nohria and Gulati, 1996; Tan and Peng, 2003). However, following Kim and Bettis (2014) we use the term "quadratic relationship" since "inverted U-shaped" implies that the peak lies within the valid range of the dataset, which is not always true and remains subject to empirical scrutiny.

Hypothesis 1b: The relationship between HR slack and firm performance takes the form of a quadratic function with a positive linear term and a negative squared term.

SLACK RESOURCES, FIRM PERFORMANCE AND THE INSTITUTIONAL CONTEXT

Even though there has been a vast amount of research examining the direct relationship between slack resources and firm performance, more recently scholars have begun to examine the conditions under which this relationship is strongest (e.g., Argote and Greve, 2007; Vanacker *et al.*, 2013). Researchers have paid special attention to the role of a firm's external environment. For instance, some prior research has shown that financial slack is most beneficial to firm performance in hostile and stable industries (Bradley *et al.*, 2011b), but becomes harmful in more complex industries (George, 2005). In their study of Mexican manufacturing plants, Lecuona and Reitzig (2014) have also shown that tacit and specific HR slack becomes almost twice as valuable when plants face more intense competition.

Equating the external environment with a firm's industry, most prior studies have adopted a single-country research design, overlooking that different countries have distinct institutional contexts.[4] Managers operating in these different contexts, however, have different preferences and abilities in allocating slack resources, calling for incorporating the institutional environment in analyses seeking to clarify the effects of slack resources on firm performance. National institutions are among the most important forces that can influence this relationship by limiting managers' discretion in making resource allocation decisions. We focus on the role of legal institutions, or the "regulative" institutional pillar (Scott, 1995). These institutions are powerful in

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[4] Some studies have focused on a sample comprising firms from a very limited set of countries (for instance, the U.S. and Canada (Singh, 1986) or Hong Kong and Singapore (Wan and Yiu, 2009)). However, these studies also overlooked the fact that countries have different institutional contexts, and these studies were constrained in examining such issues because of the small sample of firms in each country and the limited number of countries being investigated.

their influence on managers' strategic choices and as a result influence firm performance (Aguilera and Jackson, 2003; Aguilera *et al.*, 2013; Oliver, 1991). Institutional theorists believe that this influence occurs through managers' voluntary compliance with the legal frameworks that society maintains or through coercion. Either way, managers' choices have to account for such legal frameworks to retain legitimacy (North, 1990; Scott, 1995).

Invoking an institutional perspective, we propose that the performance effects of slack resources depend on the characteristics of the national corporate governance systems regulating managerial behavior. Specifically, we examine the moderating effect of the degree of protection of creditors and employees on the slack-performance relationship. We focus on creditor and employee rights because these two groups of stakeholders have relatively direct claims on a private firm's resources. Moreover, these two groups have been extensively studied (Botero *et al.*, 2004; La Porta *et al.*, 1997), especially in the strategy literature (Capron and Guillén, 2009; Schneper and Guillén, 2004). In the following section, we theorize on how creditor rights are likely to influence the performance effects of financial slack. This is followed by a discussion on how labor protection laws are likely to influence the performance effects of HR slack.

Creditor rights and the performance consequences of financial slack

Creditor rights refer to the legal rights of creditors against defaulting debtors. When these rights are strong, creditors have more power to force repayment, seize collateral assets, and/or gain control over the firm (Djankov *et al.*, 2007). The degree to which laws protect creditors varies considerably across countries (La Porta *et al.*, 1997). In some countries, creditor rights mandate management dismissal in case of bankruptcy or reorganization whereas in other countries they do not. Also, before deciding whether a firm should be liquidated or not, in some countries an

automatic stay gives managers some time to communicate with their creditors. Yet, this option does not exist in other countries.

Stronger creditor rights lead to deeper and more developed private debt markets (e.g., Djankov *et al.*, 2007; 2008; Haselmann *et al.*, 2010; La Porta *et al.*, 1997). Indeed, Djankov *et al.* (2007, p. 315) found that as the creditor rights index rises by one, the private credit to gross domestic product (GDP) ratio rises by six percentage points. Moreover, stronger creditor protection makes credit available on more favorable terms, such as lower interest rates (e.g., Bae and Goyal, 2009). Together, these observations suggest that weaker creditor rights decrease the availability of debt financing in the firm's environment and increase the cost of raising debt financing from its environment.

When managers face constraints in gaining access to debt financing from their environment because of weaker creditor rights, the positive stabilizing function of financial slack may prove especially valuable. One probable reason is that, in such resource-constrained environments, without financial slack any unexpected reduction in cash flow will result in an immediate shortage of internal funds causing, for instance, layoffs, difficulties in paying employees or suppliers and the cancelation (or delay) of basic capital investments, leading to internal turmoil (e.g., Bromiley, 1991). When managers face constraints in gaining access to debt financing because of weaker creditor rights, this may also heighten the value of financial slack's adaptive role. Indeed, with fewer external financial alternatives, managers of firms with little financial slack may not be able to experiment with new strategic initiatives or pursue new business opportunities. Having an internal buffer of cash resources that could be rapidly deployed—despite the existence of finance constraints in the environment—may thus both alleviate the potential risk of underinvestment and restore a firm's strategic flexibility (e.g.,

Bradley *et al.*, 2011b; Pfeffer and Salancik, 1978). These changes should make the value of financial slack higher (lower) for firms in countries with weaker (stronger) creditor rights.

In addition, one of the key benefits of financial slack is its adaptive role, including fostering innovation, experimentation and risk-taking activities that would improve firm performance (Bromiley, 1991; Kim *et al.*, 2008). Stronger creditor rights, however, may reduce managers' willingness to use financial slack to pursue such activities. In fact, some research shows that stronger creditor rights are associated with reduced risk-taking, leading to lower R&D intensity and innovation (Acharya *et al.*, 2011; Seifert and Gonenc, 2012). Serving as a risk-taking disincentive, strong creditor rights can reduce the impact of entrepreneurial activities firms undertake (Cumming *et al.*, 2014). These findings suggest potentially harmful effects of stronger creditor rights with respect to innovation and risky investments. Overall, stronger creditor rights may limit both the stabilizing and adaptive function of financial slack, reducing its value. Thus,

Hypothesis 2: The impact of financial slack on firm performance will be less positive (more negative) for firms located in countries with stronger creditor rights, relative to firms located in countries with weaker creditor rights.

Labor protection laws and the performance consequences of HR slack

Labor protection laws, which aim to protect employees from exploitative employers, also differ considerably across countries. For instance, significant differences exist across countries in terms of the power that unions have, the costs associated with firing employees and the ease with which managers can do so, and the social insurance provided against unemployment and sickness (Botero *et al.*, 2004). Yet, only recently have strategy scholars begun to examine the effect of national corporate governance institutions related to stakeholder groups other than suppliers of finance, recognizing that these other stakeholders (e.g., employees)—and the powers of these stakeholders as enshrined in national laws—can also have an influence on managers' decision-making and discretion. Capron and Guillén (2009), for instance, have shown that stronger

protection of employee rights in the target country significantly restricts an acquirer's ability to restructure the target and to redeploy resources. Van Essen *et al.* (2013) have also found that stronger labor rights protections constrain the ability of blockholders to pursue value-enhancing strategies such as adjusting their scale of operations when faced with revenue shocks.

Labor economists have long argued that labor protection laws introduce considerable adjustment costs such that managers operating in countries with stricter regulations will be slower to adjust to shocks. Consequently, stronger employee rights may restrict firm-level firing and hiring decisions such that managers will be less inclined to make firing decisions when confronted with negative shocks, but also less likely to hire when confronted with positive shocks (Caballero *et al.*, 2013)—with the former effect being stronger than the latter (Banker *et al.*, 2013). For instance, Adhvaryu *et al.* (2013) show that the changes in agricultural laborer employment in India in response to high versus low rainfall are greater in those states with less restrictive labor regulation. Overall, these findings show that stricter labor regulations reduce managers' flexibility when dealing with human resources.

When managers face stricter labor protection laws and the resulting reduced flexibility those laws impose, the stabilizing and adaptive roles of HR slack may be hampered. Previous research has indicated that HR slack is "stickier" than financial slack and is therefore more difficult to reallocate in the short term (Mishina *et al.*, 2004; Voss *et al.*, 2008). Whereas those human resources acquired in the past may fit with the direction of the firm's expansion currently being pursued, they likely constrain the pursuit of opportunities in areas that require different skills. Further, their stickiness implies that human resources are more difficult to redeploy. This may explain why Lecuona and Reitzig (2014) find that HR slack is *only* valuable when the employees needed to address unforeseen events cannot be hired and trained ad hoc—if they could be, hiring them on the spot as such events arise may be a better alternative than holding onto HR

slack that managers cannot deploy as effectively as new employees hired for specific jobs. Combined with the inherent sticky nature of HR slack, stricter labor protection laws hence likely make it even harder to redirect any given buffer of human resources towards solving specific internal problems or pursuing new, value-creating opportunities.

Indeed, HR slack is likely to be less "sticky" and therefore easier to redeploy for firms located in countries with weaker labor protection laws. For instance, in these environments, managers who have built up a buffer of excess manpower have more freedom in redeploying those human resources in response to sudden external pressures or internal shocks (i.e., HR slack's stabilizing role). Weaker labor protection laws also enhance HR slack's adaptive role because managers have more flexibility in changing their firms' buffer of human resources if they pursue new opportunities that require different skill sets. They also have more power to change the conditions of a particular job with existing employees, fire redundant employees, and hire employees with different skills. In contrast, managers in countries with stronger labor protection laws are more constrained in redeploying and reshaping their "buffer" of human resources. Once HR slack has been built in, it is difficult and more costly to change the composition of the human resource base when situations or opportunities pursued change radically. While managers could resort to training and development to make people more suitable for the new roles, sources of formal training—and the necessary funding—are more restricted for small and medium sized, private firms (Cardon and Stevens, 2004). Stronger employee rights are hence expected to hamper both the stabilizing and adaptive function of HR slack, reducing its value. Thus,

Hypothesis 3: The impact of HR slack on firm performance will be less positive (more negative) for firms located in countries with stronger employee rights, relative to firms located in countries with weaker employee rights.

METHOD

Data

Focusing on privately held European companies, firm-level data for this study come from *Amadeus*. The *Amadeus* database is compiled by Bureau van Dijk (BvD), one of Europe's leading electronic publishers of business information, and includes comparable financial information for firms from both Western and Eastern European countries. Disclosure requirements in Europe require private firms to publish annual accounting information.[5] BvD collects accounting information from a variety of sources, such as official registers and regulatory bodies (e.g., National Bank in Belgium, The Federal Statistics Service in Russia, Chamber of Commerce in the Netherlands and Italy and Companies House in the U.K.), annual reports, private correspondence, firm websites and news reports. BvD further harmonizes the financial accounts to allow accurate cross-country comparisons. Prior research shows that the data of private firms in *Amadeus* is as reliable as the data from alternative sources, such as *OneSource* (Faccio *et al.*, 2011). The coverage of European firms in *Amadeus*, however, is unrivaled by other databases.

We first selected private firms with available financial accounts between 2006 and 2009 (we also collected 2005 data to calculate the lagged variables for the initial year of our study). Our time frame covers periods of economic growth, the global financial crisis of 2008 and subsequent periods of economic decline. Second, we excluded utility companies because they are usually heavily regulated and largely state-owned. We further excluded financial services firms, the government/public sector and education (mainly public sector in Europe) because regulatory issues often drive business decisions in these industries. Third, we require firms to report basic

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[5] However, disclosure requirements and the amount and type of information vary among countries. For instance, small firms in the U.K. are not required to submit a profit and loss statement. The completeness of the data also varies among countries. For instance, in Germany failure to disclose financial accounts is not a punishable offence for small and medium-sized enterprises.

accounting data (e.g., total assets, employment, sales, and gross profit). This criterion excludes "empty shells"—i.e., firms only established for tax purposes (Klapper *et al.*, 2006). Finally, we eliminate firms with less than 20 employees. Given that this cut-off point is above that of any reporting nation, it helps to provide more comparable samples across countries (Desai *et al.*, 2003). These four criteria result in an unbalanced panel of 625,708 firm-year observations, which represent 167,959 firms from 34 countries operating in 56 two-digit NACE industries.

Country-level data, including creditor and labor protection measures, come from a variety of sources, including published work by Botero *et al.* (2004) and Djankov *et al.* (2007) and statistics from the World Bank. We exclude Bosnia, Cyprus, Estonia, Iceland, Liechtenstein, Malta, Montenegro and Serbia because of the lack of basic country-level control variables or creditor and labor protection measures for these countries. This results in a final unbalanced panel of 604,462 firm-year observations, representing 162,633 firms from 26 countries operating in 56 two-digit NACE industries. Table 1 presents detailed sample summary statistics by country.

*** Include Table 1 about here ***

Measures

To minimize concerns of reverse causality, we measure the dependent variable at time t and the independent and control variables at t-1. By doing so, we also account for the fact that managers may need time to "unlock" slack resources to convert them into new activities that will affect firm performance. Some prior studies have argued and shown that managers can do this within one year (e.g., Daniel et al., 2004: 572), which is in line with our applied one-year time lag. To avoid that data errors and outliers unduly influence our results, we truncated all ratio variables described below at the 0.5% tails (e.g., Brav, 2009).[6]

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[6] Winsorizing the data at the 0.5% tails provides almost identical results.

Dependent variable. We measure firm financial performance as gross profit on total assets. Gross profit is defined as revenue minus the cost of making a product or providing a service *before* deducting overhead, payroll, tax, and interest payments (e.g., George, 2005). We scale gross profit by total assets to make performance comparable across firms of different size and to mitigate heteroskedasticity concerns (Brav, 2009). This measure is not influenced by differences in tax rates across countries or by differences in financial structures across firms. Moreover, as gross profit is measured before deducting payroll payments, we avoid capturing simple constructed correlations (or accounting identities). Indeed, alternative performance measures, such as return on assets (ROA), may suffer from the fact that slack resources—and particularly HR slack—may be already built into the cost structure of firms. More specifically, payroll expenses constitute a cost that will automatically count against income, lowering operating profit, and thus ROA, in the short run. Using gross profit on total assets instead circumvents this potential problem.[7]

Independent variables. Consistent with prior research, we use financial ratios to calculate slack (e.g., Bradley *et al.*, 2011b; Bromiley, 1991; George, 2005; Greenley and Oktemgil, 1998; Greve, 2003; Kim and Bettis, 2014; Paeleman and Vanacker, 2015; Mishina *et al.*, 2004; Wan and Yiu, 2009).

To test Hypothesis 1a and Hypothesis 2, we measure *Financial slack* as cash and cash equivalents scaled by total assets (Kim and Bettis, 2014; Vanacker *et al.*, 2013). This measure is adjusted by subtracting the mean ratio of cash and cash equivalents to total assets for all firms operating in the same 4-digit industry and country as the focal firm (Bromiley, 1991). As such, it represents a close estimate of excess cash resources firms hold compared to industry and country

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[7] Nevertheless, we also used ROA, defined as earnings before interest and taxes (EBIT) on total assets, as a performance measure and obtained qualitatively similar results.

norms. Given the hypothesized quadratic relationship between financial slack and performance, we calculate financial slack squared to capture such potential quadratic effects. The inclusion of squared terms also provides theoretical consistency with previous work (e.g., Bradley *et al.*, 2011b; Bromiley, 1991) and addresses econometric concerns related to Type I and Type II errors when examining interactive hypotheses without including squared terms (e.g., Ganzach, 1997).

To test Hypothesis 1b and Hypothesis 3, we measure *HR slack* as the number of employees (measured in full-time equivalents) scaled by total sales (Mellahi and Wilkinson, 2010; Mishina *et al.*, 2004; Welbourne *et al.*, 1999). We adjusted this measure by subtracting the mean ratio of employees to sales for all firms operating in the same 4-digit industry and country as the focal firm. When firms employ more people to generate a specific amount of sales, relative to their peers, they are expected to have more HR slack (hence, larger values indicate greater levels of HR slack).[8] Again, consistent with our hypothesized quadratic relationship between HR slack and performance, we calculate HR slack squared to capture such potential quadratic effects.

Moderator variables. Our first moderator *Creditor Rights* is captured by the creditor rights index which measures the power of secured lenders in bankruptcy (Djankov *et al.*, 2007). We use Djankov *et al.*'s (2007) index, which is constructed by La Porta *et al.* (1997), but updated with minor differences for a broader set of countries. The value of one is added to the index when a country's laws and regulations provide each of the following powers to secured lenders (Djankov *et al.*, 2007: 302): (1) there are restrictions, such as creditor consent, when a debtor files for reorganization; (2) secured creditors can seize their collateral after the petition for reorganization is approved, that is, whether there is no automatic stay or asset freeze imposed by

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[8] We scale cash and cash equivalents by total assets and number of employees by sales to provide theoretical and empirical consistency with prior work. These are also "normal" denominators for cash and employees, respectively, as cash is obtained from the balance sheet (so scaling by total assets provides a ratio between 0 and 1) and HR slack relates to the inverse of productivity (i.e., sales/number of employees) (Mishina *et al.*, 2004).

the court; (3) secured creditors are paid first out of the proceeds of liquidating a bankrupt firm; and (4) an administrator, not management, is responsible for running the business during the reorganization. The creditor rights index aggregates the scores on the four items and varies between 0 (poor creditor rights) and 4 (strong creditor rights). To test Hypothesis 2, we interact the creditor rights index with financial slack and financial slack squared.

The second moderator is *Employee Rights*, which is captured by the employment law index developed by Botero *et al.* (2004). Employment laws regulate individual employment conditions, including alternatives to the standard employment contract, flexibility of working conditions, and termination of employment. The employment law index measures the incremental cost to the employer of deviating from a hypothetical rigid contract, in which the conditions of a job are specified and a worker cannot be fired. Thus, higher values of this index indicate more extensive legal protection of workers.[9] To test Hypothesis 3, we interact the employee rights index with HR slack and HR slack squared.

Control variables. We control for several variables that serve as standard controls in studies on the performance consequences of slack resources (e.g., George, 2005) as well as variables specific to our context. We first include several firm-level control variables.[10] Because

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[9] Both our creditor and employee rights measures are static. This is unlikely to be a cause of concern, however, as both creditor and labor rights have been shown to remain stable over time. Specifically, the correlation between the 2003 and 1978 creditor rights indices is 0.95. Similarly, Capron and Guillén (2009) report a 0.95 correlation between their labor rights index of the early 1990s and the index of the early 2000s. Overall, previous evidence indicates that creditor and labor rights remain very stable over time, and we hence see no reason why the use of static measures would bias our results towards finding support for our hypotheses. Moreover, we use mean-centered creditor and employee rights to reduce multicollinearity concerns when interacting these variables with financial and HR slack, respectively (e.g., Neter *et al.*, 1996).

[10] We acknowledge that firm size might influence both firm performance and the accumulation of slack resources. However, note that we already control for firm size through using ratio variables as scaling controls for firm size. In unreported regressions, we added controls for firm size to reduce any potential remaining size effects. We control for firm size, measured as the natural logarithm of the total number of employees (in full-time equivalents). Following Kim and Bettis (2014), we use the number of employees rather than other measures, such as total assets or sales, because we already used total assets to scale performance (gross profit). Using total assets or sales as a proxy for firm size may introduce a spurious relationship between firm performance and size. We also include the natural

prior performance is likely to influence both the level of slack and current firm performance (Sharfman *et al.*, 1988), we control for *lagged performance*.[11] Moreover, given that resources are likely to be more critical in younger firms, we control for *firm age* measured as the natural logarithm of the number of years since formal incorporation plus one. We also control for *potential slack,* measured as the equity-to-debt ratio, adjusted by subtracting the mean ratio for all firms in the same 4-digit industry and country as the focal firm (Bromiley, 1991; George, 2005). *Recoverable slack* is measured as inventories and accounts receivables divided by total assets (Bradley *et al.*, 2011b). This measure is again adjusted for the mean ratio for all firms in the same 4-digit industry and country as the focal firm. For both slack measures, we further calculate the squared variables to capture any quadratic effects as suggested by prior theoretical and empirical work (Bromiley, 1991; George, 2005).

We also include several industry control variables. Specifically, *industry profitability* is measured as the average ROA of firms operating in the same country and industry (4-digit industry code) as a sample firm. *Number of competitors* is measured as the natural logarithm of the number of firms competing in the same country and industry as the sample firm. *Size of competitors* is measured as the average of the natural logarithm of the number of employees of firms operating in the same country and industry as the sample firm. *Industry complexity* is measured as the sum of the squared market shares of firms operating in the same country and sector as the focal firm. Finally, to capture any remaining heterogeneity at the industry level, we include *industry fixed effects* by using two-digit industry codes.

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logarithm of the number of subsidiaries of a firm plus one, which also partially controls for firm size. Our results, however, remain virtually identical.

[11] We also estimated models where we exclude the lagged dependent variable because the inclusion of lagged performance potentially raises an important caveat. Specifically, the coefficients for independent (and control) variables with little variation could be understated because their impact on firm performance might be captured by the lagged dependent variable (e.g., Schneper and Guillén, 2004). Results remain qualitatively similar.

We also control for several country-level variables obtained from the World Bank. To avoid having our creditor (labor) protection measures capture differences in economic development rather than legal differences, we control for the level of economic development of a country—measured by the natural logarithm of *GDP per capita* defined as GDP divided by midyear population. Further, strong legal rights may be less important if enforcement of these laws is weak. We therefore control for the *Rule of Law*, which measures the legal enforcement of laws. It is a time-varying measure and varies between -2.5 (weak rule of law) and +2.5 (strong rule of law).[12] We also include *year fixed effects* to account for unobservable macro-economic effects, general events or trends in the data.

Econometric approach

With a pooled dataset consisting of up to four years of data for each firm, we tested our hypotheses using Generalized Estimating Equations (GEE) which accommodates the analysis of panel data with repeated, within-subject measures (Ballinger, 2004). The GEE approach for modeling longitudinal data accounts for unobserved heterogeneity across firms and for the lack of independence across observations for the same firm through the specification of a working correlation matrix. Using the xtgee command in Stata, we chose a normal distribution and an identity link function that corresponded to a linear model. For the correlation matrix, we used the general "unstructured" matrix option. The use of the unstructured correlation matrix together with robust variance estimators provides very conservative results (Liang and Zeger, 1986).

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[12] We further estimated models that include country fixed effects to control for any remaining unmeasured or unobservable (static) differences between countries, including financial reporting requirements and cultural differences. In these specifications, the main effects of creditor and employee rights are omitted because these variables do not change within countries. However, for the purpose of our study, we are not particularly interested in the main effects of these variables on firm performance. Rather, we are interested in the interactions between financial slack (squared) and creditor rights and HR slack (squared) and employee rights. These interactions between time-variant slack and time-invariant national laws show how the effect of slack on firm performance varies with the level of creditor or employee protection (e.g., Allison, 2005). Results remain qualitatively similar.

RESULTS

Main results

Table 2 reports the descriptive statistics and correlations between the variables, except for industry, year and country dummies. Interestingly, the correlation between financial and HR slack is negligible. Thus, firms with financial slack do not necessarily have HR slack (and vice versa). Moreover, while financial slack is positively correlated with firm performance, HR slack is negatively correlated with firm performance.

*** Include Table 2 about here ***

Table 3 presents the GEE estimation results. Model 1 includes only control variables. In Model 2, we add the financial and HR slack measures and their quadratic terms. In Model 3, we interact financial slack and its squared term with creditor rights. In Model 4, we interact HR slack and its squared term with employee rights. Model 5 presents the full model.

The results for the control variables provide some interesting insights. With respect to firm-level controls, past firm performance is positively related with current firm performance. When all other variables are held at their means, an increase from the mean to the mean + 1 standard deviation (S.D.) in prior-year performance increases current firm performance by about 73 percent for the average firm. Next, potential slack and recoverable slack positively influence firm performance at diminishing rates. An increase from the mean to the mean + 1 S.D. in potential (recoverable) slack increases firm performance by about 15 percent (29 percent) for the average firm. The results also suggest that the other firm-level controls play an economically more modest role. With respect to industry-level controls, only industry profitability has an economically strong and positive impact on firm performance. An increase from the mean to the mean + 1 S.D. in industry profitability increases firm performance by about 56 percent for the

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average firm. Finally, the country-level control variables generally have an economically modest impact on firm performance: the most impactful are GDP per capita and rule of law. An increase from the mean to the mean + 1 S.D. in country GDP per capita (rule of law) increases firm performance by about 5 percent (4 percent) for the average firm.

*** Include Table 3 about here ***

With respect to our hypotheses, Table 3 shows that Hypothesis 1a is supported. The linear coefficient of financial slack is significant and positive, while the squared term is significant and negative in all model specifications. Thus, we find that financial slack has a positive effect on firm performance, but this effect gradually diminishes with increasing slack. The effect of financial slack on firm performance does not become negative at high levels of financial slack.[13] Moreover, Table 3 shows that Hypothesis 1b is not supported. The linear coefficient of HR slack is negative and significant, while the squared term is positive and significant in all model specifications. These results are opposite to our expectations. Thus, we find that HR slack has a *negative* effect on firm performance, but this effect gradually diminishes with increasing HR slack. The effect of HR slack on firm performance does not become positive at high levels of HR slack.[14] As we demonstrate below, the strength of the effects of financial (HR) slack on firm performance ultimately depends on the creditor and employee rights of the country in which managers operate.

In Table 3, for all models that include the interaction terms between financial slack (squared) and creditor rights, we find that the linear interaction terms are negative and significant—the quadratic interaction terms are not significant. Consistent with Hypothesis 2 and

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[13] Performance increases with increasing financial slack and is at its maximum when financial slack equals approximately 0.48, which lies outside the data range.
[14] Performance decreases with increasing HR slack and is at its minimum when HR slack equals approximately 0.39, which lies outside the data range.

as plotted in Figure 1, this finding indicates that the relationship between financial slack and firm performance is less positive for firms operating in countries with stronger creditor rights relative to firms operating in countries with weaker creditor rights. These effects are also economically meaningful. When all other variables are held at their means, an increase from the mean to the mean +1 S.D. in financial slack increases firm performance by about 25 percent for the average firm located in France (a country with the weakest creditor protection rights in our sample), while it increases firm performance by about 14 percent in the average firm in the U.K. (a country with the strongest creditor protection rights in the sample).

*** Include Figure 1 about here ***

Further, in Table 3, for all models that include the interaction terms between HR slack (squared) and employee rights, the linear interaction terms are negative and significant—the quadratic interaction terms are not significant. As predicted in Hypothesis 3 and as plotted in Figure 2, this finding suggests that the relationship between HR slack and firm performance is more negative for firms operating in countries with stronger labor protection laws relative to firms located in countries with weaker labor protection laws. These effects are again economically significant. When all other variables are held at their means, a decrease from the mean + 1 S.D. to the mean in HR slack increases firm performance by about 45 percent for the average firm located in Russia (a country with the strongest employee protection rights in our sample), while it increases firm performance by about 25 percent for the average firm in the U.K. (a country with the weakest employee protection rights in our sample).

*** Include Figure 2 about here ***

Robustness tests

We fitted several additional models to assess the strength of alternative explanations and demonstrate the robustness of our findings.[15]

First, we test for the possibility that slack resources might take more time to be "unlocked" by managers than one year and hence that the relationship between financial (HR) slack and performance might change when we account for this possibility. To do so, we employ increasingly longer time lags between financial (HR) slack and firm performance, including 2-year, 3-year and 4-year time lags. Results remain similar. Specifically, when considering the relationship between financial (HR) slack and firm performance, relationships remain qualitatively similar with what we reported before using 1-year time lags.

Second, to control for the possibility that slack resources might be endogenously determined (e.g., Wang *et al.*, 2016), we apply a "predicted value approach". This helps to partial out the endogenously determined variance of the level of financial and HR slack. For financial slack, this approach entails that we first run regressions predicting the 'normal' level of cash (scaled by total assets) by regressing cash scaled by total assets on basic firm, industry and country variables and saving the predicted values. Subsequently, we subtract the 'normal' cash to total assets ratio (based on our regression) from the firm's actual cash to total assets ratio to obtain financial slack. We follow a similar procedure for HR slack. When using these alternative measures, the results remain similar.

Third, we use alternative measures for creditor and employee rights. For creditor rights, we use the World Bank's time-varying strength of legal rights index that measures the degree to which laws protect the rights of borrowers and lenders and thus facilitate lending. The index ranges from 0 to 10, with higher scores indicating that these laws are better designed to expand

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[15] These models are not reported in detail due to space considerations, but they are available from the authors upon request.

access to credit. Results remain similar. We prefer the use of the creditor rights index developed by Djankov *et al.* (2007) as our primary measure, however, because this measure better reflects the theoretical construct "creditor protection", whereas the World Bank measure also incorporates the protection of borrowers. We also use the collective relations laws index as an alternative employee rights index, which captures the balance of power between labor unions and employers and associations of employers (Botero *et al.*, 2004). Higher values of this index correspond with more extensive legal protection of workers. Results again remain similar.

DISCUSSION AND CONCLUSION

The relationship between a firm's slack resources and its financial performance has received considerable research attention, generating conflicting findings. Using a large-scale, cross-national dataset of privately held European firms, this study re-examines prior research on the slack-performance relationship and develops a new integrated behavioral-institutional perspective on how formal regulative institutions influence the performance effects of slack resources.

The relationship between slack resources and firm performance

In the behavioral perspective, slack performs a positive stabilizing and adaptive role (Cyert and March, 1963; Thompson, 1967). Thus, "slack, despite its costs, has a positive impact on firm performance" (Tan and Peng, 2003: 1249); that is, it is not until the level of slack becomes excessive that it may lower firm performance (Bourgeois, 1981; Sharfman *et al.*, 1988). This implies that firms need to reach a desirable or optimal level of slack to achieve high financial performance (Bromiley, 2005).

Consistent with Tan and Peng (2003), our results suggest that the behavioral perspective works particularly well when slack is unabsorbed (i.e., financial slack). Despite similarities with

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Tan and Peng (2003), however, we do not find evidence for an inverted U-shaped relationship between financial slack and firm performance. Even though the relationship between financial slack and firm performance takes the form of a quadratic function (with a positive linear term and a negative squared term), the inflection point lies outside the valid range of the data. This finding indicates that the impact of financial slack is positive over the entire range of the data, though this positive effect diminishes as financial slack increases. Our results are similar to those of Kim and Bettis (2014)—who focus on a large-scale sample of publicly held US firms—and show that returns to cash continue to increase far beyond transactional needs.

Conversely, our main results also suggest that the behavioral perspective overvalues the benefits (relative to the costs) of holding absorbed slack (i.e., HR slack). Specifically, we find that the impact of HR slack on firm performance is *negative* over the entire range of the data, though this negative effect diminishes as HR slack increases. One explanation for this finding could be that it might simply take more time for the positive effects of HR slack to arise. However, robustness checks using longer time lags also show negative results for the effect of HR slack on firm performance—making this unlikely to be an explanation for our findings. Our findings for HR slack do align with recent research taking a knowledge-based perspective, indicating that HR slack *in general* (with the exception of tacit and specific HR slack) decreases firm performance (e.g., Lecuona and Reitzig, 2014). Building in a buffer of human resources that is perfectly tailored to a firm's future challenges or opportunities is extremely hard to do. More often than not, firms build in a buffer of general human resources consistent with the capabilities they required in the past or to date—not necessarily intentionally as it is difficult to predict what the future will bring. However, with that kind of a general buffer of human resources, it also may be significantly harder to truly reap the benefits of having that HR slack in place as there is less

likely a fit between the human resources firms need to address future challenges or opportunities and the human resources they actually have available.

The moderating effect of regulative institutions

We further study how the performance effects of slack resources depend on the nature of regulatory macro institutions. Specifically, we theorized on the moderating impact of creditor and employee protection laws on the performance effects of financial and HR slack, respectively.

To date, scholars have largely attributed the positive effect of financial slack on firm performance to its adaptive role, stimulating innovation and experimentation (Bromiley, 1991) and the fact that it also serves as a buffer when firms are confronted with a lack of financial resources in their external environment (O'Brien, 2003). Past research, however, has not examined how national systems of corporate governance and, more specifically, creditor rights affect the performance effects of financial slack. Nevertheless, stronger national creditor and bankruptcy rights can severely constrain managers' willingness to take risks and experiment (Seifert and Gonenc, 2012) and can ease access to (cheaper) external debt financing (Djankov *et al.*, 2007). These factors are likely to make financial slack less valuable for firm performance in countries with stronger creditor rights. We indeed find that, in countries with stronger creditor rights, financial slack is less positively related to firm performance.

Prior research has further argued that "sticky" HR slack might be associated with lower firm performance because of reduced exploration into new areas that require different human resource skills, knowledge and abilities (Mishina *et al.*, 2004) and the high cost of retaining such slack (Lecuona and Reitzig, 2014). Still, past studies have not examined how national labor protection laws might influence the performance effects of HR slack, though they have suggested that stronger labor protection laws might increase the "stickiness" and cost of human resources

(Botero *et al.*, 2004). Our results show that in countries with stronger employee protection laws, which usually increase the "stickiness" and raise the costs of HR slack, HR slack is more negatively related to firm performance. These results underscore the need to consider a firm's national legal context when analyzing the relationship between its slack resources and performance.

Theoretical integration

The results provide a foundation for integrating behavioral and institutional perspectives in the study of the slack resources-firm performance relationship. One of the key aspirations of the behavioral theory of the firm was to offer "a set of summary concepts and relations that could be used to understand the behavior of *a variety of organizations in a variety of decision situations*" (Cyert and March, 1963: 2, emphasis added). However, several aspects of the interplay between organizations and their environment remain under examined (Gavetti *et al.*, 2012).

Prior theorizing almost exclusively focused on the impact of the level of slack resources on firm performance in an institutional vacuum. Simply possessing slack resources, however, is not sufficient for firms to generate performance advantages (Priem and Butler, 2001; Sirmon *et al.*, 2007). These resources need to be transformed into performance advantages through managerial action (Sirmon *et al.*, 2007), where managerial discretion is influenced by national legal systems (Crossland and Hambrick, 2007). Scholars have noted that effective deployment of firms' resources is conditioned by contextual factors (Priem and Butler, 2001) such as corporate governance systems and the market for managerial talent. Yet, past research has tended to equate a firm's external environment with its industry environment, largely ignoring the higher level of national institutions (see Capron and Guillén, 2009; Crossland and Hambrick, 2007, for notable exceptions). Our results indicate that these institutions exert a significant moderating effect on the

slack-firm performance relationship, especially among the privately held firms we examined in this study.

The use of institutional theory helps in explaining the forces that influence firm performance apart from the level of slack resources. By arguing and showing that the value of different types of slack resources depends on the institutional context, our study helps to clarify when the different types of slack resources promote firm performance and when they constrain firm performance. This brings greater clarity to the (conflicting) findings reported in previous research, which has focused on samples from countries characterized by different regulatory institutions. We have shown that similar increments in slack resources may have stronger or weaker influences on firm performance in different countries. Future studies would benefit from the insights of institutional theory because national institutions influence managers' discretion to employ their slack resources, which ultimately influences the allocation and performance consequences of these resources.

Future research directions

Our results suggest several useful directions for future study. Researchers need to consider other types of slack resources and how they may influence firm performance. This would allow a richer understanding of the role of these different resources and their interrelatedness in determining firm performance. For example, an important issue to explore in future research is the nature, measurement and effect of HR slack. The nature of this slack type may be contingent on the size of the organization and its main economic activity. Therefore, researchers may need to explore other measures to capture this type of slack. Further, the effect of HR slack on other firm performance measures needs to be explored; in particular, it would be useful to investigate how this type of slack affects organizational survival among smaller, younger private firms—many of

which work hard to stay alive. While our study shows that HR slack is detrimental to financial performance, the same may not necessarily be true for survival.

Moreover, there are multiple other institutions that influence managers' discretion in resource allocation and use. These institutions should be examined to determine their potential effect on the slack-performance relationship. Some of these institutions have a strong overt effect (e.g., legal); others (e.g., cultural norms) may have a more subtle, yet crucial impact. It would be prudent, therefore, to consider a mix of these institutions to understand their influence on managers' discretion because managers frequently have to deal with many of these institutions at the same time. The powers of these institutions change with shifts in economic and technological forces in an industry or a country. Therefore, it is important to consider the implications of these forces when analyzing the slack–firm performance relationship.

Even though we focused on privately held firms in this study, our findings on how national laws influence the slack-performance relationship might also apply in public firms. Public firms are well known for their more dispersed ownership and have been fertile grounds for studying slack and its effects on firm performance (e.g., Bromiley, 1991). Privately held firms are the dominant type of firms around the world, have more concentrated ownership, and are more constrained in their access to financial and labor markets. Consequently, there is a need for more research that gives attention to private firms. It is possible that national governance, ownership and firm governance systems interact to influence the accumulation and deployment of different types of slack resources or moderate the effect of these resources on firm performance.

One of our study's key contributions is offering a solid empirical basis to integrate behavioral and institutional views on the slack-firm performance relationship. This should help us in accumulating research findings and explaining their implications for managerial action. Given that institutions vary across countries, especially corporate governance systems, special attention

should be given in future research to cross-national comparisons, accounting for the unique settings in which managers make their strategic decisions.

Practical implications

Our findings have important implications for managers and policy-makers. Policy-makers generally view behaviors where managers accumulate significant amounts of financial slack and minimize HR slack as undesirable. Rather, policy-makers generally push managers to minimize financial slack, using excess cash to conduct investments and increase employment levels, potentially creating HR slack. However, our results suggest that such actions can significantly hamper firm performance. Moreover, these negative effects are particularly strong for firms that operate in countries that better protect financiers (i.e., creditors) and employees from possible exploitative managerial behavior. Our findings suggest an important trade-off where the actions taken by governments to increase economic activities and firm employment and the stronger protection of stakeholders may significantly weaken the competitive advantage of firms.

Our results further suggest that "lean" organizations do not necessarily perform better than organizations with some "fat" or vice versa. Managers should actively manage the diverse pool of resources in an organization that is in excess of the minimum necessary to sustain routine operations. Our evidence suggests that financial slack is valuable, and particularly for firms operating in countries with weaker creditor rights. Still, HR slack is detrimental for firm performance, and particularly for firms operating in countries with stronger labor protection laws. Overall, the management of these slack resources critically depends on their characteristics and the institutional environment in which managers operate.

Conclusion

The study of the relationship between slack resources and firm performance has received considerable attention in the literature. The diversity of theoretical perspectives and samples, while ignoring the institutional context, has resulted in a fragmented and contradictory body of research. In this study, we have tested an integrated behavioral-institutional perspective and proposed that legal institutions moderate the slack-performance relationship. Using a large sample of private firms from 26 European countries, we find support for our key proposition. Results show the importance of incorporating measures of the institutional environment in future studies examining the effect of slack on firm performance.

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Table 1: Sample summary statistics by country

Country	Nmbr of firms	Nmbr of firm-year obs	% of sample	Nmbr of 2-digit industries	Median employment	Median sales	Median assets	Creditor rights index	Strength of legal rights index	Employment law index	Collective relations laws index
AUSTRIA	206	733	0.12	38	140	13,410	15,792	3	7.00	0.5007	0.3601
BELGIUM	5,211	20,195	3.34	56	58	17,867	10,540	2	6.00	0.5133	0.4226
BULGARIA	1,869	7,167	1.19	53	92	3,847	3,127	2	9.00	0.5189	0.4435
CROATIA	2,965	11,414	1.89	55	55	4,157	3,628	3	6.40	0.4879	0.4524
CZECH REPUBL.	5,357	20,594	3.41	54	75	6,204	3,560	3	6.60	0.5205	0.3393
FINLAND	2,202	8,307	1.37	52	52	10,025	5,549	1	8.00	0.7366	0.3185
FRANCE	3,920	15,147	2.51	54	42	7,299	3,955	0	6.20	0.7443	0.6667
GERMANY	3,778	14,203	2.35	55	208	56,058	31,462	3	7.60	0.7015	0.6071
GREECE	3,654	14,385	2.38	53	40	5,860	6,929	1	4.00	0.5189	0.4851
HUNGARY	493	1,564	0.26	45	120	13,030	8,077	1	7.00	0.3773	0.6071
IRELAND	34	119	0.02	20	138	38,495	28,491	1	9.00	0.3427	0.4643
ITALY	19,732	77,902	12.89	55	56	14,683	13,295	2	3.00	0.6499	0.6310
LATVIA	862	3,363	0.56	47	94	7,144	3,843	3	10.00	0.7211	0.5327
LITHUANIA	1,151	4,332	0.72	51	88	5,896	3,643	2	5.00	0.6233	0.4970
NETHERLANDS	144	513	0.08	36	109	39,430	27,364	3	6.00	0.7256	0.4643
POLAND	6,279	22,406	3.71	54	100	9,237	5,277	1	8.20	0.6395	0.5655
PORTUGAL	667	2,614	0.43	48	81	11,855	10,953	1	3.00	0.8088	0.6488
ROMANIA	9,044	33,912	5.61	56	51	1,834	1,181	2	8.60	0.3273	0.5565
RUSSIA	35,447	126,837	20.98	56	70	2,036	895	2	3.00	0.8276	0.5774
SLOVAKIA	1,124	4,128	0.68	52	75	5,868	3,685	2	8.00	0.6571	0.4524
SLOVENIA	53	182	0.03	22	70	6,286	5,146	3	4.59	0.7359	0.4851
SPAIN	28,465	107,751	17.83	56	43	5,997	5,041	3	6.00	0.7447	0.5863
SWEDEN	3,343	12,682	2.10	56	80	21,822	10,810	1	7.20	0.7405	0.5387
SWITZERLAND	77	295	0.05	18	187	23,635	43,485	1	8.00	0.4520	0.4167
UKRAINE	13,685	48,624	8.04	55	68	1,138	680	2	9.00	0.6609	0.5774
UK	12,871	45,093	7.46	56	127	24,556	16,388	4	10.00	0.2824	0.1875
TOTAL SAMPLE	**162,633**	**604,462**	**100.00**	**56**	**63**	**6,337**	**4,405**	**2.00**	**6.78**	**0.60**	**0.50**

Note. Employees is in full time equivalents. Sales and assets are in thousands of Euros. The creditor rights index is from Djankov *et al.* (2007), the strength of legal rights index comes from the World Bank, the employment law index comes from Botero *et al.* (2004) and the collective relations law index also comes from Botero *et al.* (2004).

Table 2: Descriptive statistics and correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Panel A: Country-level																		
1 GDP per capita ^{L}	9.93	0.83	1.00															
2 Rule of law	0.91	0.80	0.88	1.00														
3 Creditor rights index	2.00	0.96	-0.06	-0.05	1.00													
4 Strength of legal rights index	6.78	2.07	-0.12	0.14	0.14	1.00												
5 Employment law index	0.60	0.15	-0.03	-0.08	-0.11	-0.45	1.00											
6 Collective relations laws index	0.50	0.11	-0.26	-0.34	-0.43	-0.39	0.48	1.00										
Panel B: Firm-level																		
7 Firm performance	0.07	0.13	-0.07	-0.09	-0.04	-0.04	0.04	-0.02	1.00									
8 Firm age ^{L}	2.76	0.69	0.44	0.42	0.06	0.06	-0.14	-0.08	-0.08	1.00								
9 Intangible assets ratio	0.02	0.07	0.19	0.18	0.07	0.04	-0.04	-0.03	-0.07	-0.01	1.00							
10 Potential slack	-0.06	2.46	0.02	0.03	0.01	0.02	-0.02	-0.01	0.15	0.08	-0.02	1.00						
11 Recoverable financial slack	0.00	0.26	0.01	0.01	0.01	0.01	-0.01	-0.01	0.32	0.07	-0.12	0.41	1.00					
12 Industry profitability	0.07	0.05	-0.22	-0.29	-0.15	-0.17	0.16	0.04	0.37	-0.23	-0.07	-0.02	-0.01	1.00				
13 Number of competitors ^{L}	4.48	1.54	-0.14	-0.29	0.16	-0.24	0.24	0.15	0.02	-0.15	-0.03	-0.01	0.00	0.06	1.00			
14 Size of competitors ^{L}	4.38	0.51	-0.03	0.06	0.17	0.23	-0.21	-0.35	0.02	0.01	0.01	0.00	0.00	0.00	-0.21	1.00		
15 Industry complexity	0.13	0.17	0.03	0.12	-0.11	0.12	-0.09	-0.11	0.01	0.03	0.02	0.00	0.00	0.00	-0.61	0.23	1.00	
16 Financial (available) slack	0.00	0.11	0.01	0.01	0.01	0.01	-0.01	-0.01	0.21	0.01	-0.07	0.15	0.30	-0.01	0.00	0.00	0.00	1.00
17 HR slack	0.00	0.05	0.03	0.03	0.01	0.00	-0.01	-0.01	-0.13	0.03	0.00	0.07	-0.04	0.00	-0.01	0.00	0.00	-0.02

Note. Country-level correlations are based on 104 country-year observations, firm-level correlations are based on 604,462 firm-year observations. ^{L} indicates the natural logarithm of a variable is used.

Table 3: GEE regressions of slack as a predictor of firm performance

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Lagged performance	0.427***	0.375***	0.375***	0.376***	0.375***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Firm age	-0.003***	-0.002***	-0.002***	-0.002***	-0.002***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Intangible assets ratio	-0.015***	-0.011***	-0.011***	-0.011***	-0.011***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Potential slack	0.003***	0.004***	0.004***	0.004***	0.004***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Potential slack squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Recoverable slack	0.089***	0.079***	0.079***	0.079***	0.079***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Recoverable slack squared	-0.025***	-0.028***	-0.028***	-0.028***	-0.028***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Industry profitability	0.626***	0.687***	0.687***	0.686***	0.687***
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
Number of competitors	0.000**	0.000*	0.000*	0.000*	0.000*
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Size of competitors	0.004***	0.004***	0.004***	0.004***	0.004***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Industry complexity	0.000	-0.001	-0.001	-0.001	-0.001
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
GDP per capita	0.002***	0.004***	0.004***	0.004***	0.004***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Rule of law	0.002***	0.003***	0.003***	0.003***	0.003***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Creditor rights	0.000	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Employee rights	-0.004***	-0.007***	-0.007***	-0.008***	-0.008***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]

Financial slack	—	0.126***	0.126***	0.126***	0.126***
		[0.002]	[0.002]	[0.002]	[0.002]
Financial slack squared	—	-0.131***	-0.129***	-0.131***	-0.129***
		[0.007]	[0.007]	[0.007]	[0.007]
HR slack	—	-0.402***	-0.402***	-0.392***	-0.392***
		[0.006]	[0.006]	[0.007]	[0.007]
HR slack squared	—	0.509***	0.509***	0.508***	0.508***
		[0.016]	[0.016]	[0.021]	[0.021]
Financial slack * Creditor rights	—	—	-0.018***	—	-0.018***
			[0.002]		[0.002]
Financial slack squared * Creditor rights	—	—	0.013	—	0.013
			[0.007]		[0.007]
HR slack * Employee rights	—	—	—	-0.215***	-0.213***
				[0.044]	[0.044]
HR slack squared * Employee rights	—	—	—	0.240	0.237
				[0.134]	[0.135]
Constant	-0.033***	-0.054***	-0.053***	-0.052***	-0.052***
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
Industry F.E.	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes
Number of firm year obs.	604,462	604,462	604,462	604,462	604,462
Number of firms	162,633	162,633	162,633	162,633	162,633
Chi-squared	209,918***	210,755***	210,889***	211,388***	211,518***

Note. Unstandardized regression coefficients from GEE models with semi robust standard errors reported in brackets. *** p < 0.001, ** p < 0.01 and * p < 0.05 (conservative two-tailed tests).

Figure 1: Moderating effects of creditor rights on the relationship between financial slack and firm performance

Strong creditor rights (80th percentile) — — — Weak creditor rights (20th percentile)

Figure 2: Moderating effects of employee rights on the relationship between HR slack and firm performance

Strong employee rights (80th percentile) — — — Weak employee rights (20th percentile)