Corporate Entrepreneurship, Country Institutions and Firm Financial Performance

Tom Vanacker *
Faculty of Economics and Business Administration
Ghent University
Sint-Pietersplein 7, 9000 Gent, BELGIUM
&
University of Exeter Business School, UK
TomR.Vanacker@UGent.be

Shaker A. Zahra
Carlson School of Management
University of Minnesota
321 19th Avenue South, Minneapolis, MN 55455, USA
zahra004@umn.edu

R. Michael Holmes Jr.
College of Business
Florida State University
821 Academic Way, Tallahassee, FL 32306-1110, USA
&
University of Johannesburg, SOUTH AFRICA
mholmes@fsu.edu

Forthcoming in the ***Journal of World Business***

Keywords: corporate entrepreneurship (CE), institutions, intellectual property (IP) protection, employee protection, performance.

* Corresponding author.

Acknowledgments. We thank the Editors and anonymous *JWB* reviewers for the helpful and constructive feedback. This paper benefited from presentations at the 2017 Academy of Management Meeting (Atlanta), the University of Zürich and Shanghai Jiao Tong University.

Corporate Entrepreneurship, Country Institutions and Firm Financial Performance

ABSTRACT

Adopting an institutional perspective, we propose that home country intellectual property (IP) and employee protection institutions moderate the relationship between corporate entrepreneurship (CE) and firm performance. Examining 9,642 European firms, we find that whereas internal CE is more positively correlated with firm performance in countries with less stringent IP protection and less stringent employee protection, external CE is particularly negatively correlated with firm performance in countries with less stringent IP protection and more stringent employee protection. These results provide a richer view of the relationship between CE and firm performance than the extant entrepreneurship and international businesses literatures suggest.

Keywords: corporate entrepreneurship (CE), institutions, intellectual property (IP) protection, employee protection, performance.

1. Introduction

Corporate entrepreneurship (CE) has inspired a large literature that crosses country boundaries (Dess et al., 2003; Zahra & Hayton, 2008; Zahra, 2015). Scholars' interest in CE stems from its importance for firms' strategic renewal (Burgelman, 1983; Hoskisson, et al., 2011; Romero-Martínez et al., 2010) and ability to develop new capabilities that update and revise firms' competitive approaches and sustain their advantages (Block & MacMillan, 1993; Kuratko, 2007; Kuratko et al., 2015). In turn, this interest has generated important research on the relationship between CE and firm performance, most of which shows that CE is positively related to firm performance, albeit with very different effect sizes (see Bierwerth et al., 2015).

The literature on the relationship between CE and firm performance, however, has three limitations that require attention. First, scholars have not been systematic in disentangling the different types of CE to examine their separate relationships with firm performance. CE can be internally or externally oriented (Zahra, 1991). Internal CE focuses on firms' policies, systems and processes that enable risk taking, proactiveness and innovation (Miller & Le Breton-Miller, 2011) and promote an entrepreneurial orientation (EO) (Covin & Wales, 2019). Examples include product and process innovation programs, experimentation, and anticipation and investment in next generation technologies (e.g., skunkworks) (Zahra, 1991; 1996). External CE focuses on entering new markets or activities by creating or buying new subsidiaries (Yiu et al., 2007) and engaging in new cooperative ventures with suppliers and customers (Wadhwa & Kotha, 2006). Although the different types of CE are related (i.e., they are not orthogonal), each has specific challenges and benefits that vary in strength and importance across different environmental conditions (e.g., Zahra, 1991). As such, some types of CE might relate to firm performance differently, and under different environmental circumstances, than other types of CE do.

A second limitation in the literature on CE and firm performance is that, although prior research shows that CE relates to firm performance differently across countries (Bierwerth et al., 2015), there is little research on the country-level factors that explain these differences. Some CE studies have documented the importance of the external environment, but nearly all of these studies have focused on industry conditions (Karimi & Walter, 2016; Zahra, 1991, 1993; Zahra & Covin, 1995; Zahra & Hayton, 2008; Yiu et al., 2007). The few studies that exist on country-level effects have focused on country culture (Morris et al., 1994; Mueller & Thomas, 2001; Rosenbusch et al., 2011; Shane, 1992). Thus, we have little knowledge of how countries' formal institutions (i.e., explicit rules, laws, and regulations; Holmes et al., 2013; North, 1990) shape the CE - firm

performance relationship. Countries' formal institutions affect firms' flexibility, uncertainty, appropriability, access to resources, and ability to manage the different forms of CE effectively (Acs et al., 2018; Cumming et al., 2009, 2010). Thus, they also can influence the performance implications of CE activities (Holmes et al., 2016; Oliver, 1997).

Third, most research has examined the relationship between CE and contemporaneous or short-term firm performance (Baum et al., 2000; Covin & Slevin, 1989; Zahra, 1991, 1993, 1996; Zahra & Covin, 1995; Zahra et al., 2000). Examining firm performance contemporaneously with CE makes it very difficult to disentangle whether CE affects firm performance, or firm performance enables CE. Likewise, investments in innovation, venturing and other CE activities may involve large up-front costs, and it may take several years for these investments to provide the desired returns. Thus, we need to establish how CE relates to firm performance over more and longer time frames than have been considered previously.

Aiming to move the literature forward and address these limitations, *we examine how countries' formal institutions moderate the relationship between multiple types of CE and firm performance over multiple time periods*. We examine internal CE by capturing firms' entrepreneurial orientation (EO), which includes decision-making policies, priorities, and operations that allow firms to take risks, act proactively, and innovate (Simsek et al., 2010). We choose EO because it captures the extent to which firms support and display entrepreneurial behavior and, in turn, the extent to which such behavior manifests as attributes of the firm (Covin & Wales, 2019). As such, EO is viewed as an outcome of firms investments in internal CE. In addition, we examine external CE by focusing on venturing, which refers to the creation or purchase of new subsidiaries to enter product and geographic markets (Maksimov & Luo, 2020; Zahra, 1996). Following the literature, we propose that venturing captures external CE because it

allows firms "to diversify into new areas that involve competencies not readily available in the [firm's] mainstream businesses" (Burgelman, 1983: 223). Thus, in this conceptualization, EO and venturing represent distinct yet related constructs and, together, capture a firm's internal and external CE dimensions.

Although multiple formal (and informal) institutions could shape the CE - firm performance relationship, we focus on intellectual property (IP) protection and employee protection. We chose these two institutions for multiple reasons. First, they relate to the core of CE activities. IP protection institutions govern firms' property rights related to their technological resources, CE activities and outcomes (Holmes et al., 2016). Employee protection institutions influence firms' flexibility to redeploy employees (Botero et al., 2004) and also affect employees' incentives and engagement with firms, which are key for successful CE activities. In this way, IP protection and employee protection institutions affect the key processes and resources that shape the strength and sustainability of the potential competitive advantages that result from CE. Second, both IP protection and employee protection institutions influence the power and actions of stakeholders (e.g., rivals, partners, and labor) that affect the creation and capture of value through CE. Third, theoretical tractability (we cannot model everything) forces us to focus on such critical institutions (we control for other country effects).

From this base, we examine how internal CE and external CE differently relate to firm performance, conditional on the nature of IP protection and employee protection institutions, over one-, three-, and five-year periods. For this purpose, we use data on 9,642 manufacturing firms in 23 European countries. The European context is interesting for several reasons. First, the main legal traditions around the world originated from Europe (e.g., Botero et al., 2004; La Porta et al., 1997). Thus, studying institutions in European countries sheds light on other institutional

environments too. Second, although the European Union (EU) has tried to harmonize the institutions of member countries, important differences remain, including in IP protection and employee protection. Also, not all European countries are EU members, creating additional variance. Finally, despite differences in reporting requirements, there is rich firm-level financial data on both public and privately-held firms in Europe. While much prior research focused on large publicly-held firms, our sample mainly comprises (medium-sized) privately-held firms, thereby capturing the most common organizational form around the globe.

Our study makes several contributions. Theoretically, by exploring how formal institutions influence the links between different types of CE and firm performance across countries, our study provides a starting point for an institution-based perspective (e.g., Peng et al., 2008; Welter & Smallbone, 2011) on the CE - firm performance relationship. Contrary to prior research that often equated a firm's environment with its industry, we focus on the moderating role of country institutions. Likewise, though most prior research on the CE - firm performance relationship has focused on one country at a time, we provide evidence that different types of CE do not occur in an institutional vacuum and that countries' formal institutions shape the relationship between different types of CE and firm performance in vital ways.

Moreover, our study provides evidence of the CE - firm performance relationship over longer time periods than commonly is done in previous research. This approach overcomes a shortcoming in extant literature, which usually focuses on contemporaneous firm financial performance (Bierwerth et al., 2015; Zahra, 1991, 1993). Even if this short-term focus stems from a lack of data, it requires attention because of the potential long-term performance implications of CE (Block & MacMillan, 1993; Dess et al., 2003). In short, the multi-country research we provide should improve the quality of evidence on the important relationships involving CE, country

environments, and firm performance (Cumming et al., 2009; Terjesen et al., 2016). This evidence also can inform managers' decisions to invest in CE as a way to achieve superior profitability.

2. Theory Development

2.1. Internal versus External CE and Firm Performance

CE refers to established firms' efforts to create and pursue new ideas, business models, and growth prospects, often by identifying and pursuing opportunities to improve firm operations, developing and commercializing new product offerings, and entering new product and geographic markets. Accordingly, CE has the potential to increase firm performance, but it also is risky and potentially expensive. For instance, CE may require the expansion and reorganization of firms' workforces, the introduction of new management processes, and significant startup and overhead expenses to achieve long-term performance benefits. Thus, CE is potentially valuable, but also potentially time consuming and costly to implement. And, for these reasons, the payback from CE is uncertain and might not materialize, especially in the short-term and if environmental conditions are unfavorable.

There are two broad types of CE (Zahra, 1991), each of which creates potential benefits and challenges for firms. The first type is internal CE, which focuses on using the firm's extant resources and capabilities to infuse innovation, improve operations, take advantage of new opportunities, and create new products and services. Frequently, internal CE manifests in greater risk taking, proactiveness, and innovativeness (Covin & Wales, 2019; Miller, 1983). The second type is external CE, which involves venturing into new product and geographic markets, frequently manifesting in the establishment or acquisition of new subsidiaries by a parent firm (Zahra, 1996). While external CE is broader than establishing new subsidiaries, we focus on this element because it is widely acknowledged that such green field investments involve significant costs but also demonstrate parent firms' strong commitment to (global) expansion.

These two broad types of CE—internal CE and external CE—differ on multiple dimensions: First, whereas external CE involves extending the boundaries of the firm, internal CE does not necessarily do that. Second, whereas external CE involves acquiring, cooperating with, or setting up new firms, internal CE involves relying on firms' extant resources. Finally, external CE often requires decentralization to subsidiaries, while internal CE allows for centralized control. Hence, both types of CE, with their different characteristics, can have different effects on firm performance.

In spite of these differences, however, internal CE and external CE are not completely orthogonal (e.g., Bahl et al., 2020; Maksimov & Luo, 2020). Firms can pursue internal CE and external CE (venturing) activities simultaneously, by using different resources and skills. For instance, internal CE might take place within subsidiaries that were established previously through external CE. Ideally, these activities complement and reinforce one another. Yet, these activities differ in the required investments and have different payback periods, which can differently influence firm performance (e.g., Zahra, 1993, 1996). There also can be tradeoffs between internal CE and external CE. The focus on external activities such as venturing, by establishing new subsidiaries to enter new industries and/or markets, for example, can reduce the resources available for the successful pursuit of internal innovation, experimental and exploratory projects, and other creative activities.

Internal CE and external CE produce complex benefits and challenges for firms (as explained in more detail below). Moreover, their respective relationships with firm performance also might vary across contexts. There is evidence, for example, that environmental conditions shape the effects of risk taking (Andersen et al., 2007), innovation (Rosenbusch et al., 2011), proactiveness (Lumpkin & Dess, 2001), and overall EO (Engelen et al., 2016) on firm

performance. Empirical results for external CE have been similarly nuanced, with studies showing positive (Zahra, 1991), non-significant (Bos et al., 2017), and negative (Denis et al., 2002) effects of venturing on firm performance across different contexts.

However, most prior studies have examined the effects of industry conditions on the CE-firm performance relationship, and only few studies have examined the specific factors that explain the between-country variation in this relationship. Further, most of these studies have focused on informal institutions, such as country culture. However, a large literature suggests that formal institutions might be important to consider too. Indeed, research suggests that formal institutions are critically important to entrepreneurship (Acs et al., 2018) and to CE more specifically (Holmes et al., 2016). Therefore, we now examine the impact of countries' formal institutions on the CE - firm performance relationship.

2.2. The Moderating Effect of Country Institutions

Oliver (1997) argued that institutions can be both enabling and constraining in their influence on firms' resources, actions, and performance. Some institutions might increase the future profitability of CE, while others reduce such profitability. Below, we propose that institutions moderate the relationship between the internal and external dimensions of CE and future firm performance. Moreover, the strength and direction of effect is likely to vary, depending on the type of institution under consideration (i.e., IP protection and employee protection institutions).

The Role of IP Protection Institutions on the Relationship between Internal CE and Firm Performance. Internal CE involves risk taking, innovation, and proactiveness to enrich firm operations, exploit opportunities, and develop new revenue. It often results from organizational learning about new technologies, strategies, and opportunities (Bojica & Fuentes, 2012; Burgers

et al., 2009). In this way, internal CE fuels new product introduction, flexibility, strategic renewal, and new or updated resources and capabilities (Kuratko et al., 2015; Zahra, 1996).

Consistent with these benefits, prior research identifies several explanations for why each aspect of internal CE is likely to increase firm performance. First, finance and economics models often assume a positive relationship between risk and return. Risk taking increases the potential upside of investments, limits competition from risk-averse firms, and may allow firms to access resources on more favorable terms (e.g., while there is still uncertainty about their potential value) (Armour & Teece, 1980; Barney, 1986). Second, innovation can enrich firms' products, services, technologies, and production and distribution processes, which can help position firms to compete in the future and reduce threats of obsolescence. Thus, firms that invest more in innovation might have long-term performance advantages over firms that invest less in innovation (Franko, 1989; Mowery et al., 1996). Third, proactiveness allows firms to act in "anticipation of future demand" and to introduce "products and services ahead of the competition." As a result, proactive firms are more likely to identify or create and exploit opportunities quickly, to assume market leadership positions, to exert influence over their environments, and to perform better through these early mover advantages (Lumpkin & Dess, 2001: 431; Miller, 1983). Therefore, in line with prior research, we predict that the main effect of internal CE on firm performance will be positive.

Although internal CE might increase firm performance over the long term, it also poses challenges that can make these performance benefits elusive under some circumstances. For instance, developing and commercializing new products, services, and technologies might require large upfront investments in R&D, production, marketing, and internal processes (Latham & Braun, 2009). Some of the new discoveries and inventions are costly and might be less profitable than anticipated, especially if rivals can imitate these new offerings quickly and/or expropriate the

focal technologies. Given the long-term nature of internal CE investments and the potential sunk costs involved (e.g., in R&D), the ability to appropriate the returns of such investments is critical, especially over the long-term (Autio & Acs, 2010; Holmes et al., 2016).

A country's IP protection institutions are among the most influential institutions that could shape the internal CE - firm performance relationship. These institutions pertain to formal rules, regulations, and norms that cover the activities and processes related to obtaining and protecting inventions and other creative works through patents, copyrights, and trademarks. Typically, they determine the ownership and rights related to discoveries and the intellectual properties resulting from such discoveries (Hall & Ziedonis, 2001). Likewise, they determine how long it takes firms to recoup the initial investments in innovations by giving firms exclusive control over the innovations for a particular period (Arora & Ceccagnoli, 2006). In this way, IP protection institutions shape the profitability of firms' new products, services, and other technologies.

Controlling and protecting the resources and capabilities produced by internal CE are important for gaining and sustaining competitive advantage. Control of IP gives firms the opportunity to achieve pioneering and early-mover advantages by commercializing their technologies ahead of rivals and to protect these advantages over the long term (Baldwin & Scott, 1987; Foster, 1986; Kimura, 1990). Thus, IP laws can be critical in helping firms recoup their upfront investments, because the advantages firms derive from internal CE often endure longer when institutions allow firms to protect their IP and shape the rules of the competition in their industry (Mansfield, 1986; Rosenbloom & Cusumano, 1989). By delineating and providing the legal mechanisms that protect firms' rights to innovations, IP protection can allow firms to recoup their investments and, in turn, increase the returns they can create and capture (Autio & Acs, 2010).

By contrast, when IP protection institutions are weak, internal CE might be less profitable. Weak IP protection institutions allow rivals to compete away some of the profits of internal CE by introducing similar and competing products and services that replicate the firm's technologies, perhaps expropriating some of the returns that otherwise would accrue to the innovating firm. In such cases, competitive advantages from internal CE are weaker and shorter in duration, providing fewer opportunities for firms to recover investments in internal CE. For instance, increased flexibility, strategic renewal, and updated resources and capabilities provide short-lived benefits if rivals can expropriate proprietary knowledge quickly and with little legal recourse.

In sum, our discussion highlights the benefits (and costs) of internal CE and how IP protection institutions can influence firms' ability to capture more of the benefits (and hence recover more of the costs) from its internal CE activities. More specifically, when institutions provide better protection of IP, firms can enjoy more the fruits of their internal CE and consequently obtain larger and more enduring advantages over rivals. In contrast, weaker IP protection institutions could enable knowledge leakage, imitation, expropriation of a firm's internal CE, and thereby hamper firms' ability to capture value from their risk-taking, proactiveness and innovation. Therefore:

> *H1a: The relationship between internal CE and firm financial performance will be positively moderated by the strength of a firm's home country IP protection institutions.*

The Role of Employment Protection Institutions on the Relationship between Internal CE and Firm Performance. Internal CE depends heavily on firm employees. They are responsible for identifying and exploiting opportunities, developing and commercializing innovation, and so on. Internal CE also engages employees in creative activities that allow them to build and use new skills (Zahra, 1991). This engagement can enrich employees' motivation, productivity, empowerment, and contributions to the firm (Kuratko et al., 2005). Similarly, internal

CE can foster organizational cultures where employees can develop and test innovative ideas, take risks, and identify and pursue entrepreneurial opportunities (Floyd & Wooldridge, 1992). Thus, internal CE has the potential to enrich firms' human capital in several ways, further underscoring the expected positive relationship between internal CE and firm performance.

At the same time, internal CE can be disruptive and might create challenges for employees. Specifically, it can produce strategic changes and revised organizational priorities, resulting in layoffs or transfers for some employees. For example, Netflix eliminated entire departments when it shifted its delivery method from mail-order to streaming (McCord, 2014). Internal CE may also require organizational (e.g., structural or policy) change and new routines and processes that employees are expected to adopt. Such changes can result in lower focus, productivity, and morale while the changes are implemented (Burgelman & Sayles, 1986; Zahra & Covin, 1995).

Because internal CE affects employees in important ways, countries' employee protection institutions are likely to be an important moderator that shapes the internal CE - firm performance relationship. These institutions provide the formal legal frameworks that define employee rights with respect to pay and benefits, work hours and responsibilities, vacation and leave time, job transfers and layoffs, among other things (Botero et al., 2004). In general, employee protection institutions seek to ensure that employees receive fair treatment and compensation as well as to promote the safety and effective functioning of the workplace. They also specify the legal and administrative procedures to resolve labor disputes, including the rights and power of labor unions (Belenzon & Tsolmon, 2016; Botero et al., 2004; Malen & Vaaler, 2017). In light of the importance of employees to the success of CE (Hayton & Kelly, 2006; Stam, 2013), it is important to examine how employee protection institutions influence the CE - firm performance relationship.

There are multiple reasons why stringent employee protection institutions might reduce firms' financial gains from internal CE by affecting their ability to develop, leverage and refresh the human capital of their employees. First, these institutions make it difficult for firms to part with unproductive employees (or those who no longer fit the firm's CE strategies) and replace them with other employees. For instance, some countries mandate large severance packages for employees who are laid off without cause, which can increase costs for firms that pursue new internal CE strategies that require reductions (or new skills) in the workforce.

Second, and relatedly, employment protection laws limit options for transferring employees or increasing their responsibilities involuntarily. These limitations are problematic, because to create value, internal CE requires flexibility and proactiveness in taking risks and investing in innovation (Belenzon & Tsolmon, 2016; Rawley, 2010) and because employee transfers, flexibility and responsibility changes are important for developing human capital (Beltrán-Martín & Roca-Puig, 2013). In this way, excessive employee protection could hamper the successful execution of internal CE activities, especially as they relate to the human capital, potentially leading to delays that hinder the ability to exploit opportunities quickly before other firms enter.

Third, stringent employee protection laws typically increase the power of unions (Botero et al., 2004). As a consequence, executives may have to negotiate with unions to, for example, implement new production technologies that result in automation and less demand for physical labor. Thus, attempting to revamp a firm's technological base could lead to serious conflicts (or the selection of second-best strategies for value creation) because unions often resist automation and the assignment of employees to different tasks. These conflicts could delay and/or significantly increase the costs of internal CE projects and, at the same time, reduce employees' satisfaction,

productivity and engagement with internal CE. All these effects hamper firms' ability to capture value from their internal CE.

In sum, while managers might want to pursue new internal CE activities, the success of these activities often hinges on employees and, in particular, their flexibility. In countries with stricter employee protection institutions, however, firms are more limited in their ability (and it is more costly) to develop, leverage, and refresh a pool of employees that fit with the new CE activities, especially when these activities require new skills and competences. This more limited employee flexibility in countries with stricter employee protection institutions can constrain the upside and increase the costs of new internal CE activities. Therefore:

> *H1b: The relationship between internal CE and firm financial performance will be negatively moderated by the strength of a firm's home country employee protection institutions.*

The Role of IP Protection Institutions on the Relationship between External CE and Firm Performance. External CE might benefit firm performance in several ways. Firms often establish or acquire new subsidiaries to gain access to new technologies that can replace, supplement, or reinvigorate their current technologies (Autio & Acs, 2010; Autio et al., 2014; Autio & Rannikko, 2016; Maksimov & Luo, 2020). By enabling entry into new markets, venturing also enables broader search, allowing firms to access more diverse knowledge (Burgelman, 1983; Maksimov & Luo, 2020; Zahra et al., 2000) while increasing the likelihood of lucrative breakthrough innovations (e.g., Ahuja & Lampert, 2001; Eggers & Kaul, 2018). As firms learn, they can combine new knowledge with their existing knowledge to strengthen their long-term competitiveness (Zahra et al., 2000). In this way, external CE shapes firms' boundaries, helps define where and how they compete over the long term, and increases their access to knowledge that is new to them.

Despite the benefits just noted, research also indicates that external CE creates challenges that can undercut these gains (Zahra, 1991, 1996). For instance, venturing can require significant up-front costs (e.g., start-up costs for new subsidiaries) that take years to recuperate. Especially in the early years of establishing and growing new subsidiaries "managers contend with many challenges related to a new operation, such as purchasing and installing facilities ... and establishing ... external business networks" (Lu & Beamish, 2004: 599). Venturing also creates new overhead costs and the need for new routines and processes to manage new subsidiaries, their interactions with buyers, suppliers, and (perhaps) regulators, and their integration with firm as a whole. These tasks can overextend managers' learning and information processing capabilities and create (both real and opportunity) costs (Hoskisson & Hitt, 1990). Thus, because of these startup and learning costs, the returns to external CE might take several years to materialize.

Home country IP protection institutions might help parent firms leverage the benefits of external CE while mitigating these challenges and, thus, might positively moderate the effects of external CE on firm performance. It may take longer to understand, integrate, and exploit unfamiliar knowledge that is developed in external subsidiaries or that is accessed from new partners (e.g., subsidiaries' suppliers) and markets. This process may require additional learning, experimentation, and investments in complementary knowledge (Zahra & George, 2002)[1]. Stronger home country IP protections give parent companies more time and ability to learn about new technologies and leverage them to generate profits in their home markets. The home market is a pivotal market for most firms, especially in the mostly privately-held (and medium-sized) firms that are the focus of our study. Weaker IP protections, by contrast, might result in more competition, expropriation of the resulting technologies, and lower profits in their home markets.

[1] Thus, internal CE might help firms leverage the benefits of external CE. We explore this issue in post-hoc analysis.

Moreover, many new subsidiaries seek to enrich their technologies, or find new applications for them, by collaborating with other firms. These subsidiaries often require alliances that enable them to develop new products or new services, access new markets that promote growth (Holmes et al., 2016), revamp their capabilities, and/or develop new ones (Arora & Ceccagnoli, 2006). However, potential partners might be reluctant to collaborate with new subsidiaries from parents located in countries with weak IP protection because of fear of expropriation. Parent companies often transfer practices from their home country to their subsidiaries, even when these subsidiaries operate in countries with weaker institutions (Cumming et al., 2017). Accordingly, when parent companies operate in countries with stronger IP protection, potential partners are less likely to fear expropriation of their technologies by the new subsidiary or its parent. Partnerships are thus more likely to form, thereby broadening parents' access to knowledge and financial benefits from new subsidiaries over the long-term. For similar reasons, potential partners are more likely to sell to, license to, or swap their IP with new subsidiaries (Arora & Ceccagnoli, 2006; Cohen et al., 2000; Delerue & Lejeune, 2011; Doern & Sharaput, 2000; Gallini, 2002) of parent companies from countries with more stringent IP protection. Consequently, stronger IP institutions provide a layer of protection that increase new subsidiaries' and their parents' ability to access new knowledge and technologies over time (Doern & Sharaput, 2000), which might produce long-term performance benefits. However, when potential partners are concerned about expropriation by the new subsidiary or its parent, they become less willing to expose their most important technologies, it may be more difficult to establish collaborative and mutually beneficial relationships, and the partnerships might become less innovative and profitable as a result.

Thus, for the reasons we have articulated above, we predict that stronger IP protection institutions in parent firms' country of origin will positively moderate the relationship between external CE and firm performance. Therefore:

> *H2a: The relationship between venturing and firm financial performance will be positively moderated by the strength of a firm's home country IP protection institutions.*

The Role of Employee Protection Institutions on the Relationship between External CE and Firm Performance. External CE also has consequences for firms' workforces. Opening new subsidiaries creates opportunities for firms to recruit new human capital from outside the firm. Some firms use new R&D subsidiaries, for example, to attract sought-after scientists and engineers (Florida, 1997). According to human capital theory, the flow of new knowledge can promote successful innovation and other CE activities. Developing new subsidiaries also creates new opportunities for current employees to earn promotions and transfer jobs. For many employees, such opportunities represent chances for career advancement and personal growth. By changing jobs, employees can learn new skills, earn higher pay, forge more business contacts, and experiment with different task environments and working conditions to determine what suits them. In this way, extending firm boundaries by opening new subsidiaries can broaden the opportunities available to employees and, in turn, can help firms attract, train, and retain talented and motivated human capital (Kim & McLean, 2012; Pinder & Schroeder, 1987). Given these benefits, these changes promote employees' understanding of their firms' operations and offer opportunities for engaging in CE.

However, external CE also raises challenges for managers. Staffing new subsidiaries and developing new processes to oversee and integrate them with other parts of the firm (e.g., reporting and collaboration routines) can be time consuming and costly (Lu & Beamish, 2004). Moreover,

firms often must adjust other aspects of their workforce to accommodate the new subsidiaries. For instance, layoffs might be necessary to streamline operations and minimize redundancy.

Due to the nature, benefits, and challenges of external CE, stronger employee protection institutions in the parent company's home country might negatively moderate the relation between external CE and firm performance. Stricter employment protection laws may limit transfer of existing employees (Botero et al., 2004). For instance, some employees may resist job transfers to new subsidiaries, especially if these transfers require physical relocation. Stronger employment protection laws limit firms' ability to initiate the transfers via fiat, because they make it more difficult for firms to discipline or remove who refuse transfers. This situation might limit the integration of the parent and subsidiary and slow down the flow of human capital and knowledge, thus constraining the parents and subsidiaries' efforts to staff subsidiaries with parent firm employees and to access and utilize knowledge they currently lack (Burgelman, 1983; Zahra et al., 2000). By extension, such laws may limit the ability to conduct and integrate the parents' and subsidiaries' research activities, which serve as a key source of knowledge for external CE. Hence, in such situations, venturing is less likely to achieve its goals and may hamper firm performance.

In addition, especially in countries with stronger employee protections, unions have more power (e.g., Botero et al., 2004) to demand concessions that limit parent companies' abilities to redeploy or dismiss employees as they see fit. Labor unions often are reluctant when parent companies plan to open new subsidiaries.[2] When new subsidiaries are in the parent's home country, they could be viewed as a way to avoid specific employee protection institutions (because such laws often are tied to the size of the firm). When new subsidiaries are built abroad, they might require or enable reductions in employment in parents' home countries. Thus, in countries with

[2] See, for example: https://www.nytimes.com/2007/05/29/business/worldbusiness/29iht-telekom.4.5915874.html; https://www.theatlantic.com/international/archive/2011/10/qantas-grounds-its-planes-fight-unions/336153/

stricter employee protection, management may have to devote more attention to negotiating new work assignments, potentially slowing down decisions and causing firms to miss important opportunities in new markets. Compliance efforts and bureaucracy also can raise firms' operating costs, potentially decreasing productivity and value creation (Autor et al., 2007). In such contexts, unions could also push for more work guarantees in the home country, and if the new subsidiary is located in a country with weak employee protection, additional benefits for employees in this new location that are more consistent with employee conditions in the home market (consistent with the idea of the international mobility of corporate governance; e.g., Cumming et al., 2017).

In this way, stronger employee protection institutions hinder the employee redeployment, recruitment, and staffing efforts needed in new subsidiaries, and further divert attention and financial resources away from other potentially more profitable endeavors, such as R&D and marketing in the new subsidiaries. Therefore:

> *H2b: The relationship between venturing and firm financial performance will be negatively moderated by the strength of a firm's home country employee protection institutions.*

3. Method

3.1. Data

To test our hypotheses, we developed a database covering firms from 23 European countries using multiple secondary sources. Our main source is the Orbis Europe database, which is compiled by Bureau van Dijk (BvD), a Moody's Analytics Company, and a leading publisher of business data. The Orbis Europe database includes comparable financial data for both Western and Eastern European firms (Vanacker et al., 2017). Disclosure requirements in Europe require both publicly- and privately-held firms to publish annual accounting information.[3] BvD collects this information

[3] However, disclosure requirements and the amount and type of information vary across countries (see Faccio et al. (2011) for a detailed discussion). We return to this point in the robustness section.

from sources that include official registers and regulatory bodies, annual reports, private correspondence, firm websites, and news reports. BvD then harmonizes the financial accounts to enable accurate cross-country comparisons. The Orbis Europe database also includes patent data, which BvD obtains from the European Patent Office's PATSTAT database.

We selected all publicly- and privately-held European firms that were operational in 2009. To limit survivor bias, which might result from using only the most recent online Orbis Europe database (because BvD removes firms after several years of no reporting), we used the August 2011 DVD version of the database to identify all firms that were operational in 2009.[4] From this population, we first selected manufacturing firms to reduce unobserved heterogeneity among firms resulting from variance in industry conditions (e.g., Barringer & Bluedorn, 1999; Stopford & Baden-Fuller, 1994; Zahra, 1996, 2000). Second, we selected independent firms that were not controlled by other shareholders (except for families, managers, or employees) that owned 50% or more of the shares. We made this decision because firms that were subsidiaries of other firms or that belonged to business groups may have less discretion over their CE policies. Third, we selected firms that had been in existence for eight years or longer. Essentially, CE is about entrepreneurship in established firms (e.g., Burgelman, 1983; Zahra et al., 2000), leading us to eliminate newer ventures. Fourth, we selected large and medium-sized firms, which were defined as (following the EU definition) firms that employed more than 50 people (in full-time equivalents) and have either more than 10 million Euro in assets or more than 10 million Euro in sales. This size threshold provided more comparability across countries (Desai et al., 2003). Focusing on larger firms also is more consistent with a focus on CE, which scholars have often associated with

[4] Survivor bias is limited because we study firms that were alive in 2009 even if they died during the next five years. Accordingly, even firms that eventually go bankrupt are in our sample for as long as they report financial accounts data.

entrepreneurship in larger firms (Burgelman, 1983). Overall, these four criteria yielded a sample of 10,063 firms with useable data from 31 countries.

We collected country-level data from other sources: the IP protection measure came from the World Economic Forum (e.g., Desai et al., 2003), the employment protection measure came from the World Bank (e.g., Botero et al., 2004; World Bank, 2010), and the other country-level data came from the World Bank (2010) also. We had to exclude Bosnia and Herzegovina, Montenegro, Malta, and Ukraine because they were missing data on the study's key variables. We excluded four additional countries (Cyprus, Estonia, Hungary, and Iceland) because they had fewer than 10 firms with useable data.[5] These steps produced a final sample of 9,642 firms with useable data from 23 countries. Table 1 presents sample summary statistics by country.

[Insert Table 1 about here]

3.2. Measures

To minimize concerns over reverse causality, we ensured there was temporal precedence for the key variables. Specifically, we measured the independent variables, moderators, and controls in 2009 and used future data (i.e., 2010-2014) to measure the dependent variables.[6] All variables are defined in Appendix A.1.

Dependent variables. We measured firm financial performance as return on assets (ROA), which is Earnings Before Interest and Taxes (EBIT) divided by total assets. ROA, a widely used measure of financial performance, indicates the efficiency with which a firm employs its assets. Because some CE (especially venturing) activities may not affect firm financial performance immediately, we measured financial performance across three separate periods (e.g., Ndofor et al.,

[5] Even when we do not exclude these countries from our sample, results remain virtually identical.
[6] We winsorize measures that are prone to outliers so that extreme values are converted to the measure's 1st or 99th percentiles (e.g., Miller & Le Breton-Miller, 2011).

2011): (1) subsequent year financial performance (*ROA1*), covering ROA in 2010; (2) intermediate financial performance, measured as the sum of ROA one to three years out (*ROA3*), covering financial performance from 2010 to 2012; and (3) longer-term financial performance, measured as the sum of ROA one to five years out (*ROA5*), covering financial performance from 2010 to 2014. We used more recent versions of the Orbis Europe database for this purpose.

Independent variables. Scholars have operationalized CE in multiple ways (see Bierwerth et al., 2015). However, as noted, many researchers follow Miller's (1983) pioneering framework that depicts *internal CE* as a construct that embodies risk taking, proactiveness, and innovation (Covin & Slevin, 1991; Miller, 1983; Zahra, 1991). We adopted this conceptualization in this study. To capture internal CE, prior studies often have used indicators derived from surveys of executives. Others have used indicators based on secondary data (Miller & Le Breton-Miller, 2011). In his recommendations for future research, Miller (2011: 879) highlights that "there has been a tendency to adhere to the same measures […] based on instruments that were developed decades ago" and "in the realm of entrepreneurial behavior, scholars might develop objective indicators […] derived in part from secondary data". While both survey and objectives measures have their advantages and disadvantages, we used the latter approach suggested by Miller (2011), because it is extremely difficult to administer surveys in over 20 countries with, for example, different languages. Moreover, while a single survey would provide us with initial evidence on the contemporaneous relationship between CE and firm performance, we also wanted to focus on the long-term association between CE and firm financial performance. Lastly, our approach complements the early work that used surveys.[7]

[7] Our approach parallels with that of upper echelons scholars. Because it is difficult to get executives to complete scales, and because the validity of such scales can be compromised by social desirability and self-monitoring behavior in the executive context, upper echelons scholars have developed secondary measures of personality traits (e.g., Hayward & Hambrick, 1997).

Though few studies have used secondary measures of internal CE per se, we chose well-established measures for the individual constructs that comprise internal CE. First, we chose a volatility measure to capture firm risk taking, which is consistent with a large body of prior research (Hoskisson et al., 2017; Palmer & Wiseman, 1999). We used a measure that was available for both publicly- and privately-held firms: "the volatility of country- and industry-adjusted profitability" (Faccio et al., 2011: 3607). For each year between 2005 and 2009, we computed the difference between a firm's ROA and the average ROA across firms registered in the same country and three-digit SIC industry in the respective years. Thus, we removed country, industry, and time effects that were beyond managers' control, thereby generating a measure of risk that was more firm specific. Faccio et al. (2011: 3607), for example, suggested that "by removing the influence of the home country and industry's economic cycle, which cannot be controlled by the actions of insiders, we have a cleaner measure of the level of risk resulting from corporate operating decisions".[8] We then computed the standard deviation of adjusted profitability over the past five years (when five years were not available, we computed the standard deviation over the last four or three years; we required at least three years of data).[9]

We measured the second component of internal CE, proactiveness, using a combination of two measures. Miller and Le Breton-Miller (2011: 1064) propose that proactiveness is best "illustrated in the aggregate investment practices of the firm." We measured such investments in two ways. First, we computed a firm's ratio of capital expenditure to capital stock. Second, we

[8] There is always a possibility that exogenous shocks outside the control of insiders influence our measure. However, Miller and Le Breton-Miller (2011: 1064) argue that by taking a long-term (5 year) period to construct our measure, "many of these exogenous shocks should diminish in importance" and our measure "will reflect to a good degree the riskiness of managerial initiatives".

[9] We have checked the correlation between the standard deviation of adjusted performance using 5, 4 or 3 years, for firms that have 5 years of historical data available. All of these correlations are above 0.80, which suggests that the risk measure calculated over a shorter time period provides very similar insights relative to a risk measure calculated over a longer time period.

computed the proportion of profits reinvested in the business, relative to industry norms. This second measure is attractive because, as Miller and Le Breton-Miller (2011: 1064) argue, "using only a measure of immediate … investment spending would have ruled out a firm's building up resources to take bolder action in the near future".[10] By retaining more profits in the business, firms have a buffer of financial resources they can use to make such bolder actions in the future (Bourgeois, 1981). These two measures, which capture firm practices with regard to capital spending and retained earnings, are indicators that firms have the means and the ability to pursue new opportunities proactively (Souder & Bromiley, 2017).

We measured the third component of internal CE, innovation, by counting the number of successful patent applications. Patents are common measure of innovation (Ahuja, 2000; Phene & Almeida, 2008). We started by identifying all the patents issued to each firm, using BvD's Orbis database (up to August 2017). Following an influential stream of prior research (e.g., Ahuja & Katila, 2001; Baum et al., 2000), we assigned the patents to firms at the date of application rather than the date of granting. We did so because there is an administrative time lag between the date of application and the date of granting. Using the date of granting would confound firms' inventive activity with this time lag. The firms in our sample had 19,100 successful patents applications in 2009. For each firm, we took the natural logarithm plus one to normalize the measure.

We acknowledge that patents—though widely used in the empirical literature—may not be a perfect measure of a firm's innovation activities. We also have considered using alternative innovation measures such as the ratio of R&D spending to sales. However, in our case, the use of such alternative measures is problematic because data on R&D spending are missing for many of our firms due to the accounting regulations in most European countries. In addition, although we

[10] Using only the proportion of profits reinvested in our compound internal CE measure (as in Miller & Le Breton-Miller, 2011) provided qualitatively similar results.

focus on manufacturing firms, we further acknowledge that the role of patents may be different across individual manufacturing sub-sectors. As described below, we account for such concerns in our empirical design by including sub-sector fixed effects.

To construct our overall *internal CE* measure, we followed prior research (e.g., Miller & Le Breton-Miller, 2011): we standardized the risk taking, proactiveness, and innovation measures (Mean=0; *SD*=1) and took their sum. While Miller and Le Breton-Miller (2011) are one of the few to use objective measures, the measures we use to construct our composite measure have been heavily used in multiple streams of literature, including finance and strategy. By constructing a composite measure, we follow Miller's (1983: 771) seminal work, which measured "entrepreneurship as a composite weighting of these three variables".[11] Further, in their review of the EO literature, Wales et al. (2013) show that out of 158 papers in their review, 123 employed a compound measure, 41 examined the individual dimensions and only 6 papers examined both a compound measure and the individual components. In the robustness section, presented later, we discuss the findings related to the individual components of the internal CE measure as well.

We next considered the external dimension of CE or venturing. Because internal CE and external CE may affect firm performance differently over time (e.g., Zahra, 1993, 1996), we used a separate measure, *venturing*, which was the count of a firm's *newly* established subsidiaries in 2009. This measure is appropriate because venturing involves funding and establishing new subsidiaries to enter new industries or markets (Block & MacMillan, 1993; Burgelman, 1983; Dess et al., 2003; Guth & Ginsberg, 1990; Sharma & Chrisman, 1999; Sykes & Block, 1989). Data for venturing were collected from Orbis Europe. As with the internal CE measure, we standardized the venturing measure (Mean=0; *SD*=1). We acknowledge that venturing is a much broader

[11] We acknowledge that while there is always a possibility for some noise in our measures, if anything, this noise works against finding support for the hypotheses (e.g., Ayers et al., 2002).

concept, relative to what our objective measure may suggest. However, prior research has shown that simple objective measures can capture much of the variation in broader multi-item subjective survey measures that capture venturing. Zahra and Hayton (2008), for example, show that twenty-two survey items that captured firms' focus on international venturing correlated strongly ($r = .71$, $p < .001$) with a single objective measure of firms' number of new international acquisitions.

Moderator variables. Our measure of *IP protection* came from the World Economic Forum 2009-2010 Global Competitiveness Index (e.g., Desai et al., 2003). It followed a seven-point scale, with one denoting countries where IP rights were neither clearly delineated nor strongly protected by law, and seven indicating that these rights were clearly delineated and strongly protected. Table 1 shows significant variations in IP protection across the countries in our sample. For example, Sweden had the highest score in the sample, ranking 2nd out of 133 countries worldwide, while Bulgaria had the lowest score in our sample and ranked 109th.

The *employee protection* measure follows Botero et al.'s (2004) work. It came from the World Bank's 2010 Doing Business report. Specifically, we used the rigidity of employment index (we divided the original index by 100 to obtain a ratio between 0 and 1), which is the average of the following variables: the difficulty of hiring (e.g., applicability and maximum duration of fixed-term contracts, and minimum wages for trainee or first-time employees), the rigidity of work hours (e.g., restrictions on night and weekend work, maximum length of the workweek in days and hours including overtime, and annual paid vacation days), and the difficulty of redundancy (e.g., notification and approval requirements for termination of redundant workers, obligations to reassign or retain, and priority rules for redundancy and reemployment).[12] Higher values indicate

[12] We also used alternative employee protection measures. First, we used Botero et al.'s (2004) original employment laws index (for more details see Botero et al., 2004: 1353-1355). Higher values on this index indicated more extensive formal legal protections of workers. However, a disadvantage of this index is that it captures labor regulations before 2009 but prior evidence indicates that employment laws remain very stable over time (Capron and Guillén, 2009).

more rigid employment regulations. Again, Table 1 shows significant variations in employment regulations across the countries in our sample. For instance, Slovenia had the highest score (displaying highly rigid employment laws), ranking 15th out of 165 countries worldwide. In contrast, Switzerland had the lowest score in our sample, ranking 149th.[13]

Control variables. The analysis also controlled for several variables that could influence the effects of internal CE and venturing on firm financial performance.

We control for several firm-level variables. A firm's age and size influence its resource endowment and, thus, may influence its internal CE, venturing, and firm financial performance (Miller & Le Breton-Miller, 2011; Zahra, 1996). We controlled for *firm age*, using the natural logarithm of the number of years since a firm's legal formation. We controlled for *firm size* as the natural logarithm of the number of firm employees (in full-time equivalents).

We controlled also for slack resources because firms can allocate these resources to internal CE and venturing, and slack resources also influence firm financial performance (e.g., Bromiley, 1991; George, 2005; Simsek et al., 2007). We captured *financial slack* by dividing a firm's cash and cash equivalents by its total assets and, then, subtracting the mean of this ratio for all firms in the same 3-digit industry and country (Kim & Bettis, 2014; Vanacker et al., 2017). As such, this measure represents the excess of (or shortage of) cash resources firms held relative to industry and country norms. We also computed financial slack squared to capture any quadratic effect on firm financial performance, as suggested by prior work (Bromiley, 1991).

Our results remain qualitatively similar. Second, we used the OECD's strictness of employment protection (regular contracts) index (for more details, see: http://www.oecd.org/els/emp/oecdindicatorsofemploymentprotection.htm). However, a disadvantage of this index is that it covers fewer countries than the World Bank's rigidity of employment index and Botero et al.'s (2004) employment laws index. But, again, our results remain qualitatively similar.

[13] In all regressions, we include mean-centered moderator variables and their interactions with the standardized independent variables (Neter et al., 1996).

We also controlled for several additional firm-level measures that might influence firm financial performance and the resources firms have available for internal CE and venturing. Firms with larger leverage ratios have more limited additional debt capacity. *Leverage* was the ratio of a firm's long-term financial debt and short-term loans on total assets (Faccio et al., 2011). Public firms may have easier access to financial and human resources. *Public* was treated as a dummy variable that equaled 1 when a firm was quoted on a stock exchange and 0 if it was privately-held. In addition, we controlled for variables that reflect the firm's momentum, which may influence their internal CE and venturing (e.g., by affecting decision making) and firm financial performance. We measured *firm growth* as total assets divided by prior-year total assets.[14] Further, we measured *prior firm performance* using net income (Audia & Greve, 2006; Bromiley, 1991; Ndofor et al., 2011).

We also controlled for several country-level variables, using data from the World Bank. To reduce the possibility that our results were driven by differences in economic development across countries, rather than differences in country institutions (Ahlstrom & Bruton, 2010), we controlled for the natural logarithm of *GDP per capita*. Likewise, alongside institutional development, infrastructure and factor markets also can influence internal CE, venturing, and firm financial performance (Hoskisson et al., 2013). Thus, we controlled for the *development of technology markets* by measuring the number of patent applications per thousand residents for each country. Further, we controlled for the *development of labor markets* by computing the share of the total labor force that with tertiary education as the highest level of completed education.

Finally, we included *manufacturing sub-sector dummies* or fixed effects. These dummies controlled for the remaining, unmeasured, and unobservable differences across sub-sectors.

[14] We use growth in total assets because sales data has more missing observations relative to total assets data. However, using sales growth as an alternative control provides similar results.

4. Results

4.1. Main Results

Table 2 reports the descriptive statistics and correlations for the variables. As expected, internal CE correlates positively with firm financial performance. However, the correlation between venturing and firm financial performance is not significant. Internal CE and venturing are only moderately correlated, suggesting that they are indeed two distinct dimensions of CE. Moreover, the correlation between IP protection and employee protection institutions is negligible, suggesting the distinctiveness of these two dimensions of the institutional environment as well. The maximum Variance Inflation Factor equals 4.54, which is well below the critical threshold of 10, reducing concerns about potential multicollinearity in our sample (Neter et al., 1996).

[Insert Table 2 about here]

Table 3 reports multivariate regression models, including only main effects. Models 1-3 contain only the controls and the main effects of the moderators. Models 1, 2, and 3 focus on subsequent year financial performance (ROA1), intermediate financial performance (ROA3), and longer-term financial performance (ROA5), respectively We then add the independent variables, internal CE and venturing, in Models 4-6 and 7-9, respectively, with each model again reflecting different timeframes for ROA. Finally, Models 10-12 are full models that include both internal CE and venturing (again, each model reflects a different ROA timeframe).

[Insert Table 3 about here]

In Table 3, the control variables show that older, larger, more highly-leveraged, and publicly-held firms exhibit lower financial performance. Past performance and past growth measures are positively related to financial performance, as would be expected. Consistent with prior research, financial slack is positively (at a diminishing rate) related to financial performance

(Bromiley, 1991). We also observe that firms in countries with higher per capita GDPs and stricter employee protection exhibit lower financial performance, whereas firms in countries with more developed technology and labor markets exhibit higher financial performance.[15] The main effect of IP protection is not significant.

In Table 3, internal CE is positively and significantly related to firm financial performance (all at $p < 0.05$). These effects also are economically meaningful. Holding other variables at their means, an increase in internal CE from the mean to the mean +1 S.D. is associated with a 5.7% higher firm financial performance in the subsequent year (ROA1). This effect also holds for longer-term financial performance (ROA5), where the same increase in internal CE is associated with a 5.3% higher longer-term financial performance. This evidence suggests that internal CE is associated with higher financial performance both immediately and in the longer-term. However, in Table 3, we fail to find a statistically significant relationship between venturing and firm financial performance. The negative but statistically insignificant coefficient is consistent with some previous work (e.g., Bos et al., 2017).

Table 4 presents the multivariate results for the hypothesized interactions. Models 1-3 include the interactions between internal CE and IP protection and between internal CE and employee protection, with each model reflecting different timeframes for ROA. Similarly, Models 4-6 include the interactions between venturing and IP protection and between venturing and employee protection. Finally, Models 7-9 represent the full model including all interactions.

[Insert Table 4 about here]

Hypothesis 1a predicted a positive interaction effect between internal CE and IP protection. In Table 4, however, the interaction of internal CE and IP protection shows consistently negative

[15] The finding related to GDP per capita could reflect greater competition in those countries.

and statistically significant associations with firm financial performance (all at $p < 0.001$). These findings are opposite to Hypothesis 1a. We plotted this interaction in Figure 1, Panel A.[16] These findings also are economically meaningful. With other variables at their means, for example, an increase in internal CE from the mean to the mean +1 S.D. is associated with an approximately 3.5% lower longer-term financial performance for the average firm located in those countries with the most stringent IP protection (i.e., Sweden and Finland), but it is associated with an approximately 17% higher longer-term financial performance for the average firm located in those countries with the least stringent IP protection (i.e., Bulgaria and Russia).

[Insert Figure 1 about here]

Turning to employee protection, Hypothesis 1b predicted a negative interaction effect between internal CE and employee protection. Table 4 shows consistently negative interaction effects. These results are statistically significant in the models with intermediate (ROA3) and longer-term (ROA5) financial performance (all at $p < 0.05$ or better). These findings provide general support for Hypothesis 1b. The interaction is shown in Figure 1, Panel B. Again, the results are economically meaningful. For the average firm, an increase in internal CE from the mean to the mean +1 S.D. is associated with an approximately 1.8% lower longer-term financial performance in the countries with the most rigid employment regulations (i.e., Slovenia and France), but it is associated with an approximately 14% higher longer-term financial performance in the countries with least rigid employment regulations (i.e., Switzerland and the UK).

Hypothesis 2a predicted a positive interaction effect between venturing (external CE) and IP protection. As Table 4 shows, we find consistently positive interaction effects, but they only are marginally statistically significant in the models with longer-term financial performance (ROA5)

[16] For the interaction plots, we focus on longer-term financial performance (ROA5) to preserve space. However, plots for subsequent year (ROA1) and intermediate financial performance (ROA3) are very similar.

at $p < 0.10$. These results provide some support for Hypothesis 2a. When this interaction is plotted in Figure 1, Panel C, the slopes suggest that the interaction is economically meaningful. When other variables are held at their means, an increase in venturing from the mean to the mean + 1 S.D. is associated with a 2% higher longer-term financial performance for the average firm located in countries with the most stringent IP protection. However, the same increase in venturing is associated with a staggering 24.9% lower longer-term financial performance for the average firm located in countries with the least stringent IP protection.

Finally, we examine the interaction between venturing (external CE) and employee protection. Hypothesis 2b predicted a negative interaction effect between venturing and employee protection. Table 4 shows that the interaction effects are negative and statistically significant in all of the models (at $p < 0.05$ or better). The interaction effect is shown in Figure 1, Panel D, and again shows that the results are economically meaningful. With other variables at their means, an increase in venturing from the mean to the mean + 1 S.D. is associated with a 16% lower longer-term financial performance for the average firm located those countries with the most rigid employment regulations, but it is associated with a 4.9% lower longer-term financial performance in the average firm located in those countries with the least rigid employment regulations. These results provide support for Hypothesis 2b.

4.2. Robustness Tests

We also performed several additional tests to investigate the robustness of the results that are presented above. The detailed results can be found in the Internet Appendix.

Internal CE components. First, consistent with prior theory and empirical work (e.g., Miller, 1983; Miller & Le Breton-Miller, 2011), we employed a composite internal CE index in our primary analysis. Given the breadth of this index, we re-estimated regressions for its

components and their interactions with IP protection and employee protection as presented in Appendix A.2.

Our results remain robust. Specifically, the main effects of risk taking, proactiveness and innovation are generally positive and significant. The interactions between proactiveness and IP protection, and innovation and IP protection, were negative and significant. The interaction between risk taking and IP protection was also negative but not significant. Next, the interactions between proactiveness and employee protection and innovation and employee protection also were all negative and significant (for ROA3 and ROA5), providing further support of our prior findings. The interactions between risk taking and employee protection were all negative but not significant. Thus, for both the IP protection and employee protection moderators, the individual components of the CE index generally had the same effects as the overall CE index did. Overall, while there are theoretical reasons to focus on a composite internal CE index (Miller & Le Breton-Miller, 2011), as discussed earlier, the results for the individual components of internal CE support the results of most of our primary analyses.

Endogeneity. Second, internal CE and venturing might be endogenously determined. Therefore, we start by estimating models that explain the antecedents of internal CE and venturing to better understand the potential sources of this endogeneity. In Appendix A.3., which reports pooled cross-country regressions with country and industry random effects, we find that firm size, financial slack, past growth, past performance, country technology markets, and country labor markets all are positively associated with firms' internal CE, and firm age and leverage are negatively associated with internal CE. We also find that firm size, leverage, public firms, GDP per capita, and country labor markets are positively associated with firms' external CE. Country-level IP protection is negatively related with firms' external CE. These results support the idea that

it is important to control for these factors (as we did) in the performance regressions reported in Tables 3 and 4 to ensure that the effects of internal CE and external CE on firm financial performance are not spuriously caused by any of these factors.

Our internal CE and external CE measures, which are based on firm-level variables, also might be somewhat endogenous to firms' choices and unobserved variation in performance potential. In such situations, scholars often use Instrumental Variable (IV) regressions. However, after much consideration, we found it hard to generate instruments that would affect CE (both internal CE and venturing) but would not affect firm financial performance as well. And, importantly, there is evidence that invalid instruments can bias empirical results worse than using no instruments at all (Semadeni et al., 2014).

Following prior work, we then considered country- and industry-level measures of variation in CE as instruments. Such measures often "are … more plausibly exogenous to an individual firm" (Duchin et al., 2010: 420). We instrumented firm-level internal CE and external CE with average internal CE and external CE at the country-industry-level (the null hypothesis that instruments are weak was rejected at $p<0.001$). The results showed that internal CE positively affected firm financial performance, and the economic magnitude of the effects were larger than reported earlier in the paper. However, we again failed to find a significant effect for external CE. Although these findings provide further support for our main results, we concur with Bettis et al. (2014: 951), who argued that good "instruments can be hard to find, and a bad instrument is worse than no instrument" (see also Larcker & Rusticus, 2010; Semadeni et al., 2014). Fortunately, we are primarily interested in how institutions shape the relationship between CE and firm financial performance. Bun and Harrison (2019: 823) show that potential "endogeneity bias can be reduced to zero for the OLS estimator as far as the interaction term is concerned" and that "Whenever IV

based inference procedures fail, we show that the OLS estimator of the coefficient of the interaction term is consistent, and that standard OLS inference applies". Still, despite these additional assurances, potential endogeneity remains a limitation.

Other country effects. Table 1 indicates that firms from some countries are over-represented in our sample (e.g., Italy), while firms from other countries are under-represented (e.g., Austria, Netherlands, Switzerland). As we highlighted before, this observation relates to differences in disclosure requirements (and differences in the type and amount of data reported) among countries (e.g., Faccio et al., 2011). Therefore, we first excluded Italy from our sample and the results remained similar. Next, we excluded countries with fewer than 100 firms in the sample because a low number of observations could lead to inefficient estimates for some variables (e.g., the risk-taking measure is adjusted for country and industry factors). Again, the results remained similar to those presented earlier.

Moreover, as presented in Appendix A.4., we report models that include country dummies to control for remaining unmeasured or unobservable differences between countries. Examples include financial reporting requirements, EU membership, and cultural differences. In these specifications, the main effects of the IP protection and employee protection were omitted (similar to other country level variables) because they are fully absorbed by the country dummies. However, we primarily were interested in the interactions between the CE variables and the IP protection and employee protection variables. Once again, the results related to these interactions remained qualitatively similar.

Possible interactions and curvilinear effects. Internal CE and external CE should not necessarily operate independently but they could strengthen or weaken each other. We therefore

tested for the impact of a possible interaction effect between internal CE and venturing on firm performance. This interaction term, however, was not significant in any of the models.

Thus far, our analyses focused on the linear effects of internal CE and external CE. For example, we found that internal CE is positively related to firm performance. However, there is also a possibility that such positive effects level off as internal CE becomes too high. Therefore, we considered tests related to potential curvilinear effects of internal CE and venturing on firm performance. These results are reported in Appendix A.5. We find that although internal CE is positively related to firm performance, the relationship becomes weaker at higher levels of internal CE. The relationship has an inverted U shape: as internal CE exceeds approximately the level of mean internal CE plus 1 standard deviation, additional internal CE is negatively related to firm performance. For external CE, there is no evidence for a curvilinear effect. More importantly, the interactions of the two CE variables and two institutional variables remain consistent with the primary findings related to our hypotheses. Overall, our evidence remains fully robust, but these additional tests do provide a cautionary note that too much internal CE could be harmful.

Finally, one may wonder if there are more complex interactions between each form of CE and the squared terms of IP protection or employee protection, respectively. Our analyses show that such more complex effects, however, also were not significant.

5. Discussion and Conclusion

Kuratko et al. (2015: 249) argued that "CE as a strategy must be measured for its actual impact." In this regard, the link between CE and firm performance has inspired considerable empirical research interest over the years. Most past research, however, has used single country data gathered through mail surveys. These studies have not considered the impact of a country's formal institutions on the CE - firm performance relationship. This is an important omission, as

institutional theory suggests that a country's institutions can significantly influence its firms' financial gains from innovation, expansion into new businesses and markets, and other forms of CE. Therefore, in this paper, we used a large-scale database that captures detailed data on firms from 23 European countries. We examined the moderating role of two key country institutions, IP protection and employee protection, on the CE - firm financial performance relationship. To do so, we examined two dimensions of CE: internal and external (i.e., venturing).

5.1. Contributions

Because the financial benefits of CE may accrue over the long-term (Block & MacMillan, 1993; Dess et al., 2003), our study has sought to improve evidence on this effect by examining a much longer time frame of up to five years. Our results show that internal CE is positively and significantly related to immediate (one year ahead), intermediate (one to three years ahead), and longer-term (one to five years ahead) financial performance. However, at very high levels, internal CE can impact financial performance negatively, because internal CE can be expensive and also cause harmful disruptions to firm's existing systems, structures, and operations. In addition, we failed to find a significant relationship between venturing and firm financial performance. These results address a persistent limitation of the CE literature that is replete with studies on the associations between CE and *contemporaneous* firm financial performance. Thus, our study robustly assesses the external validity of prior results, an increasingly important concern in many academic fields (Bettis et al., 2016). The different results for internal CE versus venturing also support the importance of differentiating between different forms of CE (Zahra, 1991) and perhaps applying different measures to capture the richness of these activities.

Our study also contributes to the literature by identifying and differentiating key institutional contingencies that moderate the relationship between different dimensions of CE and

firm performance. In particular, we found that internal CE becomes more positively correlated with firm performance in countries with *less* stringent IP protection (contrary to Hypothesis 1a). Internal CE also becomes more positively correlated with firm performance in countries with less stringent employee protection (consistent with Hypothesis 1b). Conversely, we found that external CE becomes particularly negatively correlated with firm performance in countries with less stringent IP protection (consistent with Hypothesis 2a). External CE also becomes particularly negatively correlated with firm performance in countries with more stringent employee protection (consistent with Hypothesis 2b). Thus, our results make clear that (a) the different forms of CE have different relationships with firm financial performance and, further, that (b) different types of institutions also moderate these relationships in different ways.

Our unexpected results related to Hypothesis 1a could be explained by two important side effects of more stringent IP protection. First, IP owners enjoy monopolistic advantages when IP protection is more stringent. Specifically, in countries with more stringent IP protection, firms can benefit longer from their past achievements. If true, further investments in internal CE might have provided fewer additional benefits for firms that already held long-term competitive advantages. Instead, for such firms, the significant expense of additional investments in internal CE might have reduced firm financial performance. Second, more stringent IP protection encourages firms to invest in costly and time-consuming enforcement processes to protect the competitive advantages that they acquired previously, while also incentivizing rivals to develop their own innovations to overcome such advantages (Holmes et al., 2016). Indeed, these latter behaviors might be particularly likely in those countries where managers are less willing to accept that power is distributed unequally (i.e., in countries with lower power distance). Consistent with this idea, unreported tests indicate that the interaction between internal CE and IP protection is indeed more

negative in countries with lower power distance. These possibilities also help to explain our findings that stronger IP protection had fewer benefits for the relationship between external CE (venturing) and firm financial performance (see Figure 1, Panel C; the slope turns only somewhat positive). Therefore, the complex implications of stronger IP protection should be examined more thoroughly in future studies.

Our findings also make important contributions to institutional theory. Whereas most prior cross-country CE research has focused on country culture, we examined how formal institutions shape the CE - firm performance relationship. Understanding formal institutions is important because, relative to country culture, formal institutions are more malleable and subject to reform and improvement. Whereas governments can modify formal institutions (e.g., regulations) to increase the attractiveness and profitability of CE, culture's influence is more enduring and difficult to change over time. Along these lines, an implicit assumption in much of the institutional theory literature is that institutions that promote greater (intellectual) property rights, which also enable greater firm flexibility and freedom in other areas such as labor, are more conducive to entrepreneurship because they increase its profitability and attractiveness (Bradley & Klein, 2016; McMullen et al., 2008). Extending this literature, our results show that the effects of formal institutions on the CE - firm performance relationship differ across different types of CE activities (i.e., internal versus external CE), and also different types of institutions (i.e., IP protection versus employee protection). Thus, our study contributes to a richer understanding of CE and institutions.

5.2. Limitations and Avenues for Future Research

Our results should encourage future research on formal institutions and their effects on the CE - firm performance relationship. A different set of countries, measures, and timeframes (e.g., post-Covid world; Zahra, 2020) could enhance the external validity of our results. Scholars also should

explore how institutional changes shape changes in CE and firm financial performance. Although institutional change sometimes indicates progress, for example, it also might reflect cronyism (e.g., regulatory capture) (Laffont & Tirole, 1991) and can create uncertainty, hinder learning, and reduce the benefits of innovation and entrepreneurship (Newman, 2000).

Further, we have focused on two country institutions as moderators of the CE - firm financial performance relationship, but there are other institutions that might influence this relationship, making it essential for future studies to investigate other types of institutions. For example, stronger financial institutions (e.g., credit availability; Aparicio et al., 2020) could enrich the benefits of CE by improving firms' access to financial capital or, conversely, they could diminish such benefits by supporting rivals' (including new ventures') efforts to develop and pursue CE strategies of their own. Scholars also could investigate how state funding and tax policies influence the CE - performance relationship. Such an investigation would fit in a wider topical debate on the effectiveness of different economic models (e.g., democratic socialism versus capitalism). Additionally, because institutions interact and may jointly affect decisions about CE and other strategic activities and also the firms' gains from such activities, the effect of interactions among country institutions on internal and external CE activities also deserve special attention in future studies (Batjargal et al., 2013).

Next, we have examined how internal CE and external CE differentially relate to firm performance, conditional on the nature of IP protection and employment protection institutions, over one-, three-, and five-year periods. This approach provides more robust evidence about the performance impact of CE than is available in other (mostly survey-based) cross-sectional studies that often focus on the relationship between CE and contemporaneous firm performance. Because CE, formal institutions, and firm performance also might be endogenously determined, we also

employed several endogeneity corrections and related tests to *probe* (not prove) causal effects. Still, we acknowledge that additional research is needed to further bolster causal evidence on the CE - firm performance relationship. For instance, as noted earlier, firms' investments in internal and external CE before the period of our study might shape the performance implications of current investments in CE and also the influence of different formal institutions.

Finally, internal and external CE differ in their time horizons, costs, and perceived riskiness. However, they share some commonalities. For example, both could enrich exploratory and exploitative activities but do so differently. Perhaps innovation, experimentation, and other aspects of internal CE could lead to discovery of new opportunities, products, and services that could be exploited commercially via external CE. Likewise, process innovations could help exploit other innovations. Further, internal and external CE are apt to differ in the scope of the opportunities involved. Relative to internal CE, external CE is likely to focus on bigger opportunities, requiring more new knowledge and resources, greater levels of risks, longer time horizons, and more patient investments. While these activities have both exploratory and exploitative goals, external CE may focus more on exploration than internal CE.

5.3. Implications for Practice

Our study also has implications for managers and policy makers. The importance of CE has been increasing for many years due to changes in technology and globalization, and its importance is likely to continue to increase in the years to come, especially as firms navigate the new normal environment and uncertainty in the post-pandemic period (Hitt et al., 2020). Managers should be aware of the potential trade-offs of stronger IP protection and employee protection. Stronger IP protection does not automatically mean that their firms will capture significant value from their CE activities. Hence, other actions are required for firms to capture more value from their CE

activities. Further, policy makers need to strike a balance when deciding on the level of IP protection. On the one hand, countries need IP laws to protect, incentivize, and motivate the public disclosure of innovations (allowing others to build on the innovations). On the other hand, IP laws can generate monopolistic advantages (which can hurt the firms that do not hold the advantages) and redirect resources toward costly litigation battles, potentially reducing the returns to innovation over the long term. In this regard, our study has provided new insights on how a country's IP protection influences firms' returns to CE in ways that some could see as counterintuitive. Likewise, the results also showed that stronger employee protection laws clearly reduced the returns to CE. Although these laws are designed to protect workers, they might have negative effects on workers and economies more generally over the long term by lowering returns to CE, thereby hampering future growth and employment creation. Thus, our study lays a foundation for a deeper understanding of the different types of CE and the influence of different institutions on the implications of CE activities for a firm's financial performance.

REFERENCES

Acs, Z. J., Estrin, S., Mickiewicz, T., & Szerb, L. (2018). Entrepreneurship, institutional economics, and economic growth: an ecosystem perspective. *Small Business Economics*, 51(2), 501-514.

Ahlstrom, D., & Bruton, G. D. (2010). Rapid institutional shifts and the co-evolution of entrepreneurial firms in transition economies. *Entrepreneurship Theory and Practice*, 34(3), 531-554.

Ahuja, G. (2000). Collaboration networks, structural holes, and innovation: A longitudinal study. *Administrative Science Quarterly*, 45(3), 425-455.

Ahuja, G., & Katila, R. (2001). Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study. *Strategic Management Journal*, 22(3), 197-220.

Ahuja, G., & Lampert, C. M. (2001). Entrepreneurship in the large corporation: A longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal*, *22*, 521-543.

Andersen, T. J., Denrell, J., & Bettis, R. A. (2007). Strategic responsiveness and Bowman's risk–return paradox. *Strategic Management Journal*, 28(4), 407-429.

Aparicio, S., Audretsch, D., & Urbano, D. (2020). Why is export-oriented entrepreneurship more prevalent in some countries than others? Contextual antecedents and economic consequences. *Journal of World Business*, this issue.

Armour, H. O., & Teece, D. J. (1980). Vertical integration and technological innovation. *Review of Economics and Statistics*, 62(3), 470-474.

Arora, A., & Ceccagnoli, M. (2006). Patent protection, complementary assets, and firms' incentives for technology licensing. *Management Science*, 52(2), 293-308.

Audia, P. G., & Greve, H. R. (2006). Less likely to fail: Low performance, firm size, and factory expansion in the shipbuilding industry. *Management Science*, 52(1), 83-94.

Autio, E., & Acs, Z. (2010). Intellectual property protection and the formation of entrepreneurial growth aspirations. *Strategic Entrepreneurship Journal*, 4, 234-251.

Autio, E., Kenney, M., Mustar, P., Siegel, D., & Wright, M. (2014). Entrepreneurial innovation and context. *Research Policy*, 43, 1097–1108.

Autio, E., & Rannikko, H. (2016). Retaining winners: Can policy boost high-growth entrepreneurship. *Research Policy*, 45, 42-55.

Autor, D. H., Kerr, W. R., & Kugler, A.D. (2007). Does employment protection reduce productivity? Evidence from U.S. states. *Economic Journal*, 117(521), F189-F217.

Ayers, B. C., Cloyd, C. B., & Robinson, J. R. (2002). The effect of shareholder-level dividend taxes on stock prices: Evidence from the Revenue Reconciliation Act of 1993. *The Accounting Review*, 77(4), 933-947.

Bahl, M., Lahiri, S., & Mukherjee, D. (2020). Managing internationalization and innovation tradeoffs in entrepreneurial firms: Evidence from transition economies. *Journal of World Business*, this issue.

Baldwin, W.L., & Scott, J.T. (1987). *Market structure and technological change.* Chur: Harwood.

Barney, J. B. (1986). Strategic factor markets: Expectations, luck, and business strategy. *Management Science*, 32(10), 1231-1241.

Barringer, B. R., & Bluedorn, A. C. (1999). The relationship between corporate entrepreneurship and strategic management. *Strategic Management Journal*, 20, 421-444.

Batjargal, B., Hitt, M. A., Tsui, A. S., Arregle, J. L., Webb, J. W., & Miller, T. L. (2013). Institutional polycentrism, entrepreneurs' social networks, and new venture growth. *Academy of Management Journal*, 56(4), 1024-1049.

Baum, J. A., Calabrese, T., & Silverman, B. S. (2000). Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal*, 21(3), 267-294.

Belenzon, S, & Tsolmon, U. (2016). Market frictions and the competitive advantage of internal labor markets. *Strategic Management Journal*, 37, 1280-1303.

Beltrán-Martín, I., & Roca-Puig, V. (2013). Promoting employee flexibility through HR practices. *Human Resource Management*, 52(5), 645-674.

Bettis, R., Gambardella, A., Helfat, C., & Mitchell, W. (2014). Quantitative empirical analysis in strategic management. *Strategic Management Journal*, 35(7), 949-953.

Bettis, R. A., Helfat, C. E., & Shaver, J. M. (2016). The necessity, logic, and forms of replication. *Strategic Management Journal*, 37(11), 2193-2203.

Bierwerth, M., Schwens, C., Isidor, R., & Kabst, R. (2015). Corporate entrepreneurship and performance: A meta-analysis. *Small Business Economics*, 45(2), 255-278.

Block, Z. & MacMillan, I. (1993). *Corporate Venturing*, Boston, MA: Harvard Business School Press.

Bojica, A. M., & Fuentes, M. D. M. F. (2012). Knowledge acquisition and corporate entrepreneurship: Insights from Spanish SMEs in the ICT sector. *Journal of World Business*, 47(3), 397-408.

Bos, B., Faems, D., & Noseleit, F. (2017). Alliance concentration in multinational companies: Examining alliance portfolios, firm structure, and firm performance. *Strategic Management Journal*, 38(11), 2298-2309.

Botero, J. C., Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2004). The regulation of labor. *Quarterly Journal of Economics*, 119(4), 1339-1382.

Bourgeois III, L. J. (1981). On the measurement of organizational slack. *Academy of Management Review*, 6(1), 29-39.

Bradley, S. W., & Klein, P. (2016). Institutions, economic freedom, and entrepreneurship: The contribution of management scholarship. *Academy of Management Perspectives*, 30(3), 211-221.

Bromiley, P. (1991). Testing a causal model of corporate risk taking and performance. *Academy of Management Journal*, 34(1), 37-59.

Bun, M. J., & Harrison, T. D. (2019). OLS and IV estimation of regression models including endogenous interaction terms. *Econometric Reviews*, 38(7), 814-827.

Burgelman, R. A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. *Management Science*, 23, 1349-1363.

Burgelman, R., & Sayles, L. (1986). *Inside Corporate Innovation: Strategy, Structure and Managerial Skills.* The Free Press, New York.

Burgers, J. H., Jansen, J. J., Van den Bosch, F. A., & Volberda, H. W. (2009). Structural differentiation and corporate venturing: The moderating role of formal and informal integration mechanisms. *Journal of Business Venturing*, 24(3), 206-220.

Capron, L., & Guillén, M. (2009). National corporate governance institutions and post-acquisition target reorganization. *Strategic Management Journal*, 30(8), 803-833.

Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2000). *Protecting their intellectual assets: Appropriability conditions and why US manufacturing firms patent (or not)* (No. w7552). National Bureau of Economic Research.

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10, 75-87.

Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice*, 16(1), 7-25.

Covin, J. G., & Wales, W. J. (2019). Crafting high-impact entrepreneurial orientation research: Some suggested guidelines. *Entrepreneurship Theory and Practice*, 43(1), 3-18.

Cumming, D., Sapienza, H. J., Siegel, D. S., & Wright, M. (2009). International entrepreneurship: Managerial and policy implications. *Strategic Entrepreneurship Journal*, 3(4), 283-296.

Cumming, D., Schmidt, D., & Walz, U. (2010). Legality and venture capital governance around the world. *Journal of Business Venturing*, 25(1), 54-72.

Cumming, D., Filatotchev, I., Knill, A., Reeb, D. M., & Senbet, L. (2017). Law, finance, and the international mobility of corporate governance. *Journal of International Business Studies*, 48(2), 123-147.

Delerue, H., & Lejeune, A. (2011). Managerial secrecy and intellectual asset protection in SMEs: The role of institutional environment. *Journal of International Management*, 17, 130-142.

Denis, D. J., Denis, D. K., & Yost, K. (2002). Global diversification, industrial diversification, and firm value. *Journal of Finance*, 57(5), 1951-1979.

Desai, M., Gompers, P., & Lerner, J. (2003). Institutions, capital constraints and entrepreneurial firm dynamics: Evidence from Europe (No. w10165). National Bureau of Economic Research.

Dess, G. G., Ireland, R. D., Zahra, S. A., Floyd, S. W., Janney, J. J., & Lane, P. J. (2003). Emerging issues in corporate entrepreneurship. *Journal of Management*, 29, 351-378.

Doern, G. B., & Sharaput, M. (2000). *Canadian intellectual property: The politics of innovating institutions and interests*. Toronto, ON: University of Toronto Press.

Duchin, R., Ozbas, O., & Sensoy, B. A. (2010). Costly external finance, corporate investment, and the subprime mortgage credit crisis. *Journal of Financial Economics*, 97(3), 418-435.

Eggers, J. P., & Kaul, A. (2018). Motivation and ability? A behavioral perspective on the pursuit of radical invention in multi-technology incumbents. *Academy of Management Journal*, 61(1), 67-93.

Engelen, A., Neumann, C., & Schmidt, S. (2016). Should entrepreneurially oriented firms have narcissistic CEOs? *Journal of Management*, 42(3), 698-721.

Faccio, M., Marchica, M. T., & Mura, R. (2011). Large shareholder diversification and corporate risk-taking. *Review of Financial Studies*, 24(11), 3601-3641.

Florida, R. (1997). The globalization of R&D: Results of a survey of foreign-affiliated R&D laboratories in the USA. *Research Policy*, 26(1), 85-103.

Floyd, S. W., & Wooldridge, B. (1992). Managing strategic consensus: The foundation of effective implementation. *Academy of Management Perspectives*, 6(4), 27-39.

Foster, R. (1986). *Innovation: The attacker's advantage*. New York, NY: Summit Books.

Franko, L. G. (1989). Global corporate competition: Who's winning, who's losing, and the R&D factor as one reason why. *Strategic Management Journal*, 10(5), 449-474.

Gallini, N. T. (2002). The economics of patents: Lessons from recent US patent reform. *Journal of Economic Perspectives*, 16, 131-154.

George, G. (2005). Slack resources and the performance of privately held firms. *Academy of Management Journal*, 48(4), 661-676.

Guth, W. D., & Ginsberg, A. (1990). Corporate entrepreneurship. *Strategic Management Journal*, 11(Special Issue), 5-15.

Hall, B. H., & Ziedonis, R. H. (2001). The patent paradox revisited: an empirical study of patenting in the US semiconductor industry, 1979-1995. *RAND Journal of Economics*, 32, 101-128.

Hayton, J. C., & Kelley, D. J. (2006). A competency-based framework for promoting corporate entrepreneurship. *Human Resource Management*, 45(3), 407-427.

Hayward, M. L., & Hambrick, D. C. (1997). Explaining the premiums paid for large acquisitions: Evidence of CEO hubris. *Administrative Science Quarterly*, 42, 103-127.

Hitt, M. A., Arregle, J.- L., & Holmes, R. M. (2020). Strategic management theory in a post-pandemic and non-ergodic world. *Journal of Management Studies*, https://doi.org/10.1111/joms.12646.

Holmes, R. M., Miller, T., Hitt, M. A., & Salmador, M. P. (2013). The interrelationships among informal institutions, formal institutions, and inward foreign direct investment. *Journal of Management, 39,* 531-566.

Holmes, M., Zahra, S., Hoskisson, R., Deghetto, K. & Sutton, T. (2016). Two-way Streets: The role of institutions and technology policy in firms' corporate entrepreneurship and political strategies. *Academy of Management Perspectives,* 30(3), 247-272.

Hoskisson, R. E., & Hitt, M. A. (1990). Antecedents and performance outcomes of diversification: A review and critique of theoretical perspectives. *Journal of Management*, 16(2), 461-509.

Hoskisson, R. E., Covin, J., Volberda, H., & Johnson, R. A. (2011). Revitalizing entrepreneurship: The search for new research opportunities. *Journal of Management Studies, 48,* 1141-1168.

Hoskisson, R. E., Wright, M., Filatotchev, I., & Peng, M. W. (2013). Emerging multinationals from mid-range economies: The influence of institutions and factor markets. *Journal of Management Studies*, 50(7), 1295-1321.

Hoskisson, R. E., Chirico, F., Zyung, J., & Gambeta, E. (2017). Managerial risk taking: A multitheoretical review and future research agenda. *Journal of Management*, 43(1), 137-169.

Karimi, J., & Walter, Z. (2016). Corporate entrepreneurship, disruptive business model innovation adoption, and its performance: the case of the newspaper industry. *Long Range Planning*, 49(3), 342-360.

Kim, S., & McLean, G. N. (2012). Global talent management: Necessity, challenges, and the roles of HRD. *Advances in Developing Human Resources*, 14(4), 566-585.

Kim, C., & Bettis, R. A. (2014). Cash is surprisingly valuable as a strategic asset. *Strategic Management Journal*, 35(13), 2053-2063.

Kimura, Y. (1990). Sustainable competitive advantage and market share performances of firms: The case of the Japanese semiconductor industry. *International Journal of Industry Organization*, 8, 73-92.

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. (2005). A model of middle–level managers' entrepreneurial behavior. *Entrepreneurship Theory and Practice*, 29(6), 699-716.

Kuratko, D. (2007). Corporate Entrepreneurship. *Foundations and Trends in Entrepreneurship*, Volume 3(2), 151-203.

Kuratko, D. Hornsby, J. S. and Hayton, J. (2015). Corporate entrepreneurship: the innovative challenge for a new global economic reality. *Small Business Economics 45*(2), 245–253.

Laffont, J. J., & Tirole, J. (1991). The politics of government decision-making: A theory of regulatory capture. *Quarterly Journal of Economics*, 106(4), 1089-1127.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal determinants of external finance. *Journal of Finance*, 52(3), 1131-1150.

Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, 49(3), 186-205.

Latham, S. F., & Braun, M. (2009). Managerial risk, innovation, and organizational decline. *Journal of Management*, 35(2), 258-281.

Lu, J. W., & Beamish, P. W. (2004). International diversification and firm performance: The S-curve hypothesis. *Academy of Management Journal*, 47(4), 598-609.

Lumpkin, G. T., & Dess, G. G. (2001). Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*, 16(5), 429-451.

Maksimov, V. & Luo, Y. (2020). International springboard as an entrepreneurial act. *Journal of World Business*, this issue.

Malen, J., & Vaaler, P. M. (2017). Organizational slack, national institutions and innovation effort around the world. *Journal of World Business*, 52(6), 782-797.

Mansfield, E.T. (1986). Patents and innovation: An empirical study. *Management Science*, 32, 173-181.

McCord, P. (2014). How Netflix reinvented HR. *Harvard Business Review*, 92(1), 71-76.

McMullen, J. S., Bagby, D. R., & Palich, L. E. (2008). Economic freedom and the motivation to engage in entrepreneurial action. *Entrepreneurship Theory and Practice*, 32(5), 875-895.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 27(7), 770-791.

Miller, D. (2011). Miller (1983) revisited: A reflection on EO research and some suggestions for the future. *Entrepreneurship Theory and Practice*, 35(5), 873-894.

Miller, D., & Le Breton-Miller, I. (2011). Governance, social identity, and entrepreneurial orientation in closely held public companies. *Entrepreneurship Theory and Practice*, 35(5), 1051-1076.

Morris, M. H., Davis, D. L., & Allen, J. W. (1994). Fostering corporate entrepreneurship: Cross-cultural comparisons of the importance of individualism versus collectivism. *Journal of International Business Studies*, 25(1), 65-89.

Mowery, D. C., Oxley, J. E., & Silverman, B. S. (1996). Strategic alliances and interfirm knowledge transfer. *Strategic Management Journal*, 17(S2), 77-91.

Mueller, S. L., & Thomas, A. S. (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing*, 16(1), 51-75.

Ndofor, H. A., Sirmon, D. G., & He, X. (2011). Firm resources, competitive actions and performance: investigating a mediated model with evidence from the in-vitro diagnostics industry. *Strategic Management Journal*, 32(6), 640-657.

Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. (1996). *Applied linear statistical models* (Vol. 4, p. 318). Chicago: Irwin.

Newman, K. L. (2000). Organizational transformation during institutional upheaval. *Academy of Management Review*, 25(3), 602-619.

North, D. C. (1990). *Institutions, institutional change and economic performance*. New York, NY: Cambridge University Press.

Oliver, C. (1997). Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, 697-713.

Palmer, T. B., & Wiseman, R. M. (1999). Decoupling risk taking from income stream uncertainty: A holistic model of risk. *Strategic Management Journal*, 20(11), 1037-1062.

Peng, M. W., Wang, D. Y., & Jiang, Y. (2008). An institution-based view of international business strategy: A focus on emerging economies. *Journal of International Business Studies*, 39(5), 920-936.

Phene, A., & Almeida, P. (2008). Innovation in multinational subsidiaries: The role of knowledge assimilation and subsidiary capabilities. *Journal of International Business Studies*, 39(5), 901-919.

Pinder, C. C., & Schroeder, K. G. (1987). Time to proficiency following job transfers. *Academy of Management Journal*, 30(2), 336-353.

Rawley, E. (2010). Diversification, coordination costs, and organizational rigidity: Evidence from microdata. *Strategic Management Journal*, 31(8), 873-891.

Romero-Martínez, A. M., Fernández-Rodríguez, Z., & Vázquez-Inchausti, E. (2010). Exploring corporate entrepreneurship in privatized firms. *Journal of World Business*, 45(1), 2-8.

Rosenbloom, R.S., & Cusumano, M.A. (1989). Technological pioneering and competitive advantage: The birth of the VCR industry. In *Readings in the Management of Innovation*, by M. L. Tushman and W. O. Moore (eds.), 2nd ed., Ballinger Publishing Company.

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, 26(4), 441-457.

Semadeni, M., Withers, M. C., & Certo, T. S. (2014). The perils of endogeneity and instrumental variables in strategy research: Understanding through simulations. *Strategic Management Journal*, 35(7), 1070-1079.

Shane, S. A. (1992). Why do some societies invent more than others? *Journal of Business Venturing*, 7(1), 29-46.

Sharma, P., & Chrisman, J. J. (1999). Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship. *Entrepreneurship Theory and Practice*, 23(3), 11-28.

Simsek, Z., Veiga, J.F., & Lubatkin, M.H. (2007). The impact of managerial environmental perceptions on corporate entrepreneurship: Towards understanding discretionary slack's pivotal role. *Journal of Management Studies*, 44(8), 13987-1424.

Simsek, Z., Heavey, C., & Veiga, J. J. F. (2010). The impact of CEO core self-evaluation on the firm's entrepreneurial orientation. *Strategic Management Journal*, 31(1), 110-119.

Souder, D., & Bromiley, P. (2017). Timing for dollars: How option exercisability influences resource allocation. *Journal of Management*, 43(8), 2555-2579.

Stam, E. (2013). Knowledge and entrepreneurial employees: A country-level analysis. *Small Business Economics*, 41(4), 887-898.

Stopford, J. M., & Baden-Fuller, C. W. F. (1994). Creating corporate entrepreneurship. *Strategic Management Journal*, 15, 521-536.

Sykes, H. B., & Block, Z. (1989). Corporate venturing obstacles: Sources and solutions. *Journal of Business Venturing*, 4, 159-167.

Terjesen, S., Hessels, J. and Li., D. (2016). Comparative international entrepreneurship: A review and research agenda. *Journal of Management 42*(1), 299-344.

Vanacker, T., Collewaert, V., & Zahra, S. A. (2017). Slack resources, firm performance, and the institutional context: Evidence from privately held European firms. *Strategic Management Journal*, 38(6), 1305-1326.

Wadhwa, A., & Kotha, S. (2006). Knowledge creation through external venturing: Evidence from the telecommunications equipment manufacturing industry. *Academy of Management Journal*, 49(4), 819-835

Wales, W. J., Gupta, V. K., & Mousa, F. T. (2013). Empirical research on entrepreneurial orientation: An assessment and suggestions for future research. *International Small Business Journal*, 31(4), 357-383.

Welter, F., & Smallbone, D. (2011). Institutional perspectives on entrepreneurial behavior in challenging environments. *Journal of Small Business Management*, 49(1), 107-125.

World Bank (2010). *Doing Business 2010 - Reforming through difficult times*. The World Bank.

Yiu, D. W., Lau, C., & Bruton, G. D. (2007). International venturing by emerging economy firms: The effects of firm capabilities, home country networks, and corporate entrepreneurship. *Journal of International Business Studies*, 38(4), 519-540.

Zahra, S. A. (1991). Predictors and financial outcomes of corporate entrepreneurship: An exploratory study. *Journal of Business Venturing*, 6(4), 259-285.

Zahra, S. (1993). Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. *Journal of Business Venturing*, *8*, 319-340.

Zahra, S. & Covin, J. (1995). Contextual Influences on the Corporate Entrepreneurship-Company Performance Relationship in Established Firms: A Longitudinal Analysis. *Journal of Business Venturing*, *10*(1), 43-58.

Zahra, S. (1996). Governance, Ownership and Corporate Entrepreneurship among the *Fortune 500*: The Moderating Impact of Industry Technological Opportunities. *Academy of Management Journal*, *39*, 1713-1735.

Zahra, S., Neubaum, D. O., & Huse, M. (2000). Entrepreneurship in medium-size companies: Exploring the effects of ownership and governance systems. *Journal of Management*, 26(5), 947-976.

Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-203.

Zahra, S. A., & Hayton, J. C. (2008). The effect of international venturing on firm performance: The moderating influence of absorptive capacity. *Journal of Business Venturing*, 23(2), 195-220.

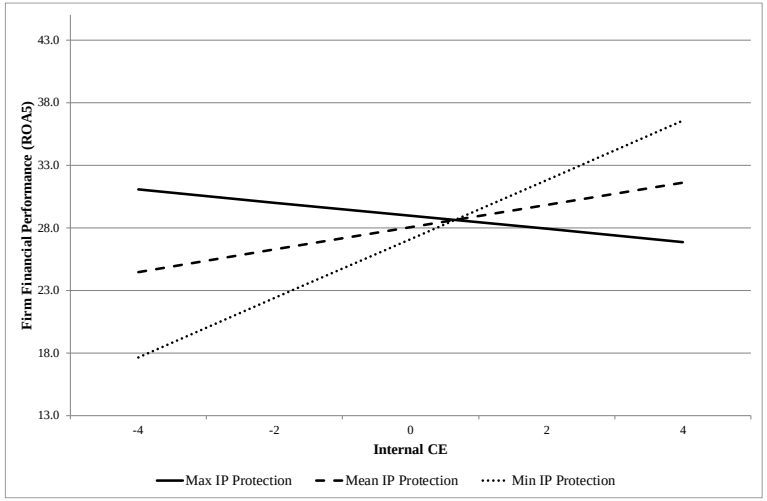
Zahra, S. A. (2015). Corporate entrepreneurship as knowledge creation and conversion: The role of entrepreneurial hubs. *Small Business Economics*, 44(4), 727-735.

Zahra, S. A. (2020). International entrepreneurship in the post Covid world. *Journal of World Business*, https://doi.org/10.1016/j.jwb.2020.101143.

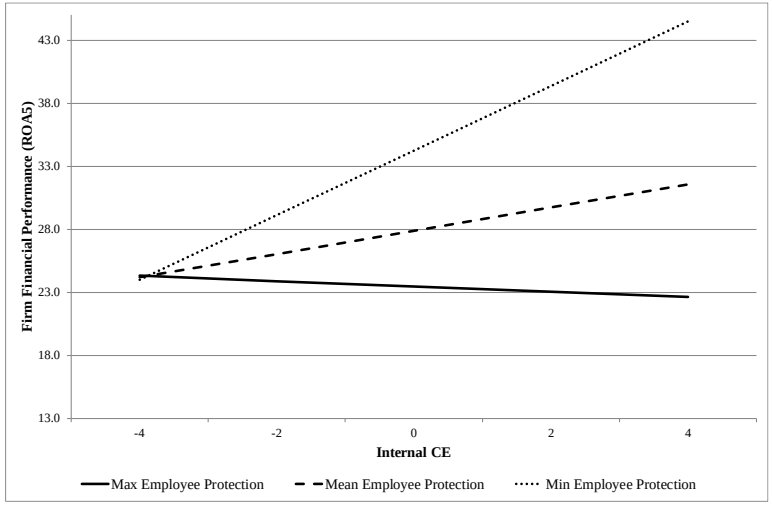
Figure 1

Interaction plots

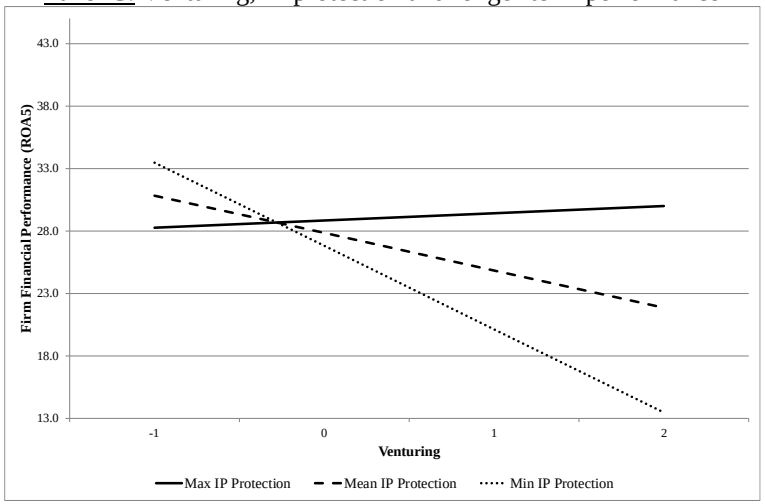
Panel A: Internal CE, IP protection and longer-term performance



Panel B: Internal CE, employee protection and longer-term performance



Panel C: Venturing, IP protection and longer-term performance



Panel D: Venturing, employee protection and longer-term performance

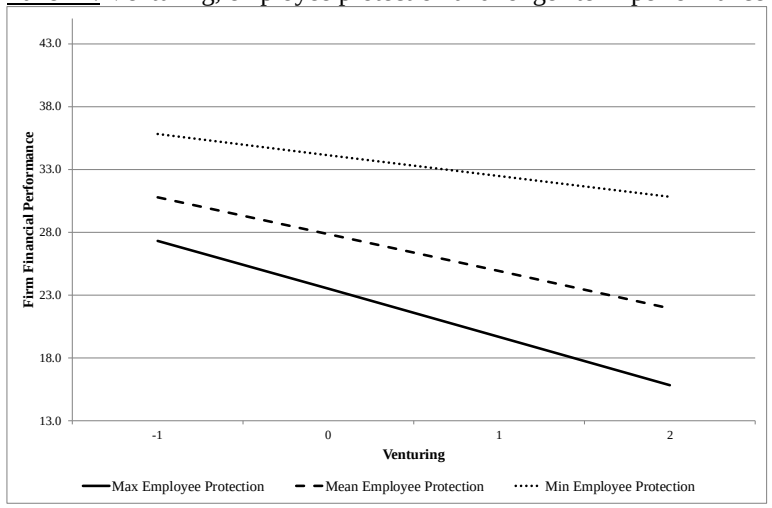


Table 1
Sample Summary Statistics by Country

	Country	Number of firms	Median employment	Median assets (in 000 EUR)	IP protection	Employee protection
1	Austria	12	220	49,795	6.07	0.24
2	Belgium	207	105	17,364	5.27	0.17
3	Bulgaria	108	296	18,285	2.63	0.19
4	Croatia	131	242	19,174	3.51	0.50
5	Czech Republic	314	225	14,634	4.02	0.11
6	Finland	143	189	25,293	6.09	0.41
7	France	318	130	16,986	5.81	0.52
8	Germany	1,592	181	20,742	5.72	0.42
9	Greece	194	112	24,723	4.14	0.50
10	Italy	2,671	95	22,735	3.91	0.38
11	Latvia	30	212	15,205	3.65	0.43
12	Lithuania	57	300	17,816	3.80	0.38
13	Netherlands	19	301	61,191	5.84	0.42
14	Poland	451	237	11,972	3.58	0.25
15	Portugal	327	138	16,333	4.61	0.43
16	Russian Federation	853	462	14,775	2.75	0.38
17	Serbia	187	286	24,660	2.77	0.35
18	Slovak Republic	71	225	16,042	3.73	0.22
19	Slovenia	101	173	20,201	4.49	0.54
20	Spain	941	100	19,299	4.31	0.49
21	Sweden	173	137	18,603	6.11	0.38
22	Switzerland	13	265	74,065	6.08	0.07
23	United Kingdom	729	226	23,713	5.33	0.10
	TOTAL SAMPLE	9,642	153	19,544	4.40	0.37

Notes. Variables are defined in Appendix A.1.

Table 2

Descriptive Statistics and Correlations

	Variable	N	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	ROA1	9,642	5.74	9.08	1.00															
2	ROA3	9,167	16.31	24.60	0.88	1.00														
3	ROA5	8,490	27.49	38.19	0.81	0.95	1.00													
4	Internal CE	9,642	0.00	2.03	0.19	0.19	0.18	1.00												
5	Venturing	9,227	0.00	1.00	0.01	0.01	0.01	0.07	1.00											
6	IP protection	9,642	4.40	1.00	0.07	0.09	0.09	0.11	0.01	1.00										
7	Employee protection	9,642	0.37	0.12	-0.06	-0.07	-0.07	0.01	-0.01	0.02	1.00									
8	Firm age ^{L}	9,642	3.33	0.61	-0.08	-0.08	-0.08	-0.04	0.05	0.13	0.07	1.00								
9	Firm size ^{L}	9,642	5.29	1.08	0.10	0.11	0.10	0.15	0.20	-0.04	-0.16	0.08	1.00							
10	Financial slack	9,642	0.00	0.10	0.19	0.19	0.17	0.08	-0.01	0.01	0.01	0.03	-0.06	1.00						
11	Leverage	9,642	0.24	0.20	-0.22	-0.21	-0.19	-0.12	0.00	-0.10	0.15	-0.04	-0.02	-0.33	1.00					
12	Public	9,642	0.10	0.30	-0.01	-0.01	-0.03	0.04	0.12	-0.02	-0.06	0.14	0.45	-0.03	-0.04	1.00				
13	Firm growth	9,642	0.99	0.17	0.17	0.14	0.13	0.35	0.00	-0.02	-0.01	-0.04	0.02	0.09	-0.04	-0.02	1.00			
14	Prior firm performance	9,642	1.64	9.51	0.22	0.21	0.20	0.21	0.10	0.11	-0.06	0.09	0.39	0.06	-0.13	0.21	0.13	1.00		
15	GDP per capita ^{L}	9,642	10.23	0.57	-0.07	-0.07	-0.07	0.03	-0.02	0.76	0.13	0.19	-0.27	0.01	-0.02	-0.18	-0.08	0.05	1.00	
16	Dev. of tech markets	9,642	0.21	0.18	0.21	0.25	0.24	0.18	0.04	0.68	0.13	0.02	0.12	0.00	-0.03	-0.01	0.01	0.09	0.41	1.00
17	Dev. of labor markets	9,642	26.82	10.68	0.19	0.20	0.20	0.11	0.06	-0.09	-0.02	-0.07	0.32	0.00	-0.03	0.14	0.08	0.05	-0.40	0.09

Notes. Correlations larger than |0.01| are significant at $p < 0.05$. ^{L} indicates the natural logarithm of a variable is used. Variables are defined in Appendix A.1.

Table 3
Internal CE, Venturing, and Firm Financial Performance

	ROA1	ROA3	ROA5	ROA1	ROA3	ROA5	ROA1	ROA3	ROA5	ROA1	ROA3	ROA5
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
Firm age	-0.77***	-1.84***	-3.20***	-0.74***	-1.78***	-3.09***	-0.75***	-1.81***	-3.25***	-0.72***	-1.75***	-3.13***
	[0.15]	[0.41]	[0.62]	[0.15]	[0.41]	[0.62]	[0.15]	[0.41]	[0.63]	[0.15]	[0.41]	[0.63]
Firm size	-0.35***	-0.99***	-1.43**	-0.38***	-1.05***	-1.53**	-0.33**	-0.96***	-1.38**	-0.35***	-1.02***	-1.48**
	[0.10]	[0.27]	[0.47]	[0.10]	[0.28]	[0.48]	[0.10]	[0.28]	[0.48]	[0.10]	[0.28]	[0.48]
Financial slack	14.18***	37.05***	54.01***	14.08***	36.84***	53.59***	14.04***	37.26***	54.57***	13.94***	37.04***	54.13***
	[1.44]	[3.80]	[5.78]	[1.42]	[3.75]	[5.72]	[1.44]	[3.92]	[5.96]	[1.43]	[3.87]	[5.89]
Financial slack	-14.62***	-31.68**	-42.42*	-14.57***	-31.55**	-42.04*	-14.42**	-31.62**	-43.02*	-14.36**	-31.45**	-42.58*
squared	[4.21]	[10.58]	[19.34]	[4.19]	[10.57]	[19.33]	[4.48]	[11.17]	[19.88]	[4.46]	[11.15]	[19.87]
Leverage	-5.83***	-15.16***	-20.03***	-5.72***	-14.88***	-19.52***	-5.75***	-14.65***	-19.07***	-5.63***	-14.33***	-18.49***
	[0.79]	[2.48]	[3.58]	[0.77]	[2.46]	[3.51]	[0.79]	[2.46]	[3.53]	[0.77]	[2.45]	[3.46]
Public	-2.14***	-6.11***	-11.66***	-2.14***	-6.10***	-11.62***	-2.26***	-6.16***	-11.77***	-2.25***	-6.13***	-11.71***
	[0.40]	[0.96]	[1.55]	[0.41]	[0.97]	[1.57]	[0.42]	[1.01]	[1.63]	[0.42]	[1.01]	[1.65]
Firm growth	5.13***	9.87***	13.53***	4.43***	8.19**	10.57*	5.31***	10.17***	13.35***	4.63***	8.37**	10.20*
	[0.92]	[2.49]	[3.70]	[1.05]	[2.67]	[4.16]	[0.97]	[2.50]	[3.71]	[1.09]	[2.65]	[4.11]
Prior firm	0.18***	0.48***	0.71***	0.18***	0.47***	0.69***	0.18***	0.48***	0.71***	0.18***	0.46***	0.69***
performance	[0.01]	[0.04]	[0.06]	[0.01]	[0.04]	[0.06]	[0.01]	[0.04]	[0.06]	[0.01]	[0.04]	[0.06]
GDP per capita	-1.93***	-7.06***	-10.45***	-1.94***	-7.11***	-10.55***	-1.93***	-7.05***	-10.46***	-1.94***	-7.09***	-10.56***
	[0.33]	[0.91]	[1.62]	[0.33]	[0.90]	[1.61]	[0.33]	[0.91]	[1.59]	[0.33]	[0.90]	[1.58]
Dev. of tech	13.36***	40.22***	59.59***	13.13***	39.69***	58.59***	13.31***	39.76***	58.90***	13.11***	39.26***	57.95***
markets	[1.01]	[2.94]	[4.73]	[0.99]	[2.93]	[4.70]	[1.00]	[2.94]	[4.70]	[0.98]	[2.92]	[4.67]
Dev. of labor	0.09***	0.26***	0.40***	0.09***	0.25***	0.39***	0.09***	0.26***	0.41***	0.09***	0.26***	0.40***
markets	[0.02]	[0.04]	[0.08]	[0.02]	[0.04]	[0.08]	[0.02]	[0.04]	[0.08]	[0.02]	[0.04]	[0.08]
IP protection	-0.24	-0.01	0.33	-0.24	-0.00	0.35	-0.22	0.09	0.53	-0.22	0.09	0.53
	[0.25]	[0.64]	[1.15]	[0.25]	[0.64]	[1.14]	[0.25]	[0.63]	[1.13]	[0.24]	[0.63]	[1.12]
Employee	-4.24***	-14.68***	-23.89***	-4.33***	-14.87***	-24.20***	-4.25***	-14.88***	-24.81***	-4.36***	-15.16***	-25.25***
protection	[0.87]	[2.53]	[4.13]	[0.86]	[2.52]	[4.13]	[0.89]	[2.60]	[4.19]	[0.88]	[2.58]	[4.18]

[Table 3 Continued]

	ROA1 M1	ROA3 M2	ROA5 M3	ROA1 M4	ROA3 M5	ROA5 M6	ROA1 M7	ROA3 M8	ROA5 M9	ROA1 M10	ROA3 M11	ROA5 M12
Internal CE	—	—	—	0.17*	0.40*	0.70*	—	—	—	0.17*	0.43*	0.74*
				[0.07]	[0.17]	[0.31]				[0.07]	[0.17]	[0.30]
Venturing	—	—	—	—	—	—	-0.10	-0.21	-0.23	-0.12	-0.24	-0.30
							[0.11]	[0.29]	[0.43]	[0.11]	[0.29]	[0.41]
Manufacturing sub-sector dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	9,642	9,167	8,490	9,642	9,167	8,490	9,227	8,769	8,133	9,227	8,769	8,133
R-squared	0.217	0.234	0.218	0.218	0.235	0.220	0.216	0.232	0.218	0.217	0.233	0.219

Notes. Variables are defined in Appendix A.1. Unstandardized regression coefficients and heteroskedasticity consistent, robust standard errors (clustered at the country and industry level) in brackets. With *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ and † $p < 0.10$ (conservative two-tailed tests).

Table 4

Internal CE, Venturing, and Firm Financial Performance—IP Protection and Employee Protection as Moderators

	ROA1 M1	ROA3 M2	ROA5 M3	ROA1 M4	ROA3 M5	ROA5 M6	ROA1 M7	ROA3 M8	ROA5 M9
Firm age	-0.73***	-1.76***	-3.06***	-0.73***	-1.75***	-3.13***	-0.70***	-1.68***	-3.01***
	[0.15]	[0.40]	[0.61]	[0.15]	[0.41]	[0.64]	[0.15]	[0.40]	[0.63]
Firm size	-0.32**	-0.92***	-1.32**	-0.31**	-0.90**	-1.28**	-0.29**	-0.83**	-1.17*
	[0.10]	[0.27]	[0.46]	[0.10]	[0.27]	[0.47]	[0.10]	[0.27]	[0.46]
Financial slack	14.18***	37.02***	54.20***	14.02***	37.22***	54.52***	14.03***	37.18***	54.70***
	[1.41]	[3.67]	[5.66]	[1.44]	[3.92]	[5.96]	[1.41]	[3.79]	[5.82]
Financial slack squared	-14.91***	-32.08**	-43.68*	-14.31**	-31.30**	-42.54*	-14.55**	-31.42**	-43.25*
	[4.18]	[10.46]	[19.34]	[4.46]	[11.14]	[19.84]	[4.41]	[11.01]	[19.80]
Leverage	-5.73***	-14.96***	-19.65***	-5.73***	-14.58***	-18.94***	-5.63***	-14.38***	-18.54***
	[0.78]	[2.47]	[3.50]	[0.79]	[2.45]	[3.52]	[0.78]	[2.45]	[3.45]
Public	-2.07***	-5.93***	-11.36***	-2.23***	-6.07***	-11.61***	-2.15***	-5.87***	-11.29***
	[0.40]	[0.96]	[1.55]	[0.42]	[1.02]	[1.67]	[0.42]	[1.02]	[1.67]
Firm growth	4.11***	7.29**	8.95*	5.30***	10.15***	13.29***	4.31***	7.47**	8.57*
	[1.06]	[2.64]	[4.08]	[0.97]	[2.51]	[3.72]	[1.10]	[2.62]	[4.04]
Prior firm performance	0.18***	0.48***	0.71***	0.18***	0.48***	0.71***	0.18***	0.48***	0.71***
	[0.01]	[0.04]	[0.06]	[0.01]	[0.04]	[0.06]	[0.01]	[0.04]	[0.06]
GDP per capita	-2.03***	-7.31***	-10.89***	-1.93***	-7.06***	-10.47***	-2.02***	-7.26***	-10.85***
	[0.32]	[0.88]	[1.56]	[0.33]	[0.90]	[1.59]	[0.32]	[0.87]	[1.53]
Dev. of technology markets	13.37***	40.38***	59.91***	13.42***	40.14***	59.54***	13.44***	40.28***	59.79***
	[1.02]	[3.04]	[4.85]	[0.99]	[2.89]	[4.61]	[1.00]	[2.98]	[4.71]
Dev. of labor markets	0.08***	0.23***	0.36***	0.09***	0.28***	0.43***	0.08***	0.25***	0.39***
	[0.02]	[0.04]	[0.08]	[0.01]	[0.04]	[0.07]	[0.01]	[0.04]	[0.07]
IP protection	-0.18	0.13	0.57	-0.24	-0.00	0.36	-0.19	0.12	0.58
	[0.24]	[0.62]	[1.11]	[0.24]	[0.61]	[1.09]	[0.23]	[0.59]	[1.05]
Employee protection	-4.09***	-14.36***	-23.47***	-4.21***	-14.76***	-24.59***	-4.07***	-14.47***	-24.18***
	[0.86]	[2.49]	[4.05]	[0.89]	[2.59]	[4.18]	[0.88]	[2.54]	[4.06]

[Table 4 Continued]

	ROA1 M1	ROA3 M2	ROA5 M3	ROA1 M4	ROA3 M5	ROA5 M6	ROA1 M7	ROA3 M8	ROA5 M9
Internal CE	0.21***	0.50***	0.85**	—	—	—	0.21***	0.52***	0.87***
	[0.06]	[0.15]	[0.26]				[0.06]	[0.15]	[0.24]
Internal CE x IP protection	-0.23***	-0.55***	-0.85***	—	—	—	-0.23***	-0.53***	-0.81***
	[0.04]	[0.12]	[0.19]				[0.04]	[0.13]	[0.19]
Internal CE x Employee protection	-0.81†	-2.87*	-5.67**	—	—	—	-0.80	-3.21*	-6.16**
	[0.48]	[1.22]	[2.09]				[0.51]	[1.25]	[2.10]
Venturing	—	—	—	-0.57†	-1.83*	-2.92*	-0.53	-1.74†	-2.80*
				[0.34]	[0.90]	[1.41]	[0.34]	[0.89]	[1.42]
Venturing x IP protection	—	—	—	0.34	1.22†	2.05†	0.32	1.16	1.96†
				[0.27]	[0.73]	[1.14]	[0.27]	[0.73]	[1.15]
Venturing x Employee protection	—	—	—	-1.24**	-3.72**	-5.56**	-1.10*	-3.20*	-4.62*
				[0.45]	[1.26]	[1.99]	[0.46]	[1.26]	[1.99]
Manufacturing sub-sector dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	9,642	9,167	8,490	9,227	8,769	8,133	9,227	8,769	8,133
R-squared	0.221	0.238	0.223	0.216	0.233	0.219	0.221	0.237	0.223

Notes. Variables are defined in Appendix A.1. Unstandardized regression coefficients and heteroskedasticity consistent, robust standard errors (clustered at the country and industry level) in brackets. With *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ and † $p < 0.10$ (conservative two-tailed tests).

INTERNET APPENDIX

Appendix A.1.

Variable Definitions

Variables	Definition	Source
Dependent variables		
ROA1	EBIT on total assets one year out [e.g., Ndofor et al., 2011]	Orbis Europe
ROA3	EBIT on total assets one to three years out [e.g., Ndofor et al., 2011]	Orbis Europe
ROA5	EBIT on total assets one to five years out [e.g., Ndofor et al., 2011]	Orbis Europe
Independent variables		
Internal CE	Corporate entrepreneurship calculated as the sum of the standardized risk taking, proactiveness and innovation measures [e.g., Miller & Le Breton-Miller, 2011]	Orbis Europe
Risk taking	Volatility of country- and industry-adjusted financial performance over the past five years [e.g., Faccio et al., 2011]	Orbis Europe
Proactiveness	(a) Capital expenditure to capital stock and (b) The proportion of profits reinvested in the business, controlling for industry effects [e.g., Miller & Le Breton-Miller, 2011]	Orbis Europe
Innovation	The number of successful patent applications [e.g., Baum et al., 2000]	Orbis Europe
Venturing	Newly established subsidiaries [e.g., Dess et al., 2003]	Orbis Europe
Moderator variables		
IP protection	A seven-point scale with one denoting nations where IP laws were neither clearly delineated nor strongly protected by law, and seven indicating that these rights were clearly delineated and strongly protected	World Economic Forum
Employee protection	The rigidity of employment index divided by 100. A score between 0 and 1 so that higher values indicate more rigid employment regulations	World Bank
Controls		
Firm age	Years since founding + 1 (ln)	Orbis Europe
Firm size	Number of employees + 1 (ln)	Orbis Europe
Financial slack	Cash and cash equivalents scaled by total assets, controlling for industry effects	Orbis Europe
Leverage	Financial debt on total assets	Orbis Europe
Public	A dummy equal to 1 when a firm is quoted and 0 otherwise	Orbis Europe
Firm growth	Total assets divided by prior-year total assets	Orbis Europe
Prior firm performance	Net income in millions	Orbis Europe
GDP per capita	Gross domestic product per resident	World Bank
Development of technology markets	The number of patent applications per 1000 residents	World Bank
Development of labor markets	The share of the total labor with tertiary education	World Bank

Appendix A.2.

Internal CE (components), Venturing, and Firm Financial Performance

	ROA1 M1	ROA3 M2	ROA5 M3	ROA1 M4	ROA3 M5	ROA5 M6
Risk taking	0.28*	0.71*	1.36*	0.23†	0.58†	1.16*
	[0.12]	[0.34]	[0.55]	[0.12]	[0.34]	[0.53]
Proactiveness	0.18*	0.43†	0.68†	0.20*	0.50*	0.76*
	[0.09]	[0.22]	[0.36]	[0.09]	[0.22]	[0.36]
Innovation	0.27*	0.90**	1.36**	0.25†	0.92*	1.47**
	[0.12]	[0.34]	[0.52]	[0.13]	[0.36]	[0.55]
Risk taking x IP protection	-0.17	-0.24	-0.53	-0.17	-0.23	-0.43
	[0.11]	[0.29]	[0.46]	[0.11]	[0.29]	[0.46]
Proactiveness x IP protection	-0.23***	-0.53**	-0.73**	-0.23***	-0.56**	-0.77**
	[0.06]	[0.18]	[0.27]	[0.06]	[0.19]	[0.27]
Innovation x IP protection	-0.30**	-1.07***	-1.65***	-0.30**	-0.96***	-1.50***
	[0.10]	[0.28]	[0.45]	[0.10]	[0.29]	[0.43]
Risk taking x Employee protection	-0.61	-2.46	-6.92	-0.69	-2.81	-7.09
	[1.12]	[3.04]	[4.66]	[1.14]	[3.11]	[4.76]
Proactiveness x Employee protection	-0.68	-2.64†	-4.55†	-0.81	-2.69†	-4.49†
	[0.60]	[1.51]	[2.53]	[0.60]	[1.53]	[2.54]
Innovation x Employee protection	-1.21†	-3.07	-5.33	-0.74	-4.68*	-8.50*
	[0.71]	[2.54]	[4.72]	[0.75]	[2.31]	[4.00]
Venturing	—	—	—	-0.54	-1.80*	-2.87*
				[0.34]	[0.89]	[1.42]
Venturing x IP protection	—	—	—	0.33	1.22†	2.06†
				[0.27]	[0.71]	[1.14]
Venturing x Employee protection	—	—	—	-1.10*	-2.94*	-4.22*
				[0.46]	[1.29]	[2.08]
Other controls	YES	YES	YES	YES	YES	YES
Manufacturing sub-industry dummies	YES	YES	YES	YES	YES	YES
Observations	9,642	9,167	8,490	9,227	8,769	8,133
R-squared	0.222	0.239	0.224	0.221	0.237	0.224

Notes. Variables are defined in Appendix A.1. Unstandardized regression coefficients and heteroskedasticity consistent, robust standard errors (clustered at the country and industry level) in brackets. With *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ and † $p < 0.10$ (conservative two-tailed tests).

Appendix A.3.
Internal CE and Venturing as Dependent Variables

	Internal CE	Venturing
Firm age	-0.13***	0.02
	[0.04]	[0.02]
Firm size	0.10*	0.13**
	[0.05]	[0.04]
Financial slack	1.79***	-0.11
	[0.37]	[0.12]
Financial slack	-0.46	0.13
squared	[1.58]	[0.34]
Leverage	-0.66***	0.07†
	[0.15]	[0.04]
Public	0.00	0.11***
	[0.09]	[0.03]
Firm growth	0.53***	-0.03
	[0.14]	[0.04]
Prior firm	0.03***	0.01
performance	[0.00]	[0.01]
GDP per capita	0.17	0.09**
	[0.14]	[0.03]
Dev. of tech	1.60***	0.11
markets	[0.37]	[0.07]
Dev. of labor	0.02***	0.00*
markets	[0.00]	[0.00]
IP protection	0.05	-0.05***
	[0.09]	[0.01]
Employee	-0.18	0.09
protection	[0.36]	[0.11]
Observations	9,479	9,064
R-squared	0.086	0.052

Notes. Variables are defined in Appendix A.1. Internal CE and venturing are measured in 2009, while the other variables are measured in 2008. Unstandardized regression coefficients and heteroskedasticity consistent, robust standard errors (clustered at the country and industry level) in brackets. With *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ and † $p < 0.10$ (conservative two-tailed tests).

Appendix A.4.
Internal CE, Venturing, and Firm Financial Performance with Country Dummies

	ROA1 M1	ROA3 M2	ROA5 M3	ROA1 M4	ROA3 M5	ROA5 M6	ROA1 M7	ROA3 M8	ROA5 M9
Internal CE	0.21***	0.47**	0.79**	—	—	—	0.20***	0.48**	0.79**
	[0.06]	[0.15]	[0.26]				[0.06]	[0.15]	[0.25]
Internal CE x IP protection	-0.23***	-0.52***	-0.77***	—	—	—	-0.22***	-0.50***	-0.72***
	[0.04]	[0.13]	[0.19]				[0.04]	[0.13]	[0.19]
Internal CE x Employee protection	-1.01*	-3.20**	-5.64**	—	—	—	-0.97†	-3.39**	-5.97**
	[0.48]	[1.21]	[2.08]				[0.51]	[1.27]	[2.14]
Venturing	—	—	—	-0.67*	-2.00*	-3.24*	-0.63†	-1.91*	-3.10*
				[0.33]	[0.89]	[1.37]	[0.33]	[0.89]	[1.38]
Venturing x IP protection	—	—	—	0.41	1.35†	2.29*	0.39	1.28†	2.19†
				[0.27]	[0.72]	[1.11]	[0.27]	[0.72]	[1.12]
Venturing x Employee protection	—	—	—	-1.43**	-4.04**	-6.01**	-1.25**	-3.49**	-5.08**
				[0.44]	[1.26]	[1.96]	[0.45]	[1.25]	[1.95]
Other controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Manufacturing sub-industry dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	9,642	9,167	8,490	9,227	8,769	8,133	9,227	8,769	8,133
R-squared	0.228	0.243	0.229	0.223	0.237	0.225	0.227	0.241	0.229

Notes. Variables are defined in Appendix A.1. Unstandardized regression coefficients and heteroskedasticity consistent, robust standard errors (clustered at the country and industry level) in brackets. With *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ and † $p < 0.10$ (conservative two-tailed tests).

Appendix A.5.

Quadratic effects of internal CE and venturing

	ROA1	ROA3	ROA5
	M1	M2	M3
Internal CE	0.41***	1.08***	1.81***
	[0.06]	[0.15]	[0.26]
Internal CE squared	-0.08***	-0.22***	-0.37***
	[0.01]	[0.03]	[0.05]
Internal CE x IP protection	-0.17***	-0.36**	-0.49*
	[0.05]	[0.13]	[0.19]
Internal CE x Employee protection	-0.81†	-2.94**	-5.33**
	[0.43]	[1.13]	[1.93]
Venturing	-0.79*	-2.18*	-3.31*
	[0.36]	[1.00]	[1.54]
Venturing squared	0.00	0.01	0.00
	[0.01]	[0.02]	[0.02]
Venturing x IP protection	0.35	1.26	2.35†
	[0.29]	[0.78]	[1.21]
Venturing x Employee protection	-1.00†	-3.17*	-5.18*
	[0.57]	[1.45]	[2.18]
Other controls	YES	YES	YES
Country dummies	YES	YES	YES
Manufacturing sub-industry dummies	YES	YES	YES
Observations	9,227	8,769	8,133
R-squared	0.227	0.241	0.229

Notes. Variables are defined in Appendix A.1. Unstandardized regression coefficients and heteroskedasticity consistent, robust standard errors (clustered at the country and industry level) in brackets. We also ran models with internal CE (venturing) squared x IP protection and internal CE squared (venturing) x employee protection; these interactions were never significant, however, and we therefore report the more parsimonious models. With *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ and † $p < 0.10$ (conservative two-tailed tests).