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ORIGINAL PAPER

Entrepreneurial orientation and firm value: Does managerial discretion play a role?

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Abstract Considerable interest exists in understanding the extent to which entrepreneurial orientation (EO) generates value in the capital markets. Drawing on insights from the discretion literature, we focus on three distinct loci of managerial discretion—organizational, industrial, and national—to examine their contingent influence on the EO-value relation. Predictions were tested on a panel dataset of firms from five advanced economies listed in the Forbes 2000 ranking. Data were analyzed using ordinary least squares to reveal that the contribution of EO to firm valuation is statistically significant and economically meaningful when organizational and/or industrial discretion are high: each unit increase in EO boosts value generation by 7.4 % when organizational discretion is high and 5.6 % when industrial discretion is high. EO therefore creates value for the firm in capital markets when the appropriate discretionary conditions are present. These findings suggest that the relation between EO and capital market value is more complex than generally believed.

Keywords Entrepreneurial orientation · Managerial discretion · Firm value

JEL Classification C12 · L25 · L26 · M10

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1 Introduction

Firms where top management is unable to successfully pursue new business opportunities often find themselves losing value in the capital markets. Failure to generate value may eventually lead to the demise of the firm as happened at many large corporations that were once household names, including American Apparel, Blockbuster and Radio Shack. Not surprisingly, a crucial task confronting senior managers is to capitalize on new business opportunities that will generate positive firm value. To this end, entrepreneurial orientation (EO)—that is, managers' inclination to be innovative, proactive, and risk taking (Covin and Slevin 2002; Miller 2011)—takes on instrumental importance. Indeed, the success of many corporations in achieving superior firm value is attributed to their management's emphasis on EO (Dess and Lumpkin 2005), so that EO is now considered a strategic imperative for business success (Covin and Lumpkin 2011).

Scholars posit and evidence indicates that the relation between EO and firm performance is generally positive (Covin et al. 2006). Meta-analysis of the EO–performance link reveals a correlation of 0.24, which is considered moderately large in strategy research (Rauch et al. 2009). Findings supporting a strong positive connection between EO and performance motivate calls for managers to become more entrepreneurial in their strategic posture (Certo et al. 2009), presumably to steer their firms towards new opportunities. Some recent research, however, raises the intriguing possibility that although managers may have a proclivity towards EO, the enactment of such a posture for the firm may be constrained (Anderson and Covin 2014; Boling et al. 2015). More specifically, as we explain later, management's emphasis on EO may not actually translate into identifying and exploiting new opportunities when there is limited or little executive discretion. Consequently, firms are unlikely to derive much benefit from management's inclination for EO unless there is sufficient leeway to enact and implement strategic tendencies and proclivities. Owners are however hesitant to give managers much latitude as the latter may take decisions that further their self-interest at the expense of the firm (Hill and Jones 1992).

In this study, we deploy managerial discretion theory (Hambrick and Finkelstein 1987; Wangrow et al. 2015) to illuminate the intricate relationship between EO and firm value. Our research examines *when* (that is, conditions under which) EO results in superior valuation in the capital markets, an important issue because researchers have mostly focused on EO's achieved performance consequences, usually measured through retrospective (marketing- and accounting-based) indicators (Gupta and Wales 2013). Valuation, a forward-looking performance indicator which accounts for possible perils and hazards that may befall the firm, demonstrates the usefulness of EO for investors, corporate boards, and other stakeholders. Recent years have witnessed some attempts to assess the valuation impact of EO (Engelen et al. 2013; Miller and Breton-Miller 2011), but they do not delve into the circumstances under which EO results in superior capital market valuations as we do in the present study. We articulate how managers might be hemmed in by constraints stemming from three distinct loci—organizational,

industrial, and national—which should redress the criticism that the multi-level nature of managerial discretion has not been carefully considered in the extant literature (Boal and Hooijberg 2000; Hutzschenreuter and Kleindienst 2013). In doing so, we contribute to the EO and discretion literatures by linking two prominent streams of research that have not been directly connected previously. Finally, we seek to alleviate recent concerns that EO-performance research "has largely been conducted in single-country contexts" (Engelen et al. 2015: 1071), so that many interesting theoretical and pragmatic questions remain unanswered in the EO literature. An international study, such as the one we report here, has the merit of facilitating robust inferences to multiple countries in the same study, which should strengthen global theory development in the area of EO.

On the empirical side, we test the predicted relationships using ordinary least squares and a panel of archival data on Forbes 2000 firms from five economically advanced countries. Our main finding is that EO matters for firm valuation when organizational discretion and industrial discretion are high. We also find that the effect of EO on firm valuation is further amplified when both organizational and industrial discretion are concurrently high. Notably, tests indicate that our findings are not influenced by endogeneity issues, which responds to recent concerns that endogeneity seldom receives systematic attention in contemporary strategic management and EO studies (Bettis et al. 2014).

2 Theory and hypotheses

An entrepreneurial posture has become increasingly important for managers as they seek new ways to create value for the firm (Covin and Lumpkin 2011; Dess et al. 2011). Following Miller (1983), the dominant conceptualization of what it means to be entrepreneurial is a strong commitment to concurrently take risks in trying out new products, innovate to rejuvenate market offerings, and become more proactive than rivals (Anderson and Eshima 2013; Covin and Slevin 1991). This generalized conception of proclivity towards entrepreneurship has formed the basis of the popular definition of EO as the simultaneous exhibition of proactiveness, risk-taking, and innovativeness (Anderson et al. 2009; George and Marino 2011).[1] After almost three decades of research, EO is considered one of the most stabilized concepts in management science (Gupta and Gupta 2015), and celebrated as "a rigorous and robust scientific construct on the basis of which a stable body of cumulative knowledge has been developing" (Basso et al. 2009: 313).

A fundamental benefit of EO is purported to be superior business performance (Covin and Lumpkin 2011). Not surprisingly, the EO-performance connection has been extensively investigated, with most researchers reporting a generally positive

[1] There are two different ways in which EO has been conceived in the literature: the gestalt approach (Covin and Slevin 1989; Miller 1983) and the disaggregated approach (Lumpkin and Dess 1996). Wales et al. (2013) found that 123 of the 150 EO articles published from 1976 to 2010 adopted the gestalt construct, so that it is now the dominant paradigm in the field (Anderson and Eshima 2013). Covin et al. (2006) explain that though the gestalt and disaggregated conceptualizations share the same name ('EO'), they are actually two very different constructs. Our focus in this study is on the gestalt EO conception.

association between EO and firm performance. Large-scale quantitative (Rauch et al. 2009) and qualitative (Gupta and Wales 2013) studies of the EO-performance relationship reveal a largely positive direct effect of EO on performance. Nonetheless, key knowledge voids remain concerning the EO-performance relationship (Wiklund and Shepherd 2011). One such void stems from the focus on achieved performance in the EO literature, mostly using retrospective accounting-, operational-, and marketing—related outcomes (Gupta and Wales 2013). In recent years, motivated by the idea that if EO is to be relevant for senior management as well as shareholders it must also have an impact on value creation in the capital markets, there has been a growing interest in understanding the consequences of EO for firm valuation. Notably, valuation incorporates assessment of expected performance, and so goes beyond the traditional emphasis on achieved performance in the EO literature. Furthermore, the myriad perils and hazards that may befall firms with entrepreneurial managers are not considered in conventional performance measures, but are reflected in capital market valuations. For these reasons, attention to firm valuation represents an important development for EO research. Notably, impact on firm valuation will enhance EO's salience for shareholders (Srivastava et al. 1998), who tend to value firms higher when they expect superior net payoffs for the firm going forward.

To our knowledge, three published EO studies explicitly examined the impact on firm value in the capital markets. Specifically, Short et al. (2010) investigated the link between EO and Tobin's q (a measure of firm value) in two independent samples of publicly-traded American firms (listed in S&P 500 and Russell 2000), revealing a significant positive association. Miller and Breton-Miller (2011) reported a direct positive relation between EO and Tobin's q in Fortune 1000 firms. Finally, Engelen et al. (2013) predicted and found that the effect of EO on Tobin's q in public high-technology American firms was significantly positive. In terms of conceptual logic linking EO with superior value, Miller and Breton-Miller (2011) argued that investors reward firms where managers embrace EO because such managers will be better able to direct their firms to compete aggressively and flexibly. The preference for entrepreneurially-oriented managers assumes greater salience when one considers that aversion to risk and conservative leadership is often believed to be characteristic of top management in large firms (Jensen and Meckling 1976). EO also helps firms gain a reputation for being ahead of rivals, which makes it more visible to customers and investors who raise its market valuation in the expectation that it will deliver superior financial performance.

These three studies seem to point towards a generally positive impact of EO on firm valuation in the capital markets, so that we present the following baseline hypothesis:

H1 There will be a positive relationship between EO and capital market valuation.

Engelen et al. (2013) report that under certain circumstances EO can result in inferior valuation, which points towards the presence of contingencies that alter the valuation effects of EO. The notion that situational exigencies impinge on valuation outcomes of EO should come as no surprise because contingency perspectives have had a long history in the EO literature (Anderson and Eshima 2013; De Clercq et al.

2013). To quote Wiklund and Shepherd (2005: 73), the relation between EO and performance outcomes is always likely "more complex than a simple main-effects-only relationship." Indeed, there is now sizable evidence that the nature and strength of the EO-performance link changes as a function of situational influences (Kraus et al. 2012). More broadly, Hambrick and Lei (1985) noted that there is rarely a strategy whose performance consequences do not depend on contingency factors, an observation that continues to resonate well with management researchers (Boyd et al. 2012). Taking to heart the dictum that advances in strategy research result from rigorous consideration of contingent logic (Donaldson et al. 2013), we seek to illuminate boundary conditions of when managerial emphasis on EO is beneficial for firm value and when it is not.

A common, albeit unstated, assumption in much of management (and business) research is that managers tend to have tremendous freedom to do as they wish (Davis and Stout 1992; Ocasio 1994). To lay observers also, it seems obvious, perhaps even natural, that people who lead firms control corporate behaviors and activities (Finkelstein et al. 2009). Anecdotal and empirical evidence, however, points to strict limits within which executives are expected to operate, at least in most circumstances (Yukl 2002). To resolve this seeming inconsistency, Hambrick and Finkelstein (1987) introduced and elaborated the idea of managerial discretion, defining discretion as the leeway top management has in implementing their desires and choices for the firm.[2] Discretion relates to the agency-theoretic divergence of interests between stockholders and managers (Hill and Jones 1992), so that the two constituencies generally have opposing interests in constricting or expanding the leeway available to management. At a basic level, discretion exists when there is absence of constraint and a great deal of means-end ambiguity (Hambrick 2007). When discretion is high, there are many viable alternatives and the constraints on decision-making are minimal, but when discretion is low, choices for executive action are few and managers are hemmed in by myriad constraints.

Depending on how much discretion exists, corporate behaviors and activities "may lie totally outside the control of its top managers, completely within their control, or more typically, somewhere in between" (Finkelstein et al. 2009: 26). Thus, discretion theory draws attention to when managers matter the most (or the least), so that managers will have greater influence on their firms when they matter more. For Hambrick (2007), discretion is a "pivotal moderator" that explain when managers have a higher (or lower) impact on firm performance.

In recent years, researchers have begun discussing the possibility that managers may find themselves constrained in actualizing their EO (Anderson et al. 2015; Kollmann and Stockmann 2014). As an orientation, EO reflects a generalized tendency or proclivity towards a particular way of thinking. Because strategic orientations reflect the mental models and beliefs of senior management (Hitt et al. 1997), EO is reflective of the manner in which top executives are inclined to steer

[2] Hambrick and Finkelstein (1987) developed the managerial discretion construct that has since received much attention in the management literature, as well as in accounting (Adams and Hossain 1998), marketing (Boyd et al. 2010) and finance (Adams et al. 2005). However, the broad notion of discretion already existed in various literatures such as economics (Williamson 1973) and sociology (Lieberson and O'Connor 1972) before Hambrick and colleagues introduced it to management researchers.

the firm. In this way, EO provides the guiding principles underlying the overall direction of the firm. However, for EO to actually be enacted and implemented in corporate behaviors and activities, managers should have the latitude to make decisions and take actions that are consistent with their predispositions (Anderson and Covin 2014; Boling et al. 2015).

Notably, discretion—or lack of constraint—is seldom explicitly stipulated to management. Consequently, executives typically do not know exactly what may pass muster, and so they tend to operate on the basis of rough estimates of the extent to which they have leeway. Yet, discretion does not come about by happenstance. Three distinct contextual loci of managerial discretion have been identified in the literature: organization (Graffin et al. 2011), industry (Hambrick and Abrahamson 1995; Hambrick and Quigley 2014), and nation (Crossland and Hambrick 2007). Research on organizational, industrial, and national determinants of managerial discretion has been steadily accumulating as scholars in a number of disciplines now seek to explain when managers will have discretion, how discretion circumscribes executive action, and the extent to which discretion influences the manifestation of top executives' predispositions and tendencies in performance outcomes of the firm (Wangrow et al. 2015). We now discuss each of the three levels of discretion as a moderator of the EO-value relation, bringing a fresh multi-level perspective to the study of contingencies in the EO literature.

2.1 Organizational discretion

When conceived at the organizational level, discretion refers to the extent to which factors and characteristics within the organization make the firm amenable to a wide range of potential actions (Hambrick and Finkelstein 1987). As Finkelstein and Hambrick (1990) asserted, the organization itself may have attributes "that inhibit or enhance top-managerial discretion" so that managers confront differing levels of constraints from one firm to the other. Organizational discretion is determined in large part by the resources available to the firm (Finkelstein and Boyd 1998). This is because adequate resources are needed to implement virtually any meaningful strategic initiative, and so alterations in the level of resources available from the organization are readily reflected in the range of viable options available to management (Finkelstein and Hambrick 1990). To our knowledge, researchers have mostly concentrated on discretion originating directly from the size of the free resource pool available to the organization, as reflected in Finkelstein and Hambrick's (1990) assertion that "managerial discretion is enhanced by availability of slack resources". We extend their argument by suggesting that discretion is also enhanced when there are expanded possibilities for combining resources due to fewer impediments towards utilization of available resources.

Our prediction is that EO will be more strongly related to firm value in a context of higher organizational discretion than in a context of low discretion. When organizational discretion is high, there will be greater leeway to engage in varied resource combinations in targeting new business opportunities, which will amplify the quantity and quality of opportunities that can be exploited (Lockett et al. 2009). Without EO to guide the pursuit of new opportunities, slack resources present in

high-discretion firms will be underutilized, and may even be wasted (Liu et al. 2014). In effect, our argument is that investors will evaluate the firm more favorably when they see that managers are entrepreneurially inclined and that there is also enough organizational discretion to permit reconfiguring resources to pursuit new opportunities. Given that EO is known to be a resource-intensive strategic option (Wiklund and Shepherd 2005), it may not be fully sufficient by itself to assure investors of the firm's future prospects. High organizational discretion will also be necessary to realize EO's true potential because of the greater leeway to reconfigure and recombine resources in pursuing new opportunities. Our emphasis on the correct alignment between EO and organizational discretion is consistent with the Penrose's (1959) idea that resource availability is beneficial for the firm if management has the wherewithal to deploy resources appropriately. Thus, we hypothesize:

H2 EO will be associated with greater valuation when discretion at the organizational level is higher than when it is lower.

2.2 Industrial discretion

Managers operate within domains defined by the products or services offered by their firm and the markets served by the firm (Levine and White 1961). For this reason, the characteristics of these domains, captured succinctly by the industry in which managers are located, greatly shape the discretion available in a situation (Finkelstein et al. 2009). Based on Hambrick and Finkelstein (1987)'s initial theorizing, researchers have examined the discretion in the product-market space, generally referred to as industrial discretion (Hambrick and Quigley 2014). For example, Finkelstein and Hambrick (1990) consider computers as an example of a high-discretion industry and natural gas distribution as a low-discretion industry. As Oh et al. (2015: 3) explain, "CEOs may differ significantly in terms of the latitude of action offered by their industry attributes", so that industries with high level of discretion provide for the strongest impact of CEOs.

Consistent with the idea that CEOs are more valuable in industries with high discretion, studies show a consistent contingent role for industrial discretion (Hambrick and Quigley 2014). We posit that EO will be a more critical factor in high-discretion industries because the rapidly changing landscape of such industries is more appreciative, and rewarding, of variety and change (Wiklund and Shepherd 2005). All else being equal, firms led by entrepreneurial managers willing to seek new opportunities, rather than those that are conservative in their orientation, are more likely to succeed in the unpredictable environment of high-discretion industries, and so investors and shareholders will value such firms higher. Conversely, in low-discretion industries strategic stability and maintaining pre-determined direction is preferred as such environments are more predictable (Boyd and Gove 2006). Thus, we hypothesize:

H3 EO will be associated with greater valuation when discretion at the industrial level is higher than when it is lower.

2.3 National discretion

The general idea that national factors may influence the discretion available in a situation has been around for a long time (Gedajlovic and Shapiro 1998), but Crossland and Hambrick (2007) are credited with the first in-depth conceptual exploration of how discretion may vary systematically at the national level. Building on the work on institutions as 'rules of the game' (North 1990), Crossland and Hambrick (2007) theorized that cross-country differences in constraints imposed on managers of public firms can be captured by 'national discretion'. In terms of formal definition, national discretion refers to the influence of an 'integrated set of conditions' which confer fewer constraints on managers in some countries (high-discretion) compared to other (low-discretion) countries (Crossland and Hambrick 2011). As Crossland and Chen (2013) explained, in low-discretion nations, CEOs are considered 'titular figureheads' without much influence over the actions of firm, while in high-discretion nations, the CEO will be seen as a sovereign with relatively unbridled authority to manage the firm activities.

Studies investigating discretion at the national level suggest that low-discretion nations confine the range of managers' actions so that their impact on firm performance is more limited than it would be when the discretion in the country is high (Crossland and Hambrick 2007). We posit that, for investors, the benefits that can accrue to EO are amplified in countries with high discretion compared to when there is low discretion. This is because when investors evaluate firm performance they also make causal attributions, so that in high-discretion countries what the firm does (or not do) will be attributed directly to what the CEO is like (Crossland and Chen 2013). Thus, in countries with high-discretion conditions, managers are given, and are perceived to possess, more freedom to move forward with new ideas, expected to assume greater responsibility to implement their desired plans, and possess the authority to hire and fire personnel (including senior managers) as they see necessary to maneuver the firm in new directions. In contrast, firm behavior will rarely be directly attributed to the CEO in low discretion countries, so that investors in such environments will be tempered in their expectations of what the CEO can do for the firm. Thus, we hypothesize:

H4 EO will be associated with greater valuation when discretion at the national level is higher than when it is lower.

To summarize, we posit a universalistic effect of EO on firm value (H1) and contingency effects of organizational discretion (H2), industrial discretion (H3), and national discretion (H4) on the EO-value relation. Figure 1 summarizes our research model.

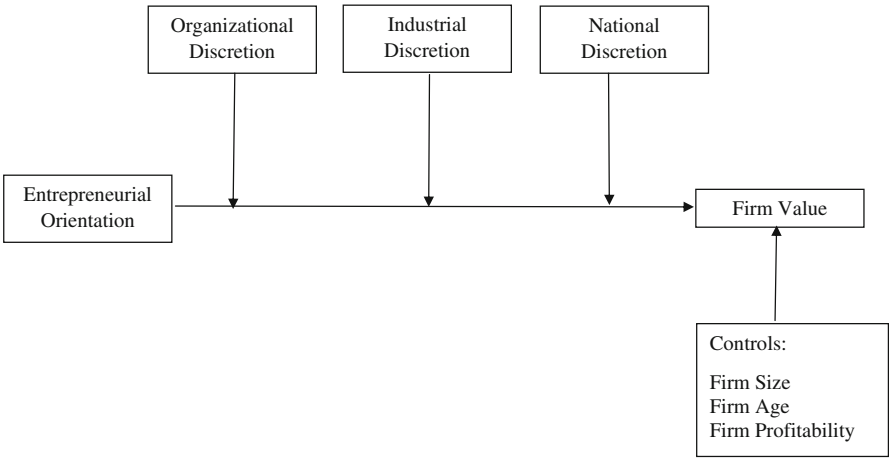

Fig. 1 EO-value resarch model

3 Method

3.1 Sample

We derived our sample from the Forbes 2000 list,[3] focusing on the largest corporations from five countries: Australia, Canada, Germany, United Kingdom (UK), and United States (US). The five sample countries were identified as follows. US is the largest equity market in the world (by total market capitalization) and its stock market is usually considered the most developed, so it was the first country to be included in the sample. We then identified other countries with large capital markets (by total market capitalization) as they tend to have well-developed stock markets: China, Japan, UK, Canada, France, Germany, and Australia (in order of market capitalization). We eliminated China from further consideration because of concerns about quality of corporate data reported by Chinese firms (Allen et al. 2005), Japan due to perceived "opacity" in its financial markets (Rajan and Zingales 1998), and France because it has a comparatively weaker climate for legal enforcement (Leuz et al. 2003). Our selection is supported by the World Bank assessment of legal rights which consistently ranks US, UK, Australia, Canada, and Germany ahead of France, Japan, and China (World Bank 2013). Notably, companies from Australia, Canada, Germany, UK, and US comprise almost half the total sales and profits of the Forbes 2000 list.

The five countries in our sample together make up more than 50 % of the world equity market (by market capitalization). Rajan and Zingales (1998) credit these countries with

[3] Since 2004, every year Forbes ranks the 2000 largest publicly listed companies around the world based on a composite score reflecting the sum of four equally weighted metrics: revenues, profits, assets, and market cap. The ranking is the result of a multi-step procedure: (1) Four separate lists are created for the 2000 biggest companies in each of the metrics. Only companies that make it to at least one of the four lists merits further consideration; (2) Each company is assigned a separate score for each of the four metrics based on its ranking in that list. Companies that rank below the minimum cutoff for the year for a metric receive a score of zero on that metric; (3) Scores for the four metrics are added up for each company to obtain a composite score. The highest composite score gets the highest rank.

having so-called arm's length economic system, where "contracts and the associated prices determine the transactions that are undertaken…[so that] the market becomes a more important medium for directing/governing the terms of transactions." Notably, forecast errors and dispersion in analyst assessments for firms in these countries are lower than global average (Chang et al. 2000), suggesting higher accuracy in equity market valuations than the rest of the world in general. Thus, it seems reasonable to focus on the five countries sampled here for the purpose of this study.

Following prior research (Hambrick and Quigley 2014; McGahan and Porter 1997), we identified non-financial, non-conglomerate firms from the selected countries in the Forbes list from 2010. To provide comparable samples from the five countries (Reynolds et al. 2003), and following best practices advocated in prior research (e.g., Reeb et al. 2012), we included 63 US-based firms in the sample (matched by ranking on the Forbes list to the 63 UK firms). Researchers conducting 'pan national' research (where sample observations are drawn from different countries) argue that without comparable samples one cannot eliminate the alternative explanation that differences in sample firms somehow account for research results (Hult et al. 2008). The final sample is comprised of 243 firms from five countries. For each country in the sample, we had a heterogeneous set of firms in terms of the Forbes ranking. For example, the most highly ranked UK firm was BP, which occupied position #10 in the Forbes ranking, while the lowest ranking firm (Autonomy) was in 1998th position. (Similar patterns emerged for other countries in the sample). ANOVA did not reveal any significant differences on firm sales and profits across the five countries, indicating that sampled firms across the five countries are comparable. The use of such comparable samples enhances sample equivalence in 'pan-national' research, strengthens the validity of findings, and boosts confidence in the accuracy of research results (Hult et al. 2008).

At first glance, our sample may seem vulnerable to concerns of sampling on the dependent variable of firm value. However, such concerns are alleviated when a firm ranks high on Forbes' ranking but not score well on valuation due to low expected future profit potential (or vice versa). We found that correlation between our measure of valuation (explained below) and Forbes' ranking for the firms in our sample was insignificant ($r = 0.07$, *ns*). Notably, we draw data for sample firms from 2005 to 2008, creating a temporal separation from the 2010 Forbes ranking.[4] The relative representation of the five countries in the Forbes ranking from 2005 to 2008 did not vary substantially, indicating that these countries maintained a strong position in global commerce throughout the sampling period.

3.2 Measures

As explained below, we capture our research constructs using previously validated measures. All constructs were measured using archival data, which increases validity and replicability of this research.

[4] Our sample does not include data for 2009 because of two reasons. First, the 2010 Forbes ranking is based on 2009 firm data. Second, 2009 was the year of 'Sudden Stop' (Mendoza 2010) when worldwide GDP growth fell from 3.76 % in 2008 to 0.07 % in 2009 (3.9 % to −0.04 % respectively, if one does not consider Zimbabwe and the West Bank).

3.2.1 Entrepreneurial orientation

Following Miller's (1983) original conceptualization and Covin and Slevin's (1991) subsequent elaboration of EO, we operationalized EO as a gestalt construct (Covin et al. 2006). Corporate letters to shareholders served as data source for measuring EO (Boling et al. 2015; Engelen et al. 2013). Senior executives spend substantial time in crafting and editing the views and information presented in the shareholder letter (Barr et al. 1992), and so statements in the shareholder letter provide "some of the best data" about strategic proclivities and dispositions of top management (Clapham and Schwenk 1991: 219). Shareholder letters are available over time and across industries, providing insights into the strategic posture of top management in a consistent manner that is difficult to obtain through other means (D'Aveni and MacMillan 1990).

Shareholder letters were obtained from corporate annual reports available either on company website or by request from investor relations department of the firm. This was meticulous work as letters were manually extracted from individual annual reports and converted to text files. In recent years, computer-aided textual analysis (CATA) has emerged as a well-regarded technique to content analyze shareholder letter for EO. Table 1 summarizes published empirical studies using CATA to assess EO.

Text analysis software DICTION screened each shareholder letter for words reflective of three EO dimensions using the wordlists ('dictionaries') generated and tested by Short et al. (2010). These wordlists have already been validated by other researchers with independent samples (e.g., Engelen et al. 2014; Wolfe and Shepherd 2013; Zachary et al. 2011). The frequency of occurrence of these words in shareholder letters (normalized by total number of words in the letter) was used as a measure of EO. Specifically, overall EO measure was created for each shareholder letter, so that higher scores indicate greater EO.

3.2.2 Managerial discretion

We assessed discretion at three levels—organizational, industrial, and national—separately using measures validated in prior research relying on archival data drawn from COMPUSTAT database.[5] Generally, multiple indicators are preferred when a construct is broad in scope (James et al. 1982), as is the case for managerial discretion (Wangrow et al. 2015). Not surprisingly, the vast majority of discretion

[5] According to Wangrow et al's (2015) recent review of the empirical discretion literature, 43 published articles have empirically measured discretion since the publication of Hambrick and Finkelstein (1987). We found 7 other empirical journal articles using discretion during the period 1987-2015 (August), so the total number of published empirical discretion studies comes to 50. Of these, we found that 14 studies used discretion at the organizational level, 20 at industrial level, and 5 at the national level (3 are at individual level, 1 mixes organizational and industrial levels, 1 mixes industrial and organizational levels, and 7 could not be coded for lack of relevant information). Thus, we successfully identified the measurement for discretion in 43 articles. Based on this analysis, we identified measures for organizational, industrial, and national discretion that could be considered most reliable and reputable, depending on where they were published, by whom, and how much impact they have had on the field.

Table 1 Summary of published articles using CATA-based EO measurement

S. No.	Authors	Year	Journal	Sample	Data source
1	Short, Payne, Brighamn, Lumpkin, & Broberg	2009	FBR	S&P 500 Firms	Letter to shareholders
2	Short, Broberg, Cogliser, & Brigham	2010	ORM	S&P 500 firms and Russell 2000 firms	Letters to shareholders
3	Zachary, McKenny, Short, Davis, & Wu	2011	JAMS	Franchisor firms	Recruitment website text
4	Wolfe & Shepherd	2013	ETP	Post-game press conferences with head coaches in American football programs	Speech transcripts
5	Engelen, Neumann, & Schmidt	2013	JoM	American high-tech companies in the S&P 500	Letter to shareholders
6	Engelen, Neumann, & Schwens	2014	ETP	American high-tech companies in the S&P 500	Letter to shareholders
7	Boling, Pieper, & Covin	2015	ETP	Publicly-traded American firms in four industries	10-K reports
8	Moss, Neubaum, & Meyskens	2015	ETP	New entrepreneurs on Kiva crowdfunding platform	Loan narratives
9	Mousa, Wales, & Harper	2015	JBR	Young high-tech American firms going public	IPO prospectuses

Journal names are abbreviated: FBR (Family Business Review), ORM (Organizational Research Methods), JAMS (Journal of Academy of Marketing Science), ETP (Entrepreneurship Theory & Practice), JBR (Journal of Business Research), and JoM (Journal of Management)

research employs multiple indicators to create discretion index (Boyd and Gove 2006).

3.2.2.1 Organization-level discretion We followed the measurement approach from Graffin et al. (2011: 758) as it relies on "indicators that have been used in other studies to measure firm-level discretion." Specifically, we used four indicators: sales growth (3 year average of annual percentage change in firm sales), sales instability (standard deviation of annual percentage change in firm sales for 3 consecutive years), annual research and development intensity (R&D/sales), and annual capital intensity (net property, plant, and equipment divided by number of employees in the firm, and then multiplying the product by −1 so that lower scores are associated with less discretion).[6] The four indicators were standardized and summed to create an overall measure of organizational discretion.

[6] Graffin et al. (2011) actually used five indicators: the four we used here plus average annual advertising intensity (advertising/sales). Unfortunately, advertising expenses was not available for the non-American firms in our sample. Using data for American firms only, we calculated the correlation between organizational discretion with and without advertising intensity, and found it to be 0.91 ($p < 0.01$), which suggests that the two overlap almost completely.

3.2.2.2 Industry-level discretion We assessed industrial discretion using Hambrick and Abrahamson's (1995) weighted measure because it was recently spotlighted as a "good exemplar" of strong construct measurement (Ketchen et al. 2013: 38). This measure comprises of four key industry-level discretionary characteristics: capital intensity, market growth, product differentiability, and marketing intensity. Data for each of these attributes is based on 2-digit SIC industry level data. Following prior research (Finkelstein et al. 2009; Hambrick and Quigley 2014), the four attributes were combined to create an overall score for industrial discretion.

3.2.2.3 Nation-level discretion We sourced national discretion scores for the five sample countries from Crossland and Hambrick (2011). Their scores were computed based on data from a panel of prominent, long-tenured international mutual fund managers tasked with assessing national discretion for fifteen developed countries on a 7-point scale. Expert ratings for these countries were significantly correlated ($r = 0.87$, $p < 0.01$) with mean ratings from an academic panel of prominent international business professors (Crossland and Chen 2013). Scores for US (6.6), UK (6.0), Canada (5.9), Australia (5.7), and Germany (4.1) were used for the present study.

3.2.3 Firm value

Following prior research (Morck et al. 1988; Yermack 1996), firm value was measured using Tobin's q, a parsimonious measure of valuation that is widely applicable across settings, comparable across firms, and well-grounded in economic theory (Montgomery and Wernerfelt 1988). Tobin's q reflects market assessment of a firm over the value of its total assets. As a valuation assessment, Tobin's q has several advantages: it is forward looking and risk adjusted, encompasses multiple aspects of performance in a single metric, and is less easily manipulated by managers than other measures (Lindenberg and Ross 1981). Furthermore, Tobin's q reflects the market's expectation of firm's future performance, so it integrates assessment of expected outcomes (Dushnitsky and Lenox 2006). Tobin's q works as a sound measure of valuation when public information quickly diffuses into equity valuations, which makes it appropriate for our research on very large corporations from developed economies. We computed Tobin's q as the sum of total book assets and market value of equity less book value of equity divided by total book assets (Ahern and Dittmar 2012). Market value of equity is stock price multiplied by shares outstanding at the end of calendar year. For North American firms we get data from Compustat North America, and for non-American firms we get data from Compustat Global.

3.2.4 Control variables

We used three firm-specific control variables in the present study—size (measured as log transformation of number of employees), age (measured as years since

founding), and profitability (Return on Equity)—as they have been shown to have strong influence on firm valuation. Our choice of control variables was guided by the following reasons: (a) profitability is often a good indicator of firm's ability to generate superior rates of return during future periods (Connolly and Hirschey 2005); (b) small firms tend to be valued higher than larger firms (Cooley and Quadrini 2001); and, (c) firm age is negatively associated with valuation because less information is available about younger firms (Pastor and Veronesi 2003) and younger firms have greater growth potential (Evans 1987).

3.3 Model and method of analysis

We estimate our predictions using the model below.

$$Tobin's\, Q_{it} = \beta_0 + \beta_1 * EO_{it} + \beta_2 * OD_{it} * EO_{it} + \beta_3 * ID_{it} * EO_{it} + \beta_4 * ND_{it} * EO_{it} + \beta_5 * OD_{it} + \beta_6 * ID_{it} + \beta_7 * ND_{it} + \delta * X_{it} + c_j + \varepsilon_{it}$$

Tobin's Q_{it} is Tobin's q for firm i at time t; EO is entrepreneurial orientation; OD, ID and ND are organizational, industrial and national discretion, respectively; OD*EO, ID*EO and ND*EO are the interactions of the various discretion variables with EO. X is a vector of control variables. β_0 is the intercept. c denotes country dummy for country j.

Based on prediction 1 we expect the coefficient β_1 to be positive reflecting a positive relationship between EO and Tobin's q. Based on predictions 2 through 4 we expect the coefficients β_2 through β_4 to be positive reflecting the contingent effect of discretion (organizational, industrial and national) on EO, such that EO has a stronger effect on Tobin's q when discretion is high. Our model is estimated using ordinary least squares. Our data consists of a cross-sectional/time-series panel of firms. We adjust standard errors for heteroscedasticity and firm-level clustering to account for within firm correlations (Petersen 2009).

4 Analyses and results

Table 2 provides descriptive statistics and correlations for all variables in our study.

To avoid problems with outliers, but not lose observations, variables were winsorized at the 1st and 99th percentile of the full sample by setting outlying values to the 1st and 99th percentiles, respectively (Kalcheva and Lins 2007). Our four-year panel dataset offers greater accuracy in inference of model parameters than single snapshot data (Hsiao 2007).

With Tobin's q as dependent variable, we conducted regression analysis in STATA to analyze the hypothesized relationships. Following past research (Adams et al. 2005; Hambrick et al. 1993), we used ordered discretion in the regression, such that the top tertile was considered high discretion (and the rest low discretion).[7] To

[7] Results are robust to using quartiles instead of tertile in conceiving high versus low discretion. We thank an anonymous reviewer for this suggestion.

Table 2 Descriptives and Correlations

S. No.	Variable	Descriptives		Correlations							
		Mean	Std. Dev.	1	2	3	4	5	6	7	8
1	Firm value	1.73	0.91								
2	Firm age	24.95	15.61	−0.03							
3	Firm size	3.22	1.54	−0.16*	0.28*						
4	Firm ROE	0.42	0.35	0.08*	0.03	0.13*					
5	EO	0.91	0.44	0.00	0.11*	0.18*	0.02				
6	Org disc	0.00	2.28	0.19*	−0.21*	−0.09*	−0 13*	0.04			
7	Ind disc	5.26	0.73	0.20*	0.02	−0.10*	−0.05	0.02	0.24*		
8	Nat disc	5.77	0.89	0.19*	0.38*	−0.04	0.04	0.04	0.03	−0.03	

* Signifies $p < 0.05$

check for multicollinearity, we generated variance inflation factors (VIF). All VIF values were below 4, which is well-below the threshold of 10, indicating that multicollinearity is not a problem in our study.

As presented in Table 3, we entered controls in the first step (Model 1) and main effects in the second step (Model 2). Contrary to our expectations, the main effect of EO on firm value was insignificant ($\beta = 0.09$ ns). Thus, H1 was not supported.

In the next step, we entered the contingency variables so that we included three direct effects (organizational, industrial, and national discretion) and three interactions (EO x organizational, EO x industrial, and EO x national discretion). Results indicate support for the moderating effect of organizational and industrial discretion (H2 and H3, respectively), but not for the moderating influence of national discretion (H4). We then introduced country fixed-effects in the model and conducted another regression analysis. We found that as expected, the interaction term of EO and organizational discretion was significantly positively associated with valuation ($\beta = 0.57, p = 0.05$), which supports H2. Similarly, as predicted, the interaction of EO and industrial discretion was also significantly positively associated with valuation ($\beta = 0.50$, $p = 0.07$), which supports H3. For testing H4, we rely on the model without country fixed-effects, which revealed that contrary to expectations, the interaction term of nation-level discretion and EO did not have a significant positive association with valuation ($\beta = -0.06$, *ns*), so H4 was not supported.

We also plot significant two-way interactions between EO and discretion (separately for organizational and industrial discretion). Figure 2 illustrates the interactive effect of EO and organizational discretion. Figure 3 illustrates the interactive effect of EO and industrial discretion. For both graphs, we define high EO and low EO as one standard deviation above and below the mean respectively.

Table 3 Summary of regression results

	Model 1	Model 2	Model 3	Model 4
Firm age	0.00	0.00	0.00	−0.01
	(0.86)	(0.99)	(0.49)	(0.18)
Firm size	−0.12	−0.12	−0.08	−0.04
	(0.02)	(0.03)	(0.16)	(0.51)
Firm ROE	0.28	0.27	0.30	0.28
	(0.04)	(0.05)	(0.02)	(0.04)
EO		0.09	−0.24	−0.28
		(0.57)	(0.17)	(0.04)
Org disc			−0.27	−0.33
			(0.33)	(0.26)
Ind disc			0.21	−0.3
			(0.42)	(0.28)
Nat disc			0.16	
			(0.61)	
EO × OD			0.52	0.57
			(0.07)	(0.05)
EO × ID			0.43	0.50
			(0.1)	(0.07)
EO × ND			−0.06	
			(0.81)	
Country dummy 2				−0.06
				(0.81)
Country dummy 3				−0.57
				(0.01)
Country dummy 4				−0.19
				(0.47)
Country dummy 5				−0.11
				(0.64)
Constant	1.97	1.94	2.02	2.27
	(0.00)	(0.00)	(0.00)	(0.00)
R-sq	0.04	0.04	0.09	0.12
adj. R-sq	0.03	0.03	0.07	0.10
F	3.04	2.04	2.86	5.27

Dependent variable: firm value (Tobin's q)

p values are in parentheses

We observe from the graphs that at high levels of discretion (both for organizational and industrial), an increase in EO boosts valuation. We also see that at low levels of discretion (whether organizational or industrial), EO does not yield superior valuation. Finally, we also observe that when EO is low, discretion has no noticeable effect on valuation. Notably, in both graphs, the highest valuation corresponds to high EO and high discretion. More specifically, valuation reaches its highest score when both EO and organizational discretion are high as well as when both EO and industrial discretion are high.

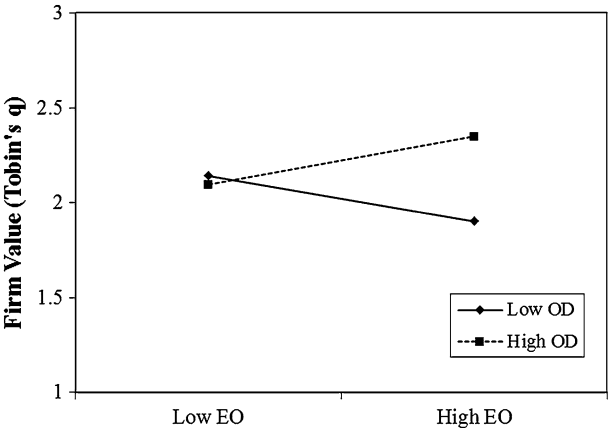

Fig. 2 Relationship between EO and firm value at different levels of organizational discretion

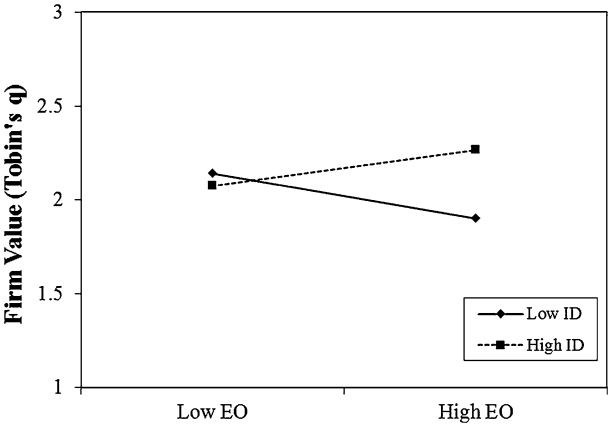

Fig. 3 Relationship between EO and firm value at different levels of industrial discretion

We also computed the economic impact of the significant effects. We found that when organizational discretion is high, one standard deviation increase in EO is associated with an increase of 0.13 in valuation, a 7.4 % increase relative to the sample average. Similarly, when industrial discretion is high, one standard deviation increase in EO is associated with an increase of 0.10 in valuation, a 5.6 % increase relative to the sample average. Finally, when both organizational discretion and industrial discretion are high, one standard deviation increase in EO is associated with an increase of 0.34 in valuation, a 19.8 % increase relative to the sample average.

Finally, to test for possible endogeneity in our model, we employ instrumental variables (Bettis et al. 2014). Following recent best-practice recommendations (Semadeni et al. 2014), we employed multiple instrumental variables: namely, market share and dividend payout (dummy coded). We regressed both variables on

EO, and saved the residual to enter as additional variable in the full model. Because the focus of our research is on contingencies, we also included in our regressions the interactions of the residuals with the two key moderators—organizational and industrial. The *p*-values were not significant for the residual-based variables, suggesting that endogeneity is of minimal concern in our study.

5 Discussion

The recent interest in EO's contributions to firm value coincides with a growing awareness that "a major objective of strategic management is to create value for shareholders" (Priem 2007: 221). There is increasing appreciation that stakeholders in corporate governance—managers, directors, and investors—cannot simply assume that positive consequences stemming from firm strategies like EO will automatically translate into superior valuation. The purpose of the present study was to tease out the circumstances under which the EO-value linkage is suitably manifested in large public firms. Using discretion logic (Hambrick 2007; Hutzschenreuter and Kleindienst 2013), we posit that organizational discretion, industrial discretion, and national discretion represent meaningful boundary conditions in enhancing the value generated from EO. We tested the research model using panel data derived from large publicly-traded firms in five advanced market economies, which strengthens confidence in the external validity of our findings and serves as a solid foundation for further theory development.

A major contribution of our research is to the EO literature. Specifically, our findings question the notion that EO will always have a universalistic impact on firm valuation (Andersén 2010), raising the possibility that the EO-value relation is in fact contingent in nature. The debate between the universalistic and contingency perspectives have gained prominence in the EO literature in recent years (Gupta and Gupta 2016). While each perspective can be used to structure theoretical arguments that explain significant levels of performance outcomes associated with EO, there is also an empirical side to this debate that has so far gone largely unnoticed in the literature. Our results clearly show that when it comes to firm valuation, EO is not a desired strategic posture for everyone. Instead, top management must match its EO with the discretion available from the industry and the organization so that there is a proper alignment between EO and discretion. Stated directly, our findings show that the promised benefits of EO will not materialize in the capital markets unless there is appropriate discretion at the organizational and industrial discretion.

A key finding of our study pertains to the contextual influence of organizational discretion. As predicted, we found that the link between EO and firm value is stronger when organizational discretion is higher compared to when it is lower. In firms where organizational discretion is high, the economic impact of EO on firm value is 7.4 % higher relative to the sample average. It is obvious from these findings that to realize the value benefits of high EO, managers must not be hemmed in by constraints imposed from within the firm. Conversely, in firms where organizational discretion is low and managers have to operate within strict constraints, high EO will not be as effective in generating superior value. It is

notable that for low EO firms, organizational discretion has no significant effect on valuation. Thus, our research suggests that for valuation benefits to accrue, high EO must be adequately supported by high organizational discretion. When EO is not aligned with appropriate organizational discretion, it will not be a net value-add for the firm.

Another key finding of our study relates to the contingent impact of industrial discretion. As expected, results revealed that the EO-value relation is stronger when industrial discretion is higher as compared to when it is lower. Thus, when managers operate in industries that accord higher discretion, EO has an impact on valuation of 5.6 % relative to sample average, which is economically meaningful and practically significant. On the other hand, when the industry does not provide the requisite discretion, the value benefits of EO may not be realized. We also note that when EO is low, industrial discretion does not have a significant impact on firm valuation, so that conservatively-oriented managers are not affected by discretion available in the industry. Most corporate managers, therefore, will benefit their firm by maneuvering to operate in an environment where the latitude available to them from the industry is appropriately aligned with their EO. This is especially true for entrepreneurial managers who provide more value to the firm when they are in industries with higher discretion.

This study also advances research on discretion theory in three ways. First, critics contend that researchers generally looks at either a singular level of discretion ('piecemeal' approach) or mixes different levels of discretion ('potpourri' approach), which does not do justice to the rich and fine-grained multi-level conceptualization of managerial discretion (Boal and Hooijberg 2000; Finkelstein and Peteraf 2007). Our findings show that the different discretionary loci—organizational, industrial, and national—have distinct influences that can be modeled separately so as to identify their independent effects uncontaminated by other influences. Second, we respond to Hambrick and Lei (1985)'s call for directly comparing the contingent influences of different moderators as a way to determine their relative practical significance and propel theoretical enquiry to the most potentially productive areas. Our findings show that, while nation-level discretion has no contingent influence, organization-level and industry-level discretion have roughly similar moderating impact. It would seem that greater attention to the role of organizational and industrial discretion is warranted. Finally, our finding that the impact of EO on firm value is strongest when both organizational discretion and industrial discretion are high highlights the merit of having simultaneously high discretion at two different levels. Discretion research is likely to benefit from consideration of combinative influence of different discretionary loci (Boal and Hooijberg 2000), such as when managers have wide latitude in terms of the organization they helm and the industry in which they are located.

Both EO and discretion literatures emerged from theory developed in the US (Wales et al. 2011) and have mostly been empirically validated within the American context (Finkelstein et al. 2009). Because the US is the most sampled country in EO research (Rauch et al. 2009) as well as in managerial discretion literature (Wangrow et al. 2015), prior research does not adequately address concerns about cultural specificity versus universality in the EO and discretion literatures. For this reason,

studies such as ours that examine predictions in multi-country samples are promising for building and testing theory in an increasingly globalizing world (Tsui 2007). We hope our research will stimulate further multi-country investigations of EO and discretion, which should help bring a valuable international perspective to these literatures. Such studies can also help introduce new assessment and analytical methods to the international business field which has been dominated mostly by single snapshot survey studies (Coviello and Jones 2004). Research on EO and discretion has been advanced by the development of archival measures that facilitate data collection over time such as we were able to conduct here. Clearly, closer links between international business researchers and scholars interested in EO and discretion are warranted.

Our research offers some novel insights to managers and policy-makers. Managers who have an existing emphasis on EO can use our results to ask the board and owners for more leeway to steer the direction they consider appropriate for the firm. Shareholders who want managers to be entrepreneurially inclined should be cognizant of the discretion needed to generate new value for the firm. Policy-makers are informed that the current zeitgeist of constraining managerial freedom can also be damaging for the firm, particularly when the strategic posture is consistent with EO. We hope our research helps business executives, shareholders, and policy-makers understand the potential downside of limiting managerial leeway as well as provide guidance on when relaxing the latitude available to management may be beneficial for the firm. Another take-away from our inquiry is that EO creates value for the firm only when the facilitating conditions—high industrial and high organizational discretion—are present.

5.1 Limitations and directions for future research

Our study has some limitations that point to worthwhile avenues for further investigation. First, the applicability of the research model developed here to smaller firms (e.g., SMEs) cannot simply be assumed, but must be empirically validated. In stark contrast to several empirical investigations of managerial discretion in large firms (as we did in the present study), there seems to be a dearth of research on how discretion manifests in small firms. This despite the popular belief that managerial discretion is more salient in small firms than large firms (Ling et al. 2008) as well as the emphasis that Hambrick and his colleagues (Finkeltsein et al. 2009) put on discretion as a relevant construct for both large and small firms. Future research will benefit from examining ways in which the contingent influence of discretion plays out in smaller firms. Given the challenges of obtaining archival information about small firms, such studies will probably require development of discretion measures derived from non-archival measures which will pose new challenges related to retrospective bias, replication, and validation.

Second, relationships were tested using data from five countries. Future studies should investigate our predictions in countries with institutional environment vastly different from these five countries. For example, Chinese, Indian, and Brazilian firms are gradually increasing in numbers among the world's largest corporations. Given the use of firm value as the dependent variable, a challenge with testing our

predictions in such emerging economies would be establishing how reliable their corporate reporting is and how efficient their markets for corporate information are. Thus, market efficiency and corporate reporting standards may be additional considerations in extending our sample to include other countries such as emerging economies. Although Chinese firms have been sampled in the EO literature (Wales et al. 2011), the three countries—China, India, and Brazil—remain largely absent from the discretion literature.

Third, our research does not consider that managers' EO may be altered by prolonged employment in high- or low-discretion contexts, or that managers are differently drawn to high- versus low-discretion settings. In unreported results, we did not find evidence for discretion as an antecedent of EO, but we are aware that the data and analyses of this study do not allow for investigating a dynamic iterative cause-effect link between EO and discretion over time. Relatedly, and consistent with much of the past research in the discretion literature (Wangrow et al. 2015), we viewed discretion as an objective aspect of a situation, and so do not speak to the idea of perceived discretion (Finkelstein and Peteraf 2007). As Finkelstein et al. (2009: 26) noted, discretion may be partly "derived from within the executive" so that one manager sees unrestricted freedom where another sees only limiting restraints. Although discretion theory is about three decades old, researchers have only scratched the surface in terms of understanding its influence (Hambrick 2007). Consequently, there is a sense that "discretion theory has had far less impact" on the management literature than "it should have" (Hutzschenreuter and Kleindienst 2013: 264). Some lament that despite the "theoretical promise" of managerial discretion, "the current body of knowledge is limited" (Preston et al. 2008: 609). We hope future studies will build on our research to delve deeper into the role of discretion as a conceptual lever that alters actualization of EO in ways not understood yet.

6 Conclusion

A crucial issue that warrants greater attention centers around the factors and processes that allow management's inclination towards EO to be translated into valuable behaviors and activities for the firm (Anderson and Covin 2014). Using discretion theory as our theoretical lens, we posit how top management's emphasis on EO needs to be properly aligned with the discretion available in the situation. EO reflects a willingness or predisposition on the part of the top management to adopt a specific strategic posture, but because it's actual enactment may be constrained (Boling et al. 2015), discretion theory seems an appropriate lens to illuminate the boundary conditions of when management's embrace of EO will benefit the firm (or not). More specifically, we theorize (and empirically demonstrate) that managerial discretion plays a key role in the actualization of EO for the benefit of the firm as a whole. While it is easy to assume that managers have wide latitude to do what they wish (Finkelstein et al. 2009), discretion theory draws attention to some of the major constraints within which managers are expected to function. By considering the contingent influence of discretion, we contribute to the ongoing discussion about the

challenges involved in linking management's predisposition towards EO with its manifestation for the firm (Boling et al. 2015; Covin and Lumpkin 2011; Kollmann and Stockmann 2014). Our research suggests that managers would do well to align their emphasis on EO with the discretion available to them from the organizational and industrial factors. We encourage future investigations to build on our research and test the predictions developed here in other contexts, such as emerging economies and smaller firms, to further increase the generalizability of our findings.

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