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Internationalization and firm default risk: The roles of environmental dynamism and marketing capability

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ABSTRACT

Internationalization's role on firm performance has captured massive research attention. However, its influence on firms' default risk, an important firm outcome that not only reflects the backward-looking firm managerial effectiveness but also signifies the forward-looking willingness-to-support from key stakeholders such as debt holders, is not found in the literature. This current research is developed to fill this important theoretical gap by formulating a moderating model that simultaneously incorporates internationalization, environmental dynamism, and marketing capability towards their dynamic joint effects on global firms' default vulnerability, and thus it generates more detailed and realistic images of internationalization under the influences of concurrent internal and external contingency factors. Our results show that high marketing capability assists firms that have a high degree of global expansion to reduce default risk. In addition, environmental dynamism can be either a facilitator or hindrance for internationalization's risk reduction, depending on firm capability levels.

1. Introduction

The rising business opportunities in the global markets spur firms to pursue international expansion, which becomes one central organizational endeavor that enables firms to acquire valuable resources, explore new market potentials, and minimize operational imperfections (Borda, Geleilate, Newburry, & Kundu, 2017; Contractor, 2007; Hitt, Bierman, Uhlenbruck, & Shimizu, 2006; Ruigrok & Wagner, 2003; Stack, Gartland, & Keane, 2007). In the business literature, internationalization is one of the most critical strategic notions that capture the trends of globalized management, consumption, purchasing, logistics, and information sharing (Pangarkar, 2008; Sapienza, Autio, George, & Zahra, 2006). Given the popularity of this topic, however, there are several theoretical vacancies that deserve notice. The first gap in international business literature involves performance measures. Although internationalization has been linked to firm outcomes such as ROA, growth, and firm value (e.g., Denis, Denis, & Yost, 2002; Lin, Liu, & Cheng, 2011; Lu & Beamish, 2001; Sapienza et al., 2006), its implications to firm risks are not well-documented, and more specifically, the knowledge about its influence on firm default risk is surprisingly limited. Bridging this gap is important because default risk is among the central focuses of firm key stakeholders such as debt holders, shareholders, and customers (Campbell, Hilscher, & Szilagyi, 2008; Rego, Billett, & Morgan, 2009), and therefore it stands for a fundamental performance measure to which managers should pay particular attention. As Eriksson, Jonsson, Lindbergh, & Lindstrand (2014) indicate, firms seeking international opportunities would be particularly alert to default risk factors because these firms are under scrutiny of wary fund providers, thus internationalized firm's ability of obtaining future resource support is directly associated with its default vulnerability (Kwok & Reeb, 2000; Mansi & Reeb, 2002). For these reasons, linking internationalization to default risk represents a substantially new and crucial look in exploring its dynamic relationships with firms' risk side outcomes.

Further, scholars such as Kirca et al. (2011) and Marano et al. (2016) explicitly call for more research efforts in sorting out relevant moderators that affect the power of internationalization. A contingency-based model is necessary for drawing more refined pictures of internationalization regarding its differential influences on firm outcomes in specific scenarios (Kirca et al., 2011; Kirca et al., 2012). In international business literature, it is surprising to observe the absence of a comprehensive formulation that simultaneously includes both firm capability and global environment factors and examines their joint effects on the link of internationalization – firm default vulnerability.

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Filling this gap is critical because a clear understanding of internationalization is not possible if either of the aspects is missing (Kirca et al., 2012). It is the joint effects of both internal and external factors that determine the magnitude and the directions of internationalization's influences (Cadogan, Kuivalainen, & Sundqvist, 2009). In the current research, we select firm marketing capability (internal) and environmental dynamism (external) to illustrate this enhanced contingency-based framework. There are strong reasons for choosing this pair of moderators. For example, firm marketing capability (MCAP hereafter) is an important form of firm strength and it signifies the firms market opportunity maximization and resource allocation in a way aiming at best market performance (Krasnikov & Jayachandran, 2008; Morgan, Vorhies, & Mason, 2009). This important aspect of firm intrinsic strength, however, has not been explicitly modeled with internationalization in the literature towards risk implications. In addition, environmental dynamism is one of the top relevant external factors that global managers must consider when they expand to foreign markets (Kuivalainen, Sundqvist, Puumalainen, & Cadogan, 2004). The turbulence of global markets reflects the degree to which a firm has to bear risks in its markets. Incorporating this factor, therefore, becomes a rewarding effort that enriches the understanding of the overall image of internationalization.

To this end, our current research formulates a moderating model that comprehensively involves internationalization, global environmental dynamism, and marketing capability, and shows how firm internationalization differentially affects a firm's default risk given the presence of these moderators. Our research thus intends to generate a set of meaningful contributions to theories. First, our research takes the first step to establish the linkage between market expansion and firm default vulnerability in the international setting and thereby moves the horizon forward to an understudied but critical performance indicator in the risk metric, which significantly goes beyond the traditional return-focused outcomes of internationally diversified firms. Considering there is an increasing interest of global firms in securitizing their default situation (Câmara, Popova, & Simkins, 2012), this contribution becomes particularly timely and meaningful. Second, our research initiates a broader view of understanding firm internationalization by simultaneously incorporating both firm inherent nature and external factors (MCAP and environment dynamism) into a higher order interaction model. This view should assist future researchers in this area to more effectively explore and capture the authentic roles of firm global strategies that are often obscured due to the complex blend of influencing factors. Third, our research establishes an explicit bridge that connects international market exploration to both dynamic capability theories and firm environment theories, which have been popular in their own fields but studies about their inter-connections are surprisingly rare in the literature. Fourth, connecting internationalization to firm risks such as default vulnerability augments the knowledge set of risk management and paves the road for future research in this relatively new area. Recent scholars such as Berger, El Ghoul, Guedhami, and Roman (2016) call for such an imperative research effort. For business practices, our research also provides useful implications for international management, resource deployment, environmental uncertainty coping, and risk reduction.

2. Theories and hypotheses development

2.1. Default risk

Default is a financial status that indicates a firm being unable to fulfill its commitment of paying back its debt, and default risk is the likelihood that a firm will fall into this undesirable circumstance (Anderson & Mansi, 2009). Default risk thus is an important firm outcome that represents the forward-looking view of the firm's financial health, and it extends the understanding of firm outcome from the traditional market/financial performance into a new horizon involving firm debt situation. Seeking ways to minimize default risk is of particular interest to firms because of several notable traits of this type of firm risk. First, default risk is a measure signifying the effectiveness of a firm in reaping its business advantages and translating these advantages into concrete financial stability (Tang & Yan, 2010). Second, default risk is directly associated with the cost of capital because existing and future debt holders are attentive to the propensity of failure of repayments, and they will escalate the threshold for the firm to obtain financial support once default risk is detected (Anderson & Mansi, 2009; Kisgen & Strahan, 2010). Third, default risk is not only a concern of debt holders, but it also is related to the benefits for shareholders because this uncertainty will be eventually translated to the market valuation of the firm due to the indication of backward-looking unsatisfactory performance and the forward-looking difficulties of seeking financial resources from the debt market (Pederzoli & Torricelli, 2005). Fourth, at the operations level, default risk influences managerial effectiveness because any enduring or temporary shortage of fund may impact firm operational activities and thus create obstacles for managers (Anderson & Mansi, 2009). Given these traits of default risk, seeking ways to reduce it becomes an important strategic area that benefits key stakeholders of the firm.

2.2. Internationalization and default risk

The literature provides strong supporting evidence for linking internationalization to firm default risk. First, market diversification theorists support that when a firm is entering more foreign markets, it achieves a broader market scope and thereby gains the benefits of more revenue sources that lead to a better financial situation (e.g., Hitt, Hoskisson, & Kim, 1997; Morck & Yeung, 1991; Weerawardena, Mort, Liesch, & Knight, 2007) and these financial benefits reduce firm default vulnerability (Tang & Yan, 2010). Second, the portfolio of global markets will allow the firm to find better resource configurations given the resource heterogeneity across country borders (Batsakis et al., 2018; Borda et al., 2017; Harrison, Hitt, Hoskisson, & Ireland, 2001; Stack, Gartland, & Keane, 2007). These improved resource structures thus provide the firm with better chances to utilize desirable inputs and avoid unattractive options, which translate to the strengths of acquiring and managing financial flows towards lower default risk (Alvarez & Jermann, 2000; Yang & Driffield, 2012). Third, engaging in multiple international markets provides the firm important learning-by-doing opportunities and knowledge accumulation, which support the firm in its efforts of dealing with possible financial shortfalls and lower its default risk (Forsgren, 2002). In addition, the portfolio effects of international markets reduce firm risks through market diversification. The negative results in one market can be offset by the positive performance in another, which stabilizes income flows and reduces the possibility of default (Tihanyi, Griffith, & Russell, 2005).

Although there exists strong evidence suggesting that internationalization may reduce firm risk, it is not uncommon to observe negative effects from it. While entering more markets brings the firm advantages, it also incurs risks such as the exposure to more uncertainties because a firm has to deal with different markets simultaneously, and therefore the odds of default increase due to the increased possibility of business failures and higher transaction and coordination costs (Contractor, Kundu, & Hsu, 2003; Yeoh, 2004). These transaction and coordination costs, as indicated by scholars such as Contractor (2007), may arise in internationalized firms and goes beyond the optimization points and hinder the firm's financial performance and increase default propensity.

Nevertheless, the literature seems to have stronger evidence in favor of the risk reduction role of internationalization due to market benefits, resource advantages, and knowledge strengths. We tentatively hypothesize the following:

H1. Internationalization will have a negative relationship with default risk.

2.3. Interaction between internationalization and environmental dynamism

Environmental dynamism in business fields is conceptualized to be the turbulence and uncertainties of markets and is characterized as a necessary external factor that firm managers will consider when they decide to pursue market expansion (Garg, Walters, & Priem, 2003; Simerly & Li, 2000). An industry with a high degree of dynamism poses significant challenges for firms because changing market conditions in a short time span leaves limited spaces in which firms can deploy coping strategies (Calantone, Garcia, & Dröge, 2003).

How environmental dynamism moderates the relationship between internationalization and default risk can be illustrated in several ways. From the angle of market demand, when a firm in a highly turbulent industry enters more international markets, it has to face more unstable market performance because of the challenges for achieving consistent demands in a highly dynamic industry (Andersen & Buvik, 2002; Zhou & Li, 2010). This creates a compounded negative situation in which a firm has to cope with uncertainties both from the industry itself as well as from the foreign exposure in its global markets, leading to unpredictable cash flows, which has been found to be one of the determining factors leading to default risk (Minton & Schrand, 1999; Powers & Loyka, 2007). From the perspective of firm operations, dynamic markets raise the barriers of successful entry and thus pose difficulties for firm management practices, marketing activities, and operations routines because fast-changing conditions do not allow organized and structured decision-making processes (Barkema, Bell, & Pennings, 1996; Grant, 2003). Dynamic markets require quick reactions that are often unfeasible for firms that are operating in diverse global markets (Powers & Loyka, 2007) and again these disadvantages increase performance uncertainties, leading to increased default vulnerability. From the stakeholder network view of the firm, turbulent global markets signify the quick shift of suppliers, partners, and customers, and a firm in such an environment is unlikely to establish stable and effective networks that protect the firm (Flint, 2004). The direct consequence of this nature of dynamism is that firms are exposed to external threats without possessing sufficient shielding mechanisms, leading to more unpredictable income flows, and in turn, higher default vulnerability (Boyne & Meier, 2009; Lichtenthaler, 2009). Therefore, we hypothesize the following:

H2. Internationalization of firms in high dynamism environment will have a stronger association with default risk compared to firms in a low dynamism environment.

2.4. Interaction between internationalization and marketing capability (MCAP)

Dynamic capability theories (DCT) conceptualize a firm's superiority as the outcome of the firm's ability to organize and deploy the resources in a way that better serves corporate objectives (Makadok, 2001). Capability is neither acquired nor shared from external parties; rather, it is an inherent firm attribute that is built through corporate learning processes, and this characteristic of capability makes it one of the most valuable assets of the firm since it prevents imitation and substitution by competitors (Winter, 2003). MCAP is created from the long-term interactions with a firm's key customers, partners, alliances, and distributors, and therefore it not only directly represents the ability of achieving better market and financial performance, but it also protects the firm from turbulence by creating idiosyncratic social and operations networks (Krasnikov & Jayachandran, 2008; Sun, Price, & Ding, 2019).

We hypothesize that MCAP will moderate internationalization's impact on firm default risk. First, firms that aggressively expand to multiple foreign markets inevitably encounter the challenges of managing enlarged market portfolios, which require the firms to streamline business activities into a more complex framework (Mauri & de Figueiredo, 2012). Firm capabilities are highly beneficial given this situation because they assist firm operational units to capture opportunities as well as avoid financial risks through better market coordination (Jin, Jung, & Jeong, 2018; Prange & Verdier, 2011; Reuter, Foerstl, Hartmann, & Blome, 2010). MCAP's benefits pinpoint this need of internationalization in that it is characterized as the ability of managing a firm's markets towards a synergy of performance enablers (Sun et al., 2019). Scholars in this field have established solid evidence. For example, Honeycutt and Ford (1996) find new market opportunities can be better utilized by a firm that has well-structured marketing functions. Similarly, Johnston, Khalil, Jain, and Cheng (2012) reveal that various international channels can be integrated into a solid network that in addition to improving marketing effectiveness also levels income flows by optimizing the business units' allocation across countries. All of these benefits associated with enhanced MCAP will strengthen firm financials, leading to lower default risk. Second, global market expansion has the potential for a firm to utilize resource composition with higher flexibility. However, this goal cannot be accomplished without the support from marketing competency. A firm with a strong MCAP is skillful in optimizing its key resources such as advertising, communication, customer relationship, sales teams, and distributorships (Kotabe et al., 2002; Nath, Nachiappan, & Ramanathan, 2010), and therefore provides itself an overall better position in competition, which in turn reduces its default vulnerability. Third, a key to competitive advantages is that the firm strategies should not be imitable (Krasnikov & Jayachandran, 2008). Internationalization by itself is often easily imitated by another firm because this firm action is visible and analyzable. For example, multinational firms are often immediately followed by their major competitors when they enter a new market. However, firm capability, especially MCAP, is likely to improve the situation by blurring the strategy visibility and analyzability, and thus it suppresses imitation and protects the firm's performance stability (Krasnikov & Jayachandran, 2008). In this sense, MCAP provides an insurance-like protection for a firm's internationalization strategy (Lew, Sinkovics, & Kuivalainen, 2013). Therefore, we hypothesize the following:

H3. Internationalization of firms with high MCAP will have stronger default risk reduction power compared to firms with low MCAP.

2.5. The higher order interaction of internationalization, environmental dynamism, and MCAP

The extant resource-based view of the firm highlights that firm strategies should be viewed in a broader version of moderation in which business environments and firm strengths are simultaneously considered. In this theory domain, firm strategies are a firm's adaptation means aiming to better deal with firm environments given the varying conditions of the firm's resource advantages in different functional areas (Parida & Örtqvist, 2015). Following this notion, a large body of studies that involve firm strategies, environmental factors, and firm inherent traits have explicitly demonstrated the benefits of using three-way interactions (e.g., Lee & Chu, 2013; Titus Jr., Covin, & Slevin, 2011). In a similar vein, the dynamic capability theory further emphasizes the nature of firm capabilities in this framework using three-way interactions (e.g., Feng, Morgan, & Rego, 2017; Mu, Thomas, Peng, & Di Benedetto, 2017). These previous studies provide a solid basis for us to construct the higher-order interaction that is entitled to reveal the more refined interactions among internationalization, environmental dynamism, and MCAP towards their risk reduction implications. Studies support the idea that turbulent environments pose difficulties for firms to actively span globally due to the escalated resource restrictions and market complexity (e.g., Sui & Baum, 2014). However, if a firm has the abilities to better sense, capture, and absorb market knowledge, a turbulent market can provide firms with unexpected opportunities and benefits (Harrington, Lawton, & Rajwani, 2005). For example, in a fast-changing industry, it is not uncommon to see firms that are initially

Table 1
Variable descriptive statistics and correlations.

		M	STD	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
Default Risk	V1	10.66	3.62												
Internationalization	V2	0.16	1.16	−0.30***											
Environmental Dynamism	V3	0.11	0.15	−0.27***	0.03										
Marketing Capability	V4	0.56	0.21	−0.28***	0.08	0.20***									
Competition Intensity	V5	0.71	0.24	0.01	−0.13*	0.14*	0.23***								
Environmental Munificence	V6	1.06	0.42	0.07	0.03	−0.28***	−0.11	−0.44***							
Firm Size	V7	9.45	1.50	−0.57***	0.30**	0.10	0.20**	0.01	−0.14*						
Firm Age	V8	3.05	0.78	−0.35***	−0.03	−0.04	0.09	−0.09	0.01	0.44**					
Product Diversification	V9	8.43	5.18	−0.46***	0.19**	0.08	0.20***	−0.04	−0.07	0.52**	0.28***				
Asset Growth	V10	0.11	0.37	−0.19**	0.00	−0.04	0.10	−0.05	0.08	0.01	−0.06	−0.02			
Leverage	V11	0.28	0.19	0.47***	−0.22***	−0.24***	0.04	0.08	0.06	−0.44**	−0.37**	−0.29**	−0.08		
Liquidity	V12	1.80	1.02	0.15**	−0.19**	−0.02	−0.14*	0.15*	0.01	−0.31**	−0.13*	−0.16**	0.13*	−0.02	
EBIT	V13	0.03	0.19	−0.34***	−0.05	0.17**	0.16**	−0.05	0.07	0.05	0.10	0.12	0.20**	−0.09	−0.13*

*p < 0.10, **p < 0.05, ***p < 0.01.

market followers quickly arise to be the market leaders. The essence is that, in turbulent markets there is no fixed pattern of growth in the industry, and opportunities are often not evident (Calantone et al., 2003). Therefore, when a firm has superior MCAP, entering fast-changing international markets will assist the firm to gain comparative advantages of reaping the fast-emerging growth potentials while simultaneously avoiding market pitfalls in the turbulence (Foss & Pedersen, 2002). For example, scholars such as Skarmeas, Katsikeas, Spyropoulou, and Salehi-Sangari (2008) indicate that if a firm is competent in establishing and managing marketing channel systems, global expansion in a changing environment becomes a favorable option because it has a better position to secure its performance than its competitors through an enhanced global network. This type of enhanced network, in many forms, has been found to alleviate the firm's financial distress (e.g., Coviello, 2006; Yang, Wang, Wong, & Lai, 2008), and therefore protects the firm from the threats of unfavorable outcomes such as default. Furthermore, this enlarged market scope and the varying market conditions, combined with the complex social and operations routines brought in by MCAP, will jointly create a sophisticated business system that is difficult to be analyzed and imitated by competitors and thus the firm builds a sustained barrier for competition. This barrier, as supported by the numerous studies in DCT (e.g., Teece, Pisano, & Shuen, 1997, Dutta et al., 1999), will perform a pivotal role to smooth the firm's income flows and create fundamental support for lowering default risk (Sun & Cui, 2014). Conversely, if a firm is unable to deploy its marketing assets, entering global markets will expose it to significant market disadvantages (Zahra, Korri, & Yu, 2005). These disadvantages, when compounded with the market turbulence, will further impair its performance levels as well as stability, leading to higher propensity of default (Bottazzi, Grazzi, Secchi, & Tamagni, 2011). Therefore, we hypothesize the following:

H4. High MCAP firms will have lower default risk when they pursue internationalization in high dynamism environment than in low dynamism environment. Low MCAP firms will have higher default risk when they pursue internationalization in high dynamism environment than in low dynamism environment.

3. Data and measures

The data we used for empirical analysis were collected from multiple sources such as S&P Credit Rating database, Compustat Global, Business Segment, and firm annual reports. This data approach is widely adopted in management, marketing, and finance literature (e.g., Anderson & Mansi, 2009; Fang, Palmatier, & Steenkamp, 2008; Morgan & Rego, 2009). This data approach has several important advantages that are relevant to this research. First, the data items are deemed to have a high level of objectivity and thus reduce the perception bias that is often seen in the survey data. The survey respondents might provide varying opinions about the same firm or industry due to their specific positions and individual angles of viewing these constructs. Second, these databases are comprehensive in terms of industry scale and firm selection and become ideal choices when both firm and industry constructs appear in the model formulation. Third, the measures have been verified by sufficient numbers of previous studies in various business research settings, and their reliability can be ensured. Fourth, these data items are accessible and understandable to firm managers. The results from this research can provide managers with practical and useful implications. Fifth, this dataset has a panel structure, which supports the data analysis by providing several additional benefits such as more accurate inferences of model parameters and better control of the impact of omitted variables (Hsiao, 2014). Although each of these databases contains a large number of data points, the merged dataset has a much reduced sample size because each database has a significant number of missing observations. This is commonly seen in numerous research projects that adopt similar methods. The final merged dataset contains 1021 observations from 251 firms, ranging from year 2000 to 2010 (unbalanced panel data). This time frame is preferred because it captures the market turbulence around year 2000 and also the financial distress around 2008, and thereby sufficiently represents the cycles of macro- as well as micro-environment changes. The firms cover a wide set of industries, such as energy, transportation, manufacturing, retail, and service sectors. The variable information is show in Table 1. We discuss the operationalization of the constructs below.

3.1. Default risk

We collected default risk data from the S&P Credit Rating database. This method is popularly used when default risk is involved (e.g., Anderson & Mansi, 2009; Himme & Fischer, 2014; Rego et al., 2009). In S&P credit system, firms are rated from "D" to "AAA" according to their vulnerability of falling into default. Following Rego et al. (2009), we transformed these ratings into a numerical span from AAA (score 1) to D (score 26), which means that when the value increases, the default risk increases. In our analysis, we not only treated it as a continuous variable in our robust regressions, but we also ran the ordered logit regression that ran this variable as ordinal. The results are consistent.

3.2. Internationalization

Measuring a firm's internationalization should not only pinpoint a firm's magnitude of diversifying into global markets in terms of scope of international presence, but it also needs to consider the portion of business achieved in international markets (Carpenter & Sanders, 2004). We incorporated both of these considerations in our measure and comprehensively included both the number of countries a firm had a business in and the percent of sales a firm obtained in countries other than its home country. The Business Segment dataset provides satisfactory data items in this regard, and it has been used by numerous international business studies that measure internationalization (e.g., Carpenter & Sanders, 2004; Kumar, 2009). To get the final measure from the two separate variables (country scope and business depth), we generated a principal component from these two dimensions to capture the degree of internationalization.

3.3. Environmental dynamism

To measure environmental dynamism in the international setting, several important criteria must be met. The data must contain a wide scope of industries in order to reflect the difference between industries. The data item must cover a time period in order to show the variation through the timeline, and it should be clearly identified and merged with firm data. For these reasons, we chose the Compustat Global dataset and collected the aggregate sales of each industry based on SIC 4-digit definition of industries, and we calculated the coefficient of variation (standard deviation scaled by mean) on the sales in each industry over every five-year moving window. This approach is supported by a large number of previous studies involving environmental dynamism or turbulence (e.g., Fang et al., 2008; Finkelstein & Boyd, 1998). In the robustness checks, we also used an industry definition such as SIC 3-digit; the results are largely consistent.

3.4. Marketing capability

The DCT conceptualize firm capability as the degree to which a firm is able to organize and deploy its controllable resources to produce maximum performance (Teece et al., 1997). Therefore, the input-output approach by using Stochastic Frontier Model (SFM) to obtain capability scores sufficiently captures the essence of this construct (Dutta et al., 1999; Nath et al., 2010). SFM essentially benchmarks each firm's efficiency of translating its available factors into outcomes such as financial gains. In the marketing area, researchers operationalize MCAP by entering a set of marketing resources such as advertising and promotion, customer relation stock, customer install base, firm slack resources, and intangible assets to gauge each firm's ability to achieve market performance. We followed this approach to collect data items from Compustat. We collected selling, general, and administrative (SG&A) to represent marketing inputs and used receivables to reflect customer relational stock (Narasimhan, Rajiv, & Dutta, 2006). We used previous sales as the install base (Dutta et al., 1999), and we generated a principal component from working capital and retained earnings to obtain slack resources (Fang et al., 2008). In addition, we collected the intangible item from Compustat to measure the brand related assets of the firm. For the SFM outcome variables, we not only used sales but also included profitability (gross margin) to more comprehensively reflect market performance. The scores resulted from the input–output SFM model benchmark the abilities of these firms to manage the assets to achieve the outcomes and therefore become an adequate measure for marketing capability (Dutta et al., 1999; Nath et al., 2010).

3.5. Control variables

In addition to the focal variables in our hypothesized model, a group of control variables is also included. We controlled for firm size because large firms are likely to have lower default risk due to their scale and scope. We collected total assets volume and applied a log-transformation to it to measure firm size (Demsetz & Villalonga, 2001). We controlled for firm age because it is accepted that when firms have a long presence in an industry, they are likely to accumulate knowledge and skill sets to help them deal with risks (Autio, Sapienza, & Almeida, 2000). We collected the number of years a firm has been listed public (with log-transformation) to measure firm age. We included environmental munificence to control for the growth rate of each industry by following the methods suggested by Keats and Hitt (1988) and Pelham (1999). Also, we controlled for industry competition intensity using 1-Herfindahl-Hirschman Index (Mishra, Vakratsas, & Krasnikov, 2018). Because multinational firms often have extended product ranges, which may be influential on their default situation, we controlled for this effect by adding product diversification measured as the number of product markets a firm is in. We controlled for assets growth because the change of firm assets may affect the debt holder's evaluation and willingness to support (Hirshleifer, 2001). We also included leverage and liquidity because they are two important finance-side factors that may influence firm default risk (Brunnermeier, 2009; Molina, 2005). Because debt holders' risk assessment will enclose firm financial gains. We controlled for this effect by including EBIT (scaled by firm asset size) (Elyasiani & Zhang, 2015). Finally, we used a series of time dummy variables to account for the effects on default risk caused by time.

4. Estimation model and methods

The final model specification is shown below. It has internationalization, environmental dynamism, and MCAP as main effects; additionally, it has the two-way moderations between each pair of them. To capture the integrative interplay of the three constructs, we added a three-way interaction. The dependent variable is default risk. In order to alleviate the concern of reverse causality, we used default risk $_{(t+1)}$ in the model estimation.

$$\begin{aligned}\text{Default Risk}_{it+1} = {} & \beta_0 + \beta_1 \times \text{Internationalization}_{it} \\ & + \beta_2 \times \text{Environmental Dynamism}_{jt} \\ & + \beta_3 \times \text{Marketing Capability}_{it} \\ & + \beta_4 \times \text{Internationalization}_{\ it} \times \text{Environmental Dynamism}_{jt} \\ & + \beta_5 \times \text{Internationalization}_{it} \times \text{Marketing Capability}_{it} \\ & + \beta_6 \times \text{Internationalization}_{it} \times \text{Environmental Dynamism}_{jt} \\ & \times \text{Marketing Capability}_{it} \\ & + \beta_7 \times \text{Competition Intensity}_{jt} + \beta_8 \times \text{Environmental Munificence}_{jt} \\ & + \beta_9 \times \text{Firm Size}_{it} + \beta_{10} \times \text{Firm Age}_{it} \\ & + \beta_{11} \times \text{Product Diversification}_{it} + \beta_{12} \times \text{Asset Growth}_{it} \\ & + \beta_{13} \times \text{Leverage}_{it} + \beta_{14} \times \text{Liquidity}_{it} \\ & + \beta_{15} \times \text{EBIT}_{it} \\ & + \text{Time Dummy Variables} + \varepsilon_{it}\end{aligned}$$

(i denotes each firm in the dataset, j denotes industries based on SIC 4-digit groups, and t denotes time).

This model specification is designed to have a number of strengths. First, the set of firm control variables such as size, age, and diversification accounts for the heterogeneity of firms with different natures that affect default risk. This model also sufficiently controls firm financial strengths by using a series of items such as assets growth, leverage, and liquidity. The environmental differences are accounted for by environmental dynamism and munificence. Therefore, this model satisfactorily considers the distinctive traits both on firm and industry levels and hence maximizes the demonstration of the force of the main effects and interactions. The addition of time dummy variable further enhances this effect.

However, one important further concern must be addressed. Although the panel structure of our collected data provides benefits such as more precise estimation and advantages of handling omitted variables, it also creates threats such as autocorrelation. To address this concern, we adopted three types of robust estimation methods in our empirical work. We first chose the White-Cluster robust regression, which produces White standard errors to address heteroscedasticity while clustering the multiple years' data points of each firm to account for autocorrelation (Stock & Watson, 2008). To ensure the robustness of the results, we further adopted two additional robust methods, the Driscoll-Kraay and Newey-West robust regressions. Both of them produce standard errors that are heteroscedasticity and autocorrelation consistent (Newey & West, 1987; Watts & Koput 2019). All of the three methods are widely used in the literature for analyzing panel data, and thus the robustness of the method choice of the current research is strongly secured.

5. Empirical analysis results and discussion

We first ran the model with control variables followed by the main effect model and the full models (Table 2). To ensure that our model is immune of multicollinearity, we checked variance inflation factors (VIF) for all the variables. None of the VIFs is greater than 10, which means multicollinearity is not a concern. The R-squared of the full model is 69.4%, indicating a sufficient explanatory power of the model. We also checked the contribution of the main effects and interactions over the control model and found the incremental contributions are significant ($F = 3.37$, $p < 0.05$, and $F = 5.74$, $p < 0.01$, respectively). Regarding the impact to the dependent variable, in the control variable list (see Table 2, column "White-Cluster Robust Estimation"), firm size is found to strongly reduce default vulnerability ($\beta = -0.201$, $p < 0.05$). This is in line with previous research in that when firms become larger, the scope effect may help them reduce performance variability and thus realize lower risk (Cenni et al., 2015). In a similar vein, product diversification reduces default risk. Diversification theories support the idea that when firms' business spans over multiple product sectors, they are more likely to reap the integration and coordination of the markets, thus resulting in lower overall firm risk (Kim, Hoskisson, & Lee, 2015). Assets growth is found to negatively impact default risk because the growth potential of a firm carries power to assure its debt holders and potential financial supporters. As expected, firms with better EBIT will likely to have lower default risk ($\beta = -0.230$, $p < 0.01$). MCAP is found to significantly reduce firm default risk ($\beta = -0.183$, $p < 0.05$). This finding is legitimate because there is abundant evidence in the literature explicitly supporting such a relationship. MCAP is one capability type that not only achieves desired firm performance through optimizing the configuration of marketing resources, but it also protects the firm by erecting competitive barriers realized by the idiosyncratic business networks.

Our first hypothesis posits that internationalization will be negatively associated with default risk. However, the empirical results show that this hypothesis is not supported. In the main effect model, we only found a marginal negative relationship ($\beta = -0.182$, $p < 0.1$). This finding of the weak relationship between internationalization and default risk at least partially answers the theorists who called for further consideration of specific firm types to understand their firm attributes' effects on their performance because there are more refined relationship patterns across firm groups (e.g., Cavusgil & Knight, 2015). This rationale is further supported and reinforced by our H3, which postulates that MCAP will moderate the relationship between internationalization and default risk. This hypothesis is strongly supported ($\beta = -0.227$, $p < 0.01$). To better demonstrate the moderating finding, we graphed it into Fig. 1. MCAP clearly demonstrates an interesting moderating effect that splits the function of internationalization. For firms with high MCAP, internationalization reduces default risk, but for firms with weak MCAP, default risk arises along with international expansion. This finding confirms and advances our theoretical development. The literature contains mixed results of internationalization, and the main effect in our model demonstrates such a trade-off and shows insignificant association when default risk is considered. However, adding MCAP into analysis reveals that firm capability is a factor that dichotomizes the power directions of internationalization based on the high vs. low capability levels.

In the global setting, MCAP's moderating effect appears to have a broader reach than only affecting internationalization. It also may exert power on a firm's strength of dealing with environmental uncertainties. The results confirm the pattern of MCAP's significant moderating role on global environmental dynamism (see Fig. 2). Previous studies often assume that environmental turbulence will automatically result in firm performance uncertainties. However, in certain conditions this type of environment is likely to provide valuable chances for firms that are capable of managing their marketing assets. In the real business world, a drastic consumption pattern change may likely give firms that have high MCAP more opportunities in winning customers than firms with low MCAP because high MCAP firms not only quickly detect the unmet needs resulted from the reshuffled competition, but they also actively create better market opportunities in a fast-changing environment to facilitate the need-satisfying offerings, and therefore strengthen their financial positions. This finding provides new insights for understanding coping mechanisms for global environmental turbulence through the angle of firm marketing capability superiority.

In addition to the two-way moderations, we take the first attempt in the international business research streams to simultaneously incorporate internationalization, global environmental dynamism, and MCAP into a higher order interaction. This hypothesis is consistently supported by all the three robust estimation methods ($\beta = -0.190$, $p < 0.05$). We graphed this moderating effect into Fig. 3 (Panel A and Panel B). Panel A shows that when MCAP is low, internationalization in a high dynamic environment will increase default risk. Conversely, when MCAP is high, internationalization turns out to be a strong risk reduction factor in a high dynamic environment (Panel B). This finding illustrates the interesting interplay among firm management strategy, external factors, and inherent attributes. Our results clearly indicates that when a firm possesses strong MCAP, pursuing an aggressive multinational presence in a turbulent industry is a preferred strategy because the firm is likely to collect the benefits of environmental changes that create emerging opportunities, and thus it can use its competencies of controlling key markets to realize performance and reduce the propensity of default. However, low MCAP firms are not able to hold this advantage. Unstable market conditions will significantly impair these firms' effectiveness of internationalization. The insignificant moderation between internationalization and dynamism (H2) also illustrates this idea. Both internationalization and environmental dynamism carry positive and negative effects, and thereby, when their effects are combined, the result is still mixed. It is the addition of MCAP that clearly splits the joint effects of these two factors.

Robustness checks. In addition to the main model, we also conducted a set of robustness checks. We used White-Cluster method to run the model test. Beyond that, we also adopted Driscoll-Kraay and Newey-west robust estimation methods (Table 2). These methods produced largely consistent results. When we checked the ordered logit model that treats the dependent variable as an ordinal variable, we observed

Table 2
Analytical results by using three panel data methods.

	Control Variables		Main Effects		White-Cluster Robust Estimation		Driscoll-Kraay HAC Estimation		Newey-West Robust Estimation	
	Coeff. (t)	Sig.	Coeff. (t)	Sig.	Coeff. (t)	Sig.	Coeff. (t)	Sig.	Coeff. (t)	Sig.
Internationalization			−0.182	*	−0.118		−0.118	**	−0.118	
			(−1.97)		(−1.52)		(−2.12)		(−1.65)	
Environmental Dynamism			−0.196		0.079		0.079		0.079	
			(−1.64)		(0.56)		(0.60)		(0.65)	
Marketing Capability			−0.141	**	−0.183	**	−0.183	***	−0.183	***
			(−2.03)		(−2.26)		(−3.24)		(−2.81)	
Internationalization × Env. Dynamism					0.027		0.027		0.027	
					(0.28)		(0.33)		(0.28)	
Internationalization × Mktg. Cap.					−0.227	***	−0.227	***	−0.227	***
					(−3.36)		(−4.33)		(−3.41)	
Env. Dynamism × Mktg. Cap.					−0.285	**	−0.285	***	−0.285	***
					(−2.55)		(−2.77)		(−2.66)	
Internationalization × Env. Dynamism × Mktg. Cap.					−0.190	**	−0.190	**	−0.190	**
					(−2.12)		(−2.04)		(−2.20)	
Competition Intensity	−0.004		0.035		0.013		0.013		0.013	
	(−0.05)		(0.40)		(0.15)		(0.17)		(0.15)	
Environmental Munificence	0.078		0.051		−0.010		−0.010		−0.010	
	(0.87)		(0.87)		(−0.27)		(−0.45)		(−0.28)	
Firm Size	−0.368	***	−0.250	**	−0.201	**	−0.201	***	−0.201	***
	(−2.79)		(−2.56)		(−2.15)		(−3.31)		(−2.67)	
Firm Age	−0.067		−0.142		−0.121		−0.121	***	−0.121	*
	(−0.60)		(−1.40)		(−1.43)		(−3.49)		(−1.91)	
Product Diversification	−0.153		−0.192	**	−0.258	***	−0.258	***	−0.258	***
	(−1.28)		(−2.12)		(−3.04)		(−3.97)		(−3.86)	
Asset Growth	−0.152	***	−0.142	**	−0.146	**	−0.146	***	−0.146	***
	(−2.67)		(−2.59)		(−2.62)		(−3.14)		(−2.82)	
Leverage	0.209	**	0.144		0.129		0.129	***	0.129	*
	(2.43)		(1.51)		(1.49)		(5.69)		(1.79)	
Liquidity	0.037		0.021		0.024		0.024		0.024	
	(0.43)		(0.31)		(0.35)		(0.42)		(0.35)	
EBIT	−0.254	***	−0.214	***	−0.230	***	−0.230	***	−0.230	***
	(−2.94)		(−2.78)		(−3.08)		(−3.86)		(−3.53)	
Time Dummy Variables	Yes		Yes		Yes		Yes		Yes	
Adj. R^2	0.570		0.635		0.694		0.694		0.694	

*p < 0.10, **p < 0.05, ***p < 0.01; All VIFs are lower than 10; The partial F tests are significant.

consistent results. We also changed the industry definitions from SIC 4-digits to SIC 3-digits to measure environmental dynamism, and we observed no significant change of the results. To measure MCAP in the Stochastic Frontier Model, we adopted the Normal-Half Normal assumption of the distribution of the residuals, and we also tested the Exponential and Truncated assumptions to generate capability scores; the results did not show significant inconsistencies. The robustness checks give additional reliability to the main results in this paper.

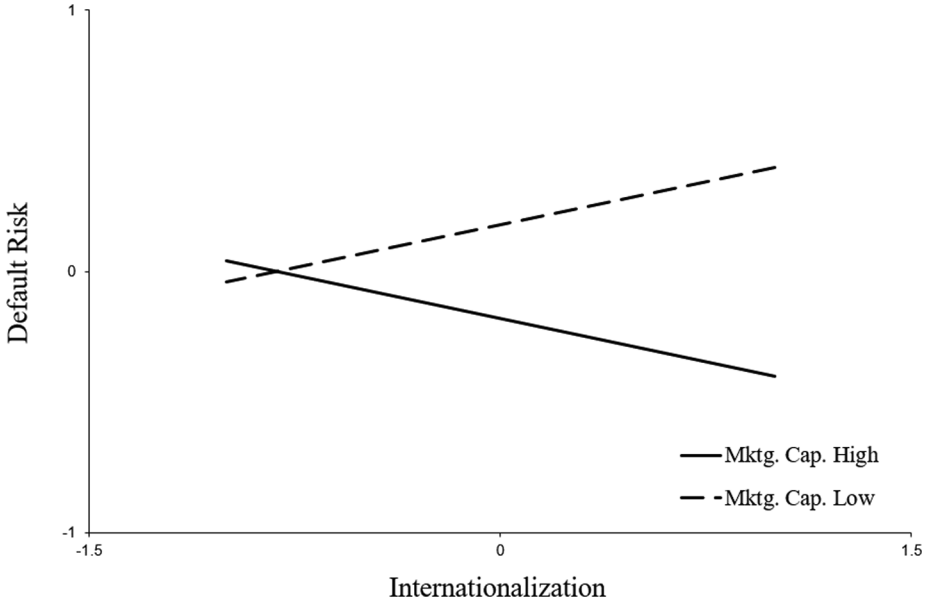

Fig. 1. Two-way moderation between internationalization and marketing capability.

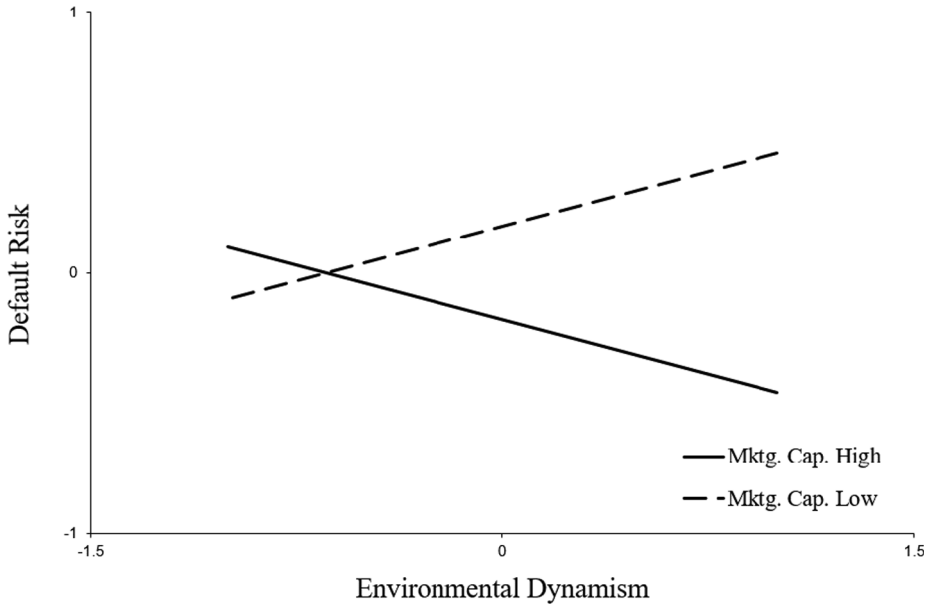

Fig. 2. Two-way moderation between environmental dynamism and marketing capability.

6. Implications for theories

Our paper provides a set of useful implications for IB theories. First, our study extends the function of internationalization into a new area that involves the risk evaluation of debt holders, which is not only a unique form of firm stakeholders that is largely different than shareholders, but it also carries important influences on the firm (Anderson & Mansi, 2009). Second, although it is widely acknowledged in the IB literature that pursuing internationalization in a firm's business is a promising strategy, cases about multinational firms' failures in their foreign markets are often observed. Our research demonstrates such a possible bi-directional nature of internationalization regarding its effects on firm default vulnerability under different moderating scenarios. Thus, these findings shed light on IB researches in that researchers need to pursue a more comprehensive view that considers the multiple-facet influences of internationalization. This interesting characteristic embedded in the construct of internationalization is also clearly shown in our empirical results in which its main effects are not evident, but the effects of the interactions are significant when its role is jointed with firm marketing capability and environment dynamism. To IB researchers, this understanding is imperative because the extant moderation-based studies often fail to consider such a higher-dimensional moderation. Thus these refined models should more realistically depict global firms' business landscape and consequently should have better power to explain internationalization's performance implications. Third, our inclusion of MCAP adds another important implication in that IB researchers should seek the synergy between multiple firm functional sectors when they formulate theoretical models. Previous researchers often limit their focuses in the same functional area, such as management or marketing, but not both. This approach misses important insights about the interplay between these functional departments because in a firm, internationalization and global marketing sectors are essentially inseparable, and thus this mechanism needs to be carefully reflected and addressed in theoretical model formulation.

The incorporation of MCAP also extends the insights of the resource-based view and dynamic capability theories of the firm in an international setting. Nath et al. (2010) have explicitly called for more exploration of marketing-side capability in facilitating the understanding of firm diversification. Our research thus answers this calling and the moderation between internationalization and MCAP in dynamic global markets finds a new application of dynamic capability theories in that firm ability is the necessary condition by which firms can seek better global opportunities. In particular, scholars such as Murray, Gao, & Kotabe (2011) place a special emphasis on the firm's competency of coping in changing markets and provides a fundamental and solid supporting basis for our research. We pinpoint this notion of capability and embed it into a broader framework in which MCAP determines the role of global expansion towards the default risk of the firm under fast-changing environments. Furthermore, in the traditional scope of RBV and DCT, firm risks received much less attention than returns. Our research thus provides a unique contribution in furthering the understanding of the firm resources and capabilities in pursuing international advantages as reflected by firm risk vulnerability. Equally important, our inclusion of default vulnerability connects stakeholder view to RBV/DCT in a new form involving debt-holders. Barney (2018) enthusiastically proposes such a research focus. Our work, by linking internationalization and default risk, pinpoints this logic and creates a novel avenue to understand Barney's (2018) theories. In addition, our work provides timely empirical endeavors that illustrate the dynamic nature of the stakeholder perspective embedded resource-based view and renders strong empirical support for this theory stream.

Our research also generates contributions for the research field of international risk management. As shown in our empirical results, internationalization does not have a definite and sole impact on risk factors such as default risk. Rather, its beneficial role is contingent upon other firm key aspects such as MCAP. This finding suggests that researchers who are exploring risk factors in global settings need to consider that internationalization's role is more complicated than previously revealed. Furthermore, the extant management literature that involves firm risk management often focuses on consumer market uncertainty, less on financial market risks such as idiosyncratic risk or systematic risk, and rarely on default risk. Our research thus suggests more focus on precisely understanding risk outcomes in international settings because our results show that internationalization can have differential and strong relationships with default risk, given the different levels of firm MCAP. Rego et al. (2009) explicitly call for such an effort that comprehensively considers firm risk aspects that represent different aspects of the firm. Theorists such as Brogaard, Li, and Xia (2017) also suggest that firm's risk factors are highly interrelated. Therefore, a more in-depth exploration on these less covered fields such as default risk is desirable in order for future researchers to adequately master the underlying mechanisms.

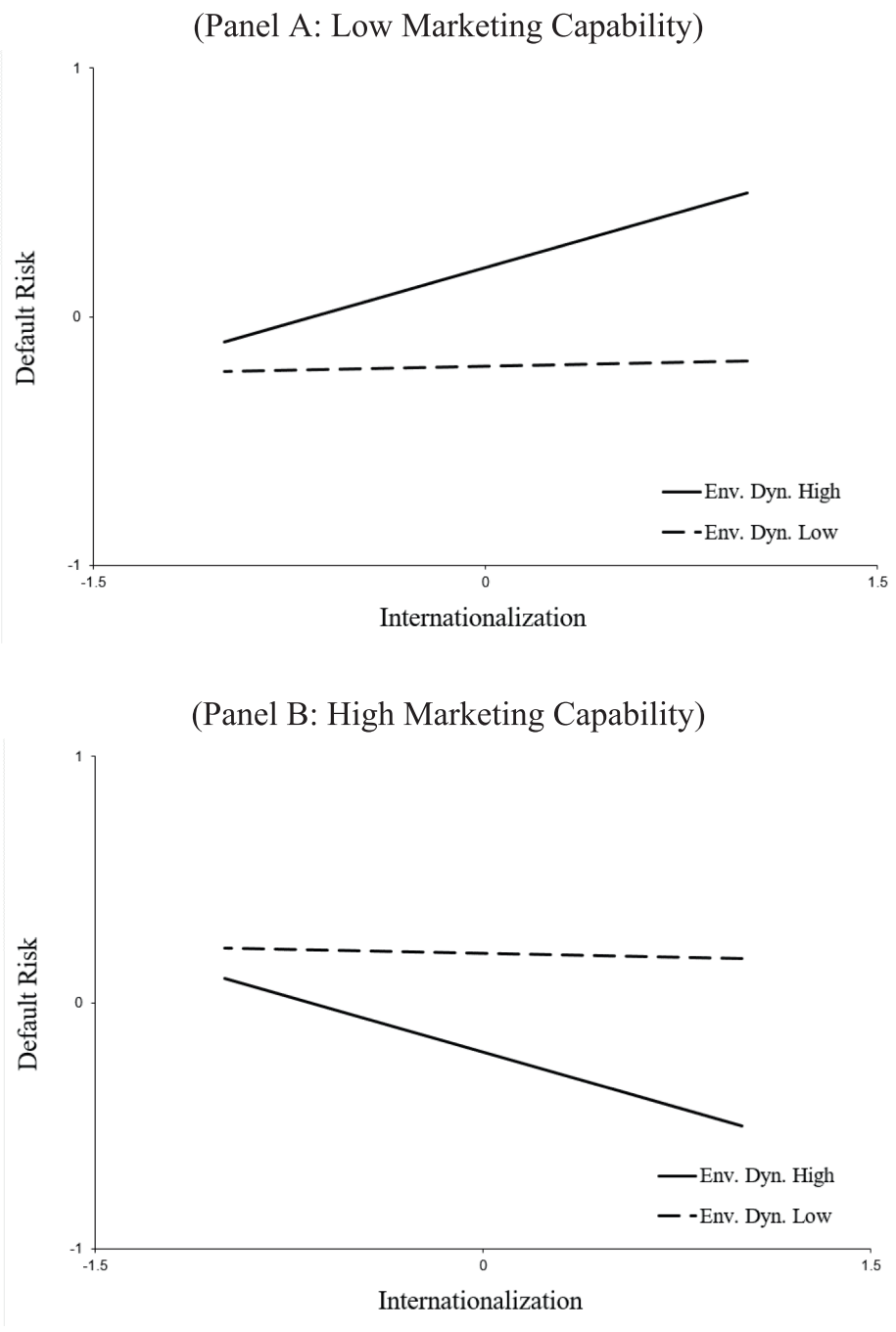

Fig. 3. Three-way moderation between internationalization, environmental dynamism and marketing capability.

7. Implications for business practices

In the era of globalization, managers tend to embrace the notion of a cross-border presence due to the widely acknowledged advantages of this strategic route. However, few global managers seek to explicitly link internationalization to firm default risk. This is an important strategic gap, since default risk is a forward-looking firm performance indicator that not only influences the willingness-to-support of key stakeholders but also impacts global managers' effectiveness in formulating their strategies. When managers expand their business horizons to foreign markets, they are looking for market opportunities and financial outcomes. However, they need to realize that their strategies might increase the likelihood of falling into default, based on specific situational factors. The insignificant main effect of internationalization clearly illustrates such a trait and indicates that there is a need for caution for the managers who are enthusiastic about fast global exploration. Simply finding their markets in more countries may not yield expected performances. Managers must be precise when evaluating their inherent ability, such as marketing capability, in order to reliably and confidently pursue aggressive internationalization. If MCAP is low, market expansion will increase firm default vulnerability due to the increase of the instability of income flows. Conversely, when MCAP is high, the default situation will be positively improved by internationalization. This finding explains the fact that many firms fall into bankruptcy even when they have a large business scope and a wide international penetration. When facing these failures, managers tend to attribute them to the changes of global market conditions. However, our results show that these conditions, such as global environmental dynamism, are not determining factors that lead to negative results of internationalization, as reflected by the insignificant interaction

between these two constructs. The underlying reasoning is straightforward: the global market condition will impact all the firms competing in the same industry in a similar vein and thus the firms will eventually have the parity of conditions. Thus the inherent competencies such as MCAP turn out to be the critical drivers because the heterogeneous firms' capabilities distinguish those firms' likelihood of mastering international business in fast-changing environments. This underlying pattern is illustrated by the insignificant two-way interaction of internationalization-dynamism but the significant three-way interaction of internationalization-dynamism-MCAP.

More importantly, obtaining lower risks are the priority of firm management. Managers actively seek actionable strategies as well as acquire useful resources to protect the firm from threats. Nevertheless, given the complexity of the operations of firms, especially multinational corporations, managers often find it difficult to establish a consistently feasible system to reduce firm risk. The complexity of this task is due to three main reasons. First, global market entry involves new knowledge acquisition that a firm has to adapt by changing its existing structure and routines. This process carries considerable uncertainties because absorbing new knowledge sets depends on the firms' internal efficiency and can face resistance by the established routines. Second, global environmental turbulence poses another threat for the firm as it seeks reliable risk management solutions. Managers are unlikely to sort out salient ways to reduce risk because the external dynamic factors quickly shift the competition patterns. Third, while most MNCs embrace the resources and opportunities obtained from global markets, their skill sets are often not appropriate for the challenges. Therefore, our research results, with a full recognition of the complex mechanisms, provide useful guidelines so that global managers can effectively deal with uncertainties. The marketing-side competencies offer strong support for internationalization in dealing with a fast-changing global environment and help the firm reduce default vulnerability. Managers should pay particular attention to build marketing capability when they are looking for global advantages. Taking this strategic emphasis should yield a set of sustained benefits. Marketing is the frontline between the firm and local customers, and it is the key functional sector that senses the market situation, competition patterns, and potential partners; therefore, it provides the necessary assistance for management teams to make quick and precise decisions regarding securing business advantages, leading to better financial strengths. In this sense, our research provides an actionable and reliable path for global managers to execute effective risk management.

An additional fact observed in global business is that firms are often intimidated by the turbulence of global markets and hesitate to pursue international opportunities. The role of environmental dynamism at different marketing competency levels in our analysis results provides interesting insights for managers. The three-way interaction shows that internationalization saliently increases risk when environmental dynamism is high but MCAP is low. Conversely, internationalization strongly protects a firm when both dynamism and MCAP are high. This image illustrates the potential threats as well as attractiveness of environmental turbulence. In fact, shifting competition patterns in global markets may provide valuable chances for high capability firms to augment their comparative advantages. This is an important insight and serves as a further incentive for managers to aggressively build their marketing competency when they seek international business chances. Global environmental turbulence should not be an intimidating factor for global managers; rather, it can serve as a sign for thinking about more global expansion, given the firm is willing to build or has established satisfactory capacity and the ability of absorbing market information and organizing key marketing resources.

Our research also indicates the close relationship between management and marketing functions. The decisions of internationalization are often made at the top management level because they involve multiple functional departments such as human resources, technology, finance, and operations. However, our research results demonstrate that the marketing sector can offer strong support for this decision making by top management levels. This support is particularly meaningful when a firm is looking for additional international opportunities to mitigate financial distress as reflected by default vulnerability. Firms in this type of situation should be attentive to the weak marketing capability that might have already caused problems in their current markets. Expanding to new markets with the current weak marketing skill sets will further jeopardize their financial positions. This undesirable situation may be augmented by a changing global environment that creates more strict demands for global firms. As a consequence, building a strong MCAP should become a necessary strategic emphasis for top management for risk reduction purposes.

8. Limitations and future research directions

Although abundant studies in the international business research streams measure internationalization as the single construct, there are many aspects such as human resources, R&D, and production that indicate ways to aim research direction into more specific fields. In this research, our main purpose is to illustrate how internationalization strategy can interplay with external and internal characteristics towards default vulnerability. Future research can take individual angles of the multi-facet internationalization and yield more specific and detailed results. Our research only chose MCAP as the main capability type. However, the dynamic capability view has conceptualized a number of key capabilities such as operations, R&D, and knowledge absorption. It is also important to consider their influences on internationalization's power on firm outcomes. More interestingly, future research can simultaneously formulate multiple capability types in the same framework and thus compare their strengths as well as directions of affecting firm performance. This approach will not only provide more detailed guidelines for global managers but also yield more insights regarding enriching RBV and dynamic capability theories and their applications in international business. Future studies can also explore more moderating effects from firm natural characteristics such as firm age, firm size, and business scopes. These variables, when combined with firm capability, should yield very meaningful insights because firms naturally differ in these dimensions. Exploring along these dimensions thus should pinpoint the business reality and create useful guidance for international business practitioners. In addition, the modes of internationalization such as Greenfield or sales arrangement may be further considered because firms pursuing different types of foreign expansion may face different situations regarding supply chain, management, customer service, as well as capital constraints. In this sense, a further examination on how the modes of internationalization interact with environment and capability would carry benefits of deepening the understanding of international business.

In the current research, we only consider default risk as the outcome variable. Yet in the risk realm, there are a number of indicators such as systematic risk, idiosyncratic risk, and total risk. In addition, performance turbulence such as ROA turbulence and cash flow volatility capture the risks in the operations sector. Even though there is evidence that supports the impact of internationalization on this area, research that explicitly explores this direction is still not adequate. Future research can incorporate more risk outcomes in order to generate greater understanding of the risk implication of internationalization. More importantly, risk outcomes can be modeled with return indicators because firm managers usually consider both return and risk when they formulate strategies. In this sense, risk adjusted returns provide more meaningful and realistic images that will help global managers' decision making in addition to supporting international business theories.

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