

# Top management teams' managerial resources and international diversification

## The evidence under an uncertain environment

TMTs'  
managerial  
resources

1999

Peng-Yu Li  
*Fu-Jen Catholic University, New Taipei City, Taiwan, and*  
Fang-Yi Lo  
*Feng Chia University, Taichung, Taiwan*

Received 6 June 2016  
Revised 15 December 2016  
24 May 2017  
Accepted 5 July 2017

### Abstract

**Purpose** – The purpose of this paper is to incorporate the resource-based perspective with upper echelon theory to examine the effect of top management teams' (TMTs) managerial resources on international diversification.

**Design/methodology/approach** – The authors sampled 360 listed companies in the USA that operated in the information technology industry in 2009, the year after the financial crisis.

**Findings** – The findings show that TMTs' tenure has a negative impact on international diversification but international experience exerts a positive impact on international diversification. Furthermore, TMTs' educational background diversity and international experience contribute to a reduction in the negative effect of tenure on international diversification.

**Originality/value** – Prior studies have investigated the role of TMT in international diversification, but they pay less attention to the interactive effect of the variety of managerial resources on international diversification. In particular, the authors examined the effect of a variety of management resources on the level of international diversification under the uncertain environment.

**Keywords** Top management team, International diversification, Tenure, Educational background diversity, International experience

**Paper type** Research paper

### 1. Introduction

The top management team (TMT) is the center of an organization, and its attributes affect the implementation of strategy. Upper echelon theory proposed that the managers' experience reflects their cognition, which influences their strategic decision-making process and strategic choices (Hambrick and Mason, 1984). Prior studies investigated the impact of TMTs' task-related characteristics, such as tenure, international experience and educational background, on international diversification (e.g. Barkema and Shvyrkov, 2007; Herrmann and Datta, 2005; Tihanyi *et al.*, 2000). However, previous studies examined the influence of the TMTs' characteristics on international diversification independently based on upper echelon theory but obtained mixed results. For example, studies concluded that longer tenure was positively associated with international diversification (Carpenter and Fredrickson, 2001; Tihanyi *et al.*, 2000), but Herrmann and Datta (2005) found a negative relationship between TMTs' tenure and international diversification.

We argue that upper echelon theory views the influence of TMTs' experience independently on international diversification and sheds less light on the interactive effect of the various experiences of managers. In this study, we incorporate the resource-based perspective to explain TMTs' managerial resources from the resources characteristic, which was mentioned less in

The authors thank the editor and two anonymous reviewers for their valuable and constructive comments and suggestions.



Management Decision  
Vol. 55 No. 9, 2017  
pp. 1999-2017  
© Emerald Publishing Limited  
0025-1747  
DOI 10.1108/MID-06-2016-0364

prior studies. The literature stresses that the top executives guide the strategic direction and act as a composition of specific resources to the firms. A TMT plays a central managerial role and determines the firm's growth and expansion. A manager's experience brings the ability to maximize the productivity of the other resources available to a firm (Penrose, 1959).

Managing international business is a complex task that requires higher problem-solving capabilities. A TMT is a combination of managerial resources for the firm, and the specific and complicated resources create a competitive advantage for the firm (Hutzschenreuter and Horstkotte, 2013b). Prior studies claimed TMTs serve as the provider of managerial resources and investigate how the TMTs influence firms' growth (Hutzschenreuter and Horstkotte, 2013a; Tan and Meyer, 2010). The managerial resources supplied by TMTs facilitate a firm's ability to implement effective international diversification (Sambharya, 1996). The experience can be a source of managerial ability and create performance advantages (Holcomb *et al.*, 2009). The managerial experience with different resources' characteristics deserves further examination of the effect on firms' international diversification. Kor (2003) suggests the mixed experience of managers supplies a better argument to explain the effectiveness of a strategy and the growth of the firms. In particular, when operating in a turbulence environment, firms need a greater variety of resources and capabilities to respond to the fast-changing environment and succeed in the global market. Thus, we further incorporate the resource-based perspective with the upper echelon theory to explain the mixed TMTs' managerial experience during international diversification.

In this study, our research question addresses how the managerial resources of TMTs affect the firms' international diversification under an uncertain and dramatically changing environment. We captured the TMTs' managerial resources from TMTs' task-related characteristics, tenure, background diversity and international experience, which are also viewed as specific resources that affected the growth of the firms in the literature (Hutzschenreuter and Horstkotte, 2013a; Tan and Meyer, 2010). Those task-related characteristics are embedded in the executives' knowledge, which influences how the executives utilize managerial resources to select information processing and decision-making methods (Kor and Mahoney, 2005). The effective use of resources by the managers creates a competitive advantage for a firm, enabling it to possess specific managerial resources which are difficult for other companies to imitate. The managerial resources cultivated from background experience affect a manager's ability to help a firm to exploit its resources and search for external opportunities, as well as play a role in the allocation of resources and implementation of strategies to assist firms in gaining a competitive advantage in the international market (Sambharya, 1996; Tan and Meyer, 2010).

In addition, we further apply the resource-based perspective to explain the characteristics of managerial resources. First, longer tenure causes resources rigidity, therefore, firms may increasingly rely on the efficient usage of existing resources. The longer tenure with resource rigidity invisibly forces firms to hold and employ existing resources and strategies for quite a long time, impeding a firm's willingness to adopt new resources and strategies that match the current environment, such as international diversification. Therefore, the longer tenure hampers international diversification. The educational background diversity and intentional experience are task-related experience and have been mentioned in prior studies. Second, educational background diversity represents the off-job managerial experience. We argue that educational background provides a firm with heterogeneous resources that can be used to build competitive advantages (Barney, 1991; Prahalad and Hamel, 1990). The characteristics of heterogeneous resources are valuable, rare and difficult to be imitated or substituted (Barney, 1991). The diversified TMT represents the variety of skills, knowledge and experience that improve innovative thinking and strategic decision making, which cannot be easily duplicated by another company. Previous studies claimed that diversity brings

broader knowledge to provide more innovative strategic thinking and facilitate a firm's international expansion (Finkelstein and Hambrick, 1996; Herrmann and Datta, 2005). Third, international experience is an on-job managerial resource which is a tacit resource and is accumulated through international assignments. This kind of experience is rare and costly to develop, but it brings global network resources and international advice to the firms (Athanassiou and Nigh, 1999). Therefore, we argue that internationalized TMTs will be invaluable resources to firms. Previous studies also argue that the international experience of TMTs increase the firm's willingness to expand to foreign countries (Sambharya, 1996).

The variety of experience owned by executives may lessen the negative effect of tenure on international diversification. We examine educational background diversity and international experience of TMTs; the two managerial resources are job related, bring broader knowledge and better information processing abilities for the executive to consider proposed growth strategies with a more open mind (Carpenter and Fredrickson, 2001). The linkage with the external environment forces the TMTs with higher abilities to overcome the ambiguity in the international environment. In addition, educational background diversity represents off-job training and international experience indicates the accumulation of on-job experiential resources. We check if the two job-related managerial resources may reduce the negative effect of resource rigidity on internationalization.

This paper provides several contributions to the literature. First, we investigate the interactive experience effect of TMTs on international diversification, which has received less attention in the prior international business literature. We examine the interactive effect of tenure, education background diversity and international experience on international diversification. Previous studies have examined the effect of education background and international experience on the level of international diversification separately (Herrmann and Datta, 2005; Sambharya, 1996) but have obtained mixed findings. However, the interactive effect of the various managerial resources to the firms has been stressed less. We argue that it is necessary to investigate the effect of multivariate managerial resources possessed by the managers on a firm's internationalization. We apply a variety of managerial experiences, testing the interactive effect of tenure, educational background diversity and international experience of TMTs to gain a more in-depth understanding of the mixed findings of managerial experience on international diversification.

Second, we examine how the TMTs' managerial experience affects international diversification under an uncertain environment which brings many changes to the firms and makes it difficult for managers to predict the impact from the environment. Prior studies stressed the role that uncertainty plays in TMTs' decision and managers with a more diversified ability are better prepared to deal with a rapidly changing environment (Carpenter and Fredrickson, 2001). The TMTs need greater flexibility to respond to uncertainty and provide strategic decisions that match the specific demands of the environment (Eisenhardt, 1989). The diverse managerial resources of the executives enhance their ability to manage the uncertain and rapidly changing environment. We extended prior studies and specially sampled 360 listed information technology companies in the USA in 2009, a year after the global financial crisis, to test the proposed hypotheses and provide a stronger evidence of how the managerial resources affect international diversification in an uncertain environment. Third, we incorporate the resource-based perspective with upper echelon theory to gain a more in-depth understanding of the ability of TMTs' characteristics with resource characteristics to increase the use of firms' managerial resources on international expansion.

In the next section, we review the literature and propose hypotheses. The sample data and our methods are introduced in the third section. The results of this study are shown in the fourth section and then we discuss our results, explore their implications, and outline the study's limitations in the final section.

## 2. Literature review and hypothesis development

### 2.1 TMT as a composition of sources to the firms in international diversification

In the strategy and international literature, international diversification has been one of the most heavily studied topics (Kirca, Roth, Hult and Cavusgil, 2012; Hitt *et al.*, 2006). One stream focuses on examining the antecedents of international diversification (i.e. Delios and Beamish, 1999; Tihanyi *et al.*, 2003). The other stream pays more attention to the consequences of international diversification, particularly performance outcome (i.e. Contractor *et al.*, 2003; Geringer *et al.*, 2000; Kirca, Hult, Deligonul, Perry and Cavusgil, 2012; Hitt *et al.*, 1997; Lu and Beamish, 2004). In addition, other studies stress the need to find the moderating and mediating effects, such as the process of the organizational factors and the organizational characteristics (e.g. Kwok and Reeb, 2000; Lu and Beamish, 2004; Vermeulen and Barkema, 2002). Furthermore, it is vital to emphasize context when examining the effect of international diversification (Verbeke *et al.*, 2009).

The research also contains an argument about the benefits and the costs of international diversification. The process of international diversification helps firms to acquire factor empowerment and flexibility, while geographic diversification is profitable for companies. In addition, it also gives the firms opportunities to assess strategic assets and resources (i.e. Hitt *et al.*, 1997). Expansion into foreign markets and resource assessment thereby enhances the companies' productivity and efficiency (Tallman and Li, 1996). Moreover, the MNEs can take advantage of their multiple locations to respond in a flexible manner to each external environment. However, international diversification also brings costs to the companies. The costs come from economic, political, legal and social-cultural differences between the domestic and foreign markets, which also cause management and operational difficulties in various environments. The complexities of coordination and control are also accompanying with the market expansion and causes higher cost (Gomes and Ramaswamy, 1999).

The literature has produced mixed findings from the association between international diversification and performance outcome (Hitt *et al.*, 1997; Kirca *et al.*, 2011). Accordingly, scholars report positive (Delios and Beamish, 1999; Grant, 1987) or negative (Collins, 1990) relationships between international diversification and firm performance. Other scholars claim that the relationship between international diversification and performance outcome is not a linear relationship but a curvilinear relationship such as U-shaped (Lu and Beamish, 2001), inverted U-shaped relationship (Hitt *et al.*, 1997) or S-shaped (Contractor *et al.*, 2003; Lu and Beamish, 2004) because the benefit and cost are imposed in different stages of international diversification. Moreover, the benefits and risks involved in international diversification make it critical for the managers' participation in internationalization decisions (Sambharya, 1996; Sanders and Carpenter, 1998; Tihanyi *et al.*, 2000). Studies therefore consider the role of managers' experiential resources in firms' international expansion. The literature suggests that the TMTs' characteristics affect their cognition and preference, which influence the way they make strategic choices and how they generate performance (Hambrick and Mason, 1984). Resource-based perspective stresses a conceptualization of a firm as a unique bundle of accumulated tangible and intangible resources. Penrose (1959) argued, "the experience of management will affect the productive services that all of [the organization's] other resources are capable of rendering." Hutzschenreuter and Horstkotte (2013b) argue that the TMTs provide a managerial service to facilitate the growth of firms. Valuable, rare and inimitable resources possessed by the firm are critical for the growth of the firm (Barney, 1991; Montgomery, 1995). Values and competitive advantages vary among firms due to their heterogeneous resources. The resource-based view also considers a firm's distinctive competencies and heterogeneous capabilities (Mahoney and Pandian, 1992). The effective usage of a firm's resources can acquire a competitive advantage which competitors cannot, and become a long-lasting sustainable advantage (Grant, 1991;

Wernerfelt, 1984). The resource-based view indicates that a firm's management must focus on the value of resources to generate sustainable competitive advantages and to improve firm performance (Lo, 2012). Those managerial resources contribute to generate a superior rent for the firms (Castanias and Helfat, 2001; Goll *et al.*, 2008).

Prior studies proposed that TMTs are a strategic asset of the firms which can generate a superior rent (Michalisin *et al.*, 2004). The executives' experience and knowledge can be an individual resource for a firm (Roth, 1995). TMTs also are viewed as a human capital resource; their skills, knowledge and experiences can be leveraged for strategic decision and facilitate organizational performance (e.g. Carpenter *et al.*, 2001; Coff, 2002; Hitt *et al.*, 2001; Collins and Clark, 2003). Job-related experience, such as tenure, and the international experience of a manager, is an important source of experiential knowledge for a firm (Cui *et al.*, 2015). Those experiential experiences are accumulated along with the growth of the firms and bond with the firms' history and specific routines. The experience of TMT involves firm-specific managerial experience, which entails the tacit knowledge of the firm's resources and capabilities (Kor, 2003). Thus, this experiential knowledge is a strategic asset for the firms, which is tacit, embedded and hard to acquire. Previous studies also demonstrate that experience drives managerial ability and becomes an important resource which is rare and difficult to imitate (Hitt *et al.*, 2001; Kor, 2003).

In addition, managers' experience, including knowledge of a firm's resources and capabilities, allows managers to make more informed resource allocation decisions that are unique to each firm (Kor and Mahoney, 2005). The managers' knowledge of the firm's resources and abilities shapes a firm's strategic decision-making process and guides a firm's direction (Kor, 2006). Tan and Mahoney (2005) argue that the top management is responsible for the strategy of international expansion. Prior studies showed that the experiential knowledge of the top managers is related to a firm's level of internationalization (Cui *et al.*, 2015; Hutzschenreuter and Horstkotte, 2013b; Sambharya, 1996). The managers' knowledge and experience enhance organizations' general managerial capabilities and helps firms to expand into new international markets.

## 2.2 TMTs' tenure and international diversification

Tenure represents the executives' level of familiarity with the company's resources and capabilities. Tenure develops with a firm's history and is specific to the business context. Tenure affects the managers' perception of market risk and opportunities (Herrmann and Datta, 2005). Prior studies stated that longer-tenured executives tend to judge information and analyze strategic alternatives depending on their existing experience, which causes managers to develop a narrow mindset (Finkelstein and Hambrick, 1996). Previous studies found that longer-tenured executives with limited knowledge and information are less willing to develop and implement innovative strategies (Cyert and March, 1963).

First, the TMT is a form of strategic resource of a firm, and its management and decisions are related to the growth of a firm. According to upper echelon theory, longer tenure reflects the managers' shared understanding, communication and cognition toward the firms (Barkema and Shvyrkov, 2007; Tihanyi *et al.*, 2000). Longer tenure brings abundant experience and fosters trust, contributing to the quality of a firm's decision-making process. However, according to the resources-based view, resource rigidity means that firms may increasingly depend on the efficient usage of existing resources, which is an invisible force inducing the firm to continue to use existing resources and strategies for quite a long time, thus impeding a firm's adoption of new resources and strategies that are better suited for the current environment. We argue that tenure has the characteristics of resources rigidity. Prior studies claim that longer tenure may cause managers to make decisions heavily dependent on previous experience (Simsek, 2007), which drive the managers to tend to take a conservative attitude and incline to consider only the existing resources, rather than accept



novel ideas to respond to a changing environment. Previous studies also pointed out that the effect of tenure has ambiguous results (Kauer *et al.*, 2007).

In addition, compared with senior executives, junior managers prefer to implement risky strategies such as diversification, innovation and strategic leverage, and they also exhibit a relatively higher willingness to respond to environmental uncertainties (Hambrick and Mason, 1984). Conversely, managers who are relatively older are less receptive to new information, and they tend to stay in a steady development at their job and plan their finances carefully. Consequently, rather than taking risks, they are more likely to choose investment activities that are more conservative (Carlson and Karlsson, 1970).

We argue that tenure has rigidity characteristics. Resources rigidity causes firms to increasingly depend on the adoption of existing resources for quite a long time, and impedes a firm's to adopt new resources to face a changing environment. This rigidity may inhibit innovative development (Leonard-Barton, 1992). Longer tenure leads the top managers to develop and utilize firm-specific knowledge based on their prior experience. TMTs' ability to develop broad perspectives and knowledge will be limited because of longer tenure (Cyert and March, 1963; Michel and Hambrick, 1992). While the managers' familiarity with the companies is a strength in their companies, the specific experience cannot be easily transferred to other companies.

In addition, long-tenure TMT also causes rigidity which prevents firms from developing new businesses. Managers who have higher tenure tend to prefer to remain in the domestic market and are typically unwilling to enter foreign markets. International diversification requires a complex collection of multiple sources of information. Foreign markets represent higher risk and are unfamiliar to the firms. Senior executives' preference to maintain the current situation and avoid uncertainty limits a firm's opportunities for growth through development in new markets (Barkema and Shvyrkov, 2007). Previous research reported a negative relationship between the tenure of TMT and international diversification of a firm (Herrmann and Datta, 2005).

Resource rigidity may cause the firms to utilize existing resources more and prefer to stay in the current situation. Under a turbulence environment, the TMTs may find it difficult to respond to a rapidly changing environment and have a lower willingness to expand into international markets. Thus, we believe that longer tenure of TMT causes resource rigidity in a firm and fosters a conservative attitude toward growth, and such managers tend to hesitate when confronted with risks; consequently, the growth of the firm through diversification is inhibited. Therefore, we propose the following hypothesis:

*H1. TMTs' tenure is negatively associated with the level of international diversification.*

### *2.3 TMTs' educational background diversity and international diversification*

Education background diversity refers to representation in the TMT of prior diversified education background. According to the resource-based perspective, heterogeneous resources are valuable, rare and difficult to imitate or substitute, which consist of endogenous sources of firm's competitive advantages (Barney, 1991). We argue that the diversified educational background of TMT could be represented as a firm's heterogeneous resource. The diversified educational background of TMT brings a diversity of skills, knowledge and experience that spark innovative thinking in the executives. Background diversity also signifies that the TMT owns a broader range of skills, networks and strategic thinking (Finkelstein and Hambrick, 1996).

Firms entering a foreign market typically face high uncertainty, ambiguity and substantial environmental change (Herrmann and Datta, 2005). The diversified knowledge and skills of TMTs increase a firm's ability to deal with environmental complexities when it enters foreign markets (Carpenter and Fredrickson, 2001; Tihanyi *et al.*, 2000). Studies show that the educational background diversity of TMTs relates positively to internationalization.

The higher levels of TMTs' diverse education form the foundation of innovative ideas and contribute to the strategic innovation of a firm through strategies, such as higher global positioning and expansion to new geographic markets (Carpenter and Fredrickson, 2001).

The diversified skills and networks also assist the TMTs' assessment of strategic assets and potential market opportunities. The critical information gained from external networks helps the TMTs to obtain more clues, which they can rely on to interpret the strategic alternatives related to international expansion. The various resources also foster their ability to identify risks and opportunities, and overcome external environmental changes (Bantel and Jackson, 1989). Thus, the TMTs with higher abilities are better prepared to face the difficult management challenge when the firms engage in the international diversification:

*H2. TMTs' educational background diversity is positively associated with the level of international diversification.*

#### *2.4 TMTs' international experience and international diversification*

The international experience gained from foreign assignments help the managers to build a global mindset (Carpenter and Fredrickson, 2001). Most previous TMT studies focused on international experience as a key source of TMTs' capabilities in a firm internationalization context. Prior studies demonstrated that TMTs' international experience supports a firm's international activities (Athanassiou and Nigh, 2000). International experience could be viewed as the firm's more abundant and empowerment resources. Executives with more international experience embrace the uncertainty and high risk that occurs when companies expand to the global market, but this type of ability is valuable and rare (Sanders and Carpenter, 1998). Moreover, managers with international experience have higher confidence and ability to deal with complex environments (Sambharya, 1996).

International diversification poses specific complexities and challenges for the management of a firm (Grant *et al.*, 1988). Firms engaged in international activities face management difficulties due to differences in culture, regulation and political environment. The experience absorbed through foreign assignments offers executives more opportunities to become familiar with business practices in an international context and assess the various cultural environments of foreign countries, which translates into a learned ability to process diverse information more effectively (Greve *et al.*, 2009). Therefore, they have a stronger ability to overcome the uncertainty and complexity that occur during intentional expansion. Hutzschenreuter and Horstkotte (2013a) also find that the TMTs' international experience can compensate for the complex interaction in a foreign country and benefit a firm's international expansion. The experience acquired through foreign assignments provides executives with abundant resources with more knowledge and experience, which lead the executives with higher confidence to smoothly deal with the uncertainty of international environment. Moreover, the global mindset enable executives with higher capabilities to evaluate strategic alternatives and provide effective strategic decisions during international expansion:

*H3. TMTs' international experience is positively associated with the level of international diversification.*

#### *2.5 Interactive effect of TMTs' tenure and educational background diversity on international diversification*

The TMTs' diversified education experience brings access to a valuable and professional background. Previous studies stated that prior educational training will affect the managers' cognition and their thought processes (Hambrick and Mason, 1984; Wiersema and Bantel, 1992). The diverse experience that spans a variety of educational backgrounds helps firms to identify critical external factors and then integrate different resources, skills and capabilities,

which will enable them to evaluate and make effective international investment decisions. Tihanyi *et al.* (2000) also suggest that TMTs with a greater diversity of educational background may possess a more diverse set of values, experiences and beliefs. In particular, managers with a more heterogeneous education background are better able to observe opportunities and threats in foreign markets (Carpenter and Fredrickson, 2001). The diversified skills and knowledge also lead the long-tenure managers to respond to uncertainty and complexity in international environmental in a flexible manner. Firms with more heterogeneous resources can reduce the disadvantages caused by resource rigidity.

Moreover, the diverse educational background connects firms to external heterogeneous and broad networks, which provides references for the TMT when assessing foreign markets. These external network connections allow the long-tenure executives to acquire more information from outside the company, leading them to adopt a less conservative attitude toward expansion into new markets. Thus, the broader strategic thinking of the TMTs with long tenure may lower the narrow viewpoint and rigid decision making behavior, thus facilitating international expansion:

*H4.* The interactive resources between TMTs' tenure and educational background diversity are positively associated with the level of international diversification.

#### *2.6 The interactive effect of TMTs' tenure and international experience on international diversification*

Prior studies found that the higher the level of international experience possessed by TMTs, the greater the probability of the firm to engage in international expansion; therefore, they are more sensitive to the changing environment. Hutzschenreuter and Horstkotte (2013a) argue that the TMTs' international experience affects the managerial ability to handle the added uncertainty that occurs during international expansion. Managers with international experience have a higher willingness and ability to manage the complexity associated with a higher level of international diversification (Singh *et al.*, 2010). They are more receptive to change and innovative strategies, therefore, entering and operating in a new market is accepted as a higher risk investment. Literature supports the suggestion that TMTs' international experience may reduce the level of uncertainty when firms internationalize (Sambharya, 1996). International experience allows the long-tenured managers to view the strategic alternatives related to international environment with a more open mind.

In addition, TMT serves as an information processing center to deal with the complexities of internationalization (Egelhoff, 1991). Managers with more international experience are better prepared to handle issues related to international operation. TMTs with more international experience have access to a wider range of information and have more contacts with other organizations (Athanasios and Nigh, 1999). Since it is easier for them to develop foreign strategic partners, they have a higher commitment to engage in international investment (Reuber and Fischer, 1997). This external environment gives the executive more opportunities to assess external resources and receive stimulation from outside (Hutzschenreuter and Horstkotte, 2013a). The global mindset also makes the executives less likely to be comfortable with the status quo. As a result, experience from international assignments may lower the possibility that executives will make decisions based on a narrow perspective, thus reducing the negative effect of tenure on international diversification. Therefore, we propose that longer tenure causes resource rigidity in a firm and fosters a conservative attitude to firm growth, thus inhibiting growth of the firm through international diversification. However, the accumulation of international experience can lessen the negative relationship between tenure and international diversification:

*H5.* The interactive resources between TMTs' tenure and international experience are positively associated with the level of international diversification.



### 3. Research methods

#### 3.1 Sample data

In order to examine the managerial resources under an uncertain and dynamic environment, we obtained the data in 2009, a year after the global financial crisis, and tested our hypotheses by examining a sample of 360 listed information technology companies. We collected relevant firm performance data from the OSIRIS global database, a commercially available financial database provided by Bureau Van Dijk that includes up to 70,000 companies (including subsidiaries and parent firms) from around the world. OSIRIS is seen as “one of the most comprehensive databases of listed companies” (Shao *et al.*, 2010), and is increasingly being used for international research (e.g. Banalieva and Dhanaraj, 2013; Oh and Rugman, 2012). The parent companies had expanded internationally and owned at least one foreign subsidiary. We excluded firms that had announced bankruptcy, as well as those that had merged with or were acquired by other firms.

#### 3.2 Measures

**3.2.1 TMT.** Prior studies have presented various definitions for TMT. Wiersema and Bantel (1992) defined TMT as the chairperson of the board, chief executive officer (CEO), president, chief operating officer, and the next-highest executive tier (e.g. senior or executive vice-presidents). Other studies have defined TMT as all members ranked higher than the vice president (Hambrick *et al.*, 1996; Sambharya, 1996), top two levels of an organization (Carpenter and Fredrickson, 2001), or any CEO-appointed executives (Athanassiou and Nigh, 2000). Based on prior studies, we examined the effect of TMT on firm growth strategy, and subsequently defined the scope of TMT as all positions ranked higher than the vice president of a firm (Carpenter and Fredrickson, 2001).

**3.2.2 Dependent variables.** International diversification. Prior studies have numerous measurements regarding international diversification (Hitt *et al.*, 2006), including the ratio of foreign sales to total sales (FSTS), foreign assets to total assets (FATA), foreign employees to total employees (FETE) (Contractor *et al.*, 2003; Li and Qian, 2005), the number of countries (Tallman and Li, 1996; Wan and Hoskisson, 2003) or the number of the subsidiaries (Geringer *et al.*, 2000; Lu and Beamish, 2004). Employing a multidimensional measurement to capture international diversification can increase the validity (Hassel *et al.*, 2003; Sullivan, 1994). Many studies have followed Sullivan's (1994) study and applied multidimensional measurement of international diversification to measure international diversification as the composition of FSTS, FATA and the geographic dispersion ratio (e.g. Carpenter and Sanders, 2004; Gomes and Ramaswamy, 1999; Thomas and Eden, 2004). The UNCTAD's Transnationality Index also employed composite indexes, including FSTS, FATA and FETE. A number of researchers have suggested considering the application of this approach to measure the depth and breadth of international diversification (Lu and Beamish, 2004; Thomas and Eden, 2004).

In this study, we measure international diversification according to two dimensions. First, the ratio of FSTS (i.e. Autio *et al.*, 2000; Grant, 1987; Tallman and Li, 1996), this measurement may reflect a firm's reliance on foreign markets and the presentation of the foreign markets (Sanders and Carpenter, 1998; Sullivan, 1994). FSTS is also a widely used definition in international diversification research (i.e. Tihanyi *et al.*, 2000). Second, country scope is defined as the number of countries in which a firm has subsidiaries, expressed as a percentage of the largest number of countries with subsidiaries presented in the study sample (Carpenter and Sanders, 2004). The country scope represents the geographic dispersion of operations across countries and implies the scope of international diversification (Tallman and Li, 1996; Thomas and Eden, 2004; Tihanyi *et al.*, 2000).

The FSTS and the country scope can capture the breadth and the depth of a firm's international diversification (Carpenter and Sanders, 2004). We also found several studies that have adopted the composition of the FSTS and the country scope as the measurement of international diversification (i.e. Hsu and Boggs, 2003; Tihanyi *et al.*, 2000). In addition, we examined a sample of companies in the information technology industry, which is a knowledge-intensive industry that relies on intelligent capital. As a result, this industry may require less physical investment than a manufacturing-based industry. Thus, applying FATA may not reflect the international diversification in this industry. The range for each of these two dimensions is from 0 to 1 and we combined the FSTS and country scope to form the composite measurement of the firm's international diversification.

*3.2.3 Independent variables.* TMTs' tenure. Older and longer tenured executives typically possess more knowledge of the resources and capabilities of an organization. However, over a lengthy period of time, they receive limited information sources and tend to make decisions based on past experience (Finkelstein and Hambrick, 1996). They are also less receptive to risk-taking and novel ideas. Less motivation to pursue greater firm performance also causes older and senior TMTs to tend to avoid uncertainty and to prefer the status quo (Herrmann and Datta, 2005; Simons *et al.*, 1999). They may avoid risky investments and decline to challenge new strategies. Thus, we measure the position tenure of TMTs and follow the methodology proposed by Tihanyi *et al.* (2000). Tenure was computed as a logarithmic transformation of the mean number of years the team members had held their current position at the end of 2009.

TMTs' educational background diversity. International diversification is frequently associated with increased environmental uncertainty and complexity. In this study, TMTs' educational background heterogeneity indicates the level of diversified knowledge that possessed by a TMT. The importance of TMTs is critical in the implementation of production diversification and international diversification (e.g. Hambrick *et al.*, 1996; Tihanyi *et al.*, 2000). The more heterogeneous educational background that a TMT possesses indicates that they possess comparatively more diversified problem-solving knowledge and skills. The educational background heterogeneity of a TMT allows firms with various resources and capabilities to develop growth strategies and evaluate strategic decisions. In this paper, TMTs' educational background heterogeneity was measured according to Blau's heterogeneity index (Blau, 1977), where  $H$  is the homogeneity index,  $S$  is the percentage of TMT members with a dominant educational track  $i$ , and  $n$  is the number of unique educational backgrounds (Wiersema and Bantel, 1992). We coded TMTs' educational background into the following six categories: arts, sciences, engineering, business and economics, law, and other. This indicator varies between 0 and 1, where higher values indicate higher resource heterogeneity in educational backgrounds, and lower values represent a concentrated educational background.

TMTs' international experience. International experience indicates the professorial and interpersonal network that an executive owns. Those social networks assist firms in assessing new markets and reducing uncertainty when entering them (Kor and Mahoney, 2005; Tan and Meyer, 2010). They also help team members develop a more global mindset, since knowledge related to new markets can benefit firm growth. TMTs' experience is a tacit and valuable resource which brings connections and human capital to firms (Carpenter *et al.*, 2001). International experience is associated with social complexity, which is difficult for competitors to understand. Such international experiences are not common and can create additional value for a firm. According to Tihanyi *et al.*'s (2000) study, we collected information about the international experience of TMT, focusing on whether the executive was either educated outside of the USA (1 = yes, 0 = no), or if they had worked outside of the USA (1 = yes, 0 = no). After coding the two measures to calculate the level of international experience,

we divided the result by two to represent the ratio of TMT members with international experience to the total number of members.

**3.2.4 Control variable.** Based on the literature on international diversification, we control the firm size measured as the log average number of employees. The firm's asset is associated with the level of international diversification, and we employed a logarithmic transformation. Moreover, firm age represents the firm's experience in business. Thus, we measured firm age as the number of months from the date of the firm's IPO until the end of 2009, and then applied a logarithmic transformation. We measured the current ratio as the ratio of current assets divided by current liabilities to reflect superior levels of unabsorbed slack resources of a firm, which may affect the firm's ability to leverage financial resources and the level of the diversification. R&D intensity is measured as the R&D expenditures to total sales to approximate the firms' innovative capability. In addition, one TMT-level variable, TMT size, is also included. TMT size indicates the scale of resources that a firm owns and we measured TMT size by the log average TMT members (Athanasios and Nigh, 2000). TMT age is measured as a logarithmic transformation of the average TMT member's age.

#### 4. Results

Table I shows the mean, standard deviation and correlations among the study variables. The variables exhibited a low level of correlation, and there were no indications of collinearity. Table II shows the regression results from the regression analysis employed to examine the proposed hypothesis. Model 1 includes only the control variables. The results reveal that the relationship between firm size is positively associated with international diversification ( $\beta = 0.285$ ,  $p < 0.001$ ). However, TMT size is negatively related to international diversification ( $\beta = -0.120$ ,  $p < 0.1$ ).

Model 2 indicates the regression result according to the relationship between TMTs' managerial resources and international diversification. The findings based on Model 3 demonstrate that the negative relationship between TMTs' tenure and international diversification is significant ( $\beta = -0.105$ ,  $p < 0.1$ ). *H1* is thereby supported. The result also shows a positive relationship between educational background diversity and the degree of international diversification ( $\beta = 0.097$ ,  $p < 0.1$ ), and supports *H2*. In addition, TMTs' international experience exhibited a positively significant relationship with the international diversification ( $\beta = 0.122$ ,  $p < 0.05$ ), thus *H3* was supported as well. Moreover, in Model 3, regarding the interactive relationship between TMTs' managerial resources and international diversification, the results show that in an uncertain environment, TMTs with diversified educational background positively reduced the negative relationship between tenure and international diversification level. *H4* was thereby supported ( $\beta = 0.108$ ,  $p < 0.1$ ). However, TMTs with more international experience have no impact on the relationship between TMTs' tenure and international diversification. Thus, *H5* is not supported ( $\beta = 0.054$ ,  $p > 0.1$ ).

We further investigate the robust result of TMTs' managerial resources on international diversification. Previous studies suggested the effect of the managerial resources on international diversification may be aligned under various firm performances. Thus, we measure return on assets as firm performance and divide the sample into two groups with a high and a low performance of sub-group, further examining the effect of TMTs' managerial resources on different performance. In Table III, the finding in Model 1 indicates, for the high-performance companies, the TMTs with more international experience contribute to firms' international diversification ( $\beta = 0.124$ ,  $p < 0.1$ ). However, for the low-performance companies, all of the relationships between managerial resources and international diversification are insignificant. The finding indicates that firms with TMT that possess

**Table I.**  
Descriptive statistics

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. International diversification	0.309	0.203	1.000								
2. Firm age	5.106	0.582	0.124**	1.000							
3. Firm size	7.253	1.613	0.171**	0.263***	1.000						
4. Firm asset	12.961	1.695	0.094*	0.118**	0.725***	1.000					
5. R&D intensity	0.137	0.151	0.035	-0.039	-0.261***	-0.109**	1.000				
6. Current ratio	3.300	2.955	0.021	-0.063	-0.223***	-0.048	0.2413***	1.000			
7. TMT size	1.780	0.433	-0.017	0.137**	0.458***	0.379***	-0.108**	-0.087*	1.000		
8. TMT tenure	1.686	1.399	-0.031	0.131**	0.102*	0.073	-0.108**	-0.046	0.154**	1.000	
9. TMT educational background diversity	0.524	0.166	0.068	-0.070	0.120**	0.088*	-0.016	-0.1766***	0.1976***	0.062	1.000
10. TMT international experience	0.182	0.254	0.138***	-0.009	0.071	0.036	0.005	-0.025	-0.019	0.018	0.007

Notes:  $n = 360$ . \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.001$

	Model 1	Model 2	Model 3
Firm age	0.080 (1.48)	0.099 (1.82)	0.103+ (1.92)
Firm size	0.285 (3.33)***	0.263 (3.09)**	0.257 (3.01)**
Firm asset	-0.065 (-0.84)	-0.059 (-0.78)	-0.056 (-0.73)
R&D intensity	0.078 (1.43)	0.066 (1.20)	0.065 (1.20)
Current ratio	0.057 (1.04)	0.073 (1.33)	0.071 (1.29)
TMT size	-0.120 (-2.07)**	-0.123 (-2.09)**	-0.116 (-1.96)*
TMT tenure		-0.044 (-0.84)	-0.105 (-1.73)*
TMT educational background diversity		0.089 (1.67)*	0.097 (1.81)*
TMT international experience		0.121 (2.35)**	0.122 (2.37)**
TMT tenure × TMT educational background diversity			0.108 (1.83)*
TMT tenure × TMT international experience			0.054 (1.04)
R <sup>2</sup>	0.058	0.082	0.093
Adj R <sup>2</sup>	0.042	0.058	0.064
ΔR <sup>2</sup>		0.023**	0.011
F	3.65**	3.45***	3.23***

Notes:  $n = 360$ . \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.001$

**Table II.**  
Result of regression  
of international  
diversification

	Model 1 High performed sub- group ( $n = 180$ )	Model 2 Low performed sub-group ( $n = 180$ )	Model 3 High product diversification sub-group ( $n = 179$ )	Model 4 Low product diversification sub-group ( $n = 181$ )
Firm age	0.015 (0.2)	0.159 (2.12)**	0.025 (0.32)	0.179 (2.33)**
Firm size	0.369 (3.02)**	0.226 (1.96)*	0.114 (0.85)	0.340 (2.99)**
Firm asset	-0.139 (-1.3)	-0.087 (-0.82)	0.007 (0.06)	-0.057 (-0.58)
R&D intensity	0.230 (3.05)**	0.042 (0.53)	0.104 (1.28)	0.051 (0.69)
Current ratio	0.101 (1.35)	0.041 (0.49)	-0.033 (-0.39)	0.122 (1.66)*
TMT size	-0.068 (-0.82)	-0.198 (-2.42)**	-0.065 (-0.75)	-0.186 (-2.29)**
TMT tenure	-0.032 (-0.45)	-0.084 (-1.13)	-0.087 (-1.12)	-0.004 (-0.06)
TMT educational background diversity	0.084 (1.16)	0.088 (1.10)	0.172 (2.20)**	-0.001 (-0.02)**
TMT international experience	0.124 (1.7)*	0.098 (1.32)	0.042 (0.55)	0.174 (2.42)
R <sup>2</sup>	0.140	0.089	0.054	0.178
Adj R <sup>2</sup>	0.094	0.040	0.003	0.134
F	3.06**	1.84*	1.07	4.41***

Notes:  $n = 360$ . \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.001$

**Table III.**  
Result of regression of  
sub-group comparison

international experience may contribute their knowledge to enhance the firm's international diversification when the firms operate effectively generate higher return from foreign markets.

In addition, we claimed that product diversification may increase the management difficulties that accompany the higher level of diversification (Hitt *et al.*, 1997; Singh *et al.*, 2010). We evaluated the degree of firm's diversification by measuring the Standard Industrial Classification (SIC) codes. We coded the primary and secondary SIC codes of each firm, and then divided those two SIC codes. For the firms that invested in similar fields, comparatively smaller scores were used to indicate a lower level of product diversification, and vice versa. Thus, we explored the divergence in the SIC codes of investee firms to evaluate the level of a firm's product diversification. Prior studies concerning the role of TMTs also used SIC code to measure corporate product diversification (i.e. Carpenter *et al.*, 2001). The sample is divided as high and low production diversification as well. The result in Model 3 shows that the effect of

educational background diversity on international diversification is stronger when firms with higher product diversification ( $\beta = 0.172, p < 0.05$ ). It indicates that off-job training provides more product-related knowledge, which contributes to the TMTs' ability to operate in a product market. In addition, the diversified experience from prior educational training also contribute to bring various knowledge toward solving the operation challenges when firms with higher level of product diversification.

## 5. Discussion and conclusion

This study primarily discusses the characteristics of TMTs in the US information technology industry based on our analysis of the relationships between TMTs' characteristics and the international diversification of firms. We analyzed 360 listed firms in the USA in 2009, and our findings show that TMTs' tenure have a negative impact on the international diversification but both TMTs' educational background diversity and international experience exerted a positive effect on firm diversification. In addition, educational background diversity can reduce the negative effect of TMTs' tenure on a firm's international diversification.

This study contributes to the literature on management and provides evidence that the TMTs' managerial resources and the variety of resources affect the firms' international investment in a dynamic environment. Prior studies recommended examining the factors influencing international diversification by considering TMTs' managerial resources independently as proposed by upper echelon theory but obtained inconsistent findings (Herrmann and Datta, 2005; Tihanyi *et al.*, 2000). We incorporate the resource-based perspective to explain the effect of managerial resources from resource characteristics to expand the existing TMT literature.

Our results support the hypothesized relationship among TMTs' tenure resource and international diversification according to the argument of resource rigidity. The findings demonstrate that senior managers may be limited by existing conceptions or previous knowledge, and they may avoid risky investments. International expansion requires investing in completely unfamiliar industries; therefore, international diversification involves comparatively higher risk. Consequently, the firm may remain with the status quo and experience difficulty facilitating international diversification. The finding is consistent with the more recent works that address the advantages of using the TMTs with overseas experience to facilitate firms' international expansion (Athanassiou and Nigh, 2000; Hutzschenreuter and Horstkotte, 2013a). In addition, the findings demonstrated that TMTs' international experience is positively related to international diversification, which indicates that endowment resource contribute to international diversification. The findings also buttress the argument that endowment resource can build competitive advantages and enhance competition with rivals.

We further examine the diversity of resources utilized during foreign market expansion, and these findings indicate that the diversity of the TMTs' educational background contributes to reduce the negative effect of tenure on the level of the international diversification of firms. It demonstrates that resource diversity can bring a broader range of innovative ideas to reduce the conservative attitude of the TMTs because of the long tenure developed within the business context. Furthermore, heterogeneous resources prevent executives from falling into the trap of group thinking. We suggest that when selecting the members of the TMT, it is necessary to consider a diversified background, which will help firms to be break free of the status quo and accept innovative strategies during international expansion.

However, we do not obtain the supported result from the proposed relationship which claimed that international experience may lower the negative impact of TMTs' tenure, on the firm's international diversification. The international experience may enable managers



with higher capabilities and confidence to cope with the complexities in the international market. It also helps executives with a more open mindset to accept novel strategies and embrace new challenges in the foreign market. However, accumulated international experience may develop from a specific foreign country which is difficult to be applied to diversified foreign markets and thereby does not have the ability to lower the negative effect of TMTs' tenure on international diversification.

This study involved certain limitations that require consideration. First, we focused on examining the effect of managerial resources under a dynamic environment and only applied cross-sectional data. However, firms implement various strategies in response to shifts in the external environment. Scholars suggest that future studies concerning the role of TMTs' managerial resources incorporate longitudinal data to obtain more comprehensive findings (Finkelstein and Hambrick, 1996; Herrmann and Datta, 2005). Second, TMTs' resources were evaluated based on specific demographic characteristics. Future studies should consider other psychological characteristics and political factors to represent TMTs' resources.

## References

- Athanassiou, N. and Nigh, D. (1999), "Research notes and communications the impact of US company internationalization on top management team advice networks: a tacit knowledge perspective", *Strategic Management Journal*, Vol. 20 No. 1, pp. 83-92.
- Athanassiou, N. and Nigh, D. (2000), "Internationalization, tacit knowledge and the top management teams of MNCs", *Journal of International Business Studies*, Vol. 31 No. 3, pp. 471-487.
- Autio, E., Sapienza, H.J. and Almeida, J.G. (2000), "Effects of age at entry, knowledge intensity, and imitability on international growth", *Academy of Management Journal*, Vol. 43 No. 5, pp. 909-924.
- Banalieva, E.R. and Dhanaraj, C. (2013), "Home-region orientation in international expansion strategies", *Journal of International Business Studies*, Vol. 44 No. 2, pp. 89-116.
- Bantel, K.A. and Jackson, S.E. (1989), "Top management and innovations in banking: does the composition of the top team make a difference?", *Strategic Management Journal*, Vol. 10 No. S1, pp. 107-124.
- Barkema, H.G. and Shvyrkov, O. (2007), "Does top management team diversity promote or hamper foreign expansion?", *Strategic Management Journal*, Vol. 28 No. 7, pp. 663-680.
- Barney, J.B. (1991), "Firms resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Blau, P. (1977), *Inequality and Heterogeneity*, Free Press, New York, NY.
- Carlson, R. and Karlsson, K. (1970), "Age, cohorts, and the generation of generations", *American Sociological Review*, Vol. 35 No. 4, pp. 710-718.
- Carpenter, M.A. and Fredrickson, J.W. (2001), "Top management teams, global strategic posture, and the moderating role of uncertainty", *Academy of Management Journal*, Vol. 44 No. 3, pp. 533-545.
- Carpenter, M.A. and Sanders, W.M.G. (2004), "The effects of top management team pay and firm internationalization on MNC performance", *Journal of Management*, Vol. 30 No. 4, pp. 509-528.
- Carpenter, M.A., Sanders, W.G. and Gregersen, H.B. (2001), "Bundling human capital with organizational context: the impact of international assignment experience on multinational firm performance and CEO pay", *Academy of Management Journal*, Vol. 44 No. 3, pp. 493-511.
- Castanias, R.P. and Helfat, C.E. (2001), "The managerial rents model: theory and empirical analysis", *Journal of Management*, Vol. 27 No. 6, pp. 661-678.
- Coff, R.W. (2002), "Human capital, shared expertise, and the likelihood of impasse in corporate acquisitions", *Journal of Management*, Vol. 28 No. 1, pp. 107-128.

- Collins, C.J. and Clark, K.D. (2003), "Strategic human resource practices, top management team social networks, and firm performance: the role of human resource practices in creating organizational competitive advantages", *Academy of Management Journal*, Vol. 46 No. 6, pp. 740-751.
- Collins, J.M. (1990), "A market performance comparison of US firms active in domestic, developed and developing countries", *Journal of International Business Studies*, Vol. 21 No. 2, pp. 271-287.
- Contractor, F.J., Kundu, S.K. and Hsu, C.C. (2003), "A three-stage theory of international expansion: the link between multinationality and performance in the service sector", *Journal of International Business Studies*, Vol. 34 No. 1, pp. 5-18.
- Cui, L., Li, Y., Meyer, K.E. and Li, Z. (2015), "Leadership experience meets ownership structure: returnee managers and internationalization of emerging economy firms", *Management International Review*, Vol. 55 No. 3, pp. 355-387.
- Cyert, R.M. and March, J.G. (1963), *A Behavioral Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ and New York, NY.
- Delios, A. and Beamish, P.W. (1999), "Ownership strategy of Japanese firms: transactional, institutional, and experience influences", *Strategic Management Journal*, Vol. 20 No. 10, pp. 915-933.
- Egelhoff, W.G. (1991), "Information-processing theory and the multinational enterprise", *Journal of International Business Studies*, Vol. 22 No. 3, pp. 341-368.
- Eisenhardt, K.M. (1989), "Making fast strategic decisions in high-velocity environments", *Academy of Management Journal*, Vol. 32 No. 3, pp. 543-576.
- Finkelstein, S. and Hambrick, D.C. (1996), *Strategic Leadership: Top Executives and Their Effects on Organizations*, West Publishing Company, St Paul, Minneapolis, MN.
- Geringer, J.M., Tallman, S. and Olsen, D.M. (2000), "Product and international diversification among Japanese multinational firms", *Strategic Management Journal*, Vol. 21 No. 1, pp. 51-80.
- Goll, I., Brown, N.J. and Rasheed, A.A. (2008), "Top management team demographic characteristics, business strategy, and firm performance in the US airline industry: the role of managerial discretion", *Management Decision*, Vol. 46 No. 2, pp. 201-222.
- Gomes, L. and Ramaswamy, K. (1999), "An empirical examination of the form of the relationship between multinationality and performance", *Journal of International Business Studies*, Vol. 30 No. 1, pp. 173-187.
- Grant, R.M. (1987), "Multinationality and performance among British manufacturing companies", *Journal of International Business Studies*, Vol. 18 No. 3, pp. 79-89.
- Grant, R.M. (1991), "The resource-based theory of competitive advantage: implications for strategy formulation", *California Management Review*, Vol. 33 No. 3, pp. 114-135.
- Grant, R.M., Jammine, A.P. and Thomas, H. (1988), "Diversity, diversification and profitability among British manufacturing companies, 1972-1984", *Academy of Management Journal*, Vol. 31 No. 4, pp. 771-801.
- Greve, P., Nielsen, S. and Ruigrok, W. (2009), "Transcending borders with international top management teams: a study of European financial multinational corporations", *European Management Journal*, Vol. 27 No. 3, pp. 213-224.
- Hambrick, D.C. and Mason, P.A. (1984), "Upper echelons: the organization as a reflection of its top managers", *Academy of Management Review*, Vol. 9 No. 2, pp. 193-206.
- Hambrick, D.C., Cho, T.S. and Chen, M.J. (1996), "The influence of top management team heterogeneity on firms' competitive moves", *Administrative Science Quarterly*, Vol. 41 No. 4, pp. 659-684.
- Hassel, A., Höpner, M., Kurdelbusch, A., Rehder, B. and Zugehör, R. (2003), "Two dimensions of the internationalization of firms", *Journal of Management Studies*, Vol. 40 No. 3, pp. 705-723.
- Herrmann, P. and Datta, D.K. (2005), "Relationships between top management team characteristics and international diversification: an empirical investigation", *British Journal of Management*, Vol. 16 No. 1, pp. 69-78.

- Hitt, M.A., Hoskisson, R.E. and Kim, H. (1997), "International diversification: effects on innovation and firm performance in product diversified firms", *Academy of Management Journal*, Vol. 40 No. 4, pp. 767-798.
- Hitt, M.A., Bierman, L., Shimizu, K. and Kochhar, R. (2001), "Direct and moderating effects of human capital on strategy and performance in professional service firms: a resource-based perspective", *Academy of Management Journal*, Vol. 44 No. 1, pp. 13-28.
- Hitt, M.A., Tihanyi, L., Miller, T. and Connelly, B. (2006), "International diversification: antecedents, outcomes, and moderators", *Journal of Management*, Vol. 32 No. 6, pp. 831-867.
- Holcomb, T.R., Holmes, R.M. Jr and Connelly, B.L. (2009), "Making the most of what you have: managerial ability as a source of resource value creation", *Strategic Management Journal*, Vol. 30 No. 5, pp. 457-485.
- Hsu, C.C. and Boggs, D.J. (2003), "Internationalization and performance: traditional measures and their decomposition", *Multinational Business Review*, Vol. 11 No. 3, pp. 23-50.
- Hutzschenreuter, T. and Horstkotte, J. (2013a), "Performance effects of international expansion processes: the moderating role of top management team experiences", *International Business Review*, Vol. 22 No. 1, pp. 259-277.
- Hutzschenreuter, T. and Horstkotte, J. (2013b), "Managerial services and complexity in a firm's expansion process: an empirical study of the impact on the growth of the firm", *European Management Journal*, Vol. 31 No. 2, pp. 137-151.
- Kauer, D., Tanja, C., Prinzessin, W. and Schäffer, U. (2007), "Effects of top management team characteristics on strategic decision making: shifting attention to team member personalities and mediating processes", *Management Decision*, Vol. 45 No. 6, pp. 942-967.
- Kirca, A.H., Roth, K., Hult, G.T.M. and Cavusgil, S.T. (2012), "The role of context in the multinationality-performance relationship: a meta-analytic review", *Global Strategy Journal*, Vol. 2 No. 2, pp. 108-121.
- Kirca, A.H., Hult, G.T.M., Deligonul, S.Z., Perry, M.Z. and Cavusgil, S.T. (2012), "Multilevel examination of the drivers of firm multinationality: a meta-analysis", *Journal of Management*, Vol. 38 No. 2, pp. 502-530.
- Kirca, A.H., Hult, G.T.M., Roth, K., Cavusgil, S.T., Perry, M.Z., Akdeniz, M.B., Deligonul, S.Z., Mena, J.A., Pollitte, W.A., Hoppner, J.J., Miller, J. and White, R.C. (2011), "Firm-specific assets, multinationality, and financial performance: a meta-analytic review and theoretical integration", *Academy of Management Journal*, Vol. 51 No. 1, pp. 47-72.
- Kor, Y. and Mahoney, J. (2005), "How dynamics, management, and governance of resource deployments influence firm-level performance", *Strategic Management Journal*, Vol. 26 No. 5, pp. 489-496.
- Kor, Y.Y. (2003), "Experience-based top management team competence and sustained growth", *Organization Science*, Vol. 14 No. 6, pp. 707-719.
- Kor, Y.Y. (2006), "Direct and interaction effects of top management team and board compositions on R&D investment strategy", *Strategic Management Journal*, Vol. 27 No. 11, pp. 1081-1099.
- Kwok, C.C. and Reeb, D.M. (2000), "Internationalization and firm risk: an upstream-downstream hypothesis", *Journal of International Business Studies*, Vol. 31 No. 4, pp. 611-629.
- Leonard-Barton, D. (1992), "Core capabilities and core rigidities: a paradox in managing new product development", *Strategic Management Journal*, Vol. 13 No. S1, pp. 111-125.
- Li, L. and Qian, G. (2005), "Dimensions of international diversification: their joint effects on firm performance", *Journal of Global Marketing*, Vol. 18 Nos 3/4, pp. 7-35.
- Lo, F.Y. (2012), "The dynamic adjustment of environment, strategy, structure, and resources on firm performance", *International Entrepreneurship and Management Journal*, Vol. 9 No. 2, pp. 217-227.
- Lu, J.W. and Beamish, P.W. (2001), "The internationalization and performance of SMEs", *Strategic Management Journal*, Vol. 22 Nos 6/7, pp. 565-586.
- Lu, J.W. and Beamish, P.W. (2004), "International diversification and firm performance: the S-curve hypothesis", *Academy of Management Journal*, Vol. 47 No. 4, pp. 598-609.

- Mahoney, J.T. and Pandian, J.R. (1992), "The resource-based view within the conversation of strategic management", *Strategic Management Journal*, Vol. 13 No. 5, pp. 363-380.
- Michalisin, M.D., Karau, S.J. and Tangpong, C. (2004), "Top management team cohesion and superior industry returns: an empirical study of the resource-based view", *Group and Organization Management*, Vol. 29 No. 1, pp. 125-140.
- Michel, J.G. and Hambrick, D.C. (1992), "Diversification posture and top management team characteristics", *Academy of Management Journal*, Vol. 35 No. 1, pp. 9-37.
- Montgomery, C.A. (1995), *Resource-Based and Evolutionary Theories of the Firm: Towards a Synthesis*, Kluwer Academic Publishers, Boston, MA and London.
- Oh, C.H. and Rugman, A.M. (2012), "Regional integration and the international strategies of large European firms", *International Business Review*, Vol. 21 No. 3, pp. 493-507.
- Penrose, E. (1959), *The Theory of the Growth of the Firm*, Basil Blackwell, London.
- Prahalad, C.K. and Hamel, G. (1990), "The core competence of the corporation", *Harvard Business Review*, Vol. 68 No. 3, pp. 79-91.
- Reuber, A.R. and Fischer, E. (1997), "The influence of the management team's international experience on the internationalization behaviors of SMEs", *Journal of International Business Studies*, Vol. 28 No. 4, pp. 807-825.
- Roth, K. (1995), "Managing international interdependence: CEO characteristics in a resource-based framework", *Academy of Management Journal*, Vol. 38 No. 1, pp. 200-231.
- Sambharya, R.B. (1996), "Foreign experience of top management teams and international diversification strategies of US multinational corporations", *Strategic Management Journal*, Vol. 17 No. 9, pp. 739-746.
- Sanders, W.G. and Carpenter, M.A. (1998), "Internationalization and firm governance: the roles of CEO compensation, top team composition, and board structure", *Academy of Management Journal*, Vol. 41 No. 2, pp. 158-178.
- Shao, L., Kwok, C. and Guedhami, O. (2010), "National culture and dividend policy", *Journal of International Business Studies*, Vol. 41 No. 8, pp. 1391-1414.
- Simons, T., Pelled, L.H. and Smith, K.A. (1999), "Making use of difference: diversity, debate, and decision comprehensiveness in top management teams", *Academy of Management Journal*, Vol. 42 No. 6, pp. 662-674.
- Simssek, Z. (2007), "CEO tenure and organizational performance: an intervening model", *Strategic Management Journal*, Vol. 28 No. 6, pp. 653-662.
- Singh, P.C.D.A., Gaur, A.P.A.S. and Schmid, F.P. (2010), "Corporate diversification, TMT experience, and performance", *Management International Review*, Vol. 50 No. 1, pp. 35-56.
- Sullivan, D. (1994), "Measuring the degree of internationalization of a firm", *Journal of International Business Studies*, Vol. 25 No. 2, pp. 325-342.
- Tallman, S. and Li, J.T. (1996), "Effects of international diversity and product diversity on the performance of multinational firms", *Academy of Management Journal*, Vol. 39 No. 1, pp. 179-196.
- Tan, D. and Mahoney, J. (2005), "Examining the penrose effect in an international business context: the dynamics of Japanese firm growth in US industries", *Managerial and Decision Economics*, Vol. 26 No. 2, pp. 113-127.
- Tan, D. and Meyer, K.E. (2010), "Business groups' outward FDI: a managerial resources perspective", *Journal of International Management*, Vol. 16 No. 2, pp. 154-164.
- Thomas, D.E. and Eden, L. (2004), "What is the shape of the multinationality-performance relationship?", *Multinational Business Review*, Vol. 12 No. 1, pp. 89-110.
- Tihanyi, L., Ellstrand, A.E., Daily, C.M. and Dalton, D.R. (2000), "Composition of the top management team and firm international diversification", *Journal of Management*, Vol. 26 No. 6, pp. 1157-1177.

- Tihanyi, L., Johnson, R.A., Hoskisson, R.E. and Hitt, M.A. (2003), "Institutional ownership differences and international diversification: the effects of boards of directors and technological opportunity", *Academy of Management Journal*, Vol. 46 No. 2, pp. 195-211.
- Verbeke, A., Li, L. and Goerzen, A. (2009), "Toward more effective research on the multinationality and performance relationship", *Management International Review*, Vol. 49 No. 2, pp. 149-162.
- Vermeulen, F. and Barkema, H. (2002), "Pace, rhythm, and scope: process dependence in building a profitable multinational corporation", *Strategic Management Journal*, Vol. 23 No. 7, pp. 637-653.
- Wan, W.P. and Hoskisson, R.E. (2003), "Home country environments, corporate diversification strategies, and firm performance", *Academy of Management Journal*, Vol. 46 No. 1, pp. 27-45.
- Wernerfelt, B. (1984), "A resource-based view of the firm", *Strategic Management Journal*, Vol. 5 No. 2, pp. 171-180.
- Wiersema, M. and Bantel, K. (1992), "Top management team demography and corporate strategic change", *Academy of Management Journal*, Vol. 35 No. 1, pp. 91-121.

#### Further reading

- Geringer, J.M., Beamish, P.W. and Costa, R.C. (1989), "Diversification and internationalization: implications for MNE performance", *Strategic Management Journal*, Vol. 10 No. 2, pp. 109-119.

#### Corresponding author

Peng-Yu Li can be contacted at: [pyli@mail.fju.edu.tw](mailto:pyli@mail.fju.edu.tw)

---

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgroupublishing.com/licensing/reprints.htm](http://www.emeraldgroupublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.