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The Effects of Ownership and Governance on SMEs' International Knowledge-based Resources

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ABSTRACT. Small- and medium-sized enterprises (SMEs) play an important role in today's global economy. However, there are significant differences in how they respond to the opportunities and threats in international markets. This study suggests SMEs' ownership and governance systems significantly influence the development of knowledge-based resources necessary for internationalization. Using a sample of 384 US SMEs, we find a positive relationship between both the equity held by top management team members and venture capitalists and the development of these important resources. This positive association is further accentuated by the presence of independent outside directors on SMEs' boards, supporting their monitoring and enterprising roles.

KEY WORDS: governance, internationalization, ownership, SMEs.

JEL CLASSIFICATIONS: L26.

1. Introduction

While small and medium-sized enterprises (SMEs) play an important role in the global economy, relatively little is known about the nature of the relationship between their ownership and governance systems and the development of their knowledge-based resources and internationalization efforts (Gedajlovic et al., 2004; Reuber and Fischer, 1997). SMEs' influence can not be debated as they account for 60–70% of employment in most advanced economies (OECD, 2004). Nearly 25% of manufacturing SMEs worldwide compete in international markets and approximately 97% of all US exporters are SMEs (OECD, 2004). SMEs are also a key source of technological advances and the transfer of new technologies and best management practices across international borders. Though previous research on SMEs' internationalization has considered industry conditions and competitive forces (e.g., Zahra et al., 1997), more recent research, however, has emphasized SMEs' ownership and governance structures, resources and knowledge as key drivers of their internationalization (e.g., George et al., 2005). This study builds on this stream by considering how ownership by top management and venture capitalists, as well as the presense of outsiders on their boards of directors, are associated with the knowledge-based resources necessary for SMEs to enter international markets.

SMEs rely on a wide variety of resources but their success depends largely on their ability to use knowledge to develop new products, services and processes in domestic and international markets. Proponents of the knowledge-based view (KBV) believe a firm's competitive advantage lies in its abilities to collect, accumulate, integrate and use knowledge (Kogut and Zander, 1992; Nickerson and Zenger, 2004; Szulanksi, 1996). This knowledge is usually embodied in the human, technological and relational resources the firm possesses. Building an infrastructure that facilitates the accumula-

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tion and use of knowledge is a key task for SMEs managers and board members, leading us to focus on their investment in knowledge-based resources for international expansion.

Proponents of the KBV argue that the knowledge-based resources SMEs control (e.g., human, proprietary and relational assets) can influence their internationalization (Dunning, 2000), especially sales and growth rates (Brush and Chaganti, 1999; Westhead et al., 2001). In fact, Johanson and Vahlne (2003: 90) observe that "the development [...] of knowledge should be regarded as a critical aspect of the strategic management of internationalization." The process of developing and leveraging knowledge-based resources in international markets is largely a function of a firm's ownership and governance systems (Beatty and Zajac, 1994; Gedajlovic et al., 2004; Zahra, 1996; Zahra et al., 2000). These systems are critical to successful internationalization as they determine the distribution of authority and expertise within firms (Gedajlovic and Zahra, 2005), influencing SMEs' investments in the development of knowledge-based resources. The exact nature of these relationships within SMEs, however, remains largely unexplored. One of our paper's contributions is documenting this role.

1.1. *Study focus and contributions*

In this paper, we examine the impact of ownership and governance structures on SMEs' knowledge-based resources, particularly those associated with internationalization activities. Following Daily, McDougall et al. (2002), we focus on three sets of key actors who are directly responsible for SMEs' organizational outcomes: top management team (TMT) and venture capitalists (VC) and board of directors. Therefore, we propose that ownership by TMT members and VCs encourage investments in knowledge-based resources for internationalization. Further, an effective governance system, characterized in our study by the presence of independent, active, vigilant and enterprising outside directors on the board, will accentuate the positive affect of both TMT and VC ownership on the SME's knowledge-based resources.

Agency theory-based research highlights the monitoring and oversight role boards of directors play (Zahra, 1996). Still, outside directors can further add value by sharing their wealth of experience with TMT members. By assuming the crucial "enterprising" role (Keasey and Wright, 1993), outside directors can encourage managers to focus on investing in knowledge-based resources for internationalization that provide SMEs with knowledge and wisdom gathered from their personal experiences. Thus, as the ratio of outside directors serving on the board increases, these directors' diverse experiences, skills and capabilities will augment SME managers' insights into how to further develop SMEs' international knowledge-based resources, which can ultimately increase SMEs' performance in international markets.

The literature suggests a growing recognition of the importance of ownership and governance systems for SMEs' internationalization. Indeed, the OECD *SME Policy Outlook* (2002) illustrates how the globalization and liberalization of various markets have prompted changes in SMEs' governance systems to facilitate foreign market entry and cross border alliances in a broad range of countries. Further, venturing into international markets is a risky activity (Carpenter et al., 2003), especially for resource constrained SMEs (Buckley, 1997). As such, vigilant and effective governance systems are necessary to monitor managers' actions while supporting the development of the knowledge-based resources needed for internationalization. The "monitoring" role centers on protecting shareholders' wealth. According to agency theorists, boards serve as the guardians of shareholders' wealth by being independent monitors and controllers of self-interested managers. Thus, directors can give managers the right incentives to dedicate and deploy organizational resources for value creating activities, including those associated with building international knowledge-based resources.

In addition to their monitoring roles, outside directors also give SMEs critical knowledge.

This knowledge provision role is at the core of the board's enterprising function (Keasey and Wright, 1993) that creates wealth for shareholders. An analysis of governance systems at the different stages in the life cycle of firms suggests the board's enterprising function is more important for young, growing firms (e.g., Lynall et al., 2003), or those facing dynamic and uncertain environmental conditions (Filatotchev and Wright, 2005), such as those SMEs might face in international markets. Dynamic conditions often found in international markets may prompt SMEs to develop new skills and competencies to ensure survival and create wealth. Building these competencies requires SMEs to gain access to internal and external sources of knowledge, a process that is time consuming and expensive. SMEs boards, therefore, need to supplement their traditional ''monitoring'' role by considering the ''enterprise'' functions that outside directors can play (Short et al., 1998). Thus, boards can not only reduce managerial opportunism, but they can also motivate SME executives to invest in long-term value creating resources, such as knowledge-based resources for internationalization. Boards often contribute their own knowledge and experiences to this crucial process (Short et al., 1999).

This study investigates how SMEs' ownership and governance systems influence the development of international knowledge-based resources. Our analyses show how agency theory applied to SME ownership and governance systems can explain the development of knowledge-based resources for internationalization. The results help to clarify the ownership and governance conditions under which these resources are developed. Finally, by focusing on international knowledge-based resources, we recognize that SMEs' greatest resources often lie in their intellectual capital. By creatively leveraging these resources, SMEs can succeed in international markets.

In the next section we develop our argument and accompanying hypotheses, connecting our agency and KBV arguments. Next, we summarize an empirical study that tested our hypotheses, describing our data collection method, sample and measures. Thereafter, we introduce the analyses and results. The final section of the paper discusses our key findings and their implications for practice and theory.

2. Theory and hypotheses

Knowledge-based resources are important for gaining and sustaining competitive advantage (Grant, 1996; Kogut and Zander, 1992). Wiklund and Shepherd (2003) propose that knowledge about markets and technology are two key resources that influence a firm's performance. Market knowledge expedites the discovery and exploitation of opportunities by increasing awareness of customer problems and needs. Knowledge about technology also facilitates the discovery of opportunities and the rapid commercialization of technological breakthroughs on a worldwide scale. In an international setting, knowledge about the stage of a technology's life cycle, its global substitutes, and its relative advantage compared to other technologies found around the world can help SMEs identify opportunities for international expansion.

Knowledge about foreign markets also gives SMEs the expertise to understand foreign competitors, develop effective business models, select viable modes of entry, and choose the appropriate time for foreign market entry. Westhead et al. (2001) report that SME managers' international industry experience is positively associated with exporting, underscoring the value of prior knowledge in locating international business opportunities. Some research also shows that those SMEs led by managers with international business experience and training are more likely to internationalize their operations (Bloodgood et al. 1996; Reuber and Fischer, 1997). These experiences enable SMEs to spot opportunities in foreign markets and develop the organizational systems necessary for internationalization. SMEs' employees and board members with varied skills and experiences in international markets and countries also provide important and useful connections to existing institutions, companies and networks in target foreign markets. They also facilitate gathering, analyzing and interpreting information about opportunities around the globe. The development of international knowledge-based resources, however, is likely to be influenced by the SMEs' ownership structure and governance mechanisms, as discussed next.

2.1. *TMT ownership and knowledge-based resources*

The effect of TMT ownership on firms' risk taking behaviors has been the subject of interest in prior research (Beatty and Zajac, 1994; Wright et al., 1996; Zajac and Westphal, 1994), especially in the international context (Dess et al., 1995; Zahra et al., 2000). Investments in and attention given to building an SME's international presence, as well as the international knowledge-based resources required to build an effective international position, are likely to be perceived as risky endeavors by SMEs' TMT. These perceptions of risk would seriously limit TMT members' enthusiasm for such investments and activities (Mitchell et al., 1992). Encouraging the TMT to invest in such risky pursuits is a fundamental issue in agency theory research. Effective governance mechanisms, including ownership structures, can encourage managers to invest in risk-taking activities (Beatty and Zajac, 1994). In particular, agency theorists observe that increasing the equity stakes of TMT members can better align their interests with those of other shareholders, which we propose will increase SMEs' investments in their knowledge-based resources for internationalization.

Although these issues have been widely discussed with reference to large firms with diffuse ownership, they might be even more important for SMEs where ownership is typically less dispersed and managers are more likely to own large blocks of equity. Thus, managers of SMEs may have a strong financial interest, as well as a direct and crucial influence on the firm's actions. Managers of larger firms, however, might have less equity and less influence as more individuals might be involved in firm decisions (Wiklund, 1998). We believe these differences in agency effects make SMEs an interesting arena in which to examine the questions raised by this study and are widely studied in large firm settings.

Internationalization is a risky move because it divides managers' limited attention across a greater number of issues and contingencies (Sanders and Carpenter, 1998). As the scope and scale of SMEs' international operations intensify, the attention given to any single market is likely to decrease. Internationalization also exacerbates agency issues by making the task of monitoring managerial actions more difficult. One widely accepted solution to these agency issues, however, is to increase the equity stake held by the TMT. Increasing TMT members' ownership in the SME aligns their interests with shareholders while providing an efficient substitute for close and direct monitoring (Carpenter et al., 2003). Therefore, we believe increased equity stakes encourage TMTs of SMEs to invest in risky, value-creating resources and capabilities, such as knowledge-based resources for internationalization. This view is consistent with the findings of Sanders and Carpenter (1998), who found that long-term stock ownership by executives was positively associated with large firm globalization. This suggests that greater alignment between the interests of the firm and its TMT owners will increase SMEs' executives' support of investments in creating the knowledge-based resources necessary for internationalization. Therefore:

H1 *TMT ownership will be positively associated with SME*'s international knowledge-based resources.

2.2. *VC ownership and knowledge-based resources*

VCs usually specialize in funding risky new ventures. Carpenter et al. (2003) note that VCs are often described as risk-seeking, active participants in monitoring and establishing strategies for the companies in their portfolios. VCs also have significant industry-specific experience. They use their collective wealth of knowledge and contacts to invest in high-risk firms and help these firms obtain the various resources needed to gain competitive advantages. By sharing their knowledge and providing access to resources previously unavailable to

SMEs, VCs can create value for the firms in which they invest (MacMillan et al., 1989; Sapienza, 1992), By offering these context-specific skills to SMEs in their portfolios, VCs can lower the real and perceived risk of many of the options that these firms might pursue, and provide them with information on how best to compete (Perry, 1988; Sapienza, 1992). In a more practical sense, VCs also provide financial resources that can aid their investments in value-creating knowledge-based resources, including those associated with future internationalization moves. Given their high tolerance for risk, VCs may seek and invest in SMEs they believe offer opportunities for significant returns. VCs, therefore, will value investments that build SMEs' knowledge-based resources as these investments usually match the risk-return ratio that VCs prefer. Further, because of their experience in international settings, VCs can help SMEs avoid the mistakes often associated with internationalization while providing their expert judgement of the value of SMEs' investments in international knowledge-based resources (Van de Berghe and Levrau, 2003). VCs understand that international knowledge-based resources are intangible and cannot be easily copied by the SME's rivals, further protecting the company's international market positions. As such, VCs are likely to encourage SME managers to invest in building these resources. Therefore:

H2 *VC ownership will be positively associated with SME*'s international knowledge-based resources.

2.3. *The moderating role of outsiders on the boards of directors*

The monitoring and enterprise roles that outside directors play highlight their potential contributions to SMEs. Both roles suggest that having a high percentage of outside directors can influence organizational decision-making, including those concerned with investing in knowledge-based resources for international expansion. Consistent with these two roles, we propose that the percentage of outside directors on an SME's board will moderate the relationships between both TMT and VC ownership and the investment in international knowledge-based resources, such that the aforementioned positive relationships will be stronger as the percentage of outside directors on the board increases.

Outsiders are defined as directors who are neither members of the firm's TMT nor relatives of (or consultants to) the team. These directors are presumed to be independent from senior managers. Some outside directors might own shares in the firms they monitor (Zahra et al., 2000). Further, given that they do not have an employment relationship with the firm, some expect outsiders to act independently from managers (Zahra and Pearce, 1989). While these directors are typically chosen by insiders, they usually can employ several tactics to monitor, discipline, and even encourage investments in knowledge-based resources for internationalization.

The independence of outside directors has been widely debated in the literature (Johnson et al., 1996). Some argue that non-executive directors might not be truly independent, as a powerful CEO can appoint outside directors sympathetic to their cause and thus wield their considerable influence over the board (Wade et al., 1990). On this issue, however, we agree with Beatty and Zajac (1994) who posit that even if one disputes the independence of outside directors and views them as coopted by top management, a heavy presence of insider directors on the board still suggests a condition of weak monitoring.

The monitoring role of outside directors centers on observing and disciplining senior managers to reduce agency problems and protect shareholders' interests (Keasey and Wright, 1993). As such, this role emphasizes the legal authority of the board. Outside directors, however, can perform a value-creating role besides being merely a corporate watchdog (Short et al., 1998; Van Gils, 2005). The role of directors might be especially important in SMEs, where boards are likely to wield greater power and influence over firms' actions and have a more direct relationship with TMT members (Bennett and Robson 2004). The enterprise role that outsiders play complements the KBV of the firms, suggesting that these directors often bring unique experiences, talents and skills not well represented on the TMT. Consequently, whether or not outsiders truly operate independently of managerial influence is not the only test. What matters most, especially for resource constrained SMEs, is that outside directors can draw on their personal experiences and their knowledge gained in a competitive business context (Daily and Dalton, 1992; McNulty and Pettigrew, 1999). Having outside directors on the board can give SMEs specialized skills and expertise (Gedajlovic et al. 2004; Sirmon and Hitt 2003; Zahra and Filatotchev, 2004; Van Gils, 2005). These directors might innovate or integrate different perspectives into the strategic decision-making processes at SMEs. Reseach shows that the very introduction of external board members creates positive tensions and instills new ideas and ways of doing business, especially with SMEs (Johannisson and Huse, 2000). Outside directors are often leaders and senior executives in their own companies and are likely to recognize the importance of international knowledge-based resources and therefore encourage SMEs' investments in building them (Zahra et al., 2000).

Consistent with agency theory, outside directors can also curb SME managers' opportunism and prompt them to sustain long-term investments in knowledge creating activities (Zahra, 1996), such as international knowledge-based resources. The knowledge perspective on governance would also indicate that these directors can augment the TMT's knowledge about international operations. Being senior executives in their own firms, outside directors usually have to tackle various challenges of internationalization. Some outsiders might have worked abroad and managed international operations, giving them first-hand knowledge of the risks and rewards of these activities. These experiences can enrich the board's deliberations about international operations and the risks associated with SMEs' internationalization. Whether grounded in legal authority (the "monitoring perspective") or the KBV (the "enterprise perspective"), we expect the influence of outside directors will moderate the positive relationships between both TMT and VC ownership and SMEs' international knowledge-based resources, as discussed below.

2.4. *TMT ownership and outsiders on boards of directors*

TMT ownership can align the interests of senior executives and SMEs' other shareholders (Zahra et al., 2000). This alignment can increase investments in knowledge resources, including R&D, specialized personnel, and training for international operations, as we suggested in Hypothesis 1. Outside directors can further improve this alignment by helping managers to invest in and craft effective strategies for developing and accumulating international knowledge-based resources. These directors might also set milestones for firms' international expansion and tie SMEs' achievements to the pay and rewards granted to managers. Outside directors, who are usually knowledgeable about the industry and competition, can give managers advice about how to best assemble and develop key resources. These directors might suggest effective strategies to recruit other managers, employees or consultants who have expert knowledge. For instance, Le, Walters and Kroll (2006) suggest that outside directors indirectly influenced R&D spending through governance activities, such as appointing the appropriate executives or developing effective internal governance mechanisms. Outside directors might also help the TMT develop effective strategies that leverage their SMEs' products, technologies or brands. These intangible assets can influence decisions about the SMEs' international operations (Dunning, 2000). These factors are likely to strengthen the effect of TMT ownership on the SMEs' international knowledge-based resources. Therefore:

H3 The ratio of external board members will moderate the relationship between TMT ownership and international knowledge-based resources such that the positive effect of TMT ownership on international knowledge-based resources will be stronger as the ratio of external board members increases.

2.5. *VC ownership and outside directors on the board*

Hypothesis 2 also suggests that higher VC ownership is likely to be positively associated with SMEs' investments in building knowledge-based resources for internationalization. We expect this relationship to be stronger when the board has a higher ratio of outside directors. Officials representing VCs often serve on boards as outside directors, bringing new knowledge into the SMEs' deliberations about internationalization. Some VCs may have been involved in managing international operations and, therefore, may appreciate their importance for SMEs' growth and profitability. VCs also follow industry trends and are likely to appreciate the need for strengthening SMEs' market positions internationally as a means of harvesting their innovations. This understanding of industry trends and international operations could be useful in guiding SMEs' strategies. Some research shows that the board monitoring and enterprising functions that VCs perform appear to intensify as the need dictates (Daily et al., 2002). Having external, strong, independent, and enterprising outside directors who serve on the boards can help VCs as they seek to influence SMEs' investments in building knowledge-based resources for internationalization. Outside directors can also share their expertise with VCs about the types of knowledge-based resources needed for internationalization. Outside directors and VCs might also coordinate their work and jointly assist SME managers in this process. This knowledge sharing and coordination can help accentuate the positive effect of VC ownership on the accumulation of knowledge-based resources for SMEs' internationalization. Therefore:

H4 *The ratio of external board members will moderate the relationship between VC ownership and international knowledge-based resources such that the positive effect of VC ownership on international knowledge-based resources will be stronger as the ratio of external board members increases.*

3. Method

Data Collection and Sample. Data on US-based SMEs' internationalization, ownership and governance are difficult to obtain from secondary sources. SMEs are also often reluctant to share information about their international operations. Therefore, we used a survey methodology to collect data from SMEs in manufacturing industries, complementing the responses with information gathered from multiple secondary sources. We targeted SMEs, companies that have 500 or fewer full-time employees (Lu and Beamish, 2001; US International Trade Administration, 2005), regardless of the firm's age. Our foucs on manufacturing industries is justified by Westhead et al. (2001), who found differences in service and manufacturing firms' internationalization strategies. We identified these companies using published state business directories that yielded 7260 company names. We randomly selected 100 companies from the list to pretest the survey, reducing the potential target population to 7160 companies. Cost constraints forced us to select every third company name on the list for our survey (2350 names).

Two mailings, conducted three months apart, were used for data collection. A letter addressed to the company's highest ranking executive accompanied each questionnaire, requesting participation in the research and providing assurances of confidentiality. Sixty-one surveys were returned undeliverable. We received 384 completed responses from SMEs representing 23 different industries (defined by 4-digits SIC), for a 16.7% response rate. This rate compares favorably with those reported in prior studies using similar populations (e.g., Westhead et al., 2001).

Response Bias. We compared the responses of SMEs that replied to the first and second rounds of the mail survey to ensure the representation of the sample to its population. *T*-tests revealed significant differences in four percent of the items, indicating the absence of systematic bias. We cross-tabulated responding and non-responding companies by location (state) and industry type but the results were statistically insignificant. We also tested for differences between respondents and non-respondents in employees and age (years); differences were not significant.

Source Bias. A common problem in SME research is gaining access to more than one respondent in order to minimize response bias. Consequently, we canvassed secondary sources to gain as much information about the SMEs' operations and history as possible. Information about company age, size and industry type came from different secondary sources. Information about international operations was available in secondary sources for about 47% of the companies, and we used this information to validate the information obtained in the survey data. Further, we sent a second survey to the ''Manager of International Operations'' of the 384 SMEs that responded to the original survey. We received 92 replies, which we used to validate the responses from the SMEs' first respondent, as reported below.

3.1. *Measures*

3.1.1. *SME ownership*

The measures covered TMT and VC ownership, using data collected from the survey. In the case of TMT ownership, these responses were validated by a second senior executive.

(a) *TMT ownership* was measured as a percent of an SME's equity held by the group over the 3-year period preceding the survey, following past research (George et al., 2005). We defined the TMT to include individuals who held positions of vice presidents or general managers or higher. They included founders and other senior managers who are influential in the SMEs' decision-making process (Daily et al., 2002).

(b) *VC ownership* was measured as the average percent of SME equity held by VCs in each of the 3 years preceding the survey, following past research (George et al., 2005). This averaging method homogenized the influence of VCs, regardless of which investment round each entered. This approach was appropriate because we could not make any attributions about the investment goals, international skills or experience or relative influence (see, Wright and Robbie, 1998) of any of the VCs in the sample. Data to test the reliability of the survey data were available from *Venture Economics* for 73 firms in the sample. These figures were correlated positively and significantly with the survey data ($r = 0.76$, $P < 0.01$).

3.1.2. *Outside directors on SMEs' boards*

Outside director ratio was calculated by dividing the number of outside directors by the total number of directors on the board, following the literature (e.g., George et al., 2005; Zahra et al., 2000). We used data from the survey but validated this measure using information from the SMEs' websites, newsletters and publications ($r = 0.87$, $n = 102$, $P < 0.001$).

3.1.3. *Knowledge-based resources devoted to internationalization*

The analyses captured SMEs' knowledge-based resources dedicated to internationalization using 14 survey items that we derived from the literature (e.g., Adler and Kwon, 2002; Dyer and Singh, 1998; Nahapiet and Ghoshal, 1998; Oviatt and McDougall, 1997; Westhead et al., 2001). We asked respondents to indicate the extent to which their companies emphasized each item, using a five-point Likert-type response format (5 = High emphasis vs. 1 = Limited or No Emphasis). An orthogonal factor analysis with varimax rotation produced three significant factors that contained 12 of the 14 original items. The first factor included five items (eigenvalue = 2.94; 26.31% of the variance captured; $\alpha = 0.72$) and emphasized having specialized human capital, with unique skills that could be leveraged in internationalization activities. We labeled this factor ''*human capital assets*.'' The second factor, labeled *proprietary assets*, included four items and represented the SMEs' possession of products, brands, patents and other forms of intellectual resources (eigenvalue = 2.20; 19.68% of variance explained; $\alpha = 0.70$). The third factor (eigenvalue = 1.76; 15.75% of variance explained; $\alpha = 0.70$) captured SMEs' investments in knowledge-based activities that created international alliances and referrals. We named this factor ‘‘*relational asse*ts.’’ Together, the three factors explained 61.73% of the variance. Factor analysis results appear in Table I.

Next, we established the content and predictive validity of the knowledge-resource based measures. Focusing on content-related validity, the three factors revealed by factor analysis (Table I) are consistent with the KBV, especially in the context of SMEs’ internationalization. *Human capital assets* are widely recognized as key to SMEs’ internationalization (Brush and Chaganti, 1999). Research has shown, for example, that TMT international experience encourages SMEs to export (Westhead et al., 2001) and that the recruitment and training of skilled employees are prerequisites for succeeding in international markets (Bell et al., 2003). Delios and Beamish (1999) explain that ‘‘proprietary assets can be knowledge that is unique to the firm; it might assume the form of specific trademark or brand built over time; or it might stem from a firm distinctive ability in product R&D.’’ Having proprietary knowledge does not guarantee innovation in the marketplace, but affects whether a firm can innovate or respond to the innovation of others (Henderson, 1999). Proprietary assets enable SMEs to differentiate themselves from competitors, spot opportunities and develop and introduce new products, particularly when firms compete across national boarders. Indeed, there is a positive relationship between proprietary assets and international geographic scope (Delios and Beamish, 1999). Internationalization studies have increasingly recognized the importance of *relational assets* (Yli-Renko et al., 2001) for gaining access to new product or process technologies, entering new foreign markets (Acs and Preston, 1997), and overcoming resource limitations as firms expand internationally. These observations support the content validity of the international knowledge-based resources.

We tested the predictive validity of our measures of international knowledge-based resources by linking them to two dimensions of SMEs’ internationalization: scope and intensity. We measured *international scope* by the number of countries in which the SME conducted operations, using survey data, following the literature (e.g., Calof, 1993; Sriram and Manu, 1995; Zahra et al., 1997). We captured *international intensity* using managers’ reports of the percentage of firms’ revenues from exporting

TABLE I
Factor analysis of SME knowledge-based resources

Items	Factors		
	1 Human Capital	2 Proprietary	3 Relational
Investing in training employees about international business.	0.85	0.22	-0.21
Hiring highly skilled employees for international operations.	0.78	0.31	0.27
Hiring employees with international business experience.	0.75	-0.25	0.26
Hiring managers with experience in international business.	0.58	0.28	0.29
Assigning employees to analyze business opportunities in foreign markets.	0.5	-0.21	0.28
Developing new products for foreign markets.	0.25	0.74	0.26
Using patents to gain access to foreign markets.	0.27	0.7	0.17
Using proprietary knowledge to build market share foreign markets.	−0.27	0.57	0.21
Focusing R&D activities on foreign operations.	0.19	0.53	0.18
Developing alliances with foreign companies.	0.24	0.31	0.76
Developing business alliances in other countries.	0.3	-0.29	0.72
Using alliances to enter foreign markets.	0.26	0.21	0.63
Eigenvalue	2.94	2.2	1.76
% of variance explained	26.31	19.68	15.74
% of cumulative variance explained	26.31	45.99	61.73
α =	0.72	0.7	0.7

and all other international activities, following prior research (e.g., Samiee and Walters, 1990; Zahra et al., 1997). Both scope and intensity of SMEs' internationalization were measured three years following the international knowledge-based resource measures. Examining simple correlations indicated that human capital, proprietary and relational assets were positively associated with international scope and intensity (all at $P < 0.05$ or better). Regression analyses also showed that the three dimensions of international knowledge-based resources were significantly related to scope and intensity (all at $P < 0.05$ or better). These results supported the predictive validity of the measures of international knowledge-based resources.

3.1.4. *Control variables*

Our analyses also controlled for several variables that could influence the relationships examined in this paper:

Company age was measured as the number of years an SME has been in existence. We did so because older companies were likely to internationalize their operations (Calof, 1993; Zahra et al., 1997) and develop the expertise necessary to harvest these operations and increase their revenues. Data came from published trade associations' directories and company websites.

Company size was measured as the natural log of the number of full-time employees (Lu and Beamish, 2001). We expected larger companies to be more active in exporting and other international operations (Calof, 1993; US International Trade Administration, 2005), probably because they have more slack resources. Larger companies might also have the specialized staff who explore foreign markets and oversee international expansion. Data were obtained from the survey, company websites and trade associations' directories.

Relative company performance was measured by dividing its return on assets (ROA) over the preceding three years by the industry's ROA during the same period. We reasoned that companies that performed at or above the industry level would pursue internationalization to achieve growth. Companies performing below the industry levels might avoid international expansion or internationalize on a limited scale. We obtained data on company ROA from the surveys. Data on industry averages came from *Almanac of Business and Industrial Financial Ratio*, online (Troy, 1995–2003).

Company internationalization objectives were measured by two survey items that followed a five-point scale (5 = Very Important vs. 1 = Not Important at All). We asked respondents to indicate "how important was each of the following factors in your company's decision to internationalize its operations...." The two items were: growth in sales and growth in revenue. We used average responses in the analysis ($r = 0.83$, $P < 0.001$).

TMT international experience captured the effect of senior managers' knowledge of international markets. This knowledge could influence the analyses of the risks associated with SMEs' decisions about the scale and scope of international operations. Secondary data on this variable were available for only 56 companies. Therefore, to avoid sample shrinkage, we used survey responses to three items. We averaged the scores across these items and used their simple average in the analysis ($\alpha = 0.67$). When we correlated the survey mean response to secondary data, the correlation was 0.61 ($n = 56$; $P < .001$), supporting the construct validity of the survey measure. Respondents rated the overall experience of their company's TMT on "experience in managing and leading international operations," "experience in working in other countries and cultures," and "experience in coordinating international operations." All items followed a five-point response format (5 = Extensive vs. 1 = Limited).

CEO duality existed when the CEO also served as board chair (Zahra et al., 2000). In this case, decisions on resource allocation and capability development were likely to become increasingly concentrated. The concentration of executive powers was expected to expedite decision making, but it could also encourage managerial entrenchment, increase conservatism, and reduce managers' incentives to assume the risks of internationalization. SMEs whose CEOs also served as board chairs were coded 1. Data were collected from company websites and the mail survey.

Debt ratio was defined as total debt to total equity (Zahra et al., 2000), using survey data. We expected the higher the SME's debt ratio, the fewer the resources it had for building the knowledge-based resources necessary for internationalization. Data came from *Almanac of Business and Industrial Financial Ratio*, online (Troy, 1995–2003).

Past number of foreign markets (at t_{-3}) served as a control variable because it could influence future foreign revenues and determine the number of new foreign markets SMEs entered. It was measured by the number of countries in which the firm had any international operations, using survey data.

Past revenue from international operations (at t_{-3}) was another control variable because higher prior revenue might encourage SMEs' entry into new markets to generate even higher revenues. Higher foreign revenues may generate the slack resources to develop knowledge. We measured this variable by the ratio of revenues from foreign markets to overall company revenues, using survey data.

Industry internationalization was also included as a control variable that might influence SME internationalization (Boter and Holmquist, 1996). We expected those SMEs in industries dominated by international competitors to be more international in their operations. Analyses included the share of industry sales held by affiliates for foreign companies working in the US (*Statistical Abstract of the United States*, 1995–2003) as a control variable. We divided these companies' annual sales by overall industry sales and then averaged these figures over the 3-year period preceding the study's dependent variables.

Industry type served also as a control variable. We classified firms as competing in high (coded 1) and low (coded 0) technology industries. In high technology sectors, an early international presence can enhance SMEs' survival and success. In these sectors the high costs of R&D can not be recovered only by domestic operations and firms need to seek international customers (McDougall and Oviatt, 1996). In such growing industries, an opportunity-based internationalization strategy is often necessary (Andersson, 2004). Incremental internationalization is more common in mature or low technology industries.

Industry R&D intensity, data for which was gathered from *Statistical Abstract of the United States* (1995–2003), reflected the average R&D spending in each SME's primary industry over the three years *preceding* the survey. In industries where knowledge was important for value creation, highly skilled employees, researchers and scientists were likely to be hired to conduct R&D and other innovative activities.

4. Analysis and results

Table II presents the means, standard deviations, intercorrelations, and levels of inter-rater agreement (where appropriate) for the key variables in the study.

We used moderated regression analysis to test our hypotheses. Specifically, we used two models: base and full. The base model (labeled 1) included all the control variables, the two ownership variables and the ratio of outside directors. The full model (labeled 2) included all the variables in the base model plus two interaction terms that were created by multiplying TMT and VC ownership by the ratio of outside directors on the SME board. The independent and control variables were captured over three years *preceding* the dependent variables. Table III shows the results.

Results show that the full model (Model 1 plus the two interaction terms) was significant under each of the three components of knowledge-based resources (all at $P < 0.001$). Adding the two interaction terms to the base model raised the R^2 by three points (partial $F = 8.11$, $P < 0.001$) in the case of human capital, two points (partial $F = 5.26$, $P < 0.001$) in the case of proprietary capital, and one point (partial $F = 2.47$, $P < 0.01$) in the case of relational capital. Despite the strong correlations among some of the variables presented in Table II, inspection of the Variance Inflation Factors (VIFs) suggested that multicollinearity was not a serious threat. As reported in Table II, variance inflation factors (VIFs) were below 6.0.

TABLE II
Intercorrelation Matrix, Means, Standard Deviations and Inter-rater Agreement

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
01 Human capital assets																
02 Proprietary assets	0.27															
03 Relational assets	−0.12	0.37														
04 VC Ownership	0.08	0.17	0.08													
05 TMT ownership	0.23	0.32	0.18	0.25												
06 Company age	0.10	0.18	0.19	−0.03	0.14											
07 Company size	0.08	0.05	0.26	−0.07	−0.11	0.27										
08 Relative past ROA (company)	0.17	0.14	0.14	0.08	0.21	0.20	0.11									
09 International Objectives (Co)	0.19	0.21	0.21	0.11	0.19	0.28	0.17	0.05								
10 TMT international experience	0.23	0.15	0.27	0.09	0.23	0.15	0.18	0.09	0.29							
11 CEO duality (=1)	−0.04	−0.09	0.03	−0.02	0.15	−0.07	−0.09	−0.07	−0.04	−0.09						
12 Debt Ratio	−0.15	0.12	0.08	0.11	−0.05	0.13	0.16	−0.03	−0.03	0.04	0.07					
13 % Past Foreign Revenue	0.17	0.18	0.21	−0.04	0.13	0.19	0.14	0.18	0.17	0.15	−0.11	−0.10				
14 # Past Foreign countries	0.16	0.15	0.28	−0.06	0.09	0.27	0.23	0.11	0.09	0.13	−0.05	−0.08	0.33			
15 Industry internationalization	0.09	0.11	0.15	0.07	0.09	0.10	0.07	0.09	0.07	0.20	0.03	0.03	0.22	0.25		
16 Industry Type (Hi Tech =1)	0.14	0.15	0.03	0.28	0.19	−0.09	−0.08	0.23	0.19	0.16	−0.05	0.29	0.28	0.19	0.31	
17 Industry R&D Intensity	0.23	0.11	0.07	0.15	0.25	−0.07	0.05	0.10	0.12	0.14	−0.03	−0.05	0.21	0.18	0.15	0.44
Mean (X)	0.58	0.48	0.33	6.18	39.09	29.34	67.13	1.43	3.07	2.91	0.73	28.89	15.02	0.26	3.19	0.46
SD	0.39	0.41	0.38	4.19	23.16	21.05	89.39	0.78	1.77	1.81	0.48	30.07	27.05	0.19	4.67	0.71
FIV	2.81	2.09	3.31	3.82	2.09	3.18	2.91	2.55	2.09	3.17	2.95	3.47	5.09	4.81	3.87	1.06
Inter−rater agreement	0.82	0.80	0.69	0.78	0.88	NA	NA	NA	0.71	0.63	0.88	0.71	0.72	NA	0.81	0.78

For $N = 384$, simple r has to be 0.11 to be significant at $P < 0.05$; 0.13 to be significant at $P < 0.01$; and 0.17 to be significant at $P < 0.001$.

TABLE III
SME ownership, governance and knowledge-based resources

Variables	Human capital		Proprietary		Relational	
	1	2	1	2	1	2
Company age	0.11	0.12	0.21*	0.20*	0.18*	0.17*
Company size	0.18*	0.17*	0.16*	0.15*	0.25**	0.23*
Relative past ROA (company)	0.13+	0.15*	0.11	0.1	0.11	0.08
Internationalization objectives	0.1	0.1	0.13+	0.13+	0.15*	0.15*
TMT international experience	0.09	0.07	0.09	0.1	0.19*	0.18*
CEO duality	−0.06	−0.05	0.07	0.08	−0.03	−0.02
Debt Ratio	−0.15*	−0.17*	−0.11	−0.12	−0.04	−0.02
# of Foreign markets	0.08	0.09	0.11	0.13	0.09	0.08
Past foreign revenue	0.22*	0.21*	0.21*	0.22*	0.18*	0.17*
Industry internationalization	0.07	0.08	0.03	0.04	0.05	0.03
Industry type	0.17*	0.17*	0.16*	0.17*	0.05	0.02
Industry R&D intensity	0.15*	0.17*	0.14*	0.18*	0.12	0.11
TMT Ownership	0.33***	0.31***	0.27**	0.35***	0.19*	0.18*
VC Ownership	0.18*	0.19*	0.21*	0.24*	0.08	0.07
Outside Directors Ratio	0.1	0.11	0.07	0.05	0.11	0.1
Outside Directors Ratio * TMT Ownership		0.37***		0.24**		0.23*
Outside Directors Ratio * VC Ownership		0.22*		0.22*		0.16*
Adjusted R^2	0.29	0.32	0.28	0.3	0.25	0.26
F	4.03***	4.51***	3.87***	4.21***	3.17***	3.99***
ΔR^2		0.03		0.02		0.01
Partial F-Value		8.11***		5.26***		2.47**

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

4.1. *Hypotheses 1 & 2*

The results for H1 and H2 appear in Table III. All of the regression equations for the base models were significant ($P < 0.001$), explaining between 25 and 32% of the variance in the dependent variables. The full model (numbered 2 in Table III) explained 32% of variance in human capital ($F = 4.51$, $P < 0.001$), 30% of variance in proprietary capital ($F = 4.21$, $P < 0.001$), and 26% of variance in relational capital ($F = 3.99$, $P < 0.001$).

The data in Table III suggested that the ratio of outside directors on the board was not significant in any of the base models. However, ownership by TMT was positively associated with all three forms of knowledge assets ($\beta = 0.31$, $P < 0.001$ for human capital assets; $\beta = 0.35$, $P < 0.001$ for proprietary assets; and $\beta = 0.18$, $P < 0.05$ for relational assets). H1, therefore, was supported. H2, which proposed that ownership by VCs would be positively associated with knowledge-based assets, received moderate support. VC ownership was positively associated with human capital assets ($\beta = 0.19$, $P < 0.05$) and proprietary assets ($\beta = 0.24$, $P < 0.05$). No significant relationship, however, was detected between VC ownership and relational assets.

4.2. *Hypotheses 3 & 4*

H3 and H4 suggested that the ratio of outside directors on the board would moderate the relationships predicted in H1 and H2. Table III also shows the interaction term for outsiders' ratio * TMT ownership was significant in the three regression equations ($\beta = 0.37$, $P < 0.001$ for human capital assets, $\beta = 0.24$, $P < 0.01$ for proprietary assets, and $\beta = 0.23$, $P < 0.05$ for relational assets). These results supported H3. The results also supported H4 as the interaction term between VC ownership and the outside ratio was significant in the case of human capital ($\beta = 0.22$, $P < 0.01$), proprietary ($\beta = 0.22$, $P < 0.05$), and relational capital ($\beta = 0.16$, $P < 0.05$).

5. Discussion

Researchers have examined the determinants of SMEs' internationalization, using multiple perspectives (Brush and Chaganti, 1999; George et al., 2005; Westhead et al., 2001; Zahra et al., 2000). In this paper, we have sought to integrate the traditional agency (monitoring) and knowledge (enterprising) views of governance to better understand the international scale and scope of SMEs' activities. In particular, we examined: (a) how ownership and governance variables might influence the development of knowledge-based resources in SMEs and (b) how these resources are linked to SMEs' future international scope and revenue. Below, we highlight our key findings and discuss their implications for effective managerial practice and theory.

5.1. *Ownership and SME knowledge-based resources (H1 & H2)*

Consistent with H1, the study found that TMT ownership was strongly and positively associated with SMEs' investment in building the knowledge-based resources devoted to internationalization. It appears that as TMT ownership increases, so too does their willingness to invest in value creating activities, such as knowledge-based resources for international expansion. TMT ownership allows them to better appreciate the strategic importance of these resources for international expansion. Given that developing knowledge-based esources is a process that is fraught with risks and uncertainty, ownership makes it somewhat easier for managers to devote the resources and energy necessary to create and later use these resources. As noted earlier, the relationship between TMT ownership and risk-taking has produced divergent results in prior empirical studies. Thus, it would appear that the size of the firm matters in this relationship. In this and other studies examining smaller firms (e.g., Zahra et al., 2000), TMT ownership has been positively associated with risk-taking behaviors. Studies considering larger firms (e.g., Beatty and Zajac, 1994; Zajac and Westphal, 1994) have found the opposite relationship. Perhaps, in SMEs, TMT members feel like they have more control over their companies' strategic decisions and performance, or have more intimate knowledge of their companies' operations. It is also possible that the psychological contract between these managers and their firms is clearer and more enduring in SMEs. These managers are owners who can shape the strategic directions of the companies they lead and see the effects of their own leadership. These factors might contribute to the willingness of TMT members of smaller firms to pursue more risky strategic options. Future studies might consider firm size or the TMT's perception of control as important moderators to the ownership-risk relationship.

Our study has also found a positive relationship between ownership by VCs and SMEs' investments in building two types of knowledge-based resources: human capital and proprietary (but not relational), partially supporting H2. These results support previous studies examining the screening and funding criteria VCs employ to choose between multiple investment opportunities (MacMillan et al., 1985; Tyebjee and Bruno, 1984; Zutshi et al., 1999). In particular, VCs usually emphasize factors related to human capital and the experience of a firm's managers in making their investment decisions. This focus appears to extend beyond funding the new venture. In this study, we find that as VC ownership increases, SMEs' emphasis on building human capital also increases, consistent with VCs' preference for valuing entrepreneurial experience and knowledge. Further, some VCs tend to specialize in high technology ventures, recognizing that companies with superior technological assets are most likely to change the rules of the game and gain superior advantages over existing rivals. As such, we would expect VCs to more readily invest in SMEs that have superior human and proprietary assets and be more willing to support future investments in their development, a belief supported by the findings of our study. These results bolster the knowledge perspective on governance by VCs, further highlighting the pervasive influence of VCs on SMEs' resource accumulation and potential competence development.

5.2. *The moderating effects of outsiders on boards of directors (H3 & H4)*

We proposed that increases in the ratio of outside directors on the board should intensify the relationships posited in H1 and H2. We found that the ratio of outside directors significantly augments the positive relationships between TMT members and VCs and SMEs' investments in all three types of knowledge-based resources. These results supported H3 and H4. Thus, outside directors serving on SMEs' boards fulfill a valuable enterprise role in the governance of these firms by offering new perspectives and ideas, and focusing managers' attention on the importance of building knowledge-based resources. Still, our results appear to contradict some earlier findings using data from larger and publicly held corporations (Zahra, 1996). Perhaps, outside directors have greater influence within SMEs, an issue that should be examined more closely in future studies. Paradoxically, while some of these outside directors are chosen by the CEO and other managers, they might have greater influence than widely believed. They can use their direct access to managers to offer suggestions and exert their influence. Owner managers can not dismiss these directors' ideas or suggestions for improvement without alienating them. In addition, outside directors might understand SMEs' business operations better, simply because of the scope of these firms' operations and their focused business approaches. Regardless, as the equity stakes held by TMT members or VCs increase, having more outsiders on the board might make SMEs more attentive to building long-term, knowledge-based resources for internationalization. These results bolster the "enterprise" role of outside directors discussed earlier (Keasey and Wright, 1993; Short et al., 1998, 1999).

5.3. *Limitations*

The results should be interpreted with caution as our analyses do not control for outsiders' or VCs' international experience. Also, the positive relationship identified between VC ownership and international knowledge based-resources might be the result of VCs' selection criteria as opposed to the conscious and deliberate effort on their part to encourage SMEs to increase their investments in these resources. Future researchers might wish to tease out this relationship more fully. Do VCs fund SMEs with strong international knowledge-based resources, or does their presence encourage SME managers to invest more heavily in these risky, value-creating resources? Our study only considered a small subset of ownership and governance variables. Future researchers should explore how other classes of owners, such as institutional owners, and other governance variables might affect the relationship proposed in this study. For instance, the analysis does not control for the public vs. private status of the firms. Whether the firms are public or privately listed might have an impact on the characteristics of the governance systems as well as on the firms' objectives when internationalizing. Of course, managers and VCs need to pay attention to other resources that go beyond those knowledge-based resources that we examined in this paper but influence internationalization. In addition, the study is cross-sectional. Therefore, the data do not allow an examination of the cause-effect relationships among the study's variable. Finally, the sample may not represent all sectors of the US economy.

5.4. *Implications for managerial practice*

The results reinforce the importance of internationalization for SMEs' successful performance. SMEs seeking to do well in an increasingly competitive and global economy are likely to benefit from internationalizing their operations. One of the key implications of our research is that internal variables matter a great deal in explaining SMEs' internationalization. In particular, the results highlight the importance of SMEs' knowledge-based resources in spurring internationalization. These accumulating research findings underscore the importance of managers' attention to building these resources, a process that sometimes takes years to pay off. SMEs, though sometimes short on financial resources, often have organizational cultures that foster patient investments in building knowledge-based resources. Managers, therefore, need to build on these cultures as they map out their firms' resource base with a view on internationalization. The capabilities that serve the firm well in home markets are not always those that help SMEs achieve survival and success in international markets.

The study also emphasizes the importance of having, and making effective use, of outsiders' on SMEs' boards of directors. As noted earlier, having more outsiders on the board can better align the interests of various stakeholders with SMEs' focus on internationalization by building knowledge-based capabilities. Some SME managers are reluctant to have outsiders on the board because outsiders may not fully understand the business or the strategic challenges the firm faces. The results indicate that this may not be the case because outside directors might give attention to the processes by which SMEs assemble and build their knowledge-based resources for internationalization. Outside directors can also play an important enterprising role on the boards in which they serve, sharing their skills and experiences with SME managers, especially regarding internationalization.

Our results also show that SME ownership by TMT members has a positive impact on the development of knowledge-based resources. This finding highlights the need to develop and maintain effective executive compensation and reward systems that tie TMT wealth to firm performance. Having and maintaining such systems is probably easier to accomplish in SMEs than in larger companies. Ownership often motivates SME managers to invest in their firms' human and intellectual resources and gives them the incentive to actively search for international alliances that enable the firm to expand abroad.

5.5. *Implications for theory and future research*

A key feature of this study is recognizing both the monitoring and enterprise roles of directors. The results show that *both* functions are needed to motivate SME managers to focus on the creation and effective deployment of knowledge-based resources in order to ensure successful internationalization. Future researchers might explore more direct measures of these roles than those employed in this study or connect them to other types and measures of knowledge-based resources. It would be useful also to determine if the relationships observed in this study remain in tact as researchers explore samples of SMEs in other industries or from other countries.

Ownership by the firms' TMT emerges as an important variable in the context of SMEs' internationalization. Given that the aspirations of these senior executives influence their companies' resource allocation and deployment for internationalization, it is important to separate founding members from non-founding members of the TMT. These managers might have different financial and psychological stakes in the companies they run and might value international expansion differently.

A worthwhile future research avenue to explore is the role of family ownership in the development of SMEs' knowledge-based resources. Many SMEs are family owned and controlled businesses. Family firms encompass a wide range of organizations that are likely to differ along several dimensions including ownership and risk propensity. These firms might vary in the extent of managerial control, their culture, the number of generations involved in the business, and the number family members who are involved in the business, among others. Research on the effect of family variables on firms' internationalization is limited (Zahra, 2003). Future studies can enrich our understanding of this effect by separating the ownership of family and non-family members of the TMT and linking them to the scale and intensity of SMEs' internationalization. Further, the ''generational'' effect of family firm ownership on internationalization decisions should also be explored. Are founders (first generation) more likely to resist internationalization? Are second generation managers more likely to find internationalization an attractive means of expansion and profitability? What are the unique family characteristics that can stimulate or discourage internationalization? Finally, our results regarding the effect of TMT ownership may depend greatly on whether these managers are family or non-family members. Examining the composition of these teams (based on family ownership) can add clarity to our findings.

SMEs might have different objectives when they internationalize their operations. Some focus on improving their profits by using their knowledge and innovative resources. Others might wish to escape the harsh competitive domestic markets in which they compete. Still other SMEs might want to create growth options. Of course, some SMEs might want to achieve all these goals at the same time. Consequently, we have controlled for some of the differences in SMEs' internationalization objectives. Future researchers would benefit from examining the effect of these goals on SMEs' decisions regarding the scope and intensity of their international operations.

Giving greater attention to the stage of the SMEs' evolution might further improve our understanding of the current results, especially regarding the roles VCs play in spurring internationalization. This influence might depend on the funding rounds that SMEs undergo and any concessions they make to obtain the financial resources they need. How and where VCs influence SMEs internationalization are areas that deserve further study. Researchers would benefit from considering the international experiences of VCs, as well as the experiences of companies in their portfolios that have internationalized their operations.

Future research aiming to better capture SMEs' investments in building knowledge-based resources is of particular interest. SMEs have a multitude of skills in the form of intellectual capital, systems, relationships and managerial processes. By capturing, measuring and classifying these resources more fully, researchers can better directly link them to the scope of and revenues from SMEs' international markets. In exploring these issues, future studies would benefit greatly from exploring different industry settings, with varying degrees of internationalization.

6. Conclusion

SMEs play an important role in the global economy and there is every indication that they will remain key players in global technology development, transfer and diffusion. Though most prior studies have emphasized the environmental antecedents of internationalization, our study draws attention to several internal factors that can determine SMEs' international expansion. The results suggest that ownership and governance structures can be aligned to promote SMEs' investments in building knowledge-based resources for successful internationalization. We hope this study encourages other scholars to build upon our findings to identify other salient factors that might contribute to SMEs' international expansion in an ever growing but challenging marketplace.

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