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THE INTERNATIONALIZATION AND PERFORMANCE OF SMEs

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We discuss and explore the effects of internationalization, an entrepreneurial strategy employed by small and medium-sized enterprises (SMEs), on firm performance. Using concepts derived from the international business and entrepreneurship literatures, we develop four hypotheses that relate the extent of foreign direct investment (FDI) and exporting activity, and the relative use of alliances, to the corporate performance of internationalizing SMEs. Using a sample of 164 Japanese SMEs to test these hypotheses, we find that the positive impact of internationalization on performance extends primarily from the extent of a firm’s FDI activity. We also find evidence consistent with the perspective that firms face a liability of foreignness. When firms first begin FDI activity, profitability declines, but greater levels of FDI are associated with higher performance. Exporting moderates the relationship FDI has with performance, as pursuing a strategy of high exporting concurrent with high FDI is less profitable than one that involves lower levels of exports when FDI levels are high. Finally, we find that alliances with partners with local knowledge can be an effective strategy to overcome the deficiencies SMEs face in resources and capabilities, when they expand into international markets. Copyright © 2001 John Wiley & Sons, Ltd.

Growth by international diversification is an important strategic option for both small and large firms. During recent years, a significant development within the broad internationalization trend has been the increasingly active role played by small and medium-sized enterprises (SMEs) in international markets (Oviatt and McDougall, 1994, 1999). The internationalization of SMEs can be expected to gain further momentum because the world economy is becoming increasingly integrated with continued declines in government-imposed barriers and continued advances in technology.

Key words: entrepreneurship; internationalization; exporting; foreign direct investment; international alliances
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The prominence of the internationalization phenomenon has captured the interest of researchers in strategic management, international business and entrepreneurship. For researchers in the strategy and international business areas, international diversification is a traditional domain, though the focus has been on large, well-established firms (McDougall and Oviatt, 1996). For entrepreneurship researchers, SMEs have been a primary focus, while entering new geographic markets has essentially been regarded as an act of entrepreneurship (Burgelman, 1983; Lumpkin and Dess, 1996; Barringer and Greening, 1998). Numerous studies in these literatures have looked at the antecedents and the process of internationalization of SMEs (e.g., Special Issues in Entrepreneurship Theory and Practice, 1996 and Academy of Management Journal, 2000; Preece, Miles, and Baetz, 1999; Wolff and Pett, 2000). Yet, to date, little is known about the...
effects of internationalization on SMEs' performance (Covin and Slevin, 1991; McDougall and Oviatt, 1996; Coviello and McAuley, 1999). We contend more attention should be devoted to exploring whether and how value is created in the internationalization of SMEs. This is because managers are ultimately concerned with whether such entrepreneurial strategies can lead to higher performance and how their firms can become more competitive when expanding geographically. We address these issues by exploring the performance implications of various internationalization strategies used by SMEs.

SMEs tend to move into foreign markets as exporters and/or as foreign investors (Reynolds, 1997). Exporting and foreign direct investment (FDI) are also common strategies used in the international activities of large, multinational firms. While previous literature has focused on the identification of the determinants of one or the other of these internationalization strategies, little consideration has been given to the shared impact these two internationalization activities have on firm performance, particularly for SMEs. In the analyses reported in this paper, we consider the joint effect of exporting and FDI strategies on firm performance in the context of SMEs. This research provides a useful complement to previous studies that have utilized samples of large firms by showing that newly internationalizing SMEs face liabilities of foreignness that translate into lower corporate performance at low levels of FDI activity. However, our research shows that these liabilities can be overcome, as higher levels of FDI are positively related to performance. Further, our analyses demonstrate that a key strategy for overcoming the resource limitations that frequently constrain an SME’s expansion is the use of alliances with firms that have local knowledge. Finally, our study shows that exporting has a negative moderating effect on the relationship between FDI and performance, which points to the importance of the configuration of internationalization strategies.

We base these inferences on our analysis of longitudinal data comprising 164 Japanese SMEs’ internationalization activities spanning the 1986–97 period. The use of a Japanese sample extends the empirical scope of both the internationalization and entrepreneurship literatures. Further, as explained later in the Sample Characteristics section in which we used multiple criteria to examine the entrepreneurial character of our sample, the Japanese empirical setting helps to ensure that the internationalization strategies we observe are indeed entrepreneurial activities.

INTERNATIONAL EXPANSION AND ENTREPRENEURSHIP

Geographic expansion is one of the most important paths for firm growth. It is a particularly important growth strategy for SMEs whose business scope has been geographically confined (Barringer and Greening, 1998). By broadening customer bases through entering into new markets, firms are able to achieve a larger volume of production, and grow. Further, there are differences in market conditions across different geographic areas. By leveraging resources in different markets, firms are in a position to capitalize on market imperfections and achieve higher returns on their resources. Sooner or later, in the pursuit of growth and/or higher return to resources, SMEs will adopt a geographic expansion strategy to pursue new opportunities to leverage core competences across a broader range of markets (Zahra, Ireland, and Hitt, 2000).

While expanding into new geographic markets presents an important opportunity for growth and value creation, the implementation of such a strategy involves many unique challenges in addition to the common ones associated with the domestic growth of SMEs. Many of the challenges are typical of the difficulties associated with the liabilities of foreignness (Hymer, 1976) and newness (Stinchcombe, 1965), if the target markets are dissimilar to the original markets, and if new subsidiaries are established. In the former liability, significant differences between markets mean that the knowledge and capabilities that an SME has developed by operating in its original markets, are often not suited to operations in the new market. New knowledge and capabilities need to be acquired or developed to successfully enter the new markets. In the latter liability, a new subsidiary faces many of the same challenges as a start-up. It needs to build business relationships with stakeholders, the subsidiary needs to establish its legitimacy, and it must recruit and train new employees to staff new operations (Barringer and Greening, 1998). These challenges are compounded when first entering an inter-
national market because differences between host and home markets, along political, economic, legal and cultural dimensions, require an internationalizing firm to change many of its ways of doing business that were developed in a domestic context (McDougall and Oviatt, 1996).

Aside from having to develop new resources and capabilities on foreign entry, an internationalizing firm faces heightened political risks as well as the operational risks stemming from the foreignness of the new environment (Delios and Henisz, 2000). The higher levels of risk an SME faces when entering a foreign market, relative to domestic expansion, reinforces the entrepreneurial characteristics of the internationalization strategy. Taken together, these characteristics reinforce the idea that internationalization is an act of entrepreneurship because it is a strategy in search of opportunities for firm growth and wealth by expanding into new markets (Lumpkin and Dess, 1996; Zahra, Kuratko and Jennings, 1999). Further, it is a strategy that requires a fundamental departure from existing practices (Damanpour, 1991; Birkinshaw, 1997) and an act that entails high levels of risk (Miller, 1983). This is particularly the case for SMEs, which are characterized by limited resources, and whose small size magnifies the downside implications of an expansion activity.

The entrepreneurial features of the internationalization of SMEs have captured the interest of entrepreneurship researchers who traditionally study start-ups that have a domestic business scope. The rapidly growing interest in the internationalization of SMEs has led to substantial research on the phenomenon. While the field of international entrepreneurship is still in its infancy (Hisrich et al., 1996; Brazeal and Herbert, 1999), two distinct streams have already emerged (McDougall and Oviatt, 2000). One stream focuses on international new ventures: start-ups that are international from inception. The other stream, to which this study belongs, looks at the internationalization of established, yet small firms. In the former stream, researchers have looked at both the antecedents and outcomes of internationalization (e.g., Autio, Sapienza, and Almeida, 2000; Zahra et al., 2000). In the latter stream, however, previous studies tended to focus on various aspects of SME export activities in terms of the antecedents and the process (behaviors and strategies) of exporting, and export performance (for reviews, see Dichtl et al., 1984; Miesenbock, 1988; Shoham, 1998). More recently, researchers have extended investigation beyond exporting to include more broadly the processes and patterns of internationalization (for a review, see Coviello and McAuley, 1999). However, few studies have addressed the performance implications of internationalization even though this is of central concern to entrepreneurs (Covin and Slevin, 1991; McDougall and Oviatt, 1996; Coviello and McAuley, 1999). This is primarily due to the difficulties in obtaining detailed information on SMEs’ foreign investments and firm performance. Archival data about many SMEs is simply not publicly available.

While studies on the performance implications of internationalization strategies have been sparse in the entrepreneurship literature, studies in international business and strategic management literatures have long explored the performance implications of international diversification strategies. Numerous researchers have argued and empirically observed that higher levels of international diversification lead to higher firm performance (e.g., Daniels and Bracker, 1989; Grant, 1987; Kim, Hwang and Burgers, 1993; Tallman and Li, 1996), up to a point, after which performance begins to decline with increasing internationalization (Geringer, Beamish, and daCosta, 1989; Hitt, Hoskisson, and Kim, 1997). Consistent with the traditional foci of strategy and international business research, the empirical findings were based on studies of large, well-internationalized firms (McDougall and Oviatt, 1996; Dana, Etemad, and Wright, 1999). It has been well argued and documented that smaller businesses ‘are not smaller versions of big business’ (Shuman and Seeger, 1986: 8). Rather, they differ fundamentally from larger firms in ownership, resources, organizational structures and processes, as well as management systems (Smith et al., 1988; Carrier, 1994). These differences could very well have an impact on the outcome of an SME’s internationalization, which is a notion we examine in this study.

This study attempts to address the aforementioned gaps in the entrepreneurship and international literatures. To that end, we focus on the question of ‘whether and how value is created in the internationalization of SMEs.’ To address this question, we directly test the performance impli-
cations of four international diversification strategies of SMEs. Internationalization is a multidimensional construct (Sullivan, 1994; Ramaswamy, Kroeck, and Renforth, 1996; Nehrt and Phene, 1998).

Two of the most prominent avenues of internationalization are exporting and FDI and we explore both the individual impacts of exporting and FDI activities as well as the joint effects of these two strategies. A second important feature of our investigation is that we not only look at the benefits but also consider the costs in the internationalization of SMEs as they stem from the intrinsic differences between SMEs and larger firms, particularly the costs that stem from the financial and managerial resource constraints that SMEs face (Jarillo, 1989; Oviatt and McDougall, 1994). While highlighting these costs or constraints, using insights from entrepreneurship researchers, we try to identify means by which these can be overcome or minimized through network relationships that help alleviate resource constraints (Larson, 1991; Deeds and Hill, 1996; Weaver and Dickson, 1998). In the array of network options, strategic alliances have gained increasing popularity with internationalizing entrepreneurial firms (Beamish, 1999). Hence, we explore how SMEs can overcome constraints to internationalization by investigating the impact of alliances on the internationalization and performance of internationalizing SMEs.

HYPOTHESIS DEVELOPMENT

Exporting

Exporting has been traditionally regarded as the first step to entering international markets, serving as a platform for future international expansions (Kogut and Chang, 1996). This strategy is particularly applicable to the internationalization of SMEs because SMEs frequently lack the resources, financial or otherwise, for FDI (Dalli, 1995; Zahra, Neubaum, and Huse, 1997). Exporting provides SMEs with fast access to foreign markets, with little capital investment required, but the opportunity to gain valuable international experience. (Root, 1994; Zahra et al., 1997; Sullivan and Bauerschmidt, 1990; Ermini and Rugman, 1996). While many studies have explored the performance effects of exporting strategies, there has been little consistency in conceptual and operational definitions of export performance (Shoham, 1998) which limits the conclusiveness of the findings from this literature (Aaby and Slater, 1989).

Conceptually, several economic benefits can be gained by exporting. The most obvious are gains related to scale and scope economies (Kogut, 1985; Grant, Jammine, and Thomas, 1988) as achieved from larger volumes of sales and production made possible by revenue growth in the geographic extension of markets. In addition, a presence in multiple, diverse international markets can lead to advantages related to increases in market power (Kim et al., 1993) and gains from the diversification of revenues (Ramaswamy, 1992a). The potential economic benefits from exporting, together with the stepping-stone effect for future international expansion (Ermini and Rugman, 1996), suggest that the extent of exporting should be positively related to an SME’s financial performance.

Hypothesis 1: An SME’s performance is positively related to its level of exporting activities.

Foreign direct investment

Internalization theorists argue that multinational firms can gain economic benefits from the exploitation of various assets across a large number of international markets either by exporting or FDI (Buckley and Casson, 1976). While exporting is an internationalization mode that involves less risk in terms of capital investment, when a firm’s assets are proprietary (such as brand equity, trademarks, or patents) exporting can expose a firm to greater risks in terms of distributor opportunism or asset appropriation and devaluation. When faced with this risk, FDI becomes an attractive means of internationalization, because it enables firms to minimize transaction-related risks through internalizing markets for proprietary asset exchange (Hennart, 1982; Rugman, 1982).

Aside from the benefits gained from the internalization of proprietary asset exchange across international borders, FDI in diversified locations enables a firm to leverage various location-based advantages (Kogut, 1985), such as a competitively priced labor force, to have access to critical resources (Deeds and Hill, 1998) and to develop new knowledge and capabilities that enhance its international competitiveness (Shan...
The potential to promote organizational learning in diverse international markets has been argued to be a key benefit of international expansion (Porter, 1990; Zahra et al., 2000).

While FDI holds these potential benefits, it requires a greater level of resource commitment in foreign countries than exporting and is more difficult to reverse. It is also less flexible than exporting in coping with investment hazards such as political instability and fluctuating market conditions in host countries. At the same time, there are different costs associated with international diversification at different levels of internationalization. At the beginning of internationalization, an entrepreneur is subject to the 'liability of foreignness' (Hymer, 1976) which stems from doing business outside the firm's home country (Buckley and Casson, 1976; Dunning, 1973). This liability means that the global entrepreneur may incur higher costs than local (host country) competitors. While this initial disadvantage might diminish with greater levels of experience in host country markets, a second disadvantage, which is related to increasing transaction and coordination costs (Tallman and Li, 1996), can be encountered at very high levels of internationalization. As a firm increases its commitment to international markets by establishing more foreign subsidiaries, the number of internal transactions increases and governance costs can reach a point where they outweigh any potential benefits, which in turn translates into lower financial performance (Tallman and Li, 1996; Hitt et al., 1997). The same logic applies to international expansion into many dissimilar markets. The costs of managing locational diversity, along political, cultural and idiosyncratic market dimensions, can eventually erode profit margins when high levels of internationalization are achieved (Geringer et al., 1989; Ramaswamy, 1992b).

This pattern of cost and benefits suggests that given a full range of FDIs, there is a sideways 'S' shaped relationship between the degree of FDI and firm performance. At the very beginning of internationalization, performance might decline as SMEs are subject to the liability of foreignness and may have to pay some 'tuition' in terms of profits for their mistakes in their initial expansion into international markets. Performance will increase as ownership advantages are exploited in a greater international spread and as new capabilities are developed in international markets (Tallman and Li, 1996; Hitt et al., 1997). However, performance will eventually fall off as governance costs and coordination costs surpass the benefits from internationalization. At this point, the higher rents attributable to internationalization will be offset by rapidly increasing governance and coordination costs, and firm performance will be depressed, although the falling-off point could be delayed as managers learn how to better manage a worldwide operation (Hitt et al., 1997).

Prior research on internationalization and performance has generally focused on large, internationally diversified firms and emphasized the downward effect on performance exerted by increasing governance and coordination costs at high levels of internationalization (Geringer et al., 1989; Hitt et al., 1997). Using well-internationalized firms as samples, these studies have shown a threshold to international diversification, that is, an inverted U curve relationship (the latter half of the sideways 'S') between internationalization and firm performance. We argue that the notion of a threshold of international diversification in these studies is much more of a concern for larger firms than for internationalizing SMEs. We contend that for SMEs, the liability of foreignness is the primary concern when first entering international markets via FDI. Given such liabilities, SMEs may not realize immediately the potential benefits from FDI. However, these liabilities can be reduced through experience accumulation. As firms gain experience via FDI, new FDIs can contribute positively to higher firm performance. We hypothesize such an effect; that is, a U curve relationship (the first half of the sideways 'S') between FDI and performance.

Hypothesis 2: The relationship between the level of FDI and an SME’s performance is nonlinear, with the slope negative at low levels of FDI but positive at higher levels of FDI.

Alliances

As discussed in the previous section, the potential benefits from investment expansion into international markets are appealing. However, SMEs may not have the full range of resources and capabilities to successfully undertake FDI and
realize these benefits. By definition, entrepreneurial firms are confronted with limited resources and capabilities (Jarillo, 1989; Beamish, 1999). SMEs face internal shortages of information, capital, management time and experience, while externally, SMEs face constraints arising from their vulnerability to environmental changes (Buckley, 1989). Such intrinsic deficiencies in resources and capabilities impose constraints on the internationalization of SMEs (Zacharakis, 1997). These constraints inflate the liabilities of foreignness (Hymer, 1976) and of newness (Stinchcombe, 1965) and make internationalization a daunting challenge to SMEs.

Alliances have been suggested as one important means of overcoming resource and capability deficiencies and enhancing the likelihood of success for internationalizing firms (Jarillo, 1989; Zacharakis, 1997; Beamish, 1999). Prior research on alliances points to several benefits including the minimization of transaction costs, increased market power, shared risks and better access to key resources such as capital and information (Kogut, 1988; Mowery, Oxley, and Silverman, 1996; Gulati, Nohria, and Zaheer, 2000). For SMEs, foremost among these benefits is access to the partner’s resources, or ‘network resources’ (Gulati, 1998).

Alliance partners can help SMEs overcome shortages of capital, equipment and other tangible assets through resource sharing between the two or more separate firms engaged in the alliance. More importantly, alliance partners represent an important source of host country knowledge to SMEs. SMEs can acquire host country knowledge and develop new organizational capabilities internally through incremental experience accumulation in new geographic regions (Johanson and Vahlne, 1977). However, this learning-by-doing process takes time and can result in mistakes (Dierickx and Cool, 1989) that are disproportionately more expensive to an SME than a large firm (Beamish, 1999; Eisenhardt and Schoonhoven, 1990; Erramilli and De Souza, 1993). By accessing alliance partners’ knowledge base, an SME can expedite its learning process and minimize mistakes. Hence, entering into alliances and having access to alliance partners’ resources offers a potentially efficient way to overcome deficiencies in an SME’s resource and capabilities.

However, alliances are not risk-free and face problems in successful implementation (Kogut, 1989; Hamel, 1991; Deeds and Hill, 1998). Compared with wholly-owned entries, alliances have complexities arising from the cooperation and coordination of two or more partners (Inkpen and Beamish, 1997). There are such potential problems as goal conflicts, lack of trust and understanding, cultural differences, and disputes over the division of control. Any of these can lead to instability or even failure. While the need for additional resources frequently necessitates the formation of alliances (Deeds and Hill, 1996; Weaver and Dickson, 1998), the difficulties with alliance management mean that the formation of an alliance itself is no guarantee to an SME’s successful entry into international markets. A real issue facing an SME entering into an alliance is to find the right partner (Zacharakis, 1997; Park and Kim, 1997; Baum, Calabrese, and Silverman, 2000).

An SME has three basic partner choices: it can partner with firms from the host country, with firms from the home country, or with firms from a third country (Makino and Delios, 1996). All three kinds of alliances could help an SME overcome shortages in financial capital and tangible resources. However, when it comes to providing a source of host country knowledge, these partner choices differ substantially (Makino and Beamish, 1998). A local partner represents a primary source of local knowledge. A local partner tends to have more detailed knowledge about various aspects of the host country environment, as compared to the other partner options. A local firm is familiar with the needs and tastes of the local consumers, it has information about local competitors and has the local contacts that can provide the focal firm with timely information. In sum, an alliance with a local partner can alleviate an SME’s local knowledge deficiencies and this strategy has been found to be an effective means of entering new host countries (Beamish and Banks, 1987; Makino and Delios, 1996).

In contrast, an alliance with firms from the home country, or with firms from a third country, holds fewer local knowledge benefits. If the partners have not made investments in the target markets, they provide little benefit to SMEs seeking to overcome deficiencies in host country knowledge. As foreign investors themselves, partners from the home country or from a third country usually do not have full access to local
resources that could provide their participants with a continuous flow of information and other benefits. Therefore, alliances with partners from the home country, or with partners from a third country are not as likely to alleviate the SME’s local knowledge deficiencies as are alliances with local firms. Given the potential risks and costs of alliances and the low marginal benefits, alliances with home country firms or third country firms might have a negative impact on an SME’s performance. As our data source did not provide information to identify third country partners, hypotheses were developed only for local partners and home country partners, even though the rationale for home country partners holds for third country partners.

Hypothesis 3a: An SME’s performance is positively related to its level of alliances with local partners formed in the process of internationalization.

Hypothesis 3b: An SME’s performance is negatively related to its level of alliances with only home country partners formed in the process of internationalization.

Interaction effects of export and foreign direct investment

As discussed earlier, both exporting and FDI have the potential to contribute to higher firm performance. At the same time, each strategy requires substantially different organizational structures and management capabilities (Roth, 1992; Ramaswamy, 1995). Exporting activities, for example, usually require the centralization of decision-making to balance the needs of different markets and to achieve maximum operating efficiency. In contrast, foreign subsidiaries are located in a variety of sites outside the home country. A dispersed set of subsidiaries across disparate geographic areas can require the decentralization of decision-making to adapt to the peculiarities of the location. Differences, such as these, in the organization of exporting and FDI (Beamish et al., 1999) make it difficult to coordinate the activities of the export unit and disparate foreign subsidiaries. Given the additional concern of the constraints on management time and experience in SMEs, the coordination costs of these two international expansion activities can readily become excessive and reduce the potential benefits from either of these two internationalization modes.

Moreover, export units and foreign subsidiaries have different mandates, with the export unit having sales in overseas markets as its primary goal and foreign subsidiaries having more complicated objectives such as market-seeking and/or resource-seeking. In the pursuit of their own mandates, these are potential conflicts and risks of cannibalization exist when firms both export to and establish local market oriented foreign direct investment in the same host country. The conflicts and cannibalization between export units and foreign subsidiaries could erode profit margins.

At a micro-level, the management of exporting and foreign subsidiaries requires different management skills. In exporting, sales skills are among the most important management skills needed. In foreign subsidiaries, a more diverse set of skills is required. Given both these macro- and micro-level concerns, it is plausible that a firm that has a high export intensity while making extended FDI activities will face a significant stretch in management resources. For the larger firms, it might not be too great a challenge because these firms have more abundant management resources and extensive international experience which help develop management capabilities in managing complexities (Hitt et al., 1997). For SMEs who have limited management resources and international experience, the complexity of managing these two international expansion activities can stretch management capabilities to the extent that it could depress overall performance.

Hypothesis 4: Exporting activities will exert a negative moderating effect on the relationship between FDI and performance.

DATA AND METHODOLOGY

Sample and data sources

There is no generally accepted definition of a small and medium-sized firm (an SME). The most widely used one in the entrepreneurship literature is the definition provided by the American Small Business Administration (SBA). The SBA defines
SMEs as stand-alone enterprises with fewer than 500 employees (Baird, Lyles, and Orris, 1994; Hodgetts and Kuratko, 1998; Beamish 1999; Wolff and Pett, 2000). Following the SBA’s definition of an SME, we limited our sample to all Japanese firms listed on the first and second sections of the Tokyo stock exchange in 1999, that had fewer than 500 employees.

For this sample, we collected corporate-level accounting and performance information from the Nikkei NEEDS tapes, an electronic data base that provides information on the corporate performance, and other financial indicators, of Japanese firms listed on the first and second sections of the Tokyo stock exchange. Where required, additional parent company information was gathered from various editions of the *Japan Company Handbook*. As we required FDI information for our analyses, we matched the list of Japanese SMEs to the list of parent firms in the 1999 edition of *Kaigai Shinshutsu Kigyousouran-Kuni Betsu* (Japanese Overseas Investments—by Country). This directory of Japanese foreign investment is published annually by Toyo Keizai Inc. Its coverage is close to the population of overseas subsidiaries of major listed and non-listed Japanese firms. Because the data are compiled annually, it is possible to develop a longitudinal profile of an SME’s internationalization process. For this study, we used the 1986, 1989, 1992, 1994, 1997, and 1999 editions of *Kaigai Shinshutsu Kigyousouran* to construct a 12-year (1986–97) panel of data. We used the 1999 edition to ensure we had the most complete information on FDI in 1996 and 1997. For first and second section firms not listed in *Kaigai Shinshutsu Kigyousouran* we confirmed that they had no FDIs by searching annual reports and industry reports.

The 164 Japanese SMEs that comprised our sample represented 7.5 percent of all firms listed on the Tokyo stock exchange. These 164 Japanese SMEs were engaged in 19 different industries, as defined by the Nikkei NEEDS tapes. The average number of employees in our sample is 321 with the smallest firm having 58 employees and the largest 499. All firms had export activities, and 95 had made FDIs. For the firms with FDI activities, half had made two investments or less in two or fewer host countries. These figures show that our sample captures SMEs that are in various phases of the early stage of the internationalization process.

**Sample characteristics**

In previous research, several criteria have been used to identify entrepreneurial firms. These criteria can be classified into three categories: firm demographics such as size, age and ownership, firm performance such as growth rate, and firm behavior such as risk-taking (Stevenson and Jarillo, 1990). In constructing the sample for our study, we attempted to satisfy the criteria of entrepreneurial firms in each category, but as McDougall and Oviatt (2000) advocate, we emphasize the latter two defining criteria.

For the first category, we used the criterion of firm size, in which smaller firms are typically thought of as entrepreneurial firms. Using the SBA definition, we restricted our sample to small and medium-sized enterprises. In the second category, we used the criterion of firm growth. Entrepreneurial firms are typically characterized as having higher growth rates than non-entrepreneurial firms (Stevenson and Jarillo, 1990). We make this assessment by comparing overall sales growth rates as well as growth in international markets via exporting and FDI. The comparison on growth rates in sales and exporting was made between the 164 firms in our sample and the remaining 1248 Tokyo stock exchange firms that operated in the same industries as our sample firms. For FDI, our analysis was limited to the firms that had made FDIs (95 sample firms and 1228 other firms, see Table 1). As it is difficult to compare and interpret growth rates of the two groups (sample for the study and the reference group) by 19 industries along three dimensions (using four measures), we calculated overall growth rates for the two groups after verification that the industrial distribution of our sample was qualitatively similar to the inter-industry distribution of the firms in the reference group. The overall annual growth rates are summarized in Table 1.

For overall growth, the firms in the sample expanded sales at mean rate of 5.74 percent which was 8.3 percent higher than the 5.30 percent for all other firms. For international activities, the growth rate of sample firms was much higher on both the export and FDI dimensions. The difference was greatest for exports where the growth rate of the sample firms was 3.5 times that of all other firms. For FDI growth, the rate of expansion in terms of the number of subsidi-
Table 1. Sample characteristics: growth rates

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<tr>
<th>Firm characteristic</th>
<th>Annual growth rate (%)</th>
<th>Comparison</th>
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<tr>
<td></td>
<td>Sample</td>
<td>All other firms</td>
</tr>
<tr>
<td>Overall sales</td>
<td>5.74</td>
<td>5.30</td>
</tr>
<tr>
<td>Export</td>
<td>22.73</td>
<td>6.61</td>
</tr>
<tr>
<td>FDI (subsidaries)</td>
<td>12.06</td>
<td>8.32</td>
</tr>
<tr>
<td>FDI (host countries)</td>
<td>8.99</td>
<td>6.06</td>
</tr>
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</table>

This comparison of growth rates shows that the SMEs in our sample were expanding at a rate slightly higher than all other firms in domestic markets, but at a considerably greater rate in international markets. This latter aspect, fast growth in international markets, relates to the third category for identifying entrepreneurial firms, and is consistent with the approach taken by Autio et al. (2000). This category bases the identification of entrepreneurial firms on the nature of activities a firm undertakes. In earlier discussion, we have stressed that internationalization is an entrepreneurial activity, particularly for SMEs. The comparatively high growth rates of the sample firms, in an area which involves greater risks and entails more resource constraints, highlights the entrepreneurial character of our sample.

The entrepreneurial character of our sample firms’ growth is further reinforced by the Japanese context. As Ronen and Shenkar (1985) identified, there are culturally isolated countries such as Japan and Korea, which do not have any close cultural counterparts, such as the United States has with Canada, or Portugal with Spain. This means that when a firm in a culturally isolated country, such as Japan, goes international it faces a much greater hurdle because, wherever it goes outside of home country, it must conduct business in a culturally, socially or linguistically very different context. This feature of the study is important because the more different the setting into which the firm is expanding, the more entrepreneurial the nature of the expansion, particularly for SMEs that have limited resources but want to ‘create or seize an opportunity regardless of the resources possessed’ (Timmons, 1994: 7).

Variables

Our models analyze the annual performance of SMEs over the 1986–97 period. To conduct the analysis, we created a record for each firm in each year of the 12-year period. Parent firm profitability is the dependent variable for all models. The main independent variables are the levels of exports, FDI activities and alliance activities. We also developed a number of control variables to account for other factors known to affect corporate performance.

Dependent variables

We measured the performance of Japanese firms using two accounting-based measures, return on assets (ROA) and return on sales (ROS) (Tallman and Li, 1996; Hitt et al., 1997). We obtained both measures from the Nikkei NEEDS tapes for each year in the 1986–97 period. These two variables were highly correlated ($r = 0.873$) and generated similar findings. As we report a large number of specifications, we confine the information in the tables to the results for ROA.

Exporting activities

We measured the level of exporting activities through export intensity, the percent of parent firm sales that were derived from export revenues. This variable was derived from annual export and revenue information found in the Nikkei NEEDS tapes.

Foreign investment activities

We developed two measures to gauge the magnitude of FDI activities, both of which were counts. The first count was the number of FDI in which
the parent firm had a 10 percent or greater equity share. The second count was the number of countries in which the firm had FDIs. Ramaswamy (1995) and Delios and Beamish (1999) used these two counts, which provide a reasonable indicator of the extent of FDI activities. These measures were derived from information reported in Toyo Keizai (1999, 1997, 1994, 1992, 1989 editions) for the 1986–97 period. These two measures are highly correlated (see the Appendix, \( r = 0.952 \)); hence, we entered these two measures separately in parallel sets of models.

**Alliance activities**

We developed two measures to capture the level of international alliance activities. We based these measures on the identity of the equity joint venture partners (Japanese or local partners). We focus on equity joint ventures in the international market because of the data availability and because this is the form where the stakes are highest for the international entrepreneur (Beamish, 1999). We could not identify third-country partners, because our data source, Toyo Keizai did not provide information on the nationality of non-Japanese partners making it difficult to distinguish local partners from third-country partners. Prior research has found that the vast majority of non-Japanese partners are local firms (Makino, 1995), hence we coded all non-Japanese partners as local partners.

The first set of measures we developed gauges the use of equity joint ventures with Japanese partners (without the participation of local partners). We first counted the number of Japanese–Japanese (J-J) equity joint ventures and the number of host countries in which the firm had J-J equity joint ventures. The counts were then divided by the total number of subsidiaries to derive J-J equity joint venture intensities by subsidiaries and by host countries. The second set of measures gauges the use of equity joint ventures with local partners (J-L) and was computed in a similar way as that for the J-J equity joint ventures. Both sets of measures were computed annually for the 1986–97 period. The measures by subsidiaries and by host countries for both J-J and J-L joint ventures are highly correlated (see the Appendix) and we entered these separately in the models.

**Control variables**

We included two measures to account for the proprietary content of an SME’s assets. The first gauged the level of propriety content in technological assets (R&D as percent of sales), and the second in marketing assets (advertising as percent of sales). We next calculated two control variables for the characteristics of the SMEs. These were the size of the SME (log of total number of employees) and product diversification of the SME (a Herfindahl measure). The first three variables were derived from the NEEDS tapes on an annual basis for the 1986–97 period. The Herfindahl measure was computed from information in the Japan Company Handbook for 1996 and the value was assigned to observations from 1986–97. Further, we included U.S.-yen exchange rates from the International Financial Statistics Yearbook to control for the exchange rate impact on the profitability of FDI. We used a U.S. dollar-yen exchange rate because the U.S. dollar is a frequently used reference point for exchange rates. Also, in Asia, where many of the Japanese subsidiaries were located, the U.S. dollar is used for business transactions because of its greater stability relative to local currencies. Our final control was a set of industry dummies based on 2-digit industry codes.

**Modeling procedure**

Because our theoretical argument posited that the internationalization of SMEs would, over time, drive changes in corporate performance, we lagged the effects of our independent variables. We explored 1-, 2-, and 3-year lags and found the results to be robust across the different lags. As a 1-year lag provides the least reduction in our data (it permits us to model events across 11 separate 1-year time periods), we report the results for models with a 1-year lag. Our sample using the 1-year lag comprises 164 cross-sections and an 11-year time series, or 1804 observations. In modeling this sample, we assume that each observation of our dependent variable is generated by an underlying process described by:

\[
Y_{ft} = \alpha + \beta' W_{ft-1} + \varepsilon_{ft}
\]

where \( W \) is a vector of explanatory variables, \( f \) denotes firm, and \( t \) denotes the time period. As
we pooled our cross-sectional and time series data to take advantage of the greater degrees of freedom offered by pooling, and to capture both the dynamic information of time series and the variation due to cross-sections, we needed to be concerned about autocorrelation and heteroscedasticity (Bergh and Holbein, 1997). To correct for the presence of autocorrelation and heteroscedasticity, we entered the exchange rate for each different year to absorb the time-related variance in the least square regressions. In addition, we verified our regression coefficient estimates with the Fuller and Battese method by TSCSREG procedure in SAS, a General Linear Square Model in which corrections are made to account for the presence of autocorrelation and heteroscedasticity (Kmenta, 1986). In comparing estimates across the two methods, there was no change in the sign of estimated coefficients, although significance levels did vary in some instances. However, the changes in the significance levels did not change the hypothesis test results. As the TSCSREG procedure does not generate results on some key model statistics such as F-statistics and $R^2$, we report the results from the OLS estimations.

RESULTS

The Appendix presents the descriptive statistics and correlation for the study’s variables. Except for the multiple measures for one variable (such as the two measures of FDI, by subsidiary and by host country, $r = 0.952$), the magnitude of the correlation and the results of regression diagnostics (e.g., VIF statistics) suggested that multicollinearity was not a serious problem.

We tested the four hypotheses using two sets of 10 regressions: one for the full sample of 164 Japanese SMEs (95 with FDIs and 69 without FDIs) and the other with a subsample of 95 Japanese SMEs with FDIs. The results of these regressions are displayed in Tables 2 and 3. All models were significant and each had reasonable explanatory power. Further, the results for the full and subsamples were consistent, but the effects for the internationalization strategy variables were more prominent in the subsample of SMEs with FDIs. While we discuss the results with reference to the models in Table 2, the discussion could be applied to the models in Table 3, with no changes except where noted.

The first model in Table 2 is the baseline model which only includes the five control terms plus the set of industry dummies. As expected, R&D intensity was positively related to firm performance ($p < 0.01$), while product diversification had a negative relationship ($p < 0.01$) to firm performance. Firm size was negatively related to performance at the 0.01 level, while advertising intensity was not significant. The latter result was also observed for a sample of larger Japanese firms (Delios and Beamish, 1999). Finally, the exchange rate (yen per U.S. dollar) had a positive relationship ($p < 0.01$) indicating that firm performance was higher when the yen was weaker. These results were consistent across all models, and we focus the rest of our discussion on the tests of our hypotheses.

Model 2 in Tables 2 and 3 tested Hypothesis 1, which predicts that exporting is positively related to firm performance. Contrary to the prediction in Hypothesis 1, the exporting measure had a negative ($p < 0.05$) relationship to firm performance. Models 3 and 4 test Hypothesis 2, which predicted a nonlinear (U-curve) relationship between the level of FDI activity and firm performance. In Model 3, the negative sign on the number of FDIs term ($p < 0.05$) and the positive sign on its squared term ($p < 0.10$) provide support for this hypothesis. For the number of countries measure, a similar result is observed, although the squared term is not significant. However, we note that in subsequent models, and subsamples (e.g., the models in Table 3), the number of country terms behave as predicted. Taken together, these findings suggest a U curve relationship between the level of FDI activity and SME performance; that is, firm performance declines with initial FDI activity but improves with a greater extent of FDI.

Hypotheses 3a and 3b make predictions about the effect of alliances on firm performance. Joint ventures with local firms are predicted to have a positive effect on firm performance (Hypothesis 3a), while joint ventures with other Japanese firms are predicted to have a negative effect on performance. Models 5 and 6 use two measures of JV partner intensity (respectively, by host country and by subsidiary) to test Hypothesis 3a. The positive signs ($p < 0.01$) on both measures provide support for Hypothesis 3a, indicating that forming joint ventures with local firms improved the performance of internationalizing SMEs.
Table 2. Regressions of return on assets (ROA) on export, FDI and JV: 164 Japanese SMEs, 1986–96a,b

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
<th>Model 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intercept</td>
<td>0.080***</td>
<td>0.085***</td>
<td>0.086***</td>
<td>0.085***</td>
<td>0.085***</td>
<td>0.086***</td>
<td>0.076**</td>
<td>0.079**</td>
<td>0.086***</td>
<td>0.085***</td>
</tr>
<tr>
<td></td>
<td>(2.464)</td>
<td>(2.614)</td>
<td>(2.653)</td>
<td>(2.627)</td>
<td>(2.631)</td>
<td>(2.655)</td>
<td>(2.355)</td>
<td>(2.444)</td>
<td>(2.642)</td>
<td>(2.640)</td>
</tr>
<tr>
<td>2. R&amp;D intensity</td>
<td>0.742***</td>
<td>0.832***</td>
<td>0.875***</td>
<td>0.896***</td>
<td>0.891***</td>
<td>0.882***</td>
<td>0.849***</td>
<td>0.863***</td>
<td>0.884***</td>
<td>0.867***</td>
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<tr>
<td>3. Advertising intensity</td>
<td>0.105</td>
<td>0.082</td>
<td>0.092</td>
<td>0.078</td>
<td>0.090</td>
<td>0.052</td>
<td>0.118</td>
<td>0.104</td>
<td>0.084</td>
<td>0.070</td>
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<tr>
<td></td>
<td>(0.886)</td>
<td>(0.693)</td>
<td>(0.775)</td>
<td>(0.657)</td>
<td>(0.760)</td>
<td>(0.442)</td>
<td>(1.006)</td>
<td>(0.880)</td>
<td>(0.708)</td>
<td>(0.589)</td>
</tr>
<tr>
<td>4. Number of employees</td>
<td>-0.019***</td>
<td>-0.019***</td>
<td>-0.017***</td>
<td>-0.017***</td>
<td>-0.018***</td>
<td>-0.018***</td>
<td>-0.017***</td>
<td>-0.017***</td>
<td>-0.017***</td>
<td>-0.017***</td>
</tr>
<tr>
<td>(log)</td>
<td>(-3.883)</td>
<td>(-3.891)</td>
<td>(-3.624)</td>
<td>(-3.533)</td>
<td>(-3.720)</td>
<td>(-3.651)</td>
<td>(-3.625)</td>
<td>(-3.520)</td>
<td>(-3.609)</td>
<td>(-3.536)</td>
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<tr>
<td>5. Product diversity</td>
<td>-0.037***</td>
<td>-0.043***</td>
<td>-0.041***</td>
<td>-0.041***</td>
<td>-0.041***</td>
<td>-0.041***</td>
<td>-0.037***</td>
<td>-0.038***</td>
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<td></td>
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<td>(-2.742)</td>
<td>(-2.743)</td>
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<td>(-2.477)</td>
<td>(-2.538)</td>
<td>(-2.786)</td>
<td>(-2.873)</td>
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<td>6. Exchange rate</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td>7. Export intensity</td>
<td>-0.056**</td>
<td>-0.051**</td>
<td>-0.048**</td>
<td>-0.050**</td>
<td>-0.045**</td>
<td>-0.045**</td>
<td>-0.046**</td>
<td>-0.032**</td>
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<td>(-4.192)</td>
<td>(-3.657)</td>
<td>(-3.634)</td>
<td>(-3.279)</td>
<td>(-3.241)</td>
<td>(-3.343)</td>
<td>(-1.893)</td>
<td>(-2.615)</td>
<td>(-2.615)</td>
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<tr>
<td>8. Number of foreign investments</td>
<td>-0.005**</td>
<td>-0.007***</td>
<td>-0.001</td>
<td>-0.001</td>
<td>-0.001***</td>
<td>-0.001***</td>
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<td></td>
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<tr>
<td>9. Number of foreign investments (squared)</td>
<td>0.001*</td>
<td>0.001***</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001***</td>
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<tr>
<td></td>
<td>(1.850)</td>
<td>(2.562)</td>
<td>(2.556)</td>
<td>(2.564)</td>
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<tr>
<td>10. Number of countries invested in</td>
<td>-0.007**</td>
<td>-0.009***</td>
<td>-0.027</td>
<td>-0.007**</td>
<td></td>
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<tr>
<td></td>
<td>(-2.361)</td>
<td>(-3.001)</td>
<td>(-0.921)</td>
<td>(-2.927)</td>
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<tr>
<td>11. Number of countries invested in (squared)</td>
<td>0.001</td>
<td>0.001*</td>
<td>0.001</td>
<td>0.001*</td>
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<td></td>
<td>(1.254)</td>
<td>(1.741)</td>
<td>(0.539)</td>
<td>(2.317)</td>
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<tr>
<td>12. JV (local partner) intensity (by subsidiary)</td>
<td>0.072***</td>
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<td></td>
<td>(3.310)</td>
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<tr>
<td>13. JV (local partner) intensity (by host country)</td>
<td>0.045**</td>
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<td>(2.935)</td>
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<tr>
<td>14. JV (Japanese partner) intensity (by subsidiary)</td>
<td>-0.072***</td>
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<td></td>
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<tr>
<td>15. JV (Japanese partner) intensity (by host country)</td>
<td>-0.043***</td>
<td></td>
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<td>(-4.282)</td>
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<tr>
<td>16. Export intensity * Number of foreign investments</td>
<td>-0.006**</td>
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<tr>
<td>17. Export intensity * Number of countries invested in</td>
<td>-0.014***</td>
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Model indices

<table>
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<th>Model 4</th>
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<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
<th>Model 10</th>
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</thead>
<tbody>
<tr>
<td>$R^2$</td>
<td>0.079</td>
<td>0.088</td>
<td>0.091</td>
<td>0.092</td>
<td>0.097</td>
<td>0.096</td>
<td>0.109</td>
<td>0.101</td>
<td>0.093</td>
<td>0.096</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.067</td>
<td>0.075</td>
<td>0.078</td>
<td>0.079</td>
<td>0.083</td>
<td>0.082</td>
<td>0.095</td>
<td>0.087</td>
<td>0.079</td>
<td>0.083</td>
</tr>
</tbody>
</table>

*a Dummy variables for industry are included in the models, but not shown in the table.

*b Upper number in a cell is a parameter estimate, numbers in the parentheses are t-statistics; ***p < 0.01; **p < 0.05; *p < 0.10 (all two-tailed tests).
Table 3. Regressions of return on assets (ROA) on export, FDI and JV: 95 Japanese SMEs, 1986–96

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
<th>Model 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intercept</td>
<td>0.141***</td>
<td>0.172***</td>
<td>0.193***</td>
<td>0.198***</td>
<td>0.189***</td>
<td>0.195**</td>
<td>0.171***</td>
<td>0.171***</td>
<td>0.183***</td>
<td>0.186***</td>
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<tr>
<td>2. R&amp;D intensity</td>
<td>0.657***</td>
<td>0.709***</td>
<td>0.784***</td>
<td>0.785***</td>
<td>0.805***</td>
<td>0.794***</td>
<td>0.702***</td>
<td>0.722***</td>
<td>0.801***</td>
<td>0.784***</td>
</tr>
<tr>
<td>3. Advertising intensity</td>
<td>-0.235</td>
<td>-0.308</td>
<td>-0.256</td>
<td>-0.312*</td>
<td>-0.257</td>
<td>-0.376</td>
<td>-0.240</td>
<td>-0.256</td>
<td>-0.275</td>
<td>-0.324*</td>
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<td></td>
<td>(-1.203)</td>
<td>(-1.582)</td>
<td>(-1.320)</td>
<td>(-1.617)</td>
<td>(-1.331)</td>
<td>(-1.948)</td>
<td>(-1.259)</td>
<td>(-1.329)</td>
<td>(-1.418)</td>
<td>(-1.685)</td>
</tr>
<tr>
<td>4. Number of employees (log)</td>
<td>-0.024***</td>
<td>-0.027***</td>
<td>-0.026***</td>
<td>-0.025***</td>
<td>-0.026***</td>
<td>-0.025***</td>
<td>-0.027***</td>
<td>-0.026***</td>
<td>-0.024***</td>
<td>-0.023***</td>
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<td>(-3.443)</td>
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<td>(-3.859)</td>
<td>(-3.683)</td>
<td>(-4.005)</td>
<td>(-3.917)</td>
<td>(-3.540)</td>
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<tr>
<td>5. Product diversity</td>
<td>-0.040*</td>
<td>-0.054**</td>
<td>-0.057***</td>
<td>-0.060***</td>
<td>-0.057**</td>
<td>-0.059**</td>
<td>-0.047**</td>
<td>-0.048**</td>
<td>-0.057**</td>
<td>-0.061**</td>
</tr>
<tr>
<td></td>
<td>(-1.813)</td>
<td>(-2.436)</td>
<td>(-2.580)</td>
<td>(-2.685)</td>
<td>(-2.556)</td>
<td>(-2.667)</td>
<td>(-2.164)</td>
<td>(-2.186)</td>
<td>(-2.566)</td>
<td>(-2.751)</td>
</tr>
<tr>
<td>6. Exchange rate</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
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</tr>
<tr>
<td></td>
<td>(3.912)</td>
<td>(3.591)</td>
<td>(3.004)</td>
<td>(2.733)</td>
<td>(3.274)</td>
<td>(2.970)</td>
<td>(4.072)</td>
<td>(3.987)</td>
<td>(3.009)</td>
<td>(2.757)</td>
</tr>
<tr>
<td>7. Export intensity</td>
<td>-0.068***</td>
<td>-0.065**</td>
<td>-0.062***</td>
<td>-0.064***</td>
<td>-0.059***</td>
<td>-0.058***</td>
<td>-0.064***</td>
<td>-0.058***</td>
<td>-0.035**</td>
<td>-0.014</td>
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<tr>
<td>8. Number of foreign investments (squared)</td>
<td>-0.009***</td>
<td>-0.011***</td>
<td>-0.081***</td>
<td>-0.010**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(-3.664)</td>
<td>(-4.330)</td>
<td>(-6.634)</td>
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</tr>
<tr>
<td>9. Number of foreign investments (squared)</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.000***</td>
<td>0.001***</td>
<td></td>
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<tr>
<td></td>
<td>(3.136)</td>
<td>(3.721)</td>
<td>(3.579)</td>
<td>(3.861)</td>
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</tr>
<tr>
<td>10. Number of countries invested in</td>
<td>-0.016***</td>
<td>-0.017***</td>
<td>-0.055***</td>
<td>-0.015***</td>
<td></td>
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<tr>
<td></td>
<td>(-4.200)</td>
<td>(-4.649)</td>
<td>(-5.253)</td>
<td>(-4.029)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11. Number of countries invested in (squared)</td>
<td>0.001***</td>
<td>0.002***</td>
<td>-0.022</td>
<td>0.002***</td>
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</tr>
<tr>
<td></td>
<td>(3.123)</td>
<td>(3.500)</td>
<td>(-0.723)</td>
<td>(4.047)</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>12. JV (local partner) intensity (by subsidiary)</td>
<td>0.075***</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>(3.216)</td>
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<tr>
<td>13. JV (local partner) intensity (by subsidiary)</td>
<td>0.050***</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14. JV (Japanese partner) intensity (by subsidiary)</td>
<td>-0.030*</td>
<td></td>
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<td>15. JV (Japanese partner) intensity (by host country)</td>
<td>-0.310*</td>
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<tr>
<td></td>
<td>(-1.850)</td>
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<td></td>
</tr>
<tr>
<td>16. Export intensity * Number of foreign investments</td>
<td>-0.001***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(-3.861)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Export intensity * Number of countries invested in</td>
<td>-0.017***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(-3.204)</td>
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<td></td>
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</table>

Model indices

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
<th>Model 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R^2$</td>
<td>0.079</td>
<td>0.094</td>
<td>0.106</td>
<td>0.111</td>
<td>0.115</td>
<td>0.119</td>
<td>0.132</td>
<td>0.118</td>
<td>0.111</td>
<td>0.120</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.059</td>
<td>0.074</td>
<td>0.084</td>
<td>0.089</td>
<td>0.092</td>
<td>0.096</td>
<td>0.111</td>
<td>0.097</td>
<td>0.088</td>
<td>0.097</td>
</tr>
</tbody>
</table>

*a Dummy variables for industry are included in the models, but not shown in the table.

b Upper number in a cell is a parameter estimate, numbers in the parentheses are $t$-statistics; *$p < 0.1$; **$p < 0.05$; ***$p < 0.10$ (all two-tailed tests)
Meanwhile, the results for Models 7 and 8 show that joint venture activity with other Japanese firms has a negative impact ($p < 0.10$) on firm performance. These results demonstrate the importance of alliance partner selection and suggest that local partners provide more value to SMEs than partners from the home country.

Models 9 and 10 in Tables 2 and 3 tested Hypothesis 4, which predicted that the extent of exporting activity will exert a negative moderating effect on the relationship between FDI and firm performance. We tested this hypothesis using two interactions constructed between exporting and the two measures of FDI activity. To guard against the observance of a significant interaction result that is spurious, we tested whether the overall change in the model's explanatory power was significant, compared to the baseline model, after the inclusion of the interaction term. For Model 9, the relevant baseline was Model 3, and for Model 10 it was Model 4. In all cases, the improvement in model fit (change in $R^2$) was significant at $p < 0.01$. As expected, given the improvement in the model, the interaction term was significant ($p < 0.05$ or less) and negatively signed in all instances. The negative sign indicates that a high export intensity exerted a negative influence on the performance impact of FDI activities. We discuss this effect in more detail in the next section.

**DISCUSSION**

Our main objective in this paper was to examine the effects of an international aspect of an entrepreneurial strategy, namely the relationship between an SME's internationalization strategy and its performance. To that end, we explored the relationships that exporting, FDI and alliances had on firm performance for a sample of internationalizing small and medium-sized Japanese firms.

Notably, we found that exporting and FDI had different impacts on firm performance. Exporting had a negative and linear relationship with performance, whereas FDI had a nonlinear relationship with performance, that is, low levels of FDI were associated with decreasing performance, but greater levels of FDI with higher performance. Before concluding that exporting is detrimental to firm performance, the interpretation of the negative impact of exporting on SME performance needs to be considered in relation to the time period for this study. Over the 1986–96 period, the Japanese yen experienced a general trend towards appreciation, which was substantive in its aggregate impact. As a result of this yen appreciation (or endaka), exports from Japan became less competitive in international markets. The higher costs associated with exporting from Japan represented a significant barrier to the financial success of Japanese exports, particularly for products that were manufactured almost exclusively in Japan. To test the impact of exchange rate fluctuations on the relationship between export and firm performance, we interacted exchange rate with export intensity in the 1986–97 period (which was the period for this study) and the 1964–96 period, which covers a broader period of yen appreciation and Japanese firm's internationalization.

The results of this analysis are reported in Table 4. The first model in Table 4 is the baseline model (the same as Model 2 in Table 2) which included only the main effects of exchange rate and exporting. The second model shows the addition of the interaction term to the baseline model. Reflecting the nonsignificance of the first interaction model in Table 4, was the nonsignificant improvement in model fit over the baseline model. The nonsignificance of the interaction is not surprising when we consider the comparatively small variance in yen values (from 239 per U.S. dollar to 169) during this 11-year period. Over a longer time span in which the strength of the yen increased markedly, from 360 in 1964 to 169 in 1996, the interaction effect is significant (Model 4 in Table 4) both at a model and individual coefficient level. The positive sign on the interaction term indicates that when the yen was weaker, a higher export intensity contributed positively to firm performance. As the models in Tables 2 and 3 test the main effects of export intensity during a period of a relatively strong yen, these models capture the latter half of the exporting, exchange rate and performance relationships. That is, during the time of a relatively strong yen (1986–96, as compared to the previous two decades), the intensity of export activities had a negative relationship with performance.

As has been reported in the popular and academic press, the response of many Japanese firms to this endaka, and the declining export competitiveness and performance shown in the two mod-
Table 4. Regressions of return on assets (ROA) on export: 164 Japanese SMEs

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intercept</td>
<td>0.0849***</td>
<td>0.0644*</td>
<td>0.137***</td>
<td>0.148***</td>
</tr>
<tr>
<td></td>
<td>(2.614)</td>
<td>(1.868)</td>
<td>(11.029)</td>
<td>(11.811)</td>
</tr>
<tr>
<td>2. R&amp;D intensity</td>
<td>0.832***</td>
<td>0.847***</td>
<td>0.687***</td>
<td>0.681***</td>
</tr>
<tr>
<td></td>
<td>(7.101)</td>
<td>(7.210)</td>
<td>(10.956)</td>
<td>(10.888)</td>
</tr>
<tr>
<td>3. Advertising intensity</td>
<td>0.082</td>
<td>0.090</td>
<td>-0.114**</td>
<td>-0.130**</td>
</tr>
<tr>
<td></td>
<td>(0.693)</td>
<td>(0.756)</td>
<td>(-1.918)</td>
<td>(-2.194)</td>
</tr>
<tr>
<td>4. Number of employees (log)</td>
<td>-0.019***</td>
<td>-0.018**</td>
<td>-0.018**</td>
<td>-0.018**</td>
</tr>
<tr>
<td></td>
<td>(-3.891)</td>
<td>(-3.733)</td>
<td>(-8.941)</td>
<td>(-8.954)</td>
</tr>
<tr>
<td>5. Product diversity</td>
<td>-0.043***</td>
<td>-0.043**</td>
<td>-0.028**</td>
<td>-0.029**</td>
</tr>
<tr>
<td></td>
<td>(-2.844)</td>
<td>(-2.856)</td>
<td>(-4.171)</td>
<td>(-4.903)</td>
</tr>
<tr>
<td>6. Exchange rate</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td>7. Export Intensity</td>
<td>-0.056**</td>
<td>0.065</td>
<td>-0.016**</td>
<td>-0.098**</td>
</tr>
<tr>
<td></td>
<td>(-4.192)</td>
<td>(0.930)</td>
<td>(-2.379)</td>
<td>(-6.105)</td>
</tr>
<tr>
<td>8. Exchange rate *</td>
<td>-0.001</td>
<td></td>
<td></td>
<td>0.001***</td>
</tr>
<tr>
<td>Export intensity</td>
<td></td>
<td>(-1.059)</td>
<td>(5.621)</td>
<td></td>
</tr>
</tbody>
</table>

Model indices

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>0.088</td>
<td>0.089</td>
<td>0.086</td>
<td>0.091</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.075</td>
<td>0.077</td>
<td>0.082</td>
<td>0.087</td>
</tr>
<tr>
<td>Length of time series</td>
<td>11</td>
<td>11</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

*Dummy variables for industry are included in the models, but not shown in the table.
*Upper number in a cell is a parameter estimate, numbers in the parentheses are t-statistics; ***p < 0.01; **p < 0.05; *p < 0.10 (all two-tailed tests)

els in Table 4, has been to shift manufacturing activities to offshore locations. Our sample captured firms in the process of this shift in manufacturing orientation and strategy. The negative relationship between export and firm performance demonstrates the motivation behind the shift to offshore production.

Interestingly, this negative relationship between exporting and performance has not been confined to SMEs in Japan. One expectation might be that large firms would be better able to cope with endaka by re-structuring their manufacturing and exporting activities to take advantage of lower cost production locations. SMEs did not have such an option because they did not have the international capabilities or facilities to implement such comprehensive strategies, and the only way to maintain export markets was to lower the prices of export goods in yen terms. Consequently, export margins diminished. While this logic suggests that larger firms may have been less exposed to the negative effects of endaka, in fact, Delios and Beamish (2000) and Geringer, Tallman, and Olsen (2000) reported similar export–performance relationships for the large Japanese MNCs studied in their research. Supporting the endaka explanation of export–performance is Geringer et al.'s (2000) observation that exporting activities contributed positively to Japanese MNCs corporate performance in the 1977–86 period, but not in the 1986–93 period.

While we found exporting to have a linear relationship with performance, FDI had nonlinear effects. To facilitate interpretation of the nonlinear effects we constructed a plot based upon the results of Model 6 in Table 3. Figure 1 illustrates the nonlinear relationship between the number of FDIs and firm performance. This curve shows an initially negative relationship which becomes positive as the number of FDIs increases. The shape of the line is a flattened U or a saucer-shaped curve. As shown in Figure 1, at the initial stages of FDI (from one FDI country to five FDI countries) there is a negative impact on performance with a more than 2 percent reduction in ROA when the number of FDI countries reaches five (as compared to zero FDI countries). Beyond this point, a greater extent of FDI contributes to higher performance at an accelerating rate. The findings of a saucer-shaped curve...
relationship between FDI and performance seem to contradict the inverted U curve found by Beamish and da Costa (1984) and Hitt et al. (1997). However, when the differences in the characteristics of the samples (their focus on large well-internationalized firms and our focus on internationalizing SMEs) are taken into consideration, our findings of a saucer-shaped curve actually complements their findings of an inverted U curve. Taken together, the findings are consistent with our contention that a sideways ‘S’ curve represents the relationship between internationalization and performance. The initial decline in performance during early stages of FDI are in line with the notion of the liability of foreignness (Hymer, 1976). The results also illustrate the magnitude of the challenges SMEs face when going international.

While the challenges can be formidable, our results suggest they are not insurmountable. One strategy that can be used to counter the challenges is to use alliances in the internationalization process. Our conceptual arguments and empirical results suggest that while alliances have the potential to help overcome the difficulties that SMEs encounter when entering foreign markets, they involve risks if not planned and implemented properly. The contrasting performance implications of alliances with Japanese partners and alliances with local partners is consistent with the findings of Makino and Beamish (1998). In the context of internationalization, local knowledge is of crucial importance to SMEs who usually have a domestic focus. Partnering with local firms (J-L alliances) provides SMEs with a direct source of local knowledge in addition to other location-specific resources (Makino and Delios, 1996). In contrast, same-country partners (J-J alliances) may or may not possess local knowledge about specific locations and hence present a less direct and reliable source of local knowledge to SMEs.

We tested this interpretation by looking at the moderating effects of the local knowledge base of the alliance partners from the home country. We gauged the local knowledge base of each alliance partner by its number of subsidiaries and the number of host countries. We then calculated the average number of subsidiaries and the average number of host countries of its alliance partners for each Japanese SME engaged in alliances. We tested the moderating effect in the subsample of 95 firms with FDI activities. The specifications in both samples yielded similar results and we report the results in the subsample of 95 firms with FDI activities, since in the larger sample, 69 firms had zero FDIs and zero alliances. As shown in Table 5, the local knowledge base of alliance partners had a significant and positive impact on the J-J alliance intensity and firm performance. Further investigation of the local
Table 5. Regressions of return on assets (ROA) on JV: 95 Japanese SMEs, 1986–96<sup>a,b</sup>

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intercept</td>
<td>0.180***</td>
<td>0.193***</td>
<td>0.191***</td>
<td>0.201***</td>
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<td>(3.946)</td>
<td>(4.228)</td>
<td>(4.162)</td>
<td>(4.399)</td>
</tr>
<tr>
<td>2. R&amp;D intensity</td>
<td>0.748***</td>
<td>0.732***</td>
<td>0.782***</td>
<td>0.765***</td>
</tr>
<tr>
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<td>(5.245)</td>
<td>(5.161)</td>
<td>(5.447)</td>
<td>(5.363)</td>
</tr>
<tr>
<td>3. Advertising intensity</td>
<td>−0.226</td>
<td>−0.307*</td>
<td>−0.264</td>
<td>−0.330*</td>
</tr>
<tr>
<td></td>
<td>(−1.173)</td>
<td>(−1.593)</td>
<td>(−1.374)</td>
<td>(−1.720)</td>
</tr>
<tr>
<td>4. Number of employees (log)</td>
<td>−0.026***</td>
<td>−0.028***</td>
<td>−0.025***</td>
<td>−0.027***</td>
</tr>
<tr>
<td></td>
<td>(−3.903)</td>
<td>(−4.182)</td>
<td>(−3.706)</td>
<td>(−4.060)</td>
</tr>
<tr>
<td>5. Product diversity</td>
<td>−0.049**</td>
<td>−0.045**</td>
<td>−0.053**</td>
<td>−0.046**</td>
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<tr>
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<td>(−2.248)</td>
<td>(−2.037)</td>
<td>(−2.410)</td>
<td>(−2.106)</td>
</tr>
<tr>
<td>6. Exchange rate</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>(3.591)</td>
<td>(3.475)</td>
<td>(3.061)</td>
<td>(3.155)</td>
</tr>
<tr>
<td>7. Export intensity</td>
<td>−0.060***</td>
<td>−0.067***</td>
<td>−0.061***</td>
<td>−0.067***</td>
</tr>
<tr>
<td></td>
<td>(−3.656)</td>
<td>(−4.058)</td>
<td>(−3.683)</td>
<td>(−4.044)</td>
</tr>
<tr>
<td>8. Number of foreign investments</td>
<td>−0.005*</td>
<td>−0.005*</td>
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</tr>
<tr>
<td></td>
<td>(−1.874)</td>
<td>(−1.841)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Number of foreign investments (squared)</td>
<td>0.001**</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.041)</td>
<td>(1.550)</td>
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<tr>
<td>10. Number of countries invested in Japan</td>
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<td>−0.010***</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(−3.091)</td>
<td>(−2.688)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Number of countries invested in (squared)</td>
<td>0.001***</td>
<td>0.001**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.577)</td>
<td>(2.056)</td>
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<td></td>
</tr>
<tr>
<td>12. JV (Japanese partner) intensity (subsidiary)</td>
<td>−0.076***</td>
<td>−0.091***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(−5.876)</td>
<td>(−6.674)</td>
<td></td>
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<tr>
<td>13. JV (Japanese partner) intensity (host country)</td>
<td>−0.047***</td>
<td>−0.070***</td>
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<tr>
<td></td>
<td>(−4.208)</td>
<td>(−5.564)</td>
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<tr>
<td>14. Japanese partners’ FDI (subsidiary)</td>
<td>0.001</td>
<td>−0.001</td>
<td></td>
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<tr>
<td></td>
<td>(0.092)</td>
<td>(0.811)</td>
<td></td>
<td></td>
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<tr>
<td>15. Japanese partners’ FDI (host country)</td>
<td>−0.001</td>
<td>−0.001</td>
<td></td>
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<tr>
<td></td>
<td>(−0.102)</td>
<td>(−1.303)</td>
<td></td>
<td></td>
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<tr>
<td>16. JV (Japanese partner) intensity * Japanese partners’ FDI (subsidiary)</td>
<td>0.001***</td>
<td></td>
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<tr>
<td></td>
<td>(3.379)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. JV (Japanese partner) intensity * Japanese partners’ FDI (host country)</td>
<td></td>
<td></td>
<td>0.003***</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td>(3.823)</td>
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Model indices

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<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
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<tr>
<td>( R^2 )</td>
<td>0.135</td>
<td>0.145</td>
<td>0.127</td>
<td>0.139</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>0.112</td>
<td>0.121</td>
<td>0.103</td>
<td>0.115</td>
</tr>
<tr>
<td>( F )-statistic</td>
<td>5.896***</td>
<td>6.151***</td>
<td>5.455***</td>
<td>5.852***</td>
</tr>
</tbody>
</table>

<sup>a</sup>Dummy variables for industry are included in the models, but not shown in the table.

<sup>b</sup>Upper number in a cell is a parameter estimate, numbers in the parentheses are \( t \)-statistics; ***\( p < 0.01; **p < 0.05; *p < 0.10 \) (all two-tailed tests)

Finally, we found that the configuration of exporting and FDI had an impact on firm performance; that is, a high export intensity coupled with a greater extent of FDI resulted in lower performance. Referring back to Figure 1, we can see that as the extent of FDI increases, a higher export intensity depresses performance, reducing the net improvement in performance from the FDIs at high levels of FDI. The trend continues at higher levels of FDIs. It should also be noted...
that despite the decline in ROA at the initial stage of FDIs, the overall trends in Figure 1 illustrate growth in ROA, suggesting that firms are more profitable with increased levels of FDIs, regardless of whether export intensity is high or low. This general pattern is important, because it reveals the intrinsic value associated with higher levels of internationalization irrespective of the forms of internationalization. It is also consistent with the findings of Delios and Beamish (1999) who demonstrated that there is intrinsic value in the expansion of geographic scope beyond that found in the exploitation of firm-specific proprietary assets. One implication of our results is that SMEs should not be discouraged by initial setbacks in the internationalization process. Rather, managers in SMEs should focus on learning from early experiences and finding effective ways to overcome the disadvantages encountered when initially operating in foreign lands. Eventually, as our results suggest, if knowledge is gained about foreign markets, the intrinsic benefits associated with internationalization will eventually outweigh the costs and the net performance impact will be positive.

Limitations

While the empirical results are interesting, caution should be exerted when generalizing the findings beyond the scope of this study. First, the results were derived from a sample of Japanese SMEs. While the Japanese setting reinforced the entrepreneurial features of the internationalization activities undertaken by these firms, it raises the concern that the findings might be country-specific. Studies with comparative samples of firms from other countries should be used to test and extend the generalizability of our findings. Further, our sample consisted of publicly listed firms. Future research could investigate the performance implications of the internationalization efforts of private and smaller-sized firms to complement the picture of the relationship between internationalization and performance for the full range of firm sizes.

CONCLUSION AND CONTRIBUTIONS

Although this study has limitations, it makes important contributions to the entrepreneurship and internationalization literatures and it provides useful insights for practitioners. First, to the best of our knowledge, it is the first time that the performance implications of four internationalization strategies have been studied separately and simultaneously using concepts derived from the internationalization and entrepreneurship literatures. The prominent differences in the impact of exporting and FDI on firm performance provide strong support for our argument that FDI is potentially a more competitive way than exporting for operating in international markets. However, initial investment forays into international markets may entail a high cost to a newly internationalizing firm. The implication is that SMEs should not curtail internationalization activities at the export stage, nor be deterred by the potentially high costs in initializing FDI, but explore opportunities to make FDIs so as to benefit from the latent value associated with such investments.

Second, our findings of the saucer-shaped relationship between FDI and SME performance complements the findings of an inverted U curve by Beamish and daCosta (1984), and Hitt et al. (1997). Considering the differences in samples, it completes a sideways ‘S’ curve conception of the relationship between internationalization and performance. In the initial stages of internationalization, performance declines as the firm deals with the liability of foreignness. However, performance then improves as new knowledge and capabilities are developed, as competitiveness is enhanced and as market opportunities are captured by the firm’s investment activities in international markets. Eventually, performance declines as the costs associated with the complexity stemming from managing many subsidiaries and in dissimilar markets increases beyond the intrinsic benefits of internationalization.

Third, the saucer-shaped relationship between FDI and SME performance also provides support for the notion of liability of foreignness (Hymer, 1976). Given their limited resources and capabilities, SMEs are more susceptible to the liability of foreignness than large firms. Our results suggest one effective strategy for managing this aspect of internationalization, namely forming alliances with local partners who can help overcome deficiency in host country knowledge.

Finally, this study reveals the importance of the configuration of activities in the context of economic and market conditions, and the need for firms to strategically manage their internationalization efforts to achieve sustainable performance advantages.
internationalization. The configuration effects on SME performance demonstrate that the impact of one internationalization mode is not in isolation from the other. The employment of both high export levels and relatively extensive FDI activities might escalate coordination costs that reduce internationalization benefits from either mode. While these costs do not reverse the long-term positive relationship between internationalization and SME performance, our findings show the differential effects of varying exporting and FDI configurations and illustrate the importance of the configuration strategy to the overall success of a firm’s internationalization.

ACKNOWLEDGEMENTS

This research was supported in part by a Social Sciences and Humanities Research Council of Canada Grant (# 411-98-0393), and by the Asian Management Institute at the University of Western Ontario. The authors wish to acknowledge the useful suggestions received from Andrew Delios, Mike Hitt, and Duane Ireland and, the reviewers and participants in ‘Creating a New Mindset: Integrating Strategy and Entrepreneurship Perspectives Conference.’

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### Appendix: Descriptive statistics and correlations

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<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
<tr>
<td>1. ROA</td>
<td>0.036</td>
<td>0.090</td>
<td>0.130</td>
<td>-0.127</td>
<td>-0.042</td>
<td>0.139</td>
<td>-0.085</td>
<td>-0.093</td>
<td>-0.114</td>
<td>0.030</td>
<td>0.024</td>
<td>-0.157</td>
<td>-0.130</td>
<td>0.002</td>
<td>-0.003</td>
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<tr>
<td>2. R&amp;D intensity (percent sales)</td>
<td>0.014</td>
<td>0.022</td>
<td>-0.101</td>
<td>-0.025</td>
<td>0.034</td>
<td>-0.035</td>
<td>0.192</td>
<td>0.066</td>
<td>0.062</td>
<td>0.017</td>
<td>-0.006</td>
<td>0.015</td>
<td>0.017</td>
<td>-0.075</td>
<td>-0.084</td>
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<tr>
<td>3. Advertising intensity (percent sales)</td>
<td>0.024</td>
<td>0.021</td>
<td>0.090</td>
<td>0.009</td>
<td>-0.061</td>
<td>-0.142</td>
<td>-0.045</td>
<td>-0.084</td>
<td>0.007</td>
<td>0.063</td>
<td>-0.029</td>
<td>-0.023</td>
<td>0.113</td>
<td>0.113</td>
<td>1.13</td>
<td>1.13</td>
</tr>
<tr>
<td>4. Number of employees</td>
<td>321.189</td>
<td>121.317</td>
<td>0.105</td>
<td>0.015</td>
<td>0.014</td>
<td>0.080</td>
<td>0.113</td>
<td>0.064</td>
<td>0.092</td>
<td>0.035</td>
<td>0.056</td>
<td>0.021</td>
<td>0.031</td>
<td>0.055</td>
<td>0.039</td>
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<tr>
<td>5. Product diversification (Herfindahl)</td>
<td>0.577</td>
<td>0.158</td>
<td>0.000</td>
<td>-0.102</td>
<td>-0.004</td>
<td>0.002</td>
<td>0.023</td>
<td>0.033</td>
<td>0.063</td>
<td>0.070</td>
<td>0.055</td>
<td>0.039</td>
<td>0.055</td>
<td>0.039</td>
<td>0.055</td>
<td>0.039</td>
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<tr>
<td>6. Exchange rate (yen per U.S. dollar)</td>
<td>127.425</td>
<td>20.921</td>
<td>0.013</td>
<td>-0.142</td>
<td>-0.135</td>
<td>-0.102</td>
<td>-0.092</td>
<td>0.002</td>
<td>-0.004</td>
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<td>0.000</td>
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<td>0.000</td>
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<tr>
<td>7. Export intensity (percent sales)</td>
<td>0.128</td>
<td>0.177</td>
<td>0.317</td>
<td>0.329</td>
<td>0.078</td>
<td>0.036</td>
<td>0.185</td>
<td>0.154</td>
<td>-0.026</td>
<td>-0.031</td>
<td></td>
<td></td>
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<td>8. Number of subsidiaries</td>
<td>1.243</td>
<td>2.352</td>
<td>0.952</td>
<td>0.226</td>
<td>0.268</td>
<td>0.358</td>
<td>0.388</td>
<td>0.111</td>
<td>0.130</td>
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<td></td>
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<tr>
<td>9. Number of host countries</td>
<td>0.968</td>
<td>1.605</td>
<td>0.219</td>
<td>0.207</td>
<td>0.370</td>
<td>0.368</td>
<td>0.074</td>
<td>0.096</td>
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<tr>
<td>10. JV (local partner) intensity (subsidiaries)</td>
<td>0.024</td>
<td>0.100</td>
<td>0.914</td>
<td>0.086</td>
<td>0.154</td>
<td>0.046</td>
<td>0.052</td>
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<tr>
<td>11. JV (local partner) intensity (host countries)</td>
<td>0.034</td>
<td>0.140</td>
<td>0.141</td>
<td>0.269</td>
<td>0.096</td>
<td>0.104</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>12. JV (Japanese partner) intensity (subsidiaries)</td>
<td>0.079</td>
<td>0.210</td>
<td>0.950</td>
<td>0.004</td>
<td>0.010</td>
<td></td>
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</tr>
<tr>
<td>13. JV (Japanese partner) intensity (host countries)</td>
<td>0.093</td>
<td>0.240</td>
<td>0.064</td>
<td>0.070</td>
<td></td>
<td></td>
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<tr>
<td>14. Japanese partners' FDI (subsidiaries)</td>
<td>38.660</td>
<td>116.448</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15. Japanese partners' FDI (host countries)</td>
<td>4.792</td>
<td>12.956</td>
<td></td>
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Notes:
1. All descriptive statistics reported for non-transformed values.
2. Pearson correlations > 0.060 or < −0.060 significant at the 0.01 level (two-tailed test)
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