

DYNAMIC INTERNATIONALIZATION CAPABILITY AND FIRM PERFORMANCE

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ABSTRACT

This exploratory study links organizational learning and dynamic capability in an Australian firm internationalization study to hypothesize how international experience lays the foundation of a dynamic internationalization capability in the firm. Interacting with the degree of internationalization, the influence of international experience on firm performance is tested with a variable encompassing the dimensions of international experience split by regional differences. The degree of internationalization - performance relationship is non-linear and differs according to a firm's level of international experience in a region. On average, organizational learning takes two years longer in regions dissimilar to a firm's home market than in regions with a home-country similarity.

Key words: international experience, dynamic capability, degree of internationalization, Australia.

INTRODUCTION

International experience ('IE') is one of the most universally relevant topics in international business because all firms operating in international markets will have some level of international experience. To date, research on firms' international experience and performance is limited. The present study aims to address this gap in the literature by investigating the relationship between firms' length and scope of international experience at the corporate level, specifically giving consideration to regional differences in the markets in which the firm operates. By focusing on overall international experience, the present study goes beyond the three dimensions investigated by Hsu and Pereira (2008) to capture all aspects of learning from internationalization.

The present study employs a dynamic capabilities explanation (Teece, 2007) and the capability lifecycle of Helfat and Peteraf (2003) in the context of firm internationalization to hypothesize how international experience lays the foundation of a dynamic internationalization capability in the firm. This paper also sets out to delve further into the degree of internationalization ('DOI') - performance relationship. As international experience is a co-specialized asset, the value of which can be exploited through internationalization only, internationalization is included as an interaction variable in the model tested. The use of the DOI as an interaction variable in our model demonstrates that the conflicting findings of previous research investigating the DOI - performance relationship may be due, at least in part, to the absence of international experience from the models tested.

The paper is presented in the following manner. The concept of international experience and an overview of dynamic capability theory are discussed, followed by an explanation of how international experience can lay the foundation of a dynamic internationalization capability. A brief overview of the conflicting findings of previous studies of the DOI - performance relationship conclude the background to this paper. Discussion on the empirical method adopted to estimate this relationship follows with the variables and their measurement elaborated, including a detailed account of the construction of the

international experience variables. Results are presented and discussed before conclusions terminate the paper.

THEORETICAL BACKGROUND

International Experience

International experience defined. There are two main types of experience that accrue to firms that operate internationally. First, there is country-specific experience (Yu, 1990), whereby a firm gains market-specific knowledge about a specific national market through operating in that market (Luo, 2000; Johanson & Vahlne, 1977). Second, there is general international operations experience that is accumulated by a firm operating internationally rather than in any particular country (Luo, 2000; Yu, 1990).

Organizational learning theory and explanations of the international expansion process suggest that the accumulation of foreign country-specific experience is time-related (Luo, 1999) because it is only through the effluxion of time that a firm will internalize the experiences it has learned from its international operations (Tsang, 1999). While time-based experience is very important, scope of experience, which measures the diversity of international experience (Erramilli, 1991; Luo & Peng, 1999), is also critical because scope accounts for different markets providing a firm with different lessons. Thus, international experience has two dimensions, length and scope.

International experience as a dynamic capability. We argue that a firm's accumulation of international experience is potentially the path to its achieving a dynamic internationalization capability. A dynamic capability is the ability to reconfigure, adapt, and integrate organizational resources and skills to meet the demands of an evolving business environment as a firm strives for sustainable competitive advantage (Eisenhardt & Martin, 2000; Luo, 2000; Teece, 2007; Teece, Pisano & Shuen, 1997), and this indirectly contributes to a firm's output (Helfat & Peteraf, 2003).

International experience indirectly contributes to a firm's output by developing, integrating and reconfiguring a firm's resources and capabilities that were its recipe for success in its home market (or

other foreign markets) for application into a new foreign market. The evolution of firms as they accumulate international experience (Pennings, Barkema & Douma, 1994) supports this contention. We refer to this knowledge and skills relevant to internationalization that are accumulated from international experience as the firm's dynamic internationalization capability. Capabilities, including dynamic capabilities, evolve through four lifecycle stages: foundation, development, maturity and branching through renewal, replication, redeployment, recombination, retirement or retrenchment (Helfat & Peteraf, 2003).

While capabilities can branch in the absence of dynamic capabilities, some branches of the capability lifecycle may benefit from the influence of dynamic capabilities (Helfat & Peteraf, 2003). The process of branching may be facilitated by a dynamic internationalization capability as prior knowledge and experience is employed to optimize capabilities to the foreign market(s) in which a firm operates. We expected that the facilitating role of international experience acting as a dynamic capability on internationally experienced firms' resources would enable them to achieve higher performance outcomes than firms lacking international experience. Hence, we frame the following hypothesis:

Hypothesis 1A. Firms with greater overall international experience perform better than firms with lower overall international experience.

As there are different types of international experience, the dynamic internationalization capability accumulated from international experience will also consist of capabilities that correspond to the types of international experience. For example, the skills needed to successfully operate in a specific foreign country developed through country-specific experience may be seen as a capability in itself, which forms one dimension of a firm's dynamic internationalization capability. As international experience is time-based, firms that have not spent sufficient time in a foreign market may not have gained the experience in that market required to develop the country-specific capability. In these circumstances, an underdeveloped or absent country-specific capability may result in firm resources being under-optimized to the foreign market conditions. As a firm accumulates experience in a particular market, it can be

expected to commit further resources to that market (Luo, 2000) which may involve switching from a low-commitment entry mode to a relatively higher-commitment entry mode (Benito, Pedersen & Petersen, 1999; Pedersen, Petersen & Benito, 2002). This may be due to the firm having revised its perceptions of the benefits, costs and risks associated with involvement in the foreign market as a result of its learning about operating in that market (Benito et al., 1999) and is consistent with a country-specific capability having been developed.

We expect that the undeveloped country-specific capability of firms lacking experience in a particular foreign market would be evident in their experiencing different performance outcomes vis-à-vis firms with sufficient international experience in that market. As the analysis for the present study was performed at the regional level, hypothesis 1B is framed in terms of regional experience as follows:

Hypothesis 1B. Firms with sufficient regional experience will enjoy different performance outcomes to firms lacking in this experience.

International experience can assist firms to overcome, or at least reduce, some of the liability of foreignness (Zaheer, 1995). In terms of our dynamic capability framework, to the extent that processes and markets share common characteristics with prior international experience that has accumulated into a dynamic internationalization capability, international experience could act to shorten the founding and development stages of the country-specific capability. Hypothesis 2 is also framed in terms of regional experience, as follows:

Hypothesis 2. A firm's region-specific capability will develop later in regions that are highly dissimilar to the firm's home country than in regions that are similar to the firm's home country.

Extent of Internationalization

The extent of firm internationalization has generally been referred to as the DOI. While many studies have investigated the relationship between the DOI and firm performance, the form of the relationship is still contested. Studies have found a linear relationship (e.g. Hsu, 2006, Li & Yue, 2008), a two-stage U-

shaped relationship (e.g. Capar & Kotabe, 2003; Ruigrok & Wagner, 2003; Thomas, 2006), a two-stage inverted U-shaped relationship (e.g. Brock, Yaffe & Dembovsky, 2006; Daniels & Bracker, 1989; Geringer, Beamish & daCosta, 1989), and a three-stage relationship (e.g. Contractor, Kundu & Hsu, 2003; Riahi-Belkaoui, 1998).

It is not surprising that the studies that have investigated the relationship between the DOI and performance have reported conflicting findings. The DOI is intended to capture both the benefits and costs of internationalization in a single measure. The concept suffers from the assumption that the costs and benefits of internationalization will be the same for all firms that have the same DOI irrespective of a multitude of individual firm characteristics that could significantly influence those benefits and costs. Further research is required taking into account individual firm characteristics to uncover the true relationship between the DOI and firm performance. Our study's use of the DOI as an interaction variable in the relationship between international experience and performance takes a step in that direction by accounting for firms' international experience.

The interaction between a firm's degree of internationalization and its international experience can be explained by the concept of co-specialization (Teece, 1986). As international experience is an intangible asset to a firm, its value to a firm will be a function of its use in conjunction with the firm's other international assets, whether they are tangible or intangible. The extent to which a firm can deploy its international experience will depend upon the extent to which a firm is internationalized. If a firm were to retreat to purely domestic operations, its knowledge of the internationalization process would sit idle and not add value to the firm's operations. Therefore, the extent of firm internationalization might have an interaction effect with international experience in its relationship with firm performance, and we hypothesise:

Hypothesis 3. The extent of internationalization, the firm's degree of internationalization, interacts with international experience in its relationship with firm performance.

EMPIRICAL METHOD

Sample Selection

Australian firms have been chosen to improve upon the richness of the portfolio of studies on this topic as the vast majority of previous studies have been based on samples of US firms and European firms.

The sample for the present study was limited to publicly listed companies because information is more readily available on publicly listed companies due to the rigorous disclosure requirements imposed by Australian legislation and associated stock exchange listing rules. The companies constituting the ASX 100 index, which were 103 of the largest Australian listed companies by market capitalization, were selected due to their accounting for the majority of the market capitalization of the Australian stock market. Figures for return on assets (ROA), foreign sales and total sales for sample firms were collected from the Aspect Fin Analysis database of financial statistics. Australian accounting standard AASB 1005.4.6 states that a geographic segment will be a reportable segment if either its sales revenue, profit or loss result, or assets amounts to 10 percent or more of total segment revenue, the combined segment result, or total segment assets respectively, of all segments (Australian Accounting Standards Board, 2000). As a result of AASB 1005.4.6, the present study required firms to meet a 10 percent foreign-sales-to-total-sales (FSTS) threshold in at least two of the three sample years to be included in the sample. Although this resulted in an unavoidable left censoring of the data, it is consistent with the approach of previous studies (e.g. Kumar & Singh, 2008; Gomes & Ramaswamy, 1999).

Applying the sampling criteria to the 103 firms of the ASX100 resulted in 23 firms for each sample year. Sixty-five of the 80 excluded firms fall under one of two sampling restrictions. First, the FSTS values could not be calculated for all sample years either due to firms' operations being solely or predominantly domestic with no foreign revenue reported (33 firms) or firms' Australian revenue being consolidated with foreign revenue into one reportable segment (e.g. Australasia), making it impossible to differentiate between domestic and foreign revenue (17 firms). Second, firms that were not Australian were excluded (15 firms). In order to obtain an acceptable sample size, three years of data (2002, 2003,

2004) for all 23 firms in the final sample were pooled into a single sample of 69 firms for the purposes of the cross-sectional analysis.

Variables and Measures

Performance (dependent variable). The present study is concerned with the actual operating returns achieved by international firms. Therefore, accounting measures of performance that show actual operating performance are more appropriate for the present study than market-based measures of performance that show how sharemarket participants value a particular company's performance. ROA is chosen in this study to measure performance instead of other accounting measures of performance such as return on sales because ROA is a widely accepted performance measure (Palich, Carini & Seaman, 2000) that managers and external analysts often rely upon as a measure of top management's effectiveness and efficiency (Grant, Jammine & Thomas, 1988); it directly reflects the impact of corporate strategy on firm performance (Grant et al., 1988), particularly given that international expansion usually involves the deployment of assets, against which a return is to be measured; and it assists in the comparison of the results of this study with prior studies where ROA is commonly used (e.g. Contractor et al., 2003; Daniels & Bracker, 1989; Gomes & Ramaswamy, 1999; Grant, et al., 1988; Hitt et al., 1997; Kim, Hwang & Burgers, 1993; Palich et al., 2000; Riahi-Belkaoui, 1998).

International experience (primary independent variable). An ideal measure of international experience would incorporate the length of experience/time-based experience in each foreign country in which a firm operates, and the scope of experience/diversity of experience a firm accumulates across various countries as a result of differences between a firm's home country and the foreign countries in which it operates. Along these lines, the present study advances a multi-dimensional variable to measure international experience.

Ideally a firm's scope of international experience would be measured at the country level rather than the regional level, to account for the differences between countries within a region. This measure

should not be confused with a pure count of the number of countries. The reporting of business activity by Australian firms is often by region rather than country, which necessitated that firms' scope of experience be considered at the regional level. The foreign geographic regions used for the present study were North America, Central or South America, Western Europe, Eastern Europe, Asia (including the Indian sub-continent), New Zealand/Pacific Islands, Africa/Middle East, and an 'other' region. While these regions were primarily chosen because they correspond with company reporting practice, they also maintain relative homogeneity within regions and heterogeneity across regions. The region labeled 'other' was included to account for firms' common practice of consolidating several smaller foreign markets into one unidentified foreign geographical segment reported as 'other'.

The starting point for constructing the IE variable was adding the number of years of reported foreign revenue in each region (length of experience) across the number of distinct foreign geographic regions in which revenue was reported (scope of experience) to arrive at an aggregate international experience value for each firm for the testing of hypothesis 1A. The necessary data were assembled from the Aspect Fin Analysis database, and companies were contacted by mail questionnaire as required to complete data compilation. To test hypothesis 1B, firms' international experience was split into two separate international experience variables. The first international experience variable, IEI, measured each firm's experience up to and including a certain number of years following its entry into each region. The second international experience variable, IEE, measured each firm's experience beyond a certain number of years following its entry into each region. For example, a transition from inexperience to experience could occur at four years after firms enter each region, in which case each firm's international experience would be split into IEI measuring experience in regions in which each firm has less than or equal to four years' experience, and IEE measuring experience in regions in which each firm has greater than four years' experience.

To test hypothesis 2, a measure of the differences between regions is required. Country risk scores provide an indication of the overall business environment for each country. Therefore, the differences between the country risk scores provide an indication of the differences between the business

environments in the countries. The Euromoney country risk scores (www.euromoney.com) were chosen because they cover a broad range of indicators about a large number of countries. Future research may wish to enrich the analysis by extending it beyond differences in the overall business environment to directly account for cultural differences. Due to the international experience measure being regional in nature, foreign region risk scores (FRRS) had to be calculated from the country risk scores of individual countries constituting each region. The FRRS was an average of the country risk scores rather than a total because a total could result in regions with a greater number of countries being assigned a greater score solely due to their greater size. The FRRS was then subtracted from the Australian country risk score to arrive at a country difference score (CDS).

In the absence of prior evidence suggesting that the direction of the difference between the scores matters, the absolute value of the CDS was taken to focus the present study solely on the size of the difference in scores. The CDS revealed two distinct groups of regions. The North America-Australia CDS (less than 5 points) and the Western Europe-Australia CDS (less than 1 point) revealed that the two regions were very similar to Australia. In contrast, the CDS score for other regions ranged from 40 to 55 points, which indicated that the regions were very different to Australia. The small CDS score for North America-Australia and Western Europe-Australia and large CDS scores for other regions suggested that the year split for North America and Western Europe should be set quite low and the year split for all other regions somewhat higher. For this reason we assigned a lower year split (e.g. 4 years) for North America and Western Europe and a higher year split (e.g. 6 years) for all other regions, including the 'other' region.

In the absence of theory indicating the minimum length of experience a firm requires in a region before it operates in that region in an experienced manner, multiple splits across different years were used to establish the year of transition from inexperience to experience empirically. Accounting for regional differences results in two separate year splits, one inexperience-experience split for similar regions and the other inexperience-experience split for dissimilar regions, such as four years and six years respectively, for empirical testing. The logarithm of the number of years in the region was also taken to test whether

firms learn from their international experiences at a decreasing rate (Barkema et al., 1996) because as firms increasingly gain experience in a region, there may be fewer lessons to learn about conducting business in that region because it has accumulated foreign business and institutional knowledge (Eriksson et al., 1997). Before taking the logarithm, one year was added to each firm's years of experience in each region to account for the learning that occurs as a firm prepares to jump the internationalization hurdle (Liesch & Knight, 1999).

Degree of internationalization (secondary independent variable). There has been extensive debate in the literature about whether the DOI is adequately captured by single item measures or whether multi-item measures are required. In light of the concerns surrounding multi-item measures and the limited availability of data required for constructing entropy measures (e.g. Hitt et al., 1997), it is not surprising that the most common measure of the DOI of the firm is a single-item measure, namely the ratio of foreign sales to total sales (FSTS) (e.g. Capar & Kotabe, 2003; Hsu, 2006; Riahi-Belkaoui, 1998; Ruigrok & Wagner, 2003). FSTS was employed as the measure of the DOI in the present study because it captures the essence of the multinationality of the firm relative to other firms by showing the firm's reliance on foreign sales; it facilitates comparison with prior studies due to the wide use of FSTS in prior studies; and there is insufficient information to construct entropy measures due to firms' commonly aggregating their sales across a number of countries or regions into a single 'other' category in the geographic segment reporting section of their annual reports. Unlike FATA, FSTS is not adversely affected by new investments that are yet to become profitable (Geringer et al., 1989) and it captures all modes of internationalization, including exporting, whereas FATA would only capture higher control entry modes because it requires foreign subsidiaries or assets for measurement (Ramaswamy, Kroeck & Renforth, 1996). Each firm's FSTS was calculated by dividing the sum of the sales reported from all of its foreign geographic segments (those outside Australia) by its total sales.

Industry membership (control variables). As several authors have found that firms' industry memberships influenced the results of their studies (Daniels & Bracker, 1989; Gomes & Ramaswamy, 1999; Kim, Hwang & Burgers, 1993), two industry dummy variables are used for the present research. The first dummy variable, 'industry', differentiates between firms producing products and firms providing services, an important distinction recognized in studies by Contractor et al. (2003) and Capar and Kotabe (2003). In the present study, a second dummy variable 'Material' was used to split the products industry classification into the two sub-classifications of material products (i.e. resources and mining) and other products because of the differences between materials and other products, particularly in terms of the scale of investment required for mining operations and the commodity (i.e. undifferentiated) nature of resource products such as oil and iron ore. The sample firms were classified into either product or service firms primarily according to their Global Industry Classification System classification obtained from the Standard and Poors website (www.standardandpoors.com.au). Annual reports and company websites were also searched to determine whether the companies' primary activities involved producing products or providing services.

The Model

Following earlier discussion we propose an interaction variable that encompasses international experience and the DOI. For the aggregate international experience variable (IE) and using FSTS for the DOI this gives IE*FSTS. Consistent with earlier studies (e.g. Contractor et al., 2003) we propose a cubic function (i.e. with two turning points). The proposed aggregate models are:

$$ROA_i = \alpha_0 + \alpha_1 IE * DOI_i + \alpha_2 IE * DOI_i^2 + \alpha_3 IE * DOI_i^3 + \alpha_4 INDUSTRY + \alpha_5 MATERIAL + \varepsilon_i \quad (1)$$

$$\ln ROA_i = \alpha_0 + \alpha_1 IE * DOI_i + \alpha_2 IE * DOI_i^2 + \alpha_3 IE * DOI_i^3 + \alpha_4 INDUSTRY + \alpha_5 MATERIAL + \varepsilon_i \quad (2)$$

The variables INDUSTRY and MATERIAL allow for differences between service and product firms and between materials firms and other product firms respectively, as previously described. The semi-logarithmic equation (2) is facilitated by the fact that all ROAs of sample firms were positive.

RESULTS

The equations were estimated by OLS using SPSS from pooled time series cross-section data from the years 2002 to 2004 inclusive (a total of 69 observations). The results are presented in Table 1. Inspection of the spread of residuals about the fitted equations supported the error term assumptions of homoscedasticity and serial independence, bearing in mind that OLS has been found to be robust in the presence of minor violations of these assumptions (Harrison & Tamaschke, 1994). Table 2 provides the descriptive statistics for the variables in the regressions.

[“Table 1 goes about here”]

[“Table 2 goes about here”]

To check for potential distorting effects of multicollinearity, the equations were also estimated sequentially beginning with the DOI term, then adding the DOI² term and then the DOI³ term, paying attention to the signs of the coefficients and incremental contributions to adjusted R² in so doing (Cohen, Cohen, West & Aiken, 2003; Harrison & Tamaschke, 1994). The outcomes of this procedure strongly support the results in Table 1.

The aggregate (equations 1 and 2) results suggest that:

1. The semi-logarithmic function (equation 2) achieves the best fit with high explanatory power and the t values of the DOI terms and the F statistic are significant at conventional levels. Adjusted R² in equation 2 is also noticeably higher than in equation 1.
2. There are two turning points in equation 2, which is consistent with earlier studies. DOI first adds negatively to ROA, performance then improves and this is followed by a further decline later on. Figure 1 traces the relationship between ROA and DOI for service firms predicted by the equation when IE equals one. As IE increases the impact of DOI on ROA is magnified proportionately.
3. Autonomous factors (i.e. factors other than international experience or DOI) had a significant positive impact on service sector ROA (as signified by the significant intercept term in Figure 1).

The dummy variable INDUSTRY has a significant positive impact on ROA. The dummy MATERIAL suggests only a marginal difference at best between material firms and other product

firms. Combined with the intercept term, this suggests that autonomous factors played a more important role in the performance of product firms than for service firms.

["Figure 1 goes about here"]

While Equation 2 provides a highly significant result with signs that conform to previous studies, inspection of Figure 1 provides a surprising finding. As DOI increases, the trace of the curve is below and never quite reaches the level of the intercept term, which represents autonomous influences on ROA. The DOI effect is magnified by increases in IE. These findings suggest that internationalization and international experience actually detracted from firms' performance during the sample period.

To consider whether this finding holds for all combinations of experience and levels of DOI, the semi-logarithmic model (equation 2) was reformulated to incorporate the disaggregated experience variables IEI and IEE described earlier. This reformulation is stated as Equation 3.

$$\ln ROA_i = \alpha_0 + \alpha_1 IEI * DOI_i + \alpha_2 IEI * DOI_i^2 + \alpha_3 IEI * DOI_i^3 + \alpha_4 IEE * DOI_i + \alpha_5 IEE * DOI_i^2 + \alpha_6 IEE * DOI_i^3 + \alpha_7 INDUSTRY + \alpha_8 MATERIAL + \varepsilon_i \quad (3)$$

Once more, the equation was estimated by OLS using SPSS. As the precise cutoff between IEI and IEE is unknown, a number of equations were run to determine the best fitting equation. This procedure suggested IEI46 and IEE46, splitting at four years for similar regions and six years for dissimilar regions, was the best fit for the data. The results are provided in Table 3, which shows both t and F values that are significant at conventional levels. Table 4 provides the supporting descriptive statistics. As previously, the equation was also estimated sequentially to check for potential distorting effects of multicollinearity beginning with the DOI terms, then adding the DOI² terms and then the DOI³ terms, paying attention to the signs of the coefficients and incremental contributions to adjusted R² as previously. The outcomes of this procedure strongly support the results of Table 3.

["Table 3 goes about here"]

["Table 4 goes about here"]

["Figure 2 goes about here"]

["Figure 3 goes about here"]

The estimated results for equation 3 suggests that:

1. The impact on ROA of internationalization varies with levels of experience. Figure 2 traces the relationship for firms operating in regions in which they lack experience (the IEI46 terms) predicted by the equation when IEI equals one (the theoretical minimum IEI score). Similarly Figure 3 provides the trace for firms operating in regions in which they have sufficient experience (the IEE46 terms) when IEE equals four (the theoretical minimum IEE score). For the IEIs it will be evident that the impact on ROA of DOI is initially positive, then turns negative, and then again turns positive. By way of contrast for the IEEs the impact is initially negative, then turns positive, followed by another negative. In both cases the impact of internationalization is magnified proportionally with experience.
2. Autonomous factors (i.e. factors other than international experience or DOI) had a significant impact on service sector ROA (as signified by the intercept term). The dummy variable INDUSTRY has a significant positive impact. The dummy MATERIAL suggests no difference between material firms and other product firms. Combined with the intercept term, these results again suggest that autonomous factors played a more important role in the performance of product firms than for service firms. Differences were found in the services sector, with dummy variables for two companies that sold franchises revealing that those two firms were not significantly different from the firms producing products, and they were thus treated as product firms for the purposes of the analysis.
3. No meaningful results were found for equation 3 using the logarithm of years in the IEE and IEE variables. Thus, there was no support for the contention that firms learn from their international experiences at a decreasing rate.

Unlike equation 2, DOI and international experience can make positive contributions to ROA for firms operating in both regions in which they possess sufficient experience and regions in which they lack

experience, as evidenced by the paths of predicted ROA values in Figures 2 and 3. Where firms lack experience in a region (Figure 2), DOI adds positively to ROA for DOI values up to about 0.2 and declines thereafter for DOI values up to about 0.8. Where firms have sufficient experience in a region (Figure 3), DOI adds negatively to ROA for DOI values up to about 0.2 and then begins to add positively for DOI values up to about 0.8. The implications of this are discussed in the next section.

DISCUSSION

Regional Similarity and International Experience

Only once firms have developed a region-specific capability can they expect to achieve performance outcomes associated with operating in a foreign region in an experienced manner. Firms operating in regions that are similar to their home country can expect the initial capability foundation and development stages to last for around four years. Firms operating in regions that are different to their home country can expect the capability foundation and development stages to last for around six years. Hypothesis 2 is supported because on average, firms can expect to take an additional two years in regions that are dissimilar to the home country to gain sufficient experience. This demonstrates that researchers must account for regional differences when measuring international experience.

Aggregate International Experience and Performance

The results for the overall experience variable were surprising, and contrary to expectations, in-so-far as they indicated that firms suffered lower performance if they had international operations and international experience. In other words, Hypothesis 1A is not supported by equation 2. The results obtained from equation 3 suggest that the most likely explanation for the surprising finding in equation 2 is that a single variable measuring firm aggregate international experience is a misspecification as it does not account for the different consequences associated with the extent to which a firm has developed its region-specific capabilities.

Disaggregated International Experience and Performance – IEI and IEE

Holding IEI and IEE constant reveals the relationship between a firm's DOI and its performance. The differences in the shape of the curves in Figures 2 and 3 support Hypothesis 1B by demonstrating that operating in an inexperienced manner (i.e. without a region-specific capability) generates different performance outcomes for a given level of internationalization compared to operating in an experienced manner (i.e. with a region specific capability). The international experience-performance relationship is not as straightforward as inexperience impairs performance and experience improves performance. This means that any operationalization of international experience needs to account for both inexperience and experience.

Regions in which firms lack experience. Firms operating in regions in which they lack experience (i.e. underdeveloped dynamic region-specific internationalization capability) are most likely to find themselves with either insufficient ('situation one firms') or sufficient ('situation two firms') general international operations experience (i.e. dynamic general international operations capability) to draw upon to assist themselves. As firms lacking experience in a region tend to prefer low commitment entry modes (Benito et. al., 1999; Johanson & Vahlne, 1977), a significant part of an inexperienced firm's performance may initially be driven by its choice of market entry mode. The initially higher levels of ROA associated with low levels of DOI may reflect the increase in sales generated by a firm's entry into new markets through low-commitment entry modes, such as exporting, which do not require significant investment in new assets. The increase in sales is more than enough to offset the cost of founding a region-specific capability or the costs of replicating existing capabilities, such as distributor networks, in the foreign region.

Firms with moderate FSTS scores (assuming domestic sales have not declined) would have reached higher levels of FSTS from either sales generated in new foreign markets or further penetration of foreign regions in which they already operated. If the increase is due to entry into new markets, the realization of economies of scale and scope is likely to require these firms to coordinate increasingly geographically distant operations. Achieving this level of coordination can be a difficult and expensive

task (Gomes & Ramaswamy, 1999). This challenge will be greatest for situation one firms because they lack the experience (i.e. possess an underdeveloped dynamic internationalization capability) to effectively manage the capability branching triggered by the increased complexity, such as by reconfiguring firm resources to achieve adequate mechanisms to coordinate multiple international markets (Craig & Douglas, 1996).

Situation two firms however could utilize their general international operations experience (i.e. part of their dynamic internationalization capability) to overcome at least some of the challenges of coordination and complexity stemming from replication into new geographic markets. In the case of situation two firms, a more likely explanation for the lower levels of performance is the costs associated with further penetration into foreign markets in competition with established companies for which the foreign market is the competitors' home market. If higher levels of FSTS are achieved through market penetration, activities associated with that market penetration, such as the further customization of products to the local market (capability renewal), broadening of product lines (capability redeployment) and increased local advertising, are costly. A firm's dynamic internationalization capability may help with the implementation of strategies but will be unable to eliminate the need to incur such expenditures. Thus, firm performance tends to be lower at moderate levels of internationalization. At even higher levels of internationalization, higher levels of performance are evident, but not as high as the levels of performance experienced at lower levels of internationalization. At high levels of FSTS, economies of scale can be expected to emerge to assist the firm to achieve positive performance. Situation two firms may be able to draw on their experience in other regions (i.e. dynamic internationalization capability) to allow them to overcome the final amount of region-specific experience required to improve performance.

Regions in which firms possess experience. As levels of FSTS increase, lower performance levels are evident, followed by higher levels of performance, then a possible decrease. The initial performance decline lends support to the argument that once firms have experience in operating in a foreign region, they have the confidence to make more costly commitments to the market. For example, a firm that

initially entered a market via exporting could invest in a wholly owned subsidiary that is yet to generate a return (capability renewal). The costs are so substantial that they initially erode many of the benefits that can be enjoyed by virtue of existing experience. Figure 3 illustrates how firms with international experience enjoy higher levels of performance at medium to high levels of internationalization. As the costs associated with geographic dispersion escalate, firms have to institute new organizational structures and controls to reverse performance declines (Geringer et al., 1989). The dynamic internationalization capability possessed by firms with region specific experience enable them to anticipate the need for adaptation, act quickly and evolve current resource configurations, thereby undergoing geovalent adjustment (Guisinger, 2001). For example, the evolution of resource configurations may manifest in changes in a firm's strategy or structure in response to the firm's learning of important cultural differences requiring product customization to local imperatives. Once these changes are in place, one or more of the firm's capabilities have branched, and the firm's operations are organized to unlock the benefits of higher levels of internationalization.

The finding of lower levels of performance at high levels of DOI is tentative given that the $IEE*DOI^3$ variable is only significant at the 10% level (two-tailed test). Firms continue to enjoy higher levels of performance until costs again become magnified. At this stage, the costs are likely to be associated with issues of control and coordination. As firms become highly internationalized, issues of coordination and control will be exacerbated by the need to cope with markets changing at different rates that result in multi-directional pulls (Craig & Douglas, 1996). In addition, a point may be reached at which a firm's existing infrastructure becomes insufficient for generating further sales and investment in additional assets will be required. Combined with the effects of new investments, new challenges arise as an already geographically diverse firm expands its international operations. These strategic adjustments (capability branching) are expenses to the firm. Thus, cultural diversity, logistical issues, and other factors such as trade barriers result in the management of internationally diversified firms being highly complex (Hitt et al., 1997) and often highly costly, which even experienced firms have difficulty in overcoming.

CONCLUSIONS

This exploratory study extends the very limited research on international experience and performance by investigating the relationship between firm performance and corporate level international experience. The construction of an international experience variable, which accounts for time-based experience and the scope of international experience, was an important step toward achieving a more comprehensive measure of international experience.

The present study extended the application of dynamic capabilities and organizational learning in the field of international business by presenting international experience, which is accumulated through organizational learning in foreign markets, as the basis of the formation of a dynamic capability, which we refer to as the dynamic internationalization capability. As our arguments concerning the dynamic capability are theoretical, future research may test directly the features of dynamic capabilities, for example reconfiguration, in this internationalization context. The process of organizational learning required for the firm to become sufficiently experienced in a foreign market was found, on average, to be two years longer in regions that are highly dissimilar to a firm's home country than in regions that are similar to a firm's home country, thereby highlighting the role of country differences. The interaction effect of the IEI*DOI and IEE*DOI variables suggests that the conflicting results of prior studies concerning the DOI-performance relationship may be due to the absence of the interaction effects of international experience, and potentially other important variables, from the models tested.

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Table 1 Results for Equations 1 and 2

	Equation 1 ROA	Equation 2 lnROA
Intercept	0.031***	-3.714***
IEDO1	-0.002	-0.085***
IEDO1 ²	0.004	0.233**
IEDO1 ³	-0.002	-0.161*
INDUSTRY	0.055***	1.333***
MATERIAL	0.01	0.553
R ²	0.696	0.755
Adjusted R ²	0.672	0.736
F	28.895***	38.89***

* $P < 0.1$; ** $P < 0.05$; *** $P < 0.01$;

Note: Two-tailed tests are used for the equation co-efficients; a one-tailed test is used for F

Table 2 Descriptive statistics and definitions for Equations 1 and 2

	Equation 1 ROA		Equation 2 lnROA	
	Mean	S.D	Mean	S.D
ROA	0.060	0.035		
lnROA			-3.07	0.84
IEDOI	14.896	13.137	14.90	13.14
IEDOI ²	7.980	11.848	7.98	11.85
IEDOI ³	5.527	10.413	5.53	10.41
INDUSTRY	0.652	0.480	0.65	0.48
MATERIAL	0.130	0.339	0.13	0.34

Definitions

ROA	Return on assets
lnROA	Natural log of ROA
IE	Aggregate international experience (time-based and region-based)
DOI	Degree of internationalisation (represented by FSTS, the ratio of foreign sales to total sales)
DOI ²	DOI squared
DOI ³	DOI cubed
INDUSTRY	Industry dummy (equals 0 for service firms and 1 for industrial firms)
MATERIAL	Material firms dummy (equals 0 for industrial firms and 1 for materials firms)
ε_i	Random error term

Table 3 Results for Equation 3

	InROA
Intercept	-4.084***
IEI46DOI	0.846***
IEI46DOI ²	-2.605**
IEI46DOI ³	1.732**
IEE46DOI	-0.078**
IEE46DOI ²	0.256**
IEE46DOI ³	-0.169
INDUSTRY	1.393***
MATERIAL	0.234
R ²	0.799
Adjusted R ²	0.772
F	29.775***

* $P < 0.1$; ** $P < 0.05$; *** $P < 0.01$;

Note: Two-tailed tests are used for the equation co-efficients; a one-tailed test is used for F

Table 4 Descriptive statistics and definitions for Equation 3

	Mean	S.D.
lnROA	-3.07	0.84
IEI46DOI	1.47	1.97
IEI46DOI ²	0.88	1.55
IEI46DOI ³	0.62	1.32
IEE46DOI	12.71	12.71
IEE46DOI ²	7.44	11.16
IEE46DOI ³	5.17	9.73
INDUSTRY	0.65	0.48
MATERIAL	0.13	0.34

Definitions

lnROA	Natural log ROA
IEI46	International experience < or = 4 yrs post entry in regions similar to the home country and < or = 6 yrs post entry in regions more different to the home country
IEE46	International experience > 4 yrs post entry in regions similar to the home country and > 6 yrs post entry in regions more different to the home country
DOI	Degree of internationalisation
DOI2	DOI squared
DOI3	DOI cubed
INDUSTRY	Industry dummy
MATERIAL	Material dummy
ε_i	Random error term

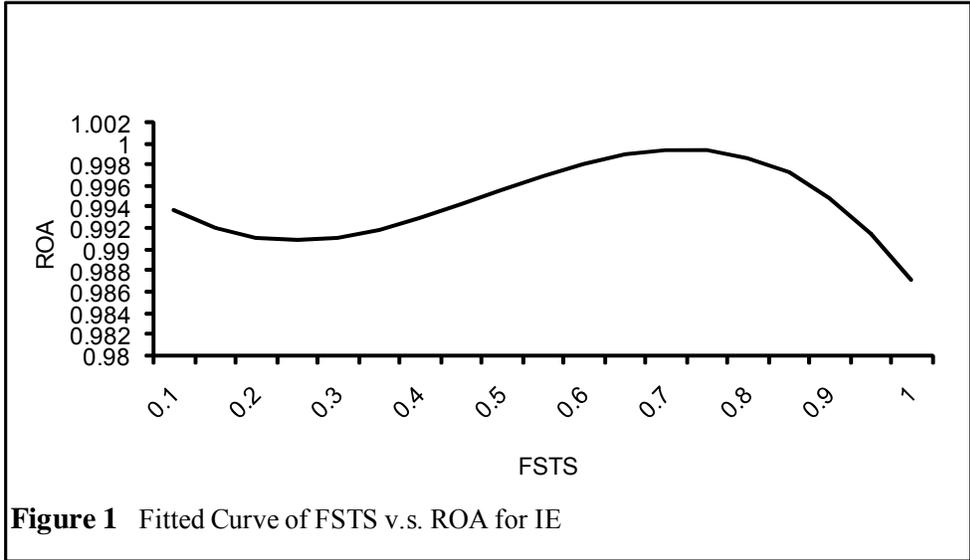


Figure 1 Fitted Curve of FSTS v.s. ROA for IE

