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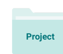

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Journal of International Business Studies (2009) 40, 1228–1238
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RESEARCH NOTE

Born global or born regional? Evidence from an exploratory study in the Costa Rican software industry

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Received: 23 August 2007
Revised: 27 November 2007
Accepted: 13 December 2007
Online publication date: 30 October 2008

Abstract
This paper provides empirical evidence about born-global firms in the software industry of a small developing country with an open economy: Costa Rica. The paper is based on data collected through interviews with CEOs or founders of 40 Costa Rican software companies. Findings show that there are few born-global firms among Costa Rican software providers. We find that most companies followed a gradual approach to internationalization, and they did not export immediately upon birth. A careful analysis of firms that exported soon after they were born reveals that most firms are actually "born regional."
Journal of International Business Studies (2009) **40,** 1228–1238.
doi:10.1057/jibs.2008.69

Keywords: regional strategy or strategies; multinational corporations (MNCs) and enterprises (MNEs); management; entrepreneurship in emerging markets; software

INTRODUCTION

Traditional theories of internationalization, often referred to as the Uppsala theories (e.g., Carlson, 1975; Johansson & Vahlne, 1977; Johansson & Wiedersheim-Paul, 1975; Welch & Luostarinen, 1988; Welch & Wiedersheim-Paul, 1980), posit that firms go through stages as they progress toward becoming international.

An alternative view has suggested that there are firms, called *born globals* (Knight & Cavusgil, 1996; Madsen & Servais, 1997; Rennie, 1993), that internationalize soon after their inception.

This research aims to contribute to this debate by providing empirical evidence about born globals in the software industry of a small developing country with an open economy: Costa Rica. The research is based on data collected through interviews with CEOs or founders of Costa Rican software firms. Findings prove that there are only a few born-global firms among Costa Rican software providers. We find that most companies internationalized gradually, and did not export immediately upon birth. We isolate and analyze firms that, according to accepted definitions, appear to be born globals. A careful analysis of these firms reveals that most are actually "born regional," as they exported mainly to Central and South America, despite their most strategic market being the United States.

The empirical evidence of this paper presents a challenge to the born global argument. In our data, firms that seem to be born global turn out to be exporters in a regional context, engaging only

in activities in nearby countries where there are no cultural or language barriers. The evidence in our paper suggests that different definitional criteria may be necessary to identify born-global firms, and also that firms will tend to go through a process of resource accumulation by engaging in markets within short proximity.

LITERATURE REVIEW

In traditional models, firm internationalization is seen as a gradual process of capability build-up by which firms slowly accumulate the resources necessary to face foreign market uncertainty (Eriksson, Johanson, Majkgard, & Sharma, 1997). These models assume that firms grow in their domestic markets before they start to export extensively. This is supposedly so because there is a learning process involved in facing unknown markets, and such a process requires knowledge and resources to face and overcome uncertain outcomes and costly investments. Knowledge and resources are progressively acquired through experience, first in known domestic markets and then in larger foreign markets (for a review see Leonidou & Katsikeas, 1996). Much literature has documented this liability of foreignness, or the cost faced by firms that operate abroad, and the need for companies to create capabilities in foreign markets (Mezias, 2002; Zaheer, 1995; Zaheer & Mosakowski, 1997).

Conventional models of internationalization have drawn criticism (Andersen, 1993; McDougall, Shane, & Oviatt, 1994; Turnbull, 1987). There is empirical evidence that shows the existence of small, young firms, endowed with very limited resources, which begin to export immediately after their foundation. For instance, Moen and Servais (2002) reported, for a sample of Norwegian, French, and Danish firms, the existence of many companies exporting a large share of their total sales shortly after their establishment. Such empirical evidence suggests that the Uppsala model is not the only possible way to describe the firm internationalization processes. Turnbull (1987) criticizes the determinism inherent in stage-based models, and argues against the notion that all firms, regardless of industry type, country context, or other variables, must inevitably follow a fixed route to become international. Other authors (Chadee & Mattsson, 1998; Erramilli & Rao, 1993; O'Farrell, Wood, & Zheng, 1998) contend that the internationalization process is not equally complex and costly in all industries. In industries where trade barriers, fixed investment, and transportation costs are low, such as services, internationalization may be less costly in terms of monetary and organizational resources.

The born global argument essentially states that firm internationalization does not have to go through the progressive accumulation of resources and capabilities. It posits that firms can start exporting from the moment they are created, and it asserts that firms are capable of penetrating markets that are far away, both geographically or "psychically" (on account of their different cultural and language traits), despite having limited resources and little accumulated organizational learning.

The definition of a born-global firm was coined by McKinsey & Co. in a report that analyzed a sample of Australian exporting firms (McKinsey & Co., 1993). It was used to describe firms that, apparently, had undergone faster processes of internationalization than would have been expected for firms of similar size, age, and nature. It was thus proposed that these firms were born globals. Cavusgil (1994), and also Knight and Cavusgil (1996), elaborated McKinsey & Co.'s empirical observation to argue against traditional models of internationalization. Cavusgil (1994: 18) went as far as to state that "gradual internationalization is dead." These claims sparked an academic debate revolving around different theories of internationalization. Since then several authors (Collis, 1991; Knight & Cavusgil, 2004; Madsen & Servais, 1997; McDougall et al., 1994; Oviatt & McDougall, 1994) have attempted to provide a theoretical foundation for these empirical observations. The theory has focused on establishing the antecedents of such firm behavior.

One research stream argues that the born global phenomenon will be most prevalent in knowledge-intensive firms, such as those that make software or information technology products. Once created, many knowledge-intensive products, such as software, can be replicated at low marginal cost. Because of this, it is argued that small knowledge-intensive firms can bypass the home market and target foreign markets, or enter domestic and international markets simultaneously (Bell, 1995; Bell, McNaughton, Young & Crick, 2003; Boter & Holmquist, 1996). Autio, Sapienza, and Almeida (2000) found that firm knowledge-intensity was positively correlated to international sales growth, and several studies (Bell, 1995; Boter & Holmquist, 1996; Coviello, 1994) have documented the tendency for firms in knowledge-intensive sectors to internationalize rapidly.

A proposition often made is that the home market has little importance for the born-global

firm, to the point of conjecturing that a small local demand might drive the firm's efforts to seek opportunities abroad. Bell et al. (2003: 341), for instance, argue: "This behavior is particularly prevalent among firms operating in small open economies and in emerging nations, where domestic demand may be limited."

Previous international experience of founders and employees has also been proposed as playing a mediating role in early internationalization (Bengtsson, 2004). Such experience enhances the firm's ability to learn and, consequently, to internationalize rapidly. Some authors argue that the new firm's knowledge and accumulated experience amount, in the end, to the entrepreneur's own knowledge about other markets (Knight & Cavusgil, 2004). Madsen and Servais (1997) posit that differences between traditional exporters and born-global firms can be attributed largely to differences in their founders' backgrounds. The founder's international experience may affect the extent to which psychic distance from strategic markets is perceived to be an obstacle to internationalization. It is plausible that entrepreneurs with international experience have a well-developed network of contacts that allows them to internationalize earlier (Contractor, Hsu, & Kundu, 2005; Kundu & Katz, 2003). In the past 2 years several scholarly studies have focused on the network dynamics of international new ventures (Coviello, 2006; Mathews & Zander, 2007; Mudambi & Zahra, 2007; Zhou, Wu, & Luo, 2007).

To summarize, it appears that many theoretical and empirical considerations support the existence of born-global firms. This notwithstanding, extant theoretical developments and empirical studies are far from proving that "gradual internationalization is dead" (Cavusgil, 1994). The born-global literature is still lacking a precise definition of what a born-global firm is, and some existing definitions are tautological. Moen (2002) asserts, for instance, that "although firms that follow this incremental development pattern may still exist, the normal pattern may be different in the new millennium." His assertion is supported by the fact that between 30 and 40% of the exporting firms in his sample of Norwegian and French firms were exporting within 2 years of their creation. The fact that 60–70% of firms in the sample were not exporting within those 2 years seems to be absent from the discussion.

It also appears that the born-global argument can be made empirically stronger by simply changing the time span to first export required for a firm to be considered born global. Inconsistency in definition criteria makes it difficult to compare the born-global phenomenon across different studies.

The existence of born-global firms contradicts much evidence that has shown the predominantly regional focus of the international activities of multinational enterprises (Rugman & Brain, 2003). In the absence of country-specific advantages, one should expect a strong firm-resource endowment in order for firms to expand abroad successfully (Rugman & Verbeke, 2005).

Finally, the born-global conjecture lacks empirical support from firms that start operating in small developing countries. Developing countries could prove a suitable litmus test for the born-global hypothesis. This is so because the internal markets of developing countries are small. Hence, according to these theories, firms must look to larger, foreign, markets in order to grow, and therefore firms that operate in small developing countries should have strong incentives to internationalize early.

RESEARCH QUESTION

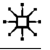
Our review of the theory and relevant literature suggests that born-global firms would abound in knowledge-based industries, and especially in small countries with open economies. Our research question thus concerns the very existence of born-global firms in small open economies.

DATA

In this paper we test whether Costa Rican software firms are born globals or whether they have followed a traditional internationalization model. Costa Rica provides a very interesting natural laboratory for investigating internationalization theories. The country has a sprawling domestic information and communications technology industry.

Costa Rica is a small developing country located in Central America. Its GNI per capita in 2004 was $4470 (World Bank, 2006). The country is endowed with a well-educated workforce, and a stable democracy. Its economy has undergone a process of liberalization. Import tariffs have steadily decreased in the past two decades. Free trade agreements have been signed with a variety of countries and, particularly, with the United States, Costa Rica's largest trading partner.

Data on the Costa Rican software industry are scant. Publicly available data aggregate software producers with firms in the broader information



and communications technologies sector, also known as the ICT sector. Under this category there are 150 firms listed. These firms include software producers and also producers of ICT-related products and services. The majority of these firms are small or medium enterprises. Only 9% of the total number of firms have more than 100 employees. Estimated exports for the whole sector are estimated to be US$70 million at the time of the study, 2004.

As Table 1 (Camtic, 2004) shows, the value of software exports grew by 40% between 2000 and 2004. Such growth could hardly be obtained by focusing solely on the domestic market. If, in fact, as Madsen and Servais (1997) posit, foreign markets, however uncertain, are regarded as opportunities for expansion, it is plausible to expect instances of Costa Rican software companies going global.

We collected data from 40 Costa Rican software companies. Although the number might seem small, it is actually a sizeable percentage of the total number of firms operating in the country at the time of the study. Firms were selected from the list of software firms in the industry, and we performed interviews with those that provided access to the authors. It is likely that the sample of firms is biased toward the more dynamic firms in the industry, and, perhaps toward firms that were likely to have some export activities. For the 40 firms we conducted semi-structured interviews and administered a questionnaire with quantitative scales for several variables. All but three interviews were with people who designated themselves as owners or founders of the firm, or with people who were designated as the highest-ranking official in the firm (i.e., CEO or president). Interviews were followed up with telephone consultations.

For this exploratory study we gathered information on two groups of variables. The first group was related to export performance. Here we used four measures. The first was a measure of total exports as a percentage of total sales. This measure, often referred to as export intensity, has been used in several empirical studies of internationalization (Axinn, 1988; Bello & Williamson, 1985; Bilkey, 1985; Kundu & Katz, 2003). A second was total foreign clients as a percentage of total customers. This variable was used to complement the more traditional export intensity measure. Though seldom used as a measure of export performance (see Zou & Stan, 1998, for a review), this measure is an important complement of export intensity, particularly for determining how active the firm is in seeking clients abroad. Data were also collected on the percentage of total foreign sales during the first year of firm existence as a percentage of total sales that year. This measure seeks to capture firms' proclivity to export early in their existence. Work on firm internationalization emphasizes early exports as an important characteristic of born-global firms. Finally we collected data on current sales, and specifically the percentage of current sales that were local, regional, or global. This measure would allow us to assess the persistence of early export activities to the date the study was conducted. This measure follows in the tradition of much work that accounts for export intensity by taking into account growth of export sales (Zou & Stan, 1998).

The second group of variables measured firm-level characteristics, specifically firm size, firm age, and export experience. The size of the firm was operationalized using total sales and number of employees. Firm age was measured as the number of years that had elapsed since the firm was founded until the time of the study. International experience was measured as the number of years the firm had been exporting.

Table 1 Basic statistics on software and information technology firms in Costa Rica

Item	*2000*	*2004*
Number of software and IT firms	137	150
Large (+100 employees) (%)	3	9
Medium (20–100 employees) (%)	23	31
Small (5–20 employees) (%)	46	43
Micro (1–5 employees) (%)	28	17
Employees per company (average)	15.2	30
Employees in software and IT companies (total)	2083	4500
Value of software exports (US$ millions)	50	70

Source: Camtic (2004).

METHODS AND RESULTS

We first attempted to establish a definition of born global consistent with those in the literature. Unfortunately, it appears that although, conceptually and intuitively, the notion of early internationalization is clear, its operationalization has followed diverse guidelines. In a recent review, Knight and Cavusgil (2005: 16) define born-global firms as "companies that, from or near their founding, obtain a substantial portion of total revenue from sales in international markets." This

definition is in accordance with those of Oviatt and McDougall (1994) and Rennie (1993), among others. The exact time elapsed to be considered "near" their founding has many interpretations in much empirical work. It, moreover, requires a careful definition of the measure that is going to be used to define the firm's outward orientation. Knight, Madsen, and Servais (2004), for instance, operationalize born globals as companies younger than 20 years that started to internationalize within 3 years of their founding and obtain more than 25% of total sales from foreign markets. In these and other works the rationale for using a particular timeline or export percentage is not clearly established.

Drawing numerical lines, either in terms of time to first exports or in the percentage of sales a firm must export in order to be considered a born-global firm, is somewhat arbitrary. The born global argument is, in essence, an assertion regarding the very nature of a firm, the assertion being that there are firms that are so intrinsically different in nature from others that they start venturing internationally much earlier. We therefore tried to isolate these firms by using clustering techniques. Such techniques allow us to establish limits along several variables, and to group firms according to characteristics alongside those variables.

When describing born-global firms, researchers have pointed to several variables that may be seen as the yardsticks that can be used to characterize them. Knight (1997: 1) for instance, defined a born-global firm as "a company which, from or near its founding, seeks to derive a substantial proportion of its revenue from the sale of its products in international markets." In this definition, which is similar to that of Knight and Cavusgil (2005) above, it is clear that born globals are set apart because of their proclivity to export, and also because they export while still in their early youth. Moen (2002: 158) defines born globals as firms "having export sales higher than 25% and an establishment date post 1990." In this definition export behavior in the firm's early age is established as the typical trait of a born-global firm. Oviatt and McDougall define an "international new venture as a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (1994: 49). Again, export behavior, both current and at an early firm age, appears to emerge as the relevant attribute that one should look at when trying to unveil the existence of born globals.

Following these studies, we used five variables to group firms of similar characteristics. The first was a measure of export intensity, in terms of the percentage of customers who were foreign customers at the time of the study. A second measure that also emerges in these studies is the temporal proximity between firm inception and first export. To characterize this we looked at the percentage of total sales during the first year that were exports, and also at time elapsed from inception to first export. In addition to these measures of export intensity and international orientation at a very early stage we also used firm size, in terms of number of employees, and firm age in years.

We first explored these variables visually. Contrary to expectations, inspection of our data showed that most firms in our sample were not born exporters. Quite the contrary: only a few firms exported right at the outset. In our 40-firm sample 36 firms reported the percentage of total sales that were exports during their first year. Out of these 36,the vast majority, 30, did not export at all during this first year. One firm reported exporting 10% of its sales within one year of its inception, and another firm reported 20% of its sales during its first year of existence. This notwithstanding, four firms reported most of their sales being exports during their first year. One firm reported obtaining 80% of its sales from export markets, and three firms exported the total of their sales during their first year of existence. Our data show that it took firms an average of 4 years from their founding to export for the first time, and not all exported on a regular basis. At the time of the study (2004) four firms in the sample had never exported at all.

Examination of current export sales as a percentage of total sales for 2004, the year of the study, revealed different export behaviors. Of the 38 firms that reported these data, one group, of 23 firms, reported less than 50% of their total sales as being exports. The other group, 15 firms in total, while consisting of smaller firms (at least as measured in terms of their number of employees), had 50% or more of their total sales coming from exports. The overall average percentage of sales that are exports is 33.6%.

After inspecting the data, we used clustering techniques as an exploratory tool that would permit us to unveil whether firms in our sample could be grouped around the five variables that emerge in the literature as the overarching characteristics of the born-global firm. Cluster analysis is used as an exploratory technique, though it

Table 2 Estimated Pearson correlation coefficients, means, and standard deviations

	1	*2*	*3*	*4*	*5*
1. Percentage of customers who are foreign					
2. Firm size	0.41**				
3. Firm age	0.05	0.34*			
4. Percentage of export sales during first year	0.52**	0.07	−0.25		
5. Time elapsed to first export	−0.28	0.12	0.46**	−0.41*	
Mean	0.34	2.43	9.08	0.11	4.06
s.d.	0.33	1.30	5.39	0.30	3.71

**p<0.01; *p<0.1.

compels a structure on the data. That is why variables must be chosen with a good theoretical basis (Aldenderfer & Blashfield, 1984). We deemed these five variables appropriate, for they stem from the literature as the fundamental constructs supporting the theory of born-global firms, which is the basis for the choice of variables.

All variables were screened to explore their distributions, missing value patterns, and outliers. Table 2 reports estimated Pearson correlation coefficients, means, and standard deviations for the variables. Generally speaking, export intensity, measured by the percentage of customers who are foreign, shows significant positive correlations with firm size and first-year exports, but not with firm age. As expected, the correlation with the time elapsed to first exports has a negative sign. The data show little correlation structure, with a Gleason–Staelin redundancy measure of 0.33, which is considered low. Hence small correlations among the variables precluded using dimensionality reduction procedures, such as factor analysis, to uncover possible underlying structure and associations.

To perform the cluster analysis, we first used, as recommended by Punj and Stewart (1983), a hierarchical clustering method, Ward's technique with Euclidean distance, to select an appropriate number of clusters, and to explore the possible occurrences of outliers. We determined the final number of clusters by examining the dendogram generated with Ward's method, and the agglomeration distance coefficients. By examining changes in cluster densities we arrived at a three-cluster solution. We confirmed the presence of one outlier, which thereupon, again following the recommendation of Punj and Stewart (1983), was deleted from further analyses. Owing to the small size of the sample we decided to deal with missing data by carefully evaluating multivariate imputation. We did this by imputing one value at a time, and examining sensitivity upon our clustering result by rerunning Ward's technique every time. The clusters obtained following this procedure remained stable throughout. Although it is common to validate clustering results by performing discriminant analysis on an ex-post basis (e.g., Knight & Cavusgil, 2005), Aldenderfer and Blashfield (1984) consider this to be statistically inappropriate. Hence, following Punj and Stewart (1983), we decided to rerun our clustering procedure using an iterative partition algorithm, *k*-means clustering, on the same dataset. In their study those authors found that *k*-means clustering appeared to be more robust than any hierarchical method, even, plausibly, when random starting points are used to get the iterative procedure going. We found that the cluster assignments using *k*-means were fairly consistent with the hierarchical procedure used first, reporting coincidences in cluster assignments greater than 72%. Moreover, with respect to the usefulness of the procedures, both permitted us to draw the same conclusions. In Table 3 we report the results of the *k*-means clustering procedure.

One group of firms, under Cluster 1 in Table 3, consisted of relatively young small firms (5.5 years on average). These companies did not engage in sizeable export activities. The percentage of total customers outside the local market was, on average, a little less than 9%. Practically no firm in this group had exported during its first year.

A second group of firms, grouped under Cluster 3 in Table 3, showed, at the time of the study, somewhat more active export activities than firms in Cluster 1. These firms' customers were, on average, 49% foreign. These firms were also the largest in the sample, and the majority of them, like those companies in Cluster 1, did not export during their first year of existence. On average, it took them 5.3 years to make their first export.

The main differences between the firms in Cluster 1 and Cluster 3 are their age and size. Both groups have in common that their export activities at their

Table 3 Cluster means for each variable

	Cluster			F value
	1	2	3	
Percentage of current customers who are foreign	8.6	83.6	49	36.23**
Firm size	1.7	2.6	3.1	5.84**
Firm age	5.5	6.2	13.3	20.48**
Percentage of exports during first year	3	90	0.9	387.45**
Time to first export	3.0	0.6	5.3	8.34**
Number of firms in cluster	18	5	16	

**$p < 0.01$.

inception were limited or non-existent. It appears safe to infer from these data that these firms started operating in the home market, and only slowly started to expand. Firms in Clusters 1 and 3 could be described as cautious internationalizers. They are not born-global firms.

Our clustering analysis reveals a third, smaller, group of firms with significantly different average characteristics. This group, under the heading Cluster 2 in Table 3, shows a much higher percentage of current customers who are foreign. Though similar in age to the firms in Cluster 1, firms in Cluster 2 exported within the first year of their founding, and they maintained the bulk of their business selling abroad. This group of companies internationalized much earlier than the other firms in the sample.

Judging by the fact that, on average, these six firms started exporting practically upon their founding (0.6 years on average for their first export), and the fact that most of their business is currently with foreign customers, we can term these firms, unlike companies in the first and third clusters in Table 1, global competitors, or born-global firms. In line with the definitions of born-global firms reviewed above, these firms are small and young, started exporting very soon after they were born, and maintain most of their business with foreign customers. Table 4 reports, for the three clusters identified, the breakdown of sales in local, regional, and global markets.

Rugman and Verbeke (2004, 2007) included only the Triad of Europe, North America, and Asia as the relevant regions to define a firm as global or home-region based. Whereas their approach may be valid for large MNEs from the Triad that dominate the Fortune Global 500, it is not relevant to small firms from nations outside the Triad; for such companies the home region obviously needs to be defined differently, and this also holds for what should be

Table 4 Percentage of sales by geographic distance, grouped by clusters observed in Table

Variable	Cluster 1	Cluster 2	Cluster 3
Percentage of local customers	92	17	51
Percentage of regional customers	5	15	27
Percentage of global customers	4	68	23

considered the relevant host regions or "rest of the world," where the liability of inter-regional foreignness is supposed to be high. We, accordingly, consider regional markets to be those that are geographically and psychologically close to the home market. This means Latin American markets. According to this, in order for a firm to be considered "global," it has to reach beyond its immediate geographic region.

Table 4 suggests two different paths to internationalization intermingled in the sample. It appears that firms in Cluster 2 that could, tentatively, be categorized as born-global firms do place a much larger emphasis on customers outside their geographic area than firms in Clusters 1 and 3 do. With the data available we can speculate that some firms follow what could be described as a traditional route to internationalization, while others do not. The table suggests that it cannot be assumed, *ex ante*, that all firms in an industry, in this case a knowledge-intensive industry of recent formation, based in a small market, are predominantly born globals.

Further inspection of our data reveals that those firms that exported within 2 years of their inception, and whose current exports were larger than 50%, concealed subtle but important differences among them. Although many firms exported early, they exported to different markets. Some firms established a very dynamic trade with nearby

Table 5 Firms in sample that exported within 3 years of founding, and country where they exported first

Export percentage, first year[a]	*Time to first export*[b]	*Export percentage, current year*[c]	*Country of first export*[d]
100	0	42	Mexico
100	0	81	USA
100	0	100	Dominican Rep.
75	0	100	Central America
15	0	20	Mexico
10	0	15	Panama
0	2	10	USA
0	2	58	Venezuela
0	2	72	Venezuela
0	2	80	El Salvador
0	2	100	Nicaragua
0	2	n/a	Ecuador
0	3	13	Mexico
0	3	13	Central America
0	3	20	Canada

[a]Export sales as percentage of total sales during first year of firm existence.
[b]Time elapsed since firm inception to first export.
[c]Export sales as percentage of total sales at time of study (2004).
[d]Country where first export was made.

countries. These countries – regional neighbors such as Nicaragua, Panama, El Salvador, Guatemala, and Honduras – are close to Costa Rica in terms of cultural traits and business practices. Few firms, however, exported upon birth to the more challenging strategic markets, such as the US and Europe, which have very different business and cultural practices.

To assess this in detail, we examined the countries to which the companies had exported first. Table 5 shows the firms that started exporting within 3 years of their creation along with their current export sales as a percentage of total sales and the reported country where the firm first exported. The majority of firms we had classified, tentatively, as "born global" firms, turned out to actually be "born regional." This means that although they started exporting very early in their lives, and continued exporting a fairly large share of their sales, much of these exports were aimed at regional neighboring countries.

There is only one firm, whose current exports account for 81% of total sales, that started exporting, right from its inception, to the most strategic market: the United States. This firm can be said to be a true "born global" firm, because it started out with more than half of its customers in a foreign country located far in terms of psychic distance. Two other firms made their first export to such strategic markets (one to the USA, the other to Canada), but most of these two firms' business still comes from serving the local market. Of the firms in our sample that have an export business that accounts for more than 40% of total sales, only one chose the USA as its first export market. Most firms, as can be seen in Table 5 for the earliest internationalizers, chose to export to nearby countries (Central America) or countries that can be said to have close proximity in terms of cultural and business traits (South America or Spanish-speaking Caribbean countries). These firms could be categorized as born regional. Finally, the vast majority of firms in the sample took longer than 3 years to make their first export. They are, simply "born locals," as they were not born with an export orientation, and currently less than 40% of their customers are foreign.

CONCLUSION AND DISCUSSION

The case of software firms in Costa Rica is particularly suitable for analyzing the determinants of internationalization, for several reasons. First, the Costa Rican economy is very small. Costa Rica had a GDP of US$18.4 billion and exports of US$8.7 billion in 2004 (World Bank, 2006). Compare this with, for instance, Denmark and Ireland, two countries with about the same population as Costa Rica. Ireland had a GDP of US$116 billion and exports of US$110 billion in 2004. Denmark had exports of nearly US$80 billions and a GDP of US$166 billion (World Bank, 2006).

Few studies, if any, have studied the phenomenon of internationalization and the born global phenomenon in small developing countries such as Costa Rica. Zou and Stan (1998), in their review of related empirical literature between 1987 and 1997, identified only one paper out of 50 that investigated the issue in Central America (Dominguez & Sequeira, 1993), but the study dealt with manufacturers and resellers that did not belong to knowledge-intensive industries. Studying the phenomenon of internationalization in such small, open economies should be of interest because, given the limited potential of the local market, incentives to internationalize should be strong.

Second, our research limits sectoral factors by looking only at local software producers. Third, the limited size of the number of statistically relevant firms allows for in-depth analysis of the modes and determinants of internationalization. Fourth,

cultural and environmental factors should not impact on the case, for we have looked at one country only, with limited regional cultural variations, and a small population concentrated in one area.

Our data show that current definitions of born global can hide an important difference among firms: the disparity between born regionals and born globals. Our data revealed the presence of firms that actively exported from their inception. A cursory look seemed to confirm the presence of early internationalizers. However, a more detailed analysis revealed that most firms actually engaged in export activities to regional markets. There were very few firms that, immediately after their founding, ventured into global markets such as the US or Europe. These markets, though desirable in strategic terms, appeared to be, at least on the surface, highly uncertain and distant in terms of traits, culture, and business practices.

Our findings revealed few true "born globals." It could be argued that the predictive value of the born global argument may have to be refined. Or, possibly, the born global argument is not adequate to explain the internationalization processes of high-technology firms based in a small developing country. With our limited empirical evidence we can only raise these issues, and further research will be necessary to provide more accurate findings. Not only we have found few born-global firms in the Costa Rican software industry, but we have discovered that most firms generated the majority of their foreign sales in nearby Latin American countries. This finding is entirely coincident with work that shows the regional nature of multinational enterprises (Rugman, 2000; Rugman & Girod, 2003). Rugman and Brain (2003) explored empirical evidence on foreign to total sales for 500 multinational enterprises and found that these companies were regionally based in their sales activities.

This research is particularly relevant for theoretical debates about how to define born-global firms. It proves that if definitions of born-global firms simply look at the export share of sales, and at the number of export markets, they may ignore whether a company internationalizes gradually, starting from culturally proximate neighboring countries, or whether it chooses its export markets according to strategic considerations, disregarding psychic distance. In all, we were looking for born globals but found mostly born regionals and born locals instead.

ACKNOWLEDGEMENTS

We thank *JIBS* Departmental editor Alain Verbeke and the three anonymous reviewers for their helpful comments and suggestions. We also thank Florida International University for their financial support.

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Accepted by Alain Verbeke, Area Editor, 13 December 2007. This paper has been with the authors for one revision.

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