



Internationalization strategy, firm resources and the survival of SMEs in the export market

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Abstract

Does “born-global” internationalization enhance or threaten a firm’s chances for survival in the export market? Despite the ongoing debate about born-global firms, we know little about what drives their survival in the export market. In particular, different theories yield conflicting predictions regarding whether born-global internationalization is superior or inferior to born-regional internationalization or gradual internationalization. Analyzing a longitudinal data set (from 1997 to 2005) of 1959 newly established Canadian small- and medium-sized enterprises (SMEs), we show that no single strategy is superior *per se* but that internationalization strategy moderates the relative importance of resources to SMEs’ survival abroad. Although resources are important for the survival of all SMEs, the relative importance of slack resources and innovation resources are most important for born-global firms followed by born-regional firms, and are the least important for gradual internationalizers.

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INTRODUCTION

Born-global firms, sometimes called “international new ventures” (INVs), have been described as “companies that from or near foundation, obtain a significant portion of total revenue from sales in international markets” (Knight & Cavusgil, 2005: 15). Although born-global firms have attracted significant research attention (Autio, 2005; Jones, Coviello, & Tang, 2011) that has emphasized their ability to achieve considerable foreign sales early in their evolution (Autio, Sapienza, & Almeida, 2000) with limited resources, little is known about the continuing ability of these firms to remain active in international markets and about the types of resources that determine their survival abroad (Keupp & Gassmann, 2009; Sapienza, Autio, George, & Zahra, 2006; Zahra, 2005). As Kuivalainen, Sundqvist, Saarenketo, and McNaughton (2012: 449) note: “there is still a paucity of empirical research on whether accelerated internationalization (or another internationalization path) plays a role in determining long-term survival, success and/or growth. The few studies that have investigated this, report contradictory or ambiguous findings (e.g., Bloodgood, Sapienza, & Almeida, 1996), are based on small samples (e.g., Gabrielsson, Kirpalani, Dimistratos, Solberg, & Zucchella, 2008), or focus on a limited number of pathways (e.g., Mudambi & Zahra, 2007)”.

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The dominant theoretical approaches in the field – the internationalization process model (IPM) (Johanson & Vahlne, 2009), the INV framework (Oviatt & McDougall, 1994) and the regionalization hypothesis (Rugman & Verbeke, 2007) – result in significantly different predictions regarding which internationalization strategy is most beneficial for the export market survival of small- and medium-sized enterprises (SMEs). The IPM implies that born-global internationalization endangers a firm's survival in the export market because such firms do not have sufficient time to learn about foreign markets well, which increases their probability of failure (Figueira-de-Lemos, Johanson, & Vahlne, 2011). According to the INV framework, firms may profit from a born-global strategy by exploring and capitalizing on international opportunities and by exploiting certain learning advantages that accompany newness (Autio et al., 2000). The regionalization hypothesis postulates that rapid internationalization is possible but that such development will be most valuable if revenues are restricted to coming from the firm's home region to diminish the liability of foreignness (Rugman & Verbeke, 2004). This theoretical discord makes it imperative that researchers empirically examine the implications of different internationalization strategies for firm survival.

In this study, we investigate the effect of different internationalization strategies (born-global, born-regional and gradual internationalization strategies) on the export market survival of SMEs. We show that, in addition to internationalization strategy, firm slack resources and innovation resources determine INVs viability in the international market. Firms that are better able to acquire adequate resources during internationalization are more likely to sustain their export market activities. Several studies highlight the importance of resources to the survival of INVs. Sapienza et al. (2006), for example, argue that the ability to shift resources is important to the survival of young firms because the uncertainty inherent in unknown foreign environments can generate unexpected requirements to adjust established routines and capabilities. Firms with more fungible resources are better able to adapt their routines, which allows them to better react to environmental changes and bolsters their survival chances abroad.

In a parallel vein, we propose that, although firm-specific resources are important for the export market survival of all SMEs *per se*, the relative importance of slack resources and innovation resources is contingent upon which internationalization strategy is

employed. Compared with other more incremental internationalization approaches, a born-global firm will have greater demand for resources to prevail in international markets. Born-global firms require slack resources and innovation resources more urgently for their survival than other internationalizing SMEs because the twin liabilities of newness (Stinchcombe, 1965) and foreignness (Hymer, 1976) are particularly strong for born-global firms, entering multiple foreign environments at an enhanced speed. For this aggressive internationalization, born-globals have to establish business routines and learn about their multiple markets at the same time, in order to overcome the "shock of entry" (Carr, Haggard, Hmieleski, & Zahra, 2010: 184) effectively.

By contrast, the export market survival of gradually internationalizing firms will be the least dependent on slack resources and innovation resources compared with born-global and born-regional firms. The liabilities of newness and foreignness do not adhere that strongly to gradually internationalizing firms because these firms enter foreign markets sequentially and can more easily learn from their own operations and build experiential knowledge. Accordingly, their survival in the international environment will be less dependent on slack resources (Chang & Rhee, 2011) and innovation (Shrader, Oviatt, & McDougall, 2000). In this study, we further sharpen the understanding about the impact of resources on the survival of INVs and show that resources are an important boundary condition for the functionality of different internationalization strategies regarding international market survival.

Our study provides three important contributions to understanding SME survival abroad. First, by observing the effect of different internationalization strategies on the survival of SMEs in the export market, we underscore the strategic-choice rationale and find strong empirical support for the notion that firms self-select into a fitting strategy. Based on the foreign direct investment (FDI) activity of 275 UK firms, Mudambi and Zahra (2007) find that employing a born-global strategy has no direct impact on firm survival. Based on this finding, that study proposed that the firms in its sample were able to decide efficient strategies during the process of internationalization. In our study, based on the export activity of all Canadian SMEs, the results suggest that neither the born-global nor born-regional strategy has a statistically significant effect on firm export market survival. Therefore we further demonstrate that small, new ventures firms are as rational as large firms; they are able to pursue



strategic choices and decide upon the optimal internationalization strategy that best fits their resource endowment and environmental conditions.

Second, we differentiate previous studies on internationalization strategies by introducing the born-regional strategy into our analysis. Previous studies either focused on a single strategy (Efrat & Shoham, 2012) or compared only born-globals and gradual internationalizers (Mudambi & Zahra, 2007). We turn to more recent notions that show that born-regionals employ a distinct type of internationalization strategy (Lopez, Kundu, & Ciravegna, 2009), which might better balance the risks and benefits of early internationalization.

Our third contribution lies at the intersection of internationalization strategies and resources. Although no single internationalization strategy dominates other strategic approaches under every condition, we demonstrate that internationalization strategies are an important moderator for a firm's survival and firm resources. Firm resources not only directly affect a firm's survival and its strategic self-selection but also interact with a firm's applied internationalization strategy. In contextualizing the firm resources-survival link through internationalization strategy, we add to previous studies on born-global firms and suggest how SMEs might better sustain their international activities with different internationalization strategies. This is an important advancement in the current understanding because it suggests that although small, new ventures are able to internationalize early with limited resources, it is particularly critical for born-global firms to acquire adequate resources during the internationalization process to survive abroad.

The data set used to examine our research questions is taken from the administrative databases produced by Statistics Canada. The sample includes all Canadian small- and medium-sized manufacturers that had at least one shipment to a foreign market between 1997 and 2005. Combining this unique data set with empirical analyses that control for possible sample selection bias and endogeneity, we provide a valid and reliable examination of the survival of SMEs in the export market.

THEORY AND HYPOTHESES

Internationalization Strategies and SME Survival in the Export Market

Traditional internationalization theories, such as the IPM (Johanson & Vahlne, 1977), are largely based on the theory of the growth of the firm (Penrose, 1959)

and the behavioral theory of the firm (Cyert & March, 1963). IPM scholars posit that internationalization should be incremental and experience-based, such as by beginning with low-involvement modes of entry in nearby or culturally similar areas. This strategy would minimize risks associated with internationalization because the degree of resource commitment is relatively low and the resources in question are focused on markets with low psychic distance. By gradually increasing international market commitment and the scope of international activities, firms can build experiential knowledge about foreign markets. This knowledge, in turn, will help them to manage risk more efficiently and will increase the probability of their survival in the international market (Figueira-de-Lemos et al., 2011). Through experiential learning, firms can begin to more efficiently identify market opportunities and reduce the liabilities of foreignness (Johanson & Vahlne, 2009). From this theoretical perspective, gradual internationalization balances the risks and opportunities associated with internationalization, and maximizes the survival of exporters.

Although the reasoning behind the internationalization process has informed many scholars and has been proven in multiple studies across various contexts, it continues to be subject to critique (Pedersen & Shaver, 2011). Evans, Lane, and O'Grady (1992) show that firms from Canada do not necessarily succeed in the US market, although Canada and the United States are culturally close, whereas Benito and Gripsrud (1992) cannot empirically confirm that firms invest first into culturally proximate countries in a systematic manner. Additionally, in studying the survival of MNE subsidiaries, Mitchell, Shaver, and Yeung (1994) demonstrate that FDIs in culturally close and nearby countries often fail.

Based on such notions, the research field on INVs evolved and began to argue that firms are neither necessarily entering into culturally or psychically close countries first (Benito & Gripsrud, 1992), nor are they more successful when they do so (Evans et al., 1992; Mitchell et al., 1994). Early internationalization is argued to be an important catalyst in the development of new capabilities for young firms because the uncertainty and risk that accrues to young firms when they are exposed to foreign markets will trigger the exploration and exploitation of new opportunities and resources (Sapienza et al., 2006). Firms that venture into multiple environments shortly after their inception face strain, but they also enjoy higher levels of potential

learning effects (Autio et al., 2000) as a result of these early forays into international markets. Relative to a mature firm, a young firm can more easily adapt its processes and structure to the international environment. Thus the latter firms enjoy the “learning advantages of newness” (Autio et al., 2000). In addition, export activity may enhance the legitimacy of firms in their domestic markets and enable them to more effectively access and mobilize resources for growth. Although the born-global approach demands significant resources, it enables firms to realize their learning potential, to exploit market opportunities on a broad scale and to generate and mobilize resources.

Beyond general support for the existence and positive features of INVs, there is increasing evidence that INVs are not a homogenous group of firms, but that there are different strategic patterns within their population (Kuivalainen et al., 2012). Only recently, several scholars have emphasized important differences between born-global and born-regional firms (Lopez et al., 2009; Sui, Yu, & Baum, 2012). Although both types of firms internationalize early in their existence and realize significant shares of their revenues abroad, born-regionals direct their internationalization toward their home region, whereas born-global firms spread their activities into markets outside their home region (Lopez et al., 2009). The born-regional strategy is well explained by a more recently developed framework regarding internationalization; the regionalization hypothesis emphasizes the advantages of a geographically focused or “regionalized” approach to internationalization (Rugman & Verbeke, 2007).

A rapid, high-commitment approach to internationalization may be superior if internationalization efforts are restricted to a specific geographic region (Rugman & Verbeke, 2004). If a firm possesses firm-specific advantages (FSAs), it should capitalize on them in international markets. Moreover, the early transfer of FSAs to international markets provides firms with an opportunity to further develop the by exploring and exploiting country-specific advantages (CSAs). However, these benefits can be counterbalanced by the liabilities of foreignness. Therefore it is suggested that firms conduct their early internationalization efforts in their home regions to ensure that they profit from FSAs and CSAs. Thus the regional perspective promotes the born-regional internationalization strategy.

These conceptual disparities translate into mixed findings and conclusions regarding SME survival in the international environment. Some scholars

argue that an enhanced international scope increases the chances of survival (Hitt, Hoskisson, & Ireland, 1994) by providing additional access to factor and customer markets (Zahra, Ireland, & Hitt, 2000) or by allowing for the learning advantage of newness (Autio et al., 2000). Other scholars focus on the negative effects of early forays and emphasize the liabilities of foreignness. Accordingly, those liabilities of foreignness manifest themselves as additional costs (such as coordination, transaction, labor, start-up and legal costs) (Salomon & Wu, 2012) that originate from the unfamiliarity with the foreign environment. These liabilities thus endanger the survival of foreign subsidiaries (Zaheer & Mosakowski, 1997).

Given these conflicting conclusions regarding the survival of SMEs in the export market, we not only focus on *if* different strategies have different effects on SME survival abroad, but we also focus on the conditions under which firms should pursue specific strategies to sustain their internationalization. We draw on the strategic-choice rationale (Child, 1972; Reid, 1983) and align resources with internationalization strategy to deduce that the internationalization strategy applied is an important boundary condition for the impact of firm-specific resources on SMEs’ survival abroad.

SME Internationalization as a Strategic Choice

Although the studies discussed above on the internationalization of SMEs arrive at different normative implications about which internationalization strategy to pursue, they concur that internationalization decisions represent important strategic choices that largely determine firm performance and survival (Filatotchev & Piesse, 2009). The strategic-choice perspective regards the creations of strategies as a set of fundamental choices about the ends and means of a business (Child, 1972). These choices are critical to firm success (Boxall, 1996; Rumelt, Schendel, & Teece, 1994) and are not randomly picked among the possible contingencies, but are the result of carefully weighing the resource requirements and environmental conditions for each possible decision. An important boundary for the strategic decision thus is a firm’s resource endowment. A firm’s resources ultimately determine the strategic flexibility of firms or, put differently, the number of strategies that are possible (Filatotchev & Piesse, 2009). For instance, Andrews (1971) argues that strategy is the matching process between the resources of the organization and opportunities in the business environment at an acceptable level of risk. A firm has an “incentive



to diversify if it possesses the necessary, excess resources to make diversification economically feasible" (Wan, Hoskisson, Short, & Yiu, 2011: 1338). As such, the strategic-choice approach suggests that internationalization strategy is endogenous because it is significantly influenced by a firm's resource endowment (Wan et al., 2011).

If a firm has a larger resource endowment, it is able to pursue strategies that may be difficult for its competitors to copy, which creates a competitive advantage. The born-global strategy seems to be one such strategy because internationalizing into multiple environments with different cultural and/or institutional backgrounds demands more human and financial resources. Undertaking a born-global strategy stresses the resource base of a firm because born-globals will "inevitably increase the levels of country risk associated with their operations" (Efrat & Shoham, 2012: 678) by targeting geographically distant countries. The further a firm extends its internationalization activities geographically, the more difficult it is for the firm to manage its foreign market activities; "dealing with foreign government officials, laws and agencies, suppliers, and customers increases the complexity of managing such an enterprise, taxing managerial resources and expertise" (Brouthers, Nakos, Hadjimarcou, & Brouthers, 2009: 25). Thus the scope of internationalization strategies is influenced by a firm's tangible and intangible resources (Tan, Plowman, & Hancock, 2007).

This indicates that firms with stronger resource endowment have more strategic options and are thus more likely to pursue a born-global strategy. Because it is a firm's choice to restrict or expand its international scope (Rugman & Oh, 2012), SMEs will enter a foreign market only when they have the resources that are required to do so. When SMEs make meaningful strategic choices and take their individual resource level into consideration, there should not be survival differences in the export market between different strategic approaches if the heterogeneous resource-allocation across firms and the endogenous nature of strategic choices is considered. This theoretical argument has received empirical support. Mudambi and Zahra (2007) show that born-global firms have similar survival chances as gradual internationalizers. They argue that firms self-select into the appropriate internationalization strategy that is based on their resource endowment. Carr et al. (2010) found no effect of age on the survival of internationalized firms. In summary, based on the relevant theory and

previous empirical evidence, we suggest the following hypothesis:

Hypothesis 1: After the endogeneity of firms' internationalization strategies is considered, born-global firms and born-regional firms will display a probability of exit from exporting that is no greater than that of firms that gradually internationalize.

Moderating the Impact of Internationalization Strategy on the Effect of Firm Resources

The strategic management literature has long argued that a firm's resources might affect the success of strategic choices (Chang & Rhee, 2011). Although outcomes of early internationalization such as international growth (Autio et al., 2000) and financial performance (Bloodgood et al., 1996) have been intensively researched, we have only a narrow understanding about the viability of born-global firms in the export market. Efrat and Shoham (2012) employ a survey from 103 Israeli firms to show that born-global firms are more likely to survive if they have distinct capabilities, such as technological skills. Although Efrat and Shoham (2012) stress the importance of firm resources for internationalization strategy choice and survival abroad, they focus only on the direct effects of resources on the strategic choice and firm survival abroad. We advance this perspective by showing that the survival effects of firms' resources are further moderated by the internationalization strategy that is pursued.

International operations not only trigger opportunities (Sapienza et al., 2006) but also must address the risks and liabilities of foreignness (Hymer, 1976). The liabilities of foreignness refer to the increased costs of operating a business in a foreign domain. The sources of these enhanced costs may be insufficient market knowledge, a negative country-of-origin image, and cultural and institutional differences of the home country, to name a few (Cuervo-Cazurra, Maloney, & Manrakhian, 2007; Santangelo & Meyer, 2011). These enhanced costs can be significant and enduring. To survive, exporters must address these liabilities and overcome the associated increased resource demand of doing business abroad. Previous research has shown that the liabilities of foreignness attach particularly strongly when internationalization evolves quickly (i.e., in born-regional and born-global firms) and when markets outside the home region are penetrated, which results in an increased environmental turbulence and hostility (Zahra & Bogner, 1999). Thus in addition to the

opportunities, the liabilities of foreignness and the resulting turbulence vary among the different internationalization strategies.

A firm's resource base helps address the liabilities of foreignness and improve the chances of survival. An abundant resource endowment acts as organizational slack and makes international operations feasible and less risky (Chang & Rhee, 2011). Such slack resources act as a buffer against bankruptcy and other downside risks and ensures the survival of the firm (George, 2005; Tan & Peng, 2003). Two suitable indicators for slack resources in our specific context are a firm's size (Hashai, 2011; Sharfman, Wolf, Chase, & Tansik, 1988) and productivity (Mishina, Pollock, & Porac, 2004).¹

According to organizational theories, slack resources are mandatory to ensure a firm's long-term survival (Tan & Peng 2003). Slack resources are particularly important in turbulent environments in enabling a firm to cope with adaptation demands or downturn risks (Sharfman et al., 1988). Therefore "despite its costs, slack (resources) buffers a firm's technical core from environmental turbulence and thus enhances its performance" (Moreno, Fernandez & Montes, 2009: 5503). This notion is also supported by resource dependence scholars, who argue that environmental uncertainty enhances resource necessity for firms that are coping with problematic interdependencies and for securing the management and control of resource flows (e.g., Oliver, 1991). Firms with more slack resources have more strategic options and can better adapt to changing environments.

Firm size is a common indicator of the availability of slack resources (e.g., Mudambi & Zahra, 2007). Larger firms typically have more managerial resources to spare and are less affected by liabilities of smallness. Managerial resources are an important component in international business because international markets increase the complexity of business operations (Preece, Miles, & Baetz, 1998). Therefore larger firms can better address increased complexity and can better circumvent potential shortfalls abroad, which makes them less likely to fail (Prashantham & Young, 2011). Accordingly, "[e]arly expansion will be facilitated by existing resources represented by stocks of knowledge and capital" (Prashantham & Young, 2011: 275).

Labor productivity is another indicator of slack resources that plays a notable role in firms' export market survival (Bernard & Jensen, 1999). Firms that are more productive have advantages when internationalizing because they are more likely to have

excess production capacities, which allows them to serve additional markets (Fan & Phan, 2007). When firms venture abroad, they face additional market opportunities (e.g., more potential customers), additional costs of operating abroad (e.g., expenses associated with regulatory adaptations, increased transactional complexity and other transaction costs). Exploring and exploiting market opportunities demands financial and human resources, which are particularly limited for SMEs. Accordingly, entering foreign markets is costly, which is why productive firms, in particular, are able to self-select into exports (Golovko & Valentini, 2011). The level of productivity thus helps determine the efficiency of scarce resources and helps a firm secure its viability in foreign markets.

Although resources are generally important for firm export market survival, we argue that their impact on survival is contingent upon the choice of internationalization strategy pursued. Gradual internationalizers face the lowest environmental turbulence. They step incrementally into foreign markets, beginning with proximate markets that are less culturally and institutionally different and are thus able to learn from their own experience. Because they limit their international expansion, they do not have to strain their resource base and do not have to adapt to many different foreign markets at the same time. Born-regional firms pursue quick and large-scale internationalization, but limit their scope to the home region. Born-regionals must invest more intensively right from the start and must address higher international complexity than gradual internationalizers that "feel their way" into international markets. However, born-regionals act in less-turbulent and less-hostile environments than born-globals because born-regional firms face only the intra-regional liabilities of foreignness, which are lower than the inter-regional liabilities of foreignness (Rugman & Verbeke, 2007). Born-global firms spread their activities into multiple environments and tax their resources. They have multiple opportunities abroad but also must cope with more hostile, divergent and turbulent environments than their counterparts.

Because born-globals operate in turbulent and complex environments, they will require a stronger tangible resource base than gradual internationalizers or born-regional firms. The slack resources are not only beneficial for overcoming risks but are also required for born-globals to profit from the full scope of the enhanced opportunities abroad (Eriksson, Johanson, Majkgård, & Sharma, 1997). If a firm has



not enough tangible resources it will fail to explore and exploit opportunities abroad (Nohria & Gulati, 1996; Voss, Sirdeshmukh, & Voss, 2008), thus rendering a less effective strategy. Moreover, firms internationalizing at higher pace particularly must monitor their productivity if they want to effectively operate their multiple international engagements and maintain their survival chances abroad (Salomon & Shaver, 2005b). This argument is also supported by a recent study from Chang and Rhee (2011) that argues that riskier internationalization strategies require higher resource bases to be operated efficiently. Therefore born-global firms require particularly strong resource bases and productivity to be competitive due to the transportation and product adaptation costs in the foreign markets they serve.

Hypothesis 2: The effect of firm size on export market survival is moderated by the internationalization strategy chosen. The effect of firm size on survival abroad will be strongest for born-global firms followed by born-regional firms and will be weakest for gradual internationalizers.

Hypothesis 3: The effect of labor productivity on export market survival is moderated by the internationalization strategy chosen. The effect of labor productivity on survival abroad will be strongest for born-global firms followed by born-regional firms and will be weakest for gradual internationalizers.

In addition to slack resources securing international operations, a firm's innovation resources are also an important driver for international value creation (Morck & Yeung, 1991) and survival in the export market. Cuervo-Cazurra et al. (2007) suggest that liabilities of foreignness occur when internationally transferred resources lose their innate advantage in a foreign environment, produce a disadvantage or fail to realize their potential because of a lack of complementary resources abroad. These causes of multiple liabilities are associated with different potential solutions. However, each solution requires a certain amount of adaptation to the foreign environment. A firm's ability to adapt to a new environment is reflected in its innovativeness (Golovko & Valentini, 2011) and by its general level of productivity. Accordingly, export market survival depends not only on a firm's slack resources, but is also highly dependent on its innovation capabilities (Chang & Rhee, 2011).

The role of a firm's innovativeness in its survival and prosperity has been intensely emphasized in

the business literature (Schumpeter, 1942). Innovation is a critical asset that generates value in the marketplace (Rubera & Kirca, 2012) and how it contributes to firm performance has been studied in great detail (Tellis, Prabhu, & Chandy, 2009). The literature generally suggests that innovation positively affects firm performance – including export market survival – by improving adaptation to foreign market conditions and ensuring better-matched strategic goals. Firms will be more successful in foreign markets if their products and services can attract potential customers, conform to institutional regulations and are priced competitively with respect to competitors (Cuervo-Cazurra et al., 2007). Innovation resources make it possible to identify the need for mandatory changes to product features that will increase compatibility with the foreign market (Mudambi, 2008). They also make it possible to realize such changes and to develop competitive advantages and improve the chances for firm survival abroad.

Compared with gradual internationalizers, both born-global and born-regional firms will require more innovation resources to create a niche market, which is less targeted by competition (Zahra et al., 2000). Thus they can establish a viable market even in complex international environments and secure their survival (Efrat & Shoham, 2012). However, born-global and born-regional firms typically lack experiential knowledge in the foreign market. More specifically, born-global and born-regional firms may not have tacit market knowledge and may exhibit a lack of understanding for foreign institutions, legislation and the general business environment (Almor & Hashai, 2004). Thus these firms require a compensation mechanism for this comparative disadvantage with respect to gradual internationalizers (Zahra et al., 2000). To compensate for such liabilities, born-global and born-regional firms require strong technological advantages (Shrader et al., 2000). Accordingly, innovative behavior may be the key to survival in a turbulent environment.

This perspective is supported by previous studies. For instance, Zhou, Yim, and Tse (2005) argue that introducing breakthrough innovations fosters survival in turbulent environments by providing greater customer benefits and reaping market potential more efficiently. Following this line of thinking, Surroca, Tribó, and Waddock (2010: 9) note that a "firm's survival depends on its capacity to innovate to take advantage of growth opportunities". According to Chang and Rhee (2011), innovative firms

may benefit more from rapid international expansion because innovation-based fixed costs are more easily amortized through a larger sales base. In this regard, born-global and born-regional firms may profit similarly from innovation because the need to quickly amortize R&D expenditures pertains to both strategy types (Baum, Schwens, & Kabst, 2011).

In sum, we argue the following:

Hypothesis 4: The effect of product innovations on export market survival is moderated by the internationalization strategy chosen. The effect of product innovations on survival abroad will be strongest for born-global firms followed by born-regional firms and will be the weakest for gradual internationalizers.

Figure 1 provides a model that depicts the hypothesized relationship between internationalization strategy and firm-specific resources, in addition to their relationships to export market survival.

METHOD

Data

To test our hypotheses, we analyzed a data set that was constructed from Statistics Canada's Exporter Register (ER), Business Register (BR) and Longitudinal Employment Analysis Program (LEAP). The main data source, the ER, is an authoritative custom-based database that includes all Canadian merchandise trade transactions. The ER is a reliable source of annual information on a firm's destination and the value of exports for each product it exported (1993–2005). The second data source, the BR, is a database that includes a complete list of the active businesses in Canada that have corporate income tax accounts, are employers or have Goods and Services Tax accounts. BR provides annual information on each firm's revenue and ownership (1997–2005). The third data source, LEAP, provides annual information on firms' employment (1997–2004). LEAP includes all firms incorporated in Canada that

legally hire employees and file corporate income tax returns.

Because the focus of this study is SME export market survival, we selected manufacturers with 500 or fewer initial employees. Because of the availability of the LEAP database, we selected firms that were established between 1997 and 2005. Finally, to avoid including sporadic exporters with no strategic commitment to the international market, we excluded firms that exported only once (Harris & Li, 2011). This selection process yielded a sample of 1959 firms.

Firm Classification

Following Kuivalainen, Sundqvist, and Servais (2007), we used three criteria to classify the observed Canadian SMEs as born-global firms (BG), born-regional firms (BR) and firms that gradually internationalize (GI). The first criterion, internationalization timing, constitutes the age of the firm when it commenced exports. The second criterion, internationalization scale, is the percentage of a firm's revenue derived from exporting; this criterion takes into account the intensity of the firm's commitment to foreign sales. Because the majority of Canadian firms export only to the US market and there are significant differences in resources requirements between Canadian firms that export only to the United States and those that export to the rest of the world (e.g., China), we used a third criterion, internationalization scope – the geographic range of a firm's foreign sales – to further distinguish born-global firms from born-regional firms.

Consistent with previous born-global studies (e.g., Knight & Cavusgil, 1996), a firm is specified as born-global if it exported within 2 years of its inception, has an export intensity of 25% or higher and exported to global (non-US) markets during the first year of its export activity; a firm is classified as born-regional if it commenced exporting within 2 years of its inception, has an export intensity of 25% or higher and only exported to the regional (US) market during its first year of export activity. The rest of the firms in the sample are classified as having been internationalized gradually. According to this classification, the numbers of firms classified as born-global, born-regional and gradual internationalizers are 111 (5.67%), 493 (25.17%) and 1355 (69.17%), respectively.

Econometric Analysis

Our econometric analysis has several features that allow us to provide reliable, unbiased answers to our

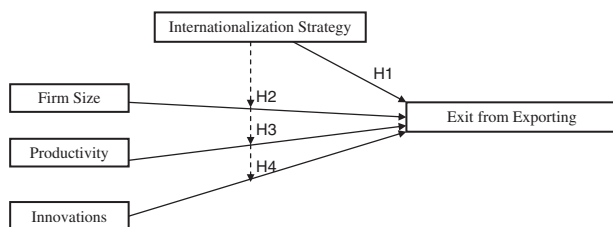


Figure 1 The survival of SMEs in the export market.

research questions. The first is the Cox Proportional Hazard Model (CPHM) specification, which is used to identify the determinants of SMEs' abilities to remain active in the export market. CPHM is one of the most widely used methods of modeling firm survival (Manjón-Antolín & Arauzo-Carod, 2008) because it is flexible in the specification of the baseline hazard and allows for a proportional specification for unobserved heterogeneity and a function of observables. A key assumption of the CPHM is the concept of proportional hazards, that is, the covariates are multiplicatively related to the hazard. Schoenfeld's global goodness-of-fit test is used to test the proportional hazard assumption in the CPHM. The results indicate no evidence that contradicts the proportional hazards assumption; therefore, the use of the CPHM is appropriate.

The second feature of our analysis is the use of the counting process approach to handle multiple exits from exporting. Exit from exporting may occur more than once for a given firm during the research period: a firm may enter, exit and then re-enter the export market. To model this type of event, the counting process approach is used to convert multi-failure event data to replicated-process single-failure event data by assigning a new identification number to a firm if it re-enters the export market (Andersen, Borgan, Gill, & Keiding, 1993).

The third feature of our analysis is the use of the two-stage method to control for the endogeneity of a firm's strategic choices (Angrist & Krueger, 1991; Bolduc, Khalaf, & Moyneur, 2008), in which the first stage estimates initial internationalization strategic choice and the second stage estimates export market survival. A multinomial logit model is used in the first stage to study each firm's strategic choice in relation to its characteristics in the year it starts exporting. The first stage model has the following structure:

$$STRATEGY_i = \alpha Y_i + v_i \quad (1)$$

where the dependent variable STRATEGY is a categorical variable that includes three outcomes: born-global, born-regional and gradual internationalization. Y_i is a vector of the independent variables for firm i that may affect its choice of internationalization strategy, α represents the coefficient estimates, v_i is assumed to be normally distributed with zero means and unit variance; furthermore, v_i represents additional unobserved effects that might affect a firm's internationalization decisions. Based on the estimated coefficients, a firm's predicted probability

of choosing the born-global (\hat{BG}) or born-regional (\hat{BR}) strategy is calculated.

In the second stage, the semi-parametric CPHM is used to estimate the survival of firms in the export market. A firm's individual hazard rate $HAZARD_{it}$ is defined as

$$HAZARD_{it} = H_t * \exp(\beta' X_i) \quad (2)$$

where H_t is the baseline hazard at time t , X_i is a vector of the independent variables that may affect a firm's export market survival (i.e., internationalization strategy, resource endowment and control variables) and β is a vector of regression coefficients. The baseline hazard at time t is estimated by Stata (by the `stcox` postestimation command `predict` with the option `basehc`) on the basis of the survival function of the whole firm population and reflects that the hazard of the event occurrence is dependent on the duration of the observation. This baseline hazard is then further adjusted by the firm specific independent variables and their regression coefficients in order to estimate the firm specific hazard of exit from export at a given time.

Our two-stage model is not a conventional model because rather than having linear models, it has non-linear models in both stages (Bolduc et al., 2008). Traditional test such as the Hausman test of endogeneity may not be effective for such model. Instead, the split-sample method (Angrist & Krueger, 1995; Beaulieu, Gagnon, & Khalaf, 2009; Kim, Petrunia, & Voia, 2010) is used to verify the appropriateness of the model and the robustness of results. This method described to have the advantage of producing an estimate bias toward zero (Angrist & Krueger, 1995), being reliable and powerful (Dufour & Jasiak, 2001) and controlling perfectly for type I error (Bolduc et al., 2008). Specifically, the sample is randomly split in half, and one half of the sample was used to estimate the parameters of the first-stage (the strategic-choice model) equation. These estimated first-stage parameters are then used to construct fitted values for the endogenous regressors (BG and BR) from data in the other half of the sample. After this process, the predicted values of the endogenous regressors (\hat{BG} and \hat{BR}) are used in the second-stage (survival analysis) parameter estimates. In summary, our analysis involved three steps: (1) using the first subsample, obtain $\hat{\alpha}_j$ by estimating the strategic-choice model; (2) using the second subsample and $\hat{\alpha}_j$, calculate \hat{BG} and \hat{BR} , the choice probabilities; and (3) using the second subsample, regress \hat{BG} and \hat{BR} on the survival analysis.

Table 1 Variable names and definition

Name	Definition
BG	= 1 if a firm is classified as born-global and 0 otherwise
BR	= 1 if a firm is classified as born-regional and 0 otherwise
INNOVATIONS	Number of new products a focal firm exports in a given year
SIZE	Number of employees a focal firm has in a given year
PRODUCTIVITY	Revenue per employee, in thousands of Canadian dollars, deflated by industry price index
FOREIGN GDP	Logarithm Canadian to major export destination GDP ratio
EXCHANGE RATE	Logarithm nominal exchange rate, defined as CAD per USD
EXCHANGE RATE VOLATILITY	$= (\text{exchange rate}_t - \text{exchange rate}_{t-1}) / \text{exchange rate}_{t-1}$
FOREIGN-OWNED	= 1 if a firm is foreign-owned and 0 otherwise
RE-ENTER	= 1 if a firm re-entered the export market and 0 otherwise
YEAR	= 1 if a firm established in a specific year and 0 otherwise
SECTOR	= 1 if a firm belongs to a specific sector and 0 otherwise, including food and beverage, textile and clothing, leather, wood, paper and printing, petroleum, chemical, plastic and rubber, non-metallic mineral, metal, machinery, computer and electronics, transportation, equipment, furniture and miscellaneous
FIRM LOCATION	= 1 if a firm is located in a specific province and 0 otherwise, including Newfoundland, Nova Scotia, New Brunswick, Ontario, Quebec, Manitoba, Saskatchewan, Alberta and British Columbia
EXPORT REGION	= 1 if a firm exports to a specific region and 0 otherwise, including North America, Europe, Asia and the rest of the world

Table 2 Descriptive statistics (N = 7287)

Correlation	1	2	3	4	5	6	7	8	9	10
1 BG	1									
2 BR	-0.14*	1								
3 INNOVATIONS	0.16*	-0.01	1							
4 SIZE	0.15*	-0.05*	0.25*	1						
5 PRODUCTIVITY	0.00	-0.02*	0.02	0.04*	1					
6 FOREIGN GDP	-0.03*	-0.17*	-0.01	-0.01	0.00	1				
7 EXCHANGE RATE	0.02*	0.14*	0.11	0.03	0.02	-0.14*	1			
8 EXCHANGE RATE VOLATILITY	-0.01*	0.17*	0.02	0.02	0.00	-0.45*	0.64*	1		
9 FOREIGN-OWNED	0.09*	-0.01	0.08*	0.30*	0.08*	-0.03*	0.01	0.03*	1	
10 RE-ENTER	-0.02*	-0.05*	-0.04*	-0.03*	-0.01	-0.13*	0.10*	0.15*	-0.02*	1
Mean	0.06	0.29	0.41	20	98.49	-2.62	0.35	0.44	0.02	0.05
s.d.	0.23	0.45	1.27	30	93.69	0.01	0.07	0.05	0.13	0.16
Minimum	0	0	0	1	0	-2.63	0.26	-1.92	0	0
Maximum	1	1	46	590	3944	-2.59	0.45	1.9	1	1

Note: N = 7287. *p < 0.05.

Variables

Variable definitions, descriptive statistics and correlations are presented in Tables 1 and 2.

Strategic-choice model

In the first-stage strategic-choice model, the dependent variable STRATEGY is a categorical variable that includes three outcomes: born-global, born-regional and gradual internationalization. The independent variables include estimates of firm resource endowment in the year it starts exporting: SIZE and

PRODUCTIVITY. Firms choose their strategies based on their ownership, industry, location and cohort conditions. We therefore include control variables, such as FOREIGN-OWNED, SECTOR-, FIRM LOCATION-, and YEAR-specific dummy variables. Furthermore, we include macro-environmental control variables such as FOREIGN GDP, EXCHANGE RATE and EXCHANGE RATE VOLATILITY, since these macroeconomic factors have been argued to influence a firm’s strategic decisions (e.g., Salomon, 2006). FOREIGN GDP of major trade partners has

been argued by multiple studies to affect internationalization strategies (Brainard, 1997; Salomon & Shaver, 2005a) because it reflects international growth opportunities (Salomon & Shaver, 2005a) and international market capacity (Fan & Phan, 2007). EXCHANGE RATE and EXCHANGE RATE VOLATILITY may influence small firms' internationalization behavior (Batjargal, Hitt, Tsui, Arregle, Webb, & Miller, 2013) since it reflects the potential risk level of operating abroad. We use the real bilateral exchange rate of the Canadian dollar against the US dollar (but not other currencies) to predict the likelihood of firm preference of global over regional or domestic strategies for the following reasons: (1) the US is the major exporting partner of Canadian firms. Sui and Yu (2012), for example, showed that more than 80% of Canadian exporters export to the United States, and more than 66% exporters only export to the United States. (2) Canadian exports to the foreign markets are most likely invoiced in the US dollar (Goldberg & Tille, 2009), especially for smaller exporters (Auboin, 2012). Therefore we believe that the exchange rate of the Canadian dollar against the US dollar has an impact on Canadian firms' export decisions such as internationalization strategies.

Survival analysis

In the second-stage survival analysis, the dependent variable is not measured directly but comprises an event (exit from exporting) or censoring indicator and a measure of the time until the event (export duration) or censoring occurs (Cleves, Gould, Gutierrez, & Marchenko, 2008). The event indicator is coded 1 if a firm exits from the export market, and coded 0 as long as it remains exporting. The time of export duration is measured in years. Censoring occurs when the event under study is not observed for a given case during the study time. In this study, left censoring occurs when a firm started exporting before the observation period of our data. We avoid this problem by excluding such firms from our sample. Right censoring arises when a firm never exits from exporting or exits from exporting after the observation period of our data. The CPHM is able to identify and handle right-censored observations (Morita, Lee, & Mowday, 1993; Trevor, 2001) and thus helps us to avoid this problem.

Independent variables include dummy variables for the firm's choice of an internationalization strategy: BG (born-global) and BR (born-regional) (gradual internationalization (GI) is used as the reference strategy). We proxy for a firm's slack resources by

(1) SIZE, using the number of employees a focal firm hires in a given year (Bonaccorsi, 1992), and (2) PRODUCTIVITY, calculated by the ratio of revenue to the number of employees (Sui & Yu, 2012). PRODUCTIVITY is measured in thousands of Canadian dollars and is deflated by annual industry price indices, using 2000 as the base year. Previous studies suggest that firm size (Sharfman et al., 1988) and productivity (Mishina et al., 2004) indicate the level of discretionary slack of a firm. Hashai (2011) argued in an INV context that "[l]arger born global firms are likely to have a greater amount of slack resources than smaller born global firms, and are more able to commit substantial resources to expanding their geographic scope and foreign operations" (Hashai, 2011: 1005). This notion has also received support from other scholars in various disciplines (e.g., Russo & Fouts, 1997; Sharma & Henriques, 2005). Similarly to firm size, productivity has also been reported as suitable measurement of slack resources (Welbourne, Neck, & Meyer, 1999), since it covers the "generated" level of slack (e.g., Chakravarthy, 1986; Greenley & Oktemgil, 1998). It serves as a general financial indicator and has been previously used to capture human resource slack (Mishina et al., 2004) which is particularly important in smaller companies relying more heavily on their human capital (Voss et al., 2008). Consequently, in this study, we use firm size and productivity to proxy slack resources in the context of internationalizing SMEs.

We proxy for a firm's innovation resources by INNOVATIONS, which is the number of new products that a focal firm introduced to the export market in a given year (Salomon & Shaver, 2005b). Specifically, a firm is considered to produce a new product if it sold a product to the foreign markets (at the four-digit Harmonized Commodity Description and Coding System (HS) level²), which it never exported before. Equivalent measurements have been used in previous studies to capture a firm's realized innovativeness (Smith, Collins, & Clark, 2005).

Since previous studies underpin the importance of ownership, cohort, location and industry specifics (Mudambi, 2008; Mudambi & Zahra, 2007) for internationalization success, we thus include FOREIGN-OWNED, SECTOR, FIRM LOCATION, and YEAR dummy variables in our regression analysis. In this study, we estimate a firm's hazard of exit from the entire export market. We control for the possible unobserved heterogeneity of firm exit from different exporting countries by including a set of dummy variables for EXPORT REGION into the regression.

RESULTS

The Strategic-Choice Model

Table 3 presents the results for the strategic-choice model, which was estimated using a multinomial logit model. The coefficients in Table 3 show the effect of the explanatory variables on the marginal utility of the internationalization strategy under consideration relative to the reference strategy, which is gradual internationalization. The coefficients of SIZE suggest that born-regional firms are the smallest firms in the year that firms begin to export, followed by born-global firms, and those that gradually internationalize are the largest firms. The coefficients of PRODUCTIVITY suggest that the most productive firms in the year that firms begin to export are those that gradually internationalize, followed by born-global firms and the least productive firms are born-regional firms. Furthermore, our results suggest that foreign-owned exporters are more likely to choose born-global and born-regional internationalization than gradual internationalization compared with their Canadian-owned counterparts. When the exchange rate between the Canadian dollar and the US dollar is higher or more volatile, Canadian exporters are less likely to choose the born-global strategy and more likely to choose the born-regional strategy.

Survival Analysis

The coefficients in Table 4 show the effect of the explanatory variables on the probability of exit from exporting. Model 1 is based on a conventional analysis; it includes the dummy variables BG and BR and does not control for endogeneity. Models 2–5 account for the endogeneity of the empirical estimates by including \hat{BG} and \hat{BR} , which are the estimated probabilities that the firm will choose born-global or born-regional internationalization.

Model 2 includes the direct effects of slack and innovation resource availability on the hazard of exit from exporting. Model 3–5 also include the interaction of t resources internationalization strategies. Model 6 uses the split-sample methodology to determine the robustness of the results of Model 2. Models 2–5 provide the most reliable and unbiased results because, unlike Model 1, they account for endogeneity and, unlike Model 6, they are based on the entire sample.

The results obtained from Model 1 suggest that, *ceteris paribus*, born-global firms have the highest probability of exit from exporting, followed by born-regional firms and then firms that gradually internationalize their operations. When the estimates are corrected for endogeneity in Models 2–6, neither \hat{BG} and \hat{BR} has a statistically significant effect on the survival of firms in the export market. These results are consistent when the split-sample estimation is used in Model 3. Therefore Hypothesis 1 is supported.

To assess if the effect of tangible resources on export market survival depends on firm's internationalization strategy, we interact SIZE with BG and BR in Model 3. Model 3 shows negative and significant coefficients of SIZE, the interaction of SIZE and BG, and the interaction of SIZE and BR. Testing for the significance of effect size differences shows that the effect of SIZE is significantly stronger for born-globals than for the other internationalization strategies, and that it is significantly stronger for born-regionals compared with gradual internationalizers.³ Furthermore, the absolute value of the coefficient on the interaction of SIZE and BG is greater than the coefficient's value on the interaction of SIZE and BR. Therefore when compared with gradual internationalizers, the effect of SIZE on reducing the hazard of exit from exporting is stronger for born-global firms,

Table 3 Strategic choice: Regression results from the multinomial logit model

	BG vs BR		BG vs GI	
SIZE	0.9319***	(0.0841)	-2.8043***	(1.0765)
PRODUCTIVITY	0.4686***	(0.0927)	-0.0923**	(0.0379)
FOREIGN-OWNED	0.1898	(0.2694)	0.7194***	(0.2273)
FOREIGN GDP	-1.3703***	(0.0835)	-0.3746***	(0.0195)
EXCHANGE RATE	-1.4450***	(0.4710)	0.1161***	(0.4080)
EXCHANGE RATE VOLATILITY	-5.6803***	(1.1501)	1.5711	(1.0080)

Notes: $N = 1959$. Log likelihood = -972.05. Pseudo $R^2 = 0.1313$.

SECTOR, FIRM LOCATION and YEAR dummy variables are included but not reported.

*** and ** indicate statistical significance at the 1% and 5% levels.

Standard errors in parentheses.

followed by born-regionals. Hypothesis 2 is, thus, supported.

To assess if the effect of productivity resources on export market survival depends on a firm's internationalization strategy, we interact PRODUCTIVITY with BG and BR in Model 5. The results show negative and significant coefficients for PRODUCTIVITY, the interaction of PRODUCTIVITY and BG, and the interaction of PRODUCTIVITY and BR. Testing for the significance of effect size differences shows that the effect of PRODUCTIVITY is significantly stronger for born-globals than for the other internationalization strategies, and that it is significantly stronger for born-regionals compared with gradual internationalizers. These results indicate that, compared with gradual internationalizers, the effect of product innovations on reducing the hazard of exit from exporting is stronger for born-global

firms, followed by born-regionals. Therefore Hypothesis 3 is supported.

To assess if the effect of intangible innovative resources on export market survival depends on a firm's internationalization strategy, we interact INNOVATIONS with BG and BR in Model 4. The results show negative and significant coefficients for INNOVATIONS, the interaction of INNOVATIONS and BG, and the interaction of INNOVATIONS and BR. Just as we did for SIZE and PRODUCTIVITY, we observed if the effect sizes of INNOVATIONS are significantly different for the three internationalization strategies. These tests showed (1) that INNOVATIONS are significantly more conducive to the export market survival of born-globals than for the other two strategies, and (2) that born-regionals profit significantly more from INNOVATIONS than gradual internationalizers. Similar to the tests above,

Table 4 Hazard of exit from exporting: Results from the CPHM

	Model 1 Conventional	Model 2 Two-stage	Model 3 Two-stage	Model 4 Two-stage	Model 5 Two-stage	Model 6 Split-sample
BG	0.0687** (0.0327)	-0.2576 (0.2424)	-0.2128 (0.2452)	-0.2318 (0.2444)	-0.2193 (0.2868)	-0.2150 (0.2560)
BR	0.0396** (0.0180)	0.1558 (0.0855)	0.1568 (0.0856)	0.1705 (0.1153)	0.1369 (0.0790)	0.2341 (0.4374)
SIZE	-0.0065*** (0.0012)	-0.0046*** (0.0013)	-0.0034*** (0.0013)	-0.0045*** (0.0013)	-0.0044*** (0.0013)	-0.0079*** (0.0019)
INNOVATIONS	-0.0290*** (0.0046)	-0.0294*** (0.0045)	-0.00274** (0.0044)	-0.0042*** (0.0011)	-0.00278** (0.0046)	-0.0254*** (0.0039)
PRODUCTIVITY	-0.0039** (0.0018)	-0.0044** (0.0018)	-0.0045** (0.0018)	-0.0043** (0.0018)	-0.0016*** (0.0004)	-0.0028*** (0.0002)
BG×SIZE			-0.0152*** (0.0040)			
BR×SIZE			-0.0051*** (0.0012)			
BG×INNOVATIONS				-0.1789** (0.0889)		
BR×INNOVATIONS				-0.1362*** (0.0364)		
BG×PRODUCTIVITY					-0.0227*** (0.0019)	
BR×PRODUCTIVITY					-0.0116*** (0.005)	
FOREIGN-OWNED	-0.1520*** (0.0485)	-0.1720*** (0.0531)	-0.1868*** (0.0531)	-0.1721*** (0.0531)	-0.1802*** (0.0494)	-0.2068** (0.0994)
RE-ENTER	-0.0029 (0.0536)	-0.0356 (0.0587)	-0.0353 (0.0587)	-0.0352 (0.0587)	-0.0338 (0.0602)	-0.0817 (0.0874)
Firm-year record	7287	7287	7287	7287	7287	3608
Observations	2072	2072	2072	2072	2072	934
Log-pseudo-likelihood	-34177	-34179	-34138	-34133	-34149	-19438

Notes: SECTOR, FIRM LOCATION, YEAR and EXPORT REGION dummy variables are included but not reported.

*** and ** indicate statistical significance at the 1% and 5% levels.

Standard errors in parentheses.

these results indicate that, compared with gradual internationalizers, the effect of product innovations on reducing the hazard of exit from exporting is stronger for born-global firms, followed by born-regionals. Therefore Hypothesis 4 is supported.

The results in Model 6 are based on the split sample method analysis, and suggest neither BG nor BR has a significant impact on firm's probability of exit from exporting. As the results in Model 6 are consistent with those from the two-stage method

analysis in Model 2, but not with those from the conventional analysis in Model 1, it suggests that our model is appropriate and that the results are robust.

We must be cautious when assessing the interaction effects of non-linear models such as the CPHM (Shaver, 2007). To examine the robustness of the results on the interaction effects in Table 4, Table 5 reports the results of separate survival analyses for born-global, born-regional and gradually internationalized firms. The results in Table 5 are consistent with those in Table 4 Models 3–5 on the moderating effects of SIZE, INNOVATIONS and PRODUCTIVITY on the relationship between export market survival and internationalization strategy.

Based on the regression results from Table 5, Figure 2 illustrates our Hypotheses 2–4 by plotting the interaction effects of SIZE, PRODUCTIVITY and INNOVATIONS on internationalization strategies (Baum, Schwens, & Kabst, 2013; Trevor, 2001). More specifically, Figure 2 plots the effect of SIZE, PRODUCTIVITY and INNOVATIONS on an average exporter's estimated hazard of exit from exporting, in relation to its internationalization strategy (BG, BR or GI). The plots reveal that, as firm size, productivity and product innovation competencies increase, the hazard of exit from the export market by born-global firms' decreases at a faster rate than that of born-regionals and gradual internationalizers. Moreover, born-regionals depend

Table 5 Hazard of exit from exporting: Split sample by strategy

	BG	BR	GI
SIZE	-0.0291*** (0.0017)	-0.0085*** (0.0026)	-0.0059*** (0.0014)
INNOVATIONS	-0.1611*** (0.0157)	-0.1060*** (0.0395)	-0.0061*** (0.0012)
PRODUCTIVITY	-0.0208* (0.0119)	-0.0020* (0.0007)	-0.0048*** (0.0021)
FOREIGN-OWNED	-0.0416 (0.1540)	-0.0415 (0.1232)	-0.2270*** (0.0567)
RE-ENTER	-0.2624 (0.3094)	0.1117 (0.1493)	-0.0372 (0.0589)
Firm-year record	388	1737	5162
Observations	112	509	1451
Log-pseudo-likelihood	-1910	-8742	-27242

Notes: SECTOR, FIRM LOCATION, YEAR and EXPORT REGION dummy variables are included but not reported. *** and * indicate statistical significance at the 1% and 10% levels. Standard errors in parentheses.

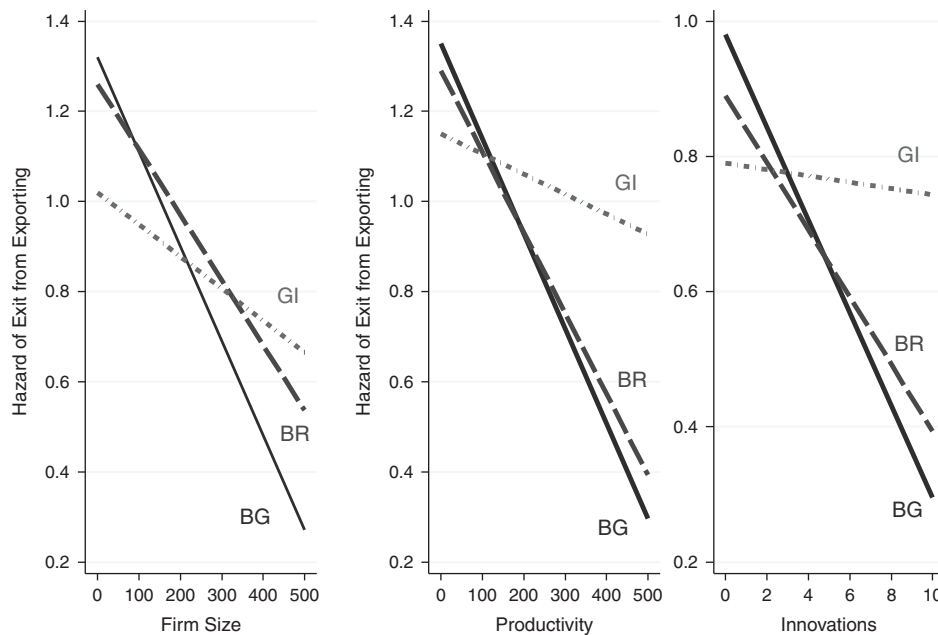


Figure 2 Estimated effects of hypothesized interactions on the hazard of exit from exporting.



more strongly on slack and innovation resources than gradual internationalizers, as shown by the significant interaction effects between born-regional strategy and firm SIZE, PRODUCTIVITY and INNOVATIONS (Table 4).

Robustness Test

We also examined the following variations to the appropriate specifications to assess the robustness of the results. First, instead of using 500 or fewer employees to classify SMEs, we used alternative sampling criteria such as 250 or 1000 employees; instead of excluding firms that exported only once, we added those sporadic exporters into the sample; instead of using number of employees, we used revenue to estimate firm size. Second, different numerical thresholds, such as 3 years and 50% were used to classify born-global firms. Third, we separate the period of analysis from 1997 to 2000 and from 2001 to 2005 (before and after the Internet bubble). In all these variations, we find results that are entirely consistent with our primary results.

DISCUSSIONS AND CONCLUSIONS

This is one of the first longitudinal studies of the relationship between internationalization strategy and the survival of SMEs in the export market. Our unique sample includes all Canadian exporting SMEs and an average firm size of 20 employees. Our results suggest that born-global and born-regional firms were smaller and less productive than gradual internationalizers when they began to internationalize. Based on a conventional analysis, it would seem that born-global firms have the lowest survival rate in the export market, followed by born-regional firms. Firms that gradually internationalize have the highest export market survival rate. After endogenizing firm strategic choice, however, we find no significant differences between these three internationalization strategies with respect to their effect on survival. These results suggest that small new ventures, similar to larger firms (Mudambi & Zahra, 2007), are rational and efficient in choosing the internationalization strategies that best fit their resource base. As such, export promotion agencies and financial institutions should not underestimate management capability and the growth potential of small entrepreneurial firms.

These results also advance our knowledge by presenting a more nuanced perspective on internationalization strategies based on the distinction between the born-global and born-regional strategies. We thus contribute to the discussion regarding

internationalization strategies by showing that the born-regional strategy, such as the born-global or gradual internationalization strategy, may only be optimal for certain types of firms, that is, those that have the necessary resources and capabilities to effectively pursue the specific strategy.

More generally, our results contribute to the ongoing debate in international business research regarding endogeneity of internationalization strategy. If we had not controlled for endogeneity, our study would have produced significantly different results and led to the conclusion that born-global firms and born-regional firms have significantly lower chances of survival than gradual internationalizers. Studies of performance outcomes of different internationalization strategies should control for endogeneity.

Contributing to the role of resources in the INV context, our results show that firm slack and innovation resources facilitate firm survival in the export market. Our findings support previous studies that argue that survival abroad is resource dependent (Mudambi & Zahra, 2007). We also advance those studies by showing that internationalization strategy moderates the function of firm resources for export market survival. Consistent with our hypotheses, we show that resources are significantly more important for the survival of born-globals than for other strategies. Our results suggest that born-globals face increased liabilities of foreignness compared with other strategies. This makes them prone to failure and increases their demand for slack and innovation resources that can be utilized to adapt to turbulent environments. Therefore the born-global strategy may lead to a greater growth potential for certain types of firms but also requires significantly more resource input to survive than other internationalization strategy types. This is consistent with the study of Pedersen and Shaver (2011) that argued for a "big step" of initial internationalization. We demonstrate that to take such a big step earlier in firm's life cycle, slack and innovative resources are required to survive in international environments.

We show that high levels of innovation are particularly important for born-global firms, followed by born-regional firms. We find that the ability to acquire adequate resources during internationalization will be critical to the survival of born-globals in the international market. Previous studies have shown that innovation (Golovko & Valentini, 2011) is positively related to firms' internationalization. We corroborate and advance these studies with our

results by suggesting that innovation is not only a driver of early internationalization but also an important factor for survival in the international environment. In particular, firms that venture into foreign markets soon after inception (i.e., born-global and born-regional firms) require such intangible resources to adapt efficiently to demand changes and the cultural and institutional plurality of international markets. Because they cover a wider spectrum of countries, born-global firms, in particular, require innovation to adapt their products to multiple and diverse market conditions. Gradual internationalizers operate in less risky and turbulent environments because they step incrementally into foreign markets and can draw on experiential learning. Although our findings largely concur with previous research on born-globals, our study also indicates that the underlying mechanisms for the positive relationship between innovativeness, productivity and international success might not be based only on the enhanced learning effects from early internationalization; in addition, selection bias may also account for this relation.

Early internationalizing firms might have been found to be more innovative than other firms (Knight & Cavusgil, 2004) because those early internationalizers who were not innovative and productive enough did not survive and therefore could not be observed in cross-sectional studies. Thus the remaining firms are more innovative than others, but not only because they learned more from their enhanced operations but also because the chances of survival were stronger. Thus innovation resources are not only important to become a successful early entrant into foreign markets but also to stay alive in the foreign market. Our study thus highlights the necessity for studies on learning in the international domain that employ longitudinal data. In sum, our study indicates that there is no simple answer to the question as to whether a firm should pursue a born-global, a born-regional or a gradual internationalization strategy. Our results underscore the importance of considering a firm's slack and innovation resources as contingencies in answering this question. Firms thus must reflect on their resource base and whether it is suitable for a targeted internationalization strategy. Thus the outcomes of this study may provide helpful information to export-oriented SMEs. Managers of SMEs should not rush into rapid internationalization; instead, they should choose an internationalization strategy that is consistent with the firm's resource building strengths. The results of this study may also be relevant to

policymakers who design and implement export promotion programs to assist SMEs. Policymakers should not try to influence firms' internationalization strategies without understanding their resources and capabilities; policies should help firms acquire sufficient financial support and develop innovative capabilities.

This study has limitations that suggest interesting avenues for future research. Although we believe that our sample of Canadian exporters has numerous advantages because it allowed us to utilize multiple large-scale databases, this approach limits our investigation to the internationalization of SMEs from one developed country. Firms from other countries (e.g., emerging economies) may have different strengths in facing the challenges of sustaining their international activities. Future studies should attempt to construct longitudinal databases that cover multiple countries. Moreover, we examine firms' overall export market survival rather than their survival in individual foreign markets. Although our approach to measure export market survival is consistent with previous studies (Efrat & Shoham, 2012; Mudambi & Zahra, 2007), we also understand that internationalization is a complex process, and each commitment to a foreign market affects a firm's activities in other markets. We partially account for potential difference in export market entry and exit decisions among heterogeneous firms by including sector, province, year and export region dummies into our analyses. Future studies might attempt to examine the relationship between survival and expansion into multiple international environments simultaneously and advance the understanding of survival in different environments. Although we used multiple procedures to account for endogeneity and to thoroughly address the limitations of the different approaches by (1) combining different approaches and (2) by performing multiple robustness checks, it should be noted that endogenizing holds several limitations such as the choice of exogenous variables or the use of exogenous variables in multiple stages. More research on endogeneity and on variables choice in the INV domain is therefore required in the future. Previous studies have also argued for the duration dependence of internationalization activities (Mudambi, 1998; Pedersen & Shaver, 2011). In the context of SME survival in the export market, future longitudinal studies might study the extent to which a longer commitment to a specific region affects the survival of firms in this region. In this context, we also require further studies on



small and young firms' FDI and how different FDI strategies affect firm survival (Chang & Rhee, 2011). Studies observing FDI (e.g., Pedersen & Shaver, 2011) found support for duration dependence in their internationalization strategies and found that the first market entry took considerably more time and effort than the following entries. We observed non-equity entry modes as largely consistent with previous studies on INVs and we were able to identify accelerated internationalization strategies. These inequalities, however, may be caused primarily by the differences in entry modes observed which leaves room for future studies to compare duration dependence between FDI and export modes. Moreover, export market survival is only one aspect of firm performance. Sapienza et al. (2006) predicted that born-global firms will have a lower chance of survival because of the liabilities of foreignness and newness; however, they also predicted that, if they survive, they will achieve better performance because they will have profited from the learning advantages of newness. Future research should examine this argument and investigate the impact of different internationalization strategies on firm survival and growth.

While we applied a slack resource lens to argue for the effects of firm size and productivity, strategy and capability-building rationales might be also conducive for explaining our results in further detail. For instance, would it be interesting to advance further into the interaction between the different resources variables. The co-occurrence of large firm size and high productivity could, for example, imply a low-cost strategy. Such a strategy could provide competitive advantages and increase SMEs' odds to survive in the export market. While we did not focus on the interaction between size and productivity, but on their independent effects on SMEs' export market survival and their interaction with different internationalization strategies, future studies should emphasize the complex interplay between business strategy and SME internationalization in more detail. Future studies may also separate different types of slack and their respective export market survival implications. Accordingly, future studies may differentiate between unabsorbed and absorbed slack (Tan & Peng, 2003). It is also possible that financial slack, human resource slack, operational slack and customer-relation slack unfold different effects on SMEs export survival as they have been shown to differently relate to product exploration and exploitation (Voss et al., 2008).

In conclusion, we use a large-scale longitudinal data set to show that internationalization strategy has no direct impact on a firm's resources on SMEs' export market survival; instead, internationalization strategy has moderating effects on export market survival. We contribute to internationalization analytical frameworks by showing that each internationalization strategy can be a promising tool and that the variance in the value of these strategic choices for SME survival abroad is eliminated if the endogeneity of strategy choice is controlled for. Accordingly, we underscore the recent conclusion by several editors of the *Journal of International Business Studies* (Reeb, Sakakibara, & Mahmood, 2012) that studies that do not control for endogeneity may yield biased estimates with respect to the impact of internationalization strategy.

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NOTES

¹While firm size (Amato & Amato, 2007; Chang, Oh, Jung, & Lee, 2012) and productivity (Chakravarthy, 1986; Greenley & Oktemgil, 1998; Mishina et al., 2004) are well-established proxies for slack resources, we note that various proxies have been used in related research to operationalize and specify slack resources, including (1) financial indicators such as the equity/debt ratio (Bergh, 1995) and above average productivity (Mishina et al., 2004); (2) perceptual measures such as perceived performance consequences of budget reduction (Nohria & Gulati, 1996); or (3) firm

characteristics such as firm size (Amato & Amato, 2007; Chang et al., 2012) to proxy the level of available, potential or recovery slack resources (Daniel, Lohrke, Fornaciari, & Turner, 2004). Since we draw on objective, secondary panel data, we cannot apply measurements from the category (2) (perceptual measurements). We, however, use an indicator of each of the other categories (1) (productivity) and (3) (firm size) in order to provide a broader perspective on slack resources and to reflect the definition of slack resources as the “cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in practice with respect to the external environment” (Bourgeois, 1981: 30). We decided for those two proxies over other indicators of slack resources (like equity/debt, quick or current ratios) because size and productivity are less likely to be victim to reporting bias in the SME context than, for instance, equity/debt ratios (Fan & Phan, 2007), they are valid and previously established indicators of slack resources (Amato & Amato, 2007; Mishina et al., 2004), and reflect the concept of slack resources by Bourgeois (1981).

²Each transaction record in the Exporter Register database includes the firm’s identification number and

a product code that is classified under the HS. The HS code is available at the eight-digit level, with the first four digits covering the broadest category. To capture a firm’s innovative resources, we use new product introductions at the four-digit HS level.

³These tests assess whether the relative magnitudes for SIZE, INNOVATIONS and PRODUCTIVITY are significantly different among firms that choose different internationalization strategies: BG, BR and GI. In order to compare the relative magnitudes associated with the different strategies we first used GI as the reference category. The significant interaction effects between the strategic choice dummies and the resource variables (Table 4, Models 4–6) show that compared with gradual internationalizers, the effect of SIZE, INNOVATIONS and PRODUCTIVITY on reducing the hazard of exit from exporting is significantly stronger for born-global firms and for born-regionals. In order to check whether the relative effect magnitudes for SIZE, INNOVATIONS and PRODUCTIVITY are also significantly different between born-globals and born-regionals, we replicated this test using BG as the reference category. With this test, we found that, compared with born regionals, the effect of SIZE, INNOVATIONS and PRODUCTIVITY on reducing the hazard of exit from exporting is significantly stronger for born-global firms. Therefore Hypotheses 2–4 receive support.

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