

INTERNATIONALIZING ENTREPRENEURS: BRIDGING REAL OPTIONS REASONING AND AFFORDABLE LOSS LOGICS

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ABSTRACT

Through a transaction-level analysis of 1,040 small businesses from 52 countries, we develop and test a framework wherein export-minded entrepreneurs pair affordable loss logics with real options reasoning to internationalize more quickly and profitably than those who employ either or neither in strategic direction under conditions of irreducible uncertainty.

INTRODUCTION

What mental calculus occurs that enables growth-minded entrepreneurs to rationalize unfamiliar and in some cases unknowable uncertainties in the pursuit of new international market opportunities? While the entrepreneurial appetite for international opportunities is well documented (Andersson, 2000, 2004; Oviatt & McDougall, 2005) and the inherent uncertainties of internationalization are voluminously chronicled (Shrader, et al., 2000), there is a paucity of scholarship specifically describing and predicting why and how entrepreneurs willingly and rationally confront irreducible uncertainty (Knight, 1921; McGrath, 1999; McMullen & Shepherd, 2006) in the pursuit of new international markets. The purpose of this paper is to address these theoretical and empirical gaps by developing and testing an explanatory framework grounded in the theories of real options reasoning (Barnett 2008; Brouthers, et al., 2008; McGrath, 1999; McGrath, et al., 2004; Reuer & Tong, 2007) and affordable loss logics (Dew, et al., 2009; Sarasvathy, 2001; Shackle, 1966) to explain the heterogeneity of strategic choices and performance outcomes among internationalizing entrepreneurs.

Consistent with McDougall and Oviatt (2000:902), we define international entrepreneurship as “a combination of innovative, proactive and risk-seeking behavior that crosses national borders and is intended to create value in organizations.” This “proactive,” exploration-oriented entrepreneur faces dual challenges with respect to uncertainty (McMullen & Shepherd, 2006): assessing and operationalizing it to reveal new opportunities to develop, while simultaneously finding ways to quash it in order to survive for another day (Shane, 2008). Paradoxically, uncertainty is embraced and even leveraged, all the while it is also contained. The essence of this uncertainty paradox – wherein entrepreneurs finance commitments to the exploration of new international opportunities (Jones, et al. 2011), while simultaneously guarding against downside risks -- is strongly suggestive of real options reasoning (McGrath 1999). As Adner and Levinthal noted, “The underlying logic of the real options framework is based on the realization that future investment opportunities are contingent on prior investment commitments” (2004:74). These investments lead to “knowledge platforms” from which

valuable opportunities can be created (Kogut & Kulatilaka, 1994). Accordingly, entrepreneurs will engage in high-risk transactions when it appears to them that future opportunities can be created over and above the immediate return from the transaction. This value may be captured in the form of real options, which confer the right but not the obligation to take strategic action at some point in the future (Dixit & Pindyck, 1994; Trigeorgis, 1996).

However, the application of ROR to entrepreneurial opportunity exploration is not without controversy. Some scholars have suggested that while real options theory is useful in capturing certain kinds of value-enhancing flexibility (Barnett, 2008; Reuer & Tong, 2007), there is little evidence that most firms possess the wherewithal to actually perform complex real options valuation (Klingebiel & Adner 2014; Miller & Shapira, 2004) and that, even if such capabilities existed, firms may discover that ROR is “overly seductive” (Adner & Levinthal, 2004), leading to expensive resource commitments that can be difficult to abandon (Barnett, 2003; Carr, 2002; Coff & Laverty, 2001). Our goal is to provide conceptual and empirical intermediation of the ROR dispute by developing and testing conjoint ROR and ALL mechanisms to explain why and how it may be rational for entrepreneurial firms to assume extraordinary risks while aiming to expand into international markets that are characterized by a priori irresolvable uncertainty. Our study offers fresh perspectives to the ongoing debate over the applicability of real options theory to the processes and outcomes of strategic discovery.

THEORY AND HYPOTHESES

The proliferation of entrepreneurial firms with international growth aspirations is evident in virtually every industry and in every country; wherever firms possess the wherewithal to consider the exportation of goods and services (Andersson, 2000, 2004; Oviatt & McDougall, 2005). Governments are themselves highly motivated to facilitate the economic benefits accrued from the international expansion of homegrown entrepreneurship (Acs, Desai, & Hessels 2008), especially “forward internationalization,” which refers to strategic activity involving the launch of goods and services for new customers in new markets (Jones et al., 2011) in pursuit of top-line growth or market share gains. Forward internationalization poses sizable market acceptance risks, especially for small, entrepreneurial firms possessing modest administrative and legal resources. Given the uncertain enforcement of ambiguous jurisdictional authority that often accompanies internationalization (Schmidtchen & Schmidt-Trenz, 2006) as well as the cascading process of launching new products and services into new markets (Jones & Coviello, 2005), IE is unusually well suited for a vigorous test of frameworks from ROR and ALL.

Within the IE context, our framework conjoins two theoretical approaches: ROR, which explains *why* internationalizing entrepreneurs undertake risky exploration of uncertain environments; and ALL, which explains *how*. According to ROR, a real option reflects “the premise that resources create the future potential for decision makers to act in ways that could not have been foreseen at the time a specific investment decision was made” (McGrath et al., 2004: 88). Since real options are investments in projects that give the option holder future preferential decision rights (Bowman & Hurry, 1993; Trigeorgis, 1996), the primary source of value is in the strategic flexibility gained by management to exercise, defer, hold, stage, bundle or abandon future opportunities. Classically conceived, real options possess value because managers can “wait and see” if and how uncertainties are wholly or partially resolved. The ability to “wait and see” limits a firm’s downside losses while maintaining the potential upside opportunities. ROR, on the other hand, extends beyond these parameters by positing real options

that are created through new opportunity exploration; an orientation best characterized as “act and see” (Adner & Levinthal, 2004).

Entrepreneurial Generation of Compensatory Real Options

For most new and small firms with internationalization aspirations, the first foray into foreign markets typically involves the exportation of goods and services (NSBA/SBEA, 2013). Although an emerging literature has identified a sub-class of new ventures that are “born global” (e.g. Knight & Cavusgil 2004), this entry mode is still comparatively rare. Exportation continues to predominate as the initial step in internationalization activity. Broadly speaking, there are two mechanisms for exporting entrepreneurs to consummate cross-border transactions: those in which payment is received prior to shipping, and those in which payment is made by the importer sometime after having received the goods or services. The latter basis, involving terms of trade (i.e. extending credit), bears significant payment risk, especially when small exporters are exposed to jurisdictional ambiguities or are too small to pursue contractual protections in a foreign domain. In these cases, an exporting entrepreneur is not fully compensated at the time of a transaction for either the time value of money or the default risk associated with potential non-payment. Therefore, *ceteris paribus*, in order to guarantee being made whole, an internationalizing entrepreneur should insist upon full payment prior to provisioning the goods and services. Unless, that is, there is some other source of value that is created through the extension of credit to counter-parties of indeterminable riskiness. The only way to rationalize the preference of extended credit over guaranteed payoff is if the entrepreneur foresees future value over and above the transaction-specific remuneration. We call the future value that is created a *Compensatory Real Option*, in recognition of the manner in which future value is created through a relationship-driven, exploratory investment decision made under uncertainty.

Since option values are a function of the volatility of the underlying asset (McGrath, 1999; Trigeorgis, 1996), the value of a CRO hinges on the uncertainty-driven volatility of its compensatory function. Therefore, entrepreneurs who willingly undertake exploratory activity that increases the uncertainty of payoff timing and amount, increase both the volatility and the CRO value. The function of an exchange that involves no payment risk is strictly transactional. The function of an exchange that generates a CRO is to create opportunities that lead to forward internationalization. Thus, there should be a close association between CROs and the achievement of internationalization aims. More formally, we predict that:

Hypothesis 1: The generation of compensatory real options is positively related to forward internationalization.

Affordable Loss Logics and Exploratory Activity

The compensatory function of real options provides the reason *why* select entrepreneurs would employ ROR in pursuing internationalization, but not necessarily *how* they do it. Traditionally, real options theory has been studied in scenarios involving large-scale, well-resourced, multi-national corporations that make sizable tangible initial investments (Reuer & Leiblein, 2000; Tong, Reuer, & Peng, 2008). In these large organizational contexts, resource allocation discipline needs to be enforced through organizational structures that insure accountability through checks and balances (Adner & Levinthal, 2004; Coff & Laverty, 2001).

The analogous regulatory process in a small firm involves the use of affordable loss logics. The economist, G.L.S. Shackle (1966), was the first to take note of affordable loss logic's role in entrepreneurial decision-making:

“It is practical and reasonable to regard the focus-loss, in absolute terms, as depending on the nature and scale of the enterprise concerned. Thus, by choice of an appropriate kind, or an appropriate size, of plant or enterprise, [the entrepreneur] can adjust the greatest amount he stands to lose, that is, his focus loss, to the amount which he can “afford” to lose.” (Shackle, 1966)

What Shackle is proposing is that entrepreneurial decision-making focuses less on the probability of generating a stream of discounted cash flows and more on the “affordability” of an exploratory mission when the project is considered as a proportion of a firm's total resources. Inherently then, the decision-making logics involve a self-governing process of setting and enforcing commitment boundaries. Fundamentally, ALL is a non-predictable strategy of explicit action that is, by nature, exploratory (Dew et al., 2009). It is - in a fashion similar to the characterization of ROR above - an “act and see” orientation, rather than “wait and see.” In the context of small, sequential investments designed to facilitate the exploration of uncertain domains, internationalizing entrepreneurs who employ ALL should be more inclined to embrace the potential opportunities extracted from irreducible uncertainty because ALL heuristics aim to conduct explorations that are provocative, frequent and fast (Sarasvathy 2006). This drives the following prediction:

Hypothesis 2: The use of affordable loss logics is positively related to forward internationalization.

Combining Real Options Reasoning and Affordable Loss Logics in Exploratory Activity

As the foregoing discussion conveys, both ALL and ROR are expressive of the “act and see” heuristic that characterizes resource-poor small firms that are intent upon exploring uncertain domains in search of promising new opportunities. As complementary components of an “act and see” heuristic, ROR and ALL work in tandem to move beyond the “wait and see” premises of the classical, project portfolio approach to real options. The problem with this, as Adner and Levinthal see it (2004), is that along the frontier of new opportunity exploration -- where target markets and technical agendas are indeterminable -- the applicability of real options should give way to existing theories of searching, probing, learning and innovating (Fig. 1).

Our view is that Adner, Levinthal and others are correct in noting the challenges that arise when sequential investments move from “wait and see” to “act and see.” However, prior conceptions have not taken into account the notion of ROR and ALL functioning in tandem, which is predicted to provide a more robust description and prescription for small-firm opportunity exploration than either alone or neither. Thus, we offer an alternative perspective in which the combined heuristics of ROR and ALL provide explanatory power beyond the boundaries demarcated for classical applications of real options theory. Specifically, in the context of strategy direction-setting by international entrepreneurs, the central assertion of this paper is that an ROR explanatory framework, when combined with ALL, is well suited to

address “act and see” exploratory investments. Over and above the independent effects of ROR and ALL on internationalization, we predict a significant interaction effect, as well:

Hypothesis 3: The use of affordable loss logics increases the positive effect of the relationship between CROs and forward internationalization.

DATA AND METHODS

After a detailed comparison of more than 150 sectors, the lumber industry was chosen as the focal point of this study. A list of subject firms was drawn from multiple sources: the Global Wood Trade Network, TimberWeb, the National Hardwood Lumber Association, the Hardwood Manufacturers Association, and the International Wood Products Association. We excluded companies engaged in either raw timber or finished wood products and companies that did not export their respective products or fell outside the target revenue range of \$500,000 to \$5,000,000. This left a final survey sample of 3,570 lumber exporters, domiciled in 52 different countries. Firms in the sample were contacted via mail, with an option to respond online. 1,040 ultimately completed utilizable surveys, representing 29% of the surveyed firms.

Measures

Dependent Variable Total Forward Internationalization (TFI). TFI is measured as a ratio of the international revenues, weighted by the number of new international product-markets (NPM) entered per year of operations divided by each firm’s total revenue.

Predictors and Controls. Compensatory Real Options (CRO). CRO is measured using a continuous variable based on an aggregate measure of the new business opportunities that were directly facilitated by an existing international business partner. New business includes all revenue-generating opportunities from product diversification, geographical expansion and supply chain diversification. The key stipulation is that this metric only captures new opportunities that are the direct result of efforts on the part of a pre-existing international trading partner. Affordable Loss (AL) is a categorical measure of the financing terms used by each entrepreneurial exporter. We created four different exporter approaches – high caution, moderate caution, moderate risk, and high risk – based on payment requirements, risk sharing, and qualifications of the importing partners. Other known predictors included in the model consist of Total Years of Operation, Years of International Operation, Total Revenue, and International Revenue. An array of control variables were grouped into three separate vectors in order to capture macro-economic, industry, country and firm effects.

RESULTS

Analysis of the model results reveals significant support for all three hypotheses, with noteworthy effect sizes and a probability of error less than 0.001. Hypothesis 1 predicted that TFI would be positively related to the use of CROs. The regression analysis indicates that over and above the controls contained in the base model, the generation of CROs contributes significant incremental explanatory power ($r^2 = .44$, $\Delta r^2 = .11$, $F^*_{1, 1030} = 150.8$, $p < .001$), with a noteworthy CRO effect ($\beta = 0.78$, $p < 0.001$). Hypothesis 2 examined the relationship between the use of affordable loss logics and TFI, modeled independently from CROs. Our results explain

a material amount of the variance related to the extent to which export-minded entrepreneurs actually achieve forward internationalization, ($r^2 = .38$, $\Delta r^2 = .05$, $F^*_{1, 1030} = 144.2$, $p < .001$). The focal predictor (AL) itself has a statistically material effect ($\beta_9 = 0.41$, $p < .001$). Hypothesis 3 predicts the conjoined implementation ROR and AL yields superior outcomes. Over and above the independent effects of ROR and AL, the combined effects of ROR*AL are significant ($r^2 = .51$, $\Delta r^2 = .18$, $F^*_{1, 1018} = 156.3$, $p < .001$), in support of Hypothesis 3.

DISCUSSION

“International business is considered inherently risky,” wrote Shrader, Oviatt and McDougall (2000:1227), “because it may involve loss of profits and/or assets as a result of changes in political, legal, economic, and social factors in foreign markets where firms compete.” Despite the high risk, the perceived opportunity to internationalize is a tantalizing prospect to growth-minded entrepreneurs. And yet, as Shrader et al. noted (2000), there are no robust frameworks for the prescription, prediction or even description of how entrepreneurs simultaneously pursue new international market opportunities while managing the inherent risks of internationalization. A key contribution of this study is that by using arguments drawn from ROR and ALL, we develop and test new mechanisms to explain why and how it may be rational for entrepreneurial firms to assume extraordinary risks while aiming to expand into international markets that are characterized by *a priori* irresolvable uncertainty.

Additionally, we offer fresh perspectives to the ongoing debate over the applicability of real options theory to the processes and outcomes of strategic discovery. Competing streams of research on real options have disputed the extent to which a wide (e.g. McGrath, Ferrirer, & Mendelow, 2004) or narrow (e.g. Adner & Levinthal, 2004) application of the theory is appropriate. Our theoretical framework offers a fruitful middle ground on the issue of ROR’s applicability and suitability. Our results suggest that the real options debate, as it pertains to internationalizing entrepreneurs, is best resolved through the conjoint use of ROR and ALL. By generating value-enhancing real options as compensation to the exporting entrepreneur, transacting firms can increase the size and speed of forward internationalization through novel mechanisms that simultaneously increase risk and improve the quality of risk management.

REFERENCES AVAILABLE FROM THE AUTHORS