Coordinating contraction and expansion for growth

ABSTRACT

We present novel theoretical arguments and empirical evidence suggesting that contracting a given growth path not only allows firms to expand a second growth path in the short term, but also to resume growth in the initially contracted path, thereby expanding both growth paths in the long term. We argue that when firms contract a given growth path, they spark two subsequent processes: First, they free up non-scale free resources from the contracted path that become available for investment in another growth path, which allows them to expand this path. Second, expansion in the other path creates new scale free resources that facilitate renewed growth along the initially contracted path. We find support for the existence of this overlooked trajectory in an analysis of changes in the international market presence and business segment presence of an extensive sample of public US-based firms between 1997 and 2019.

INTRODUCTION

In 2015 Amazon, shut down *Amazon destinations*, its hotel booking site, and decided to discontinue the sales of its *Fire* phone. The following two years were characterized by massive international expansion of Amazon in India, China, the United Kingdom and Australia. Then, while continuing its international expansion in Europe (France, Italy and Spain), the Middle East (United Arab Emirates, Turkey and Israel) and Asia (Singapore), Amazon resumed the expansion of its business scope in 2019 and 2020, opening its first solar energy facility in China, starting selling its cashier-less technology to retailers around the globe, and launching *Amazon Explore*, a new service that allows customers to book live, virtual experiences led by local experts.[1]

These changes in the business scope and international presence of Amazon may look unrelated. Yet, in the current study we develop theoretical arguments and show empirically that the above pattern of contracting a given growth path in the short term, not only as means to expand another growth path, but, importantly, also to further expand the initially contracted path in the long term is an overlooked growth trajectory. This novel but empirically relevant growth trajectory implies, paradoxically, that a long-term aim of achieving growth in a specific domain may require an initial retreat from that same domain. We label this trajectory "contraction for the sake of expansion".

Firms often grow by combining more than one growth path. This view dates back to Ansoff (1957), who discusses how a firm may increase its customer base while expanding its product range. Naturally, firms can combine growth in multiple business segments or in several national markets (e.g., Helfat & Eisenhardt, 2004; Wu, 2013; Dickler & Folta, 2020; Morandi-Stagni, Santalo & Giarratana, 2020). In a similar vein, firms often combine growth through international market and business scope expansion (see Hitt, Hoskisson & Ireland, 1994; Kumar, 2009; Wiersema & Bowen, 2008; Hashai & Delios, 2012;Bowen and Sleuwaegen, 2017). The current study focuses on this widely researched latter type of growth path combination.

Two key mechanisms, grounded in efforts to integrate recent advances within the resource-based view (RBV) of the firm into theories of growth, drive the trajectory of contraction for the sake of expansion. First, a firm's position within

[1] https://timelines.issarice.com/wiki/Timeline_of_Amazon

each of its growth paths is associated with the opportunity costs of employing and committing the firm's non-scale free *resources*[2] (Levinthal & Wu, 2010; Wu, 2013), such as the attention and cognitive capacity of internally trained managers or financial resources (Hitt, Hoskisson & Kim, 1997; Joseph & Ocasio, 2012; Penrose, 1959). This implies that contracting a given growth path frees up such non-scale free resources, which in turn can be used to expand another growth path. This argument, which represents inter-temporal resource redeployment (Helfat & Eisenhardt, 2004; Sakhartov & Folta, 2014) was previously advanced in multiple contexts (e.g., Bennett & Feldman, 2017; Berry, 2010; Kaul, 2012; Vidal & Mitchell, 2015, 2018). In the current study we present an important extension to this argument: By expanding another growth path (following the contraction of a given path), firms can create new scale free resources (Levinthal & Wu, 2010; Wu, 2013), such as new brands, new technologies, or intimate familiarity with consumer preferences. These scale free resources can then be utilized in the initially contracted path, as means to reignite its growth, allowing the expansion of both growth paths in the long term. Importantly, the aforementioned process is subject to adjustment costs (Dierickx & Cool, 1989; Helfat & Eisenhardt, 2004; Penrose, 1959), and therefore typically requires gradual adjustment, with some interval between the contraction (or expansion) of a firm's position within a given growth path and the expansion of a second path.

Let us exemplify the above ideas in the context of firms' international market and business segment expansion. As the vast literature on learning in international markets suggests (e.g., Barkema, Bell, & Penings, 1996; Zahra, Ireland, & Hitt, 2000; Sapienza, Autio, George, & Zahra, 2006; Salomon & Shaver, 2005) international market presence provides ample learning opportunities for firms as it exposes them to diverse geographic, institutional and cultural contexts that are very different from those to which they are exposed to, while doing business in their home country. In turn, international presence exposes firms to foreign market knowledge and technological innovations—two central scale free resources. Subsequently, increased familiarity with these new foreign environments and stimuli may well allow firms to identify new opportunities in product markets in which they do not operate, and thereby support renewed expansion of these firms into new business segments.

Likewise, withdrawal from some foreign markets (Benito, 2005; Berry, 2010) allows firms to free up managerial time and attention to penetrate new business segments in its remaining markets (Hashai & Delios, 2012), thereby learning

[2] In this study, we use the term "resources" rather than the term "capabilities" originally used by Levinthal and Wu (2010), since resources is a broader term that also can encompass cognitive capacity, brands, financial capital, etc.

more about new technologies and consumer preferences in such segments. The presence of firms in different business segments has been shown to also promote the learning of firms (Penings, Barkema, & Douma, 1994; Holmqvist, 2004; Xie & Oneill, 2014) by exposing them to different types of technologies, business ecosystems and consumer types. In turn, business segment presence exposes firms to diverse types of knowledge and innovation. Subsequently, increased familiarity with these new business segments may well allow firms to identify new opportunities in foreign markets in which they do not operate, and thereby support renewed expansion of these firms into new foreign markets.

Importnatly, the difference in the scale free resources created within these two growth paths (international market presence and business segment presence) offers significant opportunities to be exploited across the other path. First, as illustrated by the Amazon case, reducing the range of business segments in which they operate allows firms to use freed managerial time and attention to penetrate additional foreign markets (Meyer, 2006), thereby exposing themselves to new technologies and sources of knowledge as well as diverse consumer preferences and demands (Berry, 2014; Cantwell & Mudambi, 2005).

An analysis of panel data pertaining to the international market and business segment expansion of an extensive sample of US-based firms from 1997 to 2019, while controlling for the likely endogeneity between expanding internationally and across businesses (Kumar, 2009; Mayer, Stadler & Hautz, 2015), lends support to the existence of this novel growth trajectory. We show that firms that contracted their international (business) presence in a given year subsequently increase their business (international) presence more than firms that did not contract. Importantly, we closely identify the mechanisms driving the above effect, by showing that the initial contraction of international (business) presence increases the non-scale free managerial and financial resources of firms, which in turn, positively influence their subsequent business (international) presence.

Furthermore, and consistent with the argument above, we show that there is a positive relationship between this subsequent business (international) expansion and a firm's international and business presence at an even later point in time. We also closely identify the mechanism driving this effect, by showing that the aforementioned subsequent expansion of business (international) presence increases the scale free intangible assets and the organizational innovation resources of firms, which in turn, positively influence both their international and business presence. The incorporation of time intervals

in our analysis captures the idea of the gradual adjustment that is entailed when non-scale free resources are redeployed from one growth path to another, and when scale free resources are created and shared between several growth paths.

Our theoretical framework and findings suggest that withdrawal from a given growth path may be part of a far-sighted, long-term process, where withdrawal of one path allows expansion of another path, which will eventually facilitate renewed expansion of the original path. The analyses of these more elaborated dynamics enhance our understanding of how firms evolve over time, beyond simply predicting investment or divestment at a given point in time.

THEORETICAL FOUNDATIONS

In his 1991 paper, Michael Porter argued that strategy consists of a cross-sectional problem and a longitudinal problem, the latter being focused on the dynamic processes in which superior competitive positions arise over time. While those processes are still not fully understood, recent advances in the strategy literature have taken steps towards endogenizing resources and capabilities within firms' dynamic processes. Levinthal & Wu (2010) looked at the reallocation of non-scale free resources between businesses as an optimal diversification path, defining non-scale free resources as those that have an opportunity cost in their use within the firm (as opposed to scale free resources that do not bear an opportunity cost). Other formal models have examined how the performance implications of resource acquisition depends on the existence of superior resource synergies (Adegbesan, 2010); on whether resources are scale free or non-scale free and on the strength of product market competition (Chatain, 2013; Asmussen, 2015); and on how a firm's suppliers and buyers respond strategically to the opportunity for increased value capture (Asmussen, Foss, Foss, & Klein, 2021a). Empirical studies have looked at the ability of lagging firms to catch up with technologically and geographically proximate leaders (Miao, Salomon, & Song, 2021); at the potential for higher-order resources to generate and renew lower-order resources that sustain competitive advantage over time (Wibbens, 2019); and at the reallocation of non-scale free resources as a response to competitive threats (Morandi-Stagni, Santalo, & Giarratana, 2020).

The broad implications of this literature is that, while market-based resource acquisition is often problematic, internal development, learning, and strategic redeployment of resources is perhaps an underestimated part of the dynamic strategy process. In this paper, we argue that resources are endogenous to the firm's diversification decisions, in particular

to their expansion and contraction strategies along different growth paths, and we focus on the interplay between scale free and non-scale free resources.

To summarize our argument at the outset, let us assume that a firm has two growth paths, denoted $\boldsymbol{P_1}$ and $\boldsymbol{P_2}$. Two key mechanisms drive our proposed trajectory of contracting one of this firm's growth path (say P_1) in the short term, as means of expanding growth path P_2 as well as the originally contracted path P_1 in the long term. The first mechanism is the substitution of scarce non-scale free resources between paths. The second mechanism is the generation of new resources due to the firm's expansion in growth path P_2, following its contraction of P_1. For this mechanism, we are interested in the creation of scale free resources that renew growth in the originally contracted path P_1, resulting in expansion of both growth paths P_1 and P_2 in the long term. Both mechanisms are subject to adjustment costs of redeploying non-scale free resources from P_1 to P_2 and of sharing scale free resources between P_1 and P_2. Below we elaborate on the two mechanisms as well as on the gradual adjustment process.

Substitution of Non-Scale Free Resources between Growth Paths

Arguments and empirical evidence suggesting the existence of substitution of non-scale free resources are grounded in the Penrosian view, which stresses the limits of managerial time and efforts (Mahoney & Pandian, 1992; Penrose, 1959). The expansion of different growth paths often makes use of a similar pool of non-scale free resources such as the time, attention, and cognitive capacity of internally experienced managers (Hitt et al., 1997; Joseph & Ocasio, 2012). However, non-scale free resources (Levinthal & Wu, 2010; Wu, 2013) are resources whose utilization within a growth path P_1 is subject to significant opportunity costs in terms of their use in growth path P_2.[3] Firm managers might be deployed, for instance, to either penetrate new foreign countries or enter new product categories, but they are limited in their capacity to engage in both types of expansion. Non-scale free resources may also refer to limited financial resources that can be allocated to one but not both growth paths.

Note that using the term 'limited' for non-scale free resources does not implies that firms cannot generate new non-scale free resources (which they do regularly), but rather that above a certain level, the marginal costs of obtaining more resources increase sharply (e.g., as the firm has to hire new managers and/or raise capital), in which case it is more

[3] And also in additional growth path if such paths exist.

economical to reallocate internal resources (e.g., redeploy managers and use retained earnings). For example, if a firm has used all its retained earnings on developing new products, international expansion might be constrained as it requires raising all the necessary capital from external capital markets. Such external capital markets are more prone to adverse selection by implication of the pecking order theory (Myers, 2001) and thereby inflates the firm's cost of capital. Similarly, if all the internally trained managers of the firm are occupied with running foreign subsidiaries, the creation of new business units will be slower and more costly since it requires hiring externally from managerial labor market and subsequently socialize them into the firm's internal dominant logic (Penrose, 1959; Mahoney & Pandian, 1992). The empirical implication of this (as we will argue below), is that freeing up non-scale free resources in one growth path will enable faster growth in another path, *beyond* what the firm could achieve if it was forced to procure the *totality* of the required resources externally.

Overall, we thereby posit the existence of *substitution* between any two growth paths, which implies that reducing the firm's presence in a given path P_1 frees up non-scale free resources that can be used in another path P_2 and thereby, all else being equal, enable more significant expansion of that path. This view is consistent with the literature acknowledging the role of opportunity cost as a determinant of firm divestment decisions. Helfat and Eisenhardt (2004) were among the first to highlight the 'inter-temporal economies of scope' that firms achieve when redeploying resources between related businesses over time, as they exit some markets while entering others. Berry (2010) has shown that lower-cost foreign production and new market opportunities in foreign markets can offer a better use of existing firm resources, suggesting that these opportunities are likely to influence firm divestment of home-country operations. Meyer (2006) shows that firms focus their business scope as a means of globalizing their operations. Kaul (2012) shows that technological innovations prompt firms to redeploy resources in segments of new opportunity while divesting out of marginal businesses. Vidal and Mitchell (2015, 2018) find that divestitures free up financial resources and managerial capacity that firms can use for future growth. Lieberman, Lee, and Folta (2017) show that firms are likely to redeploy the resources of divested poorer performing businesses to existing related businesses. Bennett and Feldman (2017) provide results supporting the idea that firms sequence divestments and acquisitions to improve the allocation of managerial attention within their organizations. Dickler and Folta (2020) show that the flexibility to redeploy non-scale free resources, such as human capital, production capacity, or equipment, between different businesses, allows them to expand in markets with strong opportunities while contracting

in less attractive markets. Finally, Morandi-Stagni et al. (2020) show that firms tend to redeploy resources to business units that face increased competitive threats as means to fight such threats.

Creating New Scale Free Resources

In contrast to non-scale free resources, scale free resources are those whose utilization within a given growth path does not impose significant opportunity costs in terms of their use in alternative growth paths (Levinthal & Wu, 2010; Wu, 2013). When expanding a given growth path, P_2, firms typically create new scale free resources, such as new technologies, new market knowledge, or new brands.[4] Importantly, we argue that the creation of such scale free resources as a function of expanding a given growth path P_2 allows firms to subsequently use these resources to be concurrently shared with the originally contracted path P_1, thus contributing to the expansion of this growth path. Such resource sharing allows firm to achieve intra-temporal economies of scope (Helfat & Eisenhardt, 2004) as these resources are effectively "public goods" within the company. Indeed, the expansion of a growth path P_2 can also be associated with the creation of additional non-scale free resources (e.g., distribution channels or production facilities). However, because such resources bear opportunity costs, firms are likely to be constrained in their ability to use such non-scale free resources for expanding P_1.

For instance, new technological knowledge or new brands that firms create while expanding their operations across different businesses can serve as key scale free resources for expanding internationally (Caves, 2007; Dunning, 1988, 1993). Familiarity with the demand characteristics of a greater range of consumers (who are served across different businesses) further grants firms the capabilities to successfully penetrate new international markets. Firms operating in many businesses should be able to use their knowledge of the preferences of different customer segments when they expand internationally (Delios & Beamish, 1999). Hence, entering into new business segments opens up opportunities for firms to expand to new international markets, as it offers them a greater variety of firm-specific scale free resources that can be used for entering new international markets or expanding presence in existing ones. Indeed, experience in running a greater number of businesses has been shown to support the development of knowledge and routines that facilitate international expansion (Geringer, Tallman, & Olsen, 2000; Hitt et al., 1997; Mayer, et al., 2015).

[4] Of course, firms may also lose scale free resources when contracting a path. We revert to this point in the discussion.

Similarly, increased exposure to foreign knowledge and resources, as well as more interactions with customers, competitors, suppliers, and partners in foreign markets, generates a wide range of scale free resources that firms can use to grow and expand their business segment coverage. Operating in more international markets exposes firms to a greater diversity of demand types across countries, generating market knowledge that can serve a greater range of business segments. International expansion further grants firms with more diverse non-location specific resources, such as new technologies originating in foreign markets (Berry, 2014; Cantwell & Mudambi, 2005) to support expansion into a greater range of businesses. The combination of a wider range of foreign resources and exposure to more diverse international demand therefore stimulates business scope expansion. Taken together, these insights support the view that the scale free resources gained through expansion in one growth path can support further expansion in another path.

Adjustment Costs and Resulting Time Lags

Adjustment costs reflect the costs entailed in redeploying (or sharing) resources used in one growth path to another. The existence of such costs explains why firms cannot seamlessly shift from their current position to other positions. Adjustment costs include the direct costs of resource redeployment (e.g., the expense of moving people or equipment between different growth paths) and the indirect costs resulting from the disruption of existing operations while redeploying resources or simply from the amount of time involved in observing the effects of resources after they are applied in another growth path (Helfat & Eisenhardt, 2004; Helfat & Raubitschek, 2000). Adjustment costs are the main explanation why firms make gradual rather than abrupt changes in their presence within different domains.

The main drivers of adjustment costs are time compression diseconomies in resource development and redeployment (Dierickx & Cool, 1989). Time compression diseconomies imply that, within a given time frame, significant expansions or divestitures are disproportionately more expensive than small ones (Mahoney & Pandian, 1992; Tan & Mahoney, 2007). As it takes time to integrate new resources into a firm's existing routines and develop co-specialized resources to support them (Barkema & Schijven, 2008; Miller, Fern, & Cardinal, 2007), firms that radically expand or contract a given growth path within a short time period face more challenges and are more prone to make costly mistakes than firms that expand or contract at a more moderate pace (Jiang, Beamish, & Makino, 2014; Knott, Bryce, & Posen, 2003).

Change requires managerial attention, administrative effort, and time (Hitt et al., 1997; Joseph & Occasio, 2012; Penrose, 1959). Firms therefore must allocate substantial administrative resources to this task. When firms rapidly expand or contract, time compression diseconomies increase the managerial costs of such efforts compared to a more moderate change (Dierickx & Cool, 1989). In other words, the marginal cost of change increases when the rate of change is accelerated (Knott et al., 2003). Given that managers take such adjustment costs into consideration, the implication is that adjustments to different presence levels across growth paths will likely be gradual and require some lag.

The aforementioned literature primarily relates to the gradual expansion of firms, yet gradual adjustment equally pertains to contraction from specific presence levels and to expansion (Helfat & Eisenhardt, 2004). The process of contraction is likely to result in a time lag because contraction also typically consumes managerial resources (Moliterno & Wiersema, 2007; Shimizu & Hitt, 2005). Consequently, in the short term, the contraction of a focal growth path may actually constrain non-scale free resources significantly, and only when the contraction process is complete, managerial and other non-scale free resources that were previously occupied by the contracted path, as well as the non-scale free resources that were used to manage the contraction process, are freed up (Helfat & Eisenhardt, 2004). Hence, while the redeployment of managers from growth path P_1 to growth path P_2, discussed above, is likely to be less time intensive than training managers from scratch (Mahoney & Pandian, 1992; Penrose, 1959), the relocation of such managers still requires significant time.

The creation of new scale free resources also typically takes time. This is because learning is largely a function of time spent in a given business environment, such as in a foreign market or a new business segment (Ginsberg, 1990; Pennings, Barkema, & Douma, 1994; Zahra, Ireland, & Hitt, 2000). Moreover, new scale free resources typically need to be bundled with non-scale free resources (Levinthal & Wu, 2010; Sirmon, Gove, & Hitt, 2008), which is also a process that takes time. Following the above discussion, we therefore expect that both the redeployment of non-scale free resources from a contracted growth path P_1 to a second path P_2 and the creation of new scale free resources in a newly expanded growth path (P_2) will bear some time lags until their effects become observable.

Contraction for the Sake of Expansion

The substitution effect of non-scale free resources across two growth paths P_1 and P_2 and the creation of scale free resources for P_1 while expanding P_2, are the key drivers of the novel growth trajectory that we highlight in this paper. As

discussed above, both mechanisms are subject to adjustment costs and time compression diseconomies and are therefore likely to be gradual. First, firms that contract a given growth path P_1 free up non-scale free resources that can be used to gradually expand a second growth path P_2. Subsequently, such expansion generates new scale free resources that will allow firms to resume growth in the originally contracted path P_1, thereby expanding both growth paths in the long term.[5]

Figure 1 depicts this process. The contraction of a given growth path P_1 (at time *t*) is expected to free non-scale free resources, which can be redeployed toward a second growth path P_2 and promote its expansion at time $t+x$ ($x > 0$). The time lag from *t* to $t+x$ results from the need to allocate non-scale free managerial resources for contraction and then retrain, adjust, and relocate non-scale free managers, when redeploying them from P_1 to P_2, as discussed above. This time lag further captures the time gap between the redeployment of financial resources from P_1 to P_2 and the point when the effect of such redeployment become observable. The expansion of P_2 is therefore not expected to occur concurrently with the contraction of P_1, but rather requires some time lag.

[Insert Figure 1 about here]

For instance, by reducing the variety of its business segments, a focal firm frees up the time and attention of managers that previously ran the divested businesses. This will typically happen only after the divestment of such businesses has been completed, that is – after contracts are terminated, employees are laid off, assets are sold, and so forth. Then, the managers must be retrained for assignments abroad, making them familiar with the business and institutional characteristics of the international markets targeted for expansion by the firm, and training them to deal with cultural differences between the firm's home country and the target foreign country (Beugelsdijk, Kostova, Kunst, Spadafora, & van Essen, 2017; Waxin & Panaccio, 2005; Zaheer, 1995). In addition, often, the managers and their families must also be relocated abroad. Only after the newly assigned managers have operated in the new international market for some time is the firm likely to witness increase in its sales or other operations in these international markets (Jiang, et al., 2014). Likewise, by divesting its presence in foreign countries, a focal firm frees up the time and attention of managers that previously ran operations in these countries. This will typically happen only after the divestment of such countries has been completed (in terms of contract termination, laying off foreign employees, selling foreign assets etc.). Then, the managers and their families must also be relocated back

[5] A formal model and simulation of this process using Cobb-Douglas functions is available as supplementary material to this paper.

home and incur a lengthy process of retraining for new assignments in the home country (Black, Gregersen, & Mendenhall, 1992). Only then repatriated managers become able to effectively contribute to the firm's business scope expansion. Our first hypothesis is therefore:

Hypothesis 1 – Contraction of a given growth path P_1 is associated with a greater future expansion of a second growth path P_2.

Reverting to Figure 1, the expansion of the second growth path P_2 at time $t+x$ is expected to result in the creation of new scale free resources after an additional time lag (at time $t+y$, $y>x$). These scale free resources (e.g., new product brands or new technological knowledge) can be then used to resume growth in the initially contracted path P_1, after an additional time lag (*at* $t+z$, $z>y$). The adjustment costs in the development of scale free resources and the non-scale free resources that need to be bundled with them imply that resumed expansion of the initially contracted growth path P_1 will occur only after an additional time lag passes from the generation of these scale free resources as a result of the expansion of P_2.

Importantly, because the newly created resources are scale free, their utilization for expanding the initially contracted growth path P_1 does not impede the continued expansion of P_2. In fact, firms can also build on the resources created in P_2 to further expand this path, gradually becoming more capable of leveraging their scale free resources and thus expanding both growth paths concurrently. Hence, by contracting a given growth path P_1 in the short term (t), firms become able to expand a second growth path P_2 at $t+x$ and subsequently become more likely to expand their presence in both paths in the long term ($t+z$).

Reverting to our earlier example, by gradually penetrating international markets the firm is likely to interact with an increasing variety of customers with different preferences and demands, new foreign suppliers, and new foreign partners. These interactions are likely to lead to the development of new brands and/or to the development of new resources and technologies over time (Berry, 2014; Cantwell & Mudambi, 2005; Ellis, 2007; Lahiri, 2010). That, in turn, facilitates the identification of new opportunities in product markets where the firm does not currently operate, and thereby supports its expansion into new business segments. It follows that the expansion of this firm's international markets' range (following its business scope contraction) will, after some time lag, facilitate not only further expansion of its international presence, but also an expansion of its initially contracted business scope. In a similar vein, by gradually penetrating new business

segments the firm is likely to interact with an increasing variety of customers with different preferences and demands, as well as new suppliers and partners. These interactions are likely to lead to the development of new brands and/or to the development of new resources and technologies over time. That, in turn, may facilitate the identification of new opportunities in foreign markets where the firm does not currently operate, and thereby supports its expansion into new foreign markets. It follows that the expansion of this firm's range of busines segments (following its contraction of international presence) will, after some time lag, facilitate not only further expansion of its business scope, but also an expansion of its initially contracted international presence.

We therefore complement Hypothesis 1 and hypothesize that:

Hypothesis 2 – Expansion of a second growth path P_2 (following the contraction of a first growth path P_1) increases the probability of expanding both growth paths, relative to their starting point, after an additional time lag.

DATA AND METHODS

Sample

We test our hypotheses in the context of two growth paths that have been extensively researched in the strategic management and international business literatures: international expansion and entry into new business segments (Amit & Livnat, 1988; Wiersema & Bowen, 2011). Firms often combine these two growth strategies as their major growth paths (Bowen & Sleuwaegen, 2017; Hashai & Delios, 2012; Kumar, 2009; Mayer et al., 2015) and, importantly, have also been shown to combine their managerial resources while expanding both paths (Geringer et al., 2000; Hitt et al., 1997; Mayer et al., 2015). Taken together, this makes the study of firms' international and business expansion moves a compelling empirical context for testing our hypotheses.

The main data source for testing the proposed hypotheses is Standard and Poor's COMPUSTAT database. This database includes consolidated accounting and financial data for all publicly traded US firms. It also includes firms' our reports of their business and international segments.[6] We classified firms by industry based on the four-digit North American Industry Classification System (NAICS). The sample is an unbalanced panel dataset consisting of up to 6,156 firms and

[6] It is notewoerthy that firms typically report business presence based on classified systems, while this is not the case for international presence.

45,326 firm-year observations through 1997 to 2019. The final sample also includes firms that were dropped from the COMPUSTAT database at some point for various reasons, thus greatly reducing selection bias concerns.

Estimation Approach

There is no straightforward way to use simple regressions to test our hypotheses. Therefore, we designed the analyses in three consecutive steps, each of which consists of two sets of panel data models (illustrated in Figures 2 to 4). The first step examines the main effects and includes two equivalent sets of regressions. Each set contains three interdependent models across a six-year period, running in parallel (see Figure 2). Both sets are based on the same order of successive steps, where we assume fixed time intervals between each change (either contraction or expansion) and its effect on the second path. These intervals aim to capture the need for gradual adjustment between shifts in the contraction and expansion of both paths, and result from the complexity and time consuming nature of redeploying and sharing resources during the contraction and expansion of business segments and international market presence (Shimizu & Hitt, 2005),

[Insert Figure 2 about here]

There is no clear theoretical determination of the time interval that is required for contraction or expansion moves. The international business literature has described the expatriation process to include stages such as selection, pre-departure cross-cultural training, local acculturation, and repatriation, with the international assignment itself most often spanning 6-18 months (Mendenhall, Dunbar, & Oddou, 1987; Stahl, Miller, & Tung, 2002). Similarly, business-to-business contracts governing services and leasing of equipment can span from a few months to several years (Feng & Krishnan, 2022; Schallheim & Zhang, 2021). These observations suggest that firms cannot rapidly shift their human and monetary resource commitments from market to market, but the decision on the interval length is ultimately an empirical question. Table 1 reports the means, minimum and maximum years between subsequent contraction (expansion) moves of business segment presence and international market presence for our sample firms. As can be seen in the Table, although there is a variation in the number of years between subsequent contraction/expansion moves (ranging between 1 to 21), the average is about

two years, which is reasonably consistent with the time frames described above. Accordingly, we employ in our regression analyses two-year intervals between subsequent contraction/expansion moves.[7]

[Insert Table 1 about here]

The first set of models (left-hand side of Figure 2, labeled IP contraction) tests the influence of contraction in firms' international market presence (IP) between year t and year t+1 on firms' two-year forward change (year t+3) in business segment presence (BP), as well as on the subsequent two-year forward change (year t+5) of their business segment presence and the initially contracted international presence path. The second set of models (right-hand side of Figure 2, labeled BP contraction) examines the opposite direction: the effect of contracted business segment presence (in year t+1, relative to year t) on the increase in international market presence in t+3, and, on the subsequent level of international market presence and the initially contracted business presence path in t+5. Since the two sets share the same logic, the three models in the first set (models 1 to 3) correspond to the three models in the second set (models 4 to 6). Following Hypotheses 1 and 2 we expect firms that contracted a given path between t and t+1 to expand their operations in the second path at t+3. Two years thereafter, at t+5, the expansion of the second path is expected to lead such firms to higher presence levels in both paths, relative to our reference year (t).

The second step in the analysis aims to provide evidence for our underlying mechanisms (see Figure 3). We claim that contracting a growth path at a given time will later increase the stock of non-scale free resources, which will then lead to the expansion of the second growth path (see Figure 1). Thus, we regressed two non-scale free resources: managerial resources (Models 7 and 11) and financial resources (Models 8 and 12) at t+2 on the on the decrease in international (business) presence at t+1 (one year later), for firms that contracted their international (business) presence at t+1. In addition, we contend that the subsequent increase in the second path at t+3 should later increase the availability of scale-free resources which will then allow the expansion of the originally contracted growth path. Hence, we regressed two scale-free resources: intangible assets (Models 9 and 13) and organizational innovation (Models 10 and 14) at t+4 on the increase in international (business) presence at t+3 (one year later), for firms that contracted their international (business) presence at t+1.

[Insert Figure 3 about here]

[7] In robustness tests we also used 3 years intervals and receive consistent results. On the other hand, running our regressions with one year lags did not yiled significant results, supporting the view that such interval is too short.

The third step in the analysis connects between the main analysis (step 1) and the underlying mechanisms (step 2) to provide integrated support for the hypotheses (see Figure 4). We replicated the six models of step 1, after replacing the original independent variables with the predicted values of the second step. That is, we regressed the increase in international (business) presence at t+3 on the predicted values of managerial and financial resources in t+2 (Models 15 and 18) and regressed the change at t+5 on the predicted values of intangible assets and organizational innovation in t+4 (Models 16, 17 and 19, 20, respectively). This three-step analysis allows us to closely identify how the contraction and expansion moves of firms' influence their non-scale and scale free resources and subsequently result in expanded scope of both paths.

[Insert Figure 4 about here]

Model Specification and Measurement

Dependent and Independent Variables

To measure firms' international market and business segment presence and the changes in this presence we need to apply compatible metrics to these two growth paths. Following the extant literature, we applied the entropy measure, the most widely used measure for these constructs. The entropy measure has been used extensively in the literature, both for measuring the expansion of firms to international markets (Chang & Wang, 2007; Hitt et al., 1997; Qian, Khoury, Peng, & Qian, 2010) and into new business segments (Chakrabarti, Singh, & Mahmood, 2007; Chin & Semadeni, 2017; Kim, 2016; Mohr, Batsakis, & Stone, 2018; Wiersema & Bowen, 2008). The entropy measure is a two-dimensional metric based on the number of international markets (business segments) in which a firm operates and the distribution of sales across these markets (segments). Entropy is calculated as $\sum P_i \ln\left(\frac{1}{P_i}\right)$, where P_i is the relative share of a firm's total sales in market (segment) *i*, and the term $\ln(1/P_i)$ indicates the weight of the market (segment). Accordingly, all dependent and independent variables concerning international (business) presence were calculated by using the entropy measure.

More specifically, in models 1 and 4 we use a dummy variable taking the value 1 if there is an initial contraction in international (business) presence between t and t+1. We further use continuous measure of the absolue value of the contraction or expansion in international (business) presence t and t+3 and (also in models 7,8, 11 and 12). In models 2, 3, 5 and 6 (and the rest of the models) we use continuous measures for the change in international (business presence) between

t and t+3 and binary measure taking the value 1 if there is an expansion in international (business) presence between t and t+5.

Mechanisms

We include in our regression estimations four mechanisms referring to two non-scale free resources: managerial resources and financial resources, and two scale free resources: intangible assets and organizational innovation (Levinthal & Wu, 2010; Wu, 2013; Kang & Kim, 2020). Following Kumar (2009; p. 107) we measured firms' managerial resources as follows: $\frac{\frac{Firm\ number\ of\ employees}{Firm\ total\ sales}}{\frac{Main\ industry\ average\ of\ managers}{Main\ industry\ total\ employees}}$, where the main industry is the industry representing the largest share of a firm's sales. The data in the numerator (firm level) were taken from Compustat, while the data in the denominator (industry level) were obtained from the Bureau of Labor Statistic's Occupational Employment Survey. Financial resources were measured by the ratio of cash to total assets (Vidal & Mitchell, 2018). Amongst firms' intangible assets, brand is considered the a central asset (Barth, Kasznik, & McNichols, 2001; Kim & Chung, 1997), in addition to goodwill, intellectual property, customer lists, and R&D. Accordingly, we measured firms' intangible assets by the ratio of a firm's annual intangible assets to total assets. To measure firms' organizational innovation, we applied the operationalization offered by Xue, Ray, and Sambamurthy (2012), that captures firms' innovation by first regressing firms' Tobin's Q on inventory turnover, payables turnover, receivables turnover, and selling and administrative cost (SGA). Then the regression residual is used as a measure for firm organizational innovation. The fundamental idea of this procedure is that the gap between firms' market and book values is determined by organizational innovation and cost reductions, hence the residual of the regression capturing the effects of cost reducing factors on firms' Tobin's Q can be used as a reliable proxy for organizational innovation level.

Control Variables

We control for multiple firm-specific variables that potentially influence international (business) presence. Previous studies showed that the presence of firms in both paths is influenced by firm age (Autio, Sapienza, & Almeida, 2000; Xie & O'Neill, 2014). Following the extant literature (Chay, Kim, & Suh, 2015; Pástor & Veronesi, 2003), firm age is calculated with reference to a firm's initial public offering (IPO) year (year of listing). Prior research found evidence that firm size is positively related to its international presence (e.g., Tihanyi, Johnson, Hoskisson, & Hitt, 2003), and to its business presence

(Xie & O'Neill, 2014). A positive relationship is expected between a firm's size and its presence in both paths, as greater size is expected to help firms better exploit economies of scale and scope (Caves, 2007; Chandler, 1994; Penrose, 1959; Teece, 1982). We operationalize firm size using the natural logarithm of firm market capitalization (Sharfman & Fernando, 2008; Sørensen, 2002).

Firm R&D intensity was found to be related to both growth paths (Bowen & Wiersema, 2005; Delios & Beamish, 1999; Kumar, 2009). R&D intensity is calculated as the ratio of annual R&D expenses to total sales (Caves, 2007; Delios & Beamish, 1999). Consistent with past literature, we control for firm financial performance (Bowen & Wiersema, 2005; Tihanyi et al., 2003; Zahra et al., 2000). In line with previous studies (Bamiatzi, Bozos, Cavusgil, & Hult, 2016; Shi, Connelly, & Hoskisson, 2017), we use an accounting performance measure and not a market-based measure, operationalizing firm financial performance with returns on assets (ROA). A well-accepted notion is that firm risk influences the propensity to expand firm operations (Alessandri & Seth, 2014; Figueira-de-Lemos, Johanson, & Vahlne, 2011; Goranova, Alessandri, Brandes, & Dharwadkar, 2007; Reeb, Kwok, & Baek, 1998; Tihanyi et al., 2003). Thus, in line with our accounting performance measure and with past literature, we control for firm risk via a measure that captures the standard deviation of ROA for the three preceding years.

Firm leverage was found to influence both international (business) presence, but in different directions. Leverage was shown to be negatively related to international presence and positively related to business presence (Burgman, 1996; Chen, Cheng, & Kim, 1997; Singh, Davidson, & Suchard, 2003). It is measured as total debt (long term and short term) divided by equity (Gore, Matsunaga & Yeung, 2011; Kochhar & Hitt, 1998). Firms' international (business) presence levels are also likely to be a function of their existing resources and assets; therefore, we control for firm asset intensity, which is calculated by dividing property plant and equipment (PPE) by total assets (Siegel, 2009). As international presence and business presence are mutually dependent (Bowen & Sleuwaegen, 2017; Delios & Hashai, 2012; Kumar, 2009), we also include a control variable of a firm's presence in the second path in models where the independent variable is a function of the same path as the dependent variable (Models 2, 5, 16 and 19).

We follow Withers and Fitza (2017) and include three industry level controls: industry munificence, industry dynamism and industry concentration (calculated annually based on Compustat database). Industry munificence refers to

the abundance of resources to support growth (Dess and Beard, 1984), while industry dynamism refers to the volatility and uncertainty of the industry environment (Palmer & Wiseman, 1999). The first two variables were calculated by using a two-step procedure: (a) regressing the log of all firms' total sales in a five-year window, in each four-digit industry, on the index variable of years (time); (b) the antilog of the regression coefficient represents industrial munificence, and the standard error of the coefficient represents the level of industry dynamism. Industry concentration is measured as the share of the four largest firms from industry total sales (Misangyi et al., 2006).

We lag the control variables by one year (Baum, 2006; Bernard & Jensen, 1999). Lagging all control variables facilitates generation of causal inferences from the models (Hashai, 2015). Finally, we include 2-digit industry dummies to control for differences stemming from specific characteristics of a firm's main industry, which can influence its international and business presence (Kumar, 2009). To control for economy and time-specific effects that potentially influence firms' growth (e.g., the 2008-9 recession), we include year dummies in the models.

As for step 2 in the analysis (models 7 to 14), to avoid collinearity and overlapping we fitted a more compact model. Accordingly, apart from the independent variable (increase/ decrease in international (business) presence) we used only two firm level controls (age and size), one industry level control (concentration) and industry and time fixed effects.

Econometric Strategy

Our framework implies that changes in international and business presence are theoretically endogenous. Likewise, the non-scale free and scale free resources that we estimate are likely to be endogenous with the international and business presence of firms. This view is consistent with the extant literature on the relationships between these variables (Bowen & Sleuwaegen, 2017; Hashai & Delios, 2012; Kumar, 2009). A different and potentially more serious source of bias occurs when both the independent and dependent variables are influenced by a third, unobserved, variable. Failure to control for such a common determinant may lead to the estimation of spurious relationships between the focal variables.

The firms in our sample are likely to vary systematically in their levels of and changes in both international and business presence due to the influence of unobservable, firm-specific characteristics such as managerial skills, organizational culture, and other unmeasurable capabilities. These influences, in turn, might lead to spuriously significant coefficients in our regression estimates. For example, assume that unobserved, firm-specific capabilities affect a firm's

ability to expand internationally and to expand into new businesses segments. In that case, the relationships between these constructs would be inflated, and we would risk estimating a significant effect of international presence on business presence and vice versa, even if no such causal link exists in reality.

One strategy to address endogeneity is to implement an instrumental variable technique in our models. The extensive literature on international and business presence has, however, shown that a variable that affects one path would most likely affect the second path as well (Hitt, Tihanyi, Miller, & Connelly, 2006; Hoskisson & Hitt, 1990; Wiersema & Bowen, 2008), and is therefore likely to yield weak instruments (Bascle, 2008). Instead, we use the Arellano and Bond (AB) panel data system generalized method of moments (GMM) (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998), which uses internal instruments generated by first-differencing multiple lags of the regressors, instead of exogenous instruments. This approach allows us to mitigate endogeneity concerns, control for unobserved firm-specific heterogeneity, and implement robust standard errors in the presence of heteroskedasticity and arbitrary patterns of autocorrelation within firms (Greene, 2008; Roodman, 2009). Our models are not dynamic in nature (i.e., the lag-dependent variable is not included as a regressor), yet the AB panel data system GMM has also been shown to be suitable for static panel models (Roodman, 2009). Furthermore, several of our control variables such as R&D intensity (Salomon & Shaver, 2005; Ito & Lechevalier, 2010), financial performance (Berry & Kaul, 2016), and firm risk (Kwok & Reeb, 2000; Belderbos, Tong & Wu, 2014), are endogenous as well. The AB system GMM therefore allows us to account for multiple endogenous variables simultaneously.

Another advantage of choosing the AB system GMM is that it also allows us to estimate discrete endogenous independent variables and binary choice models, such as linear probability models. Given that the dependent variables in several regression models we run are binary variables, we therefore estimate them via linear probability models (LPM).[8] Thid advantage is As long as there is temporal variation in discrete endogenous variables, they can be considered continuous

[8] A LPM assumes a linear relationship between the probability of a particular event and several explanatory variables. Let P_i be a probability of an event in object i: $P_i = P(Y_i = 1 \mid X_{1_i}, \ldots, X_{k_i})$, and let $(1 - P_i)$ be the complementary probability (the probability of non-occurrence of the event) $1 - P_i = P(Y_i = 0 \mid X_{1_i}, \ldots, X_{k_i})$. The probability of the event, given $X_{1_i}, \ldots, X_{k_i}$, is: $P_i = \alpha + \beta_1 X_{1_i} + \ldots + \beta_k X_{k_i}$. Therefore, the model can be formulated as $P(Y = 1|\mathrm{X}) = \alpha + \beta_1 X_{1_i} + \ldots + \beta_k X_{k_i}$. As a result, the interpretation of the coefficients in the LPM is that a one-unit increase in the independent variable is associated with a beta percent change (increase or decrease) in the probability that the dependent variable will occur.

variables and can be treated by first-differencing in panel data models as well (Wooldridge, 2009). Thus, no special treatment is needed for estimating an LPM in an AB system GMM static panel data model.

We further ran a Wald test to justify the inclusion of industry dummies. In all models, the null hypothesis was significantly rejected ($p < 0.05$); that is, the inclusion of industry dummies was justified. In addition, we ran a Wald test that checked whether all year dummies are jointly equal to zero. The results indicate that the null hypothesis is rejected, i.e., their inclusion was statistically validated. The incorporation of time dummies in all models further helps remove universal time-related shocks from the error terms and prevents cross-individual correlations when running an AB panel data system GMM regression (Roodman, 2009). To ensure that the estimation is not biased due to multicollinearity, we ran diagnostic tests after all models that show that the maximum variance inflation factor (VIF) does not exceed the critical value of ten (Hair, Black, Babin & Anderson, 2010; Kleinbaum, Lawrence, Muller & Nizam, 1998).

RESULTS

Table 2 provides descriptive statistics and correlations of the study's variables. On average, the firms in our sample have greater international presence (IP) (Mean = 0.463) than business presence (BP) (Mean = 0.291). In addition, the sample firms slightly tend to expand more internationally (Mean = 0.021), than business-wise (Mean = 0.015).[9] The average IP contraction between the reference year, t, and t+1 is -0.109, while the average BP contraction at time t+1 is -0.126 (not reported in the table).

[Insert Table 2 about here]

Table 3 presents the results of our first set of models concerning the effects of the contraction of firms' international presence. To test hypothesis 1, Model 1 compares firms whose IP contracted between t and t+1 and firms that did not contract their IP, with respect to changes in BP (ΔBP) two years later (at t+3). First, the dummy variable $\Delta IP_{(t\ to\ t+1;\ Dummy)} < 0 = 1$ shows a positive association between contraction in firms' international presence and their future business presence expansion ($\beta = 0.497$; $p = 0.000$), supporting the hypothesis. Other things being equal, firms that contracted their IP at t+1 exhibit an increase in BP (at t+3) that is higher in 0.497 units than firms that did not contract.

[9] The average number of international segments (IP) for the sample firms is 2.66 (ranging between 1 and 62) and the average number of business segments (BP) is 1.82 (ranging between 1 and 17).

In addition, we estimate the effect of the *magnitude* of the change by interacting this dummy with the absolute value of ΔIP between t and t+1. To capitalize on the complete sample, we incorporate the independent variable twice in the model: once when it is conditional on a decline in IP between t and t+1, and once when it is conditional on no decline in IP between t and t+1. This procedure allows us to estimate the effect separately for firms that contracted and for firms that have not, and compare the two groups. This analysis shows that, for firms that contract their IP between t and t+1, there is a large positive association between the (absolute) magnitude of that contraction and the subsequent change in their BP level (β = 2.156; $p = 0.000$). For firms which expanded, on the other hand, there is a weak positive relationship between the magnitude of the expansion and the subsequent change in BP (β = 0.698; $p = 0.032$) as confirmed by a Wald test (Chi- squared = 5.84; $p = 0.015$) that compares between the two coefficients size (reported at the bottom of Table 1), thereby supporting Hypothesis 1. All in all, this suggests that the distinction between contraction and expansion, and the magnitude of a contraction (more so than an expansion) matters to substitution of scale free resources.

Model 2 examines the influence of ΔBP between t and t+3 (the dependent variable in Model 1), on the probability of seeing a positive increase in the same path, two years later (at t+5). Hypothesis 2 implies a relationship between the two variables specifically for firms that contracted between t and t+1, suggesting that we could test the hypothesis with only the subsample of those firms. However, that would reduce statistical power and also preclude us from seeing whether the relationship also holds (equally strongly) for firms that did not contract. Once again, to capitalize on the complete sample, we incorporated the independent variable twice in the model: once when it is conditional on a decline in IP between t and t+1, and once when it is conditional on no decline in IP between t and t+1. This procedure allows us to estimate the effect separately for firms that originally contracted and for firms that expanded, and compare the two groups. We have no a priori expectation as to the size effect in the latter group, but we can see from the table that both of these coefficients are positive and significant ($p < 0.001$), indicating that a larger ΔBP between t and t+3 increases the probability of all firms (those that contracted as well as those that expanded) to have higher BP levels five years after the reference year. This in itself is not surprising, as these firms are on a positive BP expansion trajectory. However, our results demonstrate a significant difference between the two groups of firms. The coefficient for firms that did not contract their IP in t+1 is 0.565, indicating that a one-unit increase in ΔBP between t and t+3 increases the probability of an increase in BP at t+5 (relative to t) by about

56.5%, while the coefficient for firms whose IP contracted at t+1 is 0.927, which reflects a probability of almost 92.7% of an increase in BP levels five years after the reference year. A Wald test comparing the two coefficients indicates that this difference is significant (Chi-squared = 4.40; p =0.036). This result suggests that the initial contraction in IP between t and t+1 strongly supports a positive BP expansion trajectory, consistent with our predictions.

Importantly, Model 3 examines the influence of ΔBP on the probability of an increase in the originally contracted path (IP) at t+5. For firms that did not contract their IP at time t+1, a one-unit change in ΔBP at t+3 (relative to year t) has a significant (p = 0.033) probability of 41.1% to decrease their IP levels five years after the reference year. However, for firms whose IP contracted at t+1, a one-unit change in ΔBP at t+3 significantly (p = 0.031) increases the probability of increasing IP level by 47.2%. Here, as well, a Wald test shows a significant difference between the two coefficients (Chi-squared = 5.17; p = 0.022). This implies that the change in firms' IP between t and t+5 more than compensates for their initial IP contraction between t and t+1. Models 2 and 3 thereby lend support to Hypothesis 2. The three models together pointedly support our theoretical arguments that an initial contraction in IP leads, through a growth process over several years, to higher levels in both paths.

[Insert Table 3 about here]

Table 4 reports the results of the second set of models concerning the effect of contracting business segments. Model 4 examines the difference between firms whose BP level contracted between t and t+1 and firms whose BP level did not contract, with regard to changes in IP two years later (at t+3). The results of Model 4 show that the coefficient on $\Delta BP_{(t \text{ to } t+1;\ Dummy)}$ <0=1 indicates a positive significant coefficient implying that, other things being equal, firms that contracted their BP level at t+1 have a larger change in IP (at t+3) in 0.112 units, as compared to firms that did not contract, thus supporting Hypothesis 1. In addition, when we look at the absolute values of ΔBP between t and t+1, we see that for firms whose BP contracted between t and t+1, there is a positive association between the magnitude of that contraction and the subsequent expansion of two years later (β = 0.373; p = 0.000). In contrast, for firms which did not contract their BP, there is a negative relationship between the magnitude of BP expansion and the subsequent IP expansion (β = -0.482; p = 0.009). This difference is significantly confirmed by the Wald test result (Chi-squared = 14.29; p = 0.000). The latter finding may

capture that the early BP expansion consumes non-scale free resources that are then not available for the subsequent IP expansion (an effect, however, that we did not find for early IP expansion and subsequent BP expansion).

[Insert Table 4 about here]

Model 5 tests the influence of ΔIP between t and t+3 on the probability of increased IP five years after the reference year. As in the previous set of models, two terms are entered into the model – one capturing the effect of ΔIP between t and t+3 conditional on a decline in BP between t and t+1, and another conditional on an no decline in BP between t and t+1. The results show that, for all firms, a larger ΔIP (between t and t+3) significantly enhances the probability of a positive increase in IP five years after the reference year. For firms that contracted their BP at year t+1, a one-unit increase in ΔIP at t+3 significantly ($p = 0.000$) increases the probability of increased IP five years after the reference year, by 226%, while for firms that did not contract their BP at year t+1, this probability is only 31.2% ($p = 0.021$). A Wald test confirms that the difference between the coefficients is significant (Chi-squared = 11.89; $p = 0.000$).

Model 6 examines the influence of ΔIP between t and t+3 on the probability of an increase in BP level at t+5 (relative to year t). For firms that did not contract their BP at year t+1, a one-unit increase in ΔIP at t+3 insignificantly decreases the probability of higher BP levels (by 1.3%) five years after the reference year. In contrast, firms that contracted their BP at year t+1, significantly ($p = 0.010$) increase their probability of increased BP levels at t+5 by 25.8%, when ΔIP increases by one unit. The difference between the two coefficients is significant (Chi-squared = 4.26; $p = 0.039$). Taken together, models 4 to 6 offer solid support for hypotheses 1 and 2, showing that an initial contraction of BP increases the probability of achieving greater presence in both paths, after several years.

Step 2 of our analysis aims to show the impact of contraction and expansion moves on firms' non-scale and scale free resources, as our theory suggests. Table 5 reports the results for an initial contraction in IP between t and t+1 (analogous to the first set of models in step 1, as reported in Table 3). Table 5 includes four models (7 to 10), where models 7 and 8, respectively, test the effect of contracting IP on the levels of firms' managerial and financial resources (non-scale free resources) one year later. Models 9 and 10, respectively, test the effect of expanding BP at t+3 on the levels of firms' intangible assets and organizational innovation (scale free resources) one year later. Models 7 and 8 show that firms whose IP contracted between t and t+1 exhibit an increase at t+2, in both their managerial resources ($\beta = 11.006$; $p = 0.047$), and

financial resources (β = 0.350; p = 0.038). In addition, Models 9 and 10 show that firms that increase their BP levels at t+3 (relative to year t) increase their intangible assets (β = 0.053; p = 0.003) and organizational innovation (β = 2.901; p = 0.046) scores at t+4.

[Insert Table 5 about here]

Similarly, Table 6 reports the results for an initial contraction in BP between t and t+1 (analogous to the second set of models in step 2, reported in Table 4). Models 11 and 12 show the impact of contracting BP at t+1 on firms' non-scale free resources at the subsequent year (t+2). Model 11 demonstrates a significant positive increase in firms' managerial resources (β = 2.765; p = 0.026), while Model 12 shows the same pattern for financial resources (β = 0.209; p = 0.037). Likewise, Models 13 and 14 show the effect of expanding IP at t+3 (relative to year t) on firms' scale free resources at the subsequent year (t+4). Model 13 show significant positive effect on firms' intangible assets (β = 0.034; p = 0.039), while Model 14 on firms' organizational innovation (β = 3.608; p = 0.042).

[Insert Table 6 about here]

Step 3 of our analysis replicates the models of step 1 by replacing the original independent variables with the predicted values of the step 2,[10] thereby showing the four mechanisms driving the changes in international and business presence (both at t+3 and t+5). Table 7 is analogues to Table 3 presenting the effects of contracting IP between t and t+1, while Table 8 is analogues to Table 4 presenting the effects of contracting BP. Accordingly, the dependent variables in the Tables 3 and 4 are respectively identical to the dependent variables in Tables 7 and 8. Model 15 (analogues to Model 1) and Model 18 (analogues to Model 4) show how the increased firm's non-scale free resources at t+2 impact positively and significantly (p < 0.05) the expansion in BP and IP, at the subsequent year, respectively. In addition, Model 16 (analogues to Model 2) and Model 19 (analogues to Model 5) exhibit significant (p < 0.05) positive effects of increased firm's scale free resources (intangible assets and organizational innovation) at t+4 on the change in BP and IP at t+5 (relative to year t), respectively. Likewise, Model 17 (analogues to Model 3) and Model 20 (analogues to Model 6) show significant (p < 0.05) positive effects of increased firms' scale free resources at t+4 on the change in IP and BP at t+5 (relative to year t),

[10] We winsorized the predicted values at 1st and 99th percentiles and then added to each one of them a constant that equals the biggest negative value in its distribution to avoid negative predicted values. This procedure should not influence our results as it does not change the normal distributions of the measures.

respectively. Together, these models show how the changes in non-scale free and scale free resources following an initial contraction in one growth path, eventually lead firms to higher IP and BP levels at t+5 than at the reference year (t).

[Insert Tables 7 and 8 about here]

Overall, the results reported in Tables 3 to 8 provide comprehensive support for the research hypotheses indicating that contracting a given growth path is associated with future expansion of the other path. Subsequently, increase in the second path eventually leads to higher levels in both growth paths, compared to their starting points.

The results of all the tests reported in the bottom section of Tables 3 to 8 indicate high fit for our models (with Wald chi-squared probabilities < 0.001). We also refute autocorrelation concerns as indicated by the significant AR(1) (p <0.05). In addition, in most of the models AR(2) is insignificant, as required. However, in Models 6, 16, 17, 18 and 19 AR(2) is significant. For these models we used deeper lags and did not include the first two (Roodman, 2009). The autocorrelation tests for these higher order lags were all insignificant (not reported in the tables), thus refuting possible autocorrelation concerns. Further, the null hypothesis of the Hansen test of over-identifying restrictions regarding the exogeneity of the instruments as a group is not rejected, across all models, indicating that our instruments are valid.

Robustness Tests

We ran several tests to check the robustness of our results (all are available upon request). Our results remain robust when we: (a) replicate all models using simple counts of firm's number of international markets and business segments as measures for IP and BP, respectively; (b) use alternative measures to some of our non-scale free and scale free resources. We used cash flow to revenue ratio taken from Compustat (Surroca, Tribó, & Waddock, 2010; Kang & Kim, 2020) to measure financial resources, and advertising expense divided by total sales, taken from Compustat (Boulding, Lee, & Staelin, 1994), as a measure of firm brand (an additional scale free measure); and (c) use three years interval between contraction and expansion moves (rather than two-year as in the reported results). The last two robustness tests were based on a smaller sample as data on firms' advertising expenses is lacking for many firms, and due to larger number of consecutive years needed for three-year interval analyses.

DISCUSSION

This study highlights the existence of a novel growth path, in which firms can increase their presence along a given growth path by initially contracting it. In cases where firms grow their operations through two (or more) growth paths, the contraction of one growth path in the short term may well facilitate expanding both growth paths in the long term. Specifically, we study firms' international market and business segment presence. We argue and show that firms that initially contract a given path, be it international market or business segment presence, are able to expand a second path and moreover, actually become able to reach higher levels of presence in both the international and business paths.

We further argue and show that this process has two effects on the non-scale free and scale free resources of firms. First, by contracting a given growth path (be it international of business presence) firms increase their stock of non-scale free resources, which can be then redeployed from the contracted path to the second path in the short term. This process which in essence allows firms to exploit inter-temporal economies of scope (Helfat & Eisenhardt, 2004) in their non-scale free resources is consistent with past observations of Berry (2010), Kaul (2012), Vidal and Mitchell (2015, 2018), Wu (2013), and others. In addition, and even more importantly, the expansion of a given path allows the generation of new scale free resources that can eventually support renewed expansion in the initially contracted growth path.

Contracting internationally in order to expand into more business segments can facilitate the development of new scale free resources such as familiarity with a greater variety of consumer demands, or unique foreign technologies, which allow renewed international market expansion at some point. Focusing the firm’s business scope in order to expand into more countries can facilitate the development of new resources, such as product related technological knowledge, new brands or familiarity with the preferences of new customer sectors, which ultimately allows renewed business segment expansion at some point. This process marks the ability of firms to exploit intra-temporal economies of scope (Helfat & Eisenhardt, 2004) by sharing scale free resources across the two different growth paths. Hence, we show that the redeployment of scarce non-scale free resources from one growth path to another, allows firms to make a more efficient use of their non-scale free resources, as it allows such resources to be matched with a larger pool of scale free resources. In turn, such matching allows firms to expand their "growth potential" frontier.

Our findings that firms that initially contracted a given growth path and then expanded a second path are capable to expand the originally contracted path more than those that simply have expanded a second growth path (but have not

contracted before), required elaboration. These findings likely suggest that there is only partial substitution of non-scale free resources when contracting the original path, most likely due to the indivisibility of some non-scale free resources (Penrose, 1959; Teece, 1982). Hence, when contracting a given growth path, some non-scale free resources remain undertulizied (e.g., managers time and experience, distribution infrastructure), and when new scale free resources are created in the second path, the firm becomes able to match these new scale free resources with the underulizied scale free resources in the originally contracted path and resume growth in this path. Such matching is not possible for those firms which have not contracted the original path, and will need to acquire non-scale free externally, which as we argue earlyer is likely to be more costly.

It is noteworthy that the arguments we make in this paper may well apply for firms combining growth across two different international markets (or regions) and also for firms combining growth across two different business segments. Yet, we believe that the focus on combining growth along international markets and business segments has its merits. The potential for using the diverse scale free resources that international markets presence grants firms (e.g., foreign market knowledge and international innovations) is limited when a firm operates only in a single business segment, while utilizing such scale free resources across business segments can be much more beneficial. Likewise, the potential for using the diverse scale free resources that business scope presence grants firms (e.g., knowledge on different types of technologies, business ecosystems and consumer types) is limited when a firm operates only in a single business segment, while utilizing such scale free resources across international markets can be much more beneficial. Hence, the difference in the scale free resources created within these two growth paths is likely to offer more significant opportunities to be exploited across the other path than the opportunities to exploit such resources within the same path, making the effects of sharing scale free resources across international markets and business segments more profound that those of sharing scale free resources within each of these paths.

Another important point to note is when contracting a given path firms may also lose some scale free resources.[11] Yet, we contend that the resources lost when contracting one path are less consequential than those gained in the other path. The contraction of a given growth path is likely to be accompanied with the loss of less relevant and redundant scale free

[11] We thank an anonymous SMJ reviewer for this point.

resources (e.g., old brands, obsolete managerial knowledge). This is because the existing knowledge bases of firms consist of resources that are accumulated over time and may well become core rigidities (Leonard-Barton, 1992), potentially leading to competency traps (Dencker, Gruber, & Shah, 2009; Levitt & March, 1988; Lawrence, 2018). In contrast, when expanding in the second growth path, firms accumulate more relevant and more updated scale free resources, which are likely to be more impactful than those lost. Such scale free resources may include current knowledge on consumer and their preferences, knowledge on competition and technology etc. This view is consistent with the extant literature on the advantages of organizational forgetting as a mechanism for firm renewal (Holan & Phillips, 2004; Besanko, Doraszelski, Kryukov & Satterthwaite, 2010; Easterby-Smith & Lyles, 2011). It is also supported empirically by the fact that we find that firms do expand along both growth paths in the long term, indicating that any loss of scale free resources are more than compensated for by the direct effect of the generated scale free resources (in the second growth path).

The study makes several contributions. First, we offer a novel motivation for the widely observed phenomenon of firm boundary contraction. Several studies have indeed noted that firms contract not only because they fail to generate positive gains in specific countries or business, but also as means to redeploy scarce non-scale free resources to other (more profitable) countries or businesses (Bennet & Feldman, 2017; Berry, 2010; Sakhartov & Folta, 2015; Vidal & Mitchell, 2015, 2018). Yet, our model takes this observation one step forward by showing that contraction can actually lead to expansion in the originally contracted path in the long term—an expansion that more than compensates for the original contraction. This seemingly paradoxical outcome occurs when the redeployment of non-scale free resources to another path makes available new scale free resources that can be shared to support further expansion in the originally contracted path. In other words, our findings[12] show that the increase in scale free resources driven by the redeployment of non-scale free resources from one growth path to another outweighs the decline in non-scale free resources in the original growth path.

More generally, this paper makes a contribution to the study of the coevolution of firms' strategic trajectories, which has long been a central theme in strategic management research (Lewin & Volberda, 1999). The application of "contraction for the sake of expansion" logic may enhance our understanding of a plethora of strategic trajectories, such as the coevolution of technological knowledge and product scope (Helfat & Raubitschek, 2000; Kaul, 2012), technological

[12] Including the formal model and the simulation derived from it (presented in the supplementary material).

knowledge and internationalization (Berry & Sakakibara, 2008; Cassiman & Golovko, 2011; Golovko & Valentini, 2011; Asmussen, Hashai & Delios, 2021b), and exploitation and exploration (Gupta et al., 2006; He & Wong, 2004; Levinthal & March, 1993).

A key issue that is not addressed in all the above examples of coevolution is whether, in these cases, contraction of a given path can boost expansion of the alternative path and ultimately also of the original path. This can be done, for instance, by reducing firms' emphasis on technological development and technological areas in order to expand internationally or diversify their product scope (Asmussen, et al., 2021a). Furthermore, the current study is consistent with evidence on exploration-exploitation, which shows that firms combine periods of intensive exploration with periods of intensive exploitation through a process of punctuated equilibrium (Boumgarden, Nickerson, & Zenger, 2012; Gupta et al., 2006;). In this process, firms can redeploy non-scale free resources (e.g., scientists) from one mode of technology development to another and can use novel knowledge (a scale free resource) created through exploration or exploitation to further expand the alternative path.

Managerial Implications

The managerial implications of the current study mainly relate to the importance of navigating the firm's expansion toward greater business segment and international market presence. Managers should therefore coordinate their resources wisely when shifting between international and business contraction and expansion. They should also take into account the mutual interdependence between international and business presence levels, rather than treat expansion along the two paths as separate. As international and business presence may likely be managed by different top management team executives (typically the chief marketing officer or the head of an international division in the former, and the chief technology officer in the latter), an upper-echelon point of view that recognizes their mutual interdependence is important for coordinating decisions related to firm growth along these paths. In particular, realizing that a "tactical" contraction in one path can not only enable expansion in the other path, but can also grant firms with the capability to eventually resume growth in the originally contracted path, is a key factor for improving top management team decisions about their firms' growth paths.

Limitations and Future Research Avenues

Our results should be tempered against the setting used to test our model. This setting mainly refers to large, publicly traded US-based firms, which are likely to have, on average, greater international market and business scope presence than other firms. To the extent that firms from other countries possess systematically different resources and capabilities to support their international markets and business segments, the growth patterns of such firms should be analyzed in order to examine the generalizability our theoretical framework and findings. Similarly, the growth patterns of private US-based firms (which are often smaller and younger than those analyzed in this study) should be studied in order to establish the external generalizability of our study.

Furthermore, due to the nature of the data we have in hand, the current study does not distinguish between full and partial contraction of a market, i.e. whether a firm fully exits a market or merely scales down.[13] Exploring the conditions where resumed expansion along the originally contracted path is in the contracted countries (business segments) or in new ones is an interesting future avenue for future research. This is because the scale free resources that are created in the second growth path might be more easily matched to remaining, underutilized non-scale free resources in the originally contracted path in the case of partial exit. For example, it might be easier for firms to resume expansion in a market where it has some presence, relative to a market which it has fully exited and now wishes re-enter (Bermini, Du & Love, 2016). In addition, it is plausible to assume that the time lags between contraction and expansion moves of firms are firm-specific, depending on their managerial capacity and other capabilities. The empirical approach taken in the current study was to relate to fixed time lags (two or three years) which are applicable to the 'average' firm in the sample. Future studies may include firm specific lags in their analyses. Such includsion may be especially relevant in qualitative, case based studies that can closely examine what infleunces the lags taken by firms with different sets of resources and capabilities.

Another important future research avenue would be to test the performance implications of growth processes concerning "contraction for the sake of expansion." While in the current study we controlled for the effect of firm performance on their presence levels in international markets and business segments, it would also be interesting to test how such processes influence firm performance. Finally, it should be noted that exogenous changes in firms' resources (e.g. due to major investment in the firm) as well as exogenous changes in the economic wide and business environments (e.g. the

[13] Empirically, the former would be operationalized as a larger contraction than the latter, given our use of entropy measures.

Covid-19 pandemic) may affect firms' ability to expand their international market and business segment presence. Our theoretical framework ignores such exogenous changes (although our empirical setting tries to control for them as much as possible). Such changes may influence our predictions. Therefore, one interesting future research avenue stemming from the current study is to systematically model and estimate the effects of specific exogenous changes on firms' international and business growth patterns.

REFERENCES

Adegbesan, J. A. (2009). On the origins of competitive advantage: Strategic factor markets and heterogeneous resource complementarity. *Academy of Management Review*, 34(3): 463-475.

Alessandri, T. M., & Seth, A. (2014). The effects of managerial ownership on international and business diversification: Balancing incentives and risks. *Strategic Management Journal*. 35(13), 2064-2075.

Amit, R., & Livnat, J. 1988. A concept of conglomerate diversification. *Journal of Management*, 14(4), 593-604.

Ansoff, H. I. (1957). Strategies for diversification. *Harvard Business Review*, 35(5), 113-124.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58, 277-297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68, 29-51.

Asmussen, C. G. (2015). Strategic factor markets, scale free resources, and economic performance: The impact of product market rivalry. *Strategic Management Journal*, 36, 1826–1844.

Asmussen, C. G., Foss, K., Foss, N. & Klein, P. (2021a) "Economizing and Strategizing: How Coalitions and Transaction Costs Shape Value Creation and Appropriation", *Strategic Management Journal,* 42(2): 413-434.

Asmussen, C.G., Hashai, N. & Delios, A. (2021). The Coevolution of International Scope and Technological Knowledge in MNCs, *Journal of World Business*, 57(1), 101285.

Sapienza, H.J., Autio, E., George, G., & Zahra, S.A. (2006). A Capabilities Perspective on the Effects of Early Internationalization on Firm Survival and Growth. *Academy of Management Review*, 31, 914–933

Autio, E., Sapienza, H. J., & Almeida, J.G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43(5), 909-924.

Bamiatzi, V., Bozos, K., Cavusgil, S. T., & Hult, G. T. M. (2016). Revisiting the firm, industry, and country effects on profitability under recessionary and expansion periods: A multilevel analysis. *Strategic Management Journal*, 37(7), 1448-1471.

Bascle, G. (2008). Controlling for endogeneity with instrumental variables in strategic management research. *Strategic Organization*, 6(3), 285-327.

Barkema, H.G., Bell, J.HJ & Pennings, J.M. (1996), Foreign entry, cultural barriers, and learning. *Strategic Management Journal*, 17, 151-166.

Barkema, H. G., & Schijven, M. (2008). Toward unlocking the full potential of acquisitions: the role of organizational restructuring. *Academy of Management Journal*, 51(4), 696-722.

Barth, M. E., Kasznik, R., & McNichols, M. F. (2001). Analyst coverage and intangible assets. *Journal of Accounting Research*, 39(1), 1-34.

Baum, C. F. (2006). *An introduction to modern econometrics using Stata*. College Station, Texas: Stata Press.

Belderbos, R., Tong, T. W., & Wu, S. (2014). Multinationality and downside risk: The roles of option portfolio and organization. *Strategic Management Journal*, 35(1), 88-106.

Benito G.R.G. (2005). Divestment and international business strategy. *Journal of Economic Geography*, 5(2), 235–251.

Bennett, V. M., & Feldman, E. R. (2017). make room! make room! a note on sequential spinoffs and acquisitions. *Strategy Science*, 2(2), 100-110.

Bermini, M., Du J, & Love, J.H. (2016). Explaining intermittent exporting: Exit and conditional re-entry in export markets. *Jounral of International Business Studies,* 47(9), 1058-1076.

Bernard, A. B., & Jensen, J. B. (1999). Exceptional exporter performance: cause, effect, or both? *Journal of International Economics*, 47(1), 1-25.

Berry, H. (2010). Why do firms divest? *Organization Science*, 21(2), 380-396.

Berry H. (2014). Global integration and innovation: Multicountry knowledge generation within MNCs, *Strategic Management Journal*, 35(6), 869-890.

Berry, H., & Kaul, A. (2016). Replicating the multinationality-performance relationship: Is there an S-curve? *Strategic Management Journal*, 37(11), 2275-2290.

Berry, H., & Sakakibara, M. (2008). Resource accumulation and overseas expansion by Japanese multinationals. *Journal of Economic Behavior & Organization*, 65(2), 277-302.

Besanko, D., Doraszelski, U., Kryukov, Y. & Satterthwaite, M. (2010), Learning-by-Doing, Organizational Forgetting, and Industry Dynamics. *Econometrica*, 78, 453-508.

Beugelsdijk, S., Kostova, T., Kunst, V. E., Spadafora, E., & van Essen, M. (2017). Cultural distance and firm internationalization: A meta-analytical review and theoretical implications. *Journal of Management*, 44(1), 89-130.

Black, J., Gregersen, H. & Mendenhall, M. (1992). Toward a Theoretical Framework of Repatriation Adjustment. *Journal of International Business Studies* 23, 737–760.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87, 115-143.

Boulding, W., Lee, E., & Staelin, R. (1994). Mastering the mix: Do advertising, promotion, and sales force activities lead to differentiation? *Journal of Marketing Research*, 31(2): 159-172.

Boumgarden, F., Nickerson, J., & Zenger, T. R. (2012). Sailing into the wind: Exploring the relationships among ambidexterity, vacillation, and organizational performance. *Strategic Management Journal*, 33(6), 587-610.

Bowen, H. P., & Sleuwaegen, L. (2017). Are international and product diversification substitutes or complements? Theoretical and empirical perspectives. *Global Strategy Journal*, 7, 241-256.

Bowen, H. P., & Wiersema, M. F. (2005). Foreign-based competition and product diversification strategy. *Strategic Management Journal*, 26, 1153-1171.

Burgman, T. A. (1996). An empirical examination of multinational corporate capital structure. *Journal of International Business Studies*, 27(3), 553-570.

Cantwell J., & Mudambi, R. (2005). MNE competence-creating subsidiary mandates. *Strategic Management Journal*, 26(12), 1109-1128.

Cassiman, B., & Golovko, E. (2011). Innovation and internationalization through exports, *Journal of International Business Studies*, 42, 56-75.

Caves, R. E. (2007). *Multinational enterprise and economic analysis*. New York: Cambridge University Press.

Chakrabarti, A., Singh, K., & Mahmood, I. (2007). Diversification and performance: evidence from East Asian firms. *Strategic Management Journal*, 28(2), 101-120.

Chatain, O. (2014). How do strategic factor markets respond to rivalry in the product market? *Strategic Management Journal*, 35, 1952–1971.

Chay, J. B., Kim, H., & Suh, J. (2015). Firm age and valuation: Evidence from Korea. *Asia-Pacific Journal of Financial Studies*, 44(5), 721-761.

Chandler, A. D. (1994). *Scale and scope: The dynamics of industrial capitalism*. Boston, MA: Harvard University Press.

Chang, S.C., & Wang, C, F. (2007). The effect of product diversification strategies on the relationship between international diversification and firm performance. *Journal of World Business*, 42, 61-79.

Chen, C. J., Cheng, C. A., He, J., & Kim, J. (1997). An investigation of the relationship between international activities and capital structure. *Journal of International Business Studies*, 3(3), 563-577.

Chin, M. K., & Semadeni, M. (2017). CEO political ideologies and pay egalitarianism within top management teams. *Strategic Management Journal*, 38(8), 1608-1625.

Delios, A., & Beamish, P. W. (1999). Geographic scope, product diversification, and the corporate performance of Japanese firms. *Strategic Management Journal*, 20(8), 711-727.

Dencker, J. C., Gruber, M., & Shah, S. K. (2009). Pre-Entry Knowledge, Learning, and the Survival of New Firms. *Organization Science*, 20(3): 516–537.

Dess, G. G., & Beard, D. W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 52-73.

Dickler, T.A. & Folta, T.B. (2020). Identifying internal markets for resource redeployment. *Strategic Management Journal*, 41(13), 2341-2371.

Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(12), 1504-1511.

Dunning, J. H. (1988). Changes in the Level and Structure of International Production: The Last One Hundred Years. In J. H. Dunning (Ed.), *Exploring international production* (pp. 71-119). London: Unwin Hyman.

Dunning, J. H. (1993). *Multinational enterprises and the global economy*. Wokingham: Addison Wesley.

Easterby-Smith, M. & Lyles M.A. (2011). In Praise of Organizational Forgetting. *Journal of Management Inquiry*. 20(3), 311-316.

Ellis, P. D. (2007). Distance, dependence and diversity of markets: effects on market orientation, *Journal of International Business Studies*, 38, 374-386

Feng, S., Krishnan, T.V. (2022). Contract Length Determination in the B2B Service Industry: Role of Economic Factors, Business Relationship, and Learning. *Journal of Service Research*, forthcoming. doi: 10.1177/10946705211032500.

Figueira-de-Lemos, F., Johanson, J., & Vahlne, J-E. (2011). Risk management in the internationalization process of the firm: A note on the Uppsala model. *Journal of World Business*, 46(2), 143-153.

Geringer, J. M., Tallman, S., & Olsen, D. M. (2000). Product and international diversification among Japanese multinational firms. *Strategic Management Journal*, 21(1), 51-80.

Ginsberg, A. (1990). Connecting diversification to performance: A sociocognitive approach. *Academy of Management Review*, 15(3), 514-535.

Golovko, E., & Valentini, G. (2011). Exploring the complementarity between innovation and export for SMEs' growth. *Journal of International Business Studies,* 42(3), 362-380.

Goranova, M., Alessandri, T. M., Brandes, P., & Dharwadkar, R. (2007). Managerial ownership and product diversification: A longitudinal view. *Strategic Management Journal*, 28(3), 211-225.

Gore, A. K., Matsunaga, S., & Eric Yeung, P. (2011). The role of technical expertise in firm governance structure: Evidence from chief financial officer contractual incentives. *Strategic Management Journal*, 32(7), 771-786.

Greene, W. H. (2008). *Econometric analysis*. Upper Saddle River, New Jersey: Pearson Prentice Hall.

Gupta, A. K., Smith, K. G., & Shalley, C, E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, 49(4), 693-706.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis with reading*. Upper Saddle River, NJ: Prentice Hall.

Hashai, N., & Delios, A. (2012). Balancing growth across the geographic and product diversification domains–A contingency approach. *International Business Review*, 21(6), 1052-1064.

Hashai, N. (2015). Within-Industry Diversification and firm performance—An s-shaped hypothesis. *Strategic Management Journal*, 36(9),1378-1400.

He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science*, 15(4), 481-494.

Helfat, C. E., & Raubitschek, R. S. (2000). Product sequencing: Coevolution of knowledge, capabilities and products. *Strategic Management Journal*, 21, 961-979.

Helfat, C.E. & Eisenhardt, K.M. (2004). Inter-temporal economies of scope, organizational modularity, and the dynamics of diversification. *Strategic Management Journal*, 25(13), 1217-1232.

Hitt, M.A., Hoskisson, R.E., & Ireland, R.D. (1994). A Mid-Range Theory of the Interactive Effects of International and Product Diversification on Innovation and Performance. *Journal of Management*. 20(2), 297-326.

Hitt, M. A., Hoskisson, R. E., & Kim, H. (1997). International diversification: Effects of innovation and firm performance in product diversified firms. A*cademy of Management Journal*, 40(4), 767-798.

Hitt, M. A., Tihanyi, L., Miller, T., & Connelly, B. (2006). International diversification: Antecedents, outcomes, and moderators. *Journal of Management*, 32(6), 831-867.

de Holan, P.M. & Phillips, N. (2004). Remembrance of Things Past? The Dynamics of Organizational Forgetting, *Management Science*. 50 (11), 1603-1613.

Holmqvist, M. (2004). Experiential Learning Processes of Exploitation and Exploration Within and Between Organizations: An Empirical Study of Product Development. *Organization Science* , 15(1), 70-81

Hoskisson, R. E., & Hitt, M. A. (1990). Antecedents and performance outcomes of diversification: A review and critique of theoretical perspectives. *Journal of Management*, 16(2), 461-509.

Hutzschenreuter, T., & Grone, F. (2009). Product and geographic scope changes of multinational enterprises in response to international competition. *Journal of International Business Studies*, 40, 1149-1170.

Ito, K., & Lechevalier, S. (2010). Why some firms persistently out-perform others: Investigating the interactions between innovation and exporting strategies. *Industrial and Corporate Change*, 19(6), 1997-2039.

Jiang, R. J., Beamish, P. W., & Makino, S. (2014). Time compression diseconomies in foreign expansion. *Journal of World Business*, 49(1), 114-121.

Joseph, J., & Ocasio, W. (2012). Architecture, attention, and adaptation in the multibusiness firm: General electric from 1951 to 2001. *Strategic Management Journal*, 33(6), 633-660.

Kang, J., & Kim, S-J. (2020). Performance implications of incremental transition and discontinuous jump between exploration and exploitation. *Strategic Management Journal,* 41, 1083– 1111.

Kaul, A. (2012). Technology and corporate scope: Firm and rival innovation as antecedents of corporates transactions. *Strategic Management Journal*, *33*(4), 347-367.

Kim, M. (2016). Geographic scope, isolating mechanisms, and value appropriation. *Strategic Management Journal*, 37(4), 695-713.

Kim, C. K., & Chung, J. Y. (1997). Brand popularity, country image and market share: an empirical study. *Journal of International Business Studies*, 28(2), 361-386.

Kleinbaum, D. G., Lawrence, L. K., Muller, K. E., & Nizam, A. (1998). *Applied regression analysis and other multivariable methods* (3rd ed.). Pacific Grove, CA: Brooks/Cole.

Knott, A. M., Bryce, D. J., & Posen, H. E. (2003). On the strategic accumulation of intangible assets. *Organization Science* 14(2), 192-207.

Kochhar, R., & Hitt, M. A. (1998). Linking corporate strategy to capital structure: diversification strategy, type and source of financing. *Strategic Management Journal*, 19, 601-610.

Kumar, S. M. V. (2009). The Relationship between product and geographic diversification: The effects of short-run constraints and endogeneity. *Strategic Management Journal*, 30(1), 99-116.

Kwok, C. C., & Reeb, D. M. (2000). Internationalization and firm risk: An upstream-downstream hypothesis. *Journal of International Business Studies*, 31(4), 611-629.

Lahiri, N. (2010). Geographic distribution of R&D activity: How does it affect innovation quality? *Academy of Management Journal*, 53(5), 1194-1209.

Lawrence, M. (2018). Taking stock of the ability to change: The effect of prior experience. *Organization Science*, 29(3): 489–506.

Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, 13(S1): 111-125.

Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic Management Journal*, 14(S2), 95-112.

Levinthal, D. A., & Wu, B. (2010). Opportunity costs and non-scale free capabilities: profit maximization, corporate scope, and profit margins. *Strategic Management Journal*, 31(7), 780-801.

Levitt, B., & March, J. G. (1988). Organizational Learning. *Annual Review of Sociology*, 14(1), 319–340.

Lewin, A. Y., & Volberda, H. W. (1999). Prolegomena on coevolution: A framework for research on strategy and new organizational forms. *Organization Science*, 10(5). 519-534.

Lieberman, M. B., Lee, G. K., & Folta, T. B. (2017). Entry, exit and the potential for resource redeployment. *Strategic Management Journal*, 38, 526-544.

Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal* 13(5), 363-380.

Mayer, M. C., Stadler, C., & Hautz, J. (2015). The relationship between product and international diversification: The role of experience. *Strategic Management Journal*, 36(10), 1458-1468.

Mendenhall, Dunbar, & Oddou, 1987;

Meyer, K. E. (2006). Globalfocusing: from domestic conglomerate to global specialist. *Journal of Management Studies*, 43(5), 1109-1144.

Miao, Y., Salomon, R. M., & Song, J. (2021). Learning from Technologically Successful Peers: The Convergence of Asian Laggards to the Technology Frontier. *Organization Science*, 32(1): 210-232.

Miller, D. J., Fern, M. J., & Cardinal, L. B. (2007). The use of knowledge for technological innovation within diversified firms. *Academy of Management Journal* 50(2), 308-326.

Misangyi, V. F., Elms, H., Greckhamer, T., & Lepine, J. A. (2006). A new perspective on a fundamental debate: a multilevel approach to industry, corporate, and business unit effects. *Strategic Management Journal*, 27(6), 571-590.

Mohr, A., Batsakis, G., & Stone, Z. 2018. Explaining the effect of rapid internationalization on horizontal foreign divestment in the retail sector: An extended Penrosean perspective. *Journal of International Business Studies*, 49(7), 779-808.

Moliterno, T. P., & Wiersema, M, F. (2007). Firm performance, rent appropriation, and the strategic resource divestment capability, Strategic Management Journal, 28(11), 1065-1087.

Morandi Stagni, R., Santaló, J. & Giarratana, M.S. (2020). Product-market competition and resource redeployment in multi-business firms. *Strategic Management Journal*, 41(10), 1799-1836.

Myers, S.C. (2001) Capital structure. *Journal of Economic Perspectives*, 15, 81-102

Palmer, T. B., & Wiseman, R. M. (1999). Decoupling risk taking from income stream uncertainty: A holistic model of risk. *Strategic Management Journal*, 20(11), 1037-1062.

Pástor, L., & Veronesi, P. (2003). Stock valuation and learning about profitability. *Journal of Finance*, 58, 1749-1789.

Pennings, J. M., Barkema, H., & Douma, S. (1994). Organizational Learning and diversification. *Academy of Management Journal*, 37(3), 608-640.

Penrose, E. G. (1959). *The theory of the growth of the firm*. New York: Wiley.

Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, 12(S2): 95-117.

Qian, G., Khoury, T. A., Peng, M. W., & Qian, Z. (2010). The performance implications of intra- and inter-regional geographic diversification. *Strategic Management Journal*, 31(9), 118-130.

Reeb, D. M., Kwok, C. C., & Baek, H. Y. (1998). Systematic risk of the multinational corporation. *Journal of International Business Studies*, 29(2), 263-279.

Roodman, D. (2009). How to do xtabond2: an introduction to difference and system GMM in Stata. *Stata Journal*, 9(1), 86-136.

Sakhartov, A. V., & Folta, T. B. (2014). Resource relatedness, redeployability, and firm value. *Strategic Management Journal*, 35(11), 1781-1797.

Sakhartov, A. V., & Folta, T. B. (2015). Getting beyond relatedness as a driver of corporate value. *Strategic Management Journal*, 36(13), 1939-1959.

Salomon RM, & Shaver JM. (2005). Learning by exporting: new insights from examining firm innovation. *Journal of Economics & Management Strategy* 14(2): 431-460.

Schallheim, J. & Zhang, X. (2021). Lease or Borrow? The Case of Small Equipment Contracts. *SSRN Paper*. https://ssrn.com/abstract=3970571.

Siegel, J. (2009). Is there a better commitment mechanism than cross-listings for emerging-economy firms? Evidence from Mexico. *Journal of International Business Studies*, 40(7), 1171-1191.

Sirmon, D. G., Gove, S., & Hitt, M. A. (2008). Resource management in dyadic competitive rivalry: the effects of resource bundling and deployment. *Academy of Management Journal*, 51(5), 919-935.

Salomon, R. M., & Shaver, J. M. (2005). Learning by exporting: new insights from examining firm innovation. *Journal of Economics and Management Strategy*, 14(2), 431-460.

Sharfman, M. P., & Fernando, C. S. (2008). Environmental risk management and the cost of capital. *Strategic Management Journal*, 29(6), 569-592.

Shi, W., Connelly, B. L., & Hoskisson, R. E. (2017). External corporate governance and financial fraud: Cognitive evaluation theory insights on agency theory prescriptions. *Strategic Management Journal*, 38(6), 1268-1286.

Shimizu, K., & Hitt, M. A. (2005). What constrains or facilitates divestitures of formerly acquired firms? The effects of organizational inertia. *Journal of Management*, 31(1), 50-72.

Singh, M., Davidson, W. N., & Suchard, J. A. (2003). Product diversification strategies and capital structure. *The Quarterly Review of Economics and Finance*, 43(1), 147-167.

Sørensen, J. B. (2002). The strength of corporate culture and the reliability of firm performance. *Administrative Science Quarterly*, 47(1), 70-91.

Stahl, G. K., Miller, E. L., & Tung, R. L. (2002). Toward the boundaryless career: A closer look at the expatriate career concept and the perceived implications of an international assignment. *Journal of World Business*, 37(3): 216-227.

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, 31(5), 463-490.

Tan, D., & Mahoney, J. T. (2007). The dynamics of Japanese firm growth in US industries: the Penrose effect. *Management International Review*, 47(2), 259-279.

Teece, D. J. (1982). Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior and Organization*, 3(1), 39-63.

Tihanyi, L., Johnson, R. A., Hoskisson, R. E., & Hitt, M, A. (2003). Institutional ownership differences and international diversification: The effects of board of directors and technological opportunity. *Academy of Management Journal*, 46, 195-211.

Vidal, E., & Mitchell, W. (2015). Adding by subtracting: The relationship between performance feedback and resource reconfiguration through divestitures. *Organization Science*, 26(4), 1101-1118.

Vidal, E., & Mitchell, W. (2018). Virtuous or vicious cycles? The role of divestitures as a complementary Penrose effect within resource-based theory. *Strategic Management Journal*, 39(1), 131-154.

Waxin, M. F., & Panaccio, A. (2005). Cross-cultural training to facilitate expatriate adjustment: it works! *Personnel Review*, 34(1), 51-67.

Wibbens, P. D. (2019). Performance persistence in the presence of higher-order resources. *Strategic Management Journal*, 40(2): 181-202.

Wiersema, M. F., & Bowen, H. P. (2008). Corporate diversification: The impact of foreign competition, industry globalization, and product diversification. *Strategic Management Journal*, 29(2), 115-132.

Wiersema, M. F., & Bowen, H, P. (2011). The relationship between international diversification and firm performance: why it remains a puzzle. *Global Strategy Journal*, 1(1-2), 152-170.

Withers, M. C., & Fitza, M. A. (2017). Do board chairs matter? The influence of board chairs on firm performance. *Strategic Management Journal*, 38(6), 1343-1355.

Wooldridge, J. M. (2009): Introductory econometrics: A modern approach. Mason, OH: South-Western.

Wu, B. (2013). Opportunity costs, industry dynamics, and corporate diversification: Evidence from the cardiovascular medical device industry 1976–2004. *Strategic Management Journal*, 34(11), 1265-1287.

Xie, X., & O'Neill, H. M. (2014). Learning and product entry: How diversification patterns differ over firm age and knowledge domains in US generic drug industry. *Strategic Management Journal*, 35(3), 440-449.

Xue, L., Ray, G., & Sambamurthy, V. (2012). Efficiency or innovation: How do industry environments moderate the effects of firms' IT asset portfolios? *MIS quarterly*, 509-528.

Zaheer, Z. (1995). Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2), 341-363.

Zahra, S. A., Ireland, R. D., & Hitt, M. A. (2000). International expansion by new venture firms: International diversity, mode of market entry, technological learning, and performance. *Academy of Management Journal*, 43(5): 925-950.

Figure 1 :*The Consequences of Contracting a Given Growth Path*

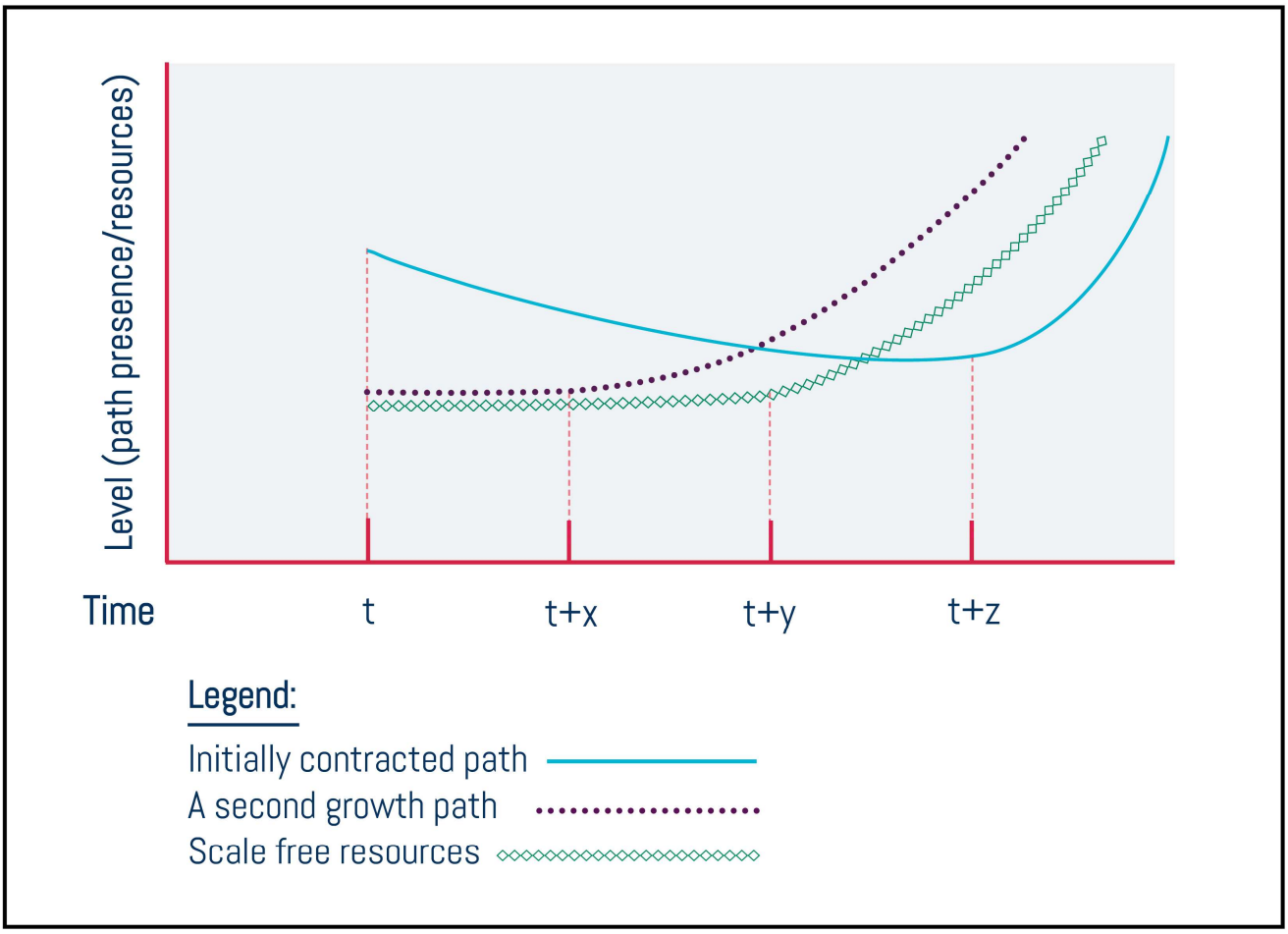

Figure 2: Schematic Map of Estimation Approach – Contraction in International and Business Presence (Step 1)

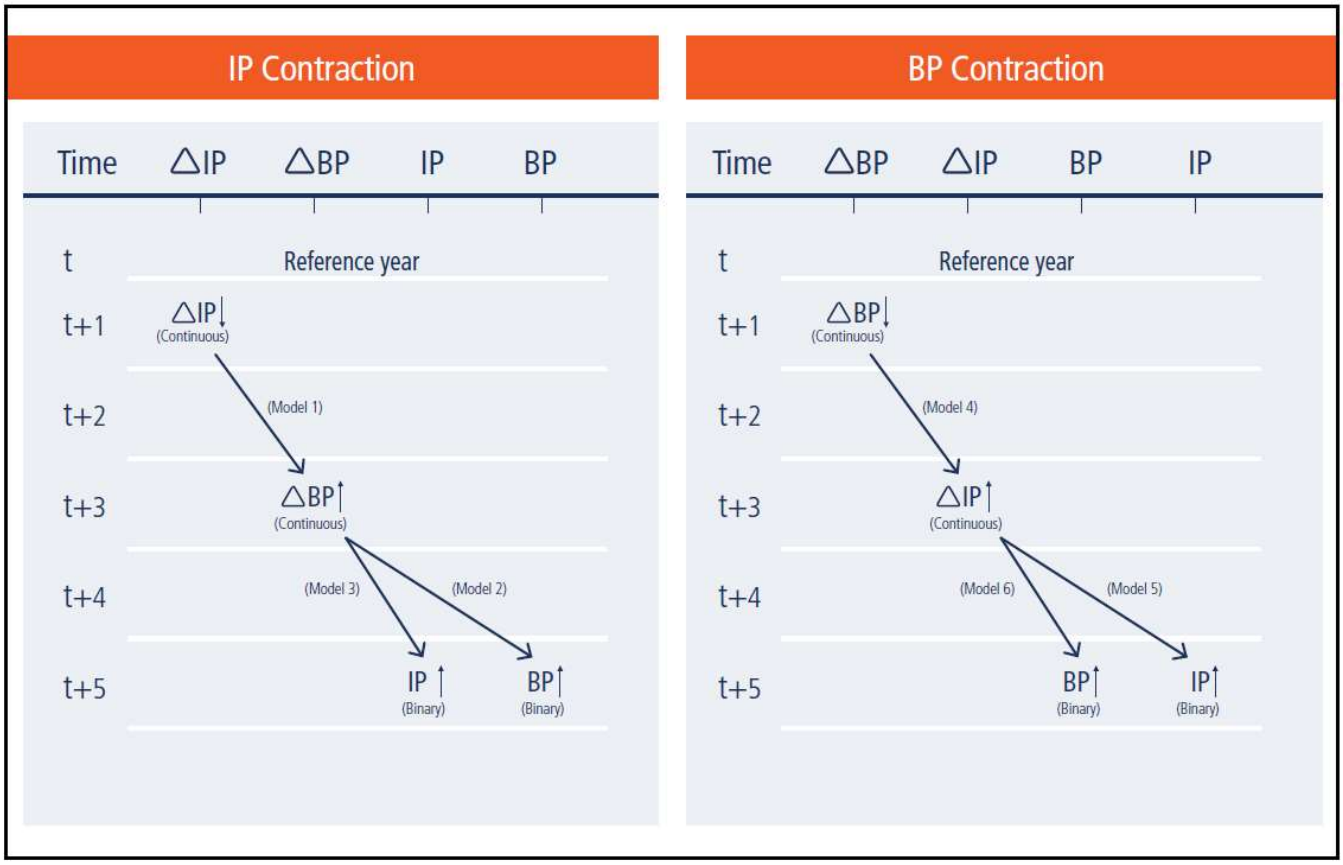

Figure 3: Schematic Map of Estimation Approach – Contraction in International and Business Presence and Changes in Non-Scale Free and Scale Free Resources (Step 2)

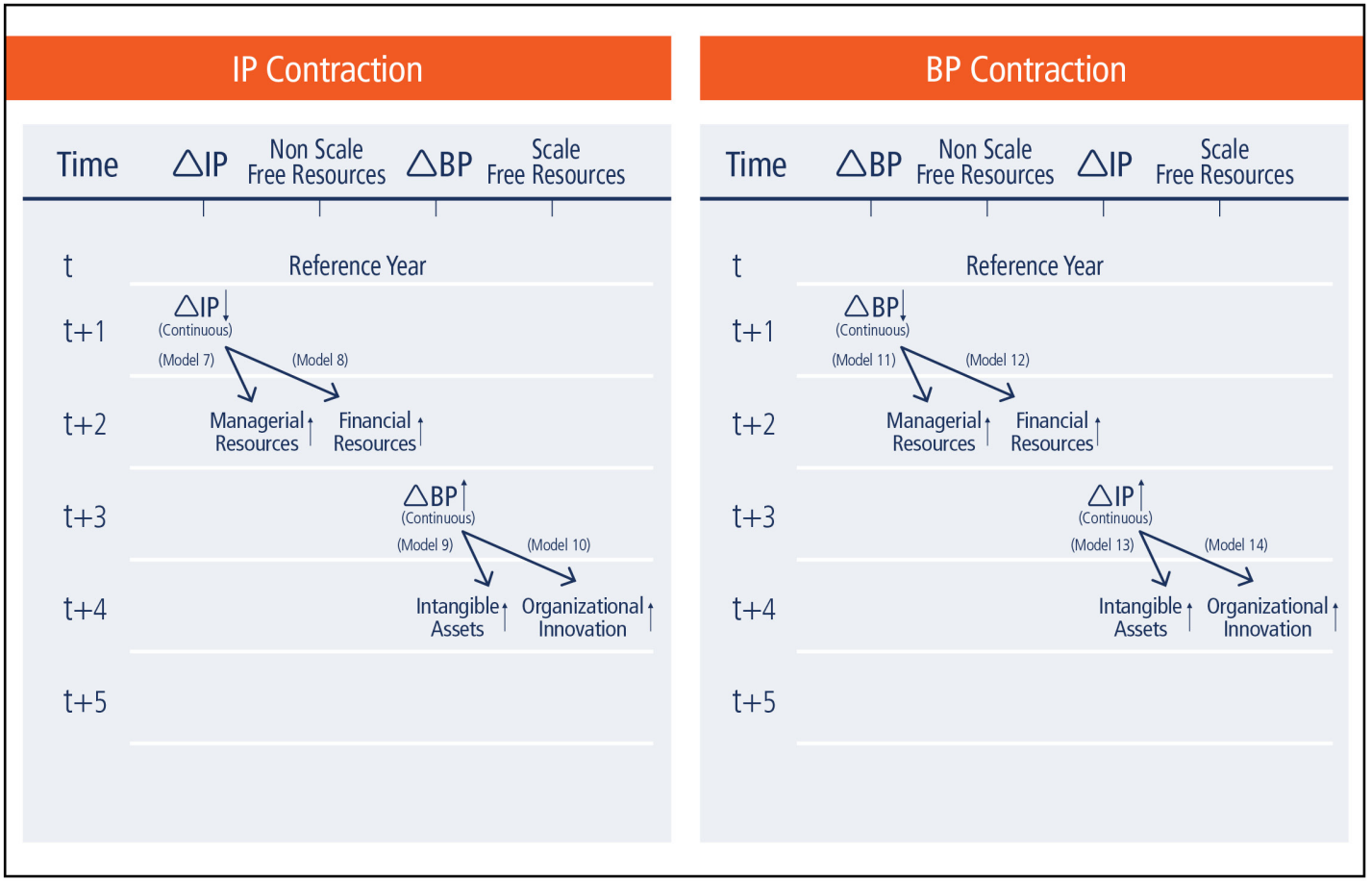

Figure 4: Schematic Map of Estimation Approach –Non-Scale Free and Scale Free Resources and Expansion in International nad Business Presence (Step 3)

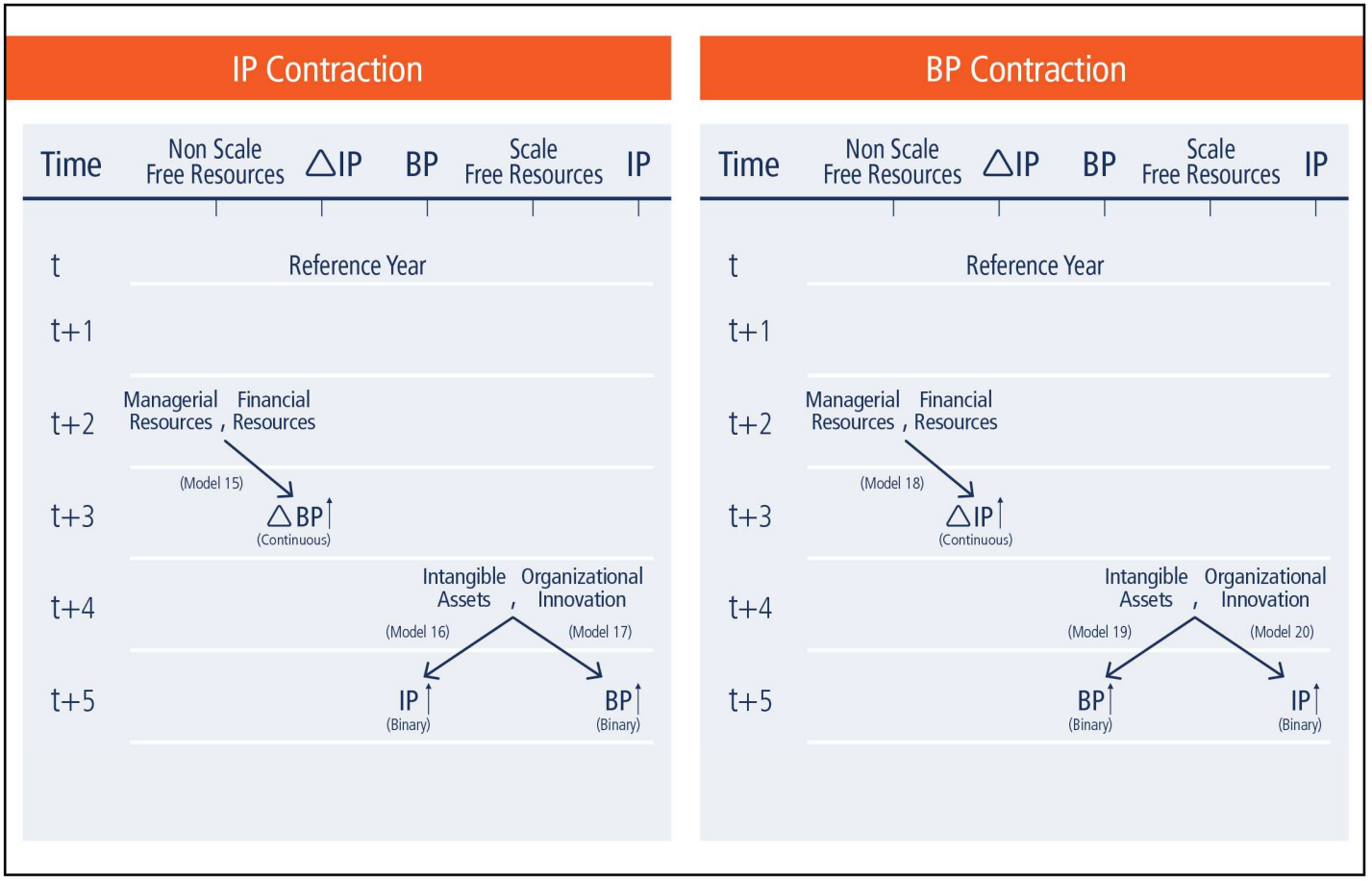

Table 1: Descriptive statistics for contraction and expansion moves

#	Intervals	Mean	Min	Max
1	Time lag between international market contraction and next business segment expansion	2.084	1	19
2	Time lag between business segment expansion and next international market expansion	1.583	1	19
3	Time lag between business segment expansion and next international market expansion	2.323	1	21
4	Time lag between business segment contraction and next international market expansion	1.917	1	20
5	Time lag between international market expansion and next business segment expansion	1.668	1	19
6	Time lag between international market expansion and next international market expansion	1.703	1	21

Table 2: Descriptive Statistics and Correlation Table

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	ΔIP (t to t+1; Continuous)	0.021	0.206	1																
2	ΔBP (t to t+1; Continuous)	0.015	0.223	**0.080**	1															
3	Firm Age	15.388	14.529	**-0.027**	**-0.028**	1														
4	Firm Size	5.356	2.444	**0.021**	**0.011**	**0.341**	1													
5	Firm R&D	5.882	44.680	**-0.012**	-0.009	**-0.079**	-0.007	1												
6	Firm Performance	-0.159	0.428	**0.031**	**0.028**	**0.246**	**0.404**	**-0.177**	1											
7	Firm Risk	0.135	0.196	-0.008	**-0.013**	**-0.233**	**-0.351**	**0.099**	**-0.366**	1										
8	Firm Leverage	0.366	3.902	**-0.013**	-0.003	-0.008	**-0.069**	0.001	**-0.124**	0.009	1									
9	Firm Asset Intensity	0.325	0.242	-0.003	0.000	**0.264**	**0.058**	**-0.109**	**0.111**	**-0.169**	-0.007	1								
10	Firm International Presence (IP)	0.463	0.548	**-0.147**	**-0.020**	**0.259**	**0.377**	**-0.101**	**0.240**	**-0.181**	**-0.035**	**0.082**	1							
11	Firm Business Presence (BP)	0.291	0.462	**-0.019**	**-0.210**	**0.364**	**0.305**	**-0.079**	**0.207**	**-0.187**	**-0.022**	**0.129**	**0.265**	1						
12	Industry Munificence	1.118	0.891	0.006	0.006	**-0.050**	**-0.012**	-0.007	0.001	**0.048**	-0.003	**-0.025**	**-0.019**	-0.001	1					
13	Industry Dynamism	1.031	0.119	0.000	-0.002	**-0.041**	**-0.026**	**-0.014**	-0.002	**0.053**	-0.003	-0.007	**-0.015**	**0.011**	**0.338**	1				
14	Industry Concentration	0.592	0.192	**-0.028**	-0.007	**0.150**	**0.057**	**-0.063**	**0.091**	**-0.087**	-0.001	**0.147**	**-0.042**	**0.081**	**0.080**	**0.132**	1			
15	Managerial Resources	3.170	15.403	**-0.015**	-0.007	**-0.104**	**-0.047**	**0.195**	**-0.215**	**0.131**	0.003	**-0.100**	**-0.127**	**-0.104**	0.003	-0.007	**-0.077**	1		
16	Financial Resources	0.292	0.275	0.001	**-0.011**	**-0.294**	**-0.084**	**0.232**	**-0.258**	**0.298**	**-0.027**	**-0.395**	**-0.129**	**-0.283**	**0.025**	0.008	**-0.197**	**0.255**	1	
17	Intangible Assets	0.152	0.189	**-0.017**	-0.006	**0.121**	**0.235**	**-0.071**	**0.097**	**-0.112**	**-0.014**	**-0.152**	**0.144**	**0.231**	-0.001	0.001	**0.078**	**-0.089**	**-0.378**	1
18	Organizational Innovation	-17.545	14.545	**0.010**	**0.018**	**0.086**	**0.310**	**-0.060**	**0.321**	**-0.155**	**-0.035**	**0.054**	**0.131**	**0.105**	0.002	-0.007	**0.020**	**-0.126**	**-0.117**	**0.060**

Table 3: Regression Analysis of the Effects of Contracting International Presence (step 1)

Variables	Model 1 DV= $\Delta BP_{(t\ to\ t+3)}$ (Continuous)	Model 2 DV= $\Delta BP_{(t\ to\ t+5)}>0$ (Binary)	Model 3 DV= $\Delta IP_{(t\ to\ t+5)}>0$ (Binary)
Main Explanatory Variables			
$\Delta IP_{(t\ to\ t+1;\ Dummy)} < 0 = 1$	0.497	0.462	0.514
	(0.070)	*(0.229)*	*(0.241)*
	[0.000]	[0.044]	[0.033]
$\lvert\Delta IP_{(t\ to\ t+1;\ Continuous)}\rvert$ X $[\Delta IP_{(t\ to\ t+1)} \geq 0 = 1]$	0.698		
	(0.325)		
	[0.032]		
$\lvert\Delta IP_{(t\ to\ t+1;\ Continuous)}\rvert$ X $[\Delta IP_{(t\ to\ t+1)} < 0 = 1]$	2.156		
	(0.468)		
	[0.000]		
$\Delta BP_{(t\ to\ t+3;\ Continuous)}$ X $[\Delta IP_{(t\ to\ t+1)} \geq 0 = 1]$		0.565	-0.411
		(0.048)	*(0.192)*
		[0.000]	[0.033]
$\Delta BP_{(t\ to\ t+3;\ Continuous)}$ X $[\Delta IP_{(t\ to\ t+1)} < 0 = 1]$		0.927	1.017
		(0.136)	(0.472)
		[0.000]	[0.031]
Firm Level Controls			
Age	-0.011	-0.011	-0.01
	(0.002)	*(0.007)*	*(0.004)*
	[0.000]	[0.135]	[0.009]
Size	0.020	-0.014	0.001
	(0.020)	*(0.033)*	*(0.020)*
	[0.320]	[0.666]	[0.973]
R&D	0.000	-0.000	-0.000
	(0.000)	*(0.000)*	*(0.000)*
	[0.980]	[0.143]	[0.421]
Financial Performance	0.294	0.251	0.536
	(0.138)	*(0.155)*	*(0.229)*
	[0.033]	[0.106]	[0.019]
Risk	0.105	-0.304	-0.562
	(0.145)	*(0.395)*	*(0.467)*
	[0.467]	[0.442]	[0.229]
Leverage	0.007	0.016	0.058
	(0.003)	*(0.017)*	*(0.047)*
	[0.041]	[0.343]	[0.215]
Asset Intensity	-0.038	-0.845	0.269
	(0.352)	*(0.503)*	*(0.442)*
	[0.914]	[0.093]	[0.542]
IP		0.691	
		(0.586)	
		[0.239]	
Industry Level Controls			
Munificence	0.035	0.335	0.486
	(0.048)	*(0.095)*	*(0.460)*
	[0.470]	[0.000]	[0.291]
Dynamism	-0.470	-2.755	-4.124

	(0.419)	*(0.817)*	*(3.071)*
	[0.262]	[0.001]	[0.179]
Concentration	-1.050	-1.752	-0.580
	(1.378)	*(1.871)*	*(0.850)*
	[0.446]	[0.349]	[0.495]
Constant	1.045	3.756	4.575
	(0.645)	*(1.167)*	*(2.699)*
	[0.106]	[0.001]	[0.090]
Year Dummies	Included	Included	Included
Industry Dummies	Included	Included	Included
Observations	45,326	36,478	36,495
Number of Firms	6,156	5,032	5,035
Wald Chi-Squared	449	2,801	2,639
	[0.000]	[0.000]	[0.000]
AR(1)	2.529	1.815	-3.218
	[0.011]	[0.069]	[0.001]
AR(2)	1.579	1.592	-1.331
	[0.114]	[0.111]	[0.183]
Hansen Test	28.83	18.92	21.33
	[0.271]	[0.273]	[0.378]
Wald Test Chi-Squared	5.84	4.40	5.17
	[0.015]	[0.036]	[0.022]

Robust standard errors in parentheses *(in italic)*; P values in square brackets.

Table 4: Regression Analysis of the Effects of Contracting Business Presence (step 1)

Variables	Model 4 DV= $\Delta IP_{(t\ to\ t+3)}$ (Continuous)	Model 5 DV= $\Delta IP_{(t\ to\ t+5)}>0$ (Binary)	Model 6 DV= $\Delta BP_{(t\ to\ t+5)}>0$ (Binary)
Main Explanatory Variables			
$\Delta BP_{(t\ to\ t+1)\ (Dummy))} < 0 = 1$	0.112	0.182	0.154
	(0.052)	*(0.070)*	*(0.052)*
	[0.033]	[0.009]	[0.003]
$\lvert\Delta BP_{(t\ to\ t+1;\ Continuous)}\rvert$ X $[\Delta BP_{(t\ to\ t+1)} \geq 0 = 1]$	-0.482		
	(0.186)		
	[0.009]		
$\lvert\Delta BP_{(t\ to\ t+1;\ Continuous)}\rvert$ X $[\Delta BP_{(t\ to\ t+1)} < 0 = 1]$	0.373		
	(0.096)		
	[0.000]		
$\Delta IP_{(t\ to\ t+3;\ Continuous)}$ X $[\Delta BP_{(t\ to\ t+1)} \geq 0 = 1]$		0.312	-0.013
		(0.136)	*(0.037)*
		[0.021]	[0.718]
$\Delta IP_{(t\ to\ t+3;\ Continuous)}$ X $[\Delta BP_{(t\ to\ t+1)} < 0 = 1]$		2.267	0.258
		(0.438)	*(0.100)*
		[0.000]	[0.010]
Firm Level Controls			
Age	-0.002	0.010	-0.003
	(0.001)	*(0.006)*	*(0.002)*
	[0.000]	[0.109]	[0.030]
Size	0.025	0.071	0.036
	(0.006)	*(0.041)*	*(0.014)*
	[0.000]	[0.081]	[0.010]
R&D	-0.000	0.000	-0.000
	(0.000)	*(0.001)*	*(0.000)*
	[0.353]	[0.566]	[0.136]
Financial Performance	-0.065	0.010	0.110
	(0.036)	*(0.236)*	*(0.050)*
	[0.073]	[0.965]	[0.029]
Risk	-0.154	-0.503	-0.029
	(0.054)	*(0.298)*	*(0.093)*
	[0.004]	[0.091]	[0.751]
Leverage	-0.001	0.091	0.001
	(0.001)	*(0.062)*	*(0.008)*
	[0.564]	[0.142]	[0.917]
Asset Intensity	-0.017	-0.381	-0.030
	(0.083)	*(0.352)*	*(0.071)*
	[0.840]	[0.280]	[0.672]
BP		-0.265	
		(0.128)	
		[0.039]	
Industry Level Controls			
Munificence	-0.031	0.002	0.001
	(0.023)	*(0.047)*	*(0.006)*
	[0.173]	[0.963]	[0.804]
Dynamism	0.101	0.021	0.021

	(0.134)	*(0.298)*	*(0.041)*
	[0.450]	[0.943]	[0.604]
Concentration	-0.071	-1.483	0.232
	(0.056)	*(0.680)*	*(0.078)*
	[0.204]	[0.029]	[0.003]
Constant	-0.023	1.133	0.017
	(0.150)	*(0.636)*	*(0.100)*
	[0.880]	[0.075]	[0.863]
Year Dummies	Included	Included	Included
Industry Dummies	Included	Included	Included
Observations	45,326	36,478	36,495
Number of Firms	6,156	5,032	5,035
Wald Chi-Squared	1,024	4,208	5,714
	[0.000]	[0.000]	[0.000]
AR(1)	-5.396	1.704	-27.33
	[0.000]	[0.088]	[0.000]
AR(2)	-1.623	1.553	-9.431
	[0.105]	[0.120]	[0.000]
Hansen Test	147.9	62.49	358.6
	[0.440]	[0.200]	[0.134]
Wald Test Chi-Squared	14.29	11.89	4.26
	[0.000]	[0.000]	[0.039]

Robust standard errors in parentheses *(in italic)*; P values in square brackets.

Table 5: Regression Analysis of the Effects of Contracting International Presence on Non-scale Free and Scale Free Resources (step 2)

Variables	Model 7 Managerial Resources (t+2)	Model 8 Financial Resources (t+2)	Model 9 Intangible Assets (t+4)	Model 10 Organizational Innovation (t+4)
Main Explanatory Variables				
$\lvert\Delta IP_{(t\ to\ t+1;\ Negative;\ Continuous)}\rvert$	11.006	0.350		
	(5.541)	*(0.168)*		
	[0.047]	[0.038]		
$\Delta BP_{(t\ to\ t+3;\ Positive;\ Continuous)}$			0.053	2.901
			(0.018)	*(1.455)*
			[0.003]	[0.046]
Firm Level Controls				
Age	-0.043	-0.004	-0.001	0.047
	(0.022)	*(0.001)*	*(0.001)*	*(0.025)*
	[0.047]	[0.000]	[0.226]	[0.064]
Size	-0.272	-0.014	0.027	1.421
	(0.224)	*(0.006)*	*(0.006)*	*(0.183)*
	[0.224]	[0.018]	[0.000]	[0.000]
Industry Level Control				
Concentration	-9.568	0.246	-0.233	1.144
	(7.515)	*(0.245)*	*(0.243)*	*(2.926)*
	[0.203]	[0.315]	[0.339]	[0.696]
Constant	10.477	0.29	0.275	-29.31
	(5.000)	*(0.142)*	*(0.294)*	*(1.769)*
	[0.036]	[0.042]	[0.349]	[0.000]
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Observations	11,318	13,056	11,095	10,431
Number of Firms	3,373	3,891	3,439	3,144
Wald Chi-Squared	92	2,689	7,239	5,289
	[0.000]	[0.000]	[0.000]	[0.000]
AR(1)	-3.20	-5.95	-2.14	-13.32
	[0.001]	[0.000]	[0.033]	[0.000]
AR(2)	-1.52	1.63	-0.69	-1.57
	[0.129]	[0.104]	[0.488]	[0.117]
Hansen Test	9.40	11.71	32.72	701.62
	[0.856]	[0.764]	[0.335]	[0.275]

Robust standard errors in parentheses (*in italic)*; P values in square brackets.

Table 6: Regression Analysis of the Effects of Contracting Business Presence on Non-scale Free and Scale Free Resources (step 2)

Variables	Model 11 Managerial Resources (t+2)	Model 12 Financial Resources (t+2)	Model 13 Intangible Assets (t+4)	Model 14 Organizational Innovation (t+4)
Main Explanatory Variables				
$\lvert \Delta BP_{(t \text{ to } t+1;\ Negative;\ Continuous)} \rvert$	2.765	0.209		
	(1.245)	*(0.100)*		
	[0.026]	[0.037]		
$\Delta IP_{(t \text{ to } t+3;\ Positive;\ Continuous)}$			0.034	3.608
			(0.016)	*(1.778)*
			[0.039]	[0.042]
Firm Level Controls				
Age	-0.216	-0.004	0.001	0.120
	(0.119)	*(0.002)*	*(0.001)*	*(0.066)*
	[0.069]	[0.012]	[0.328]	[0.070]
Size	0.535	-0.012	0.017	0.88
	(0.578)	*(0.009)*	*(0.004)*	*(0.430)*
	[0.355]	[0.181]	[0.000]	[0.041]
Industry Level Control				
Concentration	-5.385	0.148	0.037	-8.795
	(2.281)	*(0.329)*	*(0.069)*	*(4.405)*
	[0.018]	[0.653]	[0.588]	[0.046]
Constant	7.783	0.325	0.010	-20.479
	(2.027)	*(0.186)*	*(0.044)*	*(6.508)*
	[0.000]	[0.080]	[0.822]	[0.002]
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Observations	10,542	11,944	15,112	14,578
Number of Firms	3,436	3,814	3,328	3,130
Wald Chi-Squared	8,278	4,085	7,858	5,898
	[0.000]	[0.000]	[0.000]	[0.000]
AR(1)	-2.20	-6.83	-3.34	-2.71
	[0.028]	[0.000]	[0.001]	[0.007]
AR(2)	0.38	-1.40	-0.53	0.46
	[0.701]	[0.162]	[0.594]	[0.648]
Hansen Test	13.25	12.35	34.02	38.70
	[0.583]	[0.499]	[0.696]	[0.573]

Robust standard errors in parentheses *(in italic)*; P values in square brackets.

Table 7: Regression Analysis of the Effects of (predicted) Non-scale Free and Scale Free resources when Contracting International Presence (step 3)

Variables	Model 15 DV= $\Delta BP_{(t\ to\ t+3)}$ (Continuous)	Model 16 DV= $\Delta BP_{(t\ to\ t+5)}>0$ (Binary)	Model 17 DV= $\Delta IP_{(t\ to\ t+5)}>0$ (Binary)
Main Explanatory Variables			
Managerial Resources $_{t+2}$	0.026		
	(0.009)		
	[0.004]		
Financial Resources $_{t+2}$	0.472		
	(0.208)		
	[0.023]		
Intangible Assets $_{t+4}$		2.923	2.843
		(1.473)	*(1.403)*
		[0.047]	[0.043]
Organizational Innovation $_{t+4}$		0.05	0.065
		(0.025)	*(0.031)*
		[0.046]	[0.038]
Firm Level Controls			
Age	-0.000	-0.004	0.000
	(0.001)	*(0.008)*	*(0.004)*
	[0.859]	[0.638]	[0.958]
Size	0.023	0.020	-0.174
	(0.010)	*(0.098)*	*(0.037)*
	[0.018]	[0.841]	[0.000]
R&D	0.001	-0.002	0.000
	(0.003)	*(0.002)*	*(0.000)*
	[0.755]	[0.181]	[0.297]
Financial Performance	0.197	-1.125	-0.026
	(0.096)	*(0.490)*	*(0.116)*
	[0.041]	[0.022]	[0.820]
Risk	-0.018	-1.865	-0.465
	(0.185)	*(0.889)*	*(0.210)*
	[0.921]	[0.036]	[0.027]
Leverage	0.006	-0.089	0.003
	(0.016)	*(0.052)*	*(0.019)*
	[0.708]	[0.090]	[0.871]
Asset Intensity	-0.004	1.629	0.332
	(0.057)	*(0.737)*	*(0.232)*
		[0.027]	[0.152]
IP		-0.104	
		(0.285)	
		[0.715]	
Industry Level Controls			
Munificence	0.008	-0.891	-0.075
	(0.013)	*(0.391)*	*(0.075)*
	[0.524]	[0.023]	[0.314]
Dynamism	-0.034	8.544	0.398
	(0.095)	*(3.818)*	*(0.473)*
	[0.724]	[0.025]	[0.401]

Concentration	0.161	0.281	0.903
	(0.078)	*(0.614)*	*(0.567)*
	[0.038]	[0.647]	[0.111]
Constant	-0.509	-10.104	-1.635
	(0.220)	(3.715)	(0.817)
	[0.021]	[0.007]	[0.045]
Year Dummies	Included	Included	Included
Industry Dummies	Included	Included	Included
Observations	13,056	9,579	9,584
Number of Firms	3,891	2,966	2,967
Wald Chi-Squared	269	3,836	1,197
	[0.000]	[0.000]	[0.000]
AR(1)	13.69	-2.62	3.60
	[0.000]	[0.009]	[0.000]
AR(2)	1.53	-1.67	2.77
	[0.127]	[0.094]	[0.006]
Hansen Test	47.10	41.41	108.90
	[0.796]	[0.149]	[0.667]

Robust standard errors in parentheses *(in italic)*; P values in square brackets.

Table 8: Regression Analysis of the Effects of (predicted) Non-scale Free and Scale Free resources when Contracting Business Presence (step 3)

Variables	Model 18 DV= $\Delta IP_{(t\ to\ t+3)}$ (Continuous)	Model 19 DV= $\Delta IP_{(t\ to\ t+5)}>0$ (Binary)	Model 20 DV= $\Delta BP_{(t\ to\ t+5)}>0$ (Binary)
Main Explanatory Variables			
Managerial Resources $_{t+2}$	0.029		
	(0.012)		
	[0.012]		
Financial Resources $_{t+2}$	0.060		
	(0.029)		
	[0.039]		
Intangible Assets $_{t+4}$		4.948	0.223
		(2.321)	*(0.112)*
		[0.033]	[0.046]
Organizational Innovation $_{t+4}$		0.089	0.059
		(0.024)	*(0.029)*
		[0.000]	[0.041]
Firm Level Controls			
Age	-0.001	-0.026	-0.008
	(0.002)	*(0.007)*	*(0.009)*
	[0.705]	[0.000]	[0.378]
Size	-0.003	-0.135	-0.067
	(0.011)	*(0.037)*	*(0.078)*
	[0.801]	[0.000]	[0.394]
R&D	0.000	-0.002	0.011
	(0.000)	*(0.001)*	*(0.005)*
	[0.902]	[0.154]	[0.19]
Financial Performance	-0.053	-0.045	0.278
	(0.050)	*(0.151)*	*(0.250)*
	[0.291]	[0.763]	[0.265]
Risk	0.020	-0.061	-0.144
	(0.053)	(0.105)	(0.130)
	[0.704]	[0.564]	[0.270]
Leverage	0.022	0.063	0.151
	(0.018)	*(0.081)*	*(0.128)*
	[0.237]	[0.436]	[0.239]
Asset Intensity	-0.216	-0.014	-0.068
	(0.077)	*(0.249)*	*(0.182)*
	[0.005]	[0.954]	[0.707]
BP		0.137	
		(0.151)	
		[0.632]	
Industry Level Controls			
Munificence	0.006	-0.009	0.001
	(0.007)	*(0.009)*	*(0.030)*
	[0.357]	[0.326]	[0.961]
Dynamism	-0.011	-0.009	0.121
	(0.034)	*(0.072)*	*(0.182)*
	[0.745]	[0.902]	[0.506]

Concentration	-0.207	2.098	0.405
	(0.079)	*(0.754)*	*(0.503)*
	[0.009]	[0.005]	[0.421]
Constant	-0.011	-8.363	-2.884+
	(0.147)	*(1.240)*	*(1.677)*
	[0.938]	[0.000]	[0.085]
Year Dummies	Included	Included	Included
Industry Dummies	Included	Included	Included
Observations	11,946	13,123	13,102
Number of Firms	3,814	2,897	2,887
Wald Chi-Squared	172	8,978	379
	[0.000]	[0.000]	[0.000]
AR(1)	-4.87	2.69	-5.71
	[0.000]	[0.007]	[0.000]
AR(2)	-2.51	2.46	-1.50
	[0.012]	[0.014]	[0.133]
Hansen Test	370.78	226.96	34.48
	[0.310]	[0.291]	[0.754]

Robust standard errors in parentheses *(in italic)*; P values in square brackets.