

Which export channels provide real options to SMEs?

Ipsmiller, Edith; Brouthers, Keith; Dikova, Desislava

Published in:
Journal of World Business

DOI:
[10.1016/j.jwb.2021.101245](https://doi.org/10.1016/j.jwb.2021.101245)

Published: 01/01/2021

Document Version:
Publisher's PDF, also known as Version of record

Document License:
CC BY

[Link to publication](#)

Citation for published version (APA):
Ipsmiller, E., Brouthers, K., & Dikova, D. (2021). Which export channels provide real options to SMEs? *Journal of World Business*, 56(6). <https://doi.org/10.1016/j.jwb.2021.101245>



Which export channels provide real options to SMEs?

Edith Ipsmiller^{a,*}, Keith D. Brouthers^b, Desislava Dikova^c

^a Institute for International Business, Vienna University of Economics and Business, Welthandelsplatz 1, 1020 Vienna, Austria

^b King's College London, 30 Aldwych, London WC2B 4BG, United Kingdom

^c Vienna University of Economics and Business, Welthandelsplatz 1, 1020 Vienna, Austria

ARTICLE INFO

Keywords:

Exporting
Export channel choice
Market entry
Real option
SME internationalization
Born global
Comparative

ABSTRACT

Real option logic helps managers create value when making decisions because it focuses on managing the uncertainty concerning potential upside benefits and downside risks of an investment. Yet there is little research looking at the real option consequences of making export channel investments. We propose that export channel investments vary in their ability to provide real options and present a novel classification of real option export channels. We suggest that when faced with high uncertainty SMEs will prefer simpler real option export channels over more complex options. We also theorize that firm-level strategic flexibility (i.e. the depth and breadth of export experience) negatively moderates the relationship between uncertainty and real option export channel choice. Based on a sample of Austrian exporting SMEs, we find some support for our propositions. Hence, we contribute to the real option and export channel literatures by providing new insights into how export channel decisions are made and how firms choose between different real option alternatives.

1. Introduction

Exporting is the most popular form of internationalization, especially for small and medium-sized (SME) enterprises (OECD, 2013) and can lead to improved firm performance (He, Brouthers & Filatotchev, 2013). Exporting is executed through different structures (channels) for selling and distributing products in foreign markets, ranging from wholly-owned sales subsidiaries to agents and joint ventures, or independent distributors (Li, He & Sousa, 2017). Past export channel choice research tends to concentrate on how transaction cost efficiencies influence this export structure decision (Li et al., 2017). These studies suggest that firms make the export channel decision based on the level of investment commitment the firm must make and the level of control it can obtain with each export channel (Anderson & Gatignon, 1986; Li et al., 2017), virtually ignoring the potential benefits of taking a real option approach. Real options are investments in real assets (physical and human) that enable a firm to generate greater value by making flexible investment decisions when confronted with high uncertainty, minimizing potential downside risk while providing an option to benefit from future opportunities (Chi, Li, Trigeorgis & Tsekrekos, 2019). Although there is growing interest in how real option decision-making can benefit firms, especially with highly uncertain internationalization decisions (Chi et al., 2019; Ipsmiller, Brouthers & Dikova, 2019), there

appear to be conflicting ideas about whether exporting can provide a real option investment opportunity for firms as they expand abroad.

Theoretical (Buckley & Tse, 1996; Petersen, Welch & Welch, 2000) and empirical (Brouthers, Brouthers & Werner, 2008; Lee & Makhija, 2009; Sahaym, Treviño & Steensma, 2012) real option export studies provide conflicting insights. Several studies suggest (Petersen et al., 2000) and find (Lee & Makhija, 2009; Sahaym et al., 2012) that, in general, exporting provides a real option investment, while others (Brouthers et al., 2008; Buckley & Tse, 1996) theorize and find (Brouthers et al., 2008) it does not. In addition, these studies take a general 'exporting' perspective and do not consider whether different export channels can act as real option investments or not.

In this paper, we start to clarify these issues by providing a more nuanced perspective on the real options embedded in different export channels. The main research questions we seek to answer in this paper are: 1) Which export channels provide real option investments to firms? And 2) Does adding a real option perspective to a traditional transaction cost model of export channel choice lead to an improved explanation of export channel selection? Our corresponding research objectives are, firstly, to provide a classification of export channels according to the degree to which they provide real options and, secondly, to determine if taking a real option perspective, in addition to a transaction cost approach, helps improve our understanding of SMEs' export channel

* Corresponding author.

E-mail addresses: edith.ipsmiller@wu.ac.at (E. Ipsmiller), keith.brouthers@kcl.ac.uk (K.D. Brouthers), desislava.dikova@wu.ac.at (D. Dikova).

<https://doi.org/10.1016/j.jwb.2021.101245>

Received 19 October 2020; Received in revised form 8 June 2021; Accepted 9 June 2021

Available online 26 July 2021

1090-9516/© 2021 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

choices.

More specifically, building on the real option notions of downside risk and upside potential (Chi et al., 2019; Ipsmiller et al., 2019), we explain how export channels vary in the level of real asset (human and physical) investments a firm must make and therefore offer different levels of real option tradeoffs (on downside risk and upside potential) when firms are faced with investment uncertainty. Based on that, we develop a real option classification of export channels which includes three types: simple option channels (serving the export market from the home country), shared option channels (partnering with export agents, creating a joint venture, or using a distributor), and complex option channels (establishing a wholly-owned sales subsidiary in the foreign country or using multiple export channels).

We then develop a theory to explain that export channel choice will be influenced not only by traditional transaction cost factors (Li et al., 2017) but also by the level of investment uncertainty an SME faces and the level of strategic flexibility (i.e. the depth and breadth of export experience) it has created (Ipsmiller et al., 2019). Both investment uncertainty and strategic flexibility are key real option factors and have been shown to drive firm investment decisions (Brouthers et al., 2008; Folta & O'Brien, 2004; Tong & Li, 2011), including international equity-investment decisions (Brouthers & Dikova, 2010). Investment uncertainty relates to the uncertainty "over the future rewards of the investment" (Dixit & Pindyck, 1994, p. 3) and – depending on the respective investment decision – can be linked to different types of uncertainty, e.g. demand uncertainty, technology uncertainty or macro-economic uncertainty (Ipsmiller et al., 2019). Because exporters seek new sales, we focus on demand uncertainty and suggest that increased demand uncertainty leads to a preference for simple and shared export channels over complex export channels. Strategic flexibility is a real option firm-specific capability that measures the degree to which an SME has developed the ability to alter its strategy or switch its investments as changes occur in the external environment (Combe, Rudd, Leeftang & Greenley, 2012; Sanchez, 1993, 1995). This ability to act flexibly when confronted with lower than expected outcomes helps firms deal with the downside risks associated with irreversible investment decisions (Brouthers et al., 2008), allowing firms to export through more complex export channels. We test these ideas on a sample of Austrian SMEs and find some support.

In this way, we make several important contributions. First, there appears to be conflicting views about exporting as a real option investment. Some research indicates exporting provides such investments (e.g., Lee & Makhija, 2009; Sahaym et al., 2012), while other research suggests it does not (Brouthers et al., 2008; Buckley & Tse, 1996). We maintain that these conflicting perspectives are due in part to the fact that past research looked at exporting as a single structure, ignoring the fact that there are important differences between different export channels, and how real option variables (demand uncertainty and strategic flexibility) impact this choice between different types of export channels. We extend previous real option exporting research by theoretically developing a classification of export channels based not on the notions of cost and control, as previous classifications have done (Anderson & Gatignon, 1986; Li et al., 2017), but instead on the real option concepts of uncertainty, upside potential, and downside risk. By doing so, we reconceptualize export channels as real options, which managers can select to create value for the firm when internationalizing.

Second, we contribute to the exporting literature by theoretically and empirically testing the idea that adding real option insights to a traditional transaction cost model of export channel choice helps advance our understanding of how firms structure export operations. Past export channel choice studies tend to use transaction cost theory to determine this choice (Li et al., 2017). While useful, transaction cost theory focuses on determining the most efficient (Cuypers, Hennart, Silverman & Ertug, 2021) export channel based on the level of control and costs involved with each channel type (Anderson & Gatignon, 1986). We suggest that SMEs are not only concerned with export

operational efficiencies but also want to establish a channel that helps the firm generate greater value in these foreign markets. Our theory suggests that using real option logic when making this important decision helps SMEs minimize the impact of downside risks associated with demand uncertainty in the foreign market, while at the same time providing an opportunity to benefit from any potential upside changes in demand that might occur. Thus, we extend the export channel choice decision from one focusing on efficiency issues to a decision that considers both efficiency and value creation.

2. Background

The importance of exporting is reflected in a vast body of literature on the topic, which ranges from studies exploring the antecedents to exporting (Bernard & Jensen, 2004; Paul, Parthasarathy & Gupta, 2017) to papers investigating the choice of different export channels (Li et al., 2017), or the development of export strategies (Knight, Moen & Madsen, 2020), and those examining export-related outcomes (Bernard & Jensen, 1999; Chen, Sousa & He, 2016; Wagner, 2012). Exporting is particularly popular among SMEs (OECD, 2013) because, compared to MNEs, these firms have a smaller resource base (Lu & Beamish, 2001), different ownership and/or managerial structures (Brunninge, Nordqvist & Wiklund, 2007), and a higher sensitivity to external influences (Erramilli & D'Souza, 1993). Because of this, when SMEs expand internationally, they tend to prefer exporting over equity forms of operation (OECD, 2013).

Exporting activities are undertaken through different structures or export channels, which offer a mixture of control, flexibility, investment costs, and risk (Anderson & Gatignon, 1986). In this paper, we focus on the SME export channel decision, i.e. the decision about how sales and distribution functions are performed in a foreign market. Our knowledge about how SMEs make this important decision continues to be limited. Past export channel studies tend to use non-SME-specific samples (in a recent review article (Li et al., 2017), only 14 out of 47 studies looked at SMEs and another 4 out of 47 at small firms only), as do studies of equity entry mode choices (Laufs & Schwens, 2014). Furthermore, eleven out of the fourteen studies that do involve SMEs have used a simple, binary classification of export channel choice (Li et al., 2017). Thus, the choice set of export channels explored by existing SME-based export channel studies is limited.

To explain export channel choice, different theoretical perspectives have been used, most frequently transaction cost economics (Li et al., 2017). Transaction cost (TCE) theory suggests that asset specificity and uncertainty influence transaction costs and thus determine the choice between different channels. TCE choices focus on identifying the most efficient structure for firms (Cuypers et al., 2021). Because transaction cost theory does not consider the possibility of staging an investment decision or redeploying assets, it ignores important opportunities for firms to create value (Brouthers et al., 2008). Since international expansion is often sought as a means of not only increasing sales but also improving firm performance (Contractor, Kundu & Hsu, 2003), firms are interested in using an export channel that helps them generate greater value while also being efficient. Consequently, scholars like Leiblein (2003) and others (Brouthers et al., 2008; Chi & Seth, 2009; Li & Li, 2010) have suggested that adding a real option perspective to transaction cost theory can help address this value-efficiency trade-off since real options theory focuses on long-term value creation while the emphasis of transaction cost theory lies on organizational efficiency. This long-term perspective is particularly relevant when studying SMEs since export channel decisions have long-term consequences for SMEs (Li et al., 2017), reducing other investment opportunities these firms can pursue (Leonidou, 2004; Lu & Beamish, 2001), and potentially exposing the SME to financial distress if the wrong choice is made (Klein, Frazier & Roth, 1990).

When entering foreign markets, SMEs are confronted with a number of sources of uncertainty, i.e. situations in which they are unable to

determine the probability of an event to occur, which can be due to non-availability of information or a company's failure to make use of it (Ahsan & Musteen, 2011). These include cultural uncertainty (Cuypers & Martin, 2010), political uncertainty (Reuer & Tong, 2005), technological uncertainty (Jiang, Aulakh & Pan, 2009), partner uncertainty (Santoro & McGill, 2005), and demand uncertainty (Brouthers & Dikova, 2010). In general, all these different sources of uncertainty fall either into the category of endogenous uncertainty, which "can be decreased by actions of the firm" (Folta, 1998, p. 1010), or exogenous uncertainty, which "is largely unaffected by firm actions" (Folta, 1998, p. 1011). While TCE recognizes endogenous uncertainties such as internal (partner) and external (political, cultural) uncertainties, it ignores exogenous uncertainties, especially demand uncertainty (Brouthers et al., 2008). Under real options theory, the core explanatory variable is exogenous uncertainty (Ipsmiller et al., 2019).

For an exporting SME, demand uncertainty will be of primary concern since only the sales function is subject to internationalization. Demand uncertainty, i.e. the ex-ante lack of clarity on market demand (McGrath, 1997), or, put differently, "uncertainty about an investment's upside potential" (Brouthers et al., 2008, p. 18), affects prospective unit sales and hence turnover. Such uncertainties influence perceptions of both upside potential (how large sales might become) and downside risk (risk of losing the funds invested in real assets) exporting SMEs are exposed to (Leiblein, 2003). Real options theory suggests that if a firm is not sure about the future demand for its products in a foreign market, it will consider deferring investment or using a mode of entry that keeps its investments in real assets low, to limit potential losses (Miller & Folta, 2002). However, high demand uncertainty also creates upside potential because demand might develop favorably in the future, providing growth opportunities for those present in the market (Kogut, 1991). Consequently, in demand uncertainty-laden situations, SMEs will not only look to limit downside risk, but will also aim to capture upside potential with some form of investment.

Export channels are the path through which goods or services get to a foreign customer and have traditionally been distinguished from each other by which sales and distribution tasks the exporting firm performs and which ones are outsourced to third parties (Klein et al., 1990). Historically, export channels are classified based on the resource commitment and control provided by each channel (Klein et al., 1990; Li et al., 2017). One prominent way of differentiating export channels is by distinguishing between market, hybrid, and hierarchical forms (Li et al., 2017). Hierarchical forms constitute the highest control export channels and include serving the market via wholly-owned sales subsidiaries or company personnel based in the home market. The use of joint ventures or commission agents represents a hybrid or intermediate mode where control of sales or distribution is shared with another organization (He et al., 2013), whereas market channels encompass the use of a merchant distributor who deals with both sales and distribution (Klein et al., 1990). This classification (market/hybrid/hierarchical channels) distinguishes between different degrees of channel commitment and control, which align well with transaction cost theory, but does not inform about the extent to which certain channels help firms deal with demand uncertainty and provide a company with real growth option investments. Consequently, below, we build on real option logic to develop a theory to explain how different export channels provide diverse real option investment opportunities for SME exporters facing demand uncertainty when entering new foreign markets.

3. Theory and hypotheses

3.1. Demand uncertainty and export channel choice

We suggest that export channels need to be rethought based on the real option logic that, when faced with uncertainties like demand uncertainty, firms should limit their investment in real assets but create an option that allows the firm to alter the investment decision over time – to

increase the investment or to divest – in line with the evolution of uncertainty (Brouthers et al., 2008; McGrath, Ferrier & Mendelow, 2004). In this literature, real assets are often conceptualized as investments in property, plant and equipment (e.g., Brouthers & Dikova, 2010; Fisch, 2008; Tong & Reuer, 2007) and firms tend to create joint ventures instead of wholly-owned subsidiaries in order to reduce their investments in these real assets while providing upside potential (Cuypers & Martin, 2010; Kogut, 1991). Yet other real option research focuses on human resources as real assets (Bhattacharya & Wright, 2005; Foote & Folta, 2002; Sanyal & Sett, 2011). These studies suggest that investments in people (hiring, training, etc.) need to be limited when uncertainty is high, while upside potential should be maintained. Hence, in real option terms, when faced with high uncertainty, an SME's decision-making should be guided not only by concerns about costs and control but also by (option) value considerations.

Theoretically, we suggest that the use of company personnel (located in the exporter's home country) generates one type of real option export channel, a simple option channel. In practice, this means that an SME's home country-based sales/distribution people deal with export transactions with regular travel to the export market to meet clients. We refer to this type of channel as a simple option because it only involves parties within the firm's boundaries; the firm retains responsibility for both sales and distribution to the export market (Li et al., 2017). In this channel, investments in real physical assets are low compared to creating a wholly-owned sales subsidiary in the export market because no infrastructure is required in the export market. The real human asset investment in this channel consists of "commit[ting] personnel with task-specific knowledge to the exchange process with a foreign trading partner" (Bello & Gilliland, 1997, p. 25). SMEs might use existing personnel or hire a new salesperson and, with some investment in training (understanding export documentation, labeling, packaging), other home-based personnel can undertake the distribution function (Leonidou, 2004). Thus, the downside risk of exporting directly from the home market is very low because the requirements for investment in real assets (both physical and human) are low.

In addition, the upside potential of simple option export channels is high. Scholars have suggested that real options are more valuable when they are proprietary in contrast to when they are shared (Miller & Folta, 2002; Sanchez, 1993) since the exercise of the option as well as its exercise price can be adversely affected by other option holders. Based on this logic, simple option export channels (exporting directly from the home market) provide a structure that the firm can change once uncertainty abates and upside potential is disclosed. While it is true that lacking a physical presence in the export market might limit access to market knowledge and therefore negatively influence an exporter's ability to spot and exploit growth options, with simple option export channels, this issue is minimized. An SME's personnel can obtain export market knowledge during trips to the target location and through the network of contacts they develop during these visits (Petersen et al., 2000), thus enhancing the upside potential of using this channel. Moreover, since the SME can control the timing and degree of changes made to the channel, this channel provides an option to react flexibly to the evolution of uncertainty.

We suggest that foreign or domestic intermediaries (agents and joint ventures) and independent distributors provide SMEs with a shared option export channel. We refer to these as shared option channels because they involve parties outside the SME's boundaries. Whereas a distributor takes title to the goods, an agent is paid a commission on the sales made (Klein et al., 1990). Both these intermediary-based channels are contractual arrangements, whereas a joint venture involves equity commitment. What unifies these arrangements is that export functions and investments are shared with a partner, which affects the real option investment value.

While there is some variation in the level and type of investment, shared option export channels require relatively low investments in real human and physical assets compared to establishing a wholly-owned

sales subsidiary, but higher investments compared with simple option channels. Thus, shared option channels involve lower downside risk compared with wholly-owned sales subsidiaries but higher downside risk compared with simple option channels. Shared option export channels involve investing in real human assets for identifying, negotiating, managing, and evaluating partners who share the export functions in the foreign market (Leonidou, 2004). These channels provide a real option investment since they limit downside risk, compared to establishing a wholly-owned sales subsidiary in the export market, as some or all of the sales and distribution functions are performed by third parties, keeping the initial investment low (Klein et al., 1990; Li et al., 2017).

Shared option channels also provide upside potential since the exporting SME can access market knowledge through its partners to help understand what is going on and help clarify uncertainty (Chi et al., 2019; Petersen et al., 2000). These channels can provide an option to change structures to capture more income if and when uncertainty abates and demand increases. Yet, unlike simple option channels, where the exporting SME has full control over changes in structure, in shared option channels, the respective partner could limit an SME's ability to benefit from upside potential (Buckley & Tse, 1996). Specifically, the partner might impose hurdles (e.g. costly negotiations) that could prevent the exporting SME from exercising its option to increase commitment (e.g. switch to a higher-commitment export channel) in the future (Petersen et al., 2000). Moreover, the partner might also limit the growth option's value due to moral hazard. More specifically, in the case where a partner fears that if they perform too well, the exporting SME might replace them in the future and internalize the export transactions, this might decrease the partner's sales performance. Likewise, this might encourage the partner to limit the sharing of local market knowledge (Katsikeas, Skarmas & Bello, 2009). Ultimately, this could then negatively affect the growth option's value or its upside potential (Buckley & Tse, 1996). In sum, both simple option and shared option export channels provide low-cost investments and the creation of a growth option, although due to the proprietary nature of the growth option (Miller & Folta, 2002; Sanchez, 1993), simple option export channels might provide greater option value than shared option export channels.

In comparison to both simple and shared option export channels as discussed above, the establishment of a sales subsidiary in the export country or the use of multiple export channels (i.e. a combination of simple option and shared option export channels) in the same new export market at the outset represents the complex option alternative. These export channels come at higher investment costs and a related increase in downside risk compared to both other types of real option export channels. In the case of foreign sales subsidiaries, higher investment arises because a foreign (physical) presence needs to be established and maintained. Unlike exporting from home or sharing the exporting operation with a firm already present in the target market, setting up a wholly-owned sales operation requires investments in both a physical location and staff (Solberg & Nes, 2002). The staff might simply be an expatriate from the home country or local people with applicable experience. Such investments require a substantial commitment of time and resources, both scarce in SMEs, which exposes the firm to greater downside risk if the operation is not successful. While it may be true that a wholly-owned sales subsidiary could provide for better and faster experiential learning, the primary concern for an SME under uncertainty will be to limit downside risk, not to provide for the best learning environment. Furthermore, wholly-owned export channel structures provide a more expensive route to capturing upside potential, compared with other export channels, since additional foreign direct investments will be required.

The use of multiple export channels in the same export market also provides a complex option alternative. Some real option authors view multiple simultaneous investments as a real option investment (Trigeorgis, 1993; Vassolo, Anand & Folta, 2004), but these studies normally refer to multiple investments in different countries or technologies. In this study, we have multiple export channel investments

in one market. Therefore, we classify the use of multiple export channels as a complex option export channel because establishing multiple export channels in one market requires more investment than setting up one channel. Not only does the exporting SME incur the investment costs associated with each channel in the multi-channel enterprise, but also additional investment costs are required to establish coordination mechanisms for the multiple channel players to be sure that they do not compete with each other (Asmussen, Benito & Petersen, 2009). These investments substantially increase the downside risk of using multiple export channels over single channels when entering a foreign market. Furthermore, the multi-channel structure could be a limiting factor when it comes to the exploitation of upside potential (Chi et al., 2019). When multiple export channels are used, the respective channel partners have to agree at the outset how sales and distribution functions are split between them in the export market – segment differentiation (they are likely responsible for different customers) or task differentiation (they are likely responsible for different export tasks) (Fürst, Leimbach & Prigge, 2017). If the exporting SME wishes to increase its investment in the future, which may go along with increasing the share of export functions or customers served via internal channels, cost-intensive re-negotiations with all channel partners would be necessary to determine how responsibilities are reallocated in the future. Hence, we suggest that creating a foreign-based sales subsidiary or using multiple export channels in one market represent a complex-option export channel alternative to SMEs.

If demand uncertainty in a foreign market is low, SMEs may not require the downside risk protection offered by simple and shared option investment modes (Brouthers et al., 2008). Instead, they will either defer investment in the market because demand is insufficient to pursue or be induced to make larger investment commitments in order to penetrate the market, reap the potential benefits, and establish a strong position. Exploiting demand opportunities quickly when entering a promising export market is particularly important for SMEs, since in contrast to larger firms they do not have size advantages, but can benefit from higher flexibility (Alpkan, Yilmaz & Kaya, 2007). Hence, when there is less need to employ caution while exploiting the upside potential of a foreign market, a complex option export channel provides an opportunity to swiftly gain market share and generate a high volume of sales. Based on these arguments, we suggest:

Hypothesis 1. *At higher demand uncertainty, SMEs are more likely to choose simple option export channels or shared option channels over complex option channels. The effect is likely to be bigger for simple option channels than for shared option channels.*

3.2. Strategic flexibility

Making investments in foreign markets where there is uncertainty about demand for an SME's products exposes the firm to potential downside risks. As theorized above, one way for firms to address these risks is to use real option export channels that minimize the level of downside risk exposure while maintaining upside potential. Yet another way to address these uncertainty-related issues is to rely, at least in part, on the strategic flexibility a firm has created. Strategic flexibility is the ability of an organization to alter its strategy or switch its investments as changes occur in the external environment (Sanchez, 1993; Tong & Reuer, 2007). Strategic flexibility is an important real option capability because it affects a firm's ability to deal with downside risk and upside potential in an investment (Tong & Reuer, 2007). If an SME has greater strategic flexibility at the time of uncertainty resolution, it is in a better position to take actions that either limit potential losses or increase potential gains, compared to a firm lacking such flexibility.

Firms generate and can take advantage of strategic flexibility by obtaining or developing specific internal capabilities (Brouthers et al., 2008; Chi et al., 2019). Combe et al. (2012) and Sanchez (1993; 1995) suggest that strategic flexibility is composed of two components:

learning from experience and resources. We suggest that export channel strategic flexibility is created through learning from past international (exporting) experience and through the creation of a portfolio of resources generated by the number of (export) locations, which enables the development of specific capabilities to deal with uncertainty. Firms create strategic flexibility through prior exporting experience. Research has noted that firms can improve performance through exporting (Máñez-Castillejo, Rochina-Barrachina & Sanchis-Llopis, 2010) because as firms gain export experience, they accumulate learning, which leads to improved capabilities and thus higher profitability or innovation (İpek, 2019; Wagner, 2012). Through the experiential learning acquired during international exporting presence (the intensity or length of international experience), firms create export-specific strategic flexibility (Brouthers et al., 2008; Chi et al., 2019; Tong & Reuer, 2007). Being exposed to foreign environments and customers, SMEs develop processes and procedures to efficiently employ their resources in unfamiliar terrains.

The second component of strategic flexibility is created through firm resources contained in the firm's portfolio of operations that enable resource redeployment (e.g., Dickler & Folta, 2020; Sakhartov & Folta, 2014; Vassolo et al., 2004). This part of strategic flexibility enables a firm to "partially or fully withdraw non-financial resources from a business to internally redeploy them elsewhere in the portfolio" (Dickler & Folta, 2020, p. 2342). In an exporting context, the diversity or number of export operations a firm has created provides a portfolio of resources that can be used to flexibly shift or redeploy resources as changes occur in the external (export) environment. Under uncertainty, this export-based flexibility is valuable since the larger the extent of overseas relationships and sales infrastructure, the more opportunities a firm has to react to unforeseen changes in the environment (Lee & Makhija, 2009). Thus, strategic flexibility is an important real option capability that varies by firm.

We suggest that strategic flexibility (i.e. the depth and breadth of export experience) has a moderating effect on the relation between demand uncertainty and SMEs' export channel choice. The reason for this is that SMEs possessing greater strategic flexibility (depth and breadth of export experience) will perceive a lower "risk of loss" (Brouthers et al., 2008, p. 943) because greater international exporting experience provides firms with knowledge about foreign markets and business practices and, therefore, the firm develops specific capabilities, processes, or routines for dealing with changes in the external environment (Schwens, Zapkau, Brouthers & Hollender, 2018; Zou & Stan, 1998). At the same time, this accumulated exporting experience enables the SME to better detect and exploit unfolding opportunities in dynamic foreign environments (Zou & Stan, 1998). Hence, an SME with greater strategic flexibility (depth and breadth of export experience) is less concerned with strategies to decrease its downside risk exposure to uncertainties since it has developed capabilities for dealing with such uncertainties, which makes simple option and shared option export channel investments less valuable and therefore less likely.

In addition, we suggest that SMEs equipped with greater strategic flexibility (depth and breadth of export experience) will benefit less from the downside risk protection that simple and shared option export channels provide. If an SME has a portfolio of exporting operations in other foreign markets, it has potentially developed a network of alternative outlets through which products can be sold (Brouthers et al., 2008; Ioulianou, Leiblein & Trigeorgis, 2021; Tong & Reuer, 2007) and/or has developed capabilities to adapt products to meet differing country-specific needs (Cavusgil, Zou & Naidu, 1993). These export-related international resources help the SME to develop capabilities that enable it to shift output (or resources) to other markets with more flourishing demand or provide products that are better adapted to the demands in the target export market. This option to shift output to other markets or alter products would not be possible for firms without operations in other export markets (Chi et al., 2019). Thus, when an SME makes an export channel investment decision about a market that has

high demand uncertainty but the SME possesses high strategic flexibility (brought about through prior export experience and the possession of other export operations), it will decrease its preference for simple and shared option export channels since it does not need the downside risk protection such export channels provide.

Furthermore, we suggest that the moderating effect of strategic flexibility (depth and breadth of export experience) will affect simple option and shared option export channels differently. Although shared option channels offer a low investment method of international expansion because much of the required investment is picked up by partner organizations, these partner organizations often obtain legally binding agreements with the SME which restrict the SME's ability to make changes in the future without the approval of the partner organization. Thus, sharing the export channel with a partner organization can hamper the ability of an SME to take advantage of the strategic flexibility it might have created through past foreign export investments. Partner firms might not agree to shift output or change products. In contrast, simple option export channels allow the SME to make its own decisions and make changes as needed. These export channels are highly flexible and can be changed without the approval of any other firm. Because of this, we suggest that the negative moderating effect of strategic flexibility (depth and breadth of export experience) on the relation between demand uncertainty and the choice of export channels will be stronger for simple option export channels compared to shared option channels. This leads to our second hypothesis:

Hypothesis 2a. *The positive relation between demand uncertainty and preference for simple and shared option export channels is attenuated by the level of strategic flexibility (i.e. the depth and breadth of export experience) an SME possesses.*

Hypothesis 2b. *The moderating effect of strategic flexibility (i.e. depth and breadth of export experience) is stronger for simple option export channels than for shared option export channels.*

4. Methods

Our hypotheses were tested on a sample of Austrian manufacturing SMEs. Austria is a good place to test our ideas; it shows noticeable diversity in its export products (Statistik Austria, 2018), thus providing generalizability of findings across different industries. In addition, exports amount to more than 50 percent of Austria's GDP (Außenwirtschaft Austria, 2020) and SMEs make up 99.7 percent (KMU Forschung Austria, 2019) of all firms in the country. By testing our ideas on a sample of SMEs, we extend real option research, which tends to concentrate on larger firms (see O'Brien, Folta & Johnson, 2003, for an exception), to this important segment of the economy. In addition, since SMEs experience the liability of smallness manifested in a lack of crucial resources for survival and growth, they face additional challenges compared to larger firms when internationalizing (Lu & Beamish, 2001; Paul et al., 2017) and therefore tend to use export channels (OECD, 2013). We chose to study manufacturing firms, as service firms or trading companies face different cost structures, thus potentially biasing the results.

The *Aurelia* (Bureau Van Dijk, 2017) database was used to identify Austrian manufacturing SMEs (according to the EU classification of SMEs having fewer than 250 employees) engaged in exporting. We included only firms currently exporting, instead of exporting and non-exporting firms, because we were interested in determining why firms use a particular export channel, not in exploring the factors that influence a firm's decision to export or not. Consequently, our sample covers only exporting SMEs, not non-exporters. Due to limitations on time and resources, a random sample of about 1000 firms was drawn. Data were collected from April to December 2016. Each firm was contacted by telephone in order to identify the person that is most knowledgeable about the firm's export activities. The questionnaire was either

e-mailed or sent by post to this individual (depending on their preference). Two follow-up telephone attempts were made to collect questionnaires from non-respondents. In total, we received 213 questionnaires of which 33 had to be excluded from the analysis due to missing data or failure to fulfill the selection criteria (size and production activity). The final usable sample was 180 SMEs.

4.1. Dependent variable

Our dependent variable is export channel choice, i.e. the decision about which structure an SME uses for undertaking sales and distribution functions in an export market. Export channel choice was measured based on the widely used Klein et al. (1990) measure of “channel integration”. We chose this measure because it details the different export channels as opposed to studies where channels are simply grouped as direct or indirect (Li et al., 2017). We asked respondents about their *most recently entered* foreign market in order to avoid potential recall bias (Huber & Power, 1985). Respondents were asked to indicate the firm’s export arrangement in the most recently entered export market at the time of market entry: 1) a wholly-owned sales subsidiary, 2) company sales personnel sent from the home country, 3) a joint venture with a local partner, 4) commission agents, 5) merchant distributors, 6) other (to be specified), or combinations thereof. Around two-thirds of the firms in our sample reported export market entries within the last five years prior to data collection, with one-third of these taking place in the last two years, thus limiting potential recall bias.

Export channels were grouped into three different categories: 1) simple option channels (i.e. option two, the use of home country-based sales personnel), 2) shared option channels (including options three to five). Although there might be differences in resource commitment and control between shared option channels based on equity (JVs) or contracts (agents and distributors), there was only one instance of a joint venture in our sample.¹ Further, the type of distributor (domestic vs. foreign) might limit the potential to take advantage of future positive news, but we only had six cases where firms used domestic distributors, and three of these cases used them in conjunction with other channels (multiple export channels). 3) complex option channels (including sales subsidiaries [option one] and the use of multiple export channels – where companies used combinations of simple option [option two] and shared option [options three, four or five] channels). None of the respondents reported having other arrangements, including digital exporting arrangements [option six].

4.2. Independent, moderating and control variables

Demand uncertainty is defined as the ex-ante lack of clarity on market demand (McGrath, 1997). modeling real investment behavior “must take into account that investors make their decisions regarding the uncertainty they subjectively perceive rather than the uncertainty we can objectively measure” (Fisch, 2008, p. 382). Consequently, as various factors influence market demand, which might differ from firm to firm and country to country, we followed existing literature (Brouthers et al., 2008; Land, Engelen & Brettel, 2012) and used the three-item construct by Land et al. (2012), which is an adaptation of the original (Gatignon & Xuereb, 1997) and uses a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree) to ask 1) how accurately customer needs can be assessed, 2) how easy demand is to forecast and 3) how predictable the evolution of customer preferences is. Exploratory factor analysis revealed that all three items loaded on one factor. We summed up and averaged the value of these three items to create our construct demand uncertainty (Cronbach’s alpha: 0.82).

¹ In a robustness check, we excluded this JV channel case from the analysis. Our main results excluding the JV channel case are substantially the same as our results when we included the one firm using a JV channel.

Based on prior conceptualizations of strategic flexibility as a two-item construct (Combe et al., 2012; Sanchez, 1993) and building on the work of Brouthers et al. (2008), we measure strategic flexibility using firm-level international exporting experience. More specifically, our measure of strategic flexibility included the intensity or number of years of exporting experience, and the diversity or number of countries in which the firm has exporting operations. Intensity of experience can provide strategic flexibility because the more years a firm operates abroad, the more likely it has developed processes or routines to deal with changes in uncertainty. Diversity of experience provides strategic flexibility because the more countries SMEs export to, the greater the opportunities for shifting export sales or introducing modified products as uncertainty changes. We summed and averaged the standardized values of the two variables to create our construct strategic flexibility.

We controlled for variables used in prior export channel choice or real option studies. Starting with TCE variables, we measured asset specificity by asking respondents their agreement (on a 7-point scale) on six items (Klein et al., 1990): “It is difficult for an outsider to learn our ways of doing things”, 2) “To be effective, a salesperson has to take a lot of time to get to know the customers”, 3) “It takes a long time for a salesperson to thoroughly learn about our product(s)”, 4) “A salesperson’s inside information on our procedures would be very helpful to our competitors”, 5) “Specialized facilities are needed to market our product(s)”, and 6) “A large investment in equipment and facilities is needed to market our product(s)”. Exploratory factor analysis revealed that these six items loaded on two factors. Hence, we created two variables; human asset specificity, with items one to four (Cronbach’s alpha: 0.64), and physical asset specificity, with items five and six (Cronbach’s alpha: 0.67).

Our measure for internal uncertainty was based on the single question used in He et al. (2013), which asked respondents to indicate (on a 7-point scale) the difficulty of measuring the performance of individuals/firms with whom they cooperate. External uncertainty was captured as two factors (Klein et al., 1990). Environmental volatility was measured with three 7-point Likert scale items asking 1) “We are often surprised by the actions of retailers and wholesalers”, 2) “We are often surprised by the actions of our competitors”, and 3) “We are often surprised by customer reaction” (Cronbach’s alpha: 0.70). Environmental diversity was measured with three 7-point Likert scale items asking 1) “There are many final users of our product/s in this market”, 2) “There are many competitors for our product/s in this market”, and 3) “We have only a few immediate customers for our product/s in this market” (reverse-coded), but the reliability was rather low (Cronbach’s alpha for the 3-item version: 0.50, Cronbach’s alpha for the 2-item version: 0.54). Therefore, only one item, i.e. item three, was used to proxy environmental diversity.

We also included controls for two real option theory related variables. First, following Jiang et al. (2009), we measured investment irreversibility by asking respondents their agreement (on a 5-point scale) on four items: 1) “We have dedicated a significant amount of resources (e.g. human, financial or other resources) to this export arrangement”, 2) “Our investment in this exporting arrangement is hard to be redeployed”, 3) “We have committed substantial resources in training (of personnel) and installation (of the project)”, and 4) “We have spent substantial resources to adapt the product/s to the local market”. Factor analysis revealed that these four items loaded on a single factor. We summed up and averaged these four items to create our construct (Cronbach’s alpha: 0.72). Second, we controlled for the upside potential of the export market. Our measure for the investment’s upside potential was based on two questions used in Brouthers et al. (2008), which asked respondents to estimate (on a 7-point scale) the potential market size as well as the growth potential for their product/s in the respective country. Exploratory factor analysis revealed that the two items loaded on one factor. We summed and averaged the value of these two items to create our construct’s upside potential (Cronbach’s alpha: 0.81).

We included several exporting and firm specific control variables. We measured the firm's export ratio – total exports divided by total sales (Klein et al., 1990), channel volume – export sales to target market divided by total export sales (He et al., 2013), and industry – consumer goods vs. industrial goods (Jiang et al., 2009). We controlled for cultural distance from home to target market using four Hofstede (1980) variables and the Kogut and Singh (1988) formula (in robustness testing, we looked at target market cultural measures instead). Finally, we included controls for firm size, number of employees worldwide (He et al., 2013), firm age in years (He et al., 2013) and R&D and marketing intensity – R&D or advertising spending divided by total sales (Li et al., 2017).

4.3. Common methods and non-response bias

We used several techniques to deal with potential common methods bias, as recommended by MacKenzie and Podsakoff (2012), Chang, van Witteloostuijn and Eden (2010), or Podsakoff, MacKenzie and Lee (2003). First, to avoid or minimize CMB, we used several *ex ante* design measures. Specifically, we used different formats to gather data from respondents, including Likert scales (with different scale endpoints) and open-ended questions. In addition, some of the data, like export channel, firm age, and size, were not perceptions but more objective measures. While having two respondents generally also helps to reduce common methods bias (Chang et al., 2010), we could not make use of this approach since strategic decision-making in SMEs often resides with only one person. Second, to detect potential CMB, we used *ex post* statistical analyses. Results from a confirmatory factor analysis including all survey variables (TLI = 0.30; CFI = 0.40; RMSEA = 0.10; SRMR = 0.11) suggest a poor model fit, indicating that common method variance does not seem to be a problem in our study.

To estimate potential non-response bias, we compared early and late respondents using independent t-tests (Armstrong & Overton, 1977). Results indicate that the two groups do not differ significantly in any of the seventeen explanatory variables detailed above. We also looked at differences between usable (180) and non-usable (33) respondent groups. Here too, no significant differences were observed, indicating no evidence for non-response bias. Finally, we compared respondents and non-respondents in terms of turnover and balance sheet figures obtained from Orbis. No significant differences between the two groups were observed.

5. Results

Since our dependent variable, export channel, is categorical and has three values, we used multinomial logistic regression to analyze our data. Prior to running the regression analyses, we inspected study variables and their correlations (Table 1). No large correlations were noted. Furthermore, the greatest variance inflation factor (VIF) was 1.89; hence multicollinearity does not seem to be a problem.

SMEs in our sample, on average, employed 59 people, had 20 years of exporting experience, exported to 14 different countries, and exports represented 44 percent of total sales. Except for the dependent variable, standardized variables are used in the inferential statistics part to provide for better interpretability (Field, 2013). Of the 180 observations, 38 were classified as complex option channels, 81 constituted simple option channels, and 61 were shared option channels.

We performed the regression analyses in three steps. The first set of regressions (Table 2) includes only the control variables and was significant ($p = .000$, Nagelkerke's $R^2 = 0.35$), correctly classifying 63.89 percent of the cases. This value is significantly higher than the chance rate of 45.00 percent (largest category). Of the variables included in this model, two variables were significantly related to the choice between simple versus complex option channels: cultural distance and environmental diversity. Moreover, eight variables were significantly related to the choice between simple option and shared option export channels: industry (consumer goods), export ratio, cultural distance, firm size,

firm age, physical asset specificity, environmental volatility, and environmental diversity.

In the second set of regressions (Table 2), we added our independent variable, demand uncertainty. These regressions were significant ($p = .000$, Nagelkerke's $R^2 = 0.41$), as was the increase in Chi^2 over the control regressions ($p = .001$). In accordance with hypothesis one, we found that higher demand uncertainty leads to a preference for simple option and shared option export channels over complex option export channels ($B = 0.85$, $p = .004$ / $B = 1.05$, $p = .001$). This means that a one-unit change in demand uncertainty will change the odds of using simple option channels vs. complex option channels by a factor of 2.35 (95% confidence interval for $\text{Exp}(B)$: lower bound: 1.32, upper bound: 4.17) and shared option channels vs. complex option channels by a factor of 2.85 (95% confidence interval for $\text{Exp}(B)$: lower bound: 1.56, upper bound: 5.21). In addition, we calculated the average marginal effect of demand uncertainty on export channel choice. An increase in demand uncertainty by one unit decreases the probability of choosing complex real option channels by 12.39% ($p = .000$) and increases the probability of choosing shared option channels by 8.53% ($p = .014$). The average marginal effect of demand uncertainty on the choice of simple option channels was positive, but not significant (dy/dx : 3.86%, $p = .283$).

Furthermore, of the control variables included in this model, three were significantly related to the choice between simple versus complex option channels (cultural distance, environmental diversity, and investment irreversibility), three were significantly related to the choice between shared versus complex option channels (industry (consumer goods), marketing ratio, and investment irreversibility) and seven control variables were significantly related to the choice between simple versus shared option channels (industry (consumer goods), export ratio, cultural distance, firm size, firm age, physical asset specificity, and environmental diversity).

The third set of regressions (Table 2) includes the moderating variable and the interaction effect. These regressions were significant ($p = .000$, Nagelkerke's $R^2 = 0.46$) and show increased classification correctness compared to the previous regressions (65.00%). The increase in Chi^2 over the second set of regressions was also significant ($p = .031$). In this regression, we found mixed results for the impact of strategic flexibility on export channel choice. Hypothesis 2a suggested that strategic flexibility (i.e. the depth and breadth of export experience) attenuates the effect of demand uncertainty on the choice of simple and shared option export channels over complex option export channels. Consistent with hypothesis 2a, we found that the coefficient for the interaction effect of demand uncertainty and strategic flexibility was significant and negative for shared option export channels ($B = -0.70$, $p = .005$), but not significant for simple option channels. This means that a one-unit change in the interaction variable will change the odds of using shared option channels vs. complex option channels by a factor of 0.50 (95% confidence interval for $\text{Exp}(B)$: lower bound: 0.31, upper bound: 0.81). This provides only partial support to hypothesis 2a. While not hypothesized, we also found that the coefficient for the interaction effect of demand uncertainty and strategic flexibility (depth and breadth of export experience) was significant (at the 10% level) and positive for simple vs. shared option export channels ($B = 0.38$, $p = .087$), indicating that strategic flexibility positively moderates the relationship between demand uncertainty and the choice of simple vs. shared option export channels. A one-unit change in the interaction variable will change the odds of using simple option channels vs. shared option channels by a factor of 1.47 (95% confidence interval for $\text{Exp}(B)$: lower bound: 0.95, upper bound: 2.27). Hypothesis 2b suggested that the moderating effect of strategic flexibility will be stronger for simple option export channels than for shared option channels. Since the interaction effect is only significant for shared option export channels, we do not find support for hypothesis 2b.

To explore the significant interaction effects of demand uncertainty and strategic flexibility (depth and breadth of export experience), we

Table 1
Means, standard deviations and correlations.

No.	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	ECC_1	0.21	0.41	1																				
2	ECC_2	0.45	0.50	-0.47	1																			
3	ECC_3	0.34	0.47	-0.37	-0.65	1																		
4	Industry (CG)	0.31	0.46	-0.05	-0.16	0.21	1																	
5	R&D ratio	6.13%	7.64%	-0.07	0.01	0.05	0.02	1																
6	Marketing ratio	3.96%	5.20%	-0.11	-0.06	0.16	0.22	0.20	1															
7	Export ratio	44.49%	34.10%	0.06	-0.17	0.13	-0.14	0.22	0.18	1														
8	Channel volume	17.75%	24.46%	-0.04	0.12	-0.10	-0.03	-0.09	0.03	-0.27	1													
9	Cultural distance	2.02	1.44	0.25	-0.33	0.13	0.04	0.04	-0.10	0.17	-0.35	1												
10	Firm size	58.64	60.54	0.06	0.05	-0.10	-0.04	0.03	-0.08	0.21	-0.11	0.10	1											
11	Firm age	58.73	75.61	-0.04	-0.10	0.14	0.12	-0.11	-0.10	-0.03	-0.06	0.05	0.21	1										
12	Human asset specificity	4.86	1.21	0.00	0.04	-0.05	-0.26	0.08	-0.10	0.09	-0.01	-0.03	0.18	-0.08	1									
13	Physical asset specificity	2.91	1.65	0.04	0.11	-0.15	-0.05	0.01	-0.08	0.00	0.07	-0.03	0.08	-0.00	0.30	1								
14	Internal uncertainty	3.38	1.85	0.01	0.02	-0.03	-0.10	-0.06	-0.04	-0.06	0.04	0.06	-0.06	-0.10	0.28	0.14	1							
15	Environmental volatility	3.22	1.35	-0.04	-0.08	0.12	0.05	0.07	-0.06	-0.07	0.00	0.03	-0.11	0.01	0.17	0.18	0.17	1						
16	Environmental diversity	3.44	2.26	0.02	-0.14	0.13	0.14	0.07	0.14	-0.17	0.05	-0.17	-0.04	0.08	-0.08	-0.01	-0.09	-0.03	1					
17	Investment irreversibility	2.44	0.90	0.12	-0.10	0.00	-0.04	0.08	0.14	0.26	0.01	0.08	0.08	-0.10	0.35	0.25	0.07	0.23	0.03	1				
18	Upside potential	4.61	1.36	0.08	-0.07	0.01	-0.03	0.12	0.09	0.15	0.04	-0.06	0.10	-0.06	0.28	0.01	-0.08	0.04	0.18	0.22	1			
19	Demand uncertainty	3.64	1.46	-0.21	0.05	0.13	-0.12	0.03	-0.11	0.02	0.12	0.05	-0.01	-0.04	0.07	0.02	0.07	0.39	-0.16	0.19	-0.01	1		
20	Strategic flexibility	0.00	0.82	0.04	-0.17	0.15	-0.02	0.07	0.02	0.55	-0.36	0.18	0.29	0.27	-0.00	0.03	-0.11	-0.14	-0.14	0.06	-0.00	0.00	1	
21	Demand uncertainty x Strategic flexibility	0.00	3.20	0.08	-0.16	0.10	0.01	0.10	0.02	0.54	-0.38	0.21	0.25	0.23	-0.02	-0.01	-0.07	-0.13	-0.14	0.02	0.05	0.00	0.93	1

Notes. $N = 180$; ECC_1 = Complex option channel, ECC_2 = Simple option channel, ECC_3 = Shared option channel. Correlations with values of $|\cdot| \geq 0.15$ are significant at $p < .05$.

plotted the results (see Figs. 1a and 1b) using the interaction plot templates for logistic regression provided by Dawson (2017). Fig. 1a depicts the relationship between the probability of using shared option export channels (vs. complex ones) and demand uncertainty for both high and low strategic flexibility, while Fig. 1b shows the relationship between the probability of using simple option export channels (vs. shared ones) and demand uncertainty, also for both high and low strategic flexibility. Values of one standard deviation above/below the mean were chosen to indicate high and low-value cases. The graph in Fig. 1a indicates that high strategic flexibility weakens the effect of demand uncertainty on the choice of shared option export channels over complex option export channels, thus providing additional support for hypothesis 2a. The graph in Fig. 1b shows that high strategic flexibility strengthens the effect of demand uncertainty on the choice of simple option export channels over shared option export channels.

We also calculated the average marginal effects of the interaction between demand uncertainty and strategic flexibility (depth and breadth of export experience) on export channel choice. An increase in the moderating variable by one unit increases the probability of choosing complex real option export channels by 6.20% ($p = .016$) and decreases the probability of choosing shared option channels by 8.22% ($p = .011$). Furthermore, the average marginal effect of the moderating variable on choosing simple option channels was not significant ($dy/dx: 2.03\%; p = .557$).

Finally, of the control variables included in this third set of regressions, three were significantly related to the choice between simple versus complex option channels (cultural distance, environmental diversity, and investment irreversibility), three were significantly related

to the choice between shared versus complex option channels (industry (consumer goods), marketing ratio, and investment irreversibility), and six control variables were significantly related to the choice between simple versus shared option channels (industry (consumer goods), export ratio, cultural distance, firm size, physical asset specificity, and environmental diversity).

To evaluate the robustness of our results, we estimated several alternative specifications of our model. First, we replaced the cultural distance variable with Hofstede’s four target country culture dimensions because we have only one home country (Brouthers, Marshall & Keig, 2016b). Using these four variables produced no change in the results of the hypotheses tests. Second, we included a dummy variable for family ownership but did not observe substantial changes in the regression results. We controlled for the three largest industries in our sample (i.e. fabricated metal products, mechanical engineering and food), which together account for around 40 percent of observations. Still, the results of the hypotheses tests are robust. We also performed a number of additional robustness checks, which are available upon request.

Given that there tends to be a lack of comparative studies in the literature between born global/international new ventures and “traditional” SMEs (Gerschewski, Rose & Lindsay, 2015), we sought to compare firms that internationalized within 5 years after establishment with those that internationalized later. However, since there are only 36 firms in our sample that internationalized within 5 years after establishment, there are too few observations in this group to run the model. Instead, we split the sample into early vs. late internationalizers based on the information provided by the firms. We categorized firms as early internationalizers if they had internationalized within less than 16 years

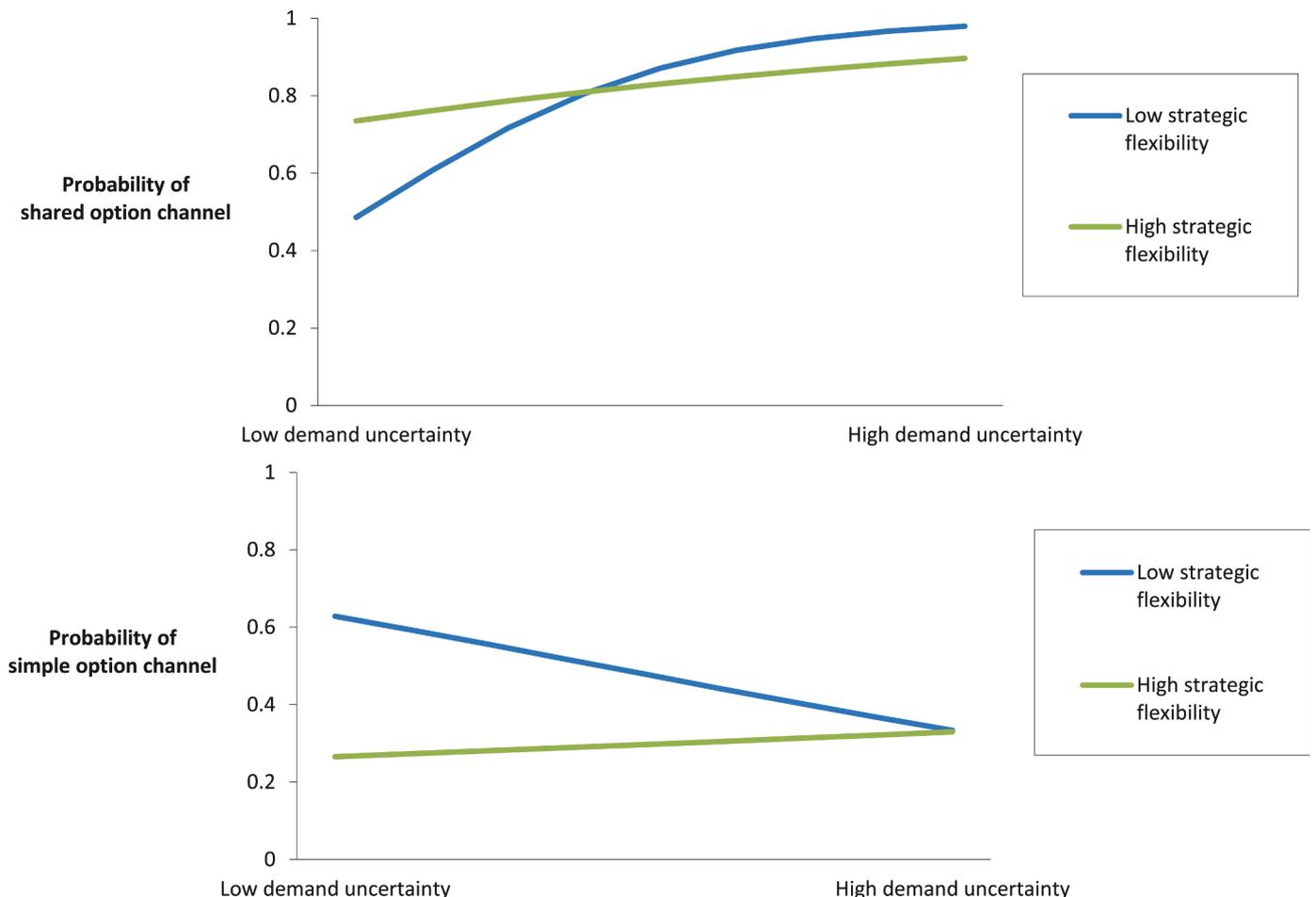


Fig. 1. A. Interaction Effect of Demand Uncertainty and Strategic Flexibility on the Probability of Using a Shared (vs. Complex) Option Export Channel. B. Interaction Effect of Demand Uncertainty and Strategic Flexibility on the Probability of Using a Simple (vs. Shared) Option Export Channel.

after establishment and as late internationalizers otherwise (this corresponds to a median-split analysis, since the median age of internationalization in our sample was 16 years). We used a median-split analysis since this leads to sub-samples of comparable size (early: 82 cases; late: 92 cases), whereas a mean-split analysis (mean = 36 years) would have yielded sub-samples of very different sizes (early: 133 cases; late: 47 cases). Early internationalizers had, on average, internationalized within 6 years of establishment (median: 6), while more traditional SMEs (late internationalizers) had, on average, internationalized within 60 years of establishment (median: 35). We reran the final set of regressions, including all control variables, demand uncertainty and the moderating impact of strategic flexibility (depth and breadth of export experience) for both types of firms. The results are reported in [Table 3](#) and suggest that real options theory is more applicable to early internationalizers than to late internationalizers.

6. Discussion, limitations and conclusion

In this paper, we suggest that the export channel choice decision should be reconceptualized as a value-creating real option decision in addition to a transaction cost efficiency decision. Real option strategies in export channel investments can help firms (more specifically resource-scarce firms such as SMEs) address value-generating issues (like demand uncertainty and strategic flexibility) not considered in more traditional TCE-based models ([Li et al., 2017](#)). We theorized and tested the notion that different export channels offer unique trade-offs in real option-based characteristics – downside risk and upside potential. Because of these differences, we suggest that firms making export channel decisions based not only on TCE factors but also by taking into account real-option factors will create better value-generating export channels.

We found some support for our theory. We hypothesized and found that demand uncertainty plays an important part in export channel decisions, in addition to TCE. SMEs perceiving higher levels of demand uncertainty tended to use simple option export channels (serving the export market from the home country) or shared option channels (partnering with export agents, creating a joint venture, or using a distributor) rather than complex option channels (establishing a wholly-owned sales subsidiary in the foreign country or using multiple export channels). While we had expected this effect to be bigger for simple option channels than for shared option channels, our findings point towards the opposite. We also hypothesized that strategic flexibility (i.e. the depth and breadth of export experience) attenuates the positive relation between demand uncertainty and the preference for simple and shared option export channels over complex option channels, and that this effect would be stronger for simple option export channels than for shared option export channels. While we found that, as expected, the moderating effect of strategic flexibility was significant and negative for shared option export channels, we did not find a significant moderating effect for simple option export channels.

These mixed results for simple option export channels raise a number of questions. If simple option channels provide the lowest downside risk protection and upside potential, as we had theorized, then both demand uncertainty and strategic flexibility should have the greatest influence on the adoption of these channels. However, we did not find this. Instead, we found that shared option channels were impacted to a greater extent by these two factors. There could be several explanations for these results. First, simple option export channels do not provide much of a learning experience in the target market, compared with shared option channels. Without access to market-specific proprietary knowledge, the value of the growth option is greatly reduced ([Brouthers et al., 2008](#)). Hence, firms pursuing a real option investment strategy would tend to prefer shared option export channels over simple option channels as uncertainty increases. Second, strategic flexibility is of more value when the firm possesses knowledge on doing business in the target market ([Cadogan, Sundqvist, Puumalainen & Salminen, 2012](#)). Since

shared option channels tend to provide more market-specific knowledge compared to arms-length simple option channels, the impact of strategic flexibility might be greater for shared option channels than for simple option channels. Future research will be required to investigate these ideas to determine if having some presence in the target market, and thus access to greater market-specific knowledge, makes real option investments more valuable than doing business in the market from a distance.

Our paper contributes to the real option and export channel choice literatures in the following ways. First, we contribute to the real option literature by exploring how export channels can provide different real option alternatives that help the firm generate value when expanding abroad. While previous real option research has tended to concentrate on equity modes of entry like joint ventures and wholly-owned production subsidiaries ([Cuypers & Martin, 2010](#); [Kogut, 1991](#)) and to compare one real option choice to a non-option choice, we make a unique contribution by looking at the export channel decision and exploring the choice between three different real option alternatives. The few real option studies that mention exporting do not examine specific export channels and disagree on whether exporting can provide a real option or not (e.g., [Brouthers et al., 2008](#); [Lee & Makhija, 2009](#)). We contribute by theorizing that different types of export channels vary in their ability to provide real options to firms and presented a novel classification of real option export channels. This classification was based on the ability of the various channels to reduce downside risk and provide upside potential. By separating export channels into three unique real option alternatives, we improve our understanding of exporting and real option logic.

Second, we contribute to the export channel literature by adding real option logic to a traditional TCE model. Most studies analyzing export channel choice have used TCE ([Li et al., 2017](#)). The TCE perspective helps firms determine the most efficient mode of operation ([Cuypers et al., 2021](#)) but when firms internationalize through exporting, they expand their sales operation in order to seek ways to improve firm performance ([Leonidou, Katsikeas, Palihawadana & Spyropoulou, 2007](#)). Research indicates that taking decisions based on real option logic leads to improved value generation ([Lee & Makhija, 2009](#)). Therefore, we proposed and tested a theory suggesting that combining insights from TCE with real options leads to improved value generation when making the export channel decision. Our results provide some support for this contention, hence advancing our knowledge of the export channel decision, moving it from strictly focusing on efficiency to a balance between efficiency and value generation.

Our study has important implications for practitioners, managers and policymakers. According to several studies, the majority of firms do not explicitly use real option logic when making investment decisions ([Baker, Dutta & Saadi, 2011](#); [Block, 2007](#); [Gahremani, Aghaie & Abedzadeh, 2012](#)). However, our study suggests that firms' (deliberate) application of real option logic when making (export channel) investment decisions could help them manage uncertainty as they expand to foreign markets. Consequently, by reading this paper, managers can learn about a new, flexibility-oriented approach to investment decision-making. Furthermore, familiarity with real option tenets might be particularly useful for decision-makers in SMEs, given smaller firms' lower likelihood of survival as compared to larger firms ([Heine & Rindfleisch, 2013](#)). By utilizing real option logic to make export channel choice decisions, decision-makers in SMEs create the possibility to reduce the risk of resource over-commitment under uncertainty, which would ultimately decrease their firms' likelihood of failure.

For policymakers, e.g. national export promotion agencies who assist firms in internationalization, our study has important implications. Understanding how firms structure their export channel investment decisions can help them design better export support and promotion services for internationalizing firms. Successful export strategies, in turn, are particularly important for small, open markets like Austria, whose economy – and thus the well-being of its citizens – is highly

Table 3
Multinomial Logistic Regression Analysis: Comparing Real Option Export Channels for Early and Late Internationalizers.

Independent variables	Model 3 Early internationalizers						Model 3 Late internationalizers											
	SI v CO			SH v CO			SI v SH			SI v CO			SH v CO			SI v SH		
	B	(SE)	[p]	B	(SE)	[p]	B	(SE)	[p]	B	(SE)	[p]	B	(SE)	[p]	B	(SE)	[p]
Step 1: Control variables																		
Intercept	8.74	(3.66)	[.017]	7.66	(3.61)	[.034]	1.08	(0.88)	[.220]	0.72	(0.79)	[.365]	1.56	(0.73)	[.032]	-0.84	(0.60)	[.161]
Industry (Consumer goods)	3.18	(1.96)	[.105]	3.53	(1.89)	[.062]	-0.35	(1.02)	[.733]	-0.24	(0.86)	[.782]	1.89	(0.86)	[.028]	-2.13	(0.81)	[.009]
R&D ratio	-0.26	(0.63)	[.680]	0.09	(0.60)	[.876]	-0.35	(0.46)	[.438]	0.97	(0.59)	[.099]	0.52	(0.63)	[.410]	0.45	(0.35)	[.199]
Marketing ratio	2.58	(1.52)	[.090]	2.91	(1.52)	[.056]	-0.33	(0.39)	[.392]	0.10	(0.53)	[.848]	0.04	(0.51)	[.934]	0.06	(0.38)	[.876]
Export ratio	-0.50	(0.65)	[.439]	-0.40	(0.65)	[.538]	-0.11	(0.54)	[.842]	0.15	(0.48)	[.755]	0.58	(0.54)	[.277]	-0.43	(0.50)	[.388]
Channel volume	3.60	(2.55)	[.158]	3.29	(2.59)	[.204]	0.32	(0.48)	[.509]	-0.57	(0.38)	[.128]	0.04	(0.42)	[.928]	-0.61	(0.38)	[.106]
Cultural distance	-2.52	(0.89)	[.005]	-1.58	(0.84)	[.059]	-0.93	(0.54)	[.084]	-0.98	(0.37)	[.008]	0.14	(0.39)	[.719]	-1.12	(0.39)	[.004]
Firm size	1.89	(0.95)	[.046]	0.56	(0.94)	[.551]	1.33	(0.54)	[.013]	0.14	(0.35)	[.684]	-0.23	(0.39)	[.551]	0.37	(0.35)	[.296]
Firm age	1.12	(1.45)	[.438]	-0.56	(1.39)	[.686]	1.68	(1.22)	[.168]	-0.24	(0.59)	[.682]	0.70	(0.55)	[.207]	-0.94	(0.46)	[.041]
Human asset specificity	0.20	(0.83)	[.806]	0.22	(0.87)	[.799]	-0.02	(0.46)	[.971]	0.08	(0.48)	[.864]	0.78	(0.46)	[.091]	-0.70	(0.44)	[.109]
Physical asset specificity	-0.33	(0.80)	[.678]	-0.92	(0.83)	[.270]	0.59	(0.56)	[.299]	-0.14	(0.37)	[.712]	-0.61	(0.40)	[.129]	0.47	(0.36)	[.195]
Internal uncertainty	-1.20	(0.73)	[.098]	-0.50	(0.72)	[.480]	-0.70	(0.44)	[.114]	-0.04	(0.38)	[.918]	-0.35	(0.41)	[.384]	0.31	(0.37)	[.398]
Environmental volatility	-2.23	(1.11)	[.044]	-1.69	(1.08)	[.119]	-0.55	(0.50)	[.277]	0.20	(0.42)	[.643]	0.87	(0.47)	[.068]	-0.67	(0.40)	[.098]
Environmental diversity	-1.33	(0.70)	[.058]	-0.79	(0.69)	[.251]	-0.54	(0.46)	[.238]	-0.41	(0.36)	[.264]	0.58	(0.43)	[.171]	-0.99	(0.40)	[.013]
Investment irreversibility	-0.99	(0.79)	[.208]	-1.23	(0.79)	[.121]	0.24	(0.46)	[.596]	-0.66	(0.41)	[.105]	-0.62	(0.44)	[.165]	-0.05	(0.42)	[.916]
Upside potential	-0.48	(0.65)	[.460]	-0.04	(0.63)	[.945]	-0.44	(0.40)	[.276]	-0.55	(0.44)	[.209]	-0.24	(0.45)	[.599]	-0.31	(0.39)	[.420]
Step 2: Demand uncertainty	4.49	(1.96)	[.022]	4.87	(1.98)	[.014]	-0.38	(0.42)	[.368]	0.62	(0.40)	[.121]	0.51	(0.44)	[.242]	0.11	(0.39)	[.785]
Step 3: Moderating effect of strategic flexibility																		
Strategic flexibility	-1.74	(0.92)	[.059]	-0.65	(0.72)	[.361]	-1.09	(0.71)	[.125]	-1.10	(0.58)	[.059]	0.29	(0.57)	[.610]	-1.39	(0.56)	[.012]
Demand uncertainty x Strategic flexibility	-1.04	(0.71)	[.147]	-1.81	(0.73)	[.013]	0.77	(0.43)	[.071]	-0.49	(0.44)	[.268]	-0.78	(0.40)	[.051]	0.29	(0.43)	[.498]
-2 log-likelihood	93.709									139.486								
Chi ²	77.759									68.346								
Degrees of freedom	36									36								
n	82									98								
Max. VIF	2.74									2.43								
Pseudo-R ² (Nagelkerke)	0.70									0.57								
Percent correctly classified	76.83%									68.37%								

SI - simple option channel, CO - complex option channel, SH - shared option channel.

dependent on exporting (Außenwirtschaft Austria, 2020; Statistik Austria, 2018). Policymakers can educate and assist SME decision-makers as they try to apply these real option concepts to export channel choice decisions, reducing the chances of over-commitment and exposure to high downside risks.

Despite these positive aspects, our study suffers from several limitations, which provide opportunities for future research. First, because we examined SMEs from Austria, our results might not be generalizable to SMEs from other countries or to larger firms. Testing our ideas with SMEs from other countries will improve the generalizability of our study. Since larger MNEs also use exporting, exploring whether and how different export channels provide real options to these firms might yield additional insights. Second, the population from which our sample was derived included only firms currently undertaking exporting. It might be that less successful exporters no longer export and, therefore, our sample could be biased towards successful exporters, which could limit the generalizability of our results.

Third, we did not consider any online distribution channels. None of our responding firms reported using digital export channels, but these online channels may constitute potentially less investment-intensive options for selling products internationally (Brouthers, Geisser & Rothlauf, 2016a). Changes in technologies and societies have accelerated the use of digital technologies, providing an opportunity for future research to investigate online channels vis-à-vis traditional export channels. Furthermore, we categorized export channels into three types, but did not differentiate between all the different types of export channel structures that exist. It could be that different forms of complex or shared option export channels provide different types of real options.

Fourth, we included three types of structures in our shared option export channel category. These include non-equity-based contractual agreements (agents and distributors) and equity-based joint venture agreements. Since equity-based agreements require greater resource commitment, they might be accompanied by higher downside risk and may also be more difficult to change when demand uncertainty begins to resolve itself and the future direction of demand becomes clearer. Since we only had one joint venture case in our sample, it was not possible for us to explore this issue. However, future research might want to develop a more detailed theory about these different 'shared option' export channels and test to see if differences do exist.

Fifth, because our data were cross-sectional, we cannot explore longitudinal effects. It would be interesting to find out if SMEs continue to follow real option strategies after entering a foreign market, i.e. if they increase commitment in case demand develops favorably or exit if demand falls below expectations. It might also be interesting to see if all three types of real option export channels (simple, shared, and complex) show the same likelihood of later being converted into a higher-commitment channel as uncertainty gets resolved. Future research capturing longitudinal data can explore these issues to determine if SMEs continue to make decisions about exporting based on real option logic.

Sixth, we explored the export channel choice and hence limited our sample to firms who already had committed to establishing export operations. Yet real option logic could be used to explain decisions at other stages in the export process. For example, research could explore the decision to export or not using real options, since the decision not to export might be conceptualized as a real option deferral decision. In addition, future research could use the real option perspective to examine export location (country) choice. Exporters have a large number of markets they could enter. Real option logic might help explain why one market is preferred over another. Finally, future research could expand on our work and that of other scholars to follow a cohort of firms throughout the entire process of exporting and test if real options theory's predictions hold.

Seventh, we measured strategic flexibility as the depth and breadth of export experience, following existing real option literature (e.g., Brouthers et al., 2008). However, export experience is a rather indirect

and imperfect measure of such flexibility. Other scholars have measured strategic flexibility more directly, e.g. through a set of questions to managers to build a construct (e.g., Grewal & Tansuhaj, 2001; Nadkarni & Herrmann, 2010). Consequently, our study might not be comparable to other studies examining the impact of strategic flexibility.

Eighth, we have not considered how firm product-related characteristics might impact real option decisions. For example, firms often differ in the product attractiveness or product mix they wish to export. At present, we do not know how these product differences influence export channel decisions. Yet one might theorize that firms with more attractive products face lower levels of demand uncertainty and downside risk compared with firms trying to export new, unproven products. Future research could contribute to knowledge by investigating how these product features (attractiveness or mix) influence the export channel decision.

Moreover, we did not consider how managerial or top management team differences could affect real option-based export channel choices (Reid, 1981). Real option literature suggests that unless real options are recognized, they only constitute shadow options (Bowman & Hurry, 1993). Therefore, the real option life cycle starts with the identification of a real option, followed by creation, management, and exercise of options (Trigeorgis & Reuer, 2017). Empirical evidence indicates that firms (more specifically, their decision-makers) exhibit different degrees of "real option awareness" (Driouchi & Bennett, 2011; Ioulianou, Trigeorgis & Driouchi, 2017; 2021), which is necessary for recognizing and appraising opportunities or real options (Barnett, 2008; Trigeorgis & Reuer, 2017). Other research suggests that upper echelons theory (Hambrick & Mason, 1984), regulatory focus theory (Brockner, Higgins & Low, 2004), individual entrepreneurial orientation literature (Bolton & Lane, 2012; Gerschewski, Lindsay & Rose, 2016) or literature on global mindset (Levy, Beechler, Taylor & Boyacigiller, 2007) and managerial cognition (Belderbos, Grabowska, Leten, Kelchtermans & Ugur, 2017) provide decision frames that might influence real option-based decisions. Hence, future research is encouraged to explore the effect of these factors on real option decision-making.

In conclusion, we extend the exporting literature by introducing a real option perspective on export channel choice. We develop a theory to explain how export channels can be conceptualized as real options. Furthermore, we test the notion that adding a real option perspective of export channel choice to the more traditional TCE framework improves our understanding of how managers make this key decision. Based on a sample of SMEs, we find some support for our ideas, which helps advance our understanding of both export channel choice and clarify some confusion with real option logic. From an export channel perspective, we increase our understanding of how firms select among a range of export channels to generate greater value in their export operations. Our paper also helps clarify past conflicting perspectives over real options and exporting by examining the export structures (channels) firms undertake as they expand abroad instead of conceptualizing exporting as a general construct. Overall, we increase our understanding of how real option logic impacts this critically important exporting decision.

Acknowledgments

This work was supported by a "Small-scale projects by WU junior faculty grant" from Vienna University of Economics and Business. Moreover, we acknowledge help with data collection from Martina Forsthuber, Felix Glawatsch, Kevin Hackl, Michael Mair, Daniel Novzari, Felix Seidenstecher and Katharina Seyerl.

References

- Ahsan, M., & Musteen, M. (2011). Multinational enterprises' entry mode strategies and uncertainty: A review and extension. *International Journal of Management Reviews*, 13, 376–392.

- Alpkan, L., Yilmaz, C., & Kaya, N. (2007). Market orientation and planning flexibility in SMEs: Performance implications and an empirical investigation. *International Small Business Journal*, 25, 152–172.
- Anderson, E., & Gatignon, H. (1986). Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, 17, 1–26.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14, 396–402.
- Asmussen, C. G., Benito, G. R., & Petersen, B. (2009). Organizing foreign market activities: From entry mode choice to configuration decisions. *International Business Review*, 18, 145–155.
- Außenwirtschaft Austria (2020). *Österreichische Exportwirtschaft 2019/2020/2021*. Available at: <https://www.wko.at/service/aussenwirtschaft/exportwirtschaft.pdf> (Accessed 1 June 2020).
- Baker, H. K., Dutta, S., & Saadi, S. (2011). Management views on real options in capital budgeting. *Journal of Applied Finance*, 21, 18–30.
- Barnett, M. L. (2008). An attention-based view of real options reasoning. *Academy of Management Review*, 33, 606–628.
- Belderbos, R., Grabowska, M., Leten, B., Kelchtermans, S., & Ugur, N. (2017). On the use of computer-aided text analysis in international business research. *Global Strategy Journal*, 7, 312–331.
- Bello, D. C., & Gilliland, D. I. (1997). The effect of output controls, process controls, and flexibility on export channel performance. *Journal of Marketing*, 61, 22–38.
- Bernard, A. B., & Jensen, J. B. (1999). Exceptional exporter performance: Cause, effect, or both? *Journal of International Economics*, 47, 1–25.
- Bernard, A. B., & Jensen, J. B. (2004). Why some firms export. *Review of Economics and Statistics*, 86, 561–569.
- Bhattacharya, M., & Wright, P. M. (2005). Managing human assets in an uncertain world: Applying real options theory to HRM. *The International Journal of Human Resource Management*, 16, 929–948.
- Block, S. (2007). Are “real options” actually used in the real world? *The Engineering Economist*, 52, 255–267.
- Bolton, D. L., & Lane, M. D. (2012). Individual Entrepreneurial Orientation: Development of a Measurement Instrument. *Education & Training*, 54, 219–233.
- Bowman, E. H., & Hurry, D. (1993). Strategy through the option lens: An integrated view of resource investments and the incremental-choice process. *Academy of Management Review*, 18, 760–782.
- Brockner, J., Higgins, E. T., & Low, M. B. (2004). Regulatory focus theory and the entrepreneurial process. *Journal of Business Venturing*, 19, 203–220.
- Brouthers, K. D., Brouthers, L. E., & Werner, S. (2008). Real options, international entry mode choice and performance. *Journal of Management Studies*, 45, 936–960.
- Brouthers, K. D., & Dikova, D. (2010). Acquisitions and real options: The greenfield alternative. *Journal of Management Studies*, 47, 1048–1071.
- Brouthers, K. D., Geisser, K. D., & Rothlauf, F. (2016a). Explaining the internationalization of ibusiness firms. *Journal of International Business Studies*, 47, 513–534.
- Brouthers, L. E., Marshall, V. B., & Keig, D. L. (2016b). Solving the single-country sample problem in cultural distance studies. *Journal of International Business Studies*, 47, 471–479.
- Brunninge, O., Nordqvist, M., & Wiklund, J. (2007). Corporate governance and strategic change in SMEs: The effects of ownership, board composition and top management teams. *Small Business Economics*, 29, 295–308.
- Buckley, A., & Tse, K. (1996). Real operating options and foreign direct investment: A synthetic approach. *European Journal of Marketing*, 14, 304–314.
- Cadogan, J. W., Sundqvist, S., Puumalainen, K., & Salminen, R. T. (2012). Strategic flexibilities and export performance: The moderating roles of export market-oriented behavior and the export environment. *European Journal of Marketing*, 46, 1418–1452.
- Cavusgil, S. T., Zou, S., & Naidu, G. M. (1993). Product and promotion adaptation in export ventures: An empirical investigation. *Journal of International Business Studies*, 24, 479–506.
- Chang, S., van Witteloostuijn, A., & Eden, L. (2010). From the Editors: Common method variance in international business research. *Journal of International Business Studies*, 41, 178–184.
- Chen, J., Sousa, C. M., & He, X. (2016). ‘The determinants of export performance: A review of the literature 2006–2014’. *International Marketing Review*, 33, 626–670.
- Chi, T., Li, J., Trigeorgis, L. G., & Tsekrekos, A. E. (2019). Real options theory in international business. *Journal of International Business Studies*, 50, 525–553.
- Chi, T., & Seth, A. (2009). A dynamic model of the choice of mode for exploiting complementary capabilities. *Journal of International Business Studies*, 40, 365–387.
- Combe, I. A., Rudd, J. M., Leeflang, P. S., & Greenley, G. E. (2012). Antecedents to strategic flexibility: Management cognition, firm resources and strategic options. *European Journal of Marketing*, 46, 1320–1339.
- Contractor, F. J., Kundu, S. K., & Hsu, C. C. (2003). A three-stage theory of international expansion: The link between multinationality and performance in the service sector. *Journal of International Business Studies*, 34, 5–18.
- Cuypers, I.R., Hennart, J.F., Silverman, B.S., & Ertug, G. (2021). ‘Transaction cost theory: Past progress, current challenges, and suggestions for the future.’ *Academy of Management Annals*, 15, 111–150.
- Cuypers, I. R., & Martin, X. (2010). What makes and what does not make a real option? A study of equity shares in international joint ventures. *Journal of International Business Studies*, 41, 47–69.
- Dawson, J.F. (2017). *Interpreting interaction effects*. Available at: <http://www.jeremydawson.com/slopes.htm> (Accessed 9 May 2017).
- Dickler, T. A., & Folta, T. B. (2020). Identifying internal markets for resource redeployment. *Strategic Management Journal*, 41, 2341–2371.
- Dijk, Bureau Van (2017). *Aurelia*. Available at: https://aurelia.bvdinfo.com/version-20171110/Search.QuickSearch.serv?_CID=1&context=3RKAEW12NX0UB8R (Accessed 27 December 2017).
- Dixit, A. K., & Pindyck, R. S. (1994). *Investment under uncertainty*. Princeton, NJ: Princeton University Press.
- Drionchi, T., & Bennett, D. (2011). Real options in multinational decision-making: Managerial awareness and risk implications. *Journal of World Business*, 46, 205–219.
- Erramilli, M. K., & D’Souza, D. E. (1993). Venturing into foreign markets: The case of the small service firm. *Entrepreneurship Theory and Practice*, 17, 29–41.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Angeles/London/New Delhi/Singapore/Washington, D.C.: Sage. Los.
- Fisch, J. H. (2008). Investment in new foreign subsidiaries under receding perception of uncertainty. *Journal of International Business Studies*, 39, 370–386.
- Folta, T. B. (1998). Governance and uncertainty: The trade-off between administrative control and commitment. *Strategic Management Journal*, 19, 1007–1028.
- Folta, T. B., & O’Brien, J. P. (2004). Entry in the presence of dueling options. *Strategic Management Journal*, 25, 121–138.
- Foote, D. A., & Folta, T. B. (2002). Temporary workers as real options. *Human Resource Management Review*, 12, 579–597.
- Fürst, A., Leimbach, M., & Prigge, J. K. (2017). Organizational multichannel differentiation: An analysis of its impact on channel relationships and company sales success. *Journal of Marketing*, 81, 59–82.
- Gatignon, H., & Xuereb, J. M. (1997). Strategic orientation of the firm and new product performance. *Journal of Marketing Research*, 34, 77–90.
- Gerschwski, S., Lindsay, V. J., & Rose, E. (2016). Advancing the entrepreneurial orientation construct: The role of passion and perseverance. *Review of International Business and Strategy*, 26, 446–471.
- Gerschwski, S., Rose, E. L., & Lindsay, V. J. (2015). Understanding the drivers of international performance for born global firms: An integrated perspective. *Journal of World Business*, 50, 558–575.
- Ghahremani, M., Aghaie, A., & Abedzadeh, M. (2012). Capital budgeting technique selection through four decades: With a great focus on real option. *International Journal of Business and Management*, 7, 98–119.
- Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, 65, 67–80.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9, 193–206.
- He, X., Brouthers, K. D., & Filatotchev, I. (2013). Resource-based and institutional perspectives on export channel selection and export performance. *Journal of Management*, 39, 27–47.
- Heine, K., & Rindfleisch, H. (2013). Organizational decline: A synthesis of insights from organizational ecology, path dependence and the resource-based view. *Journal of Organizational Change Management*, 26, 8–28.
- Hofstede, G. (1980). *Culture’s consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Huber, G. P., & Power, D. J. (1985). Retrospective reports of strategic-level managers: Guidelines for increasing their accuracy. *Strategic Management Journal*, 6, 171–180.
- Ioulianou, S. P., Leiblein, M. J., & Trigeorgis, L. (2021). Multinationality, portfolio diversification, and asymmetric MNE performance: The moderating role of real options awareness. *Journal of International Business Studies*, 52, 388–408.
- Ioulianou, S., Trigeorgis, L., & Drionchi, T. (2017). Multinationality and firm value: The role of real options awareness. *Journal of Corporate Finance*, 46, 77–96.
- İpek, İ. (2019). Organizational learning in exporting: A bibliometric analysis and critical review of the empirical research. *International Business Review*, 28, 544–559.
- Ipsmiller, E., Brouthers, K. D., & Dikova, D. (2019). 25 years of real option empirical research in management. *European Management Review*, 16, 55–68.
- Jiang, M. S., Aulakh, P. S., & Pan, Y. (2009). Licensing duration in foreign markets: A real options perspective. *Journal of International Business Studies*, 40, 559–577.
- Katsikeas, C. S., Skarmas, D., & Bello, D. C. (2009). Developing successful trust-based international exchange relationships. *Journal of International Business Studies*, 40, 132–155.
- Klein, S., Frazier, G. L., & Roth, V. J. (1990). A transaction cost analysis model of channel integration in international markets. *Journal of Marketing Research*, 27, 196–208.
- KMU Forschung Austria (2019). *KMU-Daten*. Available at: <https://www.kmuforschung.ac.at/zahlen-fakten/kmu-daten/> (Accessed 4 January 2019).
- Knight, G., Moen, Ø., & Madsen, T. K. (2020). Antecedents to differentiation strategy in the exporting SME. *International Business Review*, 29, Article 101740.
- Kogut, B. (1991). Joint ventures and the option to expand and acquire. *Management Science*, 37, 19–33.
- Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19, 411–432.
- Land, S., Engelen, A., & Brettel, M. (2012). Top management’s social capital and learning in new product development and its interaction with external uncertainties. *Industrial Marketing Management*, 41, 521–530.
- Laufs, K., & Schwens, C. (2014). Foreign market entry mode choice of small and medium-sized enterprises: A systematic review and future research agenda. *International Business Review*, 23, 1109–1126.
- Lee, S. H., & Makhija, M. (2009). Flexibility in internationalization: Is it valuable during an economic crisis? *Strategic Management Journal*, 30, 537–555.
- Leiblein, M. J. (2003). The choice of organizational governance form and performance: Predictions from transaction cost, resource-based, and real options theories. *Journal of Management*, 29, 937–961.
- Leonidou, L. C. (2004). An analysis of the barriers hindering small business export development. *Journal of Small Business Management*, 42, 279–302.

- Leonidou, L. C., Katsikeas, C. S., Palihawadana, D., & Spyropoulou, S. (2007). An analytical review of the factors stimulating smaller firms to export. *International Marketing Review*, 24, 735–770.
- Levy, O., Beechler, S., Taylor, S., & Boyacigiller, N. A. (2007). What we talk about when we talk about 'global mindset': Managerial cognition in multinational corporations. *Journal of International Business Studies*, 38, 231–258.
- Li, J., & Li, Y. (2010). Flexibility versus commitment: MNEs' ownership strategy in China. *Journal of International Business Studies*, 41, 1550–1571.
- Li, M., He, X., & Sousa, C. M. (2017). 'A review of the empirical research on export channel selection between 1979 and 2015'. *International Business Review*, 26, 303–323.
- Lu, J. W., & Beamish, P. W. (2001). The internationalization and performance of SMEs. *Strategic Management Journal*, 22, 565–586.
- MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of Retailing*, 88, 542–555.
- Máñez-Castillejo, J. A., Rochina-Barrachina, M. E., & Sanchis-Llopis, J. A. (2010). Does firm size affect self-selection and learning-by-exporting? *World Economy*, 33, 315–346.
- McGrath, R. G. (1997). A real options logic for initiating technology positioning investments. *Academy of Management Review*, 22, 974–996.
- McGrath, R. G., Ferrier, W. J., & Mendelow, A. L. (2004). Real options as engines of choice and heterogeneity. *Academy of Management Review*, 29, 86–101.
- Miller, K. D., & Folta, T. B. (2002). Option value and entry timing. *Strategic Management Journal*, 23, 655–665.
- Nadkarni, S., & Herrmann, P. (2010). CEO personality, strategic flexibility, and firm performance: The case of the Indian business process outsourcing industry. *Academy of Management Journal*, 53, 1050–1073.
- O'Brien, J. P., Folta, T. B., & Johnson, D. R. (2003). A real options perspective on entrepreneurial entry in the face of uncertainty. *Managerial and Decision Economics*, 24, 515–533.
- OECD (2013). *Fostering SMEs' participation in global markets: Final report*. Available at: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?co te=CFE/SME\(2012\)6/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?co te=CFE/SME(2012)6/FINAL&docLanguage=En) (Accessed 26 January 2018).
- Paul, J., Parthasarathy, S., & Gupta, P. (2017). Exporting challenges of SMEs: A review and future research agenda. *Journal of World Business*, 52, 327–342.
- Petersen, B., Welch, D. E., & Welch, L. S. (2000). Creating meaningful switching options in international operations. *Long Range Planning*, 33, 688–705.
- Podsakoff, P. M., MacKenzie, S. B., & Lee, J. Y. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879–903.
- Reid, S. D. (1981). The decision-maker and export entry and expansion. *Journal of International Business Studies*, 12, 101–112.
- Reuer, J. J., & Tong, T. W. (2005). Real options in international joint ventures. *Journal of Management*, 31, 403–423.
- Sahaym, A., Treviño, L. J., & Steensma, H. K. (2012). The influence of managerial discretion, innovation and uncertainty on export intensity: A real options perspective. *International Business Review*, 21, 1131–1147.
- Sakharov, A. V., & Folta, T. B. (2014). Resource relatedness, redeployability, and firm value. *Strategic Management Journal*, 35, 1781–1797.
- Sanchez, R. (1993). Strategic flexibility, firm organization, and managerial work in dynamic markets: A strategic options perspective. *Advances in Strategic Management*, 9, 251–291.
- Sanchez, R. (1995). Strategic flexibility in product competition. *Strategic Management Journal*, 16, 135–159.
- Santoro, M. D., & McGill, J. P. (2005). The effect of uncertainty and asset co-specialization on governance in biotechnology alliances. *Strategic Management Journal*, 26, 1261–1269.
- Sanyal, S., & Sett, P. K. (2011). Applying real options theory to HRM: An empirical study of IT software firms in India. *International Journal of Human Resource Management*, 22, 72–102.
- Schwens, C., Zapkau, F. B., Brouthers, K. D., & Hollender, L. (2018). Limits to international entry mode learning in SMEs. *Journal of International Business Studies*, 49, 809–831.
- Solberg, C. A., & Nes, E. B. (2002). Exporter trust, commitment and marketing control in integrated and independent export channels. *International Business Review*, 11, 385–405.
- Statistik Austria (2018). *Außenhandel*. Available at: https://www.statistik.at/web_de/services/wirtschaftsatlas_oesterreich/aussenhandel/index.html (Accessed 4 January 2019).
- Tong, T. W., & Li, Y. (2011). Real options and investment mode: Evidence from corporate venture capital and acquisition. *Organization Science*, 22, 659–674.
- Tong, T. W., & Reuer, J. J. (2007). Real options in multinational corporations: Organizational challenges and risk implications. *Journal of International Business Studies*, 38, 215–230.
- Trigeorgis, L. (1993). The nature of option interactions and the valuation of investments with multiple real options. *Journal of Financial and Quantitative Analysis*, 28, 1–20.
- Trigeorgis, L., & Reuer, J. J. (2017). Real options theory in strategic management. *Strategic Management Journal*, 38, 42–63.
- Vassolo, R. S., Anand, J., & Folta, T. B. (2004). Non-additivity in portfolios of exploration activities: A real options-based analysis of equity alliances in biotechnology. *Strategic Management Journal*, 25, 1045–1061.
- Wagner, J. (2012). 'International trade and firm performance: A survey of empirical studies since 2006'. *Review of World Economics*, 148, 235–267.
- Zou, S., & Stan, S. (1998). 'The determinants of export performance: A review of the empirical literature between 1987 and 1997'. *International Marketing Review*, 15, 333–356.