

New member in the boardroom and subsequent strategic change in the product-market scope of the firm

Virgo Süsi & Oliver Lukason

Author accepted manuscript¹ in *Review of International Business & Strategy* at 14.04.2020

Abstract

Purpose – The purpose of this paper is to explore the linkages between the appointment of a new management board member and the following strategic change in the product-market scope of the firm.

Design/methodology/approach – The study is based on the whole population of Estonian firms, in total 16,941 observations, and the data is retrieved from Estonian Business Register. First, we focus on the association between the appointment of a new board member and the likelihood of different types of strategic change. Second, we focus on the association between the new board member's previous export experience and the export related strategic change. Logistic regressions are applied for all models.

Findings – The results indicate that there is a significant association between the appointment of a new board member and the subsequent start of exports and also continuing it, entrance into a new industry and making a strategic change in more broad terms, though the significance levels vary across the composed models. No significant relationship was found with the entrance into additional geographic market(s) for already exporting firms. There was also a significant association between previous export experience of a new board member and subsequent start of exporting.

Originality/value – We look at strategic change in the product-market domain holistically by applying same data on both geographic and product portfolio expansion options. We also introduce the scale and stability contexts of strategic changes. These aspects are usually neglected from similar studies.

Keywords Corporate governance, strategic change, export, geographic markets, industry, diversification

Paper type Research paper

¹ Review of International Business and Strategy © Emerald Publishing Limited 2059-6014
DOI 10.1108/RIBS-09-2019-0130

This author accepted manuscript is deposited under a Creative Commons Attribution Non-commercial 4.0 International (CC BY-NC) licence. This means that anyone may distribute, adapt, and build upon the work for non-commercial purposes, subject to full attribution. If you wish to use this manuscript for commercial purposes, please contact permissions@emerald.com

1. Introduction

In the circumstances of separated ownership and control, owners delegate the running of a firm to the management board. Owners of the firm can set up and influence the corporate governance bundle (Rediker and Seth, 1995; Aguilera *et al.*, 2008) consisting of various mechanisms by which they can control and direct the firm (Huse, 2007). One of the key mechanisms under the control of owners is the selection and dismissal of the management board members. The nominated management board will be responsible for formulating and executing strategic decisions. Among important decisions is the product-market scope of a firm, i.e. in which industries and in which geographic markets it competes. That choice will determine many related decisions such as resources and capabilities required for successful operations (Barney, 1991), but also, defines the limits of firm growth potential until the product-market scope is redefined as part of a strategic change effort. The ability to make strategic changes in the product-market scope is therefore vital for long-term performance and growth vector of firms. Accordingly, academic research on the topic has been growing extensively during the last decades (for some excellent reviews of the topic from different angles see for example Hutzschenreuter *et al.*, 2012; Kunsich *et al.*, 2017; Müller and Kunisch, 2018).

However, strategic changes are not easy to implement as firms tend to suffer from inertial forces that constrain these changes (Goodstein and Boeker, 1991; Carpenter, 2000; Müller and Kunisch, 2018). In the latter situation a potential remedy could be making changes in the management board by nominating a new CEO or other board member(s) as it would bring new energy, knowledge and experiences to the top executive team, has the potential to break existing dogmas regarding the scope of the firm (Hutzschenreuter *et al.*, 2012) and change internal politics that is impeding further growth of the firm (Garbuio and Lovallo, 2017). Such new managerial resources widen the range of potentially addressable industries and markets for a firm, and therefore, could be the key to overcome the limits to growth.

Our research is positioned in the intersection of corporate governance, strategic change, international business and diversification domains. Namely, we aim at studying the linkages between the appointment of a new management board member and the following strategic change in the product-market scope of the firm. Our research is novel in several aspects. First, while there exists voluminous research about the associations between various corporate governance characteristics and internationalization (e.g. Lukason and Vissak, 2020) or diversification, these studies typically take a static perspective, but the dynamic perspective,

i.e. the impact of the change in management board, is largely underexplored in international business (Elosge *et al.*, 2018) and diversification (e.g. Goodstein and Boeker, 1991; Boeker, 1997) domains. Therefore, while we know a lot about how various static corporate governance variables such as board size, heterogeneity and other typical board characteristics influence firms' internationalization or diversification outcomes, we know less about the dynamic view, i.e. how changes in governance impact these growth strategies. This paper fills that void by analyzing specifically how the nomination of a new management board member, i.e. a change in an important governance variable, relates to strategic changes in firm's product-market scope. Second, we take a more holistic approach compared to previous papers by applying the same dataset for exploring strategic changes in both geographic, i.e. growth through internationalization, and industry, i.e. growth through diversification, dimensions. Such approach allows us to make comparisons between the level of impact an appointment of a new board member has on these separate growth directions. Previous studies have typically focused on only one of these dimensions. Third, we add the scale and stability factors of strategic change into the analysis, both of which are important when considering "true" strategic changes. Previous studies in the field have not covered these aspects. Fourth, research on executive succession and strategic change has been largely limited to the listed US firms while other markets with different contextual factors remain largely unexplored (Nakauchi and Wieserma, 2015). Our study is based on Estonian unlisted firms, mostly SMEs, and thus, adds to scholarly understanding of the topic in a different context. Boards in SMEs are smaller than in large firms, which means that the influence of each SME board member is more significant. Fifth, in terms of technical novelty we base our analysis on the whole population of Estonian private firms. The population of 16,941 firms accompanied by factual information about variables in our analysis gives higher validity to the results typically obtained with small samples and questionnaires in relevant studies. We compose 12 different logistic regression models with new member entering the board as independent variable and various strategic changes as dependent variables. Such one-on-one regressions allow arriving to comparable conclusions in respect to the effect of new board member's entrance.

The following Section 2 gives an overview of previous literature in the field and develops research questions for the empirical section of the paper. Section 3 discusses the data and method applied. The latter is followed by presenting the empirical results in Section 4 and discussion of findings in Section 5, while multiple future research suggestions also arise from the latter section. In Section 6 the paper ends with a conclusion, which summarizes the results

and their importance for the extant literature, lists study's limitations (with specific proposals of how to resolve them in future studies) and provides implications for business practice.

2. Literature review

According to the strategic choice paradigm (Child, 1972) top management has control over firm's strategic direction. Executive management team has the responsibility to formulate firm's strategy and the extant research has vividly shown that new top managers joining the management board typically initiate a strategic change and determine the new strategic direction for a firm (Westphal and Fredrickson, 2001).

The latter is in line with the contingency argument (Gupta, 1984; Gupta, 1988), which posits that each manager has its own background and skillset, and also, for a successful execution of the chosen strategy firms need to have appropriate managerial resources (Datta *et al.*, 2003). The value of managerial resources lies in the human and social capital of all management team members. Human capital consists of elements such as experience, knowledge, reputation and skills of management team members, while social capital refers to the relevant network that could be used for the benefit of a firm (Hillman and Dalziel, 2003; Haynes and Hillman, 2010). Thus, each management team member has her own unique human and social capital, which either enhances or limits her ability to discover and make use of the opportunities in different contexts. The latter limitations are identified and discussed by cognitive psychologists (Cyert and March, 1963), who point out that differences in the managers' cognitive perspectives impact all aspects of their strategic decision-making process, including issue identification, information search, information processing, specification of alternatives and selection of the course of action (Herrmann and Datta, 2002).

Indeed, a recent literature review of leaders' impact on strategic change (Hutzschenreuter *et al.*, 2012) concludes that the predominant argument as to why new members of the top management team implement a strategic change lies in the cognitive psychology and the concept of bounded rationality (Cyert and March, 1963), i.e. essentially the qualities of top managers. Other arguments typically used are mandate for the change from owners, environmental pressures, or power relationships (Hutzschenreuter *et al.*, 2012; Kunisch *et al.*, 2017). When the new management team member is appointed, a firm will have a different set of human and social capital (new knowledge, experiences, skills as well as social ties), and thus, the collective

cognitive map of the management team changes, which would potentially lead to a strategic change.

Several considerations should be accounted for when focusing on the strategic change. Changes occur after the decisions by the firm's leadership, but not all decisions and not all changes are strategic. Strategic decisions are characterized by factors such as persistence and level of commitment the firm takes (Van den Steen, 2017), i.e. such decisions are expected to have significant and lasting impact on firm performance outcomes (Leiblein et al., 2018). Thus, in order a change in the product-market domain to be truly strategic, it could be argued that the resulting revenues from the new domains should achieve a significant proportion of firm's total revenues and be recurring, i.e. last longer than just in the short run. Inversely, short term or minor revenue from a different industry or geographical location could be just an ad-hoc project or incidental customer order that a firm takes advantage of, and not really a strategic move. Thus, the scale and stability aspects of the strategic change should be considered. Interestingly though, prior quantitative studies on the linkages between board change and strategic change often do not account for the scale and stability characteristics, but rather look at the single-year effect (or remain silent about the timing altogether) and on the change in the count of products in the firm's portfolio (Hutzschenreuter *et al.*, 2012). In order to shed more light in the scale and stability aspects of the strategic change, we will consider them in the empirical tests of our research questions that are developed in the following sub-sections.

Another important consideration is the pace of strategic change, for which there is no clear consensus in the literature. Some authors argue for quick initiation and implementation of strategic changes after a new board member is nominated in order to keep the momentum necessary to overcome organizational inertia (e.g. Romanelli and Tushman, 1994). Others deem a more gradual approach to be preferable (e.g. Amis *et al.*, 2004), in case of which the magnitude of change discussed previously might not be achieved quickly.

The likelihood and pace of strategic change is also influenced by firm age and size. The older and bigger a firm gets, the more bureaucratic, rigid and path-dependent it tends to become both in its routines but also in learning processes, which in turn makes it less likely to implement a significant strategic change (Kotha *et al.*, 2011; Zahra *et al.*, 2006). Younger and smaller firms, on the other hand, are more flexible and prone to changes. In turn, bigger and older firms tend to have more (slack) resources, which are necessary for exploring new growth areas (Penrose, 1959), and thus, are more likely to be able to carry out a strategic change in the product-market

domain. Small and young firms, on the contrary, typically have less resources for entering new product or market domains. Thus, the impact of size and age of firms in the equation is controversial. We will apply these firm characteristics in our models as control variables to shed more light into the latter issue.

2.1. Change in the product-market scope

The product-market scope of a firm has two dimensions: product scope, i.e. the industries in which the firm competes, and markets, i.e. the geographic coverage of firm's activities. Thus, in general, the firm could attempt a strategic change in either of these dimensions, or both of them simultaneously (Ansoff, 1957). The expansion, however, is not a trivial task. Research has shown that various managerial skills, competences and capabilities are required for following any of these growth strategies. Some of these required competences are related to the functional areas such as growth related finance, operations or human resource management (Barbero *et al.*, 2011), some are specific to the industry or geographic area a firm is trying to enter (Florin *et al.*, 2003), and some concern more general expertise related to growth activities, such as innovation management (Demir *et al.*, 2017). Furthermore, in addition to skills, the managers' mindset and attitude towards growth plays a role in the successful expansion (Coudounaris, 2018). As discussed earlier, nominating new management board members might be the key to strengthen those managerial resources, and through that, to increase the likelihood of a successful strategic change.

Given the general discussion above regarding the impact of management team's change on the strategic change of a firm we now turn to the analysis of strategic changes in specific product-market domains and develop respective research questions (RQs). Figure 1 summarizes graphically the research questions and connections between them, while the research questions are discussed in depth as follows.

All research questions, except for RQ3, scrutinize the link between the appointment of a new board member in a focal firm and the (non-)existence of the subsequent strategic change in different product-market domains. RQ1 discusses strategic change in general, i.e. regardless whether the change was in the product or market dimension. RQ2 and RQ4 discuss the change in the market dimension. The difference between the two is that RQ2 looks at previously non-exporting firms and analyzes the likelihood of these companies starting exporting after the appointment of a new board member, while RQ4 discusses already exporting firms and looks

at the likelihood of entering additional export markets after a new board member has been introduced. RQ5, on the other hand, discusses the impact of a new board member on the likelihood of entering new industries, i.e. strategic change in the product dimension of the product-market scope of the firm. For all of these RQs we look at the general effect and also at the more restricted effects, where we require the subsequent change to have scale or stability so that such changes could be truly called strategic, as discussed previously. The respective models below are denominated as RQn for the general effect, RQnA for the scale restricted effect and RQnB for the stability restricted effect.

As outlined in earlier sections, the dynamic relationship between management board change and strategic change in the product-market scope is not well covered in previous research. However, despite the lack of research for these specific research questions, we expect based on a more general leadership change literature presented above and more focused literature about specific contents of strategic changes presented in the following sections, that the nomination of a new management board member should increase the likelihood of subsequent strategic change in the product-market scope of a focal firm regardless of the strategic change type, i.e. whether it would be addition of new geographic markets or entrance into new industries. However, when referring to the earlier discussion on scale and stability factors, it is more difficult to determine the potential outcome of these restricted research questions, i.e. whether the strategic changes in the product-market scope would be significant enough (the research questions with scale restriction nominated as RQnA) or lasting (the research questions with scale restriction nominated as RQnB).

RQ3 acts as a second layer of analysis where we look at the impact of previous export experience of a new board member on the likelihood of starting exports in the new firm. Based on the previous literature we expect that the findings will show that previous export experience should increase the likelihood of the focal firm going through the strategic change of starting exporting.

Figure 1 here

We start by looking at the interconnection of the addition of a new board member and subsequent strategic change in the most general level and then move to specific types of strategic change, specifically the dimensions of geographic and product expansion. Thus, our first set of research questions is:

RQ1: Are firms more likely to implement strategic changes after the entrance of new member(s) to the board?

RQ1A: Are firms more likely to implement strategic changes yielding at least 10% share of new revenues from new sources after the entrance of new member(s) to the board?

RQ1B: Are firms more likely to implement strategic changes that last for at least two years after the entrance of new member(s) to the board?

2.2. Geographic expansion

The international trade literature has established that commencement of exporting is not an easy task due to high upfront sunk costs and uncertain profitability of the endeavor (Albornoz *et al.*, 2012). Many firms that do start exporting fail and cease exporting activities quite fast. For example, the study by Vissak and Masso (2015) about Estonian exporters showed gradual discontinuation of exports over time: 58% of all exporters had export sales only for one year whereas only 14.9% of firms continued to export for 5 years and 6.8% for 10 years. Such difficulty with export growth is also visible in the study by Vissak *et al.* (2018) who researched Estonian and Spanish exporters and found that only 16.1% of Estonian and 8.3% of Spanish firms experienced positive export growth during the period of four years.

The difficulty of starting exporting is related to adapting products to the preferences of new markets, establishing distribution channels, investing into appropriate marketing (Albornoz *et al.*, 2012), all of which require knowledge about the new market (Johanson & Vahlne, 1977). Thus, the task of successfully starting and continuing exporting could be quite daunting for an incumbent board who is used to working only on the domestic market, and thus, might create internal resistance to the change. Bringing in a new board member might give new energy, reshuffle power distribution and add new cognitive perspectives to the firm, and thus, make the strategic change of starting exporting more likely. Thus, we pose the second set of research questions as:

RQ2: Are firms more likely to implement a strategic change of starting exporting after the entrance of new member(s) to the board?

RQ2A: Are firms more likely to implement a strategic change of starting exporting yielding at least 10% share of revenue after the entrance of new member(s) to the board?

RQ2B: Are firms more likely to implement a strategic change of starting and continuing exporting for at least two years after the entrance of new member(s) to the board?

Given the necessity to become knowledgeable of the potential export markets as well as the overall logic of international business, firms have two options to get that knowledge. It could be acquired with information search and learning in the current managerial team or by hiring people who already have experience at the chosen market. Often, the hiring option is preferable due to time saving as well as first-hand experience that one cannot get purely from market research. Such practical experience gathered by learning-by-doing is a valuable resource as a fair share of the knowledge involved is tacit and informal (Meinen *et al.*, 2018). In addition, the international trade research stream has shown in various settings that hiring managers and top level employees with first-hand knowledge about the target export market increases the likelihood of successful exporting activities of the new employer (e.g. Masso *et al.*, 2015; Hiller, 2013; Sala and Yalcin, 2015; Mion and Opromolla, 2014). However, some authors point out that research on specifically management level export experiences has not received sufficient attention and such studies are called for (Sala and Yalcin, 2015), since managerial level tasks are more complex than these of other employees (Mion and Opromolla, 2014). Therefore, we pose our third research question as:

RQ3. When new board members have more export experience, are they more likely to implement a strategic change of starting exporting?

As an interesting feature, the international trade literature has also found that there is a significant difference in the likelihood of success depending on whether a firm is entering its first foreign market or it already has exporting experience from some other market(s), as some of the exporting experiences are universal and not market-specific (Albornoz *et al.*, 2012). Firms may experiment in one market and then instead (or additionally) start selling in others (Mion and Opromolla, 2014). Such “sequential exporting” has been found to be an easier task than the first attempt of starting to export and it could be expected that the need for hiring additional board member with specific market knowledge is less relevant. Still this does not mean that firms with experience in one export market will easily expand to other markets. For example, Lukason and Vissak (2019) found in their study about Estonian manufacturing exporters that 81.2% of them were active only in one export market, i.e. only 18.8% of them had continued their internationalization beyond their first export market. Therefore, we pose our fourth set of research questions as:

RQ4: Are already exporting firms more likely to implement a strategic change of entering new geographic markets after the entrance of new member(s) to the board?

RQ4A: Are already exporting firms more likely to implement a strategic change of entering new geographic markets yielding at least 10% of revenue from these new markets after the entrance of new member(s) to the board?

RQ4B: Are already exporting firms more likely to implement a strategic change of entering new geographic markets and operating there for at least two years after the entrance of new member(s) to the board?

2.3. New industries

Likewise with the geographic expansion, entrance into new industries is not a trivial task. Prior research has identified various factors that either enhance or impede such diversification. In connection with the resource-based view it has been argued that a firm needs relevant experience, resources and capabilities in order to enter new industries (Sanchez-Peinado and Menguzzato-Boulard, 2009). In order to successfully compete in its current industry, firms need to improve knowledge, processes and routines relevant in that industry. However, when attempting to do so, firms may fall victim of problems discussed in learning theory such as myopic learning (Levinthal and March, 1993) and competency traps (Levitt and March, 1988). As a result, too much focus on exploitation and not enough attention on exploration creates impediments for moving to another industry (Chen *et al.*, 2012). Management's inability to see emerging opportunities in other industries and tendency to focus only on improving current business limits its diversification and growth options. Some studies (e.g. King and Tucci, 2002) have shown, that the more experience a firm has in its existing industry, the less likely it is to enter a new one.

Firm's management might also be hesitant to enter new industries because there are typically certain barriers to entry that create concerns about financial and risk consequences. For example, when entering a new industry, the entrant usually needs to make significant irrecoverable investments, e.g. building production capacity, create sales channels, invest in intangibles such as brand names and research and development (Sharma, 1998). Deciding to do so, managers put firm's resources at risk, which will be lost, when the entry proves to be unsuccessful. Of course, if the new industry is related to the existing business, the invested resources could be (partially) redeployed into the "old" industry, thus reducing the cost of entry

mistakes (Lieberman *et al.*, 2017). Furthermore, as another barrier to entry, the entrant may threaten the market position and performance of incumbent firms in the new industry, which may provoke retaliation from their side (Sharma, 1998). For instance, aggressive pricing and extensive marketing from the side of established players in the new industry potentially decreases the profitability of investment and might discourage the management to attempt an entrance to the new industry. There are industry specific features such as industry concentration and growth that determine the likely response from incumbents (Sanchez-Peinado and Menguzzato-Boulard, 2009). Mature industries tend to have high competitive pressures and low growth rates, making the incumbents' retaliation more likely than in relatively new high growth industries where there is more room for new entrants.

In conclusion, managerial myopia and tendencies to focus on exploiting current business, coupled with hesitations about barriers of entry, potentially impede the strategic change of entering a new industry. Bringing in a new management board member might create the required impulse to overcome this obstacle. In order to shed more light in this prospect we pose our last set of research questions as:

RQ5: Are firms more likely to implement a strategic change of entering new industries after the entrance of new member(s) to the board?

RQ5A: Are firms more likely to implement a strategic change of entering new industries yielding at least 10% revenue from the new source(s) after the entrance of new member(s) to the board?

RQ5B: Are firms more likely to implement a strategic change of entering new industries and operating there for at least two years after the entrance of new member(s) to the board?

3. Study design

3.1. Population of firms

The analysis is based on the Estonian whole population of firms. We account for all episodes of new board member(s) entering among the board of directors during the year 2013. That specific year is chosen for analysis, as the available dataset spans from 2009 to 2016, therefore enabling to view three years after and four years before the respective change in the board. In further text we denote the firms with a new board member with "BC" and firms without a new board member with "NC" respectively. Our dataset includes 16,941 firms, of which 472 are

BCs and 16,469 NCs. We account for several considerations when selecting the population of firms. First, we demand a firm to have at least an annual 40,000 euros turnover over a three year period after the board change. The given turnover threshold is the current limit in Estonia to be subject to pay value added tax. Firms not exceeding that limit are extremely small and often inactive. A three year limit is set to guarantee, that the firm remains active in the same size category. The latter also guarantees, that the respective board change in 2013 is not subject to a “liquidator” moving into the board after a previously failed strategy making a firm insolvent. The respective size limit is also set for years 2012 and 2013, which guarantees that the firm has been continuously engaged in economic activities, not a newly founded firm, in case of which the emergence of revenue could point to the founding board member implementing a start-up business plan, not conducting a strategic change for an already functioning firm. Second, we must exclude all firms having individuals without Estonian personal identity code in the board, as it would be impossible to track their past activities. Thus, the analysis is limited to “domestic boards”. Third, we exclude firms where a board change has occurred during the years 2011-2012, as in that case there is a high likelihood that changes occurring in activities in 2014 are not subject to a (un)changing board in 2013, but rather of that of a previous period. The median firm in our dataset encompasses an old micro firm, with respective age of 11.1 years and total revenue size of 232 thousand euros as of 2013. The most frequent number of board members in these firms is one. The strategic change (later SC) occurring in these firms is disclosed in detail in Section 3.3.

3.2. Layers of analysis

The study is divided into two layers of analysis. Layer 1 focuses on how the emergence of a new board member is associated with the likelihood of strategic change as reflected by different variables discussed in detail in Section 3.3. Thus, in Layer 1 all BCs and NCs are included. As around 34% of firms have been exporting in 2013, they are excluded from the models considering starting exporting as a strategic change, as such firms (therefore leaving 11,206 firms in the analysis, as 10,882 NCs and 324 BCs respectively) are not able to implement the relevant strategic change (i.e. such change has been implemented already before). In case of new market entries, we focus only on firms already exporting in 2013 to reflect an ongoing geographic expansion, and thus, the remaining population of 3,931 firms divides as 91 BCs and 3,840 NCs respectively. As NACE codes are available for all firms, for that strategic change type the initial population of 16,941 firms is applied. In Layer 2, we focus only on 324 BC firms to find out the association between new board member’s previous export experience and the

SC of starting exporting. The 324 BC firms divide as 49 that started exporting and 275 that did not.

3.3. Variables by Layers of analysis

The variables used in different Layers of analysis have been documented in Table 1. In Layer 1 (RQs 1, 2, 4, 5), a single independent variable (BCHANGE) is used to reflect, whether there is at least one new board member in 2013. Twelve different dependent variables are used, which respectively reflect four different types of SCs and additionally the scale and stability contexts of the SC. The types of SCs are coded as follows. First, EXPORT reflects whether a firm started exporting (for RQ2). Second, NACE reflects whether a firm was engaged in new industries, while a four digit classification is used (for RQ5). Third, MARKET reflects whether an already exporting firm was engaged in new geographic markets (for RQ4). Fourth, a combined strategic change variable (named STC) incorporating both the export and industry changes is introduced, which additionally enables to capture whether a SC irrespective of its type was present or multiple SCs occurred simultaneously (for RQ1). Throughout, a SC is considered to occur, when export revenue, respective industry or market did not exist in 2013, but emerged either in 2014 or 2015. The usage of two consecutive years is motivated by the fact that when a new board member for instance enters the firm in the end of 2013, one year could be insufficient for the SC to be implemented and reflected in the annual report of 2014. Each of the four types of SCs is besides the latter “base” approach supplemented by scale and stability contexts as follows. The scale context is captured by demanding respective SC to account for more than 10% of firm’s revenue (for RQs 1A, 2A, 4A, 5A). The stability context is captured by demanding the change to be persistent at least for two years, i.e. either 2014-2015 or 2015-2016 (for RQs 1B, 2B, 4B, 5B).

[Table 1 here]

In Layer 2 (for RQ3), the focus is on how starting exporting (EXPORT) is associated with the previous export experience of the new board members (EXPEXPER). The logic used in Layer 2 cannot be implemented for new markets and industries, as when a firm does not enter either of them, then the previous experience variable cannot be calculated unlike with the past exporting experience variable. Age, size and sectoral control variables are also applied in both Layers.

3.4. Methods

For Layer 1, binary logistic and ordered logistic regressions are applied. Binary logistic regression is used to compose 9 models with dependent variables from EXPORT to MARKETSTAB in Table 1. In all these models, BCHANGE is the only independent variable supplemented by all control variables provided in Table 1. Additional 3 models are composed with ordered logistic regression using dependent variables from STC to STCSTAB in Table 1, the independent and control variables remaining the same as for the former 9 models. In Layer 2, binary logistic regression is applied with EXPORT as dependent and EXPEXPER as independent variable, while the same set of control variables is applied as for Layer 1.

4. Empirical results

The cross tabulation of binary independent and dependent variables has been presented in Appendix 1. Of the three strategic change options captured, for BC firms new market entry is the most frequent choice (45 out of 91 BC firms), followed by new industry (109 out of 472 BC firms) and starting exporting (49 out of 324), when looking at single-year measures. Same tendency is followable for NC firms as well. Concerning the entrance in a new industry, more than 10% of the firms achieve enough scale (i.e. over 10% of total revenue), while the respective proportion of firms is much lower for starting exporting and being engaged in a new market. The stability measures follow a similar pattern, although the proportions are higher than for the scale measures. In addition, the combined strategic change (i.e. starting exporting and being involved in a new industry) is a rather infrequent phenomenon for both, BC and NC firms.

[Table 2 here]

The results of Layer 1 regressions have been documented in Table 2. The inclusion of a new board member will increase the likelihood that a formerly non-exporting firm becomes an exporter. In addition, the latter result also holds, when the stability of exporting is introduced to the analysis. When the scale of exporting is introduced to the analysis, the association is insignificant. Thus, we can conclude that the introduction of a new board member can often support firm's ambitions to enter into foreign markets, but without achieving a remarkable proportion of revenues from these markets.

While the new board member is likely to initiate exporting, no evidence was found, that the new board member increases the likelihood of entering a new geographic market for already

exporting firms. The results concerning the introduction of a new industry by a new board member are mixed. When compared with starting exporting after the board change, weaker (but still significant) evidence is found, that a new industry is entered, while the regressions with scale and stability measures are insignificant.

Finally, when a new board member is nominated, it is more likely that a firm will be engaged in both strategic changes, i.e. simultaneously starting exporting and engaging in a new industry, when compared with NC firms making the same strategic change. The scale and stability contexts are not significant for given strategic change.

There is strong evidence that the likelihood of making a strategic change by a new board member is subject to the main industry the firm is functioning in, as in most of the logistic regressions at least one or two industry dummies are significant. Older firms are more likely to implement a strategic change, while the opposite occurs in case of larger firms. The low values of correlations presented in Appendix 2 indicate that there is no threat of multicollinearity on the estimations.

[Table 3 here]

The logistic regression model for Layer 2 is documented in Table 3. The result clearly points to the fact that when a new board member has been nominated, then her greater export experience reflected as the maximum share of export from total revenue in the firms she has served as a board member earlier will more likely lead to starting exporting. The obtained results are not altered by the characteristics of firms, i.e. all control variables are insignificant.

5. Discussion of the findings

The results presented in the previous section and summarized in Table 4 lead to several important findings. Starting from the most general level, the results of RQ1 show that bringing in a new board member indeed increases the likelihood of a strategic change (irrespective of the exact type of change) in the following years compared to the situation where the management board is not changed. In addition, when the combined strategic change occurs (i.e. entrance in a new industry and starting exports simultaneously), this is especially likely to be conditioned by the entrance of a new board member. This finding supports the general notion in the literature that a change in the top leadership of a firm might be helpful in redirecting the course of a firm.

[Table 4 here]

However, when looking at RQ1A and RQ1B, i.e. when the scale and stability contexts are introduced to the model (models STC10 and STCSTAB in Table 2), the respective associations become insignificant. There are a few possible interpretations for this. First, it could be that while new board members do facilitate implementing a strategic change, it is not enough to achieve a significant proportion of new revenues (model STC10) or lasting new revenues (model STCSTAB). It could be that a new board member helps to break the initial inertia and implement a strategic change, but other elements are necessary to achieve scale and stability of that change. Second, strategic changes in general take time to achieve significant scale and stability and managers might prefer a more gradual implementation of strategic changes as proposed by Amis *et al.* (2004). In that case new board members help to break the inertia and introduce a strategic change, but it will take them more time to build a new and sustainable revenue stream from that change. Thus, looking into the scale and stability contexts of the strategic change in a longer time frame would be an interesting avenue for further empirical research.

When going into the specific context of strategic change, the results are more mixed. When looking at the base models (EXPORT, NACE and MARKET), the findings indicate that the appointment of a new board member improves the chances of starting exporting for firms that have not exported shortly before respective change (RQ2). However, the board change's association with the entrance into new industries (RQ5) is somewhat weaker (significant only at $p < 0.05$ in comparison with $p < 0.01$ for starting exporting) and the association with the expansion into additional geographic markets (RQ4) is insignificant. Thus, an important conclusion is that the exact content of the strategic change seems to matter when considering the entrance of new members to the board. Bringing in new board member(s) can have significant support to some types of strategic change, but less for others.

The reason for such difference could be the relative difficulty of implementing these various types of changes. For example, when considering geographic expansion, our findings indicate the strategic change of starting exporting (RQ2) is strongly conditioned by hiring new board members. This is further stressed by the finding that there is significant positive association between previous export experience of a new board member and the likelihood of starting exporting by the focal firm (RQ3). This finding supports Meinen *et al.* (2018) who argue that

export experience includes fair share of tacit knowledge learned by doing, and is also in line with findings of previous studies by Masso *et al.* (2015) and Hiller (2013).

The control variable of age indicates that younger firms are more likely to start exporting, which is a logical finding as older firms are likely to have started exporting already in the past. Furthermore, the finding supports the lower inertia arguments of young firms by Kotha *et al.* (2011) and Zahra *et al.* (2006). The control variable of size indicates that larger firms are more likely to start exporting, which is in line with Penrose's (1959) argument that expansion requires slack resources, something that larger firms are more likely to have.

The next steps in geographic expansion, i.e. adding new markets for already exporting firms (RQ4), are already easier and board changes do not have any significant effect. This finding is in line with Albornoz *et al.* (2012) who argue that exporting firms gain some universal (non-market-specific) export experience, which helps them in further geographic expansions. A firm does not necessarily need to find a new board member that would have specific market experience in order to expand there.

Regarding product portfolio expansion (RQ5), the key finding was that while the appointment of a new board member had a positive association with subsequent entrance into new industries, the significance level ($p=0.043$) is close to the borderline of the usual acceptable significance level (i.e. 0.05). The weaker association and smaller coefficient compared to the strategic change of starting exporting could probably be explained by the fact that industries are diverse, e.g. some are easier to enter than others. For example, such strategic change could be subject to the relatedness with existing industry as discussed by Lieberman (2017) or the growth and competitive factors of the industry as discussed by Sanchez-Peinado and Menguzzato-Boulard (2009), thus acquiring new (or different) managerial resources for that step is less important. Our data did not enable us to control for these contingencies, but it would be an interesting follow-up analysis for future studies. Similarly to the EXPORT model, the age variable indicates that younger firms are more likely to expand into new industries, while the opposite occurs in case of large firms.

When looking at the models with stability restriction, i.e. models requiring a lasting strategic change, some additional interesting insights are obtained. The strategic change of starting exporting was the only change type where the stability context yielded significant results (model EXPORTSTAB for RQ2B). Models related to achieving stable revenue from new

geographic markets for already exporting firms (model MARKETSTAB for RQ4B) and from other industries (model NACESTAB for RQ5B), on the other hand, were insignificant. The outcome of MARKETSTAB is logical as already the unrestricted base model (MARKET) showed insignificant results. However, it is interesting that while both EXPORT and NACE models were significant on the base level (albeit at different p-values), adding the new revenue stability restriction changes the outcome, i.e. export model remains significant while new industry model does not.

This shows that the nomination of a new board member is significantly associated with both starting and keeping export revenues for a focal firm, but in case of diversification to other industries the nomination of a new board member is only significantly associated with entering into new industry for a short-term, but not for a long-term (at least two consecutive years in our analysis). It seems that while there is a short-term effect of the nomination of a new board member in expanding into new industry, the impact fades away in the longer run: there is no significant difference in maintaining new industry revenue depending on whether a new board member was appointed or not. The possible interpretation for this could be that successfully entering a new industry is a more complicated task than starting to export with existing product portfolio. As discussed previously, new industries require investments into new physical resources (e.g. production lines) as well as knowledge and capabilities (Sanchez-Peinado and Menguzzato-Boulard, 2009) while risking the protective actions from incumbent industry players (Sharma, 1998). The initial results of the diversification might not be satisfactory and inertial forces (Müller and Kunisch, 2018) in the organization might be too strong to overcome by just the nomination of a new board member. Of course, starting to export also requires investments but since the products to be sold in export markets are essentially the same as in the home market, the inertial forces seem to be lower and the impetus brought about by the new board member is more sustainable. Thus, further studies with different set of explanatory variables could shed more light into the issue why export revenue can be sustained after a new board member's entrance to the firm, but the opposite occurs in case of introducing new industries.

Concerning the models with scale restriction, all of them (EXPORT10, MARKET10, NACE10) yield insignificant results, thus indicating that there is no statistical difference in achieving high level of new revenue dependent on whether or not a new board member was nominated. The interpretation for this could be similar to the one discussed in connection with general strategic

change models above, i.e. it might take more time to achieve high level of revenue from new sources, or that additional elements are needed to bring about high level of new revenue. Future research is called for to analyze this issue further.

6. Conclusions

The aim of this paper was to study the linkages between the appointment of a new management board member and the following strategic change in the product-market scope of the firm. In total, 12 logistic regression models were built, where the independent variable – appointment of new management board member(s) – was the same for all models, but the dependent variable represented different types of strategic change: starting to export for previously non-exporting firms, entrance into a new geographic market for already exporting firms, entrance into a new industry, or a general strategic change (a composite measure of either starting exporting and/or entering a new industry). For all of the mentioned four types we also analyzed the scale and stability contexts such as the threshold of 10% revenues from the new source, and revenue continuance for at least two years from the new source. We also studied the association between the previous export experience of a new board member and the subsequent strategic change of starting exporting. We applied the models on the population of Estonian firms in total of 16,941 observations.

The results indicate that there is significant association between the appointment of a new board member and the subsequent start of exports and also continuing it, entrance into a new industry and making a strategic change in more broader terms, though the significance levels varied across these models. There was also a significant association between previous export experience of a new board member and subsequent start of exporting.

The study makes several contributions to the literature. First, the study takes a dynamic perspective on the link between corporate governance and strategic change by looking at how nomination of a new management board member is associated with strategic changes in firm's product-market scope. Previous studies have so far predominantly analyzed the association between typical static corporate governance characteristics and strategic change, therefore leaving a gap in our understanding on how changes in corporate governance are connected with strategic change. This study is one of the few papers taking such dynamic look on the topic. Second, we apply the same data on different types of strategic change in the product-market scope, whereas previous studies tend to focus either on changes in geographic or industry dimensions. We believe our approach is thus more holistic and gives additional insights in terms

of how board change is associated with different types of strategic change. Third, we apply scale and stability contexts in all models, which enables to discuss the occurring strategic changes more elaborately. These elements are important components of strategic decisions, yet they are not typically discussed in the research focusing on the interconnection of board and strategic changes. Fourth, our analytical approach by looking at the independent and dependent variable as “one-on-one” situations, despite its simplicity, yields the “cleanest” associations of which strategic change is most likely after a new member enters the boardroom. Fifth, our research is based on population level data that is procured from an official national database (Estonian Business Registry), which improves the validity of our findings as we are free from typical limitations of sampling and self-reporting biases inherent to the research of corporate governance and strategic change.

The results also yield to several practical implications. Business owners or boards of directors struggling with implementing a strategic change could consider changing the management board to bring in new energy, insights and connections, and in that way, increase the likelihood of a strategic change. However, the type of strategic change that is sought after matters. The appointment of a new board member seems to be more important when a non-exporting firm is trying to start exporting, but less so when the firm is trying to diversify to another industry, or even irrelevant when an already exporting firm is trying to move to an additional market. In case a non-exporting firm is trying to start exporting and decides to bring in a new board member, it would be especially beneficial that the new board member would have recent export experience from previous employers. Furthermore, business owners should be aware that while bringing in new board members might help to break the initial inertia and implement a strategic change, it might not be enough to create a long-term sustainable revenue from the new source, at least in case of diversifying into new industries.

However, the study is not free from limitations. First, the study is based only on Estonian firms. It is necessary to validate the results in other countries, which is a potential avenue for further research. Second, our dataset did not enable to consider strategic changes in a lengthy time frame. In case of aiming to change the market or industry orientation substantially, more time is needed to build up and implement necessary resources. Therefore, we call for studies using data in the longer timeframe to analyze specifically the stability and scale contexts of strategic changes following a board change. Third, our dataset does not enable to draw direct conclusions about causality. Although the firms engaged in the analysis are mostly micro firms, and thus,

board members have a substantial role in implementing firm's strategy, we cannot rule out the role of other individuals (e.g. workers with relevant export or industry experience), change in regulations, market dynamics, and eventually, pure chance, in conditioning the respective strategic change. Thus, we suggest paying more attention to these aspects in future studies.

Acknowledgement

We acknowledge funding from the European Union Horizon 2020 Research and Innovation action under grant agreement No. 822781 GROWINPRO and Estonian Research Council's grant PRG791 "Innovation Complementarities and Productivity Growth". Second author acknowledges financial support from University of Tartu Foundation's Ernst Jaakson Commemorative Scholarship.

References

- Aguilera, R.V., Filatotchev, I., Gospel, H. and Jackson, G. (2008), "An Organizational Approach to Comparative Corporate Governance: Costs, Contingencies, and Complementarities", *Organization Science*, Vol. 19 No. 3, pp. 475-492.
- Albornoz, F., Calvo Pardo, H.F., Corcos, G. and Ornelas, E. (2012), "Sequential exporting", *Journal of International Economics*, Vol. 88 No. 1, pp. 17-31.
- Amis, J., Slack, T. and Hinings, C.R. (2004), "The pace, sequence, and linearity of radical change", *Academy of Management Journal*, Vol. 47 No.1, pp. 15-39.
- Ansoff, I. (1957), "Strategies for diversification", *Harvard Business Review*, Vol. 35 No. 5, pp. 113-124.
- Barbero, J.L., Casillas, J.C. and Feldman, H.D. (2011), "Managerial capabilities and path to growth as determinants of high-growth small and medium-sized enterprises", *International Small Business Journal*, Vol. 29 No. 6, pp. 671-694.
- Barney, J. (1991), "Firm Resources and Sustained Competitive Advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Boeker, W. (1997), "Executive Migration and Strategic Change: The Effect of Top Manager Movement on Product-Market Entry", *Administrative Science Quarterly*, Vol. 42 No. 2, pp. 213-236.
- Carpenter, M.A. (2000), "The Price of Change: The Role of CEO Compensation in Strategic Variation and Deviation From Industry Strategy Norms", *Journal of Management*, Vol. 26 No. 6, pp. 1179-1198.
- Chen, P.-L., Williams, C. and Agarwal, R. (2012), "Growing Pains: Pre-Entry Experience and the Challenge of Transition to Incumbency", *Strategic Management Journal*, Vol. 33 No.3, pp. 252-276.
- Child, J. (1972), "Organizational structure, environment and performance: The role of strategic choice", *Sociology*, Vol. 6 No. 1, pp. 1-22.

Coudounaris, D.N. (2018), "Typologies of internationalization pathways of SMEs: what is new?", *Review of International Business and Strategy*, Vol. 28 No. 3/4, pp. 286-316.

Cyert, R.M., March, J.G. (1963), *A behavioral theory of the firm*, Englewood Cliffs, NJ: Prentice-Hall.

Datta, D., Rajagopalan, N. and Zhang, Y. (2003), "New CEO openness to change and strategic persistence: The moderating role of industry characteristics", *British Journal of Management*, Vol. 14 No. 2, pp. 101-114.

Demir, R., Wennberg, K. and McKelvie, A. (2017), "The Strategic Management of High-Growth Firms: A Review and Theoretical Conceptualization", *Long Range Planning*, Vol. 50 No. 4, pp. 431-456.

Elosge, C., Oesterle, M.-J., Stein, C. M. and Hattula, S. (2018), "CEO succession and firms' internationalization processes: Insights from German companies", *International Business Review*, Vol. 27 No 2., pp. 367-379.

Florin, J., Lubatkin, M. and Schulze, W. (2003), "A Social Capital Model of High-Growth Ventures", *Academy of Management Journal*, Vol. 46 No. 3, pp. 374-384.

Garbuio, M. and Lovallo, D. (2017), "Does organizational politics kill company growth?", *Review of International Business and Strategy*, Vol. 27 No. 4, pp. 410-433.

Goodstein, J. and Boeker, W. (1991), "Turbulence at the top: A new perspective on governance structure changes and strategic change", *Academy of Management Journal*, Vol. 34 No. 2, pp. 306-330.

Gupta, A.K. (1984), "Contingency linkages between strategy and general manager characteristics: A conceptual examination", *Academy of Management Review*, Vol. 9 No. 3, pp. 399-412.

Gupta, A.K. (1988), "Contingency perspectives on strategic leadership: Current knowledge and future research directions". In: D.C. Hambrick (Ed), "The executive effect: Concepts and methods for studying top managers", pp. 147-188, JAI Press, Greenwich, CT.

Haynes, K.T. and Hillman, A. (2010), "The effect of board capital and CEO power on strategic change", *Strategic Management Journal*, Vol. 31 No. 11, pp. 1145-1163.

Herrmann, P. and Datta, D.K. (2002), "CEO Successor Characteristics and the Choice of Foreign Market Entry Mode: An Empirical Study", *Journal of International Business Studies*, Vol. 33 No. 3, pp. 551-569.

Hiller, S. (2013), "Does immigrant employment matter for exports? Evidence from Denmark", *Review of World Economics*, Vol. 149 No. 2, pp. 369-394.

Hillman, A.J. and Dalziel, T. (2003), "Boards of directors and firm performance: integrating agency and resource dependence perspectives", *Academy of Management Review*, Vol. 28 No. 3, pp. 383-396.

Huse, M. (2007), *Boards, Governance and Value Creation*, Cambridge University Press, Cambridge.

Hutzschenreuter, T., Kleindienst, I. and Greger, C. (2012), "How new leaders affect strategic change following a succession event: a critical review of the literature", *The Leadership Quarterly*, Vol. 23 No. 5, pp. 729-755.

Johanson, J. and Vahlne, J.-E. (1977), "The internationalization process of the firm – a model of knowledge development and increasing foreign market commitments", *Journal of International Business Studies*, Vol. 8 No.1, pp. 23-32.

King, A.A. and Tucci, C.L. (2002), "Incumbent Entry into New Market Niches: The Role of Experience and Managerial Choice in the Creation of Dynamic Capabilities", *Management Science*, Vol. 48 No. 2, pp. 171-186.

Kotha, R., Zheng, Y. and George, G. (2011), "Entry into new niches: the effects of firm age and the expansion of technological capabilities on innovative output and impact", *Strategic Management Journal*, Vol. 32 No. 9, pp. 1011-1024.

Kunisch, S., Bartunek, J.M., Mueller, J and Huy, Q.N. (2017), "Time in Strategic Change Research", *Academy of Management Annals*, Vol. 11 No. 2, pp. 1005-1064.

Leiblein, M. J., Reuer, J. J. and Zenger, T. (2018), "What Makes a Decision Strategic?", *Strategy Science*, Vol. 3 No. 4, pp. 558-573.

Levinthal, D.A. and March, J.G. (1993), "The myopia of learning", *Strategic Management Journal*, Vol. 14 Special Issue: Organizations, Decision Making and Strategy, pp. 95-112.

- Levitt, B. and March, J.G. (1988), "Organizational learning", *Annual Review of Sociology*, Vol. 14, pp. 319-340.
- Lieberman, M.B., Lee, G.K. and Folta, T.B. (2017), "Entry, Exit, and the Potential for Resource Redeployment", *Strategic Management Journal*, Vol. 38 No. 3, pp. 526-544.
- Lukason, O. and Vissak, T. (2019), "Internationalization and failure risk patterns: Evidence from young Estonian manufacturing exporters", *Review of International Business and Strategy*, Vol. 29 No. 1, pp. 25-43.
- Lukason, O. and Vissak, T. (2020), "Export behavior and corporate governance", *Review of International Business and Strategy*, Vol. 30 No. 1, pp. 43-76.
- Masso, J., Rõigas, K. and Vahter, P. (2015), "Foreign market experience, learning by hiring and firm export performance", *Review of World Economics*, Vol. 151 No. 4, pp. 659-686.
- Meinen, P., Parrotta, P., Sala, D. and Yalcin, E. (2018), "Managers as Knowledge Carriers - Explaining Firms' Internationalization Success with Manager Mobility", CESifo Working Paper No. 7126, Center for Economic Studies and Ifo Institute (CESifo), Munich.
- Mion, G. and Opromolla, L.D. (2014), "Managers' mobility, trade status, and wages", *Journal of International Economics*, Vol. 94 No. 1, pp. 85-101.
- Müller, J. and Kunisch, S. (2018), "Central Perspectives and Debates in Strategic Change Research", *International Journal of Management Reviews*, Vol. 20 No.2, pp. 457-482.
- Nakauchi, M. and Wieserma, M.F. (2015), "Executive succession and strategic change in Japan", *Strategic Management Journal*, Vol 36 No. 2, pp. 298-306.
- Penrose, E. (1959), *The Theory of the Growth of the Firm*, Oxford University Press: New York.
- Rediker, K.J. and Seth, A. (1995), "Boards of directors and substitution effects of alternative governance mechanisms", *Strategic management journal*, Vol. 16 No. 2, pp. 85-99.
- Romanelli, E. and Tushman, M. L. (1994), "Organizational Transformation as Punctuated Equilibrium: An Empirical Test", *Academy of Management Journal*, Vol. 37 No. 5, pp. 1141-1166.

Sala, D. and Yalcin, E. (2015), "Export experience of managers and the internationalization of firms", *The World Economy*, Vol. 38 No.7, pp. 1064-1089.

Sanchez-Peinado, L., Menguzzato-Boulard, M., (2009), "Antecedents of entry mode choice when diversifying", *Industrial Marketing Management*, Vol. 38 No. 8, pp. 971-983.

Sharma, A. (1998), "Mode of entry and ex-post performance", *Strategic Management Journal*, Vol. 19 No. 9, pp. 879-900.

Van den Steen, E. (2017), "A formal theory of strategy", *Management Science*, Vol. 63 No. 8, pp. 2616-2636.

Vissak, T., Lukason, O. and Segovia-Vargas, M.-J. (2018), "Interconnecting exporter types with export growth and decline patterns: Evidence from matched mature Estonian and Spanish firms", *Review of International Business and Strategy*, Vol. 28 No. 1, pp. 61-76.

Vissak, T. and Masso, J. (2015), "Export patterns: Typology development and application to Estonian data", *International Business Review*, Vol. 24 No. 4, pp. 652-664.

Westphal, J.D. and Fredrickson, J.W. (2001), "Who Directs Strategic Change? Director Experience, the Selection of New CEOs, and Change in Corporate Strategy", *Strategic Management Journal*, Vol. 22 No. 12, pp. 1113-1137.

Zahra, S.A., Sapienza, H.J. and Davidsson, P. (2006), "Entrepreneurship and Dynamic Capabilities: A Review, Model and Research Agenda", *Journal of Management Studies*, Vol. 43 No. 4, pp. 917-955.

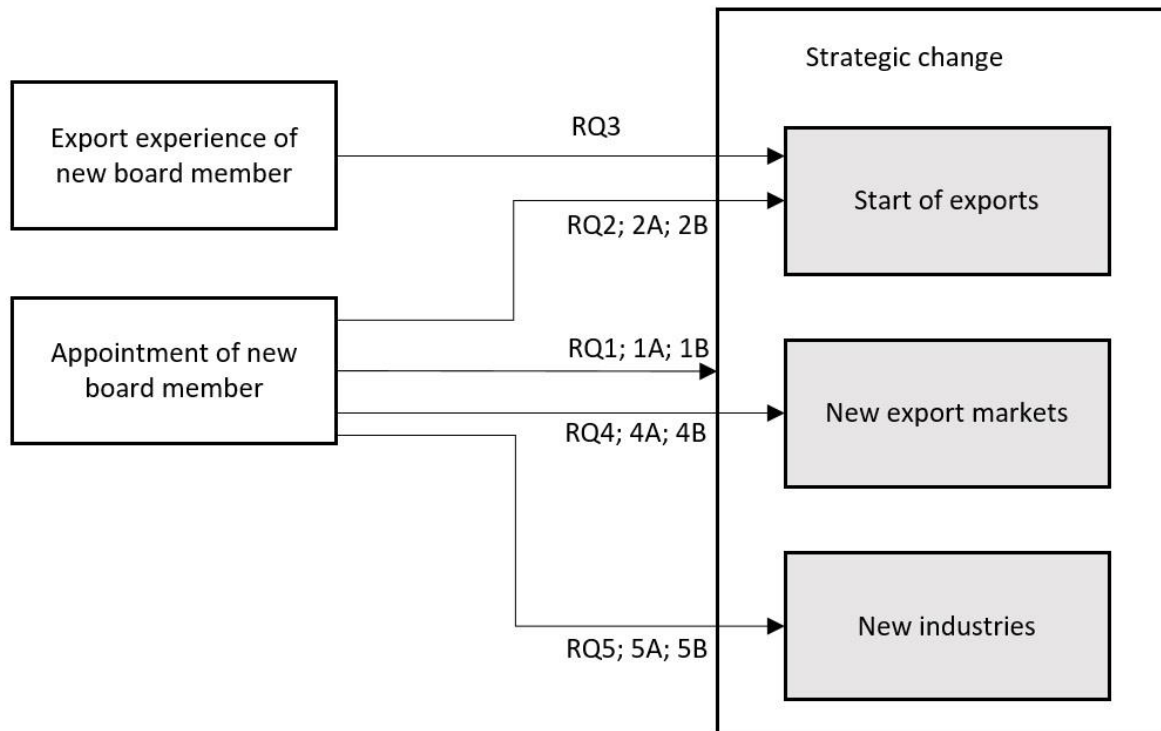


Figure 1. Conceptual scheme of the study with research questions.

Table 1. Variables by Layers of analysis.

Coding	Explanation
Layer 1	
<i>Layer 1 independent variable</i>	
BCHANGE	1 – if at least one new board member entered the board in 2013; 0 – otherwise
<i>Layer 1 dependent variables</i>	
EXPORT	1 – firm started exporting in either 2014 or 2015, no exporting in 2013; 0 – otherwise
EXPORT10	1 – firm started exporting in either 2014 or 2015 at a scale of >10% of total revenue, no exporting in 2013; 0 – otherwise
EXPORTSTAB	1 – firm started exporting in either 2014 or 2015, has two consecutive exporting years as 2014-2015 or 2015-2016, no exporting in 2013; 0 – otherwise
NACE	1 – firm was engaged in a new industry ¹ in either 2014 or 2015, respective industry missing in 2013; 0 – otherwise
NACE10	1 – firm was engaged in a new industry ¹ in either 2014 or 2015 at a scale of >10% of total revenue, respective industry missing in 2013; 0 – otherwise
NACESTAB	1 – firm was engaged in a new industry ¹ in either 2014 or 2015, has two consecutive years in the new industry as 2014-2015 or 2015-2016, respective industry missing in 2013; 0 – otherwise

MARKET	1 – firm was engaged in a new market in either 2014 or 2015, respective market missing in 2013; 0 – otherwise
MARKET10	1 – firm was engaged in a new market in either 2014 or 2015 at a scale of >10% of total revenue, respective market missing in 2013; 0 – otherwise
MARKETSTAB	1 – firm was engaged in a new market in either 2014 or 2015, has two consecutive years in that market as 2014-2015 or 2015-2016, respective market missing in 2013; 0 – otherwise
STC	EXPORT+NACE, therefore obtaining value 0, 1 or 2
STC10	EXPORT10+NACE10, therefore obtaining value 0, 1 or 2
STCSTAB	EXPORTSTAB+NACESTAB, therefore obtaining value 0, 1 or 2
Layer 2	
<i>Layer 2 independent variable</i>	
EXPEXPER	Maximum export share the new board members in the specific firm have experienced in other firms they have been board members in 2009-2012
<i>Layer 2 dependent variable</i>	
EXPORT	See Layer 1
Control variables for both Layers	
AGE	Firm age in years as of 31.12.2013
SIZE	Natural logarithm of total revenue in 2013
N_A	1 – if NACE A ² ; 0 – otherwise

N_BCDE	1 – if NACE B, C, D or E; 0 – otherwise
N_G	1 – if NACE G; 0 – otherwise
N_FL	1 – if NACE F or L; 0 – otherwise

Note: ¹ The engagement in a new industry is measured as a new 4-digit NACE code. One new industry is sufficient to code with value 1, while we keep track of all the new industries. When the firm is engaged in several new industries, then in case of checking the consecutive action for NACESTAB, we account new industries in a summed principle. Same reasoning is subject to new market variables MARKETSTAB. ² The main industry remarked by the firm in the annual report used for classification. Service industry NACEs remain as the reference category not included in the statistical analysis.

Table 2. Twelve logistic regression models portraying how board change is associated with the likelihood of strategic change.

Independents / dependent	EXPORT		EXPORT10		EXPORTSTAB		NACE		NACE10		NACESTAB	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
BCHANGE	0.454	0.005	0.391	0.155	0.437	0.028	0.228	0.043	0.194	0.182	0.180	0.148
AGE	-0.028	0.000	-0.052	0.000	-0.031	0.001	-0.023	0.000	-0.029	0.000	-0.023	0.000
SIZE	0.132	0.000	0.146	0.001	0.221	0.000	0.044	0.005	-0.108	0.000	0.047	0.007
N_A	0.139	0.312	0.295	0.187	-0.180	0.337	1.116	0.000	0.824	0.000	1.030	0.000
N_BCDE	0.594	0.000	0.742	0.000	0.520	0.000	0.121	0.064	0.018	0.833	0.152	0.036
N_G	0.437	0.000	-0.132	0.451	0.282	0.010	-0.026	0.640	0.065	0.348	0.067	0.271
N_FL	-0.118	0.203	-0.030	0.848	-0.481	0.000	0.265	0.000	0.421	0.000	0.286	0.000
Constant	-3.779	0.000	-4.921	0.000	-5.324	0.000	-1.926	0.000	-0.622	0.016	-2.277	0.000

Independents / dependent	MARKET		MARKET10		MARKETSTAB		STC		STC10		STCSTAB	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
BCHANGE	-0.024	0.914	-0.353	0.411	-0.275	0.253	0.273	0.025	0.265	0.085	0.221	0.100
AGE	-0.020	0.007	-0.045	0.000	-0.004	0.657	-0.026	0.000	-0.035	0.000	-0.026	0.000
SIZE	0.354	0.000	-0.078	0.095	0.331	0.000	0.093	0.000	-0.019	0.444	0.112	0.000

N_A	-0.959	0.000	-0.129	0.684	-0.824	0.001	0.952	0.000	0.738	0.000	0.816	0.000
N_BCDE	-0.195	0.038	-0.307	0.048	-0.162	0.104	0.336	0.000	0.298	0.003	0.312	0.000
N_G	-0.151	0.074	-0.665	0.000	-0.169	0.060	0.195	0.001	0.162	0.043	0.199	0.003
N_FL	-0.885	0.000	-0.365	0.031	-0.940	0.000	0.147	0.011	0.320	0.000	0.076	0.241
Constant	-4.342	0.000	-0.518	0.370	-4.902	0.000						
Threshold 1							2.147	0.000	1.465	0.000	2.736	0.000
Threshold 2							4.802	0.000	4.770	0.000	5.801	0.000

Note: For STC, STC10, STCSTAB ordered logistic regression is applied, while binary logistic regression for other models. In the ordered logistic regression Threshold 1 points respectively to STC=0, STC10=0 or STCSTAB=0, Threshold 2 points respectively to STC=1, STC10=1 or STCSTAB=1.

Table 3. Layer 2 logistic regression model (dependent EXPORT).

Independents	B	Sig.
EXPEXPER	1.329	0.009
AGE	0.026	0.438
SIZE	0.024	0.816
N_A	0.221	0.704
N_BCDE	0.371	0.454
N_G	0.342	0.441
N_FL	-0.504	0.303
Constant	-2.547	0.052

Table 4. Results of research questions

Research question	Results
RQ1: General strategic change after the nomination of a new board member	Association between the addition of a new board member and general strategic change is positive and significant (at $p < 0.05$).
RQ1A: General strategic change with scale restriction after the nomination of a new board member	Association between the addition of a new board member and general strategic change with the scale restriction is insignificant (at $p < 0.05$).
RQ1B: General strategic change with stability restriction after the nomination of a new board member	Association between the addition of a new board member and general strategic change with the stability restriction is insignificant (at $p < 0.05$).
RQ2: Starting exporting after the nomination of a new board member	Association between the addition of a new board member and starting exporting is positive and significant (at $p < 0.01$).
RQ2A: Starting exporting with scale restriction after the nomination of a new board member	Association between the addition of a new board member and strategic change of starting to exporting with the scale restriction is insignificant (at $p < 0.05$).
RQ2B: Starting exporting with stability restriction after the nomination of a new board member	Association between the addition of a new board member and stability of exporting is positive and significant (at $p < 0.05$ level).
RQ3. Previous export experience and starting exporting	Association between previous export experience of a new board member and starting exporting is positive and significant (at $p < 0.01$ level).
RQ4: An exporting firm entering a new geographic market after the nomination of a new board member	Association between the addition of a new board member and an exporting firm entering a new geographic market is insignificant (at $p < 0.05$).
RQ4A: An exporting firm entering a new geographic market with scale restriction after the nomination of a new board member	Association between the addition of a new board member and an exporting firm entering a new geographic market with the scale restriction is insignificant (at $p < 0.05$).

RQ4B: An exporting firm entering a new geographic market with stability restriction after the nomination of a new board member	Association between the addition of a new board member and an exporting firm entering a new geographic market with the stability restriction is insignificant (at $p < 0.05$).
RQ5: Entering a new industry after the nomination of a new board member	Association between the addition of a new board member and entering a new industry is positive and significant (at $p < 0.05$ level).
RQ5A: Entering a new industry with scale restriction after the nomination of a new board member	Association between the addition of a new board member entering a new industry with the scale restriction is insignificant (at $p < 0.05$).
RQ5B: Entering a new industry with stability restriction after the nomination of a new board member	Association between the addition of a new board member entering a new industry with the stability restriction is insignificant (at $p < 0.05$).

Appendix 1. Cross tabulation of binary dependent and independent variables from Layer 1

		EXPORT		Total
		0	1	
BCHANGE	0	9891	991	10882
	1	275	49	324
Total		10166	1040	11206

		MARKET		Total
		0	1	
BCHANGE	0	2133	1707	3840
	1	46	45	91
Total		2179	1752	3931

		EXPORT10		Total
		0	1	
BCHANGE	0	10586	296	10882
	1	309	15	324
Total		10895	311	11206

		MARKET10		Total
		0	1	
BCHANGE	0	3480	360	3840
	1	85	6	91
Total		3565	366	3931

		EXPORTSTAB		Total
		0	1	
BCHANGE	0	10311	571	10882
	1	293	31	324
Total		10604	602	11206

		MARKETSTAB		Total
		0	1	
BCHANGE	0	2691	1149	3840
	1	65	26	91
Total		2756	1175	3931

		NACE		Total
		0	1	
BCHANGE	0	13426	3043	16469
	1	363	109	472
Total		13789	3152	16941

		STC			Total
		0	1	2	
BCHANGE	0	8166	2468	248	10882
	1	222	85	17	324
Total		8388	2553	265	11206

		NACE10		Total
		0	1	
BCHANGE	0	14704	1765	16469

		STC10			Total
		0	1	2	
BCHANGE	0	9433	1386	63	10882

	1	415	57	472
Total		15119	1822	16941

	1	270	53	1	324
Total		9703	1439	64	11206

		NACESTAB		Total
		0	1	
BCHANGE	0	14089	2380	16469
	1	389	83	472
Total		14478	2463	16941

		STCSTAB			Total
		0	1	2	
BCHANGE	0	8863	1908	111	10882
	1	248	66	10	324
Total		9111	1974	121	11206

Appendix 2. Table of correlations of independent and control variables in Layer 1

	BCHANGE	AGE	SIZE	N_A	N_BCDE	N_G	N_FL
BCHANGE	1.000	0.000	0.078**	0.016*	0.017*	-0.009	-0.008
AGE		1.000	0.207**	0.025**	0.061**	0.071**	-0.059**
SIZE			1.000	0.032**	0.118**	0.115**	-0.018*
N_A				1.000	-0.091**	-0.131**	-0.118**
N_BCDE					1.000	-0.215**	-0.194**
N_G						1.000	-0.278**
N_FL							1.000

Note: ** p-value < 0.01, * p-value < 0.05. Due to the binary nature of many variables, Spearman correlations are estimated.