

Exploring the exporting–downsizing link: Does the type of export strategy and firm efficiency in foreign markets matter?

ABSTRACT:

This study explores the relationship between exporting strategies, firm efficiency, and downsizing. Drawing on the resource-based view, we first test whether there is a link between export intensity and the propensity of a firm to downsize. Next, we examine the impact of direct/indirect exporting strategies as well as the interactive effects of efficiency and each exporting strategy on the propensity to downsize. We use a sample of Spanish manufacturing firms between 1993 and 2016. Our findings reveal a negative effect of a firm's level of involvement in foreign markets via exports on the propensity to downsize. Our results also show that the propensity to downsize is lower in firms using a direct export strategy and in more efficient firms opting for this strategy. However, no support for a significant association between the propensity to downsize and the use of an indirect export strategy and efficiency is observed.

Keywords:

Downsizing; internationalization; exporting; direct and indirect export strategy; firm efficiency.

1. Introduction

In recent years, research on employee downsizing has led to a better understanding of the different issues surrounding this phenomenon in terms of both its potential causes and consequences (e.g., Budros, 1997, 1999; Brauer & Laamanen, 2014; Datta, Guthrie, Basuil, & Pandey, 2010; Harney, Fu, & Freaney, 2018; Mellahi & Wilkinson, 2010a, 2010b; Norman, Butler, & Ranft, 2013; Zorn, Norman, Butler, & Bhussar, 2017). There are, nonetheless, several key issues that remain unexplored, such as the potential impact of a firm's international strategy on downsizing. An influential review conducted by Datta et al. (2010) does not find any empirical work exploring this effect. A summary review of more recent studies reveals that this effect remains largely ignored in the management field (e.g., Harney et al., 2018; Schenkel & Teigland, 2017; Schulz & Wiersema, 2018; Tsai & Yen, 2018; Vicente-Lorente & Zúñiga-Vicente, 2018; Zorn et al., 2017).

Because past research has reported the negative impacts of downsizing on employees (see Quinlan & Bohle, 2009), it is essential to understand its potential facilitators and/or inhibitors. We argue that a firm's international strategy can have a significant effect on downsizing. Researchers in international trade (mainly economists) have shown an interest in exploring the impact of internationalization —via exporting— on job growth. Within this stream of literature, the effect on job growth of exporting —considered the dominant strategy in firms' international expansion (e.g., Cerrato & Piva, 2012; Lu & Beamish, 2001; Onkelinx, Manolova, & Edelman, 2016; Salomon & Jin, 2010)— is generally expected to be positive, based on the premise that as a firm produces more goods and services for foreign markets, this higher production will translate into a need to hire more workers. This optimistic view has been voiced by scholars, business leaders, policymakers, and the popular press, although the findings are mixed (e.g., Bernard & Jensen, 1999; Di Cintio, Ghosh, & Grassi, 2016; Slaper, 2015). Here, we contend that a firm's international strategy might have a significant

effect on its decision to downsize. In fact, there is now growing interest in the management field in exploring the potential associations between a firm's internationalization strategy and its human resources (HR). In this regard, research from a resource-based view (RBV) indicates that a firm's HR become a critical factor when entering foreign markets via exporting (Cerrato & Piva, 2012; Gomez-Mejia, 1988; Onkelinx et al., 2016).

This study examines the link between a firm's export strategy and employee downsizing by building on prior research streams in international trade theory and primarily the RBV. Specifically, it answers the following questions: First, is there a link between export intensity (defined as the ratio of foreign sales to total firm sales) and a firm's propensity to downsize? Second, what is the nature of the link between the specific type of export strategy chosen by the firm and its propensity to downsize? There are two main export strategies for entering a foreign market: relying on intermediaries (i.e., indirect exporting) and using the firm's own means (i.e., direct exporting) (Lindsay, Rod, & Ashill, 2017; Sharma & Erramilli, 2004). The strategies differ in their levels of HR commitment, with the former requiring less. The RBV enables us to directly connect exporting with downsizing through the bundle of resources (and particularly HR) needed to pursue each exporting strategy.

It is generally assumed that as firms' efficiency/productivity levels fall, downsizing rates should rise (e.g., Budros, 1997). In addition, whereas many studies show that more efficient/productive firms self-select themselves into exporting, other studies suggest that firms benefit from the experience generated by exporting —whereby a firm's efficiency improves after entering foreign markets. To our knowledge, fewer than a handful of studies have found significant differences in efficiency levels between direct and indirect exporters (e.g., Bai, Krishna, & Ma, 2017; Yaşar, 2015). It is therefore reasonable to investigate how the interactive effects of a firm's level of efficiency and the specific type of export strategy used to enter foreign markets can influence the propensity to downsize.

This study both adds to and complements the well-known causes of downsizing with its emphasis on the potential role played by a key firm-specific factor, namely, an international business strategy involving direct and indirect exporting. This area of study has so far been largely neglected. Our analysis is relevant because exporting is the most popular strategy used by firms to expand and compete in today's globalized competitive arena (Li, He, & Sousa, 2017; Salomon & Jin, 2010). Furthermore, HR are typically viewed as one of the main driving forces behind internationalization (e.g., Cerrato & Piva, 2012; Gomez-Mejia, 1988; Onkelinx et al., 2016). Our study thus provides new insights on and fresh evidence for the potential link between two of the most far-reaching and significant phenomena in management in recent years: internationalization via an exporting strategy and downsizing. As we distinguish between two different export strategies in foreign markets, our results help unravel the mixed results reported by economists when examining the exporting-job growth link. Finally, by exploring the potential interactive effect of the efficiency level, we also highlight the importance of using more complex models in obtaining a better understanding of how exporting and efficiency can jointly influence downsizing decisions.

The study uses a sample of Spanish manufacturing firms from 1993 to 2016. Spain is the world's 16th-largest export economy —exporting \$296b in 2017 (OEC, 2019). Moreover, many recent studies have analyzed different aspects of Spanish exporting firms (e.g., Almodóvar & Rugman, 2014; Caldera, 2010; Campa & Guillén, 1999; Fernández-Olmos, Gargallo-Castel, & Giner-Bagües, 2016). Interestingly, Spain is one of the developed countries with the highest unemployment rates —17.2% in 2017 (OECD, 2019). Such a high rate reveals that downsizing is probably a frequent event in this country. It is therefore critical to understand how exporting strategies influence the downsizing decisions of Spanish firms because of the negative impacts downsizing has on a firm's workforce/HR (Quinlan & Bohle, 2009) and, ultimately, on the country's economic and social welfare.

2. Theoretical framework and hypotheses

Figure 1 illustrates the conceptual framework that is empirically tested here. This figure distinguishes the relationships between the main variables and the respective hypotheses. It is assumed that exporting (proxied by exporting intensity) and the different exporting strategies are significant predictors of the propensity to downsize (Hypotheses 1, 2a, and 2b), while the level of a firm's efficiency can also interact with each exporting strategy and influence downsizing (Hypotheses 3a and 3b).

.....
Insert Figure 1 about here
.....

2.1. *Exporting and employee downsizing*

The relationship between international trade and employment dynamics (job growth) has received a great deal of attention in the literature on international trade. Traditional trade models usually assume that a country's technological capabilities and/or relative production factor endowments determine the competitiveness of its different industries and ultimately of firms at a global level (see, for example, the Heckscher-Ohlin model). Within this context, it is posited that firms in export-oriented industries should increase both their output and their demand for new workers, while firms belonging to import-competing industries should decrease production and probably lay off workers. Notably, most of these traditional models argue that international trade should lead to workers moving across firms in different industries, whereby redundant workers will automatically move into new jobs. Given this assumption, international trade-related unemployment is not viewed as a problem (Jansen & Lee, 2007), and, as a result, downsizing is not considered an issue either. In comparison, more recent international trade models (e.g., Bernard & Jensen, 1999; Melitz, 2003) tend to focus on the reallocation of production factor endowments within the same industry from purely domestic firms to the more productive international ones (i.e., exporting firms).

However, regardless of whether more traditional or recent models are used, economists agree about the long-term benefits linked to international trade, mainly through exporting, as resources and capabilities are more likely to be used more efficiently (Di Cintio et al., 2016). A growing body of research conducted at the firm level in the field of international trade has documented the superiority of firms engaged in international markets through exporting compared to those firms producing solely for their own domestic market. Specifically, this research stream stresses that international firms tend to be more capital- and technology-intensive and hence more innovative and efficient/productive (e.g., Aw & Hwang, 1995; Bernard & Jensen, 1997; Voigtländer & Garcia-Marin, 2018). The benefits generally attributed to the adoption of this international business strategy are varied and include advantages such as gains for workers in the form of higher average wages and better career prospects (e.g., Bernard & Jensen, 1999; Gomez-Mejia, 1988; Schank, Schnabel, & Wagner, 2007; Wagner, 2012). It is therefore posited that exporting should have a positive impact on job growth, and several studies have confirmed this (e.g., Bernard & Jensen 1999; Falk & Hagsten, 2015; Hessels & Parker, 2013).

The decision to expand operations into foreign markets is one of the most important and complex strategic steps a firm may make. Building on the RBV, scholars argue that entering into international markets is based on firm-specific resources (e.g., Lindsay et al., 2017; Peng, 2001; Sharma & Erramilli, 2004). Firms internationalize to exploit their most valuable resources, such as human capital. This is a type of intangible resource that cannot be readily imitated and is therefore particularly important in helping firms achieve growth and ultimately build a sustainable competitive advantage (Barney, 1991). Accordingly, it is broadly recognized that HR play a critical role in a firm's internationalization process (e.g., Cerrato & Piva, 2012; Fernandez-Olmos & Diez-Vial, 2013; Gomez-Mejia, 1988; Hitt, Bierman, Uhlenbruck, & Shimizu, 2006; Javalgi & Todd, 2011; Peng, 2001).

According to the RBV, HR can be viewed as a key resource that greatly facilitates the recognition and exploitation of business opportunities in foreign markets (Fernandez-Olmos & Diez-Vial, 2013; Westhead, Wright, & Ucbasaran, 2001). Alternatively, companies that lack HR or do not consider them to be a valuable resource are unlikely to succeed in foreign markets, where the challenges are even greater than in domestic ones. If firms access international markets with inadequate human capital, they may not be able to provide the production and/or service quality customers expect (Hitt, Bierman, Shimizu, & Kochhar, 2001), or they may face serious problems in organizing and facilitating the coordination of different activities and tasks between home and host countries.

Compared to domestic firms, those that expand abroad are likely to need more employees with the skills required to successfully manage the different activities linked to international expansion processes. Moreover, HR must be allocated carefully within exporting firms to successfully contend with the external contingencies posed by foreign markets, which call for some type of specialized knowledge in the workforce (Gomez-Mejia, 1988: 495). As firms increase their international presence, they are also more likely to offer their employees more favorable conditions in terms of monetary and non-monetary rewards (Gomez-Mejia, 1988; Hessels & Parker, 2013). With an increasing commitment to foreign markets, the number of employees within the firm involved in managing the different international operations may also increase significantly (Hessels & Parker, 2013). Most of the mainstream literature has found a positive link between a firm's need for human capital and its increasing internationalization (e.g., Cerrato & Piva, 2012; Hitt et al., 2006; Javalgi & Todd, 2011).

Based on these arguments, we can expect firms that are increasingly engaged in international markets through exporting to create more jobs. This implies that the higher a firm's exporting intensity is, the lower its propensity to downsize is. We therefore propose:

Hypothesis 1. There is a negative link between a firm's involvement in foreign markets through exporting and its propensity to downsize.

2.2. Indirect vs. direct exporting and employee downsizing

Once a firm decides to enter a foreign market, it must choose the most appropriate way of organizing its international business activities. The international business literature identifies a vast array of modes that a firm may choose to enter a foreign market (e.g., Andersen, 1997; Buckley & Casson, 1998; Erramilli, Agarwal, & Dev, 2002; Morschett, Schramm-Klein, & Swoboda, 2010; Pan & David, 2000; Sharma & Erramilli, 2004). Each of these modes has different implications in terms of the degree of control a firm may exercise over its international operations, the level of risk it must bear to expand into foreign markets, and the resources it must commit (e.g., HR). For exporting firms, two of the more popular modes or strategies of entry into foreign markets are: 1) exporting indirectly with the help of a specialized agent or intermediary, and 2) exporting directly to customers from other countries through the firm's own means (Hessels & Terjesen, 2010; Li et al., 2017; Peng & York, 2001; Sharma & Erramilli, 2004).

As Gomez-Mejia (1988: 495) initially noted, "as a scarce strategic resource, human capital must be allocated carefully within the exporting firm". Additionally, it is essential for these firms to create "the stock of human capital necessary to deal with the external contingencies posed by foreign markets that can call for specialized knowledge and experience requirements in the workforce. For firms trying to expand their foreign sales, international factors should therefore be explicitly considered when making those decisions related to the internal movement of people across positions and the external hiring into the organization" (1988: 495). However, the role played by and the need for HR can be expected to depend in part on the type of exporting strategy selected by the firm if it is assumed that each strategy effectively involves a different degree of investment in such resources.

In indirect exporting, specialized agents or intermediaries in the home country tend to play a significant mediating role in international trade as they link individuals and firms that “would otherwise not have been connected” (Peng & York, 2001: 328). They are also sometimes required for the arrangement and success of transactions in international markets (Trabold, 2002). In contrast, those firms that use direct exporting are fully responsible for conducting their own market research (i.e., identifying a potential customer base in the foreign market), along with most of the logistics and remaining operations or activities related to their international transactions (i.e., marketing activities). In sum, selling through a specialized agent or intermediary is a relatively more economical and straightforward way to enter a foreign market than selling directly through the firm’s own resources. This means that firms selecting indirect exporting as the preferable strategy for selling their products abroad should be less committed to, and engaged in, the export process than firms selecting direct exporting.

According to the RBV, when a firm expands overseas through exporting, it must choose between indirect and direct exporting to glean the greatest value from its resources in foreign markets. As noted above, existing RBV research indicates that the bundles of resources a firm possesses are the most critical factors underpinning the strategic decision to export. Sharma and Erramilli (2004) have suggested that a firm is more likely to choose to enter a foreign market via indirect exporting when the likelihood of establishing a competitive advantage in both production and marketing activities in the foreign market is low. This strategy is associated with greater use of external resources and explains why a firm tends to rely more on a home-country agent or intermediary with a presence in the foreign country and that has resources that may also be more suitable for the foreign market conditions. On the other hand, if a firm believes that it is unable to realize a production-related competitive advantage in foreign markets but is at least able to generate a competitive advantage on the marketing side,

then it is more likely to choose direct exporting. With this strategy, a firm tends to rely more on its internal resource pool (intangible resources) to sell its product overseas and thus preserve its competitive advantage in foreign markets. In other words, it is more likely that a firm with valuable intangible resources (such as HR) will enter a foreign market using a direct exporting strategy as this allows the firm to have greater control over its international operations and thus avoid the use of agents and intermediaries, who might opportunistically try to exploit the firm's valuable intangible resources (Fernández-Olmos & Díez-Vial, 2015; Sharma & Erramilli, 2004).

Indirect exporting is, therefore, the entry mode requiring the least HR investment. The indirect exporting mode is seen as the initial stage in the internationalization process, and it is especially recommended when a firm lacks sufficient internal resources (for instance, HR) to sell directly. In this case, the firm faces two major challenges. One is choosing a suitable specialized agent or intermediary in the foreign market that can identify a customer base for marketing the firm's products (Albaum & Duerr, 2008). The other is coping with the increase in production required to meet the demand from foreign customers. Within this context, the firm will very likely need to invest in new machinery/equipment to increase production. This investment may allow the firm to smoothly increase its production capacity with the same number of workers or without having, a priori, to hire new workers.

Moreover, in certain situations, and as a result of the investment in new machinery/equipment, the firm might decide to lay off workers to reduce production costs and increase efficiency/productivity to remain competitive both at home and abroad. This argument is consistent with the organizational efficiency perspective that draws on the RBV. An essential premise underlying this body of research is that a major purpose of employee downsizing is to make more efficient use of HR in certain situations (Datta et al., 2010). In other words, in a situation such as the one described, HR would not be viewed as a valuable and unique asset.

HR can play an important role in production activities although they may also be easily replaced by machinery/equipment, while the remaining activities (such as logistics or marketing) are carried out by external agents or intermediaries. Thus, it is highly probable that firms will have low levels of worker engagement with a short-term focus as HR is not conceived as a specific core resource for successful operations abroad (Lepak & Snell, 1999; Rousseau, 1995). The limited uniqueness and specificity of human capital dissuades a firm from carrying out significant investments in extant human capital (Lepak & Snell, 1999: 39). Within this context, firms are expected to be able to outsource and lay off workers without jeopardizing their existing competitive position/advantage (Lepak & Snell, 1999; Pfeffer & Baron, 1988; Von Hippel, Mangum, Greenberger, Heneman, & Skoglund, 1997).

Direct exporting certainly gives a firm greater control over its international operations. Unlike indirect exporting, this strategy draws a firm closer to its foreign customers. In fact, a firm selects this method when relations with foreign customers are considered too important to be left to independent agents or intermediaries. This method may be particularly expedient when export intensity is high, therefore requiring a greater commitment in terms of marketing, financing, and HR. For example, a firm needs to invest substantial resources in marketing activities to identify and better understand foreign customers' tastes and preferences. Likewise, a firm must also invest substantial resources in logistics and distribution activities (Sharma & Erramilli, 2004). The successful performance of all these activities usually involves hiring skilled employees (Brambilla, Lederman, & Porto, 2012). Fernández-Olmos and Díez-Vial (2015) confirm the greater importance of HR in firms adopting a direct exporting strategy than in firms adopting an indirect one.

Direct exporting may also mean the firm has its own sales representatives, distributors, or retailers abroad. In this case, the firm must also recruit skilled employees, who may be both host-country nationals and home-country nationals. Firms selecting this strategy normally

need to set up an international operations department to centralize all the specialized skills required to deal with foreign markets. According to the RBV, firms with the most capable human capital are more likely to have the largest scope of international operations (Hitt et al., 2006). Consequently, HR will play a critical role in ensuring the success of this strategy, and firms will be more likely to endeavor to retain and invest in these valuable HR as they may be the main source of the firms' competitive advantage in international markets. Moreover, when employees are viewed as a core component of competitiveness, firms may well establish organization-focused relationships to increase employees' incentive to engage in firm-specific learning (Lepak & Snell, 1999; Rousseau, 1995; Tsui, Pearce, Porter, & Hite, 1995), which may be especially necessary to compete in foreign markets. The primary objective of these relationships is precisely to foster greater ongoing commitment from employees because it is expected to translate into exceptional performance (Lawler, Mohrman, & Ledford, 1995; Lepak & Snell, 1999). Given that human capital plays a critical role in developing and undertaking international activities, downsizing events could be especially detrimental to the maintenance of the firm's competitive position/advantage.

Based on the previous arguments, we expect the propensity to downsize to be positive in firms selecting indirect exporting as an entry mode into foreign markets and negative in firms selecting the direct approach. We therefore propose:

Hypothesis 2a. There is a positive link between a firm's involvement in foreign markets through an indirect export strategy and its propensity to downsize.

Hypothesis 2b. There is a negative link between a firm's involvement in foreign markets through a direct export strategy and its propensity to downsize.

2.3. Interactive effects of firm efficiency and export strategies on employee downsizing

Downsizing has typically been viewed by firm managers as a legitimate restructuring strategy aimed at improving organizational efficiency. More specifically, from an economic

perspective, it has been assumed that downsizing is caused by a constant effort to enhance productivity and efficiency (McKinley, Zhao, & Rust, 2000) and thereby remain competitive in the marketplace. This has led many scholars to hypothesize that the higher the level of a firm's efficiency/productivity is, the lower its propensity to downsize is (e.g., Budros, 1997, 1999; Datta et al., 2010). Accordingly, a firm's level of efficiency has been considered a significant predictor of downsizing rates. In fact, there are several empirical studies confirming the existence of a negative relationship between a firm's level of efficiency/productivity and its propensity to carry out drastic reductions in its workforce (e.g., Budros, 1997; Gittell, Cameron, Lim, & Rivas, 2006; Yoo & Moody, 2000). These findings are in precise consonance with the organizational efficiency perspective drawing on the RBV.

There are also many empirical studies showing the existence of a significant and positive relationship between the level of a firm's efficiency/productivity and its exports. This is known in the literature as the *self-selection hypothesis* and implies that more efficient/productive firms have a higher probability of exporting. However, this does not provide the entire picture of the relationship because exporting firms may also improve their levels of efficiency by, for example, incorporating host countries' local demand into their products and/or services, using the better resource endowment in host countries, and/or providing self-training for their internal activities. Exporting has also been advocated as an important channel for transferring knowledge stocks from foreign markets, which in turn contribute to increasing exporting firms' level of efficiency. This is also known as the *learning-by-exporting hypothesis* (for a review, see Wagner, 2007, and Hayakawa, Machikita, & Kimura, 2012).

As suggested by some studies, there may be significant differences in the levels of efficiency between firms adopting direct and indirect exporting strategies (e.g., Bai, et al., 2017; Yasar, 2015). Firms entering a foreign market through direct exporting are more likely

to build closer relationships with clients and their trading counterparts, which can result in enhanced labor force skills, improved product/service offerings, and positive externalities from knowledge obtained by the firms in international markets. In addition, and according to the RBV, HR are viewed as a critical factor in these firms for successfully transferring this type of intangible knowledge, which is generally tacit in nature (Bai et al., 2017; Howells, 1996; Yasar, 2015). In contrast, firms opting for an indirect exporting strategy have more difficulty in engaging closely with clients or other types of agents in foreign markets. These firms are less likely to have and be able to internally develop a stock of knowledge on how to effectively do business abroad. This might also explain why HR is not considered as important a resource as in the case of their direct-exporting counterparts and, ultimately, why the potential benefits of foreign knowledge can be exploited more effectively through direct exporting (Rosenberg, 1982; Wu, Sinkovics, Cavusgil, & Roath, 2007; Yasar, 2015). In any case, because firm efficiency is usually viewed as an important inhibitor of employee downsizing, we expect that the higher the level of efficiency in firms adopting an indirect or direct export strategy is, the lower their propensity to downsize is. Thus, we propose:

Hypothesis 3a. There is a negative interactive effect between a firm's level of efficiency and the adoption of an indirect export strategy on its propensity to downsize.

Hypothesis 3b. There is a negative interactive effect between a firm's level of efficiency and the adoption of a direct export strategy on its propensity to downsize.

3. Method

3.1. Data collection and sample selection

We collected the data to test our hypotheses from the Survey on Business Strategies (SBS) between 1993 and 2016. This is a yearly survey conducted by the SEPI Foundation with the support of the Spanish Ministry of Industry. The SBS covers a wide range of Spanish firms operating in all the country's manufacturing sectors. One of the SBS's main features is the

representative nature of the reference population, which consists of firms with 10 or more employees. The SBS captures information on foreign trade (e.g., exports and access channels to foreign markets through exporting) and employment (e.g., headcount). All the information contained in the SBS is subject to quality and consistency controls.

Unlike most prior research on downsizing, which has focused primarily on large firms, our sample involves a large proportion of small and medium-size enterprises (SMEs), which may complicate the comparison between our findings and past ones, although it may also be helpful for identifying similarities to and differences with past research. Our evidence may also be representative of firms from a developed country with high and persistent unemployment rates. For instance, the unemployment rate in Spain in 1993 (the first year of our analysis) was 21.3%, compared to 6.1% in the US, 2.9% in Japan, and 14% in the EU. In 2016 (the last year of our analysis), these rates were 19.6% in Spain, 4.9% in the US, 3.1% in Japan, 8.6% in EU-28, and 10.0% in the Eurozone (19 countries) (Eurostat, 2019). Spain has also suffered from the recent economic crisis more than other countries around the world, with unemployment rates of over 20% for several years. This means that downsizing has been a relatively frequent event in the country. On the other hand, Spain is also one of the world's main exporters. In 1993 and 2016, exports accounted for 17.8% and 22.0% of GDP, respectively.

We eliminate firm-year observations that (a) do not have the relevant information (130,554 observations), (b) use both direct and indirect exporting modes in the same year (2,595 observations) —i.e., we need to isolate the effect of either direct or indirect exporting strategies on downsizing but not the effect of both strategies at the same time— and (c) establish a sales subsidiary or a sales office to carry out international activity within the foreign market because our analysis is focused on exports (2,453 observations) —i.e., we ensure that these firms did not use other entry modes, such as foreign direct investment (FDI).

The resulting dataset is an unbalanced data panel of 17,694 (firm-year) observations for the period from 1993 to 2016, amounting to a total of 3,599 firms and an average of 5 firm-year observations per firm.

3.2. Variables

Our dependent variable is *Downsizing*, a dichotomous variable that takes a value of 1 if a firm has downsized during a given year and 0 otherwise. We consider a firm to have downsized if its workforce under open-ended contracts has decreased by more than 10% over two successive years. This definition conveys the usual idea of intentionality because it excludes reductions in the size of the temporary workforce (Ahmadjian & Robinson, 2001) and ensures that downsizing implies a significant reduction in employment (Freeman & Cameron 1993). Moreover, it is consistent with many prior empirical studies suggesting that this cut-off value can reasonably distinguish between planned (or intentional) downsizing and significant workforce cutbacks and other temporary and reactive reductions in employment (e.g., Ahmadjian & Robbins, 2005; Ahmadjian & Robinson, 2001; Cascio, Young, & Morris 1997; Freeman & Cameron, 1993; Guthrie & Datta, 2008; Mellahi & Wilkinson, 2010a, 2010b; Vicente-Lorente & Zúñiga-Vicente, 2012, 2018). Given the dummy nature of the dependent variable, the empirical models developed to test our hypotheses were estimated using a random-effects panel data probit estimator (see Section 3.3 below).

The independent variables of interest include measures of exporting intensity and the different export strategies used by firms to access foreign markets (i.e., indirect and direct exporting). *Exporting intensity* is used to test our Hypothesis 1, being defined as the ratio of foreign sales through exports to total sales. This is one of the most common forms of measuring a firm's degree of internationalization, especially for SMEs (e.g., Benito-Osorio, Colino, Guerras-Martín, & Zúñiga-Vicente, 2016; Cerrato & Piva, 2012; Keupp & Gassmann, 2009; Onkelinx et al., 2016; Reuber & Fischer, 1997). The dummy variable *Indirect exporting*

is used to test Hypothesis 2a. Indirect exporting enables the company to either use independent intermediaries or specialized agents located within the firm's domestic market to provide the knowledge and contacts necessary to sell overseas (without the risks and complexities of doing it alone) or use collective means for exporting (for instance, when exporters are assisted in penetrating foreign market through cooperative arrangements with other exporters from the same industry). The dummy variable *Direct exporting* is used to test Hypothesis 2b. This variable refers to exporting wherein a firm uses its own resources to sell abroad (e.g., sales representatives, distributors, or retailers). Finally, *Firm efficiency* is defined herein as the ratio of value added to total assets. The higher this variable is, the more efficient the firm is in its use of assets. In contrast, if an organization has low levels of efficiency, its assets will be oversized. Here, we consider the interactive effects of this variable with each exporting strategy to test our Hypotheses 3a and 3b.

Finally, in line with previous research, we also control for other variables that are likely to affect employee downsizing, such as *R&D intensity*, *labor costs*, *liquidity*, *leverage*, *financial performance*, *firm size*, *market demand*, and *capacity utilization*, explained as follows.

1) *R&D intensity* is the ratio of total R&D spending to total sales. This ratio can be viewed as a composite input-based indicator of the firm's innovation activities. Some prior studies have shown that it may be an important factor in employment or downsizing decisions (e.g., Vicente-Lorente & Zúñiga-Vicente, 2012, 2018).

2) *Labor costs* represent the ratio of labor costs (wage, salaries, and social security contributions) over total sales. Because labor costs also tend to drive downsizing decisions, we assume that organizations with higher labor costs are more motivated to downsize to reduce their overhead (e.g., Cascio, 1993; Guthrie & Datta, 2008).

3) *Liquidity* is estimated using a standard measure, the current ratio, which is the ratio of current assets to current liabilities. Prior literature has shown that liquidity has an impact on firm performance (Chang, 1996).

4) *Leverage* is the ratio of debt to total assets. Downsizing may be viewed as a common response to financial distress (e.g., Coucke, Pennings, & Sleuwaegen, 2007; Muñoz-Bullón & Sánchez-Bueno, 2014). Firms with extensive debt have difficulty repaying creditors and thus may be either less willing to downsize (because of the aforementioned expense of the associated red tape) or more willing to do so to reduce costs.

5) *Financial performance* is generally considered an important antecedent of downsizing decisions, with a weaker performance often leading to layoffs (Datta et al., 2010). Different measures of firm performance may be used, such as stock prices (Worrell, Davidson, & Sharma, 1991) or financial earnings (Cascio et al., 1997; De Meuse, Vanderheiden, & Bergmann, 1994). Yu and Park (2006: 236) have indicated that “it is difficult to nail down the downsizing effect from stock market reactions because too many external variables other than downsizing affect capital market performance in firms. Additionally, as some downsizing practices tend to be implemented by firms in financial difficulty, the stock market would react negatively to downsizing as a sign of bad performance in those firms.” We therefore decide to use financial earnings. In particular, we use return on assets (ROA), which is consistent with most prior literature on downsizing (Cascio et al., 1997; De Meuse, Bergmann, Vanderheiden, & Roraff, 2004). ROA is computed by dividing earnings before income, taxes, depreciation, and amortization (EBITDA) by total assets.

6) *Firm size* is controlled by including a logarithmic transformation of total sales. Cascio and Young (2003: 132) reported that small companies, especially small manufacturers, tend to resist downsizing because they seek to protect the substantial investments involved in hiring and training workers.

7) *Market demand* is measured through a set of dummy variables to record whether the company's market share has grown, remained constant, or shrunk (on a year-on-year basis). We also include a dummy variable to show whether there is a downward trend in the main market targeted by the company. The literature supports the notion that employee downsizing is likely to be more prevalent under conditions of falling demand (Filatotchev, Buck, & Zuckov, 2000).

8) *Capacity utilization* is the firm's average use of capacity. When this capacity is weak, employers will be eager to downsize (Greenhalgh, Lawrence, & Sutton, 1988). Several studies argue that the propensity to downsize and the level of downsizing are strongly influenced by industry conditions (e.g., Coucke et al., 2007; Guthrie & Datta, 2008). Therefore, several dummy variables are included to represent the industry to which the firms belong measured at the two-digit CNAE level (the Appendix includes descriptions of all the variables used in the empirical study).

3.3. *Econometric analysis*

Given the categorical nature of our dependent variable, we employ a probit model as a suitable method. This model is designed to assess the magnitude and significance of the effects of the explanatory variables on either the *frequency* or the *probability* of the response variable (in our case, a reduction in the workforce under open-ended contracts by more than 10%). What is more, the fact that several sequential (yearly) observations of the same firm are recorded in our dataset allows us to address the issue of unobserved heterogeneity. To address the possibility that those firm characteristics not included as controls explain different propensities to downsize, we specify a random-effects probit model to estimate the likelihood of employee downsizing in a given year as follows:

$$Pr(y_{it} > 0) = \phi(x_{it-1}\beta + \lambda_i) + u_{it};$$

where ϕ is the standard normal cumulative distribution function; variables in the x_{it-1} vector are firm characteristics at year $t-1$ that may influence downsizing in the current year; λ_i is a time-invariant firm-specific error that captures the effects of unobservable characteristics; and u_{it} is the error term, which is defined as follows: The first component (v_i) is a firm-specific unobservable effect capturing all a firm's unobserved time-constant characteristics that affect downsizing. The second component (e_{it}) is often called the idiosyncratic error or time-varying error because it represents unobserved factors that change over time and affect downsizing. Any differences in the propensity to downsize due to unmeasured firm-specific factors are absorbed by the unobserved heterogeneity component. This study also controls for potential problems of endogeneity/simultaneity in the estimation of our models. The study seeks to solve this problem through the one-year lagging of all the explanatory variables (i.e., independent and control variables, except for *industry*) with respect to the dependent variable.

4. Results

4.1. Descriptive analysis

Panels A and B of Table 1 provide the summary statistics of the variables used in the analyses (means and standard deviations) and the correlations between them, respectively. The table shows that the average level of export intensity for the sample firms is approximately 13.52%. Approximately 9% of the firms use indirect exporting, whereas almost 32% of the sample firms opt for direct exporting (the remaining 59% of the firms in our sample are nonexporters). Regarding the bivariate correlations (Panel B), it is important to indicate the negative and significant covariation (statistically significant at a 99% level of confidence) between several of our main variables of interest, such as export intensity, direct exporting, firm efficiency, and employee downsizing. The table also reveals that multicollinearity does not appear to be a problem in our empirical study because most of the explanatory variables have correlations lower than 0.2.

Insert Table 1 about here

4.2. Regression results

Table 2 shows the estimation results from the random-effects probit model for testing the proposed hypotheses. The table reports the outcomes of seven alternative specifications. Model 1 is the baseline model that includes only the control variables. Model 2 adds the independent variable of interest in Hypothesis 1 (i.e., export intensity); Models 3 and 4 add *Indirect exporting* (Hypothesis 2a) and *Direct exporting* (Hypothesis 2b), respectively; Model 5 (6) further includes the interactions of *Indirect (Direct) exporting* with *Firm efficiency*, respectively (Hypotheses 3a and 3b); finally, Model 7 includes all the independent and control variables.

Insert Table 2 about here

Models 2 to 7 in Table 2 show that the estimated coefficient of export intensity is always negative and statistically significant ($p < 0.01$). This result indicates that a firm's exporting intensity has a linear and negative impact on the propensity to downsize. Strong statistical support is therefore found for Hypothesis 1. In Model 3, the estimated coefficient for *Indirect exporting* is not statistically significant. Therefore, no support is found for Hypothesis 2a. In contrast, the coefficient for *Direct exporting* is negative and significant in Model 3 ($\beta = -0.168$; $p < 0.01$), which supports Hypothesis 2b. Finally, although *Firm efficiency* has a nonsignificant impact on the indirect exporting–downsizing relationship (Model 5), which offers no support for Hypothesis 3a, the results in Model 6 confirm Hypothesis 3b since the interaction between *Direct exporting* and *Firm efficiency* has a negative and significant coefficient ($\beta = -0.032$, $p < 0.05$). This means that when the value added is larger (i.e., the level of firm efficiency is higher), the likelihood of downsizing is significantly lower among those firms also using a

direct exporting strategy. In other words, direct exporters that are highly efficient in using their assets are significantly less likely to downsize. The coefficient of *Firm efficiency* is negative and significant in Models 1 to 5. This means that the higher the level of firm efficiency is, the lower the propensity of a firm to downsize is. Finally, the results in Model 7 confirm most of the relationships found in Models 2 to 6.

The results in Table 2 also reveal that the propensity to make drastic cuts to the workforce is less likely to coincide with larger *capacity utilization*. *Firm size* and *R&D intensity* also seem to be significant inhibitors. In contrast, downsizing is more likely in firms with higher *leverage*, when a downturn in the market has occurred, when the firm's market share has either shrunk or remained constant, and when there is a higher ratio of *labor costs* to sales. These control variables maintain their signs and/or significance levels in all the models.

4.3. Robustness checks

To assess the robustness of our findings, we also perform the main analyses using alternative definitions of the dependent variable. First, we consider a different threshold for downsizing; a cut-off value of 20% instead of 10%. Second, we use a continuous measure of downsizing; that is, the percentage reduction in the number of workers under open-ended contracts in period t over period $t-1$. Third, we consider a firm to have downsized if its total headcount decreased by more than 10%, or 20% over two successive years.

The results of these additional robustness tests are reported in Table 3. Model 1 shows the results using 20% cut-off values for computing our dependent variable —the use of different thresholds is the same procedure used in previous studies on downsizing for testing the robustness of our findings (e.g., Ahmadjian & Robbins, 2005; Ahmadjian & Robinson, 2001; Cascio et al., 1997; Freeman & Cameron, 1993; Guthrie & Datta, 2008; Mellahi & Wilkinson, 2010a, 2010b; Vicente-Lorente & Zúñiga-Vicente, 2012, 2018). Similar results are obtained independently of the threshold considered. The robustness of our findings is therefore

confirmed, as we find no substantial differences when choosing either one of these cut-off values for downsizing (10% or 20%).

Second, we consider an alternative definition of downsizing based on reductions in the firm's total headcount. Specifically, we consider a firm to have downsized if its total headcount has decreased by more than 10%, or 20% over two successive years. The estimation results using these definitions are reported in Models 2 and 3 (Table 3). The signs and significance of the estimated effects of *Export intensity*, *Indirect exporting*, *Direct exporting*, *Indirect exporting* x *Firm efficiency*, and *Direct exporting* x *Firm efficiency* are consistent with the results in Table 2 above. Therefore, the consideration of this alternative definition of downsizing leads to similar results.

Finally, Model 4 in Table 3 contains the results of the random-effects Tobit model, which takes the change in the workforce size under open-ended contracts as the dependent variable. We therefore use a continuous definition of downsizing (specifically, the ratio between the difference in the number of workers under open-ended contracts in period t and in period $t-1$ and total headcount in period $t-1$). The inclusion of the extent of downsizing as the dependent variable (instead of the dummy variable indicating downsizing) leads to qualitatively similar results to those obtained when taking the dummy variable as the dependent variable. Therefore, once again, the results obtained are qualitatively similar to those reported in Table 2.

5. Discussion and conclusions

This study is one of the first attempts to explore the downsizing effects of an export-based internationalization strategy. From this standpoint, our findings provide original evidence by assessing whether a firm's international strategy could lead to significant and intentional reductions in its workforce. In general, the results show that as firms increase their involvement in foreign markets via export intensity, the propensity to make drastic cuts to

their workforce significantly diminishes. Moreover, these findings suggest that a high degree of internationalization (via export intensity) has a positive effect on the workforce in terms of job growth. In some ways, these findings are in line with several past empirical studies in the field of international trade that confirm a positive effect of export intensity on job growth (e.g., Bernard & Jensen, 1999; Falk & Hagsten, 2015; Hessels & Parker, 2013). This involves recognizing the key role that human capital could play when a firm decides to expand abroad via exports. Considering human capital a critical resource for successfully competing in foreign markets likely makes firms more reluctant to carry out drastic reductions in their workforce.

Therefore, consistent with prior research (e.g., Hitt et al., 2006), our study also provides empirical evidence to support the potential efficacy of human capital in export operations. For example, Hitt et al. (2006) found that internationalization requires the use of capable human capital and that human capital positively moderates the relationship between internationalization and performance. If this is so, it is logical to argue that firms are more reluctant to downsize. There is also some prior research (e.g., Onkelinx et al., 2016) suggesting there is a threshold above which additional human capital endowments do not enhance internationalization via exports. In other words, this prior research suggests there is a potential negative association between human capital and export intensity. Our findings seem to contradict these conclusions because they corroborate the idea that the greater the international involvement of a firm via exports, is the lower its propensity to downsize is. Additionally, as noted above, this finding might be interpreted as a signal of the relevance that firms accord to HR when expanding their international scope.

Our findings also reveal that the nature of the link between the type of export strategy adopted by a firm and its propensity to downsize is rather different. Specifically, we find that the effect of internationalization on employee downsizing is not significant when firms opt for

specialized agents or intermediaries (or collective actions), whereas it is negative and strongly significant when they opt for their own means or resources. These findings are consistent with the notion contained in Hypothesis 1 because one can expect firms to use their own resources as they increase their international involvement (i.e., as they increase their export intensity). Compared to the indirect export strategy, the direct export strategy is more complex and hence requires having or developing specific capabilities. The increasing complexity of internationalization operations requires high levels of human capital to successfully manage such activities (Onkelinx et al., 2016). As human capital is viewed as a critical resource, firms will also be more reluctant to downsize. In addition, once human capital has been carefully trained and assigned to handle complex internationalization operations, it is especially important to retain workers, as their experience related to different markets, situations, and circumstances enables them to generate an intensive process of organizational learning (Zahra, Ireland, & Hitt, 2000) by incorporating and transferring their acquired and accumulated knowledge to the firm's operations and organizational capabilities.

As noted above, in our study, most of the firms operating in international markets have adopted strategies that involve a greater commitment to HR (i.e., direct exporting). This might plausibly explain why the relationship between export intensity and employee downsizing is also negative. However, our results clearly distinguish between different exporting strategies to gain a more holistic picture of the nature of the relationship between exporting and downsizing since different strategies have different impacts on downsizing. Our study thus provides additional insights to unravel the contradictory findings in past research in the field of economics on the link between exporting and employment growth. Our findings are also consistent with the assumptions in the RBV that firms expanding the scope of their international operations or strengthening their international commitment (via direct exporting)

need to have the most capable HR (Hitt et al., 2006). As HR are viewed in these situations as a key resource for obtaining a competitive advantage, firms are more reluctant to downsize.

In line with previous studies, our findings also reveal that a firm's level of efficiency has a negative and significant impact on the propensity to downsize (e.g., Budros, 1997; Gittell et al., 2006; Yoo & Moody, 2000). This is consistent with the assumption of the efficiency perspective drawn from the RBV whereby the greater the firm's efficiency in the use of its resources/assets is, the lower the need for employee downsizing is. However, our findings highlight that important differences can be detected between direct and indirect exporters in terms of their interactive effects with firm efficiency. We find that the interactive effects of the level of efficiency and exporting strategies on the propensity to downsize are only significant in the case of direct exporters. Our results suggest that the efficiency levels of direct exporters have a negative impact on the propensity to downsize because such firms can also benefit from receiving feedback from their international customers or other agents involved in international operations, which may improve their product/service standards as well as cause them to benefit from other knowledge spillovers (Yasar, 2015). According to the RBV, the success of this exporting strategy depends largely on the skills of the firm's HR. In fact, in such a context, HR tend to be viewed as critical resources to ensure an appropriate transfer of knowledge between home and host countries. This could explain why firms should, at least initially, be more reluctant to carry out mass layoffs.

Finally, in line with previous research, our findings also suggest that there are other significant environmental (e.g., Ahmadjian & Robinson, 2001; Budros, 1997, 2000; Muñoz-Bullón & Sánchez-Bueno, 2014) and organizational factors (e.g., Gittell et al., 2006; Muñoz-Bullón & Sánchez-Bueno, 2014; Vicente-Lorente & Zúñiga-Vicente, 2012, 2018) that may inhibit or facilitate employee downsizing.

5.1. Implications for scholars, managers, and policymakers

Our study has important implications for scholars, practitioners, and policymakers. From an academic perspective, this study emphasizes the relevance of internationalization via exports as a potential inhibitor of employee downsizing, especially when a firm is highly involved in foreign markets. From our results, it seems clear that researchers seeking a better understanding of the downsizing phenomena need to closely examine the particular exporting strategy each firm adopts.

From a managerial perspective, our findings suggest that those international strategies that imply a greater engagement in foreign markets (i.e., direct exporting) may be considered consistent with other strategies characterized by job growth or stability. Moreover, considering the special relevance that HR may acquire in an internationalization strategy (mainly when it involves a greater level of HR commitment), there is a justified need to develop managerial competences and skills for better strategic management of HR. In this sense, it seems clear that one of managers' major roles should be to achieve a suitable co-alignment between a firm's HR practices and its export strategy. This is also important because it might readily be assumed that the better the alignment of the firm's HR practices or architecture around its chosen export strategy is, the higher the performance and efficiency levels and, hence, the lower the need for massive layoffs will be.

Our evidence is also consistent with policymakers' conventional assumption that exports (mainly in the case of direct exports) and job growth are positively related at the firm level. Accordingly, policymakers could justify the design of public subsidy systems or other types of funding to foster firms' export operations, especially for those opting for a direct export strategy. These public subsidies or aids may be especially important in the case of SMEs because they are key players in most economies around the world and tend to be much more vulnerable to the barriers or constraints that often hamper their growth prospects via

internationalization (Hessels & Parker, 2013). These aids to direct exporting could also be viewed as a helpful social instrument to mitigate the negative impact that downsizing has not only on employees but also on their families and even society in general.

5.2. Avenues for future research

We also indicate several issues as an agenda for future research. Spanish manufacturing firms provide a privileged arena for studying the antecedents of downsizing decisions within the context of a high and persistent level of unemployment even though these conditions might also limit the generalization of our findings. Furthermore, our sample's nature and characteristics may accurately represent the population of manufacturing SMEs, which includes a significant number of companies without international operations. Our sample includes data on firms that are internationally inactive, thus avoiding the problem of sample selection bias or 'sampling on the dependent variable,' which may afflict studies focusing solely on the select group of firms that have made the decision to internationalize.

Further empirical evidence in other institutional contexts might also help assess the generalizability of our findings, although this may also be limited because of our exclusive focus on manufacturing firms. It might therefore be advisable to conduct similar research with a representative sample of service firms. Additionally, prior evidence has shown that firm ownership structure (e.g., in terms of family and non-family-owned) is an important determinant of firm internationalization (for a review, see Hitt, Tihanyi, Miller, & Connelly, 2006). Thus, it could also be interesting to test whether ownership structure is an important moderating variable in the relationship considered.

Our study does not identify the effect of internationalization via exports on downsizing decisions or consider their impact on different types of employees in terms of, for instance, more skilled workers versus less skilled ones or 'strategic' versus 'nonstrategic' employee groups (see Datta et al., 2010 and Lepak & Snell, 1999). Because human capital is not

homogeneous, it would be interesting for future research to explore the types of employees that may be more/less affected by such decisions. Our stated arguments and findings suggest that the more valuable employees are, the less likely they are to be dismissed. Furthermore, this analysis could also provide a complementary view to the mainstream literature that examines the relationship between HR quality and internationalization.

Finally, because the internationalization process via exports can be more complex than is depicted in this study, it would be very interesting to further investigate how this might affect the results obtained here. For example, future studies could examine what occurs in the following situations: 1) when firms de-internationalize by exiting or reducing their involvement in some countries as a result of changes in the economic environment; 2) when the same companies re-internationalize by returning to the countries that they had previously exited or re-increasing their foreign commitments; and 3) when companies continuously change between entry strategies in foreign markets and/or combine different entry strategies¹ (see, for example, Bernini, Du, & Love, 2016; Dominguez & Mayrhofer, 2017).

References

- Ahmadjian, C. L., & Robbins, G. E. (2005). A clash of capitalisms: Foreign shareholders and corporate restructuring in 1990s Japan. *American Sociological Review*, 70(3), 451-471.
- Ahmadjian, C. L., & Robinson, P. (2001). Safety in numbers: Downsizing and the deinstitutionalization of permanent employment in Japan. *Administrative Science Quarterly*, 46(4), 622-654.
- Albaum, G. S., & Duerr, E. (2008). *International marketing and export management*. Harlow: Pearson Education.
- Almodóvar, P., & Rugman, A. M. (2014). The M Curve and the performance of Spanish international new ventures. *British Journal of Management*, 25, S6-S23.
- Andersen, O. (1997). Internationalization and market entry mode: A review of theories and conceptual frameworks. *Management International Review*, 37, 27-42.

¹ We are very grateful to one of the anonymous reviewers for suggesting these ideas as avenues for future research.

- Aw, B. Y., & Hwang, A. R. M. (1995). Productivity and the export market: A firm-level analysis. *Journal of Development Economics*, 47(2), 313-332.
- Bai, X., Krishna, K., & Ma, H. (2017). How you export matters: Export mode, learning and productivity in China. *Journal of International Economics*, 104, 122-137.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Benito-Osorio, D., Colino, A., Guerras-Martín, L. Á., & Zúñiga-Vicente, J. Á. (2016). The international diversification-performance link in Spain: Does firm size really matter?. *International Business Review*, 25(2), 548-558.
- Bernard, A. B., & Jensen, J. B. (1997). Exporters, skill upgrading, and the wage gap. *Journal of International Economics*, 42(1-2), 3-31.
- Bernard, A. B., & Jensen, J. B. (1999). Exceptional exporter performance: Cause, effect, or both? *Journal of International Economics*, 47(1), 1-25.
- Bernini, M., Du, J., & Love, J. H. (2016). Explaining intermittent exporting: Exit and conditional re-entry in export markets. *Journal of International Business Studies*, 47(9), 1058-1076.
- Brambilla, I., Lederman, D., & Porto, G. (2012). Exports, export destinations, and skills. *American Economic Review*, 102(7), 3406-38.
- Brauer, M., & Laamanen, T. (2014). Workforce downsizing and firm performance: An organizational routine perspective. *Journal of Management Studies*, 51(8), 1311-1333.
- Buckley, P. J., & Casson, M. C. (1998). Analyzing foreign market entry strategies: Extending the internalization approach. *Journal of International Business Studies*, 29(3), 539-561.
- Budros, A. (1997). The new capitalism and organizational rationality: The adoption of downsizing programs, 1979–1994. *Social Forces*, 76(1), 229-250.
- Budros, A. (1999). A conceptual framework for analyzing why organizations downsize. *Organization Science*, 10(1), 69-84.
- Budros, A. (2000). Organizational types and organizational innovation: Downsizing among industrial, financial, and utility firms. *Sociological Forum*, 15(2), 273-306.
- Caldera, A. (2010). Innovation and exporting: evidence from Spanish manufacturing firms. *Review of World Economics*, 146(4), 657-689.
- Campa, J., & Guillén, M. F. (1999). The internalization of exports: Firm-and location-specific factors in a middle-income country. *Management Science*, 45(11), 1463-1478.
- Cascio, W. F. (1993). Downsizing: What do we know? What have we learned? *Academy of Management Executive*, 7(1), 95-104.

- Cascio, W. F., & Young, C. E. (2003). Financial consequences of employment-change decisions in major US corporations, 1982–2000. In K.P. De Meuse & M.L. Marks (Eds.), *Resizing the organization: Managing layoffs, divestitures, and closings* (pp. 131-156). San Francisco, CA: Jossey-Bass.
- Cascio, W. F., Young, C. E., & Morris, J. R. (1997). Financial consequences of employment-change decisions in major US corporations. *Academy of Management Journal*, *40*(5), 1175-1189.
- Cerrato, D., & Piva, M. (2012). The internationalization of small and medium-sized enterprises: The effect of family management, human capital and foreign ownership. *Journal of Management and Governance*, *16*(4), 617-644.
- Chang, S. J. (1996). An evolutionary perspective on diversification and corporate restructuring: Entry, exit, and economic performance during 1981-89. *Strategic Management Journal*, *17*(8), 587-611.
- Coucke, K., Pennings, E., & Sleuwaegen, L. (2007). Employee layoff under different modes of restructuring: exit, downsizing or relocation. *Industrial and Corporate Change*, *16*(2), 161-182.
- Datta, D. K., Guthrie, J. P., Basuil, D., & Pandey, A. (2010). Causes and effects of employee downsizing: A review and synthesis. *Journal of Management*, *36*(1), 281-348.
- De Meuse, K. P., Bergmann, T. J., Vanderheiden, P. A., & Roraff, C. E. (2004). New evidence regarding organizational downsizing and a firm's financial performance: A long-term analysis. *Journal of Managerial Issues*, *16*(2), 155-177.
- De Meuse, K. P., Vanderheiden, P. A., & Bergmann, T. J. (1994). Announced layoffs: Their effect on corporate financial performance. *Human Resource Management*, *33*(4), 509-530.
- Di Cintio, M., Ghosh, S., & Grassi, E. (2016). Firm employment growth, R&D expenditures and exports. *ETA: Economic Theory and Applications* 240750. Fondazione Eni Enrico Mattei (FEEM). DOI: 10.22004/ag.econ.240750.
- Dominguez, N., & Mayrhofer, U. (2017). Internationalization stages of traditional SMEs: Increasing, decreasing and re-increasing commitment to foreign markets. *International Business Review*, *26*(6), 1051-1063.
- Erramilli, M. K., Agarwal, S., & Dev, C. S. (2002). Choice between non-equity entry modes: an organizational capability perspective. *Journal of International Business Studies*, *33*(2), 223-242.
- Eurostat, (2019). *Total unemployment rate*. European Commission. <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps0020>

3&plugin=1 Accessed 15 June 2019.

- Falk, M., & Hagsten, E. (2015). Export status and firm growth of European SMEs. *Economics Bulletin*, *35*(2), 1330-1338.
- Fernández-Olmos, M., & Díez-Vial, I. (2013). Effect of firms resources on international diversification: An application in the Iberian ham industry. *European Management Journal*, *31*(2), 196-208.
- Fernández-Olmos, M., & Díez-Vial, I. (2015). Intangible resources, export channel and performance: is there any fit? *Journal of Business Economics and Management*, *16*(5), 1013-1033.
- Fernández-Olmos, M., Gargallo-Castel, A., & Giner-Bagües, E. (2016). Internationalisation and performance in Spanish family SMEs: The W-curve. *BRQ Business Research Quarterly*, *19*(2), 122-136.
- Filatotchev, I., Buck, T., & Zuckov, V. (2000). Downsizing in privatized firms in Russia, Ukraine, and Belarus. *Academy of Management Journal*, *43*(3), 286-304.
- Freeman, S. J., & Cameron, K. S. (1993). Organizational downsizing: A convergence and reorientation framework. *Organization Science*, *4*(1), 10-29.
- Gittell, J.H., Cameron, K., Lim, S., & Rivas, V. (2006). Relationships, layoffs, and organizational resilience: Airline industry responses to September 11. *Journal of Applied Behavioral Science*, *42*(3), 300-329.
- Gomez-Mejia, L. R. (1988). The role of human resources strategy in export performance: A longitudinal study. *Strategic Management Journal*, *9*(5), 493-505.
- Greenhalgh, L., Lawrence, A. T., & Sutton, R. (1988). Determinants of work force reduction strategies in declining organizations. *Academy of Management Journal*, *13*(2), 241-254.
- Guthrie, J. P., & Datta, D. K. (2008). Dumb and dumber: The impact of downsizing on firm performance as moderated by industry conditions. *Organization Science*, *19*(1), 108-123.
- Harney, B., Fu, N., & Freeney, Y. (2018). Balancing tensions: Buffering the impact of organisational restructuring and downsizing on employee well-being. *Human Resource Management Journal*, *28*(2), 235-254.
- Hayakawa, K., Machikita, T., & Kimura, F. (2012). Globalization and productivity: A survey of firm-level analysis. *Journal of Economic Surveys*, *26*(2), 332-350.
- Hessels, J., & Parker, S. C. (2013). Constraints, internationalization and growth: A cross-country analysis of European SMEs. *Journal of World Business*, *48*(1), 137-148.
- Hessels, J., & Terjesen, S. (2010). Resource dependency and institutional theory perspectives on direct and indirect export choices. *Small Business Economics*, *34*(2), 203-220.

- Hitt, M.A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on the strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, 44(1), 13-28.
- Hitt, M. A., Bierman, L., Uhlenbruck, K., & Shimizu, K. (2006). The importance of resources in the internationalization of professional service firms: The good, the bad, and the ugly. *Academy of Management Journal*, 49(6), 1137-1157.
- Hitt, M. A., Tihanyi, L., Miller, T., & Connelly, B. (2006). International diversification: Antecedents, outcomes, and moderators. *Journal of Management*, 32(6), 831-867.
- Howells, J. (1996). Tacit knowledge. *Technology Analysis & Strategic Management*, 8(2), 91-106.
- Jansen, M., & Lee, E. (2007). *Trade and employment: Challenges for policy research*. WTO Secretariat, International Labour Organization and World Trade Organization, Switzerland.
- Javalgi, R. R. G., & Todd, P. R. (2011). Entrepreneurial orientation, management commitment, and human capital: The internationalization of SMEs in India. *Journal of Business Research*, 64(9), 1004-1010.
- Keupp, M. M., & Gassmann, O. (2009). The past and the future of international entrepreneurship: a review and suggestions for developing the field. *Journal of Management*, 35(3), 600-633.
- Lawler, E. E., Mohrman, S. A., & Ledford, G. E. (1995). *Creating high performance organizations: Practices and results of employee involvement and Total Quality Management in Fortune 1000 companies*. San Francisco, CA: Jossey-Bass.
- Lepak, D. P., & Snell, S. A. (1999). The human resource architecture: Toward a theory of human capital allocation and development. *Academy of Management Review*, 24(1), 31-48.
- 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(2), 303-323.
- Lindsay, V., Rod, M., & Ashill, N. (2017). Institutional and resource configurations associated with different SME foreign market entry modes. *Industrial Marketing Management*, 66, 130-144.
- Lu, J. W., & Beamish, P. W. (2001). The internationalization and performance of SMEs. *Strategic Management Journal*, 22(6-7), 565-586.
- McKinley, W., Zhao, J., & Rust, K. G. (2000). A sociocognitive interpretation of organizational downsizing. *Academy of Management Review*, 25(1), 227-243.
- Mellahi, K., & Wilkinson, A. (2010a). A study of the association between level of slack reduction following downsizing and innovation output. *Journal of Management Studies*,

47(3), 483-508.

- Mellahi, K., & Wilkinson, A. (2010b). Slash and burn or nip and tuck? Downsizing, innovation and human resources. *The International Journal of Human Resource Management*, 21(13), 2291-2305.
- Melitz, M. J. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71(6), 1695-1725.
- Morschett, D., Schramm-Klein, H., & Swoboda, B. (2010). Decades of research on market entry modes: What do we really know about external antecedents of entry mode choice? *Journal of International Management*, 16(1), 60-77.
- Muñoz-Bullón, F., & Sánchez-Bueno, M. J. (2014). Institutional determinants of downsizing. *Human Resource Management Journal*, 24(1), 111-128.
- Norman, P. M., Butler, F. C., & Ranft, A. L. (2013). Resources matter: Examining the effects of resources on the state of firms following downsizing. *Journal of Management*, 39(7), 2009-2038.
- OECD (2019). Spain (ESP) exports, imports, and trade partners. <https://atlas.media.mit.edu/en/profile/country/esp/> Accessed 15 June 2019.
- OECD (2019). Selected indicators for Spain. <https://data.oecd.org/spain.htm>. Accessed 15 June 2019.
- Onkelinx, J., Manolova, T. S., & Edelman, L. F. (2016). Human capital and SME internationalization: Empirical evidence from Belgium. *International Small Business Journal*, 34(6), 818-837.
- Pan, Y., & David, K. T. (2000). The hierarchical model of market entry modes. *Journal of International Business Studies*, 31(4), 535-554.
- Peng, M. W. (2001). The resource-based view and international business. *Journal of Management*, 27(6), 803-829.
- Peng, M. W., & York, A. S. (2001). Behind intermediary performance in export trade: Transactions, agents, and resources. *Journal of International Business Studies*, 32(2), 327-346.
- Pfeffer, J., & Baron, J. (1988). Taking the workers back out: Recent trends in the structuring of employment. In L. L. Cumming, & B. M., Staw (Eds.), *Research in organizational behavior* (pp. 257-303). Greenwich: JAI Press.
- Quinlan, M., & Bohle, P. (2009). Overstretched and unreciprocated commitment: reviewing research on the occupational health and safety effects of downsizing and job insecurity. *International Journal of Health Services*, 39(1), 1-44.

- Reuber, A. R., & Fischer, E. (1997). The influence of the management team's international experience on the internationalization behaviors of SMEs. *Journal of International Business Studies*, 28(4), 807-825.
- Rosenberg, N. (1982). *Inside the black box: Technology and economics*. Cambridge, U.K.: Cambridge University Press.
- Rousseau, D. M. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements*. Thousand Oaks, CA: Sage.
- Salomon, R., & Jin, B. (2010). Do leading or lagging firms learn more from exporting? *Strategic Management Journal*, 31(10), 1088-1113.
- Schank, T., Schnabel, C., & Wagner, J. (2007). Do exporters really pay higher wages? First evidence from German linked employer–employee data. *Journal of International Economics*, 72(1), 52-74.
- Schenkel, A., & Teigland, R. (2017). Why doesn't downsizing deliver? A multi-level model integrating downsizing, social capital, dynamic capabilities, and firm performance. *The International Journal of Human Resource Management*, 28(7), 1065-1107.
- Schulz, A. C., & Wiersema, M. F. (2018). The impact of earnings expectations on corporate downsizing. *Strategic Management Journal*, 39(10), 2691-2702.
- Sharma, V. M., & Erramilli, M. K. (2004). Resource-based explanation of entry mode choice. *Journal of Marketing Theory and Practice*, 12(1), 1-18.
- Slaper, T. (2015). Does export growth create jobs? *Indiana Business Review*, Summer, 1-6.
- Trabold, H. (2002). Export intermediation: An empirical test of Peng and Ilinitch. *Journal of International Business Studies*, 33(2), 327-344.
- Tsai, C. F., & Yen, Y. F. (2018). Moderating effect of employee perception of responsible downsizing on job satisfaction and innovation commitment. *The International Journal of Human Resource Management*, 1-25. <https://doi.org/10.1080/09585192.2018.1424014>.
- Tsui, A. S., Pearce, J. L., Porter, L. W., & Hite, J. P. (1995). Choice of employee-organization relationship: Influence of external and internal organizational factors. In G.R. Ferris, (Ed.), *Research in personnel and human resources management* (pp. 117-151). Greenwich, CT: JAI Press.
- Vicente-Lorente, J. D., & Zúñiga-Vicente, J. A. (2012). Effects of process and product-oriented innovations on employee downsizing. *International Journal of Manpower*, 33(4), 383-403.
- Vicente-Lorente, J. D., & Zúñiga-Vicente, J. A. (2018). The U-shaped effect of R&D intensity on employee downsizing: evidence from Spanish manufacturing firms (1994–2010). *The*

- International Journal of Human Resource Management*, 29(15), 2330-2351.
- Voigtlaender, N., & Garcia-Marin, A. (2018). Exporting and plant-level efficiency gains: It's in the measure. *Journal of Political Economy*, 127(4), 1777-1825.
- Von Hippel, C., Mangum, S. L., Greenberger, D. B., Heneman, R. L., & Skoglund, J. D. (1997). Temporary employees: Can organizations and employees both win? *Academy of Management Executive*, 11(1), 93-104.
- Wagner, J. (2007). Exports and productivity: A survey of the evidence from firm-level data. *World Economy*, 30(1), 60-82.
- Wagner, J. (2012). Average wage, qualification of the workforce and export performance in German enterprises: Evidence from KombiFiD data. *Journal for Labour Market Research*, 45(2), 161-170.
- Westhead, P., Wright, M., & Ucbasaran, D. (2001). The internationalization of new and small firms: A resource-based view. *Journal of Business Venturing*, 16(4), 333-358.
- Worrell, D. L., Davidson III, W. N., & Sharma, V. M. (1991). Layoff announcements and stockholder wealth. *Academy of Management Journal*, 34(3), 662-678.
- Wu, F., Sinkovics, R. R., Cavusgil, S. T., & Roath, A. S. (2007). Overcoming export manufacturers' dilemma in international expansion. *Journal of International Business Studies*, 38(2), 283-302.
- Yaşar, M. (2015). Direct and indirect exporting and productivity: Evidence from firm-level data. *Managerial and Decision Economics*, 36(2), 109-120.
- Yoo, H. O., & Mody, B. (2000). Predictors of downsizing in the US local telephone industry. *The Information Society*, 16(1), 23-33.
- Yu, G. C., & Park, J. S. (2006). The effect of downsizing on the financial performance and employee productivity of Korean firms. *International Journal of Manpower*, 27(3), 230-250.
- Zahra, S. A., Ireland, R. D., & Hitt, M. A. (2000). International expansion by new venture firms: International diversity, mode of market entry, technological learning, and performance. *Academy of Management Journal*, 43(5), 925-950.
- Zorn, M. L., Norman, P. M., Butler, F. C., & Bhussar, M. S. (2017). Cure or curse: Does downsizing increase the likelihood of bankruptcy? *Journal of Business Research*, 76, 24-33.

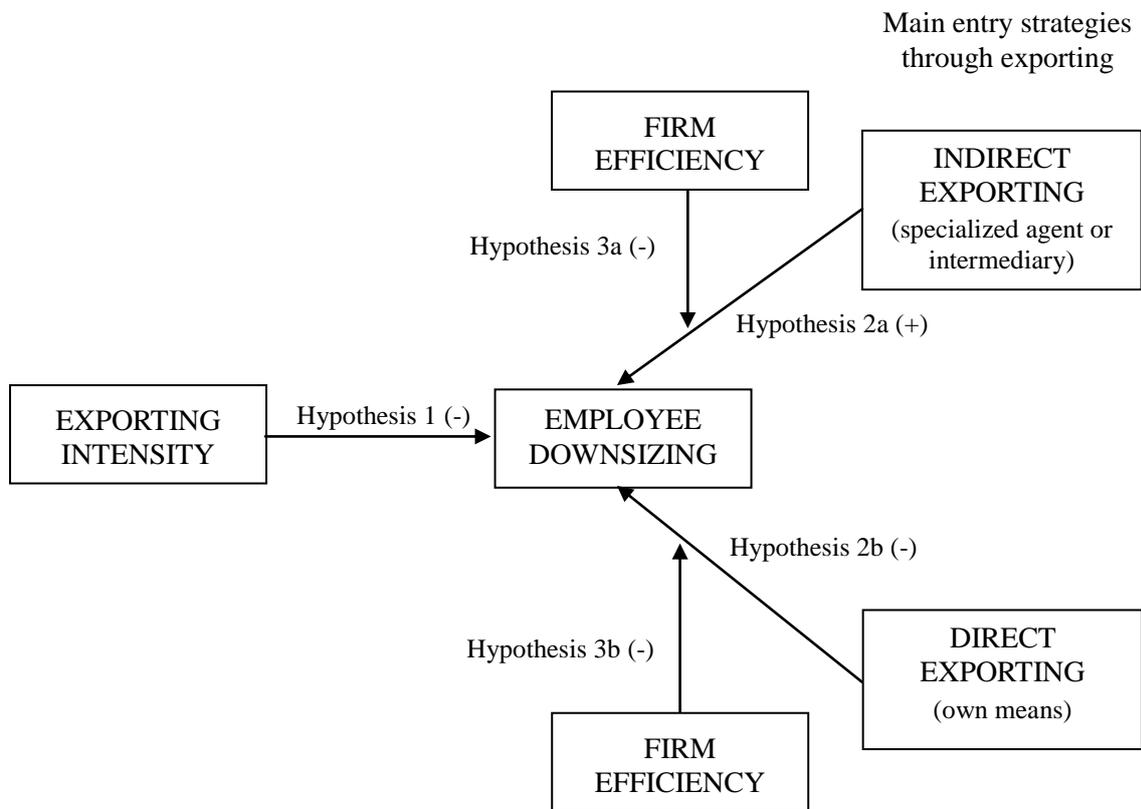


Figure 1. Proposed research model

Table 1. Descriptive statistics and correlation matrix

Panel A: Summary statistics		
	Mean	Standard deviation
Downsizing	0.201	0.400
Export intensity	13.520	24.550
Direct exporting	0.319	0.466
Indirect exporting	0.087	0.283
Firm efficiency	0.988	1.545
ROA	12.625	89.884
Capacity utilization	78.056	17.454
Market in recession	0.281	0.450
Market share growing	0.201	0.401
Market share constant	0.591	0.492
Market share shrinking	0.207	0.405
Leverage	0.149	0.172
Current ratio	9.776	175.032
Labor costs to sales ratio	0.328	1.500
Firm size	0.033	0.179
R&D intensity	0.752	24.653

Panel B: Correlation matrix																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Downsizing	1.000															
2. Export intensity	-0.086***	1.000														
3. Direct exporting	-0.091***	0.623***	1.000													
4. Indirect exporting	-0.008	0.128***	-0.212***	1.000												
5. Firm efficiency	-0.046***	-0.103***	-0.127***	-0.038***	1.000											
6. ROA	-0.020***	-0.013*	0.000	-0.003	0.119***	1.000										
7. Capacity utilization	-0.146***	0.056***	0.036***	0.005	0.160***	0.040***	1.000									
8. Market in recession	0.140***	-0.027***	0.002	-0.009	-0.084***	-0.042***	-0.281***	1.000								
9. Market share growing	-0.069***	0.047***	0.047***	0.001	-0.005	0.034***	0.105***	-0.227***	1.000							
10. Market share	-0.058***	0.008	0.005	0.007	0.066***	0.002	0.118***	-0.280***	-0.604***	1.000						
11. Market share	0.138***	-0.056***	-0.052***	-0.009	-0.076***	-0.036***	-0.247***	0.564***	-0.257***	-0.615***	1.000					
12. Leverage	0.047***	0.004	-0.005	0.013*	-0.116***	-0.014*	-0.056***	0.017**	0.030***	-0.045***	0.025***	1.000				
13. Current ratio	-0.003	-0.019**	-0.022***	-0.010	0.003	0.000	-0.002	-0.008	0.001	0.004	-0.006	0.035***	1.000			
14. Labor costs to sales	0.044***	-0.033***	-0.041***	-0.018**	-0.015**	-0.011	-0.029***	0.020***	-0.019**	-0.003	0.022***	0.005	0.003	1.000		
15. Firm size	-0.042***	0.171***	0.178***	0.017**	-0.074***	-0.002	0.055***	-0.013*	0.006	0.002	-0.008	-0.003	-0.008	-0.022***	1.000	
16. R&D intensity	0.012	0.012*	0.011	-0.002	-0.011	0.000	0.009	-0.004	-0.001	0.004	-0.004	0.002	0.001	0.790***	0.007	1.000

Sample size = 17,694 observations; Number of firms = 3,599. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 2. Random-effects panel data probit regression results on downsizing

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Export intensity		-0.004*** (0.001)	-0.005*** (0.001)	-0.003*** (0.001)	-0.005*** (0.001)	-0.003*** (0.001)	-0.002*** (0.001)
Direct exporting				-0.168*** (0.034)		-0.206*** (0.039)	-0.223*** (0.041)
Direct exporting x Firm efficiency						-0.032** (0.015)	-0.033** (0.015)
Indirect exporting			0.035 (0.043)		0.020 (0.053)		-0.076 (0.056)
Indirect exporting x Firm efficiency					-0.013 (0.026)		-0.021 (0.026)
Firm efficiency		-0.017** (0.007)	-0.017** (0.007)	-0.019*** (0.007)	-0.016** (0.008)	-0.009 (0.009)	-0.008 (0.009)
ROA	-0.001*** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)
Capacity utilization	-0.008*** (0.001)						
Market in recession	0.192*** (0.031)	0.191*** (0.031)	0.191*** (0.031)	0.197*** (0.031)	0.191*** (0.031)	0.196*** (0.031)	0.197*** (0.031)
Market constant	0.098*** (0.032)	0.097*** (0.032)	0.096*** (0.032)	0.095*** (0.032)	0.096*** (0.032)	0.094*** (0.032)	0.094*** (0.032)
Market shrinkage	0.282*** (0.042)	0.275*** (0.042)	0.275*** (0.042)	0.268*** (0.042)	0.274*** (0.042)	0.268*** (0.042)	0.267*** (0.042)
Leverage	0.293*** (0.068)	0.293*** (0.068)	0.292*** (0.068)	0.289*** (0.068)	0.291*** (0.068)	0.291*** (0.068)	0.290*** (0.068)
Current ratio	-0.0001 (0.000)						
Labor costs to sales ratio	0.129*** (0.024)	0.112*** (0.025)	0.113*** (0.025)	0.104*** (0.025)	0.113*** (0.025)	0.104*** (0.025)	0.103*** (0.025)
Firm size	-0.334*** (0.107)	-0.240** (0.102)	-0.239** (0.102)	-0.186* (0.097)	-0.239** (0.102)	-0.194** (0.098)	-0.191* (0.098)
R&D intensity	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)
$\ln(\sigma_v^2)$	-2.624*** (0.171)	-2.733*** (0.185)	-2.732*** (0.185)	-2.784*** (0.192)	-2.733*** (0.185)	-2.788*** (0.193)	-2.791*** (0.193)
σ_v	0.269	0.255	0.255	0.249	0.255	0.248	0.248
ρ	0.068	0.061	0.061	0.058	0.061	0.058	0.058
χ^2	717.211***	774.232***	774.690***	799.178***	774.890***	802.653***	804.511***
N	17,723	17,694	17,694	17,694	17,694	17,694	17,694

All the models include industry dummies as control variables; Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3. Probit regressions using alternative measures of the dependent variable (i.e., downsizing)

	Random-effects probit models			
	(1) 20% threshold (open-ended)	(2) 10% threshold (total workforce)	(3) 20% threshold (total workforce)	(4) Random effects tobit
Export intensity	-0.002** (0.001)	-0.002*** (0.001)	-0.001 (0.001)	-0.003*** (0.001)
Direct exporting	-0.316*** (0.053)	-0.243*** (0.039)	-0.048*** (0.016)	-1.002*** (0.718)
Direct exporting x Firm efficiency	-0.050*** (0.017)	-0.039*** (0.015)	-0.039*** (0.015)	-0.822*** (0.230)
Indirect exporting	-0.110 (0.069)	-0.212*** (0.055)	-0.316*** (0.072)	-0.668 (0.997)
Indirect exporting x Firm efficiency	-0.014 (0.030)	-0.035 (0.027)	-0.043 (0.030)	-0.750* (0.449)
Firm efficiency	-0.014 (0.010)	-0.001 (0.009)	-0.014 (0.010)	-0.808** (0.365)
ROA	-0.000 (0.001)	-0.001 (0.000)	-0.000 (0.001)	-0.045*** (0.011)
Capacity utilization	-0.009*** (0.001)	-0.008*** (0.001)	-0.009*** (0.001)	-0.173*** (0.013)
Market in recession	0.215*** (0.038)	0.260*** (0.029)	0.211*** (0.037)	4.769*** (0.567)
Market constant	0.094** (0.040)	0.167*** (0.031)	0.105*** (0.040)	1.900*** (0.568)
Market shrinkage	0.219*** (0.052)	0.367*** (0.040)	0.267*** (0.052)	5.402*** (0.772)
Leverage	0.400*** (0.082)	0.275*** (0.063)	0.284*** (0.079)	4.631*** (1.257)
Current ratio	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.001)	0.000 (0.001)
Labor costs to sales ratio	0.009 (0.012)	0.027** (0.013)	0.007 (0.012)	0.533*** (0.203)
Firm size	-1.113*** (0.314)	-0.282** (0.116)	-0.892*** (0.305)	1.655 (1.167)
R&D intensity	-0.033*** (0.010)	-0.000 (0.001)	-0.023*** (0.009)	-0.018 (0.012)
σ_v	0.340	0.179	0.250	3.834
ρ	0.103	0.031	0.059	23.646
Wald(χ^2)	624.90***	1037.834***	711.768***	826.59***

* All the models include industry dummies as control variables; Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Appendix

Definitions of variables

<i>Dependent variable:</i>	
Downsizing	1 if there is a reduction above 10% in the number of total employees with open-ended contracts between year t and year $t-1$; otherwise, 0
<i>Independent variables:</i>	
Export propensity	Ratio of sales in foreign markets to total sales (in %)
Indirect exporting	1 if the firm exports through independent intermediaries and/or specialized agents located in Spain or through collective means for exporting (e.g., cooperative arrangements with other exporters from the same industry); otherwise, 0.
Direct exporting	1 if the firm uses its own resources/means to sell abroad (e.g., sales representatives, distributors, or retailers); otherwise, 0
Firm efficiency	Value added over assets ratio (in logs)
<i>Control variables:</i>	
ROA	Ratio of operating income over total assets (in %)
Capacity utilization	Average degree of capacity utilization
Market in recession (1=Yes)	1 if there is a downward trend in the market; otherwise, 0
Market size growing (1=Yes)	1 if the market targeted by the company is growing; otherwise, 0
Market size constant (1=Yes)	1 if the market targeted by the company is remaining constant; otherwise, 0
Market size shrinking (1=Yes)	1 if the market targeted by the company is shrinking; otherwise, 0
Leverage	Debt to total assets ratio
Current ratio	Current assets to current liabilities ratio
Labor costs to sales ratio	Ratio of severance pay, early retirement pay and voluntary severance pay over total personnel costs
Firm size	Total sales (billions of euros)
R&D intensity	Ratio of investment in R&D activities to total sales (in %)
Industry	Dummy variables of the industry of the firm's main activity at the 2-digit level (Meat products, Tobacco and Food, Drinks, Textile Products, Leather and Shoes, Wood Products, Paper products, Publishing and Graphic Arts, Chemical products, Plastic materials and Rubber, Non-metallic Minerals, Metallurgy, Metallic products, Machinery and Mechanical equipment, Office machinery, Computing equipment, Electric machinery and equipment, Motor vehicles, Other transportation equipment, Furniture, Other manufacturing industries)
