**Explaining industrial firms' export propensity: the role of capital structure, diversification and FDI strategies.**

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## Abstract

This paper examines the export propensity of Spanish industrial manufacturing firms. Specifically, we explore the link between firms' export propensity and their capital structure, diversification and FDI (foreign direct investment) strategies. Data are drawn from the Iberian Balance Sheet Analysis System (SABI) for the period 2002-2005. Our estimations use a panel probit random effects procedure. Our results suggest a positive link between export propensity and either internal features (firm's age, size and performance, initial conditions) or external characteristics (regional and sectorial spillover effects). A novel result is the positive influence of firm ownership concentration and foreign shareholding. However, we do not observe a relationship between export propensity and either leverage degree or diversification strategy.



**Keywords**: Export propensity; firm's leverage; ownership structure; diversification strategy; foreign direct investment; Spanish manufacturing sector.

## 1. Introduction

Exporting activities boost the growth of both individual firms and nations. For this reason, the relevance of exporting has been widely studied in both the international business literature and the economic literature. Although the economic literature has analysed firms' export propensity, stressing the heterogeneity between exporter and non-exporter firms (Bernard and Jensen, 1997; Roberts and Tybout, 1997; Delgado, Fariñas and Ruano, 2002; Mañez, Rochina-Barrachina and Sanchís, 2008), certain managerial determinants remain unexplored. The aim of the present paper is to analyse the effect of firms' capital structure and their strategies for diversification and FDI (foreign direct investment) on their export propensity, and focuses on three specific factors. First, little effort has been devoted so far to exploring the influence of firms' corporate ownership on their internationalization strategy. Dosuglu-Guner (2001), George, Wiklund and Zahra (2005) and Filatotchev, Isachenkova and Mickiewicz (2007) provide contradictory evidence for the differences in export propensity between firms controlled by managers and those controlled by external shareholders. Also, there is little evidence regarding the effect of firms' leverage on their export behaviour. From an economic point of view, Greenaway, Guariglia and Kneller (2007) provide evidence of differences in financial health between exporter and non-exporter firms.

Second, to the best of our knowledge, few studies have examined the relationship between exports and firm diversification strategy. Mañez, Rochina-Barrachina and Sanchís (2004, 2008) analyse the issue but use inadequate proxy variables to measure diversification strategy (for instance, applying R&D intensity to proxy vertical diversification and advertising intensity to proxy horizontal diversification).

Third and finally, few reports have linked FDI (Foreign Direct Investment) and exporting propensity. Those that have been published have focused mainly on productivity dissimilarities, considering the two phenomena as alternative internationalization channels (Helpman, Melitz and Yeaple, 2004; Kimura and Kiyota, 2006).

The present paper explores all these matters in an attempt to broaden our understanding of the relationship between exporting propensity and capital structure, diversification, and FDI strategies. To do so, we merge the economic and strategy literature in internationalization and use a panel database containing specific information for Spanish industrial manufacturing firms (8,019 industrial firms for the period 2002-2005). This procedure allows us to control for unobserved heterogeneity through the use of a probit random effects model.

Furthermore, and more specifically, we should highlight three significant contributions of our research: (i) we provide evidence for a positive effect of concentration and foreign ownership on a firm's export propensity; (ii) we find a positive relationship between FDI and export strategies; and, finally, (iii) our findings may provide a starting-point for future research into the link between a firm's diversification strategy and its export activity.

The paper is organized as follows. Section 2 reviews the literature on exporting behaviour and the effects of ownership structure. Section 3 introduces the hypothesis to be tested, whilst section 4 describes the database and the econometric strategy. Section 5 presents the main results; the final section discusses them and concludes.

## 2. Literature review

The examination of the economic and strategic literature reveals two major research lines to be considered: i) literature analysing several aspects that determine a firm's export activity (in section 2.1); and ii) the main contributions of the effect of a firm's ownership structure on strategy (sections 2.2 and 2.3).

### *2.1. Factors underpinning exporting behaviour*

A significant body of literature has examined factors that explain firms' exporting propensity. Amongst other feasible classifications, a distinction can be made based on the role of internal/external factors. On the one hand, the economic literature mainly focuses on external factors (e.g. government policies, sectorial concentration, etc.) and

estimates either regional or sectorial spillover effects. From this perspective, it is argued that closeness to exporters reduces the costs of access to foreign markets. As a consequence, nearby firms are more likely to export (Bernard and Jensen, 1997, 2004; Barrios, Görg and Strobl, 2003). On the other hand, microeconomic approaches consider the role of internal factors above all. In fact, a firm's heterogeneity is shown as the most decisive factor. The present paper applies this perspective. Three reasons can be identified when accounting for the effects of a firm's heterogeneity on exporting behaviour: (i) the firm's size and age; (ii) its performance, and (iii) its strategy.

First, associations between firms' age and size and exports have been found (Roberts and Tybout, 1997; Wagner, 2001; Mañez, Rochina-Barrachina and Sanchís, 2008). In this regard, sunk costs constitute a key factor in export decisions: smaller or younger firms are less likely to export since they face bigger sunk costs than their larger and older counterparts.

Second, the relationship between export dynamics and a firm's performance deserves special attention because of their reciprocity. That is, do successful firms export or does exporting lead to the firm's success? The direction of flow of this causal relationship has not been conclusively determined. On the one hand, it is argued that only firms with a sufficient level of performance risk entry to the export market because of the presence of sunk costs. What is more, the more productive the firm, the higher the ex-ante probability to export (Roberts and Tybout, 1997; Clerides, Lach and Tybout, 1998; Bernard and Jensen, 1999, 2004; Delgado, Fariñas and Ruano, 2002). On the other hand, a learning-by-exporting hypothesis is also feasible; that is, exporter firms will become more productive ex-post (see Girma, Greenaway and Kneller, 2004; Baldwin and Gu, 2003 for empirical evidence for Canada and UK, respectively).[1] Furthermore, there is also evidence of sunk costs hysteresis in exports (see Bernard and Jensen, 2004; Greenaway and Kneller, 2007; Mañez, Rochina-Barrachina and Sanchís, 2008): that is, current exports are dependent on past exporting behaviour. Therefore, two consequences are expected: (i) firms that have exported beforehand are more likely to export, and; (ii) firms in the export market that were non-exporters in the past are more likely to leave, due to their more limited international experience.

[1] Delgado, Fariñas and Ruano (2002) provided evidence for the Spanish case. However, their results were less conclusive and limited to younger exporting firms.

Third, and finally, the literature also examines the association between exporting activities and firms' other strategies. In particular, firms' technological capacity and innovation strategy have received a great deal of interest from scholars (Barrios, Görg and Strobl, 2003; Mañez, Rochina-Barrachina and Sanchís 2004, 2008; López-Rodríguez and García-Rodriguez, 2005; Pla-Barber and Alegre, 2007). In fact, empirical evidence shows that innovation (measured by R&D expenditures, product and process innovations, patents, etc.) increases firms' exporting propensity and intensity.

There is also a significant relationship between exports and firms' FDI strategy. From this perspective, it is argued that exports and FDI constitute substitute internationalization channels and that the choice can be explained by dissimilarities in firm productivity. Research findings provide evidence that more productive firms choose complex strategies involving a mix between FDI and exports (Helpman, Melitz and Yeaple, 2004; Kimura and Kiyota, 2006).

*2.2. Ownership structure effects on several corporate strategies*

The importance of ownership structure and corporate governance in determining corporate strategic development (Porter, 1990) and its implications for performance is well known (see La Porta, 2000; Thomsen and Pedersen, 2000; Demsetz and Villalonga, 2001; Filatotchev, Kapelyushnikov, Dyomina, Aukutsionek, 2001, Riahi-Belkaoui, 1996).

Following the agency theory perspective, the association between corporate governance and diversification strategy has been explored in depth. Amihud and Lev (1981) provided evidence that the companies with greater ownership concentration were less diversified: hence, the larger the block shareholders, the lower the firms' diversification levels (Jensen and Meckling, 1976; Eisenhardt, 1989). Agency theory predicts that managers not closely monitored by large block shareholders will act self-interestedly; consequently, they will be more likely to engage in risk-reducing strategies. Additionally, diversifying mergers and conglomerates operations decrease shareholders' values (Berger and Ofek, 1996; Servaes, 1996; Denis, Denis and Sarin, 1997, amongst others). However, Lane, Cannella, and Lubatkin (1998) state that firms' ownership

structure (the presence/absence of large block shareholders) and corporate strategies are largely independent phenomena. This argument was corroborated by Singh, Mathur and Gleason (2004) who suggested that agency conflict does not constitute a valid explanation for firms' adoption of a particular diversification strategy. According to these authors, ownership dissimilarities between diversified or focused firms are due to their stage of corporate evolution (i.e. number of years since foundation) rather than to their ownership structure.

In addition, recent empirical studies indicate that ownership structure is an important determinant of innovation strategy (Chin, Chen, Kleinman and Lee, 2009; Lee, 2005; Lee, 2004; Francis and Smith, 1995). However, the results are inconsistent. The underlying reasons for these contradictory results are likely to be either country-level dissimilarities (Lee, 2005) or differences in the performance measures used throughout the econometric specifications (assets returns, profits, market values, sales growth, etc.). So local particularities may in fact be due to these differences, and this means that alternative measures should be used for detecting this relationship.

*2.3. Ownership structure effects on exporting activity*

Although the effect of corporate governance and ownership structure on diversification and innovation strategies has been studied in depth in the literature, firms' export activities have received little attention.

Dosoglu-Guner (2001) provided evidence for the association between a firm's ownership structure and export intention (i.e. its plans for initiating export activities). It has also been argued that externally controlled firms (i.e. those with external shareholders) are more likely to conduct international strategies than those with internal ownership (CEOs and managers) (Dosoglu-Guner, 2001; George, Wiklund and Zahra, 2005). Based on the agency theory, these studies argue that principals and agents have differences in risk preferences or incongruence in goals. Although internationalization generates value for shareholders, the associated risk may deter managers from embracing this strategy. However, the results of Filatotchev, Isachenkova and Mickiewicz (2007) challenge these conclusions: they found that managers' independence was positively associated with firms' exporting but negatively related to

ownership concentration. The discrepancy in the findings may be attributed to country-level particularities in managers' strategic independence.

Finally, the influence of owners' identity on internationalization strategy has also been examined. Filatotchev, Stephan and Jindra (2008) found that firms in transition economies in which the participation of foreign investors surpassed a specific ownership threshold (51%) were more likely to export intensively. Moreover, George, Wiklund and Zahra (2005) showed that institutional and venture capital ownership increases the scale of SME internationalization[2], signalling the important role played by these investors in these firms.

## 3. Research hypothesis

Based on previous theoretical and empirical research, this section explores the relationship between a firm's export propensity and capital structure and the association with other corporate strategic characteristics, such as diversification and FDI. Figure 1 displays the empirical model designed to explain a firm's export propensity. The model includes the main factors described in the literature review and some new factors described in this section.

[Insert Figure 1]

### *3.1. Capital structure*

As noted above, the management literature shows that corporate governance influences a firm's strategy. Therefore, we can also infer that a firm's capital structure affects other strategies such as internationalization.

A resource-based view argues that only firms with valuable resources generate competitive advantages and higher long-term performance (Barney, 1991). Among these resources, financial funding is crucial; internationalization is a long, costly process

[2] The scale of internationalization indicates the extent to which a firm's activities depend on foreign markets. This measure includes export share, amongst other variables.

and funding provides the capital investment necessary for firms' international expansion. A suitable infrastructure must be built up for growing in foreign markets and developing multiple strategies. The resource-based view suggests that large-block investors may provide access to the resources required for developing international activities (Filatotchev, Stephan and Jindra, 2008). In fact, exporting is one of the most important (and riskiest) issues in a firm's internationalization strategy process. The decision to export is linked to the presence of high sunk costs (Roberts and Tybout, 1997) such as researching new foreign demand, establishing marketing and distribution channels, advertising the brand name, adjusting product characteristics and packaging to meet foreign tastes, and complying with the quality and safety legislation of other countries, and so on (Girma, Greenaway and Kneller, 2004).

Additionally, the decision to export involves risk because the investment pay off is genuinely uncertain. Successful export activity improves performance, but only in the long term. Success is contingent on the firm's long term commitment to increase participation in international markets and requires full support from the shareholders controlling the firm (Dosoglu-Guner, 2001). So ownership structure may play an important role in a firm's export propensity.

In summary, due to the risky nature of exports, the need for substantial capital investment and the fact that the results will be long-term rather than short-term, the degree of ownership concentration may well be a relevant factor. The more concentrated the shareholding, the more tightly controlled the firm will be and, hence, the greater the amount of resources committed to the firm's exporting strategies. Thus, we suggest the following hypothesis:

**$H_1$: The higher the firm's ownership concentration, the greater the propensity to export**

In addition to ownership concentration, shareholder nationality affects a firm's export propensity. Multinationals consider foreign affiliates as part of an integrated chain of their international value adding activities in which any flow is steadily transferred. Strategic asset motivations and efficiency seeking typically characterize the last stages of a firm's internationalization process (Dunning, 1993). In fact, large multinationals

tend to rationalize their production, distribution and marketing activities through synergy-building among geographically-dispersed operations. Their goal is to capitalize on the fact that their network activities and capabilities are spread in different countries and present diverse environmental characteristics (Dunning 1993). For example, foreign-owned companies in the manufacturing industry are considered by their corporate multinational as foreign export platforms operating in several markets. Two additional factors affecting export propensity might be taken into account here: (i) foreign-owned firms enjoy better access to foreign markets due to complementarities with other businesses in the same group (Mañez, Rochina Barrachina and Sanchis, 2008), and (ii) foreign multinationals perform better than their native counterparts (Greenaway and Kneller, 2007; Kneller and Pisu 2004).

Since foreign-controlled firms may have a higher propensity to export than domestic ones, we expect a positive relationship between foreign ownership and exporting activity. Thus we predict that:

**$H_2$: Foreign ownership is positively related to export propensity**

Previous research associating capital structure and strategy acknowledges that strategic decisions may also be driven by a firm's financial constraints (Kochhar and Hitt, 1988). Shareholders' equity and indebtedness can be considered as alternative mechanisms of corporate governance. Thus, from this perspective, we can infer a possible association between a firm's leverage level and its exporting strategy.

Greenaway, Guariglia and Kneller (2007) provided evidence that financial health is a decisive factor for export market participation. In particular, the effect of a firm's leverage effect on exporting strategy can be significant for several reasons. First, debt capital (including long-term debt) is more rigid than equity: loans have to be paid to creditors following strict schedules and interest on debt capital and must be repaid in full before any dividends are paid to equity suppliers. Second, export activities are associated with high sunk costs that generate hysteresis in export markets. Consequently, the related risk of this strategy is high (Bernard and Jensen, 2004). Third, the higher the leverage degree, the greater probability of bankruptcy. Since the latter constitutes a costly process, new financial costs arise. Thus, exporting firms which are

mainly being financed through debt may well increase the general risk for the whole company.

Therefore, we can argue that high leverage levels can lead to financial constraints for undertaking export strategies. Building on these arguments, we expect that:

**$H_3$: The lower a firm's leverage level, the more likely it is to export**

*3.2. Corporate strategies*

Exporting firms can also be influenced by other corporate strategies such as product diversification. Internationalization and diversification constitute two alternatives for a firm's growth strategy. Whilst the aim of diversification is to grow by opening new business lines (i.e. adding new products and services or growing into different value chain phases) internationalization relies on expanding the same business in new foreign markets.

We wonder whether expansion models in fact substitute or complement each other, since these strategies can reinforce each other when applied simultaneously (Wiersema and Bowen, 2008). Resource-based theory argues that the choice between exporting and diversification depends, among other factors, on the firm's financial resources which condition new investment opportunities. However, since both alternatives are costly and the resources available are limited, past diversification decisions may reduce the likelihood of initiating exporting strategies.

Therefore, we suggest that firms with higher levels of product diversification are less likely to export because of the presence of funding constraints. Accordingly, we put forward the following hypothesis:

**$H_4$: The more diversified the firm, the lower the export propensity**

Similarly, foreign direct investment (FDI) can also be linked to a firm's exporting propensity. The literature provides evidence of the relationship between productivity, exporting decisions and FDI (Helpman, Melitz and Yeaple, 2004 and Kumura and

Kiyota, 2006). Moreover, the Uppsala model connects the two mechanisms explaining internationalization as a growth pattern because of the lack of information and the importance of either perceived risk or uncertainty. Therefore, exporting is used at the first stages, whilst FDI constitutes the final stage in the internationalization exporting (Johanson and Vahlne, 1977). Nevertheless, firms that have completed their international learning curve and are currently involved in FDI do not necessarily have to abandon the entry mechanisms they have used before. In fact, firms can access different foreign markets either by means of FDI or through exporting. Hence, these two simultaneous internationalization strategies are complementary.

To sum up, in a multi-product multinational, exports and FDI become positively correlated if there are horizontal or vertical complementarities across product lines (Greenaway and Kneller, 2007). On the one hand, in the case of vertical upstream FDI, intermediates domestic demand may be supplied by foreign subsidiaries through arms-length trade. On the other, for vertical downstream FDI, the establishment of commercial subsidiaries in foreign countries will increase final goods exports. Campa and Guillen (1999) show that around 40% of Spanish manufacturing FDI is related to commercial activities for distributing exports in foreign markets. Finally, even for the horizontal FDI case, exporting will be implemented to supply the foreign market demand for complementary goods which are manufactured in home-country plants.

Bearing all these arguments in mind, we expect that firms establishing foreign subsidiaries will also carry out export activities. Thus, we suggest that:

**$H_5$: The greater a firm's FDI, the more likely it is to export**

## 4. Database and Methodology

### *4.1. Data and sample characteristics*

Our data correspond to the Iberian Balance Sheet Analysis System (SABI)[3]. The sample is composed by those industrial manufacturing firms located in Spain with a turnover above 2 million Euros with complete information on management and strategic variables (export, ownership structure and diversification) for the period 2002-2005. Additionally, we obtained further periodical information specifically for financial variables (1998-2001) which allowed us to consider initial performance conditions in our estimation procedures. The resulting data comprised a panel of 8,019 firms operating in the Spanish manufacturing industry. We included firms registered in the industrial sector (NCEA[4]-93 Rev1: from the 15 to 36 code. Furthermore, for reasons of representation, we computed sampling weights using sectorial information from "Fomento de la Producción".[5]

Focusing on one specific year (2005) and applying European standards[6], we divided our sample into large firms (5.03%), medium-sized firms (21.39%) and small firms (73.59%). In 2005, 32.51% of Spanish firms did not operate abroad and 13.49% were considered as importers. Slightly over half of the firms (54%) operated abroad (20.5% were exporters whilst 33.5% either exported or imported). Only 1.74% of firms changed their exporting behaviour during the period under consideration (2002-2005). Thus, the probability of a firm starting or stopping exporting across two consecutive years is low. In accordance with the findings of Bernard and Jensen (1997; 2004) the evidence of sunk costs reinforces this point. In fact, 75.73% of large firms are exporters but only 47.75% of small firms.

Table 1 shows a list of definitions for all the variables used in the empirical analysis, and Table 2 presents data on firms' export behaviour. Table 2 shows that firms that

[3] SABI is a Bureau Van Dijk (BvD) product distributed in Spain by Informa. BvD, which has been headquartered in Brussels since 1973, is a well-known source of European company information. This database includes information about companies' accounts, activities, ownership and management for almost one million Spanish companies. The main sources used by SABI are the Spanish Business Register, the BORME, the national press and other publications coming from official organisms.

[4] National Classification of Economic Activities provided by the Spanish National Institute of Statistics (INE).

[5] *Fomento de la Producción* is a database elaborated by this named institution, annually publishing since 1984 a firm directory named "Spain 30,000" which contains main up-to-date data of the biggest 30,000 Spanish companies in all industrial and services sectors. The information is drawn up from the Spanish Mercantile Registration.

[6] We used operating revenues to assign the sample to three categories based on firm's dimension. Larger firms were those over 50 million Euros, medium firms those between 10 and 50 million Euros whilst the rest, that is, up to 10 million Euros.

export are older, operate more frequently as public limited companies, present higher profit records and lower levels of debt. In addition, Table 2 indicates that the performance of firms trading is related to their dimension. For this reason, we conducted separate regressions according to firms' size.

[Insert Tables 1 & 2]

*4.2. Econometric methodology*

To model latent firms' decision to internationalize ($y^*_{i,t}$) we estimated a reduced form including several determinants: (i) firms' observable characteristics lagged in one-year period ($X_{i,t-1}$) conditioning trade performance; (ii) average share of exporters within the sector indicating spillovers within industries and Spanish regions (Autonomous Communities - ACs) being collected into ($\alpha_{j1}$, $\alpha_{j2}$) respectively[7]; and (iii) time fixed effects-year dummies ($\mu_i$) denoting macroeconomic environmental conditions. We use a panel probit random effects estimation procedure using a panel database structure. The equation to be estimated is as follows:

$$y^*_{i,t} = \begin{cases} 1 & X'_{i,t}\delta + \alpha_{j1} + \alpha_{j2} + \mu_i + \varepsilon_i \\ 0 & otherwise \end{cases}$$

where $i$=1…$N$ indicates firms; $j$=1…$k$ represents sectors, and; $t$=2002…2005 denotes the periods considered. Assuming joint normality, independent distribution and absence of serial correlation for $\varepsilon_i=\pi_i+u_{i,t}$ (where $\pi_i$ is an unobserved individual specific effect that is time-invariant and $u_{i,t}$ is a time-varying idiosyncratic error term), a panel probit random effects model can be estimated. Although no entry-exit exporters and importer firms are observed in our longitudinal database, we can still observe sunk costs. That is, firms' previous economic conditions may influence their export decisions because the presence of fixed costs (Roberts and Tybout, 1997). We should therefore fix this econometric problem because the parameters may be biased (Wooldridge, 2005). For

[7] Bernard and Jensen (2004) found no significant effects for spillovers from the same industry and nearby exporters. Notwithstanding, controversial findings are observed regarding the presence of differences within Spanish either ACs (autonomous communities) or manufacturing sectors (Barrios, Görg and Strobl, 2003; Mañez, Rochina-Barrachina and Sanchis, 2004).

this purpose, throughout the empirical analysis we included information regarding: (i) trade in lagged terms ($y_{i,t-1}$); (ii) average past performance (operating revenues in logs) and volatility in past performance (EBITDA). Both indicators refer to the period 1998-2001. Since with the first approach one year is lost in the panel dimension and because the results coincide, we prefer to show the latter specification (see Table 2).

Amongst the firms' characteristics considered ($X_{i,t-1}$) we include a list that may affect the probability of becoming an exporter, such as firms' age or operation as a public limited company (see Table 1 for definitions). To control firms' size we included operating revenues and total assets in logarithm terms and lagged one-year to avoid contemporaneous relationship. Next, we included several magnitudes to consider firms' capital structure features: two dummies indicating different levels of ownership concentration (the lowest level constitutes the reference category[8]), a dummy for foreign ownership and a continuous variable representing indebtedness ratio. Moreover, we take into account firms' diversification strategy considering, first, three degrees of diversification based on information from NCEA codes, and second, following Hitt, Hoskisson and Kim (1997), the unrelated diversification defined as those firms declaring different first two digits in the NCEA codes. Finally, we also incorporated the number of foreign subsidiaries to measure firms' FDI strategy.

## 5. Empirical results

Table 3 reports the final results. We progressively introduce the list of covariates either to test hypotheses separately or for reasons of robustness. Column (1) shows baseline estimation results. As can be seen, the final results in column (5) hardly change compared to the partial results provided in the rest of the columns.

$H_1$ to $H_3$ predicted that ownership structure had an influence on exporting propensity. First, $H_1$ indicated that the higher the concentration, the more likely a firm was to export. This is corroborated for those firms showing a medium level concentration of ownership structure (0.173, $p<0.01$) compared to their less concentrated counterparts.

[8] A low level of concentration is defined as the presence of one or more shareholders with an ownership percentage (direct or total) below 25%.

Second, being a foreign firm, $H_2$ predicted the higher propensity to export. This is corroborated through the estimated coefficient (0.264, $p<0.01$). Third and finally, $H_3$ predicted that the greater the firm's leverage, the lower its propensity to export. Notwithstanding, the estimated coefficient (-0.001, $p>0.1$) was not statistically significant. Although descriptive statistics shown in table 2 that those firms trading presented a lower indebtedness ratio, this feature might be accounted for through other covariates.

Next, diversification strategies ($H_4$) were not statistically significant: that is, no positive influence on exporting decisions was corroborated. Finally, FDI ($H_5$) constitutes a key factor for predicting the greater propensity to export (0.210, $p<0.01$).

[Insert Table 3]

Furthermore, some other results, although expected, are worthy of mention: (i) a firm's size is positively related to its export propensity; (ii) a firm's age has a positive, statistically significant effect, as expected in view of its experience at least in the domestic market; (iii) initial conditions (proxied either by means of a lagged term for the dependent variable or average and volatility in either past revenues or past benefits) show a positive statistical significant effect; and (iv) sectorial or regional spillovers are highly relevant for explaining a firm's decision to export. The last finding indicates that proximity to competitors or neighbours that export influences one's own decision.

Next, for reasons of robustness and sensitivity we split the sample on the basis of two factors: size, and technological-sectorial classification. Table 4 shows the results when dividing the sample according to size. We observe that i) ownership concentration structure ($H_1$) effects hold only for smaller firms; ii) foreign firms ($H_2$) have an effect on medium-size enterprises but not for the rest of categories; iii) indebtedness ($H_3$) does not remain statistically significant; iv) regarding diversification strategies ($H_4$) none of the subsamples indicated relevance (although for medium-sized firms unrelated diversification appeared positively related at a high significance level $p<0.1$); v) whilst FDI ($H_5$) remained significant regardless of firm's size.

Finally, accounting for sectorial technological levels (and using the EUROSTAT classification[9]) no difference was observed.[10]

[Insert Table 4]

## 6. Discussion and conclusion

The aim of this study was to analyse the effect of firms' capital structure and diversification and FDI strategies on their export propensity. We analysed a sample of 8,019 Spanish manufacturing firms for the period 2002-2005 by means of a panel probit random effects model.

Our findings suggest that the factors traditionally included in the economic literature are also significant for explaining firms' export propensity in the Spanish manufacturing sector. For example, our results reveal a positive link between export propensity and internal firm characteristics (such as age, size and initial performance conditions). This evidence is consistent with previous literature on firms' heterogeneity (Roberts and Tybout, 1997; Wagner, 2001; Mañez, Rochina-Barrachina and Sanchís, 2008) and with exporting dynamics (Roberts and Tybout, 1997; Clerides, Lach and Tybout, 1998; Bernard and Jensen, 1999, 2004; Delgado, Fariñas and Ruano, 2002). Moreover, our findings also confirm, for the Spanish context, the role played by regional and sectorial spillover effects (external factors) on firms' export decisions, as shown by Bernard and Jensen (1997, 2004) and Barrios, Görg and Strobl (2003).

With regard to strategy literature, we also found that ownership concentration can be an internal factor to be taken into account in the explanation of export propensity. Resource-based theory can predict, at least partially, the differences internal capital structure between exporters and non-exporters. Firms that show a high level of ownership concentration in their capital are more likely to export than those that have no large-block shareholders. Due to the risk associated with export strategy, financing

[9] We used information from the Statistical classification of economic activities in the European Community aggregated in the Eurostat high technology sectors.
[10] We do not report these results since no differences were observed. Results are available upon request.

this activity needs a large-scale, long-term commitment on the part of shareholders. In fact, we found that it is more relevant for smaller firms, because of the greater perceived risk of export activities. Therefore, our results complement the ones by Dosoglu-Guner (2001) and Filatotchev, Stephan and Jindra (2008).

Furthermore, our empirical evidence supports the argument that firms with major foreign capital participation are more likely to be exporters than firms that are nationally owned. This result is consistent with previous studies in the economic literature (Kneller and Pisu, 2004, and Mañez, Rochina Barrachina and Sanchis, 2008) and the business literature (Filatotchev, Stephan and Jindra, 2008). However, we did not find evidence for a negative, statistically significant relationship between exporter firms and their degree of leverage.

Several results were obtained regarding exporting and other growth strategies. On the one hand, no effects of strategy diversification were found on exporting firms. Arguably, this finding may be due to a limitation in the study design when proxying firms' diversification strategies because of the lack of further information. We suggest that future research should use other proxy measures when accounting for this factor.

On the other hand, we provide evidence of the positive impact of FDI strategies on a firm's export propensity. This finding confirms that the two activities are complementary and part of the whole firm's international strategy. Thus, having foreign subsidiaries does not decrease a firm's export activity, but boosts it. In this regard our results are in accordance with Bernard and Jensen (2004).

A major limitation of our study is the fact that we do not know how long firms have spent in the export market. For this reason, and due to the short period covered, we did not compile information on exporting experience. Future research should make sure to avoid this problem.

Future research lines should thoroughly analyse the impact of capital structure on export activities and on other internationalization strategies as well. In our opinion, this gap in previous literature should be filled. As the association of corporate governance with firm's diversification strategies has been studied in depth, it might be of interest to

analyse the influence of a firm's ownership concentration on exporting but in other internationalization mechanisms such as FDI or strategic alliances. Furthermore, the effect of different types of shareholders in those corporate strategies should also be analysed. Thus, family, industrial or financially controlled firms may have different stakes and goals that might influence their internationalization strategy.

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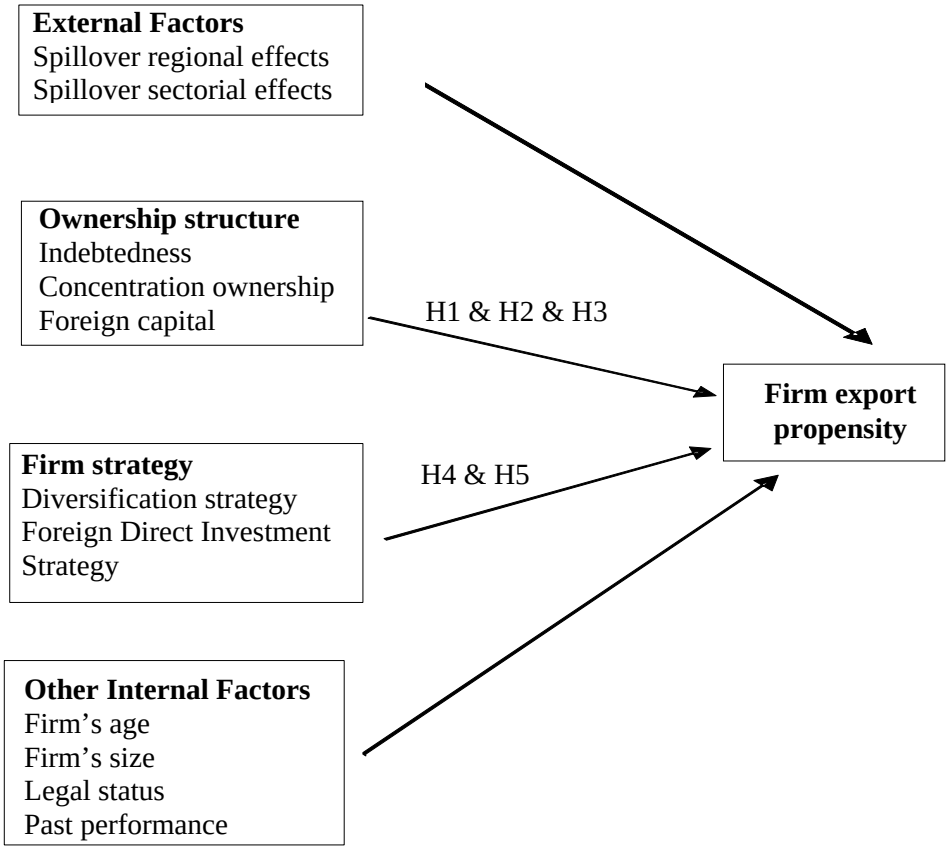
**Figure 1 Research model**



## Table 1 Definition of variables used throughout the empirical analysis

| *Variables* | *Definitions* |
|---|---|
| **Dependent variable** | |
| Export propensity | Dummy variable: 0= non-exporting firm; 1= exporting firm |
| **Covariates** | |
| **Firm's characteristics** | |
| Firm's age | Number of years the company has been operating in the Spanish manufacturing industry. Difference between 2005 and the firm's date of establishment |
| Not public limited company | Dummy variable: 0= firms that operate as public limited companies; 1= Firms with other legal forms. |
| **Company size** | |
| Operated revenues in log terms & lagged | Firm's operating revenues in log terms and one lagged period (in thousand Euros) |
| Total assets in log terms & lagged | Amount of total assets in log terms and one lagged period (in thousand Euros) |
| **Initial conditions** | |
| Average operating revenue initial conditions | Average operating revenues in log terms for the period 1998-2001 (in thousand Euros) |
| Volatility EBITDA initial conditions | Level of the EBITDA dispersion for the period 1998-2001 (in thousand Euros) |
| **Externalities** | |
| Regional spillovers | Average share of the number of firm exporters within Spanish Autonomous Communities indicating spillovers within Spanish regions |
| Sectorial spillovers | Average share of the number of firm exporters within sector indicating spillovers within industries |
| **Ownership** | |
| Medium concentration level | Dummy variable: 1= firms with one or more shareholders with an ownership percentage (direct or total) above 25% but below 50%; 0= otherwise |
| High concentration level | Dummy variable: 1= firms with one or more shareholders with an ownership percentage (direct o total) over 50%; 0= otherwise |
| Foreign firm | Dummy variable: 1= firms in which the major shareholder is foreign; 0= Spanish owned firms |
| Indebtedness | Debt ratio in percentage. Long and short debts/ total assets % |
| **Diversification Strategy** | |
| Low diversification level | Dummy variable: 1= Diversified firms operating in at least two different sectors (NCEA-code); 0= otherwise |
| Medium diversification level | Dummy variable: 1= Diversified firms operating in at least three different sectors (NCEA-code); 0= otherwise |
| High diversification level | Dummy variable: 1= Diversified firms operating at least in four different sectors (NCEA-code); 0= otherwise |
| Unrelated diversification | Dummy variable: 1= Diversified firms operating in more than one business and its NCEA codes are different in the two first digits; 0= Diversified firms that operate in related business and its NCEA codes have at least the same first two digits |
| **Foreign Direct Investment** | |
| Number of foreign subsidiaries | Number of foreign subsidiaries participated by the firm at any percentage ownership |

**Table 2 Descriptive data of Spanish manufacturing firms included in the regression results in 2005**

| | Overall sample | Trade = 0 | Trade = 1 | Large & Trade = 1 | Medium & Trade = 1 | Small & Trade = 1 |
|---|---|---|---|---|---|---|
| **Firm characteristics** | | | | | | |
| Firm's age | 21.99 (12.58) | 19.47 (11.25) | 24.14 (13.24) | 30.23 (19.85) | 26.31 (14.89) | 22.65 (11.25) |
| Not operating as public limited company | 0.42 (0.49) | 0.50 (0.50) | 0.34 (0.48) | 0.16 (0.36) | 0.24 (0.42) | 0.41 (0.49) |
| **Company size** | | | | | | |
| EBITDA in log terms | 6.19 (1.33) | 5.99 (1.23) | 6.36 (1.39) | 9.09 (1.26) | 7.27 (0.91) | 5.71 (0.93) |
| Total assets turnover in log terms | 8.58 (1.12) | 8.34 (1.00) | 8.78 (1.17) | 11.41 (1.03) | 9.67 (0.60) | 8.16 (0.63) |
| **Ownership** | | | | | | |
| Indebtedness | 58.78 (21.82) | 60.32 (22.33) | 57.45 (21.27) | 59.52 (20.44) | 57.19 (21.09) | 57.40 (21.40) |
| Medium concentration level | 0.07 (0.26) | 0.06 (0.23) | 0.09 (0.28) | 0.10 (0.30) | 0.12 (0.33) | 0.07 (0.25) |
| High concentration level | 0.03 (0.16) | 0.02 (0.14) | 0.03 (0.18) | 0.07 (0.26) | 0.06 (0.23) | 0.02 (0.14) |
| Foreign firm | 0.05 (0.23) | 0.04 (0.19) | 0.07 (0.25) | 0.27 (0.44) | 0.13 (0.34) | 0.02 (0.14) |
| **Strategy** | | | | | | |
| Low diversification level | 0.48 (0.50) | 0.48 (0.50) | 0.47 (0.50) | 0.38 (0.49) | 0.44 (0.50) | 0.49 (0.50) |
| Medium diversification level | 0.13 (0.34) | 0.14 (0.35) | 0.13 (0.34) | 0.09 (0.29) | 0.12 (0.32) | 0.14 (0.34) |
| High diversification level | 0.02 (0.14) | 0.02 (0.15) | 0.02 (0.13) | 0.02 (0.14) | 0.02 (0.15) | 0.02 (0.12) |
| Unrelated diversification | 0.14 (0.34) | 0.14 (0.34) | 0.14 (0.34) | 0.11 (0.31) | 0.13 (0.34) | 0.14 (0.35) |
| **Foreign Direct Investment** | | | | | | |
| Number of foreign subsidiaries | 0.17 (0.78) | 0.06 (0.45) | 0.27 (0.97) | 1.46 (2.23) | 0.47 (1.17) | 0.07 (0.39) |
| **Sample size** | 8,019 | 3,689 | 4,330 | 292 | 1,157 | 2,881 |

Note: we show information on average values and standard deviations into brackets.

## Table 3 Probit panel data results for Export activity

| | (1) Baseline | (2) Hypothesis 1 to 3 | (3) Hypothesis 4 | (4) Hypothesis 5 | (5) Jointly |
|---|---|---|---|---|---|
| **Firm characteristics** | | | | | |
| Firm's age | 0.075 (11.60)a | 0.067 (9.57)a | 0.075 (11.58)a | 0.076 (11.50)a | 0.068 (9.54)a |
| Firm's squared age | -0.001 (-8.42)a | -0.001 (-6.90)a | -0.001 (-8.40)a | -0.001 (-8.27)a | -0.001 (-6.81)a |
| Not operating as public limited company | -0.138 (-2.58)b | -0.102 (-1.80)c | -0.140 (-2.60)a | -0.134 (-2.49)b | -0.101 (-1.79)c |
| **Company size** | | | | | |
| Lagged operating revenues in log terms | 0.066 (1.25) | 0.044 (0.74) | 0.066 (1.25) | 0.063 (1.19) | 0.041 (0.69) |
| Lagged total assets in log terms | 0.208 (5.78)a | 0.214 (5.53)a | 0.209 (5.79)a | 0.202 (5.57)a | 0.203 (5.20)a |
| **Initial conditions** | | | | | |
| Average operating revenue initial conditions | 0.182 (3.55)a | 0.185 (3.33)a | 0.182 (3.56)a | 0.162 (3.16)a | 0.164 (2.94)a |
| Volatility EBITDA initial conditions | 0.000 (-0.58) | -0.002 (-0.89) | 0.000 (-0.60) | 0.000 (-1.11) | -0.002 (-0.88) |
| **Externalities** | | | | | |
| Regional spillovers | 3.163 (10.74)a | 3.045 (9.80)a | 3.163 (10.74)a | 3.115 (10.58)a | 2.985 (9.61)a |
| Sectorial spillovers | 1.887 (9.66)a | 2.000 (9.23)a | 1.904 (9.73)a | 1.893 (9.59)a | 2.012 (9.18)a |
| **Ownership** | | | | | |
| Indebtedness (H3) | | -0.001 (-0.93) | | | -0.001 (-0.63) |
| Medium concentration level (H1) | | 0.169 (2.61)a | | | 0.173 (2.62)a |
| High concentration level (H1) | | -0.098 (-1.08) | | | -0.098 (-1.05) |
| Foreign firm (H2) | | 0.267 (2.66)a | | | 0.264 (2.58)b |
| **Strategy** | | | | | |
| Low diversification level (H4) | | | 0.026 (1.01) | | 0.030 (1.03) |
| Medium diversification level (H4) | | | -0.009 (-0.28) | | 0.000 (0.00) |
| High diversification level (H4) | | | 0.101 (1.58) | | 0.067 (0.89) |
| Unrelated diversification (H4) | | | 0.031 (0.84) | | 0.030 (0.73) |
| **Foreign Direct Investment** | | | | | |
| Number of foreign subsidiaries (H5) | | | | 0.187 (4.15)a | 0.210 (4.42)a |
| Sample size | 31,175 | 26,506 | 31,174 | 30,817 | 25,294 |
| Wald $\chi^2$ | 964.59 (0.00) | 806.55 (0.00) | 968.18 (0.00) | 976.57 (0.00) | 727.90 (0.00) |

Note: Adjusted robust standard errors were computed whilst statistics are reported in brackets. So a, b and c denote statistical significance at 1, 5 and 10% respectively.

## Table 4 Probit panel data results for Export activity

| | (1) Large | (2) Medium | (3) Small |
|---|---|---|---|
| **Firm characteristics** | | | |
| Firm's age | 0.045 (2.39)b | 0.061 (4.86)a | 0.064 (8.22)a |
| Firm's squared age | -0.001 (-2.75)a | -0.001 (-3.41)a | -0.001 (-5.59)a |
| Not operating as public limited company | -0.375 (-1.18) | 0.027 (0.21) | -0.089 (-1.43) |
| **Company size** | | | |
| Lagged operating revenues in log terms | 0.202 (1.05) | -0.166 (-1.02) | 0.060 (0.93) |
| Lagged total assets in log terms | -0.374 (-1.97)b | 0.344 (3.62)a | 0.186 (4.04)a |
| **Initial conditions** | | | |
| Average operating revenue initial conditions | -0.136 (-0.83) | 0.160 (1.65)c | 0.296 (4.33)a |
| Volatility EBITDA initial conditions | 0.000 (1.58) | 0.000 (0.15) | 0.000 (0.25) |
| **Externalities** | | | |
| Regional spillovers | 1.122 (0.77) | 3.097 (5.05)a | 3.015 (8.55)a |
| Sectorial spillovers | 2.265 (1.61) | 2.855 (5.11)a | 1.837 (7.99)a |
| **Ownership** | | | |
| Indebtedness (H3) | 0.001 (0.14) | 0.004 (1.64) | -0.001 (-1.06) |
| Medium concentration level (H1) | -0.295 (-0.65) | 0.090 (0.84) | 0.207 (2.31)b |
| High concentration level (H1) | 0.874 (1.67)c | -0.043 (-0.26) | -0.197 (-1.75)c |
| Foreign firm (H2) | 0.053 (0.25) | 0.442 (2.99)a | 0.240 (1.26) |
| **Strategy** | | | |
| Low diversification level (H4) | -0.179 (-1.02) | -0.028 (-0.36) | 0.044 (1.36) |
| Medium diversification level (H4) | -0.356 (-1.42) | 0.075 (0.75) | -0.005 (-0.14) |
| High diversification level (H4) | 0.434 (0.87) | 0.082 (0.37) | 0.066 (0.91) |
| Unrelated diversification (H4) | -0.221 (-0.80) | 0.180 (1.70)c | 0.009 (0.21) |
| **Foreign Direct Investment** | | | |
| Number of foreign subsidiaries (H5) | 0.251 (3.45)a | 0.231 (3.65)a | 0.257 (3.29)a |
| Sample size | 1,099 | 5,748 | 19,340 |
| Wald $\chi^2$ | 59.75 (0.00) | 199.56 (0.00) | 565.51 (0.00) |

Note: Adjusted robust standard errors were computed whilst statistics are reported in brackets. So a, b and c denote statistical significance at 1, 5 and 10% respectively.