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WHICH SME'S CHARACTERISTICS ARE IMPORTANT IN GEOGRAPHIC DIVERSIFICATION OF EXPORTS?¹

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WHICH SME'S CHARACTERISTICS ARE IMPORTANT IN GEOGRAPHIC DIVERSIFICATION OF EXPORTS?

Abstract

Globalisation is increasingly forcing companies to expand their export markets. This paper examines the characteristics of companies which affect the geographic diversification of exports by SMEs. Using a sample of 146 Spanish SMEs that exported over the period 2000-2006, we estimate a panel model of fixed effects. The results show that the international experience of the firm, the qualification of their personnel, the availability of financial and technological resources and product diversification encourage the geographic diversification of a company's exports. While productivity and the existence of foreign subsidiaries have a significant impact, not on diversification, but on the concentration of exports in a few geographic markets.

Keywords:

Geographic diversification; export; company characteristics; panel methodology.

1. INTRODUCTION

Globalisation is forcing exporting companies to reorganise their resources to reach more markets and those increasingly farther afield. Thus, international diversification, defined as "*expansion across the borders of global regions and countries into different geographic locations or markets*" (Hitt et al., 1997),

becomes a priority not only for companies but also for the authorities (UNCTAD, 2002).

This geographic diversification enables the company to seize new opportunities and diversify the risks associated with export activity (Contractor, 2007). In addition, companies that export to distant and different markets generate a process of value creation. This is not only for the contribution to profitability, but also because of the beneficial effects of the accumulation of knowledge about other modes of internationalisation; which ultimately facilitate the establishment of foreign subsidiaries (Majocchi and Zucchella, 2001).

In the case of SMEs, it had been accepted that they exported to few and nearby countries, because their size limited access to the needed resources to reach more and farther markets. Nowadays, however, the profound changes in international markets have enabled size, in itself, not to be an obstacle. Moreover, small companies are able to reach far afield, possibly in search of niche markets not covered by the larger companies (Bell et al., 2003).

However, not all SMEs are able to geographically diversify their exports. Therefore, this work investigates the characteristics which favour geographic diversification of exports for companies.

To achieve this goal, the approach proposed by the Uppsala School, which proposes gradual internationalisation, is particularly useful. This states that, as the SME increases geographic diversification of its exports, its commitment increases, leading to the establishment of foreign subsidiaries.

However, the incremental approach of Uppsala may be too deterministic and not be applicable in some cases (Bell et al., 2003). Therefore, the Resource-Based View or RBV (Penrose, 1959) becomes important in highlighting the heterogeneity of resources and capabilities that make up the company. These are key to the internationalisation of the business and, in particular, for the choice of destination for the exports. This is because the company will opt for those destinations where it has more advantages than its competitors.

Also helpful is the Transaction Cost Theory which points to the limits of international expansion (Williamson, 1985). It states that transaction costs are particularly important in activities that require investment in specific assets and under conditions of uncertainty, as is the case of the export business, which requires specific investment (the costs of tailoring company products and processes, due to cultural, legal and technological differences in international markets). Market uncertainty is also greater than in domestic markets, due to the increased difficulty of establishing international contracts, asymmetric information and the geographical distance of foreign customers. Therefore, it follows that greater geographic diversity leads to increased transaction costs. These transaction costs are closely linked to certain features of the company, such as governance structure (coordination has to be greater in a company which is more geographically diversified), or the size of the firm (Verwaal and Donkers, 2002; Qian et al., 2008).

The two main contributions of this study are: firstly, the relationship between geographic diversification of exports and company characteristics is

investigated, demonstrating the heterogeneity between them. So far, work on this topic has focused on the relationship between geographic diversification and company performance (i.e., Hitt et al., 1997; Geringer et al., 2000; Dastidar, 2009). The few papers that study company characteristics relative to its international business is that of Tseng et al. (2007), which looks at how the resources of the company influence its business expansion abroad. However, it only considers the increase in export volume, and not the geographical diversification of its exports. Other works, like that of Ruane and Sutherland (2005), focus on the possibility that export destinations are linked to the features of the company, but it only differentiates between Irish companies that export to the United Kingdom or elsewhere.

Secondly, most research on geographical diversification has involved large enterprises whose findings are not necessarily applicable to SMEs (Lu and Beamish, 2006).

Geographical diversification is an important dimension in the exporting behaviour of a company, and its study in relation to the characteristics of the company is particularly novel for Spanish SMEs.

To achieve its goal, this research bases its assumptions on the various arguments offered by previous literature. Subsequently, the sample, the variables and their measurement are presented, as well as the methodology used in the research. The results of the study are then analysed, and finally, the conclusions are presented.

2. LITERATURE REVIEW AND HYPOTHESES

Following the approach of Uppsala (Johanson and Vahlne, 1977), the company continues a gradual process of internationalisation, initially exporting to few countries and over lesser psychological distances. Firstly, because the business environment is more familiar in terms of language, culture and business practices. Secondly, because it is less expensive to operate in nearby markets than in distant countries, since operation and transportation costs are less (Ojala and Tyrvaïnen, 2007).

However, sometimes the SME needs to travel farther to access niche markets for its products. Moreover, it may need to diversify the risks associated with exporting, due to asynchronous business cycles, or to protect itself against the volatility of exchange rates, due to operating in different currencies (Contractor, 2007). Therefore, it is necessary to identify the factors favouring the company continuing a strategy of international diversification in its exports.

To facilitate the understanding of the different firm characteristics which influence the geographical diversification of exports, we could distinguish 3 categories: firm experience (organisational and international), firm's local-based resources and capabilities (human resources qualification, productivity, financial and technological resources), and international resources (foreign subsidiaries and shareholders, and exported product diversification).

The organisational experience of the company has been one of the most important topics for researchers in analysing the behaviour of the exporting

company. However, its relationship with geographical diversification has not been sufficiently studied.

It is traditionally believed that companies with greater organisational experience are those exporting to more markets and those farther afield; as they have developed the processes in the domestic market to enable them to quickly absorb new knowledge in foreign countries (Balabanis and Katsikea, 2003), which is needed to penetrate international markets. This states that, as a company increases its organisational experience, it develops more organisational resources associated with the greater experience of its managers and a better understanding of its business and market, helping it to overcome exporting barriers with increasing ease (Leonidou, 2000). Thus, a company with organisational experience is better able to adapt to different tastes, habits and attitudes of foreign consumers, or international product specification standards. This is because, throughout its lifetime, it has probably had to adapt to such changes in its domestic market.

However, the existence of these processes can lead to inertia which impedes adaptation to change and access to different markets. It can lead to what March (1991) described as “the exploration-exploitation trade-off”, so the ability to take on new challenges, such as entry into other markets, is less in companies that possess greater organisational experience than those who have less experience (Maksimov, 2008). As such, Autio et al. (2000) argue that companies with less organisational experience have learning advantages regarding internationalisation, as they are able to learn more quickly than companies with

more experience. Their newly acquired knowledge is added to existing knowledge, without having to replace that which existed beforehand. In addition, the flexibility of young companies enables them to adapt better to more and farther countries (Bausch and Krist, 2007). In particular, with regard to those companies with little organisational experience who are already internationalised, Autio et al. (2000) suggest they adopt an international identity which provides them with access to ever more international markets.

However, most of the literature suggests a positive relationship between organisational experience and geographic diversification. Therefore, we pose the following hypothesis:

Hypothesis 1. The greater the organisational experience of the company, the greater the geographical diversification of its exports.

Another company feature which influences its diversification strategy is international experience, which makes it easier to identify business opportunities, establish relationships and minimise the cost of errors in a given foreign location (Kundu and Katz, 2003). International experience stimulates geographic diversification of exports by providing knowledge that facilitates the identification and assessment of the opportunities offered by countries of greater cultural distances (Durán, 2006).

In addition, the sunk costs associated with export activity (Roberts and Tybout, 1997; Bernard and Jensen, 1999; and Bernard and Wagner, 2001) may have already been made by those companies which have more international

experience. So that the costs of geographical diversification are lower for them than for companies with less international experience (Greenaway and Kneller, 2004). However, despite the globalisation of the economy, differences remain between countries, and particularly between geographic areas. This is because sunk costs are different depending on the export destination, so that the international experience gained would not necessarily mean that sunk costs had been made. As a result, the company would have to assume new sunk costs in the area it wanted to export its products to, regardless of prior international experience.

So, although there is no unanimity in the literature on the impact of international experience, most accept a positive relationship, therefore we propose the following hypothesis:

Hypothesis 2. The greater the international experience of the company, the greater the geographical diversification of its exports.

Regarding the firm's local-based resources and capabilities such as human resources of the company, following the RBV (Penrose, 1959), we expect a much higher skilled management team and workforce to contribute positively to successful exporting.

Thus, the greater the knowledge of both company and market the management team has, the greater the growth of the company; with geographic diversification being one of these forms of growth (Mishina et al., 2004).

The more skilled managers tend to lead the company towards geographic diversification, as this may be associated with greater visibility and prestige, along with higher levels of profitability and compensation for managers (Mishina et al., 2004). This argument is in line with Agency Theory (Jensen and Meckling, 1976), under which diversification is a consequence of opportunistic behaviour and creates conflicts of interest and coordination and control costs for management. Geographic diversification increases the complexity of the organisation and this complexity, in many cases, makes it difficult to coordinate personnel (Penrose, 1959). This means that managers have to be able to establish effective coordination mechanisms that keep the geographic diversification of the company under control (Mishina et al., 2004).

While entry into similar markets often involves the repetition of already established processes, entry into different and more distant markets means the company has to creatively re-jig existing processes. Therefore, having qualified staff would have a positive impact on geographical diversification (Mishina et al., 2004).

In addition, Wignaraja (2008) finds that higher levels of human capital (in terms of the technical skills of the workforce and the education and experience of managers) are associated with faster technological learning and the development of strategies that increase the specific competitive advantages of the company, which therefore encourage the geographic diversification of its exports. Alongside this technical aspect, authors such as Shapiro et al. (2008) refer to the cultural skills of company personnel, as a feature that encourages geographic

diversification. “*Cultural sensitivity in international business*” benefits geographical diversification by facilitating the entry of the company's products in physically and psychologically distant markets.

Furthermore, a more skilled labour force contributes to vertically differentiating company products. So this would be expected to have a positive impact on the geographical diversification of exports: products with different levels of quality can be offered to different markets (Máñez et al., 2008).

This leads us to make the following hypothesis:

Hypothesis 3. The greater the human resources qualification, the greater the geographic diversification of its exports.

Another aspect which may influence the strategy of geographical diversification of exports is the productivity of the company. The literature suggests that there is a positive relationship between the diversity of export destinations and productivity. There are at least two reasons to explain this positive relationship. The first is related to self-selection of the company: only the more productive companies can successfully compete in international markets (Melitz, 2003; Girma et al., 2005), since only they can take on the sunk costs involved in accessing distant markets. The second reason refers to *learning by exporting*, which suggests that as the exporting company acquires knowledge and has access to greater resources, it can increase productivity and, in turn, export to more and farther destinations (De Loecker, 2007). Both explanations are not

mutually exclusive, but may exist together, although self-selection dominates the literature.

This leads to the formulation of the following hypothesis:

Hypothesis 4. The greater the productivity of the company, the greater the geographic diversification of its exports.

Moreover, geographic diversification of exports requires a company to have financial resources. These may come from its own funding resources or via others.

Access to financial resources and the ability to use them to develop the necessary skills is essential to increase the geographic diversification of exports (Graves and Thomas, 2008).

In this regard, SMEs have very limited access to capital markets, only a minority of them is listed on stock exchanges, and investors prefer liquid assets and diversifying their investments.

Furthermore, a feature of SMEs is that they have difficulties in access to credit, which may limit their geographic diversification. Beck and Demirguc-Kunt (2006) and De la Torre et al. (2008) propose that, because the majority of SMEs are not required to perform external audits, they tend to have a certain lack of transparency in their accounts, and in many cases do not have the information available required by banks. This uncertainty means it is difficult to assess their true capacity to pay and to intend to pay. However, this weakness can be mitigated by the proximity inherent in SMEs; the personal service and direct

contact with owners and managers and the local community in which they operate.

Therefore, we cite the lack of external financial resources as a major problem for increasing the geographic diversification of exports. As a result, to finance their activities abroad, SMEs tend to use the funds generated internally (Graves and Thomas, 2008). So, the greater resources, the greater the incentives for geographic diversification of exports, as companies seek new opportunities in other markets.

Therefore, we propose the following hypothesis:

Hypothesis 5. The greater the availability of financial resources for the company, the greater the geographic diversification of its exports.

The relatively recent development of Information and Communication Technologies (ICT) are considered justified as a factor in the geographic diversification of exports. ICTs involve the use of innovative technology such as Internet services (Web), sophisticated hardware and software, satellite systems or satellite phone (Ruiz Estrada, 2009). In particular, the Internet helps to create a global market, which reduces the fixed costs associated with exporting to new markets (Freund and Weinhold, 2004). Clarke and Wallsten (2006) distinguish between developed countries and under-developed countries because, although the Internet represents a general increase in world trade, its positive effects appear to be greater in developed countries which have the infrastructure needed to exploit the potential of the Internet.

In addition, according to Petersen et al. (2002), one of the main barriers to international expansion is the uncertainty of foreign markets, and the Internet can be a tool for reducing asymmetric information (facilitating the creation, retention and transfer of tacit knowledge). However, uncertainty about the credibility of information on the Internet can act by increasing the asymmetry of the information.

The Internet is a major new distribution channel which companies can use to sell their products directly to consumers. It can also be used to find potential customers and distributors, for completing contracts on line (Clarke, 2008), for making contact with multiple buyers simultaneously (Freund and Weinhold, 2004), thereby increasing global trade.

Therefore, we propose the following hypothesis:

Hypothesis 6. The availability of Information and Communication Technologies in the company favours geographic diversification of its exports.

Finally, other features of the company that influence the strategy of geographic diversification of its exports are the international resources such as foreign subsidiaries and ownership and exported product diversification. Crick (2007) notes that companies that maintain a strategy of geographic concentration tend to have subsidiaries in key markets, while companies with a geographic diversification strategy seek to increase exports through agreements with agencies or distributors.

However, while it may seem that the existence of foreign subsidiaries is a substitute for export activity, both forms of entry into international markets can coexist: This is especially so for SMEs, who are trying to execute a strategy of geographic diversification for their exports. According to the Uppsala School, as the company gains more knowledge of international markets, it commits more and more resources, until it establishes subsidiaries abroad. Thus, companies that have subsidiaries abroad are in a better position to export to more distant countries, as their perception of risk is lower and their experience is greater.

Therefore, we made the following hypothesis:

Hypothesis 7. When a company has foreign subsidiaries, the greater will be the geographic diversification of its exports.

Another international firm resource is the presence of foreign shareholders. They bring skills and technologies from source countries which help improve the physical productivity of firm. And also firms with foreign ownership are more likely to access to overseas business networks, it implies make easier the access to finance, to qualified human resources and specialist in export business (Yoshino, 2008).

In addition, we expect the existence of foreign shareholders to make the geographic diversification of exports easier. This is due to their first-hand knowledge of international markets and valuable experience accumulated in exporting, not only to the market of origin of the foreign shareholders, but to more distant and diverse markets.

Furthermore, the existence of foreign shareholders produces an effective reduction in the perceived risk associated with exporting activity (Requena and Castillo, 2007), which makes geographical diversification of exports easier.

Therefore, we propose:

Hypothesis 8. When a company has foreign shareholders, the greater will be the geographic diversification of its exports.

Product diversification and geographic diversification are two forms of company growth which are connected (Bausch and Krist, 2007). However, there is no general consensus on the impact that product diversification can have on geographic diversification, so that the dominant position in the literature argues that product diversification provides resources that can be used to increase geographic diversification (Penrose, 1959). However, high levels of product diversification can lead to excessive transaction costs that restrict geographic diversification, resulting in a trade-off between product and geographic diversification (Tallman and Li, 1996).

We therefore propose the following hypothesis:

Hypothesis 9.: The greater the product diversification of the company, the greater the geographic diversification of its exports.

3. METHODOLOGY: SAMPLE, VARIABLES AND THEIR MEASUREMENT

3.1. Sample presentation

To test the hypotheses, we used a combination of data from two sources: the Spanish Chamber of Commerce data on export and the SABI database (System for Analysing Iberian Balance Sheets).

The first one is produced by the Spanish Chamber of Commerce, in cooperation with the State Agency for Tax Administration (AEAT), and includes Spanish importing and exporting companies who have voluntarily registered. The aim of this directory is to promote international trade for Spanish importing and exporting companies by providing information on the products they sell and the places they trade with.

Among the advantages of the Directory², with respect to other databases, is that the data supplied can be attributed to individual and clearly identifiable companies, which enables a study to be made of a specific part of the companies. The data are updated continuously, so that we can observe their evolution over a period of several years. However, there are disadvantages: (1) Export volume is shown in sections, and not in absolute amounts; (2) The volume of exports per product or specific destination is not shown, only that as a whole for each company; and (3) It is voluntary, so it does not include all exporting companies, but only those who have chosen to register and update their data.

² This database was also used in recent studies such as that of Lucio et al. (2007).

The SABI database provides financial and general information from Spanish and Portuguese companies.

We used this information on 323 Spanish companies who exported in 2006 (the latest year available when this research started). The SABI database provides additional information for 233 of the 323 non-financial companies in Spain during the period between 2000 and 2006. To identify SMEs, we follow the criteria established in the European Commission Recommendation 2003/361/EC³. We identified nine companies that were too large to be included in the sample. Also, we only included companies that exported each year of the period considered (2000-2006), so 78 companies were removed from the sample.

The final sample therefore consisted of 146 SMEs who had exported every year during 2000-2006 and for whom all the necessary information was available. However, because we took the explanatory variables with a time lag of one period, as explained in section 3.3 of the model estimation, in the end we had six periods and 876 observations.

The distribution by size and export volume of the 876 observations in the sample are shown in Table 1, where 188 observations (21%) exported less than €100,000 (low export volume), 397 (45%) exported between €100,000 and €1 million (medium export volume) and 291 (33%) exported over €1 million (high export volume). Regarding the size distribution, it can be seen that the majority of

³ According to the definition, companies employing less than 250 persons or those having an annual turnover not exceeding 50 million Euros, and/or an annual balance sheet total not exceeding 43 million Euros, are regarded as SMEs. Furthermore, within the SME category, the threshold between the small and medium-sized enterprises is set at a staffing level of 50 persons or an annual turnover and/or annual balance sheet total not exceeding 10 million Euros. According to the definition, a micro-company employs fewer than 10 persons and has an annual turnover and/or annual balance sheet total not exceeding 2 million Euros.

medium-sized enterprises exported over €1 million (63% of the observations of medium size), while the majority of micro and small enterprises have a medium export volume.

Insert Table 1

The company **Sector** is based on the OECD sector classification (Organisation for Economic Co-operation and Development). Thus, eight sectors are identified: **S1**-Foodstuffs (11 companies); **S2**-Textile and Wood Industry (19 companies); **S3**-Oil, Chemicals, Rubber and Plastics (20 companies); **S4**-Metal and Mechanical Products (28 companies); **S5**-Office Machinery, Computers, Radio, TV and Communications equipment (13 companies); **S6**-Vehicles and other transportation equipment (5 companies); **S7**-Trade and Repair (47 companies); and **S8**-Other sectors (3 companies).

The sectors with the most exporting companies are **S7**-Trade and Repair and to a lesser extent, the **S4**-Metal and Mechanical Products, so that over 51% of companies in the sample are included in these sectors.

3.2. Variables and their measurement

Dependent variables

Geographic diversification is the dependent variable. Previous studies, such as Tallman and Li (1996), have used the number of countries as a measure, but it does not inform us about the cultural, economic, political and social diversity.

So to capture those differences we classified the world market into different geographical regions (Arregle et al., 2009), and the geographical diversification is measured by the number of geographic areas for their products, so the greater the number of geographic areas, the greater the geographic diversification of company exports.

To identify the export destinations, the world market is classified into different geographical regions. The criterion also used by Hitt et al. (1997) and Delgado-Gómez et al. (2004) is based on the political and economic conditions existing in each country during the study period, so as to maintain homogeneity within each group. Thus, countries were grouped into nine geographical areas, such that countries included in one area could not be included in subsequent areas. There was also an area for “*not determined*” (or unknown) destinations in the Chamber of Commerce database.

The 10 geographical areas are: the fifteen European Union countries (**EU-15**); those newly joining the European Union (**EU-25**); Candidate countries for the European Union (**Pot EU**); Tax havens (**TH**)⁴; Latin America (**LA**); OECD countries not included in the above areas (**R-OECD**); Asia (**ASIA**); Africa (**AFRICA**); Rest of the World (**RW**); and not determined (**Nd**).

Explanatory Variables

Experience variables such as organisational experience is measured by the natural logarithm of the number of years between the company being founded

⁴ Countries included as Tax Havens are those considered as such under the Royal Decree 1080/1991, July 5.

(Tseng et al., 2007) and analysis, as the experience gained from an extra year of corporate life, for example, is greater the less experience a company has (Ramirez et al., 2006).

International experience was measured using the natural logarithm of the number of countries the company export to (Barkema et al., 1996).

Firm's local based resources and capabilities such as the qualification of human resources was measured by the natural logarithm of the average wage per worker (Bernard and Jensen, 2004).

Productivity was measured by the natural logarithm of the average sales per employee (Harris and Li, 2009; Ruane and Sutherland, 2005).

The availability of financial resources is evaluated by the profitability ratio, calculated as the ratio of profit after interest and taxes with own funds.

Information and Communication Technologies were measured with a dummy that took the value one if the company had a Web page and zero otherwise (Nieto and Fernández, 2005).

And finally international resources as the existence of foreign subsidiaries was measured following the work by Majocchi and Zucchella (2001), with a dummy variable that takes the value of one if the company has a foreign subsidiary and zero otherwise.

The presence of foreign shareholders was measured by a dummy variable that takes the value one if the firm has foreign shareholders, and zero otherwise.

Product diversification was measured in terms of the number of different exported goods. The natural logarithm of the number of TARIC chapters⁵ exported by the company was taken.

Control variables

The industry sector is controlled, because traditionally it has been noted that the industrial environment the company operates in has an influence on geographic diversification. This uses eight dummy variables taking the value one if the firm belongs to this sector, and zero otherwise, were used.

Also controlled is the size of company, because the larger the size the easier it is to access foreign markets and more resources (Davies et al., 2001). It is measured by the logarithm of the number of workers (Goerzen and Beamish, 2003).

Finally, the exporting volume of the company was used as a control. Since the information available provides three levels of exports: less than €100,000, €100,000 to €1 million, and over €1 million, to measure this variable three dummy values were created, which took the value of one if the company exported in each of these intervals, and zero otherwise.

The descriptive statistics of the variables are shown in Table 2. Table 3 shows the correlation matrix and the *Variance Inflation Factors (VIF)*. It can be seen that most of the VIF values are between one and two and the highest value is

⁵ The online customs tariff database is a multilingual database which includes all measurements relating to tariff, commercial and agricultural legislation. By integrating and coding these measures, the TARIC secures their uniform application by all Member States and gives all economic operators a clear view of all measures to be undertaken when importing or exporting goods.

2.12, well below half the limit of 10 recommended by Hair et al. (1999), therefore there are no serious multicollinearity problems.

Insert Table 2 and 3

3.3 Estimation

To achieve this aim, we used panel methodology because it has advantages over cross-sectional models: it reduces collinearity between the explanatory variables, such that the efficiency of the econometric estimation increases; it allows the heterogeneity characterising the company to be considered; and it also enables dynamic effects to be incorporated (Daskalakis and Psillaki, 2008).

As the objective is to identify the factors influencing the geographic diversification strategy for exports, we used a delay of one year for independent variables (factors), so that these are the factors considered when deciding on strategy. In addition, this reduces the potential problem of endogeneity of explanatory variables (La Rocca et al., 2009). Thus, we estimate the following model with a total of 876 observations for 146 companies:

$$GD_{i,t} = \beta_0 + \beta_1 EXPO_{i,t-1} + \beta_2 EXPI_{i,t-1} + \beta_3 CUALIF_{i,t-1} + \beta_4 PVDAD_{i,t-1} + \beta_5 RFIN_{i,t-1} + \beta_6 ICT_{i,t-1} + \beta_7 PEXT_{i,t-1} + \beta_8 AEXT_{i,t-1} + \beta_9 DIVP_{i,t-1} + \varepsilon_{i,t}$$

Where i is the company, t the year, and:

$GD_{i,t}$: Geographic diversification of the company i in the period t

β_0 : constant

$EXPO_{i,t-1}$: organisational experience of the company i in the period $t-1$

$EXPI_{i,t-1}$: international experience of the company i in the period $t-1$

$CUALIF_{i,t-1}$: human resources qualification in the company i in the period $t-1$

$PVDAD_{i,t-1}$: productivity of the company i in the period $t-1$

$RFIN_{i,t-1}$: financial resources of the company i in the period $t-1$

$ICT_{i,t-1}$: ICT in the company i in the period $t-1$

$PEXT_{i,t-1}$: foreign subsidiaries of the company i in the period $t-1$

$AEXT_{i,t-1}$: foreign shareholders in the company i in the period $t-1$

$DIVP_{i,t-1}$: product diversification in the company i in the period $t-1$.

$\varepsilon_{i,t}$: the error term

To test the model we apply panel methodology with sector and time effects, using the statistical program STATA 9.0.

This method tests for any effects and, if they exist, whether they are fixed or random. To this end, there are three models: the pooled data (pooled OLS), random effects and fixed effects.

To determine which model best fits the data, firstly we compare the pooled data model versus the random effects, via the test formulated by Breusch and Pagan (Lagrange multiplier test for random effects).

The results of this test indicate the existence of effects, since the null hypothesis of this test is rejected, which is that the variance of the random deviation is zero: $\text{Var}(u) = 0$

$$\text{chi}^2(1) = 427.92 \quad \text{Prob} > \text{chi}^2 = 0.0000$$

Therefore, the random effects u_i are relevant and it is preferable to use the random effects estimation rather than pooled.

The next step is to perform the F significance test for fixed effects:

$$F(145, 721) = 7.06 \quad \text{Prob} > F = 0.0000$$

The results indicate that it is preferable to use the fixed effects rather than the grouped model.

Then, the Hausman test results shows that the difference between the random and fixed effects coefficients is systematic, and therefore the fixed effects method should be used:

$$\chi^2(9) = 59.47 \quad \text{Prob} > \chi^2 = 0.0000$$

We used the *Feasible Generalised Least Squares* estimators to correct the problems of autocorrelation and heteroskedasticity.

The fixed effects panel model results, estimated using *Feasible Generalized Least Squares*, showed that the time effects were not significant, and we therefore estimated the adequacy or otherwise of its incorporation using an F test.

$$F(5, 850) = 0.65 \quad \text{Prob} > F = 0.6620$$

The results show that the dichotomous time variables are not jointly significant, so we eliminate them from the final model.

4. RESULTS

The results for the final fixed effects model are shown in Table 4

Insert Table 4

Previous organisational business experience does not seem to have a statistically significant influence on the geographic diversification of exports, thus *Hypothesis 1* is rejected.

Companies exporting to many geographical areas usually have a lot of previous organisational experience. However, this becomes less important the more international experience the company gains.

Consequently international experience has a significant influence on the geographic diversification of exports, so *Hypothesis 2* is not rejected.

As companies are able to reach more countries, the possibility of exporting to more geographical areas increases. This is in keeping with the majority position in the literature, according to which international experience provides knowledge that facilitates the identification and assessment of opportunities offered by countries of a greater cultural distance (Durán, 2006).

The qualification of human resources has a statistically significant influence on geographic diversification, so *Hypothesis 3* is not rejected.

It is therefore confirmed that a higher level of human capital, in terms of both technical skills of the workforce and education and experience of its managers, is a specific competitive advantage for the company, thereby promoting the diversification of its geographic exports.

The productivity of the company has a significant influence on the geographic diversification, but the sign is different from that expected, so *Hypothesis 4* is rejected.

This result could be related to exploitation *versus* exploration literature. Following March (1991) exploitation includes things captured by terms such as production, efficiency, selection or implementation; exploration includes such things as search, experimentation or innovation. So, with increasing productivity, the company is adopting an exploitation behaviour more than exploitation one, consequently will be more likely focus on familiar area than increase geographical diversification of the exports.

This shows that company productivity could be useful for consolidating the presence in the markets where it is already established, but not for new geographical areas. This is probably because, with increasing productivity, the company prefers to focus on markets which are already familiar, and incentives to export to distant areas are reduced.

The availability of financial resources has a statistically significant influence on the geographic diversification of company exports, so *Hypothesis 5* is not rejected.

Therefore, it seems to be confirmed that the availability of financial resources allows the company to try new strategies and experiment with innovative projects, such as entry into other international markets, which would not be possible with very limited financial resources (Wiklund et al., 2009).

The level of ICT has a significant influence on geographic diversification of exports, so *Hypothesis 6* is not rejected.

ICTs are consolidated as an influential factor in the decision to geographically diversify company exports because, in accordance with Petersen et

al. (2002), the Internet is a tool that can reduce one of the main obstacles to international diversification, such as the uncertainty in foreign markets.

The existence of foreign subsidiaries has a significant influence, but the sign is different from that expected, so *Hypothesis 7* is rejected.

Thus, in accordance with this result, when the SME has subsidiaries abroad, it tends to geographically concentrate its exports, possibly around the area where its subsidiary is established. This confirms the thesis maintained by Crick (2007) that companies tend to have subsidiaries in markets they consider to be key, and do not use them to expand their exports to different geographical areas.

The existence of foreign shareholders does not seem to have a significant influence on geographic diversification, so *Hypothesis 8* is rejected.

The knowledge and experience of foreign shareholders in the company is usually regarded as a highly useful business resource due to the exchange of knowledge involved. However, for Spanish SMEs, it does not seem to matter.

Product diversification also has a significant influence on geographic diversification, so *Hypothesis 9* is not rejected.

Product diversification increases opportunities for access to different geographical areas, possibly because, in spite of globalisation, each area still has its own peculiarities.

5. CONCLUSIONS

Globalisation has allowed companies to seek new opportunities in increasingly diverse markets, not only to improve profitability, but also to

diversify the risks associated with exporting. In addition, it especially allows knowledge to be accumulated which facilitates other more committed modes of internationalisation, ultimately favouring the establishment of subsidiaries abroad.

Given that it is normally considered a disadvantage to be a small company for geographical diversification of exports, this paper focuses on SMEs, showing that some are able to reach many and diverse markets.

Since the great majority of European businesses are SMEs, identifying those features that favour the geographic diversification of their exports is a matter of crucial importance, not only for leading in the markets they operate in, but also to ensure their survival.

Therefore, we posed certain hypotheses to estimate how company features can affect the geographical diversification of exports. One of the differences from previous studies is that we have considered many features and we have related them to geographic diversification.

The econometric results indicate that certain characteristics encourage further geographical diversification. Specifically, our estimates show that a higher levels of international experience, along with more able human resources, and a greater availability of financial and technological resources, plus a greater number of products exported, are features which appear to achieve greater geographical diversification of exports.

By contrast, the productivity of the company and the availability of foreign subsidiaries have a significant impact, not on diversification, but on the concentration of exports in a few geographic markets. This indicates that the

productivity of the firm is exploited more when exports are concentrated in a few geographic areas. Furthermore, the effect of subsidiaries could be interpreted as a measure of the importance of these markets. So that companies that have plants in certain markets are focusing their efforts on concentrating their exports.

Organisational experience and the presence of foreign shareholders, however, do not seem to significantly influence geographical diversification. The first, probably because the companies involved in the international arena already have a high level of expertise in their home markets and, therefore, international diversification is not considered crucial. While the presence of foreign shareholders in Spanish SMEs is scarce, which dilutes the potential impact they may have on the diversification of exports.

Thus, the results are of interest, but require further investigation to try and overcome some of the limitations they present. So, although they have been used as approximations for typical business characteristics usually measured in the literature, some of those presented need improving. However, it should be noted that the availability of data for Spanish SMEs is still quite restricted.

Nevertheless, despite this, this work is an attempt to advance the study of geographic diversification as an objective for companies who want to succeed in the international arena. This is particularly so for the Spanish SME, which in recent decades has acquired significant international importance.

REFERENCES

- Arregle, J.; Beamish, P. and Hebert, L. (2009). The regional dimension of MNEs' foreign subsidiary localization, *Journal of International Business Studies*, 40/1, 86-107.

- Autio, E.; Sapienza, H.J. and Almeida, J.G. (2000). Effects of Age at Entry, Knowledge Intensity, and Imitability on International Growth, *The Academy of Management Journal*, 43/5, 909-924.
- Balabanis G.I. and Katsikea E.S. (2003). Being an entrepreneurial exporter: Does it pay? *International Business Review*, 12, 233-252.
- Barkema, H.; Bell, J. and Pennings, J. (1996). Foreign entry, cultural barriers, and learning, *Strategic Management Journal*. 17/2, 151-167.
- Bausch, A. and Krist, M. (2007). The Effect of Context-Related Moderators on the Internationalization-Performance Relationship: Evidence from Meta-Analysis, *Management International Review*, 47/3, 319-348.
- Beck, T. and Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint, *Journal of Banking & Finance*, 30/11, 2931-2943.
- Bell, J.; McNaughton, R.; Young, S. and Crick, D. (2003). Towards an Integrative Model of Small Firm Internationalisation, *Journal of International Entrepreneurship*, 1/4, 339-362.
- Bernard, A. and Jensen, B. (1999). Exceptional exporter performance: cause, effect, or both? *Journal of International Economics*, 47/1, 1-25.
- Bernard, A. and Jensen, B. (2004). Why Some Firms Export, *Review of Economics and Statistics*, 86/2, 561–569.
- Bernard, A. and Wagner, J. (2001). Export Entry and Exit by German Firms, *Weltwirtschaftliches Archiv/Review of World Economics* 137 /1, 105–123.
- Clarke, G. (2008). Has the internet increased exports for firms from low and middle-income countries, *Information Economics and Policy*, 20/1, 16-37.
- Clarke, G. and Wallsten, S. (2006). Has the Internet Increased Trade? Developed and Developing Country Evidence, *Economic Inquiry*, 44/3, 465-484.
- Contractor, F. (2007). Is International Business Good for Companies? The Evolutionary or Multi-Stage Theory of Internationalization vs. the Transaction Cost Perspective, *Management International Review*, 47/3, 453-475.
- Crick, D. (2007). UK SMEs' motives for internationalizing: Differences between firms employing particular overseas market servicing strategies, *Journal of International Entrepreneurship*, 5 /1-2, 11-23.
- Daskalakis, N. and Psillaki, M. (2008). Do Country or Firm Factors Explain Capital Structure? Evidence from SMEs in France and Greece, *Applied Financial Economics*, 18, 87-97.

- Dastidar, P. (2009). International corporate diversification and performance: Does firm self-selection matter?, *Journal of International Business Studies*, 40/1, 71-85.
- Davies, S.; Rondi, L, and Sembenelli, A. (2001). Are multinationality and diversification complementary or substitute strategies? An empirical analysis on European leading firms, *International Journal of Industrial Organization*, 19/8, 1315-1346.
- De la Torre, A.; Martinez Peria, M. S. and Schmukler, S. L. (2008). Bank Involvement with SMEs: Beyond Relationship Lending. World Bank Policy Research Working Paper Series (June 1, 2008).
- De Loecker, J. (2007). Do exports generate higher productivity? Evidence from Slovenia, *Journal of International Economics*, 73/1, 69-98.
- Delgado-Gómez, J.M.; Ramírez-Alesón, M. and Espitia-Escuer, M.A. (2004). Intangible resources as a key factor in the internationalisation of Spanish firms, *Journal of Economic Behavior & Organization*, 53/4, 477-494.
- Delios, A. and Beamish, P. (1999). Geographic scope, product diversification, and the corporate performance of Japanese firms, *Strategic Management Journal*, 20/8, 711-727.
- Durán, J. (2006). El auge de la empresa multinacional española, *Boletín Económico del ICE*, 2881, 13-33.
- Freund, C. and Weinhold, D. (2004). The effect of the Internet on international trade. *Journal of International Economics*, 62/1, 171-189.
- Geringer, J.; Tallman, S. and Olsen, D. (2000). Product and international diversification among Japanese multinational firms, *Strategic Management Journal*; 21, 51–80.
- Girma, S.; Kneller, R. and Pisu, M. (2005). Exports versus FDI: An Empirical Test, *Review of World Economics/Weltwirtschaftliches Archiv*, 141/2, 193-218.
- Goerzen, A., and Beamish, P. (2003). Geographic scope and multinational enterprise performance, *Strategic Management Journal*, 24/13, 1289-1306.
- Graves, C. and Thomas, J. (2008). Determinants of the Internationalization Pathways of Family Firms: An Examination of Family Influence, *Family Business Review*, 21/2, 151-167.
- Greenaway D. and Kneller, R. (2004). Exporting and Productivity in the United Kingdom, *Oxford Review of Economic Policy*, 20/3, 358-371.
- Hair, J.; Anderson, R.; Tatham, R. and Black, W. (1999). *Análisis Multivariante* 5ª Edición, Prentice Hall Iberia, Madrid.

- Harris, R. and Li, Q. Ch. (2009). Exporting, R&D, and Absorptive Capacity in UK Establishments, *Oxford Economic Papers*, 61/1, 74-103.
- Hitt, M.A., Hoskisson, R. and Kim, H. (1997). International Diversification: Effects on Innovation and Firm Performance in Product-diversified Firms, *Academy of Management Journal*, 40 /4, 767-799.
- Jensen, M. and Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs and capital structure. *Journal of Financial Economics*, 3/4, 305-360.
- Johanson J. and Vahlne J.E. (1977). The internationalization process of the firm. A model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8, 23-32.
- Kundu, S. and Katz, J. (2003). Born-International SMEs: BI-Level Impacts of Resources and Intentions, *Small Business Economics*, 20/1, 25-47.
- La Rocca, M.; La Rocca, T. and Staglianò, R. (2009). Agency Costs of Free Cash Flow or Internal Capital Market Arguments in Diversification Decisions. Working Paper Series (February 14, 2009).
- Leonidou L.C. (2000). Barriers to export management: an organizational and internationalization analysis. *Journal of International Management*, 6, 121-148.
- Lu, J. and Beamish, P. (2006). SME internationalization and performance: Growth vs. profitability. *Journal of International Entrepreneurship*, 4/1, 27-48.
- Lucio J.J.; Mínguez, R. and Álvarez, D. (2007). El tamaño de la empresa exportadora e importadora española. *Boletín económico de ICE, Información Comercial Española*, 2908, 13-30.
- Majocchi, A. and Zucchella, A. (2001). Internationalization and Performance: findings from a set of Italian SMEs. Working paper 2001/18.
- Maksimov, V. (2008). Refining the Link between Age at International Entry and Growth. Atlanta Competitive Advantage Conference Paper (May 29, 2008).
- Máñez J.A.; Rochina, M.E. and Sanchis, J. (2008). Sunk Costs Hysteresis in Spanish Manufacturing Export, *Review of World Economics*, 144/2, 272-294.
- March, J.G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2/1, 71-87.
- Melitz, M. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity, *Econometrica*, 71, 1695–1725.

- Mishina, Y., Pollock, T. and Porac, J. (2004). Are more resources always better for growth? Resource stickiness in market and product expansion. *Strategic Management Journal*, 25/12, 1179-1197.
- Nieto, M.J. and Fernández, Z. (2005). The role of information technology in corporate strategy of small and medium enterprises. *Journal of International Entrepreneurship*, 3/4, 251-262.
- Ojala A. and Tyrvainen, P. (2007). Market entry and priority of small and medium-sized enterprises in the software industry: An empirical analysis of cultural distance, geographic distance and market size. *Journal of International Marketing*, 15/3, 123-149
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley.
- Petersen, B.; Welch, L. and Liesch, P. (2002). The Internet and foreign market expansion by firms. *Management International Review*, 42/2, 207-221.
- Qian, G.; Li, L.; Li, J. and Qian, Z. (2008). Regional diversification and firm performance. *Journal of International Business Studies*, 39/2, 197-214.
- Ramírez, M., Delgado, J.M. and Espitia, M. (2006). La internacionalización de las empresas españolas 1993-1999: un estudio de los factores de localización. *Moneda y Crédito*, 167-191.
- Requena, F. and Castillo, J. (2007). Information Spillovers and the Choice of Export Destination: A Multinomial Logit Analysis of Spanish Young SMEs. *Small Business Economics*, 28/1, 69-86.
- Roberts, M. and Tybout, J. (1997). The decision to export in Colombia: An empirical model of entry with sunk costs. *The American Economic Review*, 87/4, 545-564.
- Ruane, F and Sutherland, J. (2005). Export Performance and Destination Characteristics of Irish Manufacturing Industry. *Review of World Economics/Weltwirtschaftliches Archiv*, 141/3, 442-459.
- Ruiz Estrada, M.A. Globalization and Regional Integration (January 7, 2009).
- Shapiro, J. Ozanne, J. and Saatcioglu, B. (2008). An interpretive examination of the development of cultural sensitivity in international business. *Journal of International Business Studies*, 39/1, 71-88.
- Tallman, S. and Li, J. (1996). Effects of international diversity and product diversity on the performance of multinational firms. *Academy of Management Journal*, 39/1, 179-196.

- Tseng, Ch.; Tansuhaj, P.; Hallagan, W. and McCullough, J. (2007). Effects of firm resources on growth in multinationality. *Journal of International Business Studies*, 38/6, 961-974.
- UNCTAD (2002). *World Investment Report 2002* UN Conference on Trade and Development: New York and Geneva.
- Verwaal, E. and Donkers, B. (2002). Firm size and export intensity: Solving an empirical puzzle. *Journal of International Business Studies*, 33/3, 603-613.
- Wignaraja, G. (2008). FDI and Innovation as Drivers of Export Behaviour: Firm-Level Evidence from East Asia. UNU-MERIT Working Paper No. 2008-061 October 23, 2008.
- Wiklund, J.; Patzelt, H. and Shepherd, D.A. (2009). Building an integrative model of small business growth, *Small Business Economics*, 32/4, 351-374.
- Williamson, O. (1985). *The Economic Institutions of Capitalism*. New York, Free Press.
- Yoshino, Y. (2008). Domestic Constraints, Firm Characteristics, and Geographical Diversification of Firm-Level Manufacturing Exports in Africa. World Bank Policy Research Working Paper No. 4575.

TABLES

Table 1. Distribution by export volume and size

Export Volume	Micro		Small		Medium		Total Observations	
	No	%	No	%	No	%	No	%
Low	58	36.5	116	23.9	14	6.1	188	21.5
Medium	88	55.3	238	49.0	71	30.7	397	45.3
High	13	8.2	132	27.2	146	63.2	291	33.2
Total	159	100	486	100	231	100	876	100

No: Number.

Source: Prepared internally.

Table 2. Descriptive Statistics

	Mean	SD
Geographical diversity_t	1.126	0.701
Organisational experience_{t-1}	2.736	0.633

International experience $t-1$	1.721	1.074
HR qualification $t-1$	3.249	0.395
Productivity $t-1$	5.107	0.800
Financial Resources $t-1$	12.848	18.597
ICT $t-1$	0.651	0.477
Subsidiaries abroad $t-1$	0.075	0.264
Foreign shareholders $t-1$	0.055	0.228
Product diversity $t-1$	0.995	0.772
S1	0.075	0.264
S2	0.130	0.337
S3	0.137	0.344
S4	0.192	0.394
S5	0.089	0.285
S6	0.034	0.182
S7	0.322	0.467
S8	0.021	0.142
Company size $t-1$	3.235	1.042
Export level low $t-1$	0.215	0.411
Export level medium $t-1$	0.453	0.498
Export level high $t-1$	0.332	0.471

SD: Standard Deviation.

Source: Internally prepared.

Table 3. Correlation Matrix

	1	2	3	4	5	6	7	VIF
1-Organisational Experience	1							1.53
2- International Experience	0.2337	1						1.91
3-HR Qualification	0.0737	0.1298	1					1.49
4-Productivity	0.0601	-0.1210	0.4573	1				2.01
5-Financial Resources	-0.0538	-0.1002	0.0081	0.1739	1			1.13
6-Product Diversity	0.2716	-0.0219	0.1660	0.2304	0.0881	1		1.33
7-Company Size	0.4138	0.4156	-0.0967	-0.2160	-0.0924	0.0694	1	2.12

Source: Internally prepared.

Table 4. Panel Model Results: Dependent Variable Geographic diversification t

Variable	Coefficient	SD
Organisational experience $t-1$	0.0176	0.0146
International experience $t-1$	0.6481***	0.0089
Human Resources qualification $t-1$	0.0520**	0.0214
Productivity $t-1$	-0.0431**	0.0145
Financial resources $t-1$	0.0007*	0.0004
ICT $t-1$	0.0746***	0.0195
Subsidiaries abroad $t-1$	-0.0932**	0.0327
Foreign shareholders $t-1$	-0.0098	0.0387
Product diversification $t-1$	0.0191*	0.0098
S2	0.0631	0.0434
S3	0.0183	0.0402
S4	0.0387	0.0406
S5	-0.0726*	0.0437
S6	-0.0764	0.0708
S7	-0.0184	0.0395
S8	0.0276	0.0666
Company size $t-1$	-0.0257**	0.0111
Medium Exports $t-1$	-0.0168	0.0208
High Exports $t-1$	-0.1236***	0.0287
Constant	0.0982	0.0929
Chi-squared	10093.94***	
N° Observations	876	
N° Companies	146	
N° Periods	6	

Significance of the coefficients according to the Wald Statistic: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.001$.
 Source: Internally prepared.