THE EXPORT ACTIVITY AND NON-PRICE COMPETITIVENESS OF EUROPEAN FIRMS

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Introduction

The external sector is currently essential to restoring growth to the Spanish economy. The weakness of domestic demand, caused by the need for further deleveraging by households and firms and fiscal consolidation in the public sector, suggests that the external sector will continue to play a key role in the medium term. In this respect, price competitiveness and world demand are prime determinants of export growth. However, the latest evidence highlights the importance of other variables, usually associated with the notion of non-price competitiveness, which may explain the uneven behaviour of exports across the euro area countries over the last decade.[1]

The concept of non-price competitiveness is very broad and reflects not only improvements in product quality and processes, but also improvements in relation to the management of the firm, distribution channels and after-sales services [Dieppe *et al. (*2012)]. Accordingly, non-price competitiveness is not only linked to the quality of the products, but also to the efficiency of the firm, which contributes in turn to increasing competitiveness through the traditional price and cost channels. Distinguishing these two channels empirically is complicated, since the factors that generate productivity gains (e.g. investment in intangible assets or human capital) improve the competitiveness of the firm, not only through costs, but also by increasing the quality of the final product.

According to the latest international trade literature, exporting firms are larger, more productive and more innovative than those that produce solely for the domestic market. Adaptation to an increasingly globalised, more competitive environment requires firms to refine their management, innovation and human-capital-investment strategies, so as to achieve a growing level of sophistication that enables their non-price competitiveness to improve, through increases in efficiency and product quality. This enhances their ability to face up to international competition, to penetrate markets with greater growth potential and to position themselves advantageously in global value chains [Mayer and Ottaviano (2007)].

This article analyses the relationship between export activity and the non-price competitiveness of Spanish firms and of our main euro area trading partners. It uses microeconomic information from the survey "European Firms in a Global Economy" (EFIGE),[2] which provides details on the quality of firms' output, and of other variables, which, according to the available evidence, have a positive impact on competitiveness, such as their human-capital endowment, innovation and involvement in other forms of internationalisation. The rest of the article is organised as follows. First, following a brief description of the database, a comparative analysis is made of the export activity and non-price competitiveness of Spanish firms in relation to those of some of our main euro area trading partners. Afterwards, the relationship between these two variables is estimated, considering not only the impact of non-price competitiveness on the probability of exporting, but also on the diversification of external sales. Finally, the conclusions are presented in the last section.

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1 According to European Commission estimates (2010), external demand and price competitiveness only explained around 55% of the change in real exports in the euro area countries in the period 1998-2008.

2 EFIGE is a project designed to identify the policies necessary to improve Europe's external competitiveness, which has received the support of the European Commission through its FP7 programme.

The export activity and
non-price competitiveness
of Spanish firms: a
comparative analysis

INFORMATION AVAILABLE
IN THE DATABASE

The absence of homogeneous microeconomic data at the international level means that it is difficult to perform a cross-country comparative analysis of export activity and its determinants. Recently this gap has been partly filled by the survey carried out as part of the EFIGE project.[3] This database contains homogeneous information on a wide number of variables for the manufacturing firms of seven EU countries (Austria, Germany, France, Hungary, Italy, Spain and the United Kingdom), although this article only uses the data relating to Spain and its main euro area trading partners (Germany, France and Italy). Despite the highly detailed information provided, the survey has a number of limitations that restrict the type of analysis that can be performed. It should be noted that the sample only includes firms with more than ten workers, so that larger firms are over-represented in comparison with their weight in the economy as a whole. This bias is greater in countries, such as Italy and Spain, in which smaller firms are more common. Also, the survey only provides cross-sectional information for 2008 (and, in some cases, in order to measure the effects of the great recession, for 2009), which means that it is impossible to study the dynamics of exporting firms in the wake of the crisis. In principle, the information time lag should have less of a bearing on the validity of the results of the analysis, since the survey focuses on structural factors which change gradually over time. However, in the current circumstances, with the Spanish economy in the midst of a far-reaching adjustment process, this general consideration should be treated with greater caution.

The information provided by the EFIGE allows us to analyse in greater detail the factors that explain the differences in the export behaviour of firms in different EU countries. In particular, the database includes variables that enable export activity to be approximated, considering not only whether or not a company exports,[4] but also how well-established and deep-rooted its international relations are (see Table 1). Also, the survey contains information that is indicative of the non-price competitiveness of firms, both through variables that may directly capture the quality of their output and others that approximate the quality of their productive processes. Specifically, in the first case, there are qualitative variables on the relative quality of the firm's output compared to that of its competitors, on whether or not it has quality certificates and whether it discriminates when setting prices abroad, according to the quality of the good exported. However, this information does not always guarantee that firms' responses are comparable, since output data are not available. That said, it is illustrative of the degree of competition that a firm can be expected to face in an increasingly globalised and interdependent world.

The empirical evidence shows that the quality of the productive process depends on the efficiency of the firm, which is in turn explained by a set of factors relating to the accumulation of human and technological capital. In general, these factors are usually positively related to size [see Mayer and Ottaviano (2007) and Altomonte *et al.* (2012)]. In addition, in general terms, exports represent a greater proportion of the total sales of firms that have more experience abroad and are more productive, and also their geographical and product diversification is broader [see Bastos and Silva (2010) and Galán and Martín (2012)].[5,6]

3　The number of firms in the sample is approximately 15,000. For further information, the reader may consult the website www.efige.org.

4　This article considers exporting firms to be those that state in the survey that they made sales abroad in 2008 or on a regular basis in previous years. This broad definition of an exporting firm seeks to mitigate the impact on the base of exporting firms of the collapse of world trade in 2008, and not to exclude firms that usually export.

5　Likewise, Besedes and Prusa (2011) find that the fragility of trade relations limits the long-term growth of goods exports, and that the differences in survival rates explain a signficant part of the differences in the evolution of countries' exports. In turn, the stability of export relations depends positively on the efficiency of the firm.

6　The evidence based on aggregate data by product type tends to confirm that exports to more distant markets tend to have higher prices, net of transport costs [see Baldwin and Harrigan (2011)].

CHARACTERISTICS OF FIRMS' EXPORT ACTIVITY AND NON-PRICE COMPETITIVENESS TABLE 1

	Description
Size	Log number of employees
EXPORT ACTIVITY	
Exporter	Dummy which takes the value 1 if the firm exported in 2008 or on a regular basis before 2008
Export intensity	Exports as a percentage of total sales in 2008
Variety of exports	Variable reflecting the number of products exported in 2008 to the first export market: equal to 1 if the number is 1; 2, if it is between 2 and 5; 3 if 6-10; and 4 if over 10
Geographical diversification	Number of countries to which the firm exported in 2008
QUALITY	
Quality certificate	Dummy which takes the value 1 if the firm has quality certificates
Degree of quality	Quality of the firm's output relative to its competitors, as a percentage
Differentiation	Dummy which takes the value 1 if the firm's prices discriminate between different export markets on the basis of the quality of the exports
HUMAN CAPITAL	
Graduate ratio	Percentage of employees with a university degree
Managers with international experience	Dummy which takes the value 1 if a manager has worked abroad for at least one year
Variable remuneration	Dummy which takes the value 1 if managers receive some type of variable remuneration
Training	Dummy which takes the value 1 if the firm's employees receive training
INNOVATION	
Process innovation	Dummy which takes the value 1 if the firm made some sort of process innovation between 2007 and 2009
Product innovation	Dummy which takes the value 1 if the firm made some sort of product innovation between 2007 and 2009
R&D	Dummy which takes the value 1 if the firm invests in R&D
OTHER FORMS OF INTERNATIONALISATION	
Foreign capital	Dummy which takes the value 1 if the firm belongs to a multinational group
FDI	Dummy which takes the value 1 if the firm produces partly through FDI
Importing of standardised intermediate goods	Dummy which takes the value 1 if the firm imports standardised intermediate goods
Active outsourcer	Dummy which takes the value 1 if the firm produces partly through arm's length agreements
Passive outsourcer	Dummy which takes the value 1 if the firm produces exports to order

SOURCE: Banco de España, on the basis of EFIGE/Bruegel-UniCredit data.

In relation to technological and human capital, the EFIGE survey provides information on the performance of innovation activities (in relation to products and processes) and investment in R&D. Also, the database contains details of employees' skill levels, the international experience of the management, which, in principle, facilitates the penetration and consolidation of the firm in foreign markets by reducing the associated information costs when it starts to export, and the existence of variable compensation paid to managers, which indicates the adoption of efficiency-geared management policies [see Cerisola *et al.* (2012)].

In addition, the survey contains information on the different internationalisation strategies employed by the firm. The costs that the firm has to incur when it decides to expand internationally are much lower if the firm exports than if it decides to undertake foreign direct investment (FDI). Hence, the empirical literature finds a positive relationship between the productivity of a firm and its international expansion strategy. Although it is true that a minimum level of productivity is required for the firm to internationalise successfully, internationalisation ultimately has positive effects on the productivity of the firm through various channels (e.g. imports of higher quality inputs or adoption of the parent firm's technology,

positive spillovers). EFIGE provides very detailed information on the degree of internation-alisation of the firm; specifically, on the performance of FDI activities, membership of a multinational group, the type of intermediate goods imported[7] and the active or passive integration of the firm into global production chains.[8]

On the basis of the information provided by the variables described above, it can be con-cluded that the impact of composition effects (i.e. those relating to the diversity of firm size in the productive sector of a country) on the aggregate data relating to export activity and non-price competitiveness may be very important, especially in the case of Spain.

According to the data used in this article, exporting is less common among Spanish firms (extensive margin) and, moreover, exports are less significant (intensive margin) and diver-sified than those of our main euro area trading partners, although these differences decline as the size of the firm increases (see Table 2).[9] This would partly explain the lower weight of goods exports, in real terms, in GDP in Spain (21.7% in 2012) compared with Germany (43.9%) and Italy (24.5 %).

With respect to the direct information on quality, the variables supplied by the survey do not allow clear conclusions to be drawn, either because of their lack of variability or be-cause of the difficulty of interpreting them. Thus, for example, the fact that a firm sells at different prices in different markets may be explained by the fact that the quality of the products it exports differs, but also by the fact that markets differ, for example in terms of size and the degree of competition. That said, it should be noted that the proportion of firms with quality certificates is higher in Spain than in other countries, with the exception of Germany.

Turning to the indirect indicators of non-price competitiveness, with regard to human cap-ital, the proportion of high-skilled employees is lower in Spanish firms, although the pres-ence of managers with international experience and of employees participating in training courses is high, albeit lower than in economies with greater exporting strength, such as Germany. Moreover, the information compiled by EFIGE indicates that there remains a wide margin for improving the management remuneration policy, by linking it more closely to the firm's results. In the section on innovation, the proportion of Spanish firms that in-vest in R&D is seen to be lower, despite greater dynamism in the generation of process innovations.[10] Finally, in relation to the degree of internationalisation of the firm, it can be seen that the penetration of foreign capital and direct investment activities are also less significant, on average, in Spanish firms than in those of the other large euro area econo-mies, except for Italy. Also, the participation of Spanish firms in global value chains is rather lower and, moreover, tends to be predominantly passive. By contrast, a higher per-centage of Spanish firms import standardised inputs, in line with the Spanish economy's

7   Foreign capital holdings and FDI facilitate access to better technology, and to higher quality inputs. By contrast, if the firm imports standardised intermediate goods (components normally available on the market), this is more indicative of cost saving than of quality inputs that affect the productivity of the firm.

8   A firm is considered to participate actively in global value chains if it externalises part of its output abroad, while its participation is passive if it sells part of its output to foreign customers under specific contracts. See, for ex-ample, Békés et al. (2011) for a more detailed description of the relationship between the position of a firm in the value chain and the evolution of certain firm characteristics.

9   The descriptive statistics presented in Table 2 were tested for equality, comparing the sample corresponding to Spain with the aggregate for the rest of the countries. In all cases, the discrepancies are statistically significant, with the exception of the variety of products exported.

10 The aggregate R&D spending indicators show, by contrast, a significant gap between Spain and the euro area as a whole (in 2010, 0.7% of GDP, as against 1%, respectively).

	Total (excluding Spain)					Spain				
	10-19 employees	20-49 employees	50-249 employees	Over 250 employees	Total	10-19 employees	20-49 employees	50-249 employees	Over 250 employees	Total
EXPORT ACTIVITY										
Exporter (b)	48.9	59.7	76.0	84.2	61.4	43.8	57.9	73.6	86.9	56.5
Export intensity (c)	27.4	31.1	36.4	43.7	32.7	21.8	25.0	34.0	41.3	27.3
Variety of exports (c)	1.8	1.9	2.1	2.4	2.0	1.8	2.0	2.1	2.1	1.9
Geographical diversification (d)	4.0	6.0	10.0	15.0	7.0	3.0	4.0	6.0	15.0	4.0
QUALITY										
Quality certificate (b)	39.8	57.8	76.7	87.4	58.1	46.8	61.5	79.9	94.5	60.4
Degree of quality (c)	94.2	95.3	96.4	96.0	95.2	99.0	98.2	98.8	99.3	98.6
Differentiation (b)	7.4	7.3	7.0	5.6	7.1	19.9	21.8	19.6	14.9	20.3
HUMAN CAPITAL										
Graduate ratio (c)	16.1	15.2	15.5	16.1	15.6	9.1	12.4	16.3	19.9	13.0
Managers with international experience (b)	10.7	14.8	32.3	62.4	20.3	11.4	22.8	41.8	68.3	23.7
Variable remuneration (b)	26.9	33.3	53.2	70.3	38.0	16.5	24.6	39.0	64.8	25.8
Training (b)	60.4	73.8	90.0	96.0	74.4	75.1	86.4	92.8	97.2	83.7
INNOVATION										
Process innovation (b)	33.7	40.6	49.3	52.7	41.1	42.2	54.1	58.7	76.6	51.5
Product innovation (b)	38.6	47.2	56.8	64.8	47.7	38.9	45.8	54.2	68.3	45.6
R&D (b)	39.3	52.1	67.8	79.0	53.2	34.7	47.6	61.4	71.0	46.1
OTHER FORMS OF INTERNATIONALISATION										
Foreign capital (b)	1.7	4.4	13.9	30.0	7.2	1.2	3.2	11.7	35.2	5.3
FDI (b)	0.9	2.8	8.3	26.8	5.0	0.7	1.6	8.2	24.1	3.4
Importing of standardised intermediate goods (c)	23.5	26.6	30.6	38.9	28.0	38.5	39.0	40.3	41.0	39.3
Active outsourcer (b)	3.3	4.2	6.1	9.8	4.7	1.1	1.9	1.2	2.8	1.5
Passive outsourcer (b)	34.3	44.3	55.6	64.7	44.9	19.9	31.1	54.0	54.6	31.3
MEMORANDUM ITEM										
Number of firms	2,655	3,583	1,769	582	8,589	1,032	1,232	402	145	2,811

SOURCE: EFIGE/Bruegel-UniCredit dataset.

a The definitions of the variables may be found in Table 2.
b The value of this variable indicates the percentage of firms that have the characteristic considered.
c Mean.
d Median.

high import dependence. In general, Spanish and German firms internationalise their production primarily through FDI, while, in relative terms, the French and Italians make more use of international outsourcing [see Fernández et al. (2012)].[11]

The data used suggest that the laggard position of Spanish firms as a whole in terms of their international openness is a consequence of the high weight of SMEs,[12] which generally find it more difficult than larger firms to pay the costs involved in penetrating

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11 Firms that outsource tend to reimport a large proportion of the outsourced production to the home country, so that one might also expect outsourcing to have a more positive (less negative) impact on exporting than FDI.

12 It should be recalled here that since the EFIGE survey does not provide information on firms with fewer than 10 employees its results are distorted, especially in countries in which smaller firms account for a significant part of the economy. This is the case in Spain, where 90% of all firms have fewer than 10 employees (76% in the case of industry), according to data of the Spanish Central Companies Directory (DIRCE).

foreign markets, since they are frequently less efficient and have more limited financial, organisational and human resources. Indeed, according to the information supplied by the EFIGE survey, large Spanish firms (which account for most of Spain's exports)[13] have a higher propensity to export than those of the other countries considered and their geographical diversification is similar.[14] However, their export intensity is somewhat lower. In the case of the other variables that directly or indirectly approximate non-price competitiveness, it can also be seen that large Spanish firms achieve similar or even higher levels than those of their main European trading partners, the high level of their employee skills being a case in point. However, when the largest firms are compared, active participation in global value chains and investment in R&D continue to be lower in the case of Spanish firms.

In short, the information used in this article suggests that large Spanish firms have a relatively solid competitive position in comparative terms, which would help to explain the favourable performance of Spanish exports in recent years. That said, the latest ICEX and balance of payments data suggest that Spanish SMEs are expanding their international projection, against a background of weak domestic demand. Progress in eliminating the obstacles that hinder firm growth would be conducive to the entrenchment and extension of this process.

Determinants of the export activity of firms: a European comparative analysis

The above-mentioned data show that Spanish firms, as a whole, differ from their competitors in the main euro area economies with regard to their export activity and to certain characteristics positively related to non-price competitiveness. This section considers whether such characteristics actually influence diverse aspects of firms' exporting activity and may, therefore, contribute to explain the differences observed in the export developments of the countries considered. For this purpose, four empirical relationships are estimated. In the first regression, the dependent variable is an indicator variable (dummy) that takes the value 1 if the firm exported in 2008 or if it exported on a regular basis before 2008 and 0 otherwise. In the second regression, the variable to be explained takes the value 1 if the export intensity of the firm, measured as the proportion of its total sales that corresponded to exports in 2008, exceeds the national average and 0 otherwise. In the third regression, the dependent variable is equal to 1 if the variety of products exported by the firm also exceeds the national average and 0 otherwise. Finally, in the fourth regression, the variable to be explained takes the value 1 if the number of export markets is greater than the median number of its country and 0 otherwise. All the regressions, which are of the Probit type, include dummy sector variables, to control for unobservable differences, according to the branch of activity.[15] In regressions 2, 3 and 4, in order to correct for the possible selection bias, since export intensity and diversification are only observed for those firms that actually export, a two-stage estimation is made, following the model proposed by Heckman (1976), which improves the estimation in regression 2.

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13   The international empirical evidence shows that the degree of concentration of exports is very high. In the case of Spain, in 2012, 10% of the largest goods exporters accounted for 97% of total goods exports [see ICEX (2013)].

14   Aggregate customs data show that in recent years the geographical diversification of Spanish exports towards the more dynamic emerging markets has increased, not only through an increase in the intensive margin (i.e. in the value exported per trade relationship), but also through diversification of the export base towards these new markets. That said, Spain's main export market continues to be the euro area, and Spanish firms have difficulty entrenching their presence in new markets. Even so, the number of firms regularly exporting increased in 2012 for the first time since the collapse of world trade [see Banco de España, (2013)].

15   In general, the correlations obtained are not high, which suggests that the different variables do not supply redundant information and that they can be included together in the econometric specification.

TABLE 3

	Probability of exporting (1)	Probability that the export intensity exceeds the national average (2)	Probability that the variety of products exported exceeds the national average (3)	Probability that the geographical diversification is greater than the national median (4)
France (b)	-0.060			
	(0.047)			
Italy (b)	0.195**			
	(0.081)			
Spain (b)	0.057			
	(0.036)			
Size	0.021**		0.039**	0.076***
	(0.009)		(0.017)	(0.015)
Quality certificate	-0.001	0.056	0.110**	0.085**
	(0.024)	(0.047)	(0.047)	(0.044)
Differentiation	0.142**	0.037	-0.135**	-0.042
	(0.064)	(0.07)	(0.062)	(0.059)
Graduate ratio	0.002***	0.001	-0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Management with international experience	0.051**	0.105***	0.067**	0.103***
	(0.023)	(0.039)	(0.038)	(0.035)
Variable remuneration	0.022	-0.009	0.070**	-0.007
	(0.021)	(0.039)	(0.038)	(0.036)
Process innovation	0.042**	-0.018	0.036	-0.002
	(0.021)	(0.036)	(0.036)	(0.035)
Product innovation	0.071***	-0.064	0.090**	0.054
	(0.021)	(0.044)	(0.042)	(0.039)
R&D	0.122***	0.080	0.059	0.080**
	(0.021)	(0.055)	(0.047)	(0.043)
Foreign capital	0.048	0.093**	-0.103**	0.025
	(0.041)	(0.054)	(0.054)	(0.054)
FDI	0.121***	0.071	0.100**	0.082**
	(0.046)	(0.05)	(0.051)	(0.051)
Importing of standardised inputs	0.115***	-0.001	0.049	0.038
	(0.028)	(0.041)	(0.039)	(0.038)
Passive outsourcer	0.275***	0.054	-0.044	0.073**
	(0.021)	(0.065)	(0.037)	(0.035)
Likelihood function	-477.6	-813.6	-403.0	-373.4
Number of observations	1,253	1,089	673	674

SOURCE: EFIGE/Bruegel-UniCredit dataset.

a The definitions of the variables may be found in Table 1. Average marginal effects are reported. Standard errors are in brackets. *, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively. The two-stage Heckmann procedure is applied in regression 2 to control for selection bias (it was not significant in regressions 3 and 4).
b The reference in regression 1 when interpreting the coefficients is Germany.

The results are presented in Table 3.[16] The coefficients of the regressions show the impact of a marginal change in the level of each independent variable on the probability that the dependent variable is realised (for example, in the first regression, if the number of employees increases by 1%, the probability of exporting increases by 0.02%). In the case of the dummy variables, the coefficient is interpreted as a discrete change in the level of the variable, i.e. from 0 to 1. In regression 1 dummies for each country are also included. In this case, the results of the estimation suggest that Spanish firms, having controlled for their individual and sector characteristics, do not have a lower probability of exporting than German ones. That is to say, according to this methodology, Spanish and German firms that are similar, in particular as regards size,[17] have a similar propensity to export.

As for the variables that directly approximate aspects relating to the quality of the firm's output, the results confirm that the presence of quality certificates significantly raises the degree of diversification of exports. For its part, price differentiation on the basis of the quality of the goods sold in each market seems to be associated with firms that export a smaller number of products, which suggests greater specialisation.[18]

The effects of the other control variables are generally in line with the international and Spanish evidence [see Martín et al. (2009)].[19] As regards the variables relating to human and technological capital, the level of labour skills and, especially, the international experience of management increases the probability of exporting. This latter variable, moreover, is conducive to increases in export intensity, the variety of products exported and the geographical diversification of exports. This result is particularly interesting for Spain, since Spanish SMEs usually lack human capital with experience in the international environment to a greater extent than the SMEs of other core EU countries. The adoption of more active management remuneration policies fosters the product diversification of exports. Also, the accumulation of technological capital contributes positively and significantly to the propensity to export and to geographical diversification and, in the case of product innovation, to increase the number of products sold abroad.

With regard to the different internationalisation strategies, direct investment increases the probability that the firm exports, and that it has foreign trade relations that are deeper and more diversified, in terms of products and markets, than other exporting firms. Accordingly, in the case of the manufacturing firms represented in the EFIGE survey, the internationalisation of production through FDI complements export activity. Membership of a foreign multinational group increases export intensity, but seems to inhibit export diversification, which could indicate greater centralisation of trade with group firms, and in particular with the parent company. Also, participation in global value chains increases the

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16   Robustness tests have been performed for regressions 2 and 3, using the national median as reference instead of the national mean, and taking as reference the mean for the whole sample and not only for each country. There is no significant qualitative change in the overall results for the determinants of export activity.

17   Size contributes positively to export activity, in line with the international empirical evidence. This variable is omitted in regression 2, since in the two-stage Heckman procedure the size of the firm is used to control for selection bias. In the regression in which this bias is not controlled for, the coefficients are positive and significant.

18   The international empirical literature finds evidence that firms charge higher prices for the products they sell to more distant markets. This may indicate that firms discriminate in their pricing between export markets (which is compatible with a scenario in which firms produce vertically differentiated varieties of the same product) and export higher quality products (and, therefore, higher priced products) to more distant countries. Althought robust, this result also reflects the fact that it is the more productive firms, which produce higher quality goods, that export to distant markets. See Schott (2004), Hummels and Klenow (2005) and Bastos and Silva (2010).

19   The analysis presented should be interpreted with some caution, since, as it is a cross section, it is not possible to correct for endogeneities and unobservable firm-level characteristics.

probability of exporting and eases access to new markets, since relations are established at the international level.[20] Importing intermediate goods also raises the probability of exporting, probably because of the accessibility to a greater variety of inputs at a lower cost.

Conclusions

This article uses the EFIGE database to compare various aspects of the export activity of the manufacturing firms of the four largest euro area economies and to relate them to different variables which directly or indirectly approximate non-price competitiveness, through human and technological capital and their degree of participation in alternative internationalisation strategies. The results of the study should be treated with caution since, despite its great detail, the database has certain limitations. Moreover, most of the information dates from 2008 and does not capture the transformations in the productive structure that have occurred since then.

The export activity of Spanish firms tends to be lower than that of those in the other large euro area economies. This is a result of the structure of Spain's business fabric, given the lower relative weight of large firms than in France and Germany. When the composition effect associated with size is corrected for, large Spanish firms are seen to have a similar competitive capacity to those of economies with a greater export vocation.

The estimation of the role played by the various firm characteristics that may approximate non-price competitiveness in the probability of exporting or in the deepening of foreign trade relations is in line with the international evidence. Broadly, size, human capital (in particular, the international experience of managers) and technological capital, and internationalisation through other channels (participation in global value chains or foreign direct investment) tend to increase the propensity to export and the degree of export intensity, while their impact on diversification is mixed, although it is particularly significant and positive in the case of firms that carry out FDI which, according to the evidence, tend to be more efficient.

In the case of Spain, apart from the well-known negative impact on export activity of the small size of our corporate base, other variables, such as the lower degree of internationalisation of Spanish firms (in particular, in global value chains, including the largest ones), are found to be a constraint on the expansion of exports. By contrast, the variables that directly measure quality are found to entail a boost to Spanish exports. The latter result, however, should be treated with caution, given the bias detected in the responses of the firms to these questions in the survey and that the levels of other variables indicating quality, such as product innovation and R&D, are below the average for the three euro area countries considered in this article.

Further improvements to the export potential of the Spanish economy require fresh progress on structural reforms, which would ease the reallocation of factors of production towards more efficient sectors and firms, potentially generating economies of scale. Also, the financial restructuring that is being undertaken in the productive private sector will, in the medium and long term, contribute to increasing firms' human and technological capital and their possibilities of internationalisation.

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20   The coefficients for active participation in global value chains are not significant.

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