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Economic Watch

Spain

Madrid, December 7, 2012
Economic Analysis

Spain Unit

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The Internationalisation of Spanish Firms*

- **Spain's exports of goods and services is the aggregate demand component that has recorded more positive surprises during the crisis**
  Spanish exports, which already performed well in the period 1999-2007, have cushioned the downturn in economic activity during the crisis, becoming the engine of recovery for many firms. It is the only component of aggregate demand that has comfortably surpassed its pre-crisis peak value.

- **In contrast to the performance of other industrialised economies, Spain's share of world exports in goods and services fell only slightly -by 8.9%- and roughly in line with Germany's, where relative export prices behaved better**
  The good relative performance of Spain's export market share coincides with increased export diversification both in terms of destination markets –towards emerging and growth-leading economies (EAGLEs)- and production -towards sectors that are more complex and with a greater ability to extend exporting to other sectors that may use the cumulated productive knowledge. In both features, the industry composition of Spanish exports is above the global average.

- **A number of factors, largely ascribed to the realm of the firm's strategic decision-making, have shaped Spain's internationalisation process**
  On the one hand, we find decisions on inputs of production, related to company size, investment in capital stock, skilled labour intensity, R&D spending and technology adoption. On the other, we find decisions pertaining to market strategy and finance, such as product innovation, product diversification, and the reliance on alternative sources to long-term financing, including foreign ownership.

- **Policies aimed at fostering internationalisation need to be part of a medium- and long-term growth strategy based on effective measures**
  The institutional framework must be shaped to improve the environment in which firms operate, mainly on two fronts: the functioning of the market for inputs (labour and capital markets, access to new technologies and production innovations) and the functioning of the market for goods and services (improved competition).

*The authors would like to thank Miguel Cardoso and Juan Ramón García-López for their comments and suggestions, and Mercedes Nogal for her assistance. This Economic Watch summarises the main results in Correa-López and Doménech (2012) (BBVA Working Paper No. 12/30).

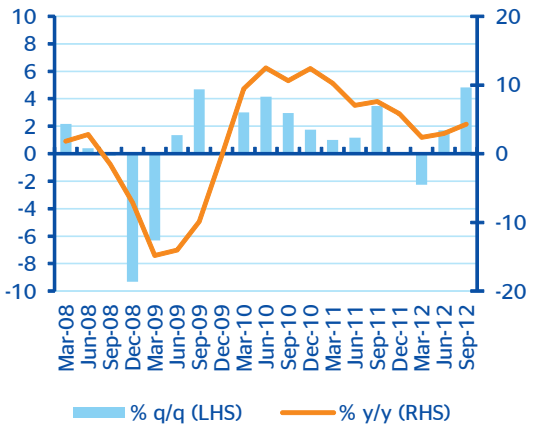
1. Introduction

The Spanish economy is undergoing a significant structural adjustment process in which the internationalisation of its firms has become crucial for a number of reasons. On one hand, as long as the adjustment process continues, domestic demand cannot be the driver of economic growth. In the run-up decade to the 2008 financial crisis, the Spanish economy devoted a large proportion of its factor inputs to non-tradable sectors (primarily residential investment). Growth in domestic demand largely outstripped growth in aggregate supply, and the excess demand situation was met with increased imports -favoured by easy access to liquidity at historically low financing costs- while the current account deficit deteriorated. **Economic recovery requires a movement in the opposite direction: a rapid and effective reallocation of factor inputs** from those sectors that have already carried out most of the adjustment (i.e. construction and related services), or that are currently adjusting (i.e. part of the financial sector and the public administration), **to sectors with higher potential output growth.** Competing in foreign markets -via exports- and in domestic markets -via import substitution- would raise the contribution of net exports to growth, thus leading the recovery in investment, employment, and, eventually, private consumption.

On the other hand, the Spanish economy has accumulated a large volume of gross external debt (170% of GDP in the second quarter of 2012) and has reached a negative net international investment position (NIIP) of around 90% of GDP. To correct these large external imbalances, the economy necessitates persistent current account surpluses, and one desirable way to achieve them is by improving the international competitiveness of its firms.

Spain's exports of goods and services is the aggregate demand component that has recorded more positive surprises during the crisis, cushioning the downturn in economic activity and becoming a true engine of recovery. To date, it is the only component of aggregate demand that has comfortably surpassed its pre-crisis peak value (Charts 1 and 2). **What factors underpin the good performance of Spanish exports? Can exports become the source of growth in the medium-term, thus contributing to Spain's reduction of external imbalances?** This Economic Watch attempts to provide an answer to these questions by exploring them from a firm-level perspective, in line with the new trade theory (Melitz, 2003).

Chart 1
Spain: exports growth, goods and services (%)



Source: BBVA Research based on INE

Chart 2
Spain: quarterly evolution of exports, goods and services

Note: t=3T2008
Source: BBVA Research based on INE

Fortunately, there are Spanish companies with a proven ability to compete abroad that could lead the process of factor reallocation. A dual economy such as Spain's offers **several examples of business excellence on an international level,** which helps explain the resilience of Spanish exports during the crisis. Immediate challenges, however, include **eliminating the institutional barriers that may prevent the efficient reallocation of factor inputs across sectors of**

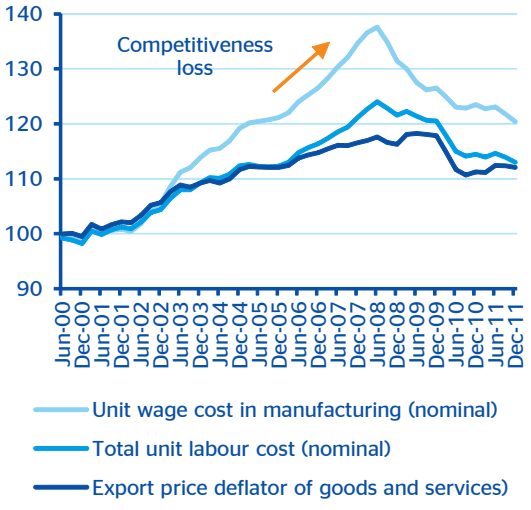
production and setting out the right incentives to encourage the natural transition of firms to internationalisation. Given the uncertainties that have plagued financial markets for years now, especially in Europe, addressing these challenges is a necessary condition for economic recovery, albeit not a sufficient one.

In this context, this Economic Watch explores the factors that have characterised the internationalisation process of Spanish firms and the underlying features to success in foreign markets. In the light of the evidence, the paper examines the economic policies that may encourage the transition of non-exporting firms and of newly-created firms to internationalisation in the years to come. From a macroeconomic perspective, Section 2 looks at the behaviour of Spanish exports and their pattern of growth since the establishment of EMU. Section 3 analyses the factors behind the export market participation of Spanish firms over a time span of twenty years. We find that firms' decisions regarding factor inputs and market and financial strategies have had important feedback effects on the internationalisation process, leading to the emergence of larger, more productive firms with an increased presence in international markets. Section 4 addresses the main economic policies that could encourage and promote internationalisation. Finally, Section 5 concludes.

2. Spain's internationalisation from a macroeconomic perspective

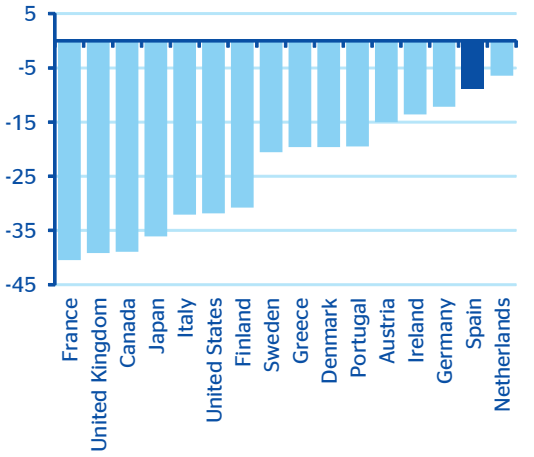
In the decade 1998-2007, the strong cyclical expansion of investment, consumption and imports was financed by an unprecedented increase in private external debt, reaching a level that could be hardly sustained in the medium to long run. Both nominal wage growth –usually indexed to past inflation rather than to productivity- and the growth in profit margins explain the positive inflation differential that persisted between Spain and EMU countries in the first ten years of the euro. The evolution of international relative prices led to the well-known loss of competitiveness of the Spanish economy, which exceeded 20% in terms of unit labour costs (ULCs) in relation to 36 industrialised economies (Chart 3).

Chart 3
Spain: Real effective exchange rates compared to 36 industrialised countries, 1T00=100



Source: BBVA Research based on European Commission

Chart 4
Export share in world markets, goods and services, rate of change 1999-2011 (%)



Source: BBVA Research based on WTO

However, **despite the fact that an increasing volume of economic resources were required to meet domestic demand, the contribution of exports to GDP remained relatively stable.** In 2007, just before the economic crisis unfolded, exports of goods and services represented 26.9% of GDP, up slightly from 26.8% in 1999. After the Great Trade Collapse of 2008-2009,

Spanish exports grew much faster than GDP, and faster than in the period prior to the crisis. As a result, the contribution of exports to economic activity rose considerably. To the extent that Spain's recent export performance is underpinned by the structural decision of a large number of firms to turn to international trade, **it becomes more likely that the current account adjustment currently underway is of a permanent nature.**

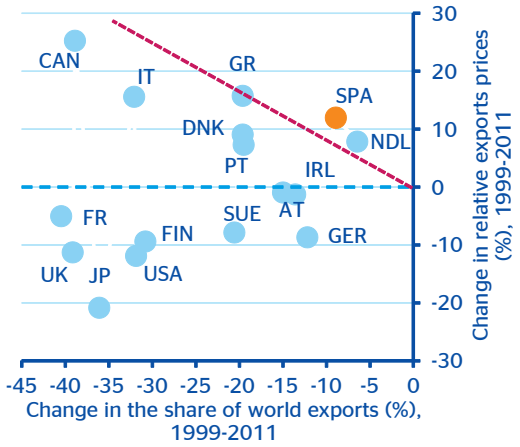
Since the establishment of the euro, **Spanish exporters have been successful in containing the loss of export share in world markets** that several advanced economies have experienced as a result of globalisation and the subsequent gains of export share by many emerging countries. From 1999 until 2011, Spain lost 8.9% of its export share, a relatively modest figure if compared to the record of other large producers: France, -40.5%; UK, -39.2%; Italy, -32.1%; USA, -31.9%; and, more modestly, Germany, -12.2% (Chart 4). **This positive feature is not well known,** and is typically overshadowed by the dismal evolution of competitiveness indicators based on international relative prices (Chart 3). The combined evidence of a modest market share loss, on one hand, and a sizeable real effective exchange rate appreciation, on the other, has been referred to as **the "Spanish paradox"** (e.g. Antràs et al., 2010, and Crespo-Rodríguez et al., 2012).

The literature has provided an explanation of this paradox by looking into firm level data. In fact, large Spanish firms experienced both lower unit labour cost growth and higher export growth than the rest (Antràs et al., 2010), yet this differential performance is not reflected in aggregate price indicators due to aggregation and dispersion bias (Altomonte et al., 2012). To the extent that the size of exporting firms is much larger than that of non-exporting firms, this can explain why the appreciation of export prices has been much less intense than that of relative unit labour costs (Chart 3).

In an attempt to explain the Spanish paradox, Chart 5 **summarises two results relevant to the export performance of Western European economies, Canada, the U.S. and Japan between 1999 and 2011.** In the vertical axis of this figure, we have represented the variation of export prices from 1999 to 2011, relative to 36 industrialised economies, and in the horizontal axis the variation of export market shares over the same period.

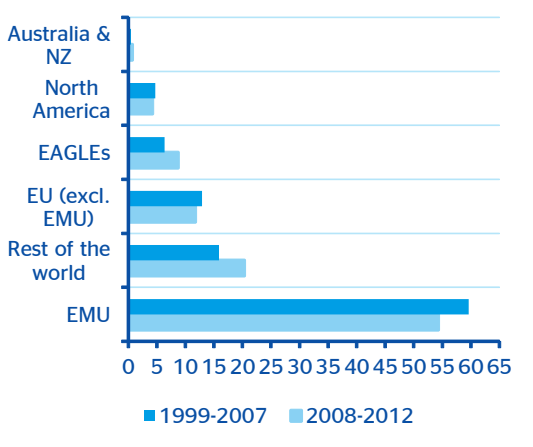
The first result is that **there is no clear cross-country relationship between variations in relative export prices and variations in export market shares.** In fact, price competitiveness gains are positively correlated with market share losses, albeit the correlation coefficient is low (0.22) and not statistically significant (Chart 5). This evidence does not imply that relative prices are not relevant for export market shares, but that non-price determinants have been more important during this period and have more than compensated the effects of export prices.

Chart 5
Change in the world share of exports and in relative export prices, goods and services, 1999-2011 (%)



Source: BBVA Research based on European Commission and WTO

Chart 6
Spain: Composition of goods exports by main geographical destination area (%)



Source: BBVA Research based on Datacomex

The variation of the export market share of a country can be decomposed into the variation of the international relative price –or price competitiveness- and the variation of non-price determinants. The red line with negative slope depicted in Chart 5 captures the values of the market share variation that can be entirely attributed to the corresponding movements in international relative prices (under the assumption of a price elasticity of exports equal to -1.25). That is, the export share loss experienced by Greece since joining EMU can be entirely explained by the behaviour of its price competitiveness. However, for a country located on a parallel line to the red one, the evolution of other non-price factors becomes relevant to explain export share variation. Thus, **the evidence presented in the figure suggests that the evolution of non-price determinants has been more important than movements in international relative prices to explain market share variation among advanced economies.** In particular, Germany, France, the U.K. and the U.S. experienced similar depreciation rates but very different market share performances, from the 12% export market share loss of Germany to the 40% loss of France. Table 1 summarises this evidence numerically.

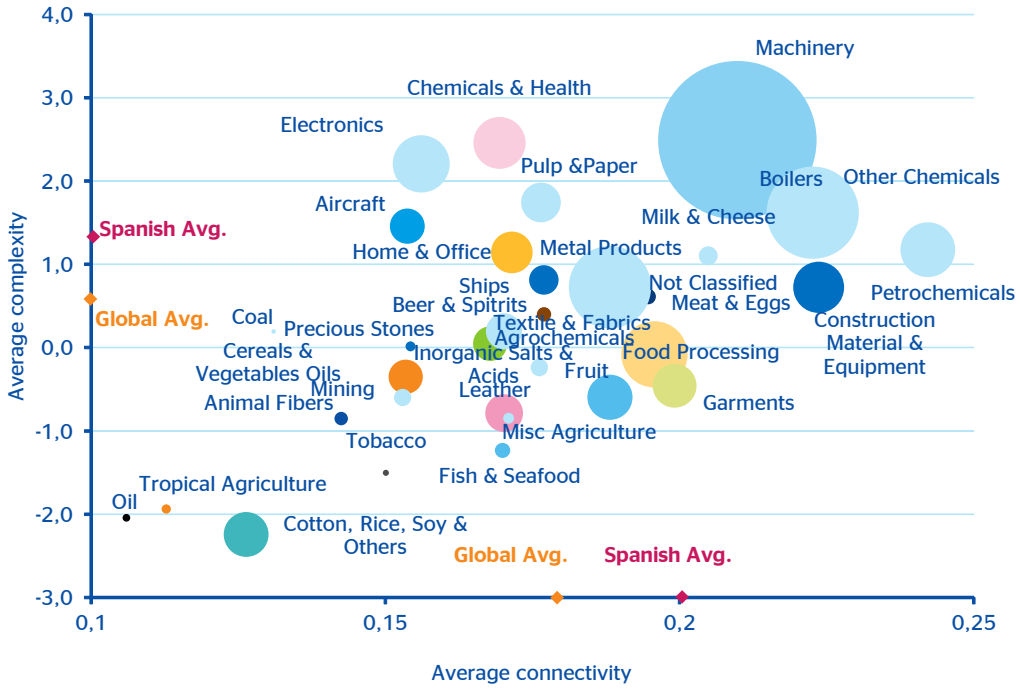
The second result that emerges from Chart 5 is that, given the appreciation and depreciation rates recorded in the sample, **Spain displayed the most favourable evolution of the non-price determinants of export market shares** (amounting to 6pp). If Spain had experience the real effective exchange rate depreciation of, say, Germany, its export market share would have increased 20 pp (equivalent to 6% of Spanish GDP).

Despite the fact that the pre-crisis sectoral growth pattern did not favour export growth, at least it did not prevent **Spain's** from building up a **solid base of exporting firms that differentiated their goods and services in international markets.** This base is essential to explain the good performance of exports during the worst stages of the crisis. In particular, the recovery of goods exports has affected a large number of industries. Furthermore, the pattern of geographical diversification that characterised the pre-crisis period has shifted towards an increased presence in other markets (Chart 6), such as the emerging and growth-leading economies (EAGLEs). From the viewpoint of industrialised countries, **the growing demand from emerging economies provides a unique opportunity for firms to adapt their products and penetrate markets with rising per capita income levels and a middle class of hundreds of millions of people.**

In this context, **Spain has the advantage of being one of the economies with the most diversified export industry in the world, according to both product variety and the number of export destination countries** (Hausmann et al., 2011). Using the methodology developed by these authors, Chart 7 shows Spain's average domestic distribution of exports by sector in the period 1999-2011 according to their levels of global complexity and connectivity. A sector's **complexity index** is higher the lower the number of countries capable of making the sector's goods and the higher the extent of product diversification of those countries. **Sectoral proximity or connectivity** is a measure of the average distance of a sector to each of the products that are exported gobally. The higher the connectivity, the greater a sector's ability to extend exports to other sectors that may use its productive knowledge. Accordingly, countries with the highest international advantage in terms of product diversification will have a domestic distribution of exports geared towards more complex and more connected sectors.

The red and orange symbols on the axes in Chart 7 display, respectively, Spain's and the world's weighted averages of complexity and connectivity. Spain is above the global average in both indicators. The average complexity of Spanish exports (1.32) is more than double that of global exports (0.57), whereas its average industry connectivity (0.2) is more than 10% above the global average (0.18). Among the best performing industries, in terms of complexity and connectivity, we find sectors with a high weight in Spain's domestic exports such as **machinery (33%), other chemical products (11%) and other metallic products (8.9%).** Given that Spain's world export share in services (3.4% in 2011) is higher than in goods (1.7% in 2011), and that most of the country's large global firms are in the services industry, **the results of replicating Chart 7 for services would probably be even more favourable.**

Chart 7
Spain: Complexity, connectivity and domestic distribution of goods exports by sector 1999-2011



Source: BBVA Research based on Datacomex and Hausmann et al., 2011

3. Spain's internationalisation from a firm-level perspective

The recent economic literature has shown that the behaviour of aggregate exports is determined at the microeconomic level by both, the number of exporting firms relative to the total number of firms (*extensive margin*) and the value of exports relative to the total sales of exporting firms (*intensive margin*). **Identifying the features that have influenced Spain's export performance in recent decades is key to understand the resilience of exports** during the crisis, assess the potential role for exports as a engine of medium- to long-term growth, and learn the challenges that the economy may face to correct its external imbalances.

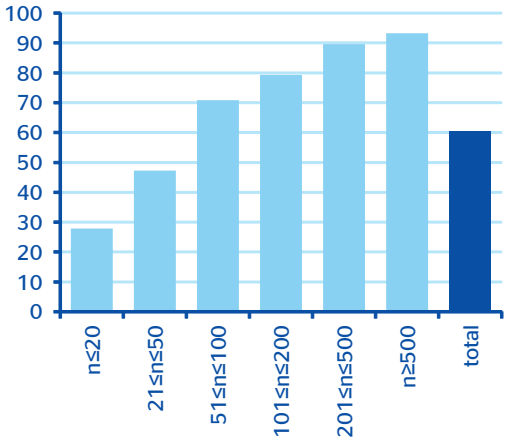
According to the Bank of Spain (2011) database, **the economy has a relatively small number of exporting firms.** In particular, only 12% of Spanish firms exported goods and 9% exported services -other than tourism- in the 2001-2011 period. Furthermore, the level of concentration is considerable: 1 percent of the firms with the largest export volumes accounted for 67 percent of all exports while 10 percent of the firms accounted for 93 percent.

Two factors explain the low share of exporting firms. Firstly, **Spanish firms are excessively atomised, i.e., the total number of firms is high compared to the size of the economy**. Thus, the problem is not so much that there are few exporters -although there is ample margin for increasing the number- but rather that there are too many small firms that cannot export. Secondly, we find the selection effect into exporting. **The selection effect implies that only those firms that surpass a certain productivity threshold are able to sunk the fixed costs associated with entering a new market and survive the competitive pressures** (Melitz, 2003). International empirical evidence has found substantial intra-industry heterogeneity in firms' productivity. Furthermore, the productivity threshold that selects a firm into exporting is well above average productivity, whether the latter is measured as the average productivity across firms in the economy or the within-industry productivity average (Altomonte et al., 2012). Therefore, any analysis of the selection effect needs to consider intra-industry heterogeneity, addressing the

factors that may raise the number of firms capable of surpassing the within-industry productivity threshold and operate internationally.

Possibly, **one of the factors that has attracted most of the attention in the firms and trade literature is firm size**[1]. Using data from the *Spanish Survey on Firms Strategies* (ESEE) in the manufacturing sector, conducted annually by the SEPI Foundation, Chart 8 illustrates the positive relationship between export propensity and firm size that is present in the sample.

Chart 8
Spain: Percentage of exporters by firm size, average 1990-2010



Note: n refers to the number of employees
Source: BBVA Research based on ESEE

Table 1
Labour productivity and firm size in industry (each country average = 100), 2005

	1-9	10-19	20-49	50-249	250+
France	59,1	73,3	81,0	86,0	126,0
Germany	49,8	58,1	74,3	88,7	122,5
Italy	54,0	81,6	99,0	122,1	146,2
Spain	53,4	67,7	77,6	101,4	165,5
UK	74,5	74,4	81,4	90,1	122,0
USA	54,1	4,8	53,8	68,3	129,8

Note: For the US (2003), the groups are 1-9, 10-19, 20-99, 50-199, 100-499 and 500+.
Source: BBVA Research based on OECD (2008)

This result suggests that **larger firms have higher labour productivity than smaller firms.** Using industry data from the OECD (2008) for 2005, Table 1 shows that Spanish firms with more than 250 employees have 65% higher labour productivity than the average, whereas the labour productivity of the smallest firms is approximately half the average. Other countries display productivity differences across firm size categories, albeit the range of variation is smaller than in the Spanish case. Assuming that the productivity differences reported in Table 2 can be extrapolated to the rest of the Spanish economy, and taking aggregate labour productivity data comparable among countries, it follows that Spain's lower aggregate comparative labour productivity level is partly explained by the higher share of Spanish employment in small- and medium-sized enterprises (compositional effect) and that **Spain's large firms are as productive as their U.S. counterparts.**

Albeit size is a relevant feature for firm's internationalisation, it is not the only one (Navaretti et al., 2010). Firms with the right characteristics in terms of innovation, availability of alternative financing channels, human resources and management, and ownership structures are able to grow and become successful internationally (Altomonte et al., 2012). Once we analyse a broad set of variables, the empirical results indicate that, on average, **exporting firms share a set of distinctive features, more competitiveness-friendly, if compared to non-exporting firms.** Apart from being substantially larger, Table 2 shows that **exporters have higher real productivity and physical capital stock per employee, rely more on skilled labour and are more likely to invest in R&D and adopt foreign technology.** On average, roughly 80% of the firms reporting either product or process innovations in the year were also exporters during the year.

1: Under certain assumptions on firm distribution, the literature has found that the exports of large firms can be used as a good proxy of aggregate exports (Di Giovanni and Levchenko, 2010), reflecting the importance of firm size in recent literature

Table 2
Firms' characteristics in the Spanish manufacturing industry: exporters vs. non-exporters, average 1990-2010

(median of the distribution)	Exporters	Non-exporters
Size (a)	167	21
Productivity (value added per employee) (b)	33.2	20.2
Productivity (output per employee) (b)	104.7	48.8
Physical capital per employee (b)	31.4	12.3
Innovation:		
High-skilled labour (%) (c)	3.6	0
White collar workers (%)	28.6	21.4
R&D and technology adoption (d)	24	0
Ownership structure:		
Foreign capital participation* (%) (e)	26.3	3.1
Market competition:		
Market share in main market* (%)	14.3	7.9
Finance:		
Long-term debt over own resources (f)	2.8	5.8
Real average cost of long-term debt (%) (f)	4	4.8
Temporary employment rate (%)	9.3	12.9

Notes: Employment, productivity, physical capital, competition and finance data begin in 1991; (a) average number of employees during the year; (b) calculated using the perpetual inventory method, in volume and thousands of euros per employee; (c) refers to engineering and university graduates, as percentage of total employees; (d) R&D spending and imports of technology services, in thousands of euros; (e) as a share of the firm's equity; (f) debt with financial institutions; * the statistic used for the analysis is the average.
Source: BBVA Research based on ESEE

With regard to ownership structure, a major differentiating factor between exporters and non-exporters refers to the presence of **foreign capital in Spanish manufacturing.** According to the ESEE database, the foreign participation rate in exporting firms is on average nine times higher than that of non-exporting firms (26.3% versus 3.1%). On the other hand, the larger market share enjoyed by exporters is explained by less productive firms exiting the market after trade liberalisation.

As for how firms finance their productive activity, the evidence provided in Table 2 indicates that exporting firms rely less on long-term debt with financial institutions and, on average, have a lower real cost of long-term finance. Finally, the data show a higher temporary employment rate among non-exporting firms.

An intra-industry analysis of the characteristics associated to exporting firms vis-à-vis non-exporting ones supports the conclusion reached at the aggregate level. Furthermore, the evidence presented in Table 3 shows that there is substantial within-industry heterogeneity. For example, in at least five industries, exporters and non-exporters show a difference in median size of more than 200 employees. Likewise, the productivity (measured as real production per employee) of exporters in half the industries is twice or even three times the productivity of firms that do not export in the corresponding industry.

Table 3
Firms' characteristics by manufacturing sector: exporters vs. non-exporters, average 1990-2010

(calculations based on the median of the distribution)	Size	Productivity (based on VA)	Productivity (based on output)	K stock per employee	High-skilled workers	White collar workers
	Difference	Ratio	Ratio	Ratio	Difference	Difference
Meat industry	154	1.4	1.7	1.9	2.7	2.7
Food and tobacco products	201	1.8	3.2	2.9	3.7	-4.7
Beverages	-72	1.3	1.4	1.3	3.7	-2.0
Textiles and apparel	88	1.7	2.5	2.9	1.7	10.6
Leather and footwear	9	1.3	2.0	2.2	0	5.9
Timber industry	54	1.3	1.3	1.8	1.3	1.3
Paper industry	157	1.9	2.0	1.9	4.3	2.8
Graphic design	31	1.5	1.6	2.0	2.5	3.9
Chemicals and pharmaceuticals	243	1.9	1.9	2.6	2.8	7.1
Rubber and plastic products	115	1.7	2.2	2.3	3.8	6.1
Non-metallic mineral products	190	1.3	1.2	1.6	3.0	1.1
Ferrous and non-ferrous metals	270	2.0	3.0	4.2	2.4	7.4
Metallic products	86	1.6	2.3	2.7	2.9	3.8
Agricultural and industrial machinery	87	1.6	2.0	2.2	4.2	14.1
Computers, electronics and optics	174	1.3	1.3	3.5	4.5	14.7
Machinery and electrical material	220	1.5	1.9	3.3	3.9	8.8
Motor vehicles	293	1.8	2.2	4.2	3.2	7.8
Other transport materials	192	1.9	2.7	3.6	4.0	10.7
Furniture industry	22	1.4	1.5	1.8	1.7	4.2
Other manufacturing industries	26	1.2	1.7	1.9	1.7	4.7

	R&D and adoption	Foreign ownership	Market share	Ratio of long-term debt	Cost of long-term debt	Temporary rate
	Difference	Ratio	Ratio	Ratio	Difference	Difference
Meat industry	0	1.8	0.9	-4.6	-1	0.8
Food and tobacco products	17	7.3	1.7	2.0	0	0.9
Beverages	9	2.7	0.7	6.0	-2	1.0
Textiles and apparel	0	10.5	3.1	2.9	-1	0.5
Leather and footwear	0	2.0	2.2	4.3	0	1.0
Timber industry	0	70.7	2.2	1.2	0	0.9
Paper industry	0	6.8	2.8	-0.7	0	0.9
Graphic design	0	5.3	1.6	0.1	-1	1.0
Chemicals and pharmaceuticals	579	3.5	2.2	0.0	-1	0.9
Rubber and plastic products	14	13.7	2.3	-8.2	-1	0.6
Non-metallic mineral products	0	6.1	1.3	-2.0	-1	0.9
Ferrous and non-ferrous metals	112	5.6	1.7	-12.1	0	0.7
Metallic products	0	11.1	2.3	-7.1	0	0.7
Agricultural and industrial machinery	99	10.9	2.0	-3.2	-1	0.6
Computers, electronics and optics	487	4.6	1.5	1.0	-1	0.6
Machinery and electrical material	188	6.9	1.6	-1.9	-1	0.4
Motor vehicles	387	6.0	1.4	-1.6	1	0.9
Other transport materials	224	19.0	1.0	-0.5	-1	0.3
Furniture industry	0	32.1	2.1	-1.0	-1	1.0
Other manufacturing industries	0	4.1	2.1	-6.1	-1	1.3

Notes: See Table 3 for a definition of the variables and the units of measure. Sectoral clasification based on CNAE-09.
Source: BBVA Research based on ESEE

Next, we carry out a formal analysis of the potential effect of each firm-level variable on export propensity. Identifying the determinants that increase the probability of exporting is crucial for at least two reasons, first, to evaluate the ongoing internationalisation process that the Spanish economy embarked on when it joined the common market and, second, to shape the economic policies that may foster this process. In line with the recent empirical literature on the determinants of exports (Greenaway et al., 2007, Berman and Héricourt, 2010, Minetti and Zhu, 2011), we estimate a probit model on the probability of exporting as a function of a variety of explanatory variables.

Table 4 presents the estimation results on the probability of exporting after comparing alternative specifications and deleting those regressors that are found insignificant. The qualitative results of this **first approximation to export propensity indicate that the probability of exporting increases with firm size, real capital stock per employee, R&D expenditure and technology adoption, the share of skilled labour, market competition and foreign ownership.** In addition, the probability of exporting is higher if the firm reports product innovations or diversifies production to more than one product during the year. Conversely, the probability of exporting decreases with the ratio of long-term debt to equity, in line with the recent literature that emphasizes the importance of a firm's financial health in order to face the fixed costs associated with entry in export markets.

Table 4
Export propensity of Spanish manufacturing firms, average 1991-2010

	Coefficients	Marginal effects
Size (a)	0.396***	0.050***
	(0.022)	(0.003)
Physical capital per employee (a)	0.146***	0.018***
	(0.021)	(0.003)
R&D and technology adoption (a)	0.043***	0.005***
	(0.013)	(0.002)
White collar workers (b)	0.427***	0.054***
	(0.123)	(0.015)
Market share (b)	-0.408***	-0.052***
	(0.091)	(0.012)
Foreign ownership (b)	0.343***	0.043***
	(0.057)	(0.007)
Long-term bank debt ratio	-0.004*	-0.001***
	(0.002)	(0.000)
Product innovation (c)	0.159***	0.020***
	(0.039)	(0.005)
Product diversification (d)	-0.135***	-0.017***
	(0.051)	(0.007)
Pro memoria:		
Number of observations	10376	
Pseudo R2	0.25	
Wald chi2(45)	1427.4	
Prob > chi2	0.000	

Notes: (a) in logs; (b) in unitary terms; (c) dummy = 1 if the firm reports product innovations in the year and 0 otherwise; (d) dummy = 1 if the firm does not diversify its production, i.e. it reports a single 3-digit product in CNAE-09, and 0 if the firm diversifies production, i.e. it reports more than one 3-digit product in CNAE-09. Robust standard errors in parentheses.* indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.Marginal effects evaluated at the mean. Sample period: 1991-2010.
Source: BBVA Research based on ESEE

In line with the literature, the results shown in Table 4 suggest that a 1% increase in firm size increases the probability of exporting by 5%[2]. Likewise, a 1% increase in real capital stock per employee raises the probability of exporting by 1.8%. Achieving product innovation in the year increases the probability of exporting by 2 percentage points while diversifying production

2: Greenway et al. (2007) and Minetti and Zhu (2011) find a positive effect of firm size on the export propensity of a sample of firms in the UK and Italy, respectively.

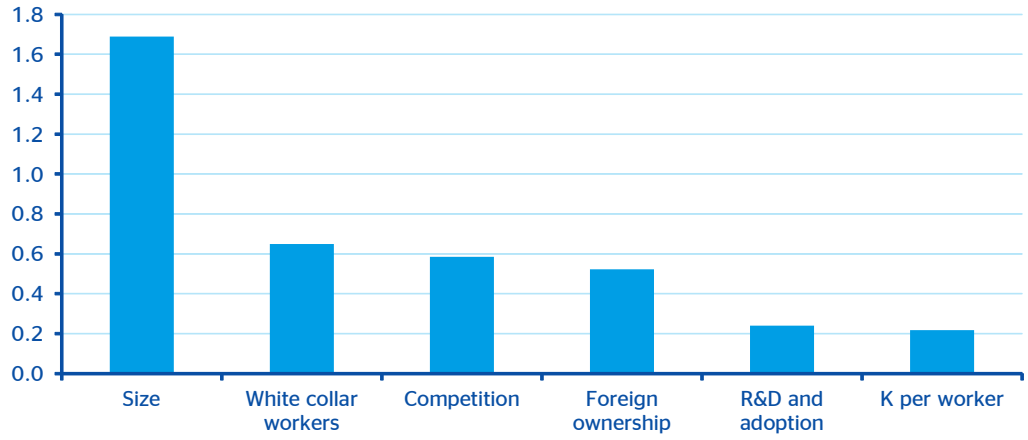
raises it by 1.7 percentage points, suggesting the importance of firm's strategy in fostering internationalisation.

Using the estimates presented in Table 4, **Chart 9 summarises the results of a number of simulation exercises on the probability of exporting after an increase in each of the main determinants** from their corresponding median (or average, if appropriate) sample values. Thus, an increase of 10 employees in the median firm size (specifically, from 50 to 60 employees) would increase the probability of exporting by 1.69%. Similarly, an increase of 10 percentage points in the median of white collar workers would increase the probability of exporting by 0.65%.

A similar quantitative effect is obtained from an increase in product market competition, induced by a 10 percentage points decrease in average market share, and from an increase in foreign ownership, induced by a 10 percentage point increase in the average share of foreign ownership. In addition, raising average expenditure on R&D and technology adoption by 50% would increase the probability of exporting by 0.24%, while increasing the median stock of capital per employee by 10% would have a similar effect.

Bearing in mind that all these figures are orientative –e.g. they do not consider how the extra expenditure on R&D would be distributed across firms in the sample and, therefore, the potential differential effect on the probability of exporting– we can conclude that size stands out as a relevant variable for firms when deciding to pursue an internationalisation strategy. Together with size, investment in capital stock per employee and expenditure on R&D and technology adoption are the factors that the firm may decide upon with no ex ante limit, beyond what is dictated by optimal decision-making.

Chart 9
Impact on the probability of exporting of exogenous changes in each variable (%)



Note: In each simulation, the rest of regressors are evaluated at their respective mean value.
Source: BBVA Research based on ESEE

In summary, a number of factors, largely ascribed to the realm of the firm's strategic decision-making, have shaped Spain's internationalisation process over the last two decades. On the one hand, we find **decisions on inputs of production,** related to company size, investment in capital stock, skilled labour intensity, R&D spending and technology adoption. On the other, we find **decisions pertaining to market strategy and finance,** such as product innovation, product diversification, and the reliance on alternative sources to long-term financing, including foreign ownership.

On balance, the benign combination of all these factors has produced important feedback effects, underpinning the relatively good performance of the Spanish export market share, the strong recovery of exports during the financial crisis, and the inroads made into emerging markets with new and differentiated products. Ultimately, they provide an explanation to the so-called Spanish paradox.

4. Economic policy and the internationalisation of Spanish firms

When studying an economy's internationalisation process –and therefore its competitiveness- from a disaggregated perspective, one needs to address both the microeconomic and macroeconomic policy implications. The set of policies aimed at fostering internationalisation in Spain has to be part of a medium- and long-term growth strategy based on effective and credible initiatives. The Spanish National Reform Programme (Programa Nacional de Reformas) can be thought of as an attempt at bringing together such strategic measures.

From an aggregate perspective, **the institutional framework of an advanced economy is shaped to improve the environment in which firms operate.** This aim helps both exporters and non-exporters on two fronts: the market for inputs (labour and capital markets, access to new technologies and production innovations) and the market for goods and services.

With regard to **the labour market,** the recent reform provides firms with more flexible and efficient mechanisms to absorb shocks. Yet, the implementation of the labour market reform needs to be monitored continuously, especially among exporters and firms that undertake FDI, in order to detect deficiencies that may pose a competitive disadvantage for Spain vis-à-vis competitors in international markets.

Regarding policy recommendations in the area of **capital markets,** measures to **make credit available to exporters and to promote the internationalisation of SMEs** must be adopted, given the importance of finance in foreign trade -from the time when firms begin production until they receive payment from foreign importers- and the related financial risks. One way to do this is to strengthen the role of the CESCE through credit insurance and programmes entailing co-risks with financial institutions. Lower capital consumption of banks (in line, for instance, with the European Parliament's proposal in CRD4) in certain lines of export-related finance would encourage export credit. Similarly, promoting reciprocal guarantee companies via appropriate government guarantees would help diversify export finance risk. In addition, other complementary forms of financing must be encouraged given the excessive reliance of Spanish firms on bank loans which, similar to other European countries, is far greater than in the US. Bond securitisations and/or issues by export SMEs clusters could be an effective way to improve access to capital markets, as they would benefit from the advantages of larger portfolio issues and diversified risks. Another disadvantage that Spanish firms face, if compared to international competitors, is the absence of venture capital firms, which are key players in the initial stages of export activity at the firm level. The financial and government support described above is especially important to promote start-ups and incubators oriented towards foreign trade.

A better **economic and regulatory environment** is essential to the operation of both the market for inputs and the markets for goods and services. According to the Doing Business ranking, Spain was in 44th place in 2012 in the ranking on the ease of doing business, but 55th in facilitating trade across borders. Evidently, there are many more categories that are relevant to the international competitiveness of Spanish firms. Therefore, **Spain needs to set a strategic target and change all the required regulations in order to, for instance, rank among the top 10 countries in each category within a short period of time (e.g. one year).** This target should place particular emphasis on the reduction of the **administrative red tape** that is present at various levels of public administration. It is necessary to achieve a more efficient and flexible regulatory environment, aimed at fostering competition among businesses in a **single market** and encouraging firms' foreign orientation as much as possible. Introducing a single channel through which firms' relationships with the government and the various public agencies are managed can be achievable via the interconnection of IT platforms.

The regulatory and legal frameworks in which markets function need to include **incentives for firm growth.** Often, the regulatory framework shows discontinuities based on firm size, creating incentives to maintain an excessively atomised production structure. As explained in earlier sections, size is a key determinant of productivity and one of the main variables explaining the probability that a firm exports and its chances of survival in foreign markets after several years. In this respect, one way to help Spanish firms become larger is through standardisation of domestic

regulations, exploiting the advantages of a single internal market. This has been precisely one of the EU's objectives. For instance, evidence suggests that removing geographical barriers to the establishment of large commercial areas helps commercial firms to gain size and creates the conditions for them to pursue internationalisation.

Public administration not only needs to remove barriers and obstacles to business activity, but also to actively promote exports by **exploting the economies of scale in economic diplomacy and foreign intelligence** via commercial offices and greater coordination and closer cooperation with Spanish firms abroad.

Likewise, Invest in Spain (public body under the ICEX) should also operate as a single window for foreign firms wishing to invest in Spain. These administrative channels, alongside an internationally competitive tax burden, would boost FDI inflows, incorporating the country's manufacturing industries into global production chains and, therefore, paving the way for internationalisation.

With regard to fiscal policy, **substituting social security contributions for direct taxation** –i.e. a fiscal devaluation (see Boscá, Doménech and Ferri, 2012, Mooij and Keen, 2012, or Farhi, Gopinath and Itskhoki, 2011)- is one way to raise competitiveness in the short and medium term. The effects are similar to a currency devaluation, which can no longer be used due to monetary union membership. For Spain, Boscá, Doménech and Ferri (2012) find that an increase in VAT (e.g. of two percentage points) combined with a reduction in social security contributions (with no impact on public revenues) could increase employment by 1.2%, GDP by 0.93% and exports by 1.1% for the first two years after such reform. Another policy, geared towards attracting talent, could establish a transition period (e.g. four years) of reduced marginal tax rates for skilled labour working abroad. In the long run, human capital is the key determinant of productivity and, accordingly, of a country's competitiveness. This is particularly relevant for firms aiming to compete in international markets.

Finally, with regard to **technology**, economies of scale in R&D and innovation processes must be exploited. Although large businesses account for the bulk of investment in R&D, improvements in technology also benefit SMEs, which often have yet to reach sufficient scale to produce the kind of innovation that is required to compete internationally. In these cases, their ability to **outsource technology services to large institutions specialising in knowledge, technology and innovation transfer** is crucial. The German Fraunhofer experience analysed by Comín, Trumbull and Yang (2011) is an excellent example of a public-private initiative in innovation, where German firms of any size engage with the organisation in regular projects in order to face technology challenges. As Hauser (2010) notes, other countries benefit greatly from similar infrastructures (e.g. ITRI in Taiwan, ETRI in South Korea or TNO in the Netherlands), bridging the gap between research centres that develop innovations, technology solutions or new products, and firms wishing to use them to gain a competitive advantage, especially abroad.

5. Conclusions

This Economic Watch has explored the characteristics of the internationalisation process of Spanish firms and the key to their success in foreign markets. It also addresses the set of economic policies that may promote and facilitate internationalisation over the coming years.

Evidence suggests that, since joining EMU in 1999 until 2011, **Spain's share of world exports in goods and services fell only slightly -by 8.9%**- despite the rapid growth of China, India and several other emerging economies in global trade. **Meanwhile, other industrialised nations saw their world export shares fall by 20% to 40%.** Broadly speaking, there is no clear cross-country relationship between variations in relative export prices and variations in export market shares. In fact, price competitiveness gains are positively correlated with market share losses, albeit the correlation coefficient is low (0.22) and not statistically significant. This evidence does not imply that relative prices are not relevant for export market shares, but that non-price determinants have been more important during this period and have more than compensated the effects of export prices. If Spain had experience the real effective exchange rate depreciation of, say, Germany, its export market share would have increased 20 percentage points (equivalent to 6

per cent of Spanish GDP).

The good relative performance of Spain's export market share coincides with **increased export diversification both in terms of destination markets** –towards emerging and growth-leading economies (EAGLEs)- **and production** -towards sectors that are more complex and with a greater ability to extend exporting to other sectors that may use the cumulated productive knowledge. In both features, the industry composition of Spanish exports is above the global average.

A number of factors, largely ascribed to the realm of the firm's strategic decision-making, have shaped Spain's internationalisation process over the last two decades. On the one hand, we find **decisions on inputs of production,** related to company size, investment in capital stock, skilled labour intensity, R&D spending and technology adoption. On the other, we find **decisions pertaining to market strategy and finance,** such as product innovation, product diversification, and the reliance on alternative sources to long-term financing, including foreign ownership. On balance, the benign combination of all these factors has produced important feedback effects, underpinning the relatively good performance of the Spanish export market share, the strong recovery of exports during the financial crisis, and the inroads made into emerging markets with new and differentiated products.

Finally, the diversity of the determinants of a firm's internationalisation process requires **economic policy to be multidimensional,** at the micro and the macroeconomic level. The **institutional framework of an advanced economy must be shaped to improve the environment in which firms operate.** This aim would help both exporters and non-exporters on two fronts: the market for inputs (labour and capital markets, access to new technologies and production innovations) and the market for goods and services (improved competition). Economic policy not only needs to remove barriers and obstacles to business activity, but also to actively promote exports along the recommendations considered in this Economic Watch.

References

Altomonte, C., Aquilante, T. and Ottaviano, G.I.P. (2012), "The Trigger of Competitiveness – The EFIGE Cross Country Report", Bruegel Blueprint Series, Vol. XVII.

Antràs, P., Segura-Cayuela, R. and Rodríguez-Rodríguez, D. (2010), "Firms in International Trade (with an Application to Spain)", SERIEs Invited Lecture at the XXXV Simposio de la Asociación Española de Economía.

Banco de España (2011), "La Competitividad de la Economía Española", Informe Anual.

Berman, N. and Héricourt, J. (2010), "Financial Factors and the Margins of Trade: Evidence from Cross-Country Firm-Level Data", *Journal of Development Economics*, Vol. 93, pág: 206-217.

Boscá, J.E., Doménech, R. and Ferri, J. (2012), "Fiscal Devaluations in EMU", Economic Research Department BBVA Working Paper Series No. 1211.

Comin, D., Trumbull, C. and Yang, K. (2011), "Fraunhofer: Innovation in Germany", Harvard Business School Note, 9-711-022.

Correa-López, M. and Doménech, R. (2012). "The Internationalisation of Spanish Firms", BBVA Documentos de Trabajo No. 12/30.

de Mooij, R. and Keen, M. (2012), "Fiscal Devaluations and Fiscal Consolidation: The VAT in Troubled Times" in A. Alesina and F. Giavazzi (eds.), Fiscal Policy after the Financial Crisis. University of Chicago Press (forthcoming).

Di Giovanni, J. and Levchenko, A. (2010), "Firm Entry, Trade, and Welfare in Zipf's World", NBER Working Paper 16313.

Farhi, E., Gopinath, G. and Itskhoki, O. (2011), "Fiscal Devaluations", NBER Working Paper 17662.

Greenaway, D., Guariglia, A. and Kneller, R. (2007), "Financial Factors and Exporting Decisions", *Journal of International Economics,* Vol. 73, pág: 377-395.

Hausmann, R., Hidalgo, C.A., Bustos, S., Coscia, M., Chung, S., Jímenez, J., Simoes, A. and Yildirim, M.A. (2011), The Atlas of Economic Complexity: Mapping Paths to Prosperity. Cambridge, MA.

Hauser, H. (2010), The Current and Future Role of Technology and Innovation Centres in the UK. Report to the Department for Business Innovation & Skills.

Melitz, M.J. (2003), "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity", *Econometrica*, Vol. 71, pág: 1695-1725.

Minetti, R. and Zhu, S.C. (2011), "Credit Constraints and Firm Export: Microeconomic Evidence from Italy", *Journal of International Economics*, Vol. 83, pág: 109-125.

Navaretti, G.B., Schivardi, F., Altomonte, C., Horgos, D. and Maggioni, D. (2010), "The Global Operations of European Firms", Second EFIGE Policy Report.

OECD (2008): OECD Compendium of Productivity Indicators. OECD.

Rodríguez Crespo, A., Pérez-Quirós, G. and Segura Cayuela, R. (2012), "Competitiveness Indicators: The Importance of an Efficient Allocation of Resources", *Economic Bulletin* (January), Bank of Spain.

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