

Garcia-Tabuenca, Antonio; Crecente-Romero, Fernando; Pablo-Martí, Federico

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Was Easy Access to Credit an Obstacle to the Competitiveness of Spanish Smes?

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WAS EASY ACCESS TO CREDIT AN OBSTACLE TO THE COMPETITIVENESS OF SPANISH SMEs?¹

1. Introduction

In the expansive phase of the economy (1996-2007), particularly in the EU following the creation of the euro, credit to the private sector and, in particular, to non-financial companies, increased notably. According to a survey from the European Commission (2005), slightly over 77% of small and medium-sized European companies stated that they had available adequate levels of financing. Some countries (inside and outside the Eurozone) were above the average, such as Finland, Ireland, Denmark and the United Kingdom, reaching a proportion above 90%, while in Spain the figure was 85%. In others, such as Sweden or Germany, this proportion fell to 77 and 73% respectively.

These data suggest that in this phase of the cycle the traditional credit restriction suffered by SMEs, shown in abundant literature (Vohrl and Adams, 1997; EU 2011; Callejón and Segarra, 2012), would have been at least partially relieved, given that the majority of these productive units had access to cheap credit. The reasons explaining it were the influence of the Maastricht Treaty and the creation of the euro in the EU economies, from which were derived a sustained fall in interest rates and a strong growth in demand, which modified the conditions of the credit market.

Greenspan (2013, p. 218) has explained that the benign monetary convergence of the euro during the period of worldwide upswing permitted even the least competitive economies of southern Europe to progress, since with little effort they could have access to large quantities of money lent by their northern neighbours. Basing himself on increasing unit labour costs and relative prices with regard to Germany, this author argues that under a false sensation of wellbeing, these southern economies gradually became less competitive than those of the north.

Elsewhere, following the emergence of the financial crisis in 2007/8 and its immediate effect on the debt markets/credit markets/bond markets and on the productive economy, these companies have again suffered sharp financial restrictions, although these differ greatly among countries. This has been signalled by the European Commission and the Central European Bank (2009 to 2013), basing themselves on the results of the Survey on the Access to Finance of SMEs in the Euro Area.

Following this sudden and drastic impact, many companies did not know how to react, or were unable to. On the one hand, because their “recessionary” balance sheets (Koo, 2011) contained high debt levels and their survival was based on the repayment or restructuring of the debt. On the other, because internal demand and, consequently, production, profits and employment, fell sharply to levels unknown for decades.

That is to say, following a golden decade of the new common European currency, with the collapse of Lehman Brothers and the virtual closure of the credit market on a global scale, the differences in international competitiveness among the members of the Eurozone have become crudely apparent and the disparities with the German bond shot upwards (Greenspan, 2013).

¹This study is the result of a wider piece of research, *The Internationalisation of Spanish Companies, Risks and Opportunities*, 2013, undertaken with the collaboration of the Mapfre Foundation, to which the authors are indebted for the opportunity provided.

The impact of the crisis was aggravated in Spain by the strong links which the majority of the productive sector had with the prosperous activity of the construction and property sectors. Between 1997 and 2007, these sectors incubated a speculative bubble of considerable size, with strong interrelationships among sectors and economic agents, including financial entities. Following the initiation of the sub-prime crisis in the USA and its rapid transmission to the world economies, this bubble burst violently, sharply aggravating the consequences of the crisis in the Spanish economy, the fourth largest in the EU, according to GDP size.

The question posed and attempted to answer in the present study is whether the easy access to credit and favourable financial conditions in the period prior to the crisis has had as a consequence an improvement in the modernization of Spanish companies, particularly SMEs, through the growth of productive investment and competitiveness in the long term, which would have permitted orientation towards a more export-based model. Or whether, by contrast, these conditions were not employed in investment aimed at encouraging their competitiveness (for example, increasing size, technological effort or the bases for internationalising their activity), leading instead to a generalized increase in unit labour costs and the stagnation of the local economy.

To calculate the international competitiveness of companies and economies, research has proposed distinct measurement indicators, such as exchange rates, productivity growth, labour costs, margins or profits, or production costs and financial costs, among others. Similarly, the export capacity of companies and countries has been considered to be a proxy of competitiveness.

Company borrowing and export capacity are the two principal variables considered in this study. The first is measured in relative terms as the figure of debt compared to total assets. It is related to financial costs and the need to repay debt. In our working hypothesis it is assumed that, in a particular company, the greater is its debt ratio the lower is its investment capacity to undertake operations or foreign trade strategies.

This hypothesis is especially relevant to the case of an economy in a recessionary phase, with policies of fiscal consolidation and public expenditure austerity, while at the same time the private sector is highly indebted. Consequently, firms minimise debt in place of maximizing profits, in an attempt to eliminate the debt burden generated by the bursting of a price bubble of assets financed by debt (Koo, 2013, p. 90). This means that despite very low interest rates, or even lax monetary policies, there is a generalised process of the slimming of balance sheets in the business sector in place of resorting to credit for new productive investment.

In summary, the present study examines the evolution of the Spanish economy from the expansionary period until the situation of crisis in 2012/3, concentrating on the behaviour of exporting firms which, following the recession of 2009, have increased their international market share, taking advantage of the fall in internal demand, firstly, and in wages and prices, secondly. This reduction of wages and prices is the consequence of the inevitable process of internal deflation suffered by Spain and the economies of southern Europe as a (partial) solution to the competitive breach generated in the Eurozone among lending and borrowing countries in the period of incubation of the latest bubble.

The objective of the paper is to explore the general behaviour of Spanish companies and examine whether the eventual exit from the crisis could be based, at least in part, on the continuation and growth of this exports-based model arising from the crisis or, on the contrary, this does not seem to be credible or proves to be an overly optimistic vision.

On the basis of data proceeding from company registers and the employment of economic-financial and econometric techniques, the paper offers results regarding the probability of exports of Spanish companies in relation to diverse economic-financial indicators, principally to their degree of indebtedness. This facilitates certain orientations for the debate on the Spanish productive model and the importance and appropriateness of the focus of policies and incentives in the field of company credit.

In addition to this introduction, the study comprises six sections. The second summarises certain characteristics of Spanish enterprises before and during the crisis, as well as the behaviour of firms with regard to their international trade activity. The information sources and method employed are presented in the third section. The fourth offers graphic and statistical results. The fifth section describes the results of the model and discusses them. Finally, the last section concludes by presenting aspects worthy of note, the limitations encountered in the study and some orientations with regard to the policy field.

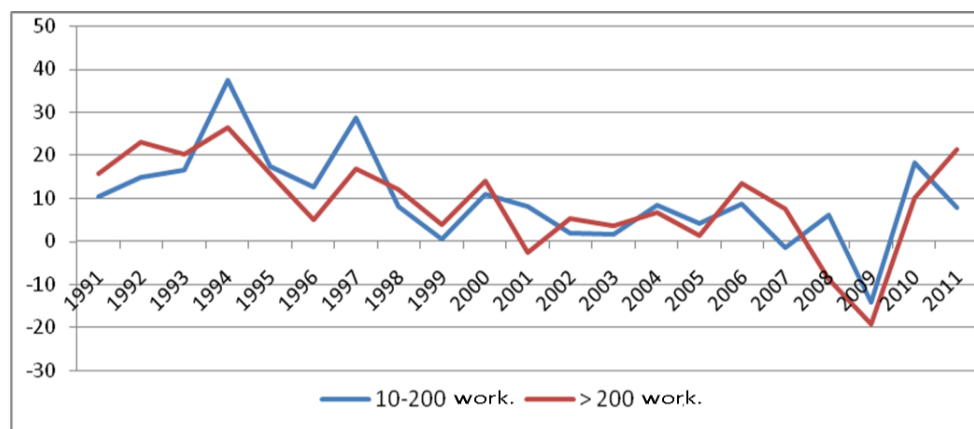
2. The Spanish economy and exports in the phases of expansion and crisis

With the entry of Spain into the EU institutions (1986), the Spanish business fabric modernized and involved itself in processes of innovation and opening to the exterior. In turn, the rate of company creation displayed a significant increase.

Contemplating the period of 20 years between 1986, the year of Spain's entry into the EU, and 2005, at the height of expansion and the inflation of the bubble, the share of Spanish exports rose from 1.2 to 2.1 per cent of the world total. However, from 1997/98 onwards this share was scarcely modified, as imports grew strongly, increasing the deficit of the trade balance and evidencing a loss of competitiveness of the Spanish economy.

In general, in the long period in which the internal market and the creation of the euro were consolidated, the property bubble expanded and burst and the crisis deepened, the evolution of exports has displayed irregular and decreasing behaviour (in both large and medium-sized companies) (Graph 1). Exports, which grew dynamically in the early 1990s, between 15 and 20 per cent annually, from 1997 on began to decline until they showed negative rates in 2007/8 and fell by up to 20 per cent with the recession of 2009.

Graph 1. Evolution of the exports of Spanish manufacturing companies, by company size, 1991-2011 (percentage variations)



Source ESEE, SEPI Foundation.

From 2009 on, exports have recovered notably, as a consequence of the sharp contraction of internal demand and of imports. Traditionally exporting companies and new ones, which knew how to take advantage of the contraction of salaries and prices suffered by the Spanish economy, as well as how to recur to international markets (traditional and new), considerably increased the volume of exports. It has been shown recently, however, that exporting Spanish companies have not needed to reduce prices to continue being competitive in international markets, although the reduction of unit labour costs has served to increase profit margins and continue with their financial restructuring (Fernández, 2013). New research and a longer period of time will permit these concepts to be refined.

At the end of 2013, 41,163 companies were regular exporters (in the four previous consecutive years) of goods and, in total, 150,992 companies had displayed some exporting activity during that year (non-regular). Between 2009 and 2013 there was an increase in the number of non-regular companies, but above all exports were due to regular exporters; however, in 2012 and 2013 the growth of the volume exported fell sharply (Table 1).

In 2012, the set of companies exporting goods, which represented 15% of the total of companies with salaried workers, sold abroad a value of 21.2% of GDP. Taken together, the goods and services of Spanish exports accounted for 31.4% of GDP. As a consequence of this growth of exports and reduction of imports the need for financing of the Spanish economy has been progressively reduced, drawing the current account balance close to equilibrium.

Table 1. **Evolution of Spanish exports of goods: companies and volume**
(growth in % over previous year)

	2009	2010	2011	2012	2013
Total companies	6.1	1.7	12.6	11.7	10.2
Volume of exports	-15.5	16.8	15.2	5.1	5.2
Regular companies	0.8	-1.4	-3.9	3.0	7.3
Volume of exports	-14.4	16.4	14.5	5.3	4.9

Source: compiled with data from “Perfil de empresas exportadoras”, ICEX, January 2014

Nevertheless, the majority of exports have been due to a small group of companies. Thus, in 2012, 87.9% of the volume exported was performed by 4,777 large and medium-sized firms. Meanwhile, the share of small companies fell noticeably: 100,083 companies, or 73.1% of the total, each exported goods to the value of 50,000 euros or less during 2012, that is to say 0.29 per cent of the total volume of exports.

From these data it can be deduced that the majority of companies have not made a competitive leap outside their local boundaries. These companies were able to take advantage of the boom in internal demand prior to the crisis, exploiting the abundant supply of credit awarded in the Eurozone. But the great majority did not adopt strategies oriented towards internationalisation.

Their business objectives were principally directed at increasing turnover and profitability. Between 2000 and 2007, in companies without international commercial activity, net profit per unit of equity was maintained or increased systematically between 14 and 16%, while for exporting companies this figure was between 11 and 13% (Graph 4). As a result, the majority of companies lacked economic incentives to modify these objectives. This “non-exporting strategy” was endorsed in a survey

undertaken in July 2013 (complementary to the present study)² in which 85.5% of firms declared they did not foresee processes of internationalisation in the following five years, compared to 8% which did so.

Elsewhere, when contemplating the size of Spanish companies (a crucial factor in foreign trade), it can be observed that between 1999 and 2013 there was a systematic increase in the participation of smaller firms (microfirms), with an average annual growth of 0.58%, and a reduction of the remaining sizes, small, medium-sized and large, with average annual decreases of -3.0, -1.8 and -0.4% respectively. However, in this field of business size, so sensitive in economic analysis, there should be taken into account recent contributions which warn of the inefficiency of policies which, with the aim of increasing productivity, convert the increase in size into an end in itself (Huerta and Salas, 2014).

Similarly, the productive specialization of an economy is another key factor in the international dynamics of companies. By sector, Spanish service companies notably increased their participation compared to the remaining sectors (0.9% annual growth), especially that of industry (-3.6%), which fell notably as its competitiveness grew, and to a lesser extent to that of construction (-0.6), which increased sharply between 1999 and 2008, to then suffer a brusque adjustment following the bursting of the bubble³.

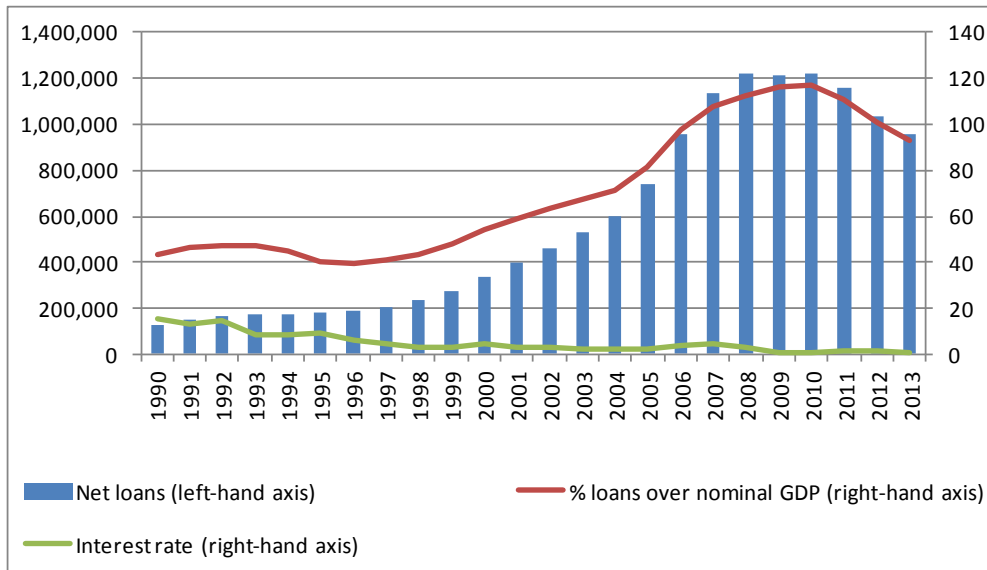
Finally, revising other indicators of international competitiveness, such as investment in innovation and patents, it is clear that the crisis has corrected them sharply downwards. Until 2008 expenditure on R&D maintained upward rates, pointing to a certain convergence with the European and OECD average. In that year it still increased at 7.6% annually, while from 2009 on it notably reduced; in 2011, it registered a decrease of 4.1% with regard to the previous year: company expenditure fell most sharply, by 5.4% (INE, 2012). With regard to the evolution of applications for patents of Spanish origin, in the period 2000-2011 a significant improvement took place, with annual rates of growth of 5.1% (Spanish Office), 11% (World Intellectual Property Organization) and 9.4% (European Patent Office). In all cases, with the irruption of the crisis this growth has been reduced, most significantly in national and European applications.

With the brusque irruption of the crisis in 2008, the business fabric, particularly its local and less competitive part, comprising small companies, was trapped in a state of uncertainty, high indebtedness and a lack of reactive powers. Between 2007 and 2013 275,669 firms were destroyed (-1.4% annually on average). Those which survived have since then undertaken an arduous process of reducing balance sheets, which impedes them from taking investment decisions (Graph 2).

Graph 2. **Net loans to non-financial companies** (millions of euros and % of GDP) **and interest rates** (3-monthly interbank deposits), **1990-2013**

²Together with this research an opinion poll regarding the internationalisation strategies of Spanish companies was performed. A sample of 654 companies was examined, with diverse segmentation criteria. For more information, see http://www.fundacionmapfre.org/fundacion/es_es/images/internacionalizacion_tcm164-49571.pdf

³Annex 1 offers a table of the structure of Spanish companies, by size and sector.

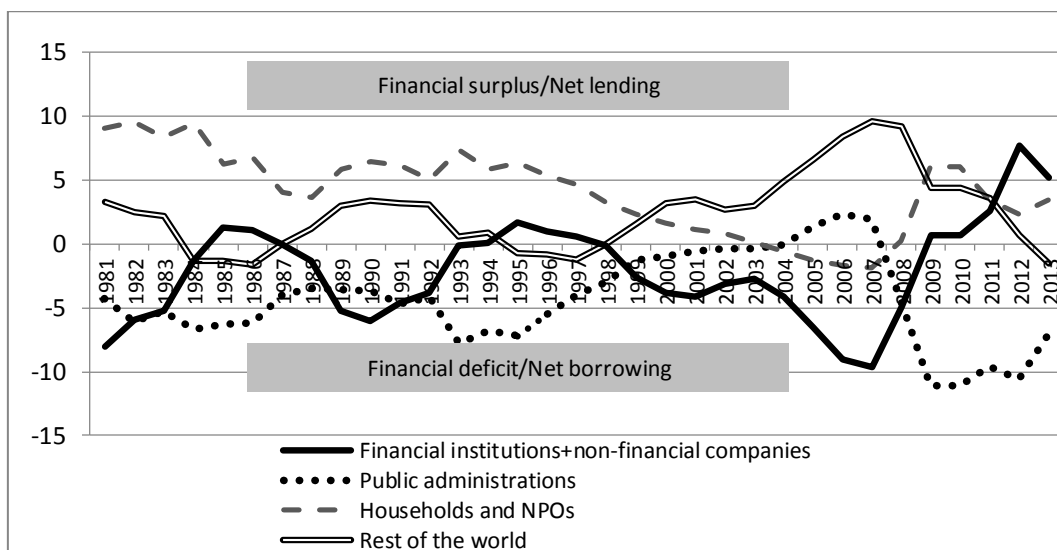


Source: Compiled using data from the Bank of Spain, Financial Balance

This situation of “balance sheet recession” has meant that since 2009 non-financial companies have changed their usual function of investment to that of net savers, while at the same time financial institutions have been notably increasing their capacity for financing, due to the needs for amortization of their international debt and the scanty credit granted. Meanwhile, households, in the years of the crisis, have come to rectify the change in their role as savers for that of investors, which they performed from 2003 onwards, in the midst of the property bubble and untrammelled consumption (Graph 3).

Koo (2011) has referred insistently to this singular situation of the private sector (non-financial companies, financial institutions and households) as a net saver, despite interest rates close to zero. This author warns that while the European economic authorities have focused (as had already happened in Japan) almost exclusively on the size of the fiscal deficit of the southern European countries, they have completely ignored the magnitude of private savings which have been generated by the private sector since the onset of the crisis.

Graph 3. Net lending or net borrowing of institutional sectors, 1981-2012 (% over nominal GDP)



Source: Compiled using data from the Bank of Spain

3. Information sources and methodology

Use has been made of company data proceeding from the information contained in company registers. SABI is an economic-financial database for the majority of Spanish enterprises (AMADEUS is the European database employing the same criteria), and includes statements of accounts for a high percentage of those companies registering their annual accounts in company registers.

From the SABI database there have been extracted populations or data samples for a period of 10 years, between the financial years 2003 and 2012, five years prior to the explosion of the crisis and the following five years (Table 2). The segmentation criteria are: productive sectors (agriculture and extraction, manufacturing, construction, commercial distribution services and the remaining services), NUTS-1 regions (Madrid, Centre, East, South, Northwest, and Northeast) and company size (small, medium and large enterprises). Due to the pronounced majority of microfirms in the Spanish economy and in the database, microfirms (1 to 9 workers) have not been taken into account, which avoids biases in the analysis.

In accordance with the information provided by SABI, the following populations or complete groups of companies have been extracted: 1) firms which export and import, 2) companies which only export, and 3) enterprises which only import. Similarly, there has been extracted a sample of: 4) the total set of companies in the economy, which includes companies that do not perform commercial activity abroad. This set of companies without international activity basically behaves like that of the economy as a whole, since it is comprised of barely 100,000 firms from the more than 1,000,000 base units. To adopt this criterion, which simplifies the analysis, statistical tests were first performed with the two groups separately and it has been observed that graphically the values of the median have parallels. This sample of the total of the economy is used in the study as a control group.

In order to determine the sample size of the latter group, we have used the SOTAM Program (Sistema de Optimización para Tamaños de Muestra or Optimisation System for Sample Sizes) designed by Manzano Arrondo (2010). The sample is therefore representative of the national structure (average), according to three segmentation criteria: company size, sector and region.

Table 2. **Populations and samples of companies, SABI database, 2014** (number of companies)

Population in SABI	Population	Sample
1) Exporting and importing	10,246	-
2) Exporting	4,432	-
3) Importing	4,963	-
4) Total companies in the economy	136,664	9,318

Source: SABI database and DIRCE-INE

The study of the behaviour of companies engaged or not with foreign trade has been performed from two perspectives. The first is via an examination of economic-financial indicators and their graphic analysis. Specifically, the following indicators have been obtained: a) debt ratio (value of the debt over value of assets), b) ratio of external funding over equity, c) total assets, d) productivity (added value per worker, in euros), e) EBITDA over assets (profit before interest payments, taxes, depreciation and amortization, divided by the value of assets), f) EBITDA over turnover, g) economic profitability (profits before interest and taxes, divided by the asset value) and h)

financial profitability (net profit per unit of equity). The statistical median has been used in the calculations.

On this point, research into exporting companies in recent years has recently claimed that financial restrictions represent an additional source of heterogeneity to understand their behavioural differences (Bellone et al., 2010). One of the most common proxies used in the literature to measure financial restrictions is the sensitivity of investment to cash flow (Fazzani, 1998), equivalent to that which is used in the present study (EBITDA/asset), but others similar to that proposed here have also been used, which according to distinct studies have offered different results. Bellone et al. (2010) have used size (total assets), profitability, liquidity, cash flow generating ability, solvency, trade credit over total assets and repayment ability (financial debt over cash flow). Whatever the case, in the analyses of these variables account must be taken of the possible and frequent correlations between them, in order to avoid adverse results.

The second perspective of the analysis uses a probit model, in which the dependent variable adopts the value of 1 or 0 depending on whether the observation analyzed undertakes export activity or not, respectively. To this end an ad hoc database was constructed, with the set of economic-financial indicators listed, which operate as independent variables, and a group of dummy variables which facilitate the analysis on the basis of the size, sector and region of companies.

4. Results

4.1 Study of economic-financial indicators

From the study of economic-financial indicators and graphic analysis it can be deduced that during the study period (2003 to 2012), which follows a decisive phase of the expansionary cycle of the Spanish economy (from 1996 to 2007), and another phase from the onset of the crisis until its deepening and the recessions of 2009 and 2011-12 (2008 to 2012), companies with international trade activity display better results (Graph 4).

In general terms, the group comprising companies which regularly export and import is located at the top of the graphs, with the exception of the debt ratio, which appears at the lowest part. This supports the argument that higher company commitment to international trade means lower needs for borrowing presented in their balance sheets. Next is the group of companies which only undertake export activity, followed by those which only import. Finally, in the lowest part of the indicators are the groups comprised by the control group, or the average of the Spanish economy, associated with the companies which do not undertake trading activity.

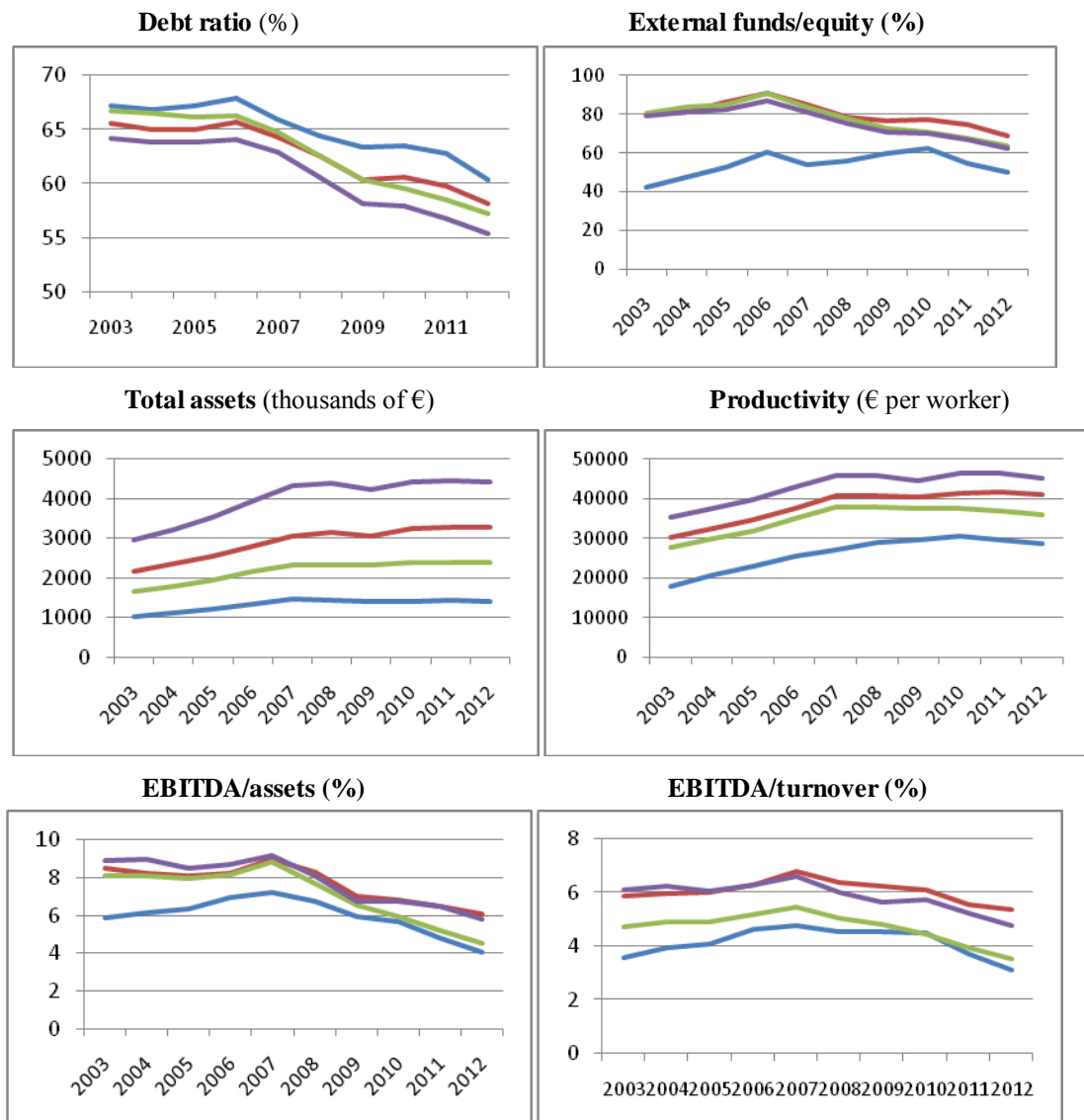
However, all of these, with the exception of productivity (and total asset value, which is not a ratio), sharply reduce their results from 2008 on (slightly less intensely in the case of the two EBITDAs). Productivity suffers a lower decrease in the early years of the crisis and recovers from 2009 on, due to the marked fall in employment and salaries.

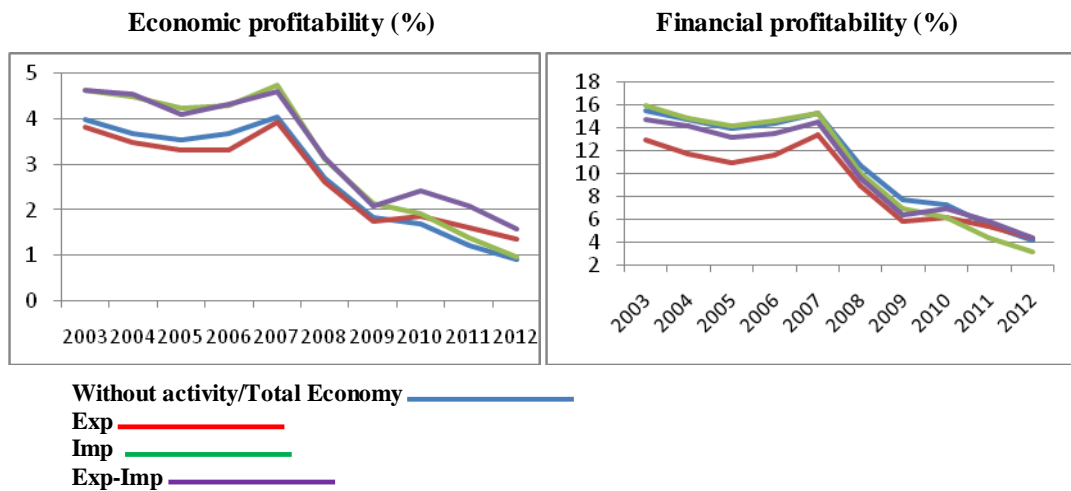
Nevertheless, it can be observed that between 2003 and 2009 companies without international trade activity (and the control or average group of the economy) returned better results in financial profitability than exporting/importing firms and exporting companies. From 2009 on, with the crisis sharply reducing internal demand, the panorama changed and the exporting/importing and exporting firms began to display increasing financial profitability, similar to or exceeding local companies (without foreign trade activity and control group) in the final years of the analysis, and would foreseeably overtake them if the study period were extended.

This distinct configuration of financial profitability could be explained by taking into account that companies without foreign trade activity (the average of the Spanish economy) during the incubation and development of the bubble had easy and cheap access to credit (which permitted them to finance investment more with external funds than with equity), lacked incentives to modernise and to compete abroad. Thus, their tendency was to continue in the shelter of their traditional domestic activity, impelled by sharply rising demand, due to the increasing value of property assets and other related assets. This is coherent with the fact that 62.5% of the firms surveyed stated that their business abroad has generated an improvement in their results.

With only the arrival and deepening of the crisis, principally from the recession of 2009 on, and the sharp fall in internal demand and also of costs and salaries, companies which had been undertaking foreign activity began to improve their relative position, stimulated by more active external demand and more competitive prices. To these were added the most capable and well-prepared companies in the productive fabric, which would explain the growth in the number of exporting firms and the volume in value of exports since 2009.

Graph 4. Economic-financial indicators of Spanish companies according to their international trading activity, 2003-2012, median (companies of over 8 workers)





Source: Compiled from data from SABI and DIRCE-INE

In both financial profitability and economic profitability, companies which only undertake importing activity are positioned on the upper part of the graph (in the case of economic profitability this runs parallel to that of exporting/importing companies, and in that of financial profitability it runs parallel to those which do not undertake activity abroad (and the average of the economy) until the arrival of the recession, the moment in which they come to occupy the lower part, due to the sharp fall in internal demand. It should be borne in mind that in this group of only importing companies there coexist firms of highly varied typology (intermediate input or final consumption traders, etc.). It may be worth making a separate study in other research, since it is not a specific objective of the present work.

In summary, it would appear that while the indicators of economic profitability (adequate use of investment in fixed and working assets, productivity (adequate combination of the human factor and technical structure) and EBITDA (liquid funds generated by the company relativized by total assets and turnover) display similar behaviour in the period of expansion (growth) and crisis (contraction), financial profitability (the net result between net profit and equity, or the surplus for the business owner for risk assumed) evolves differently.

In turn, the debt indicator maintains the same tendency as the remaining indicators, but anticipates the arrival of the crisis. All the groups of companies initiate a process of debt reduction until 2006, which could indicate signs of approachment to the bursting of the assets bubble.

4.2 ANOVA analysis

Before tackling the model proposed, a check was made of whether there exist statistically significant behaviours among the four company groups considered (exporting/importing, exporting, importing, without foreign activity (average of the economy)). To this end, an ANOVA analysis has been performed, assuming the hypothesis of normality and homoscedasticity of the independent variables. However, although the majority of the ratios analysed do not meet the hypothesis of normality and homoscedasticity, the results obtained maintained their robustness due to the large sample size (Peña, 2002, p. 492-496).

To this end the Brown-Forsythe statistic is used; this modifies the F-statistic of the ANOVA analysis (Jimenez and Sánchez, 2007). Additionally, to determine concretely which groups are statistically different other tests are used *post hoc*; these are multiple

comparisons which consist of formulating a linear combination of the necessary number of medians of the sample and populations used in the study. The choice depends on whether the equality of variances of the variables is assumed. The present research uses the Scheffé tests.

From the set of ratios studied, only three present statistical significance in three years (2004, 2008 and 2012) in the period from before the onset of the crisis until 2012: debt ratio, economic profitability and EBITDA over assets (Table 3).

Thus, with regard to the debt ratio it can be seen that during the expansionary period (2004), the most highly indebted companies are those which have no relationship to the exterior, while those which do so, including the group of importers, show a fairly similar degree of indebtedness, although lower than the former. Nevertheless, in the middle of the economic recession (2012) a change occurred in company behaviour. Importers and exporters (who participate more actively in international trade) have managed to significantly diminish their debt levels (by more than 6 percentage points), while companies with no international presence (the average of the economy), despite having partially reduced the level of indebtedness, widen the gap with regard to the former (by almost 7 points with regard to the almost 4 of 2004), which would explain their greater difficulties in repaying the loans granted in the stage of economic growth. In an intermediate situation are the companies which only export or import, although they are also below the average of the economy (5 points).

Table 3. ANOVAS

<i>Debt ratio</i>			
GROUPS	2012	2008	2004
Exporting-Importing	55.36	59.20 (*)	61.90 (*)
Exporting	57.71 (*)	60.21 (*)	62.67 (*)
Importing	57.15 (*)	60.80 (*)	63.82 (*)
Non-exporting-Importing	62.75	64.6200	65.57
<i>Significance</i>	0.000	0.000	0.000
<i>Economic profitability</i>			
Exporting-Importing	1.43 (*)	4.27 (*)	5.90 (*)
Exporting	1.41 (*)	3.82 (*)	4.91
Importing	-0.65	4.37 (*)	5.89 (*)
Non-exporting-Importing	-1.32	2.78	5.29 (*)
<i>Significance</i>	0.000	0.000	0.003
EBITDA over assets			
Exporting-Importing	5.52 (*)	8.12 (*)	9.78 (*)
Exporting	6.11 (*)	9.53 (*)	9.25 (*)
Importing	3.83	8.52 (*)	9.28 (*)
Non-exporting/Importing	1.64	6.64	8.20
<i>Significance</i>	0.000	0.000	0.000

(*) Homogenous groups

This situation underlines that the companies which opted for international sales and/or the acquisition of inputs or final goods from the exterior have had a greater capacity and more possibilities of generating cash flows (EBITDA over assets) than those which destined the financing obtained to internal growth, through the increase in productive

capacity or modernization of their equipment, while maintaining their commercial orientation to the local market.

The commitment to foreign trade means important initial costs, which may burden in the early years the income statements of companies, and similarly their profitabilities. If the gross profit of companies is related to their volume of assets (economic profitability), it can be observed that all companies obtain positive profitability in the expansive phase. The two reasons which best explain this positive behaviour are, firstly, the ease of access to credit which permitted them to increase their productive capacity, especially in the case of small firms, and, secondly the strong growth of national demand, which permitted an increase in turnover.

However, companies which only export, partly renouncing the strong pull of national consumption, obtained the lowest economic profitability. Nevertheless, as the first symptoms of economic deceleration appeared, companies with exclusively national activity lost in four years almost half of the profitability which they had in the year 2004, in contrast to companies with external trade, which also saw a reduction in their profitability but on an appreciably lower scale. This situation became sharper in the middle of the crisis, in which only the exporting companies managed to achieve positive profitability. As a result, the strategy followed by these companies, which required satisfying a greater profitability at times of international investment, was later favoured by their greater capacity for survival and dynamism, expressed in terms of positive economic profitability [and an acceptable generation of cash flow, although lower than in the years prior to the crisis]. That is to say, international activity has placed them in an advantageous position to confront the national climate, with a sharp fall in demand and difficulties of liquidity for suppliers and clients.

What is more, if this analysis is translated into terms of free cash flows (EBITDA with regard to assets), the situation is very similar to that described, with the difference that in this case an international presence (independently of the trade formula chosen) proves beneficial in the years prior to the crisis. Logically, the companies which only import follow a similar behaviour to the sample of the average of the economy, since they acquire in the majority of cases goods and services for consumption by national agents. In turn, companies which have maintained their exporting activity throughout the period, although they have seen a reduction in their liquid assets have maintained sufficient to be able to continue to pay their debts in a process of deleveraging, and similarly to reinvest at least a part of that money in their productive capacity and thereby maintain a competitive position both nationally and internationally. The opposite occurs with companies without international activity, which have seen their liquid assets highly reduced which permits them to repay only part of their accumulated debt and means they have to resort frequently to processes of financial restructuring or closure.

4.3 Probit model

To determine the impact which the financial aspects of companies have upon their export capacity a probit model was estimated. In the econometric estimation of the model the probabilities that companies were exporters was made dependent on a set of economic-financial variables and on a series of control variables.

The economic-financial variables considered were the following:

- Debt ratio (debt)
- EBITDA ratio over total assets (ebitdaasset)

- EBITDA ratio over turnover (ebitdaturn)
- Economic profitability (ecprof)
- Financial profitability (fiprof)

Due to the problems of endogeneity encountered the variables regarding external funds over equity, total assets and productivity were not included, although they could have been, a priori, relevant from a theoretical point of view.

At an aggregate level, the Spanish economy has demonstrated a tendency to increase its export propensity since its incorporation into the European Union. To reflect this aspect, which could distort the results, the trend variable “year” was included, to take account of the year of the observation.

To control for heterogeneity in behaviour due to company size the model includes a series of dummy variables regarding the number of workers (as indicated in Section 3), in which have been excluded, to take it as reference, the group of smallest companies included in the sample, that is to say the microfirms of 9 workers.

The diverse export capacity of the productive sectors is included in the analysis through a set of five dummy variables representing the sectors of manufacturing, construction, commercial distribution services and other services. The sector excluded, which serves as reference, is that of agriculture and extractives.

Finally, regional differences have been incorporated through six dummy variables concerning the NUTS-1 regions: Centre, East, South, Northwest, and Northeast. In this case the region of Madrid has been used as reference.

The estimation of the model has been performed in two phases. The first estimation (Model 1, Table 4) considers the years prior to the irruption of the crisis (until 2007), while the second estimation (Model 2, Table 5) considers the years of greatest impact of the crisis (from 2008 to 2012). The reason for estimating two models with a different time horizon is to avoid a possible smoothing of the results which does not capture the true importance of the variables analysed upon the propensity to export. It must be taken into account that the behaviour of the majority of the variables, both before and after the crisis, shows an inverse relationship. For example, until the year 2007 company profits exhibited an increasing evolution and from that period onwards the trend became just the opposite (Graph 4).

The proposed econometric estimation of the probit models is shown in the two tables below.

Table 4. Estimation 1, 2003-2007

y1	Coeff.	Robust Std Err	z	P > z	[95% Conf.	Interval]
debt	-.0002186	.0001481	-1.48	0.140	-.0005088	.0000715
ebitdaasset	-.0055964	.000818	-6.84	0.000	-.0071998	-.0039931
ebitdaturn	8.05e-07	6.59e-07	1.22	0.222	-4.88e-07	2.10e-06
ecprof	.005011	.000854	5.87	0.000	.0033372	.0066848
fiprof	-.0002566	.0000607	-4.22	0.000	-.0003757	-.0001376
year	-.0025364	.0026388	-0.96	0.336	-.0077083	.0026355
Size-2	.1389146	.0246015	5.65	0.000	.0906966	.1871325
Size-3	-1.012.811	.0289306	-35.01	0.000	-1.069.514	-.9561076
Size-4	-.4045291	.0247334	-16.36	0.000	-.4530056	-.3560526
Size-5	-1.049.937	.0253255	-41.46	0.000	-1.099.574	-10.003
Manufacturing	.2128976	.0156951	13.56	0.000	.1821358	.2436593

Construction	.6067185	.017665	34.35	0.000	.5720958	.6413411
Retail	.7401757	.0258499	28.63	0.000	.6895109	.7908406
Other services	.9164518	.0437332	20.96	0.000	.8307363	1.002.167
Madrid	.2148646	.0139938	15.35	0.000	.1874374	.2422919
East	.3557906	.0111199	32.00	0.000	.3339959	.3775852
South	.0836884	.0161543	5.18	0.000	.0520265	.1153503
Northwest	.217706	.0136875	15.91	0.000	.190879	.244533
Northeast	.1650613	.0157883	10.45	0.000	.1341169	.1960058
_cons	5.058162	5.291133	0.96	0.339	-5.312269	15.42859

Probit regression
Wald chi2(19) = 18597.76
Prob > chi2 = 0.0000
Log pseudolikelihood = -76979.301
Number of obs = 126237
Pseudo R2 = 0.1173

Table 5. Estimation 2, 2008-2012

y1	Coeff.	Robust Std Err	z	P > z	[95% Conf. Interval]
debt	-.0006114	.0001278	-4.78	0.000	[-.000862 -.0003608]
ebitdaasset	-.0004977	.000643	-0.77	0.439	[-.001758 .0007625]
ebitdatum	1.45e-08	1.95e-07	0.07	0.941	[-3.68e-07 3.97e-07]
ecprof	.0028692	.0006479	4.43	0.000	.[.0015994 .0041391]
fiprof	-4.59e-06	.000052	-0.09	0.930	[-.0001065 .0000973]
year	.0166319	.002576	6.46	0.000	.[.011583 .0216808]
Size-2	.1406716	.0235578	5.97	0.000	.[.0944992 .1868439]
Size-3	-1.018.409	.0274616	-37.08	0.000	[-1.072.233 -.9645853]
Size-4	-.3928219	.0235949	-16.65	0.000	[-.439067 -.3465768]
Size-5	-1.049.901	.024141	-43.49	0.000	[-1.097.217 -1.002.586]
Manufacturing	.216996	.0147839	14.68	0.000	.[.1880201 .2459719]
Construction	.6192097	.0167645	36.94	0.000	.[.5863519 .6520675]
Retail	.7687737	.0250837	30.65	0.000	.[.7196105 .8179368]
Other services	.9417986	.0431501	21.83	0.000	.[.8572259 1.026.371]
Madrid	.2303048	.0133376	17.27	0.000	.[.2041636 .256446]
East	.336417	.0106091	31.71	0.000	.[.3156236 .3572105]
South	.0727922	.0154679	4.71	0.000	.[.0424757 .1031087]
Northwest	.1938222	.0130316	14.87	0.000	.[.1682807 .2193636]
Northeast	.161465	.0152652	10.58	0.000	.[.1315458 .1913843]
_cons	-33.4708	5.178.591	-6.46	0.000	[-43.62.066 -23.32.095]

Probit regression
Wald chi2(19) = 20708.73
Prob > chi2 = 0.0000
Log pseudolikelihood = -83601.284
Number of obs = 137404
Pseudo R2 = 0.1202

With regard to the economic-financial variables, the results obtained were, in general, highly significant and in line with theory and previous results.

In the period prior to the crisis (Table 5) all the variables proved significant, except for the debt ratio and EBITDA over turnover. The level of indebtedness is an important predictor of export activity, following the irruption of the crisis. Until 2007, with easy access to credit for all companies, the greater or lesser availability of external financial resources was not significant for exports. This explains why the determining variables are profitabilities (economic and financial), which permit the sustaining of the initiative to export.

However, with the reduction of the level of economic activity (Table 6), the debt ratio becomes a significant variable in explaining the propensity to export, in such a way that

the greater is the debt level the lower are the probabilities of exporting. That is to say, only the companies which during the expansionary period have known how to adequately manage the external financing received have, in the period of crisis, a greater possibility of facing up to the maintenance of the investment resulting from exterior activity.

EBITDA, by contrast, does not appear to affect export activity. The decision to export is apparently taken by companies from a perspective less related to the situation than that represented by gross income obtained in the period. As explained previously in the ANOVA analysis (Section 4.2), the availability of monetary resources only proves significant in a bonanza situation. That is to say, independently of the origin of the sources of financing, the variable which explains the decision to become involved in international trade is the net availability of sufficient cash with regard to total investment (EBITDA over assets), and similarly the availability of positive economic profitability to support the investments to be undertaken (Table 5/estimation 1). On this same point, it is coherent that the indicator of economic profitability in the period subsequent to the crisis (Table 6/estimation 2) is significant, despite the fact that EBITDA over assets ceases to be so.

Financial profitability is a significant variable in the period prior to the crisis (Table 5). The decision to export must be supported by the company shareholders, given the initial risk this investment represents. Only companies with the capacity to confront the greater risk with a greater financial profitability are those with greater probabilities of having a presence in international trade. However, following the beginning of the crisis this variable becomes non-significant, underlining the slight effect upon exports represented in this period by the average cost of external capital (Table 6).

That is to say, the probability of not initiating or not continuing with export activity is not determined by the inability to meet the payment of the interest of the debt contracted, but instead by the problems of repaying the funds borrowed. The large quantities of debt acquired in the period of expansion at very low interest rates means that, in the case of companies which did not have foreign trade activity, they must now direct their cash flows obtained to repaying the debts contracted and, thus, restrict or rule out any new foreign investment decisions. By contrast, in the case of companies which already had export commitments in the incubation phase of the crisis can now, in the period of crisis, continue to repay their debts and maintain their foreign investment dynamic.

In turn, the variable associated with the trend (year) is significant and negative in the first estimation. As the Spanish economy showed signs of deceleration (already prior to 2007) the probabilities of exporting diminished. Nevertheless, the second estimation shows a positive behaviour of the variable, accepting the challenge and indispensable process of foreign sales by Spanish companies, as an alternative to the situation of the sharp decline of national demand.

By size, it can be observed that smaller companies are those which display a greater propensity to export. This apparently surprising result indicates that the lower opening to abroad which is observed among these companies is not derived from their size, but instead from their financial, regional and sectorial conditioners. Nevertheless, this result requires a more detailed subsequent analysis.

Considering the sector of activity, both before and after the onset of the crisis, the companies which display a greater propensity to initiate foreign trade are those in the service sector, whether commercial distribution services (wholesale and retail

commerce) or the remaining services (telecommunications, transport, etc.). This behaviour is coherent with the development the Spanish economy has experienced over the last decade, in which there has taken place a significant intensification of services (in both the number of companies and in the contribution to added value and to employment).

Finally, at regional level, it is confirmed that the regions which concentrate the greatest economic activity of the country, whether for their strategic situation or their lengthy business tradition. Specifically, the sharpest propensity occurs in the Community of Madrid, followed by the eastern regions and the northeast region.

5. Concluding remarks

This study attempts to answer, or at least to offer some clues to, the question of whether the easy access to credit in the period prior to the crisis has had consequences for the improvement of the competitiveness of Spanish companies (basically SMEs). Or whether, on the contrary, this access was not employed in investment aimed at favouring a more export-oriented productive model, which would have had an influence, for example, on company size, technological effort or organisational improvements.

Underlying the previous question lies another of a more complex nature (one which this study does not aim to answer). Concretely, whether the benign monetary convergence of the euro in the period of the worldwide upswing permitted the less competitive economies of southern Europe to progress, at least apparently, through the money lent by their northern neighbours, while their unit labour costs and relative prices gradually made them less competitive.

The explosion of the property bubble in Spain (and other countries) and the sudden emergence/emergency of the crisis impacted strongly on the productive sector, and the majority of companies did not know how to or could not react, and since then have been suffering what has been termed “balance sheet recession”. The heavy indebtedness acquired in the expansive phase is being inexorably reduced by the majority of companies.

In accordance with the results of this research it is clear (or at least there appear clear indications) that this slimming of debt, in the crisis phase, is preventing companies from adopting long-term investment decisions and being able to adapt to a more competitive and export-oriented productive model. Basically, the only survivors of this process are those companies which were already internationalised in the period of incubation of the crisis, which were able to notably increase exports from 2009 on and, at the same time, to help to reduce the sharp deficit of the current account balance sheet of the Spanish economy.

Together with other complementary indicators, business indebtedness and the export capacity (or probability) of companies are the two principal variables considered in the analysis. Study has been made of broad samples of companies differentiated by size, sector and localization, and economic-financial analysis techniques are employed, on the one hand and a probit model, from which two estimations are made (the period prior to the crisis and the crisis), on the other. Both the techniques offer substantially convergent results.

From the study of economic-financial indicators it is deduced that during the period 2003-2012 companies with international commercial activity display better results, in both the phases of expansion and of crisis.

However, it has been observed that between 2003 and 2007 companies without international trade activity returned better results in financial profitability than those involved in foreign trade activities. From 2009 onwards, when the crisis caused internal demand to fall sharply, the scenario changed and exporting companies began to converge with local companies or even to slightly exceed them, although both groups still presented increasing financial profitability.

This distinct configuration of financial profitability is explained by bearing in mind that during the incubation and development of the bubble, companies without foreign commercial activity (or the average of the economy) lacked incentives to modernise themselves and compete abroad. This lack of incentives may have been the result of easy and cheap access to credit, which permitted them to finance their investment needs with external funds more than with equity, and obtain, incidentally, greater financial profitability than exporting companies.

The crisis caused a sharp fall of internal demand, but also of costs and salaries, meaning that exporting firms began to improve their relative position, stimulated by more active foreign demand and more competitive prices.

With regard to the debt ratio, it can be appreciated that during the phase of expansion, the most highly indebted companies are those which do not have commercial relations abroad, while those which do have such relations, including the group of firms which only import, display a fairly similar degree of indebtedness, and one lower than the former group.

The decision to trade abroad requires significant initial costs, which in the early years can weigh down the income statements, and similarly its profitabilities. If the gross profit of companies is related to their volume of assets (economic profitability), it can be observed that all companies obtain a positive profitability in the expansive phase. The two reasons which best explain this good behaviour are, firstly, the ease of access to credit which permits them to extend their productive capacity, especially of small firms and, secondly, the strong growth of national demand which permitted an increase in turnover.

Elsewhere, the results obtained from the econometric model were, in general, highly significant and in line with theory, the previous graphic results and the ANOVA analysis.

The level of indebtedness emerges as an important predictor of the exporting activity of companies following the irruption of the crisis, since in the period of previous expansion, with easy access to credit, the availability of external financial resources did not prove significant.

Before the crisis, the factors best explaining the taking of the decision to export were the availability of a necessary operating surplus, independently of the form of financing chosen. But with the bursting of the property bubble and the explosion of the crisis in the productive economy the panorama radically changed: only those companies which were less exposed to the effects of balance sheet recession (or deleveraging) were those which managed to maintain themselves in the foreign sector.

In summary, independently of other factors, the lower the level of indebtedness and the greater the economic profitability, the greater will be the probability of exporting.

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