



# EFIGE country report: Spain

*Did Spanish firms perform worse in  
the wake of the 2008 crisis?*

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and Susanna Esteban



EFIGE IS A PROJECT DESIGNED TO HELP IDENTIFY THE INTERNAL POLICIES NEEDED TO IMPROVE EUROPE'S EXTERNAL COMPETITIVENESS

Funded under the Socio-economic Sciences and Humanities Programme of the Seventh Framework Programme of the European Union.

LEGAL NOTICE: The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 225551. The views expressed in this publication are the sole responsibility of the authors and do not necessarily reflect the views of the European Commission.

The EFIGE project is coordinated by Bruegel and involves the following partner organisations: Universidad Carlos III de Madrid, Centre for Economic Policy Research (CEPR), Institute of Economics Hungarian Academy of Sciences (IEHAS), Institut für Angewandte Wirtschaftsforschung (IAW), Centro Studi Luca D'Agliano (Ld'A), Unitcredit Group, Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).

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# SPAIN COUNTRY REPORT

## *Did Spanish firms perform worse in the wake of the 2008 crisis?*

By Aránzazu Crespo, Klaus Desmet and Susanna Esteban

### Main policy questions and policy implications

Of the large European countries, Spain has been arguably hit the hardest by the economic crisis. While the extent of the crisis is evident in many aggregate macroeconomic indicators, such as the sharp increase in unemployment and the slow recovery of GDP growth, these indicators mask systematic differences at the firm level. This report analyses the heterogeneity of firm performance across countries, and singles out differences that set Spanish firms apart. Given the high degree of firm heterogeneity, understanding the crisis at the firm level is key to the designing of targeted policies, and thus improving the effectiveness of economic policy. The preliminary findings of this report suggest that the relatively high share of small firms in Spain may have contributed to the relatively poorer performance of the Spanish economy. This suggests that policies that lead to firm-size distortions and limit the growth of small firms should be carefully reevaluated. Policies that foment internationalisation, either through exports or ownership, might also make firms more resilient during downturns.

## Executive Summary

Of the large European countries, Spain has been arguably the hardest hit by the economic crisis. While the extent of the crisis is evident in many aggregate macroeconomic indicators, such as the sharp increase in unemployment and the slow recovery of GDP growth, these indicators fail to uncover systematic differences at the firm level. In this report we explore the underlying cross-country structural characteristics of the best and the worst performing firms, as measured by the change in their profit margin between 2008 and 2009. We then single out the differences that set Spanish firms apart. Understanding the crisis at the firm level is necessary for designing more effective and targeted policies. The most relevant findings can be summarised as follows:

1. The aggregate data point towards Spanish firms being the worst performers of all the countries surveyed.
2. Spain is the surveyed country with the largest share of small firms reporting a profit margin decrease. However, it is also the country with the second-to-largest share of large firms reporting a profit margin increase.
3. The poor performance of Spain appears to be mainly accounted for by the relative predominance of small firms.
4. In countries, such as Spain where the share of exporting firms is relatively small, exporters do better than non-exporters. In contrast, in countries with a larger share of exporting firms, non-exporters perform better.
5. Across countries firms belonging to a foreign group show a better performance.
6. There are no systematic patterns across countries related to the age of firms. Spanish start-ups performed better than start-ups in other countries.
7. For the group of firms with constant or increasing profit margins, innovation is positively correlated with higher profit margins. Overall, the evidence on the relationship between innovation and performance is weak.
8. Some sectors fared better than others. In Spain the sectors in which the country traditionally has had comparative advantage did worse.
9. Firms not successful at getting credit from financial markets performed worse. This is especially important in Spain, given that nearly all firms rely on credit markets to operate.
10. Overall Spanish firms fared worse than their European counterparts.

Since the findings in this report are based on the exploration of descriptive statistics, formulating policy recommendations based on these findings should be done with necessary caution. However, the results do suggest that policies should aim to:

1. Evaluate the existence of firm-size distortions that affect the size distribution of firms, limiting the growth of small firms.
2. Foster the internationalisation of firms, both in terms of exporting and foreign ownership.
3. Improve access to credit markets.

## **1. Spain during the crisis**

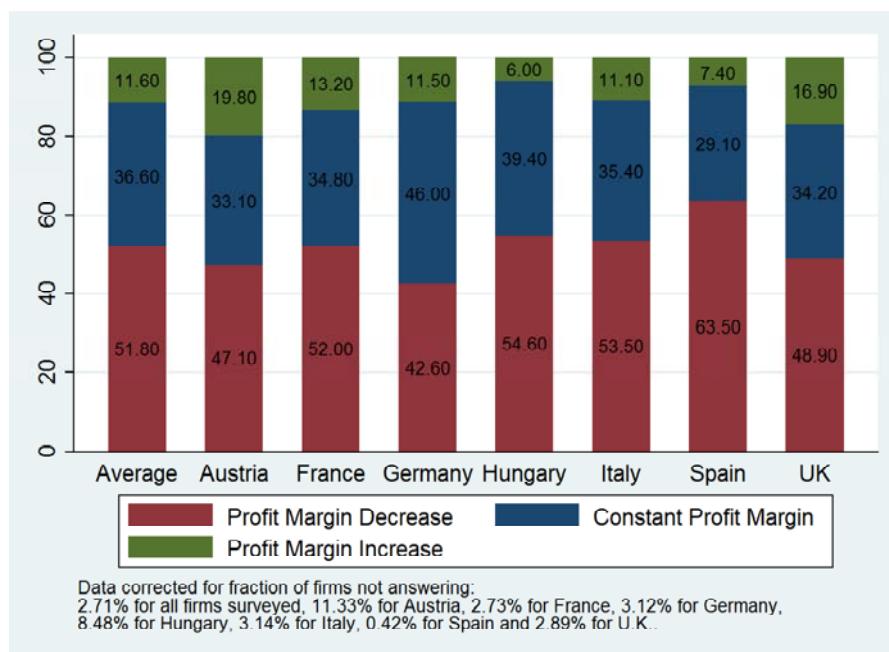
Of the large European countries, Spain was arguably hit the hardest by the economic crisis. While the extent of the crisis is evident in many aggregate macroeconomic indicators, such as the sharp increase in unemployment and the slow recovery of GDP growth, these indicators fail to uncover systematic differences in firms' performance. In this report, we analyse the performance of Spanish firms relative to their European counterparts in 2008 and 2009. We uncover empirical regularities at the firm level, identifying which structural characteristics may have improved the ability of firms to live through the crisis. Understanding the impact of the crisis at the firm level is also necessary for better targeting policy proposals and improving their effectiveness.

The EU-EFIGE/Bruegel UniCredit Survey was conducted in 2010 and resulted in a cross-country dataset that contains qualitative and quantitative information on around 150 items for 15,000 manufacturing firms. The surveyed countries were Austria, France, Germany, Hungary, Italy, Spain and the United Kingdom. One of the items in the survey was the firms' self-reported qualitative change in profit margins (increased, decreased or remained constant) in the years 2008 and 2009. We use this information as a measure of a firm's performance. In what follows, we use descriptive statistics to analyse the relationship between the change in profit margin and a number of firms' characteristics, such as size, internationalisation, age, innovation and sector. An important caveat to this report is that, by relying exclusively on descriptive statistics, the relationships we uncover cannot be interpreted as being causal.

## 2. Spanish firms: performing worse

Figure 1 plots the share of firms by change in profit margin for all the countries surveyed. While it uncovers substantial heterogeneity across countries, a clear pattern arises: Spanish firms are the worst performers. Spain is the surveyed country with the largest share of firms reporting a decrease in profit margin, 63.5 percent, followed by Hungary, Italy and France, which, albeit exhibiting a poor performance, have already lower shares in the 50-55 percent range. In contrast, Germany, Austria and the UK are better performers. Germany has the smallest share of firms reporting a decrease in profit margin (42.6 percent), and Austria and the UK have the largest share of firms reporting an increase in profit margin – 19.8 percent and 16.9 percent, respectively.

**Figure 1: Share of firms by change in profit margin for all countries (2008-2009)**



Although the data shows that Spanish firms are the worst performers, this observation may be the outcome of data aggregation. If, for example, size makes firms more resilient and Spain has a larger share of small firms, then overall Spain would be performing worse, although similar-sized firms might be performing similarly across countries. We next explore the underlying cross-country structural characteristics of the best and worst performers in 2008-2009. The goal is to uncover systematic patterns and to single out the differences that set Spanish firms apart.

### 3. Firm size

Existing empirical evidence supports the theory that large firms are more profitable than small firms. This could be due to the existence of economies of scale, innovation, market power or better access to capital markets, among other structural characteristics. Shepherd (1972) and Hall and Weiss (1967) argue that profit margins increase with firm size, while Marcus (1969) does not find clear evidence of a positive relationship between firm size and profitability. Dunne, Roberts and Samuelson (1988) study the patterns of entry and exit in US manufacturing firms and find that small, young firms are the ones having the highest failure rates.

Table 1 reports the size distribution of firms, as measured by the number of employees, for all the countries surveyed. Significant cross-country differences exist. Although all the countries have a size distribution that is skewed towards small firms, they differ in the evenness of the distributions (as measured by the relative share of small versus large firms). Compared to other countries, Spain has a large share of small firms. Spain, Italy and France have 80-90 percent of the firms with fewer than 50 employees, while Austria, Germany, Hungary and the UK have only 70-75 percent.

**Table 1: Firm size distribution for all countries (2008-2009)**

	10 to 19 employees	20 to 49 employees	50 to 249 employees	More than 250 employees
Survey average	35.7 %	45.7 %	15.6 %	3.0 %
Austria	31.2 %	42.0 %	22.1 %	4.8 %
France	40.3 %	40.3 %	16.1 %	3.4 %
Germany	28.4 %	46.1 %	20.4 %	5.0 %
Hungary	32.6 %	41.3 %	20.9 %	5.2 %
Italy	37.6 %	50.5 %	10.6 %	1.4 %
Spain	39.3 %	45.6 %	13.3 %	1.8 %
United Kingdom	35.1 %	41.8 %	19.4 %	3.7 %

Figure 2 plots the change in profit margin by firm size, as measured by the number of employees, for Spain and the survey average. Interestingly, the Spanish firms that clearly fare worse than their European neighbours are the small firms: 65.7 percent of small Spanish firms (10-19 employees) report decreases in their profit margin while the survey average is 52.4 percent. For large firms, although there is a larger share of firms reporting a decrease in profit margin in Spain than the survey average – 46.6 percent versus 43.3 percent – the share of firms reporting an increase is significantly larger – 24.9 percent versus 18.4 percent.

**Figure 2: Share of firms by change in profit margin for all firm sizes (number of employees), for Spain and survey average (2008-2009)**

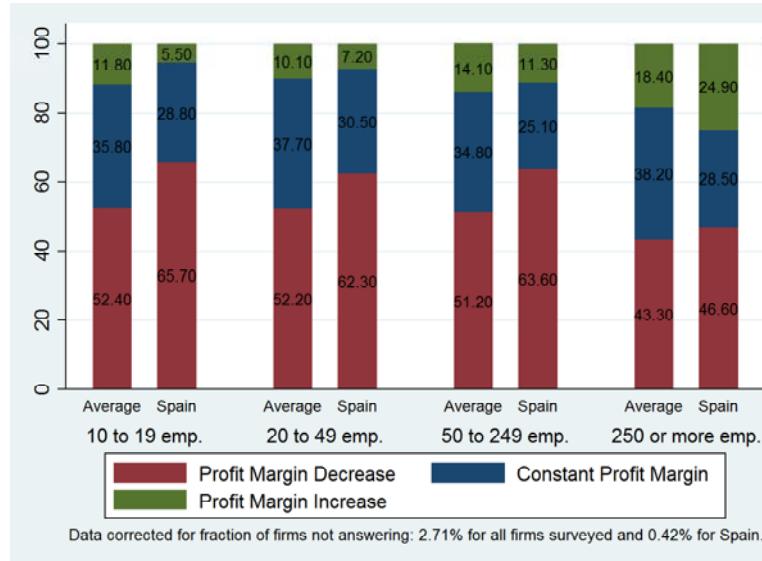


Table 2 breaks down the survey average in Figure 2 by country surveyed. With the exception of Austria, Hungary and the UK, in all the countries the change in firms' profit margin increases with firm size. Interestingly, in the countries where changes in profit margin do not increase with firm size, the firm size distribution is more even, with a larger fraction of small firms. This finding suggests that concentration is tied to a dominant market position and this enhances large firms' market power. The size distribution of firms may be the key to explaining the cross-country heterogeneity in firms' performance. We find, for example, that Spain has the second largest share of large firms reporting an increase in profit margins, but it is also has the largest share of small firms reporting a decrease.

**Table 2: Share of firms by change in profit margin for all firm sizes (number of employees), for all countries surveyed [2008-2009]**

Profit margin decrease

	10 to 19 employees	20 to 49 employees	50 to 249 employees	More than 250 employees
Survey average	52.4%	52.2%	51.2%	43.3%
Austria	37.3%	46.4%	57.7%	78.9%
France	52.1%	52.8%	52.5%	40.0%
Germany	41.4%	43.0%	45.0%	35.8%
Hungary	47.2%	54.3%	66.9%	54.1%
Italy	54.0%	54.3%	48.2%	51.1%
Spain	65.7%	62.3%	63.6%	46.6%
United Kingdom	47.1%	49.5%	50.8%	50.3%

Constant profit margin

	10 to 19 employees	20 to 49 employees	50 to 249 employees	More than 250 employees
Survey average	35.8%	37.7%	34.8%	38.2%
Austria	38.8%	31.5%	30.3%	16.9%
France	33.3%	35.3%	36.7%	36.7%
Germany	46.1%	48.9%	38.1%	49.8%
Hungary	48.0%	36.3%	30.7%	45.9%
Italy	34.4%	35.4%	39.0%	33.2%
Spain	28.8%	30.5%	25.1%	28.5%
United Kingdom	35.9%	34.9%	31.8%	22.4%

### Profit margin increase

	10 to 19 employees	20 to 49 employees	50 to 249 employees	More than 250 employees
Survey average	11.8%	10.1%	14.1%	18.4%
Austria	24.0%	22.1%	12.0%	4.2%
France	14.6%	11.8%	10.8%	23.3%
Germany	12.5%	8.1%	17.0%	14.4%
Hungary	4.8%	9.4%	2.4%	0.0%
Italy	11.6%	10.3%	12.7%	15.8%
Spain	5.5%	7.2%	11.3%	24.9%
United Kingdom	17.0%	15.5%	17.5%	27.3%

Note: Data corrected for fraction of firms not answering: 2.71% for all firms surveyed, 11.33% for Austria, 2.73% for France, 3.12% for Germany, 8.48% for Hungary, 3.14% for Italy, 0.42% for Spain and 2.89% for UK.

## 4. Internationalisation

We next explore whether the internationalisation of a firm may explain its performance. We use two measures: export activity and foreign ownership.

### Export Activity

Exporters may be more profitable than non-exporters because of a selection effect. As argued by Melitz (2003), if there is a fixed cost to accessing foreign markets, only the most productive (and profitable) firms will be able to export.

Table 3 shows that Spain is below the survey average in share of firms exporting: 61.1 percent of Spanish firms export while the survey average is 64.4 percent. Spain, France, Germany and the UK are the countries with the smallest share of firms exporting (below survey average).

**Table 3: Share of firms by export status for all countries surveyed (2008-2009)**

	Non-Exporter	Exporter
Survey average	35.6%	64.4%
Austria	26.8%	73.2%
France	41.5%	58.5%
Germany	40.0%	60.0%
Hungary	32.7%	67.3%
Italy	27.8%	72.2%
Spain	38.9%	61.1%
United Kingdom	36.0%	64.0%

Note: Data corrected for fraction of firms not answering: 0.01% for all firms surveyed, 0% for Austria, 0% for France, 0% for Germany, 0% for Hungary, 0.03% for Italy, 0% for Spain and 0% for the UK.

*Table 4* shows the share of firms by change in profit margin and export status for all the countries surveyed. The positive relationship between export status and changes in profitability does not hold across countries, but interestingly, the underlying pattern that emerges is one where changes in profitability correlate with the share of exports: in countries with a smaller share of exporting firms (Spain, France, Germany and the United Kingdom), exporters do better than non exporters. By contrast, in countries with a larger share of exporting firms (Austria, Hungary and Italy), exporters do worse than non exporters.

**Table 4: Share of firms by change in profit margin for different export status and all countries surveyed (2008-2009)**

Profit margin decrease

	Non-Exporter	Exporter
Survey average	50.6%	52.5%
Austria	44.9%	47.8%
France	53.8%	50.7%
Germany	38.1%	45.7%
Hungary	52.3%	55.4%
Italy	51.3%	54.2%
Spain	64.6%	62.9%
United Kingdom	52.5%	47.1%

Constant profit margin

	Non Exporter	Exporter
Survey Average	39.5%	35.1%
Austria	31.0%	33.7%
France	34.3%	35.1%
Germany	53.4%	40.7%
Hungary	36.2%	40.4%
Italy	36.8%	34.9%
Spain	30.1%	28.5%
United Kingdom	34.5%	34.0%

### Profit margin increase

	Non Exporter	Exporter
Survey average	9.9%	12.5%
Austria	24.1%	18.5%
France	11.9%	14.2%
Germany	8.5%	13.5%
Hungary	11.5%	4.2%
Italy	11.9%	10.9%
Spain	5.3%	8.6%
United Kingdom	13%	18.9%

Note: Data corrected for fraction of firms not answering: 2.71% for all firms surveyed, 11.33% for Austria, 2.73% for France, 3.12% for Germany, 8.48% for Hungary, 3.14% for Italy, 0.42% for Spain and 2.89% for the UK.

### Foreign Ownership

The ownership of a firm may also determine its internationalisation. Obviously, firms that are not part of a group are not foreign owned, while those that do belong to a group can be nationally or foreign owned. Table 5 shows the share of firms by nationality status, uncovering large cross-country differences. In Spain, Hungary, Germany and Italy, more than 80 percent of firms do not belong to a group. At the other end of the scale, we find France with 69.4 percent of firms not belonging to a group, and the UK and Austria with 74.3 percent and 77.4 percent of firms not belonging to a group, respectively.

**Table 5: Group ownership and nationality by country (2008-2009)**

	National group	Foreign group	No group
Survey average	11.2%	6.6%	82.3%
Austria	8.5%	14.1%	77.4%
France	20.6%	10.1%	69.4%
Germany	7.3%	5.1%	87.6%
Hungary	5.1%	12.6%	82.3%
Italy	11.3%	3.0%	85.7%
Spain	10.7%	4.2%	85.1%
United Kingdom	11.2%	14.5%	74.3%

Table 6 shows changes in profit margin by group ownership, comparing all the surveyed countries. One clear pattern arises: with only the exception of Austria and Germany, being part of a foreign group improves the prognosis. Indeed, a smaller share of firms belonging to a foreign group reduce their profit margin than those not belonging to a group or belonging to a national group, and a larger share of firms belonging to a foreign group increase their profit margin. The comparison of firms not belonging to a group with those belonging to a national group is heterogeneous. While in Spain nationally-owned groups perform better than firms not belonging to a group, in France, for instance, the evidence is the opposite.

**Table 6: Share of firms by change in profit margin for group ownership and nationality, for all countries surveyed (2008-2009)**

Profit margin decrease

	National group	Foreign group	No group
Survey average	52.3%	44.9%	52.2%
Austria	54.2%	66.2%	42.5%
France	55.3%	43.2%	52.2%
Germany	41.3%	38.6%	42.8%
Hungary	60.8%	29.5%	57.0%
Italy	48.5%	44.9%	54.4%
Spain	64.8%	43.6%	64.2%
United Kingdom	51.4%	49.1%	48.5%

### Constant Profit Margin

	National group	Foreign group	No group
Survey average	33.2%	36.1%	37.0%
Austria	40.5%	19.5%	34.9%
France	35.4%	41.1%	33.9%
Germany	37.0%	41.9%	46.8%
Hungary	39.2%	70.5%	36.1%
Italy	34.4%	33.8%	35.6%
Spain	25.1%	40.8%	29.0%
United Kingdom	31.8%	26.5%	35.7%

### Profit margin increase

	National group	Foreign group	No group
Survey average	14.4%	19.0%	10.7%
Austria	5.3%	14.3%	22.6%
France	9.3%	15.7%	13.9%
Germany	21.7%	19.5%	10.3%
Hungary	0.0%	0.0%	7.0%
Italy	17.1%	21.3%	10.1%
Spain	10.1%	15.6%	6.7%
United Kingdom	16.7%	24.4%	15.7%

Note: Data corrected for fraction of firms not answering: 2.71% for all firms surveyed, 11.33% for Austria, 2.73% for France, 3.12% for Germany, 8.48% for Hungary, 3.14% for Italy, 0.42% for Spain and 2.89% for the UK.

## 5. Age

Existing empirical evidence (eg Dunne, Roberts and Samuelson, 1988) points towards the age of the firm being negatively related to its survivability. Table 7 reports the distribution of firms by age and country surveyed, displaying significant cross-country heterogeneity. (Start-up firms are less than three years old, young firms are four to 15 years old, and mature firms are more than 15 years old.) One surprising observation is that most

Spanish firms are young; the data show that only a small fraction of firms are start-ups (1.7 percent) and also, relative to other countries, a small fraction of firms are mature (68.5 percent).

**Table 7: Share of firms by age for all surveyed countries (2008-2009)**

	Start-up	Young	Mature
All	2.4%	24.2%	73.4%
Austria	3.7%	23.3%	73.0%
France	2.4%	20.2%	77.4%
Germany	2.8%	20.4%	76.7%
Hungary	2.4%	50.5%	47.1%
Italy	2.0%	23.7%	74.3%
Spain	1.7%	29.7%	68.5%
United Kingdom	3.0%	24.8%	72.2%

Note: Data corrected for fraction of firms not answering: 0.24% for all firms surveyed, 0.21% for Austria, 0% for France, 0% for Germany, 0% for Hungary, 0.40% for Italy, 0% for Spain and 1.07% for the UK.

Table 8 shows the share of firms by change in profit margin for the different age categories for all the countries surveyed. There are no clear patterns across countries. Young firms do not appear to be systematically better or worse performers than older firms. Nonetheless, Spanish firms mark some differences. Spanish start-up firms have the largest share of firms that don't have decreasing profit margins. However, most of those firms are keeping their profit margins constant, rather than increasing them.

**Table 8: Share of firms by change in profit margin for all ages and countries surveyed (2008-2009)**

Profit margin decrease

	Start-up	Young	Mature
Survey average	45.6%	48.7%	53.1%
Austria	48.4%	47.0%	47.1%
France	38.1%	47.2%	53.6%
Germany	44.4%	38.3%	43.6%
Hungary	64.1%	57.8%	50.9%
Italy	52.2%	48.7%	55.2%
Spain	36.7%	59.6%	65.8%
United Kingdom	48.0%	44.5%	50.5%

Constant profit margin

	Start-up	Young	Mature
Survey average	37.4%	37.9%	36.1%
Austria	33.9%	38.7%	31.1%
France	42.6%	38.8%	33.6%
Germany	37.3%	48.7%	45.6%
Hungary	35.9%	40.2%	38.7%
Italy	35.9%	35.1%	35.3%
Spain	51.3%	32.2%	27.3%
United Kingdom	26.6%	36.7%	33.7%

### Profit margin increase

	Start-up	Young	Mature
Survey average	17.0%	13.4%	10.8%
Austria	17.8%	14.3%	21.8%
France	19.3%	14.0%	12.8%
Germany	18.4%	13.0%	10.9%
Hungary	0.0%	2.0%	10.5%
Italy	11.9%	16.3%	9.5%
Spain	12.0%	8.2%	6.9%
United Kingdom	25.3%	18.8%	15.8%

Note: Data corrected for fraction of firms not answering. 2.85% for all firms surveyed, 11.33% for Austria, 2.73% for France, 3.12% for Germany, 8.48% for Hungary, 3.50% for Italy, 0.42% for Spain and 3.39% for the UK.

## 6. Innovation

Table 9 shows the share of firms engaged in process and/or product innovation. Maybe surprisingly, Spain is has the second largest share of firms that are innovating. In Spain, 68.7 percent of firms report that they are innovators, while the survey average is 64.4 percent.

**Table 9: Innovation status by country (2008-2009)**

	Innovator	Non Innovator
Survey average	64.4%	35.6%
Austria	74.2%	25.8%
France	58.5%	41.5%
Germany	62.5%	37.5%
Hungary	54.4%	45.6%
Italy	66.5%	33.5%
Spain	68.7%	31.3%
United Kingdom	65.1%	34.9%

Note: Data corrected for fraction of firms not answering: 0.01% for all firms surveyed, 0% for Austria, 0% for France, 0% for Germany, 0% for Hungary, 0.03% for Italy, 0 % for Spain and 0% for the UK.

Table 10 shows the change in profit margin by innovation status for all the countries surveyed. It uncovers a clear systematic pattern. While for those firms with worst performance (decreasing profit margins), the innovation status plays no role, when considering that don't have a declining performance (increasing or keeping constant their profit margins), the innovation status matters positively. With the exception of Hungary (a country that also has the smallest share of firms innovating), in all the countries, innovation has a positive relationship with increases in profit margin. In Austria, for example, 24.2 percent of innovators increase their profit margin, while only 3.7 percent of non-innovators increase them.

**Table 10: Share of firms by change in profit margin for all innovation status and all countries surveyed (2008-2009)**

Profit margin decrease

	Innovator	Non Innovator
Survey average	51.8%	52.0%
Austria	46.5%	49.3%
France	52.0%	52.1%
Germany	43.4%	41.1%
Hungary	61.0%	47.2%
Italy	52.4%	55.8%
Spain	63.4%	63.9%
United Kingdom	47.1%	52.4%

Constant profit margin

	Innovator	Non Innovator
Survey average	34.7%	40.0%
Austria	29.3%	47.0%
France	32.4%	38.2%
Germany	43.2%	50.5%
Hungary	33.2%	46.6%
Italy	34.3%	37.7%
Spain	28.2%	31.2%
United Kingdom	33.6%	35.3%

### Profit margin increase

	Innovator	Non Innovator
Survey average	13.5%	8.0%
Austria	24.2%	3.7%
France	15.6%	9.8%
Germany	13.4%	8.4%
Hungary	5.8%	6.2%
Italy	13.3%	6.5%
Spain	8.4%	4.9%
United Kingdom	19.3%	12.3%

Note: Data corrected for fraction of firms not answering: 2.71% for all firms surveyed, 11.33% for Austria, 2.73% for France, 3.12% for Germany, 8.48% for Hungary, 3.14% for Italy, 0.42% for Spain and 2.89% for the UK.

## 7. Sectors

We next explore the extent to which the crisis has been sector-specific. Table 11 reports the share of firms by sector for all the countries surveyed. Not surprisingly, there is substantial country-level heterogeneity, although there are no large differences in specialisation across countries. Spain, in particular, is close to the survey average in all the sectors.

**Table 11: Share of firms by sector for all surveyed countries (2008-2009)**

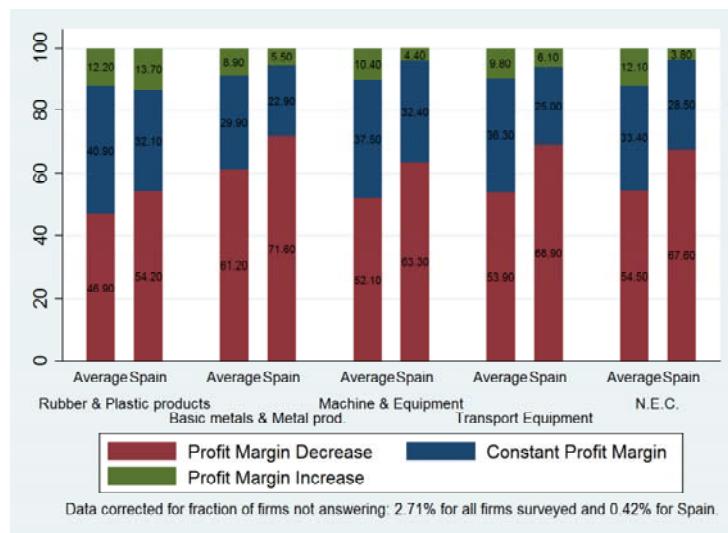
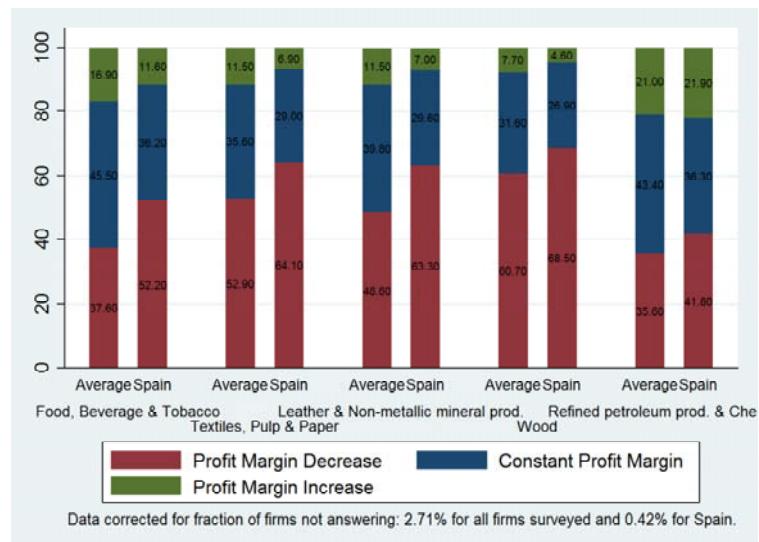
	Food product, beverage and tobacco	Textiles, textile products, pulp, paper and paper products	Leather, leather products, other non metallic mineral product, electrical and optical equipment	Wood and wood products	Chemicals, chemical products and man-made fibers & coke, refined petroleum products and nuclear fuel
All	13.7%	14.7%	16.5%	4.4%	3.0%
Austria	19.8%	10.8%	13.2%	7.9%	2.6%
France	18.3%	14.5%	13.4%	4.5%	3.6%
Germany	18.3%	10.8%	17.9%	3.9%	2.6%
Hungary	18.0%	15.5%	14.7%	5.7%	2.4%
Italy	8.6%	16.9%	18.1%	4.0%	2.6%
Spain	14.3%	15.3%	16.1%	5.0%	3.5%
United Kingdom	8.3%	18.2%	14.6%	4.8%	3.8%

	Rubber and plastic products	Basic metals and fabricated metal products	Machine and equipment n.e.c.	Transport Equipment	N.E.C.
All	5.3%	21.6%	10.9%	3.0%	6.8%
Austria	4.0%	17.2%	11.4%	2.3%	10.7%
France	5.6%	22.1%	9.1%	3.1%	5.9%
Germany	4.9%	20.9%	13.7%	2.4%	4.5%
Hungary	7.0%	18.6%	9.3%	2.9%	5.9%
Italy	4.9%	23.4%	11.4%	2.7%	7.5%
Spain	4.7%	21.4%	7.5%	3.4%	8.6%
United Kingdom	7.4%	19.9%	10.4%	4.4%	8.2%

Figure 3 reports the performance of Spanish firms relative to the survey average. Table A1 in the Appendix disaggregates the data by country. In all the sectors, the share of firms decreasing their profit margin in Spain is

larger than the survey average. Nonetheless, the worse performance of Spanish firms is exacerbated in some sectors; see pulp, textiles and paper production, leather and non-metallic production, and transport equipment.

**Figure 3: Share of firms by change in profit margin for all sectors, for Spain and survey average (2008-2009)**



## 8. Profit margins and credit access

The current crisis has been characterised by a severe credit crunch. Firms may have suffered because of a lack of access to credit. As shown in Table 12, in Spain, compared with other EU countries, most firms did request credit. In fact, only 8.8 percent of Spanish firms did not apply for credit, compared with 27 percent for all the European firms surveyed. This may reflect the deeper crisis in Spain, and the relatively high indebtedness of the private sector.

**Table 12: Share of firms that applied for credit by country (2008-2009)**

	Yes, successfully	Yes, unsuccessfully	No
All	50.5%	22.5%	27.0%
Austria	62.8%	8.3%	28.9%
France	44.7%	22.6%	32.7%
Germany	52.0%	11.6%	36.4%
Hungary	49.8%	26.2%	23.9%
Italy	48.8%	30.5%	20.7%
Spain	62.6%	28.6%	8.8%
United Kingdom	31.2%	2.3%	66.5%

Note: Data corrected for fraction of firms not answering: 81.68% for all firms surveyed, 85.48% for Austria, 91.96% for France, 87.82% for Germany, 88.32% for Hungary, 75.41% for Italy, 70.16% for Spain and 80.63% for the UK.

**Table 13: Share of firms successful in the request of credit by country (2008-2009)**

	Successfully	Unsuccessfully
All	60.1%	30.9%
Austria	88.3%	11.7%
France	66.4%	33.6%
Germany	81.8%	18.2%
Hungary	65.5%	34.5%
Italy	61.5%	38.5%
Spain	68.6%	31.4%
United Kingdom	93.2%	6.8%

Note: Data has been corrected for fraction not answering: 86.56% for all firms surveyed, 89% for Austria, 94.48% for France, 92.06% for Germany, 91.19% for Hungary, 80.40% for Italy, 72.56% for Spain and 93.51% for the UK.

To better understand the credit crunch, it is useful to compute the firms that were unsuccessful in getting credit as a share of those that applied for credit. As reported in Table 13, Spanish firms only fared marginally worse: 41.8 percent were denied credit in Spain, compared with 38.7 percent in Europe. The main difference between Spain and Europe, therefore, is the greater reliance on credit markets of Spanish firms.

Table 14 reports, for the case of Spain, the credit application share and outcome by number of employees. As we increase firm size, the probability of applying for credit and being successful at receiving credit increases. This could be interpreted as an important indicator of why large Spanish firms have a better prognosis. Table 15 supports this reasoning. It shows how a request for credit and/or the obtaining of credit is likely to affect profit margins. In all the countries, firms that were successful were more likely to increase their profit margin, while firms that were unsuccessful were less likely. In Spain, for example, 9.4 percent of all firms having successfully been granted credit had an increase in profit margin, while of those that were unsuccessful, only 6.6 percent did. Interestingly, those firms not having requested credit had the lowest probability of having an increase in profit margin. This may indicate that firms understand that credit will not be given to them and therefore do not request it. Two atypical cases are Hungary and Austria. In both countries none of firms surveyed had requested credit and were denied it. Moreover, in Hungary, all firms requested credit.

**Table 14: Share of firms that applied for credit by size class in Spain (2008-2009)**

	Yes, successfully	Yes, unsuccessfully	No
10 – 19 employees	65.9%	25.9%	8.3%
20 – 49 employees	60.1%	30.9%	9.1%
50 – 249 employees	61.6%	29.7%	8.7%
250 or more employees	78.1%	10.8%	11.1%

Note: Data has been corrected for fraction not answering, 70.16% for Spain.

**Table 15: Share of firms experiencing a change in profit margin over countries according to access to credit (2008-2009)**

Profit margin decreased

	Yes, successfully	Yes, unsuccessfully	No
All	60.3%	65.7%	51.4 %
Austria	53.1%	100%	47.1 %
France	52.2%	53.3%	45.8 %
Germany	60.7%	65.0%	53.8 %
Hungary	28.0%	60.8%	37.9 %
Italy	57.6%	60.0%	49.9 %
Spain	68.1%	75.9%	64.4 %
United Kingdom	46.8%	23.6%	49.0 %

Constant profit margin

	Yes, successfully	Yes, unsuccessfully	No
All	27.7%	21.6%	37.0%
Austria	37.9%	0.0%	31.9%
France	29.2%	14.3%	25.4%
Germany	23.5%	9.5%	33.3%
Hungary	44.9%	39.2%	62.1%
Italy	32.3%	25.9%	45.4%
Spain	22.5%	17.5%	29.9%
United Kingdom	31.2%	56.1%	35.7%

### Profit margin increased

	Yes, successfully	Yes, unsuccessfully	No
All	12.0%	12.7%	11.6%
Austria	9.0%	0.0%	21.0%
France	18.7%	32.5%	28.9%
Germany	15.8%	25.5%	12.9%
Hungary	27.1%	0.0%	0.0%
Italy	10.0%	14.1%	4.7%
Spain	9.4%	6.6%	5.6%
United Kingdom	21.9%	20.3%	15.3%

Note: Data has been corrected for fraction not answering: 81.97% for all firms surveyed, 87.68% for Austria, 93.87% for France, 89.47% for Germany, 87.88% for Hungary, 76.76% for Italy, 70.51% for Spain and 79.98% for the UK.

## 9. Conclusions and policy implications

We have explored the underlying cross-country structural characteristics of the best and worst performing firms in 2008-2009 with the goal of finding systematic patterns and singling out the differences that set Spanish firms apart. The data suggest that the performance of firms in different countries can be accounted for by a few structural characteristics such as size, export status, foreign ownership and innovation activity. In particular, there is clear evidence that the unevenness of the firm size distribution matters for the relative performance of small versus large firms. In economies with a relatively low number of large firms, resulting in high concentration indexes, small firms perform badly while large firms fare better. As a result, the poor performance of Spain appears to be mainly accounted for by the predominance of small firms.

An immediate policy implication would arise from an evaluation of distortions that affect the size distribution of establishments, favouring the creation of small firms and limiting their growth into medium-sized firms. Recent empirical and theoretical work shows that such policies can lead to misallocation of resources and have significant effects on aggregate productivity (eg Restuccia and Rogerson, 2008, Guner, Ventura and Xu, 2008, and Hsieh and Klenow, 2009).

## **10. Caveats**

We must acknowledge seven caveats in our analysis. First, changes in profit margin are only available for those reporting firms that are price setters, in contrast to those whose prices are set by the market or fixed. (See Table A2 in the Appendix for shares of firms.) Second, the data are profit margin changes and not levels. Although one may argue that, in an economic downturn, it may be more likely that the firm that has increased its profit margin is more profitable, the empirical relationship remains unclear. The importance of this caveat is somewhat lessened, however, by our focus on cross-country comparisons. Third, our data contain categorical information and thus are blind to quantitative differences across countries. Fourth, since we only have data for 2008-2009, we must exercise caution in interpreting the change in profit margin as having a different pattern or behaviour than in neighbouring years. Five, our results are based on a survey of 15,000 firms. Although the sample is highly representative, it may not be equally representative for all the variables and for all the cuts of data. Six, given that the survey only covers the manufacturing sector, one should exercise caution when extrapolating the findings to the entire economy. Last, this report is limited to using descriptive statistics and exploring correlations between variables. No causal relationships can be established, and findings should be interpreted as indicators.

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### The EFIGE Project

European Firms in a Global Economy (EFIGE) is a research project, funded by the European Community's Seventh Framework Programme/Socioeconomic Sciences and Humanities (FP7/2007-2013). The project aims to analyse the competitive performance of European firms in a comparative perspective.

The EU-EFIGE/Bruegel-UniCredit Survey is the backbone of the whole project: it is the first harmonised cross-country dataset containing quantitative as well as qualitative information on around 150 items for a representative sample of some 15,000 manufacturing firms in the following countries: Austria, France, Germany, Hungary, Italy, Spain and the United Kingdom. These items cover international strategies, R&D, innovation, employment, financing and the organisational activities of firms, before and after the financial crisis.

This Country Report presents preliminary evidence on the relation between firm characteristics and their performance during the crisis, as measured by the changes in their profit margins. It analyses the heterogeneity of firm performance across different countries, with a particular focus on Spain.

## APPENDIX

**Table A1: Share of firms by change in profit margin for all sectors and countries surveyed [2008-2009]**

Sector 1	Manufactures of food product, beverage and tobacco
Sector 2	Manufacture of textiles, textile products, pulp, paper and paper products
Sector 3	Manufacture of leather, leather products, other non metallic mineral product, electrical and optical equipment
Sector 4	Manufacture of wood and wood products
Sector 5	Manufacture of coke; refined petroleum products and nuclear fuel Manufacture of chemicals, chemical products and man-made fibers
Sector 6	Manufacture of rubber and plastic products
Sector 7	Manufacture of basic metals and fabricated metal products
Sector 8	Manufacture of machine and equipment n.e.c.
Sector 9	Manufacture of transport equipment
Sector 10	Manufacture n.e.c

### Profit margin decrease

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5
Survey average	37.6%	52.9%	48.6%	60.7%	35.6%
Austria	37.8%	31.5%	51.5%	44.3%	49.6%
France	43.7%	55.4%	49.7%	59.9%	37.3%
Germany	26.9%	45.6%	37.4%	47.6%	26.7%
Hungary	51.5%	30.0%	64.4%	88.9%	75.0%
Italy	31.6%	51.5%	51.6%	66.0%	31.5%
Spain	52.2%	64.1%	63.3%	68.5%	41.8%
United Kingdom	37.8%	52.9%	39.8%	57.5%	39.8%

	Sector 6	Sector 7	Sector 8	Sector 9	Sector 10
Survey average	46.9%	61.2%	52.1%	53.9%	54.5%
Austria	40.0%	63.4%	57.8%	77.9%	29.6%
France	47.2%	59.1%	50.0%	59.7%	54.0%
Germany	42.8%	52.8%	48.4%	35.4%	45.4%
Hungary	58.0%	53.1%	73.3%	50.0%	45.4%

Italy	43.2%	64.9%	54.5%	39.9%	55.3%
Spain	54.2%	71.6%	63.3%	68.9%	67.6%
United Kingdom	49.8%	57.1%	40.5%	74.7%	43.8%

Constant profit margin

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5
Survey average	45.5%	35.6%	39.8%	31.6%	43.4%
Austria	37.8%	46.3%	24.6%	34.1%	50.4%
France	42.0%	32.7%	37.5%	30.7%	44.0%
Germany	57.3%	41.2%	52.3%	45.7%	56.2%
Hungary	28.7%	60.0%	30.4%	0.0%	25.0%
Italy	47.2%	36.7%	37.9%	26.0%	43.4%
Spain	36.2%	29.0%	29.6%	26.9%	36.3%
United Kingdom	35.2%	33.7%	37.9%	34.5%	36.9%

	Sector 6	Sector 7	Sector 8	Sector 9	Sector 10
Survey average	40.9%	29.9%	37.5%	36.3%	33.4%
Austria	50.0%	25.1%	20.0%	22.1%	40.9%
France	39.0%	29.2%	41.1%	32.2%	18.8%
Germany	41.0%	38.6%	42.8%	41.2%	45.4%
Hungary	42.0%	46.9%	26.7%	50.0%	54.6%
Italy	47.5%	27.2%	35.3%	53.5%	31.9%
Spain	32.1%	22.9%	32.4%	25.0%	28.5%
United Kingdom	41.0%	27.9%	35.6%	21.0%	41.3%

Profit margin increase

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5
Survey average	16.9%	11.5%	11.5%	7.7%	21.0%
Austria	24.3%	22.2%	23.9%	21.6%	0.0%
France	14.2%	11.9%	12.8%	9.4%	18.7%
Germany	15.8%	13.2%	10.3%	6.7%	17.1%
Hungary	19.7%	10.0%	5.2%	11.1%	0.0%

Italy	21.2%	11.8%	10.5%	8.0%	25.1%
Spain	11.6%	6.9%	7.0%	4.6%	21.9%
United Kingdom	27.0%	13.5%	22.3%	8.0%	23.3%

	Sector 6	Sector 7	Sector 8	Sector 9	Sector 10
Survey average	12.2%	8.9%	10.4%	9.8%	12.1%
Austria	10.0%	11.5%	22.2%	0.0%	29.6%
France	13.8%	11.7%	8.9%	8.1%	27.2%
Germany	16.2%	8.6%	8.7%	23.3%	9.2%
Hungary	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	9.3%	7.8%	10.1%	6.6%	12.7%
Spain	13.7%	5.5%	4.4%	6.1%	3.8%
United Kingdom	9.2%	15.0%	23.9%	4.3%	14.9%

Note: Data corrected for fraction of firms not answering: 2.71% for all firms surveyed, 11.33% for Austria, 2.73% for France, 3.12% for Germany, 8.48% for Hungary, 3.14% for Italy, 0.42% for Spain and 2.89% for the UK.

**Table A1: Price setting behavior by surveyed country (2008-2009)**

	Margin over total cost	Margin over variable cost	Fixed by the market	Regulated	Other
Survey average	41.1 %	15.0%	36.9%	3.5%	3.6%
Austria	27.1 %	15.2%	46.3%	5.1%	6.4%
France	40.4 %	14.5%	41.2%	1.8%	2.1%
Germany	35.7 %	16.6%	39.3%	5.0%	3.3%
Hungary	22.0 %	10.7%	56.3%	0.6%	10.3%
Italy	43.1 %	13.1%	36.2%	3.6%	4.0%
Spain	55.9 %	10.9%	27.2%	2.9%	3.1%
United Kingdom	37.5 %	22.9%	33.5%	2.7%	3.4%

Note: Data corrected for fraction of firms not answering: 1.16% for all firms surveyed, 2.70% for Austria, 0% for France, 1.24% for Germany, 0% for Hungary, 0.03% for Italy, 0% for Spain and 5.7% for the UK.