

## THE COMPETITIVENESS OF THE SPANISH ECONOMY A BIRD'S-EYE VIEW OF THE FOUR LARGEST EURO AREA ECONOMIES

Ramon Xifré Oliva

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# THE COMPETITIVENESS OF THE SPANISH ECONOMY A BIRD'S-EYE VIEW OF THE FOUR LARGEST EURO AREA ECONOMIES

Ramon Xifré Oliva<sup>1</sup>

## Abstract

The competitiveness of the Spanish economy has displayed an ambivalent evolution since 1999: its price-cost competitiveness has deteriorated and its external competitiveness has improved. This paper provides a bird's-eye view of several facts that may help explain this ambivalence, some quite idiosyncratic to Spain and some likely to be of more general relevance. In particular, we argue that the dual evolution of Spanish competitiveness is better understood if microeconomic elements, like firm size and product quality upgrading, are taken on board to accompany traditional macro indicators of competitiveness. The paper also addresses the policy implications of these findings, stressing the importance of structural economic policy reforms that have direct impact on firms' demography.

JEL Classification: D24, E20, F12, L11, L15

**Keywords:** external and price-cost competitiveness, firm size, export quality.

<sup>1</sup> ESCI - Universitat Pompeu Fabra and PPSRC - IESE Business School. The author thanks the fellow members of the European Central Bank CompNet Research Network for their input and feedback. Contact information: ESCI - UPF, Pg. Pujades 1, 08003 Barcelona (Spain). E-mail [ramon.xifre@esci.upf.edu](mailto:ramon.xifre@esci.upf.edu).

# THE COMPETITIVENESS OF THE SPANISH ECONOMY A BIRD'S-EYE VIEW OF THE FOUR LARGEST EURO AREA ECONOMIES

## Introduction

The competitiveness of an economy is generally considered to be a key economic policy priority. In the context of the economic and financial crisis in the European Union, this issue is even more central and the official European Commission position is that “A major weakness of the pre-crisis surveillance arrangements was the lack of systematic surveillance of (...) competitiveness developments,” (European Commission, 2012), while in words of one of the most relevant political leaders of the continent, “The euro crisis as it is today [is] a debt crisis, a competitiveness crisis,” (Merkel, 2012).

However, beyond its prominence in the policy debate, there is no univocal way of understanding the competitiveness of an economy, but rather there are two basic approaches: internal and external competitiveness (terminology taken from Draghi, 2012). This distinction is not rhetoric but rather has plenty of policy relevance. In the particular case of the Spanish economy, the fourth largest in the Euro Area, recent analyses have shown that both concepts of competitiveness have evolved in opposite directions in Spain since the introduction of the euro in 1999. By most standards of measurement, the internal (price-cost) competitiveness has deteriorated and the external (export-related) has improved.

This dual behavior complicates the search for optimal economic policies to put Spain back on track and, more widely, to stabilize the Euro Area because it represents a challenge to the prevailing view. The widely accepted narrative is that Spain had long been suffering from acute competitiveness problems, which were masked by massive credit inflows. Those capital entries made up for the weak competitive potential of the economy and fuelled construction-related growth during the pre-crisis period. Once they ceased, the competitiveness deficit of Spain became apparent.

Given this framework, should the competitiveness loss in Spain be a rotund, unambiguous and comprehensive phenomenon, then the path forward would necessarily entail a reduction in costs and a contraction in margins across the board. However, the administration of this univocal treatment strategy risks damaging the healthy parts of the Spanish economy, which are oriented toward the production of tradable goods and services: presumably, the very same portion of the Spanish productive fabric that is at the core of the “competitiveness paradox.”

The main purpose of this paper is to examine the evolution of the competitiveness of the Spanish economy in detail from these two angles, and to provide several partial attempts at explaining this dual behavior. In particular, the paper is focused on exploring the role that the interaction of macroeconomic and microeconomic (firm-level) factors may play in explaining this dual behavior. This, of course, matters for providing sound policy prescriptions on how to improve economic performance, with the aim of closing the competitiveness gaps within the Euro Area and the European Union.

In terms of methodology, this paper attempts to review the available evidence on the issue critically and to supplement it with original results. The ultimate goal is to elaborate a structured discourse that combines a micro and macro vision of competitiveness. In other words, our aim is to provide the key micro and macro stylized facts that may explain the recent evolution of the competitiveness of the Spanish economy in the context of the four largest economies in the Euro Area (Germany, France, Italy and Spain itself) or EMU4.

The paper is organized as follows: Section 2 presents a succinct revision of the competitiveness concepts and examines whether they are consistent when applied to the EMU4 countries. Section 3 is focused on examining the role that four non-price competitiveness factors may play in explaining the dual behavior of competitiveness in Spain. Finally, Section 4 presents the conclusions.

## **2. The Consistency of the Competitiveness Measures for EMU4 Countries Since 1999**

### **2.1 Basic Evidence**

The competitiveness trends in the Euro Area economies since 1999 have been extensively analyzed (see for instance European Central Bank 2005, Di Mauro and Forster 2008, Di Mauro *et al.* 2010, European Commission 2010c and European Central Bank 2012). A common theme that arises from this literature is the difficulty to assess the competitiveness developments in the Euro Area in a unitary way.

Part of the reason for this is that there is no univocal concept of an economy’s competitiveness, though some recent works have provided a survey of its most popular notions or dimensions (in addition to the above references, which do just that, see also De Grauwe 2010). In the most fundamental terms, there are two clear, distinct concepts or dimensions of the competitiveness of an economy: external and internal (Draghi 2012). The external competitiveness of an economy is analogous to the case of a firm – outperforming others in sales in a given market. In contrast, the internal competitiveness, also known (and used interchangeably in this paper) as price-cost competitiveness, is a more general concept, related to all sorts of determinants of an economy’s

productivity – which would include the availability of all types of capital, sound institutions, efficient regulations and innovation and management capacities (see Syverson 2011).

However, beyond the complexity of the competitiveness concept in general, the measurement of the competitiveness in the four largest Euro Area (EMU4) economies has its own idiosyncratic specificities. In this section, we explicitly analyze the consistency of several competitiveness measurements in the EMU4 countries. We will first examine the internal and external competitiveness evolution using headline indicators and then broaden the scope by taking into account complementary measurements of both dimensions.

In terms of price-cost competitiveness, the evolution in each of the four EMU4 countries is represented in Figure 1 by the Real Effective Exchange Rate (REER), based on Unit Labor Costs (ULC) for the total economy, as calculated by the European Commission (European Commission 2012). For each country, the series are relative in two aspects: they are computed in relative terms with respect to the rest of the Euro Area countries and they are normalized in 1999 terms. According to the European Commission, the REER captures “the movement in the prices or costs of production of domestically produced goods relative to the prices or costs of goods produced by competitor countries” (European Commission 2012). As we are interested in the relative performance of Euro Area economies, it seems natural to restrict the set of competitor countries to Euro Area countries only. The REER allows for considering different price or cost deflators; the ULC is one of the most popular ones, as it takes both productivity growth and labor-cost changes into account. As is well known, the relative ULC can be interpreted as the labor cost per unit of output, relative to a set of competitor countries. Accordingly, for a group of countries with the same currency, like the EMU4, increases in the ULC-based REER of a given country constitute evidence of the appreciation of the domestic production due to higher labor costs, lower productivity growth or a combination of both. Other things equal, this would make the country’s exports relatively more expensive and, therefore, would result in a reduction of its sales abroad. The baseline theory prediction is that a worsening in the internal dimension of competitiveness would be transmitted to the external one.

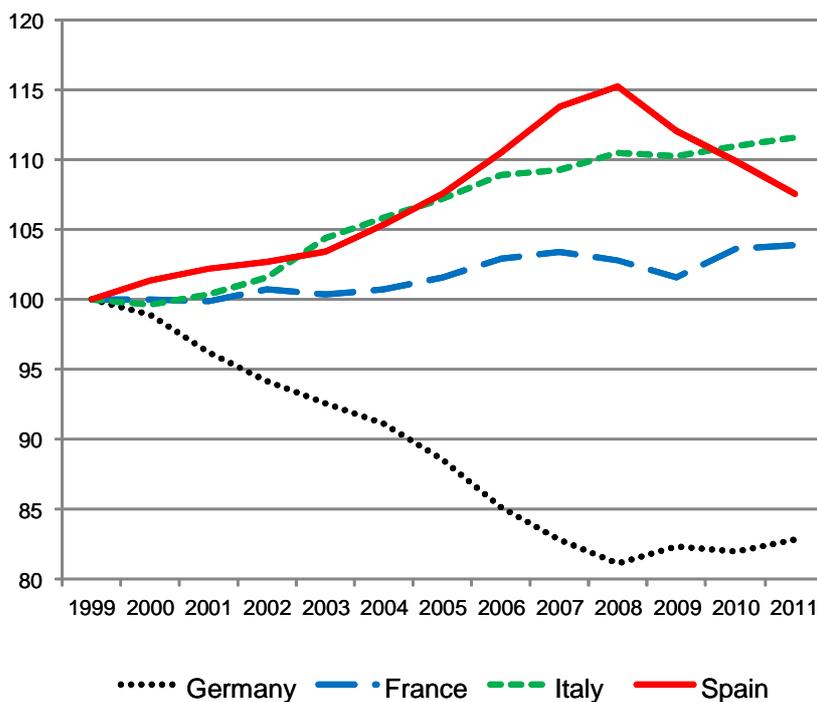
Under the ULC-based REER, the German economy is the only one in the EMU4 that has gained internal competitiveness since 1999. The competitiveness of the German economy improved year after year between 1999 and 2008, and has remained stable since then, resulting in an accumulated 17% REER depreciation for the period 1999-2011. The worsening of price-cost competitiveness in the other three large EMU4 countries is quite heterogeneous in terms of pace and trajectory. Spain is the country where the competitiveness loss peaked, with a 15% REER appreciation in 2008, but it is equally distinguished as the sole country where the competitiveness loss trend clearly reversed, so that by 2011 it had recovered nearly half of that total internal competitiveness loss. The cases of France and Italy are similar in that they show a steady trajectory of competitiveness loss, but do differ in the rapidity of deterioration, with the Italian pace barely tripling the French one, leading to accumulated REER appreciations of 12% and 4% respectively by 2011.

In terms of external competitiveness, we will measure the EMU4 countries’ performance by their share in the Euro Area exports of goods to the world, normalized in 1999 terms. The four series appear in Figure 2. Although this is a relatively standard choice for an external competitiveness measure, it is worth briefly discussing the reasons that justify it. On the one hand, it is clear that the results would not change if one were to compute the country’s share in total world trade, instead of working with the country’s share in Euro Area exports. The former is the combination of the latter with the change of the Euro Area share in global trade, which does not depend on the

individual country. On the other hand, one could argue that the external competitiveness is better captured by the combined trade of goods and services, rather than by goods alone. We will discuss the issue later on, but two comments are in order: first, on average, the exports of goods account for approximately three-quarters of the total foreign trade in EMU4 countries; second, in the country where trade in services is more of an issue, Spain, the most prominent service export sector is tourism, whose competitiveness conditions appear to be quite specific and only loosely related to the overall economy competitiveness developments.

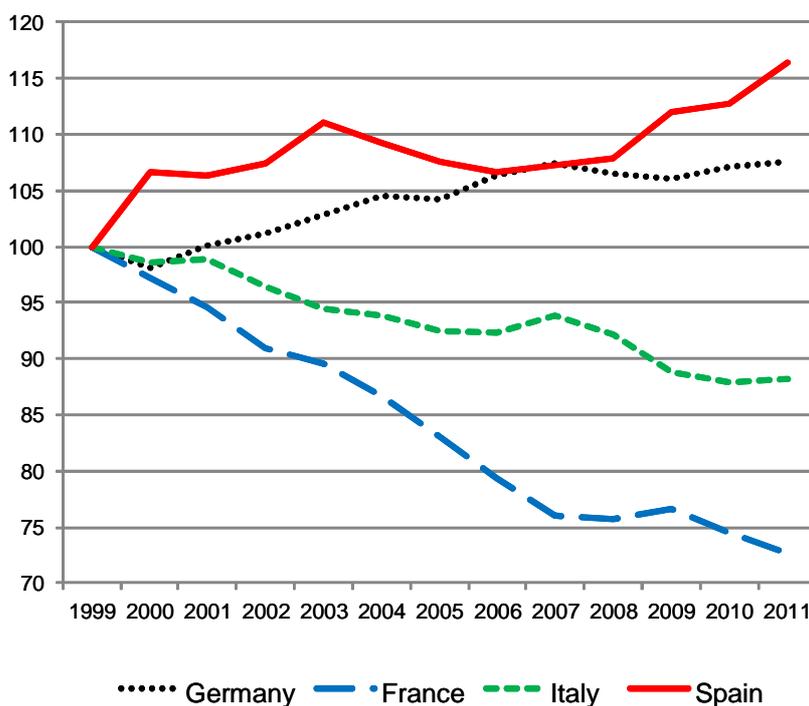
From this perspective, as Figure 2 shows, the EMU4 group is divided into two sets of countries: Germany and Spain, which have improved their external competitiveness, and France and Italy, where it has deteriorated. In particular, Spanish exports of goods to the world represented 5.6% of the Euro Area exports in 1999 and 6.6% in 2011, resulting therefore in a 16% share increase. The German share increased more moderately, 8%, in congruence with the fact that Germany is the top exporter of the Area (it accumulated 31.5% of total Euro Area exports in 2011). On the downside, France lost more than a quarter of its Euro Area export share between 1999 and 2011, and Italy nearly half of that.

**Figure 1**  
**Real effective exchange rate based on ULC for the total economy (index 1999 = 100)**



Source: European Commission.

**Figure 2**  
**Share in Euro Area exports of goods to the world, current prices (index 1999 = 100)**



Source: Eurostat.

Beyond the individual behavior of the EMU4 countries in these dimensions, the case of the Spanish economy is of particular interest as it reveals a lack of congruence, or “decoupling,” between internal and external measures of competitiveness. As noted above, economic theory suggests that there should be a negative association between real appreciation and export performance across countries. Indeed, this has been the case for Germany, which has improved on both fronts, and for France and Italy, which have lost competitiveness, also in both dimensions.

This ambivalent behavior of the competitiveness of the Spanish economy – also referred to as the “Spanish Paradox” – has already been identified in a number of recent works, including Spanish Prime Minister Economic Bureau (2010), Antràs *et al.* (2010), European Commission (2010a, 2010b and 2013), Crespo-Rodríguez *et al.* (2012), and Cardoso *et al.* (2012). The main theme in these papers is to postulate some kind of “duality” in the Spanish economy, i.e., firm productivity is very unequally distributed among Spanish firms, with large and exporting firms that tend to be very efficient and quite different from the rest. Some of these works argue that, as a result, part of the “paradox” is attributable to aggregation problems in the construction of economy-wide ULC-based REER.

## 2.2 Extended Evidence

To refine and contrast this basic evidence, we perform two basic exercises based on alternative measurements of both internal and external competitiveness in the EMU4 economies. Firstly, we show that the competitiveness decoupling observed in Spain is not ULC-specific; i.e., that Spanish export market shares are positively associated with other measurements of real appreciation, different from the ULC. Secondly, we examine the sensitivity of this result from

the external competitiveness side and explore the association of ULC with other indicators of export performance. We find that across the EMU4 countries, net exports of goods as a share of the GDP, rather than an export share, are more closely associated with ULC-based REER.

Table 1 reports four correlations for each of the four EMU4 countries. For each country, each correlation coefficient reflects the association over time between the export market share in the Euro Area and one of four particular measurements of real appreciation of the economy (in all cases, normalized in 1999 terms). The four measurements are the ones provided by the European Commission in its “Price-Cost Competitiveness Quarterly Reports” (see European Commission, 2012 for precise definitions of each): the Unit Labor Costs in the economy as a whole (column 1 in Table 1), the Unit Wage Costs in the Manufacturing Sector (column 2), the consumer prices index HICP (column 3) and the price deflator of exports of goods and services (column 4).

The first column in Table 1 quantitatively corroborates the evidence shown in Figure 1 and Figure 2. Note that, as expected, there is a strong negative association between ULC-based real appreciation and export performance in Germany, France and Italy, while the correlation is positive for Spain. More tellingly, the other three columns of Table 1 show that the sign of the correlation persists when alternative measures of real appreciation are considered for Germany, Italy and Spain. The case of the French economy is more complex, as the expected negative relationship between both dimensions of competitiveness is only observed when the internal competitiveness is measured deflating with the ULC; it turns strongly positive for the rest of the real appreciation measures.

**Table 1**  
**Correlation between different measures of real appreciation and export shares, 1999-2011.**

	ULC for total economy	Unit wage cost for manufacturing	HICP deflator	Price deflator, exports of goods and services
<b>Germany</b>	-0.961	-0.812	-0.936	-0.904
<b>France</b>	-0.932	0.545	0.941	0.850
<b>Italy</b>	-0.940	-0.905	-0.982	-0.922
<b>Spain</b>	0.371	0.328	0.679	0.545

Source: Eurostat, European Commission and author’s calculations.

The fact that alternative real appreciation measures can diverge widely has already been documented (for one of the most recent references, see Bayoumi *et al.* 2011 for a survey in the context of the Euro Area). As they record, standard measurements of real effective exchange rates assume that all goods are equally tradable and, therefore, subject to the same degree of competition. This could potentially be a problem when the economies have different degrees of exposure to international competition. In parallel, some papers have stressed that aggregate productivity is expected to rise along with a country’s openness to foreign competition (Di Mauro *et al.* 2010.)

For these reasons, it is important to contrast the traditional measures of real effective exchange rates, mostly based on prices, with other macro measures that capture the relative size of the export sector in an economy. In our context, this may be particularly relevant given that the evolution of the above REER measures does not capture one of the most prominent Spanish economic pitfalls, namely, its low export intensity in net terms.

Table 2 reports the external trade, gross and net, in merchandise and services, as a proportion of the GDP on average terms for the period between 1999 and 2011.

**Table 2**  
**External trade % as of GDP, average 1999-2011**

	Merchandise trade			Service trade			Total trade
	Export	Import	Net export	Export	Import	Net export	Net Export
<b>Germany</b>	34.9	28.9	6.0	5.9	7.5	-1.6	4.4
<b>France</b>	21.0	22.1	-1.1	5.7	4.9	0.7	-0.4
<b>Italy</b>	21.3	21.1	0.3	5.0	5.3	-0.3	0.0
<b>Spain</b>	18.2	24.2	-6.0	8.7	6.2	2.6	-3.4

Source: Eurostat.

From this perspective, the EMU4 countries have followed three patterns. First, France and Italy have relatively balanced trade relationships with the rest of the world: in France, the healthy service-trade behavior compensates the adverse developments in merchandise-trade and vice versa in Italy. Second, Germany has a formidable trade surplus in merchandise-trade combined with a minor deficit in service-trade; and third, the Spanish external sector is roughly the anti-symmetric mirror image of the German one, with the specificity of having a larger tourist sector that contributes notably to the services trade surplus.

Upon this basis, Table 3 reports the correlation coefficients across time between the ULC-based REER and four distinct measures of external competitiveness for each EMU4 country. The results show that the correlation coefficients between net merchandise exports and the ULC-based REER are negative across the four EMU4 countries, including Spain.

External competitiveness measurements based on gross, rather than net, exports generate counterintuitive coefficients for Italy (first and second row in Table 3). Restricting the attention to net exports, when merchandise and service trade are considered, the relationship between external and internal competitiveness is weak in France, although it runs in the expected direction, and for this reason there is a case for considering the net exports of merchandise trade superior to the net exports of merchandise and service trade in terms of alignment with the real appreciation indicators.

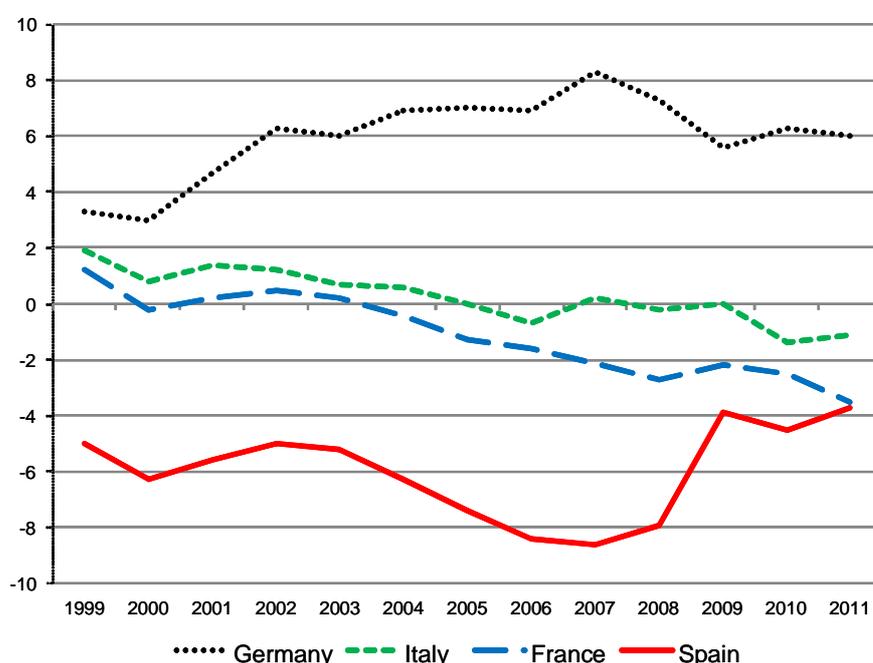
**Table 3**  
**Correlation between different external competitiveness measures and ULC-based REER, 1999-2011**

	Germany	France	Italy	Spain
Exports, merchandise and service trade	-0.972	-0.244	0.409	-0.445
Exports, merchandise trade	-0.940	-0.200	0.479	-0.414
Net Exports, merchandise and service trade	-0.886	-0.271	-0.921	-0.551
Net Exports, merchandise trade	-0.745	-0.913	-0.892	-0.405

Source: Eurostat (Comext), European Commission (DG Ecfm) and author's calculations.

The evolution of the net exports of merchandise trade is represented in Figure 3. It shows clear, sustained patterns for Germany, France and Italy and a slightly erratic pattern for the Spanish economy, a qualitatively similar scenario to Figure 1. In the case of Germany, barring the decline in trade due to the international economic and financial crisis, its net exports have been growing sustainably from 1999 to 2011, from 3.5% of GDP to 6%. For France and Italy, there is a steady deterioration of their net trade balance with respect to the rest of the world, from surpluses in 1999 to deficits in 2011. Regarding the Spanish economy, in the period from 1999 to 2008 the net merchandise trade has been increasingly negative, with an important break in the trend in 2008. As a result of this, the Spanish external trade position is practically the same as the French one in 2011, with deficits of 3.5% and 3.7% of the GDP respectively, while in 1999 it was worse by a margin larger than 6 GDP points (deficit of 5% and surplus of 1.2% respectively).

**Figure 3**  
**Next Exports, merchandise trade, 1999-2011, as % of GDP**



Source: Eurostat.

The idea that arises from the evidence presented in this section is that there is no consistent relationship between the internal and the external competitiveness conditions in the EMU4, the Spanish economy standing as the most complex case. France also represents a challenge, given that it is the country with the poorest external performance since 1999 of the EMU4 countries, but it experienced only mild internal real appreciation. The Italian and the German economies conform better to the theory prediction of the alignment of both dimensions of competitiveness.

This makes a case for exploring the role of “non-price” determinants of competitiveness in explaining the developments in the EMU4 countries. The literature has identified a wide variety of “non-price” factors that may interact with the internal competitiveness conditions of a country and have a significant impact on the external results. In the rest of the paper we explore some of the most relevant factors in the context of the EMU4: the production structure and the growth model, firm size effect, the destination of exports and product quality upgrading.

### 3. Non-Price Competitiveness Factors in the EMU4

#### 3.1 Growth Patterns

At the most aggregate level, the four EMU4 economies' growth experiences are fundamentally distinct, both from the demand-side and supply-side perspectives.

From a demand-side perspective, the external demand contributed positively to overall growth only in Germany in the pre-crisis period. Indeed, the German GDP growth in the period 1999-2007, 1.6% in average annual rate, is evenly distributed between domestic and external demand expansions (Table 4). For Italy and France, the contribution of the domestic demand is two and three times more important, respectively, than in Germany in the pre-crisis period. In both countries, however, the net trade relationships with the rest of the world detracted from growth, rather than contributed to it. As a result, the three countries' aggregate growth rates do not differ markedly from each other, while the growth patterns clearly do. This contrast in the growth pattern is even more acute in Spain, whose economy has grown two times stronger than Germany and Italy, but with a pattern that is heavily tilted towards domestic demand. Indeed, Spain has the largest positive contribution of domestic demand, which is almost five times larger than the German figure, and the largest negative contribution of external demand, three times stronger than the country that comes after, France. This "unsustainable" growth model in Spain only began to change – abruptly – as a result of the financial and economic crisis in 2008, and there has been a very significant shift from internal to external demand contribution in the period 2007-2011.

**Table 4**  
**Domestic and external demand contributions to real GDP growth, 1999-2011**

	1999-2007			2008-2011		
	Average annual GDP growth	Domestic demand contrib.	External demand contrib.	Average annual GDP growth	Domestic demand contrib.	External demand contrib.
<b>Germany</b>	1.6%	0.8%	0.8%	0.7%	0.9%	-0.2%
<b>France</b>	2.2%	2.5%	-0.3%	0.0%	0.3%	-0.3%
<b>Italy</b>	1.6%	1.7%	-0.1%	-1.1%	0.0%	-1.1%
<b>Spain</b>	3.7%	4.9%	-1.2%	-0.6%	-2.7%	2.1%

Source: Eurostat and author's calculations.

From the supply-side perspective, the major factors that explain the growth in the period 1995-2007 in Germany and France are the improvement of multifactor productivity and the capital deepening in the production process, according to calculations by EU-Klems reported by FEDEA (Table 5). In contrast, the main driving force supporting growth during this period in Spain was the increase in jobs, which explained three quarters of the income growth. The main reason for this has been a structural increase in the labor market participation rate, which has risen from 60% to 75%, mainly as a result of women entering the labor market. On the other hand, the productivity performance of Italy, and especially Spain, has been rather disappointing. Indeed, these are two of the few EU27 countries with a negative contribution of productivity to growth in the pre-crisis period.

**Table 5**  
**Contribution of factors to GDP growth. Average annual change 1995-2007**

	Real GVA growth	Labor input contrib.	Capital input contrib.	Multifactor Productivity contrib.
<b>Germany</b>	1.6%	-0.1%	1.0%	0.7%
<b>France</b>	2.2%	0.7%	0.9%	0.8%
<b>Italy</b>	1.4%	0.8%	0.9%	-0.4%
<b>Spain</b>	3.6%	2.3%	1.9%	-0.7%

Source: FEDEA (2011) based on EU-KLEMS.

Thus, following Estrada *et al.* (2009), one of the most authoritative accounts of the process of building up the macroeconomic imbalances in the Spanish economy, it is clear that the pre-crisis Spanish growth model was unsustainable. It was exposed to important demand stimulus, which could only be matched partially by domestic output production, given the weak behavior of productivity. As these authors point out, three broad, interrelated classes of imbalances emerged in this period: (a) inflation differentials (originated from both wage and profit margin surges) with the subsequent impact on the appreciation of the REER; (b) property-sector developments related to the construction boom; and (c) private sector debt. These developments severely undermined the competitiveness of the Spanish economy and have led to an inexorable need for adjustment (see Ortega and Peñalosa, 2012, for a summary of the economic policy “lessons” that can be drawn from the pre-crisis experience in Spain).

Finally, to address the congruence between internal and external competitiveness measures at the macroeconomic level, it is important to examine the different behaviors of the tradable and non-tradable sectors of the EMU4 economies, both in terms of productivity performance and relevance in the respective national economies. Table 6 reports the average growth rate of labor productivity in the tradable and non-tradable sectors in the four EMU4 countries between 2001 and 2011. Figures 4, 5 and 6 represent the share of the value added originated in those two sectors and in the public sector (see the notes for Table 6 for the exact definition of these sectors).

**Table 6**  
**Productivity growth, Tradable and Non Tradable sectors of the market economy. Average annual change, 2001-2011**

	2001-2007		2008-2011	
	Tradable sectors	Non Tradable sectors	Tradable sectors	Non Tradable sectors
<b>Germany</b>	4.48%	1.27%	0.05%	0.03%
<b>France</b>	3.63%	1.06%	0.80%	0.05%
<b>Italy</b>	1.25%	-0.39%	0.51%	-0.26%
<b>Spain</b>	2.97%	-0.17%	2.50%	2.59%

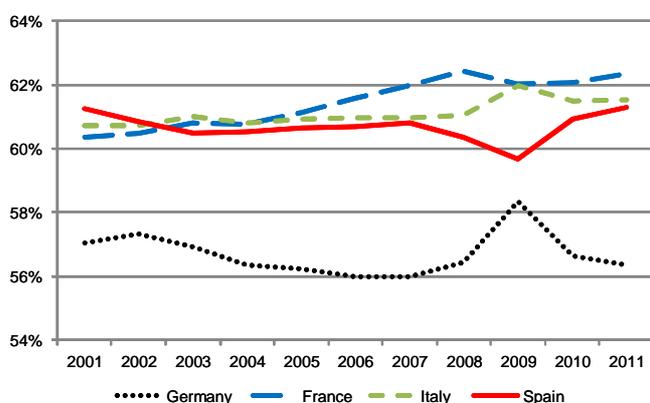
Source: Eurostat and author's calculations.

Notes: Tradable sectors: NACE Sectors A - E (Agriculture and Industry, except Construction); Non Tradable sectors: NACE Sectors F - N (Construction, Retail Trade; Accommodation, Food Services, Real State, Professional and Financial services). Public administration is excluded.

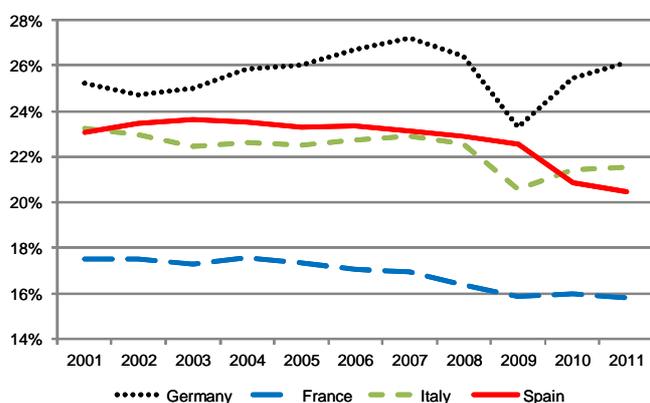
Table 6 shows that, in each of the pre-crisis years, tradable sectors in Germany and Spain improved their productivity three percentage points above the non-tradable sectors, the difference being smaller for France and especially, Italy. However, probably the most noticeable fact is the negative growth that apparent labor productivity in the non-tradable sectors experienced in Spain and, more severely, in Italy over the period 2001-2007. The intense job destruction that Spain started to suffer in 2009 explains the swift improvement in the apparent labor productivity in the country, both in the tradable and the non-tradable sectors of the economy.

Concerning the relative size of these sectors in the EMU4 economies, Figure 5 shows that the tradable sector in Germany has been larger than in the other three countries by a margin that has widened between 2001 and 2007 and also since 2009. Indeed, the tradable goods sector represented a larger share of the German economy in 2011 than ten years earlier, while for the other three EMU4 economies the opposite is true. Of these three, the country that has had the largest loss in the contribution of the tradable sector to the whole economy is precisely Spain, where almost two and a half percentage points of the GDP have vanished from the tradable sector. According to Figure 6, the activity lost in this sector in Spain seems to have been absorbed mainly by the public administration, whose share of value added since 2007 has increased by more than two percentage points of the GDP in Spain, which is by far the largest increase of the EMU4 economies. In Germany and France the contribution share of the public administration to the respective value added has remained remarkably constant during the period 2001-2011, while there has been a modest increase of nearly one percentage point of the GDP in Italy.

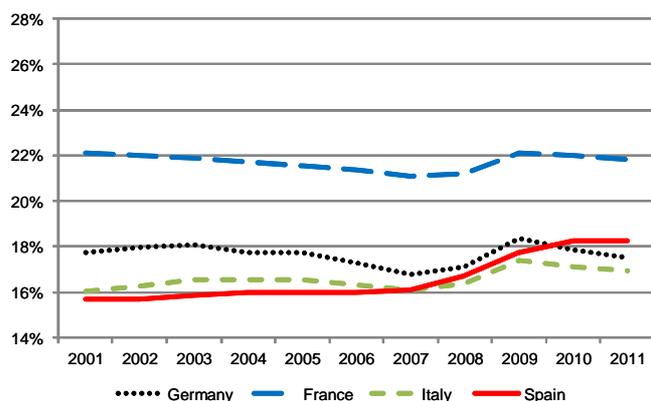
**Figure 4**  
**Non-Tradable sector value added, as share of total value added**



**Figure 5**  
**Tradable sector value added, as share of total value added**



**Figure 6**  
**Public Administration value added, as share of total value added**



Source: Eurostat and author's calculations.

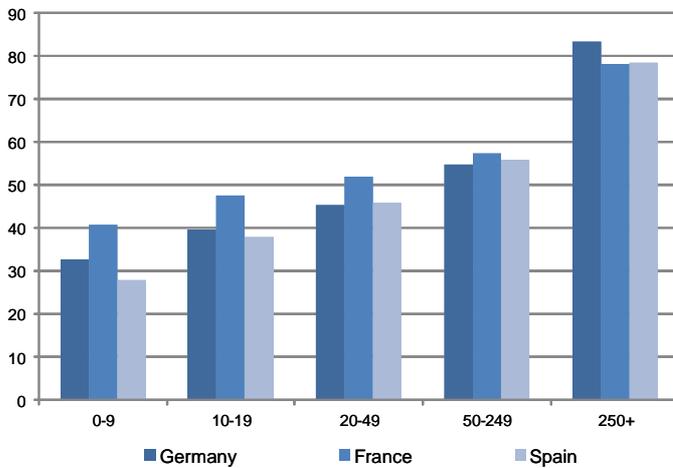
### 3.2 Firms' effects

Zooming in from the aggregate perspective to firm-level evidence, there is both conceptual and empirical agreement that the aggregate industrial and export performance depends strongly on firm-level factors, such as size, organization, and technological capacity (Altomonte *et al.* 2011, 2012). At the same time, it is well documented (Mayer and Ottaviano, 2007 and Bernard *et al.* 2011) that firm-level data on productivity and performance tends to follow the Pareto distribution (large number of individuals with small values and small number of individuals with large values) rather than a normal distribution.

Following this strand of literature, it is natural to look for the source of the differences in aggregate performance across the EMU4 countries: a generalized poor performance in the lagging countries or the coexistence of uneven firms. In this section we examine this question by considering three key, interrelated determinants of performance: productivity, R&D expenditure and export propensity, with data that acknowledges differences in firms' size across the four countries.

Figure 7 reports the results on labor productivity for the three EMU4 countries with data available from Eurostat (Germany, France and Spain) and it shows that the differences across these three countries are more pronounced for small-sized firms than for firms with 250 or more employees. This fact is, of course, related to the observation by Antràs *et al.* (2010) that the size dimension is highly instrumental in explaining the Spanish paradox, since part of the problem may come from aggregation problems in the construction of the Unit Labor Costs, in that small firms might be overrepresented compared to the set of exporting firms, where there is typically a greater proportion of large firms.

**Figure 7**  
**Labor productivity according to firm size, manufacturing sector, 2010 (Thousands of euros per year)**

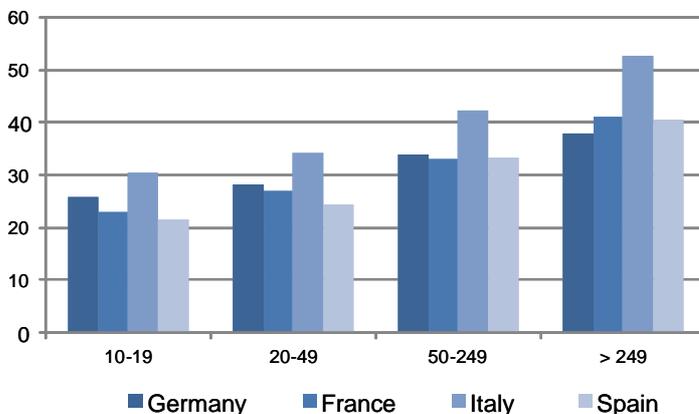


Source: Eurostat.

In terms of the connection between export performance and the size of the firm, the EFIGE Project provides very useful, comparable data on firms' characteristics and strategic decisions for some European countries, including the four EMU4 countries. According to analysis of this database by Barba Navaretti *et al.* (2010), the characteristics of the exporting firm, in particular its size, seem to matter much more than its country of origin in determining the firm's export performance. This is seen in Figure 8, which shows the share of the total turnover that is originated by the export activity in the four EMU4 countries.

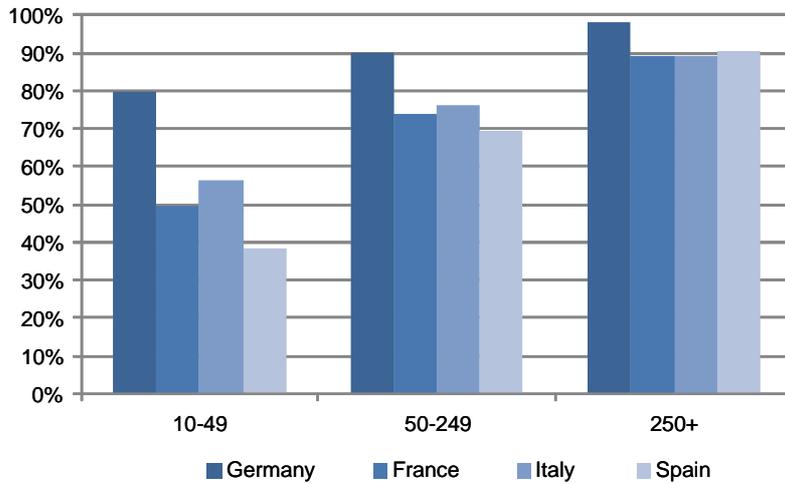
A similar pattern emerges concerning the innovation intensity of firms in the EMU4. Figure 9 depicts the proportion of firms which perform innovation activities, according to the definition of the Community Innovation Survey (CIS), depending on the size of the company. It is clear that differences between countries tend to become much milder as we focus on a class of larger-size companies. Indeed, when considering the largest size class, France, Italy and Spain have nearly the same proportion of companies performing innovative activities.

**Figure 8**  
**Share of total turnover coming from exports, manufacturing sector, according to firms' size (2008)**



Source: EFIGE according to Barba Navaretti *et al.* 2010

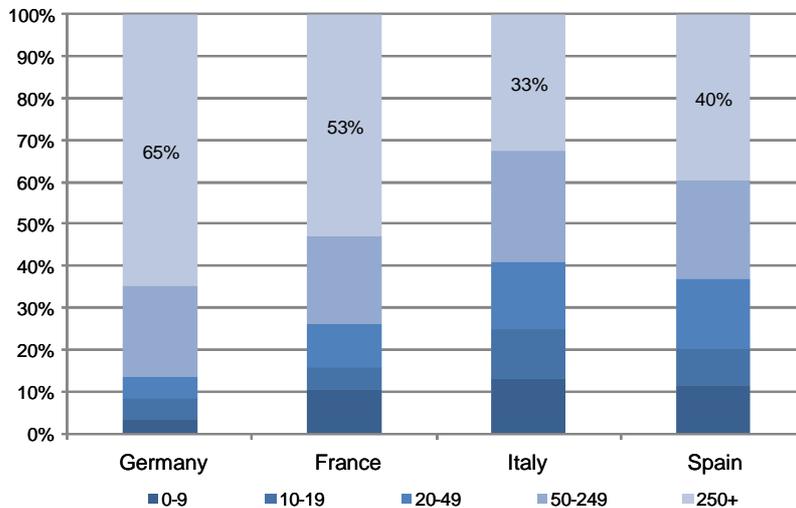
**Figure 9**  
**Proportion of firms with innovation activity, manufacturing sector, according to firms' size (2008)**



Source: Eurostat (CIS).

These effects interact with the firm structure in Italy and Spain, which is characterized by a relatively large population of small firms. This is observed in Figure 10, which represents how the value added is distributed among firms' size classes for the EMU4 economies.

**Figure 10**  
**Shares of private sector value added according to firms' size, manufacturing sector (2008)**



Source: Eurostat.

What emerges from this evidence is the existence of “dual” economies in the cases of Italy and Spain, in which there are large, export-oriented firms that compare relatively well with the rest of large EMU4 firms in terms of competitiveness, but which are few in number, coupled with an important population of medium- and small-sized firms that face severe competitiveness problems and obstacles to growth.

### 3.3 Extra-EU export growth

The main source of growth for the four countries' exports has been the large demand increase from outside EU markets, although with differentiated impacts on each of the four economies. In particular, Spanish exports to non-Euro Area destinations have increased between 1999 and 2011 at an average annual rate close to 10% in nominal terms, which means they have more than tripled in nominal terms over the period. Extra-EU German exports in nominal terms have increased by a factor of 2.6, and Italian and French ones by factors of 2.2 and 1.6 respectively (Table 7). Some recent works have focused on providing explanations for these export developments.

**Table 7**  
**Annual growth rate of EMU4 exports to Euro Area and Non-Euro Area destinations, nominal and real terms, average 1999-2010(11).**

	Euro Area destinations		Non-Euro Area destinations	
	Nominal terms	Real terms	Nominal terms	Real terms
Germany	4.6%	5.0%	8.1%	6.5%
France	1.9%	2.0%	4.2%	3.0%
Italy	2.6%	2.5%	6.7%	4.5%
Spain	5.7%	4.5%	9.6%	6.5%

Source: Eurostat and Deutsche Bundesbank.

Notes: Nominal growth for the period 1999-2011 and real growth for the period 1999-2010.

The paper by Deutsche Bundesbank (2011) shows that, in real terms, the German export growth in the period 1999-2010 is only matched by Spain (Table 7). The paper seeks to quantify the importance of the three main determining factors that may explain the export growth, in real terms, in the EMU4 countries: a global trade effect, regional structure of exports and competition effects. Within this framework, they find that the factor with the largest explanatory power is the surge in global trade, which does indeed explain nearly all of Germany's export growth. For France and especially Italy, this exogenous positive stimulus is significantly outweighed by the adverse behavior of the other two components: either those countries have, in relative terms, a low-profile position in high-growth economies or the products/varieties they sell have been beaten in terms of price/quality by their competitors' exports. In the case of Spanish exports, the paper shows that those negative effects are rather modest (nearly half of the French magnitudes and one third of the Italian ones).

Building on those insights, it is important to obtain a precise picture of how the EMU4 countries have expanded their export base in non-EU destinations, both in geographical terms and regarding their export structure. The EMU4 exports' share to non-EU destinations has significantly increased over time, although the penetration rates in those markets are quite different across the four Member States. In 2011, the difference between the largest exposition to extra-EU trade, Italy, and the lowest, Spain, amounted to almost 12 percentage points of the total export share (Table 8).

**Table 8**  
**EMU4 Non-EU export shares, nominal terms, 1999-2011**

	Non-EU export share		Change in non-EU export share	Change in non-EU export share excl. energy exports
	1999	2011	1999-2011	1999-2011
<b>Germany</b>	33.5%	40.3%	6.7%	6.9%
<b>France</b>	33.4%	38.1%	4.7%	4.9%
<b>Italy</b>	35.2%	42.9%	7.7%	7.1%
<b>Spain</b>	25.7%	31.2%	5.5%	4.9%

Source: Eurostat and author's calculations.

To gain deeper knowledge of the causes behind those aggregate export surges, we decompose the four EMU4 countries' export share changes, both from a geographical and product specialization perspective. This will show whether the EMU4 countries' firms followed similar or differentiated patterns of growth in their extra-EU expansion. In performing these analyses, we follow the convention of excluding the energy exports, as they are affected by much higher price volatility than the rest of exports and their evolution might distort the picture. The changes in export shares after excluding the trade of energy product are reported in the last column of Table 8. We follow the same procedure in both exercises: the total change in export share is decomposed in positive and negative changes for the export shares of the corresponding categories (geographical or industrial); thus those regions or products with a positive variation have increased their share, and vice versa.

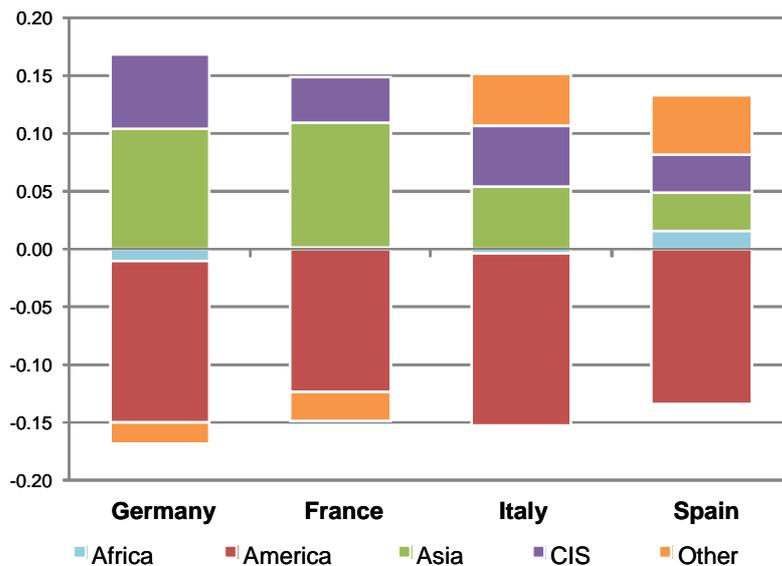
The results are depicted in Figure 11 and in Figure 12, which show that in geographical terms, the four EMU4 expansion experiences are qualitatively similar and the differences are essentially a matter of intensity: the four countries, especially Germany and France, have increased their extra-EU trade thanks, firstly, to the Asian markets and, secondly, to the Commonwealth of Independent States (CIS). For Italy and Spain, there are also important increases to other countries, which are mainly Switzerland (second non-EU destination for Italian exports and fourth for Spanish ones) and Turkey (vice versa). Finally, only for Spain, the increase in trade relationships with Africa (mainly, the northern part) is of significant size. In general, these expansions are the mirror image of the relative reduction of the exposure to (North and South) American markets (Figure 11).

The story is more contrasted for the product specialization breakup, since the differences among EMU4 countries' expansion patterns are more important (Figure 12). First of all, the four countries have changed their export structure in different intensities: Germany's expansion to non-EU destinations has not markedly changed its structure (no product category has increased or decreased its share by more than two percentage points); the larger shifts have taken place in France (with one product category losing eleven percentage points of export share) and Italy and Spain remain in the middle. In more concrete terms, the common key trend that explains the movements is the well-known growing role of intra-industry trade in international transactions and what makes the difference in each country's case is precisely its movement towards different placements in the global value chains.

In the case of Italian and Spanish exports, they have grown mainly by substituting production inputs (intermediate goods and machinery) for consumption goods in their non-EU markets. There is, however, an important difference between both countries: in this process, Italian firms have increased the share of higher-value added inputs (machinery and equipment) by almost two percentage points, while Spanish firms have moved back in this dimension and they have lost more than one percentage point of share.; Instead, their largest structural shift has been an increase of nearly six percentage points in the intermediate goods, which in general constitute the lower value-added segment of production inputs. This suggests that Italian exporter firms are firmly climbing upwards in the global value-added chains while Spanish firms have only done so moderately.

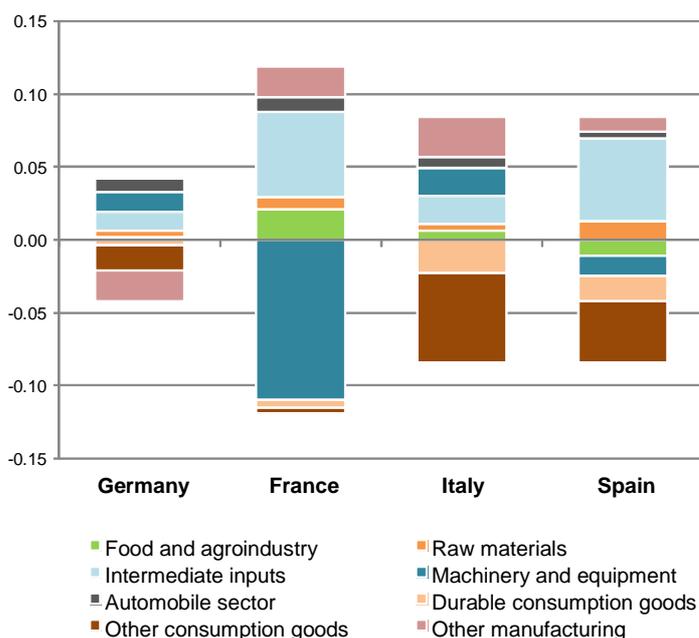
This effect is even stronger for French exports, which have reduced the share of machinery and equipment in their export structure by eleven points and increased the share of the more elementary production inputs by six percentage points. Indeed, to put the French export shift in perspective, while in 1999 France was the EMU4 country with the largest export share devoted to machinery, (It represented 52.7% of its total exports to non-EU markets in 1999 and 41.7% in 2011.) it ceded the leadership to Germany in 2011 (which has moved from 42.3% to 43.7%).

**Figure 11**  
**Export share variation to Non-EU by destination, 1999-2011**



Source: Eurostat and author's calculations.

**Figure 12**  
**Export share variation to Non-EU destinations by sector, 1999-2011**



Source: Eurostat and author's calculations.

Notes: Product classification by the Spanish Ministry of Trade. Energy exports are excluded.

From a different perspective and with a different methodology, the paper by García and Tello (2011) also analyzes how the specialization of the Spanish and German exports matches global demand and provides consonant results with the above evidence. Relying on the OECD data, they pay attention to the technological content of the Spanish exports, which have been largely below the averages for Germany, France and Italy. However, they show that the high-technology Spanish exports, in contrast to their French and Italian counterparts, have not reduced their share in global trade (Table 9). In particular, given that Spanish exports of high- and low-technology products have grown at a faster pace than their global corresponding demands, the authors suggest that those two niches of Spanish manufacturing have improved their (price and/or non-price) competitiveness via, among other things, product and process innovation, product quality upgrading, etc.

**Table 9**  
**World Export average shares of exports according to technology intensity, 1999-2008.**

	Average share 1999-2008					Share variation 1999-2008, in pp				
	H	M-H	M-L	L	Total	H	M-H	M-L	L	Total
<b>Germany</b>	8.5	16.8	10.6	7.7	<b>11.6</b>	0.9	0.7	-1	1.6	<b>0.8</b>
<b>France</b>	4.8	6.4	5	5.2	<b>5.5</b>	-1.1	-0.8	-1.5	-0.7	<b>-1.0</b>
<b>Italy</b>	1.9	5.3	5.7	6.6	<b>4.7</b>	-0.3	-0.3	-0.7	-0.6	<b>-0.4</b>
<b>Spain</b>	0.9	2.9	2.8	2.5	<b>2.3</b>	0.1	-0.2	-0.2	0.4	<b>0.0</b>

Source: García and Tello (2011) based on OECD (STAN Bilateral Trade).

Notes: H, High Technology industries; M-H, Medium-High Technology industries; M-L, Medium-Low Technology industries; L, Low Technology industries; Total, Total manufacturing.

### 3.4 Product quality upgrading

We will now examine in detail whether there has been any significant change in the export quality patterns of the EMU4 economies. In particular, we are interested in examining whether there is any evidence of quality upgrading in the Spanish exports that could explain the “puzzle” of real appreciation combined with good export performance observed in the country. This appears to have indeed been the case in most Central, Eastern and Southeastern European (CEES) countries since 1999 (Fabrizio *et al.* 2007 and Benkovskis and Wörz 2012).

The issue of quality in exports has gained prominence in international trade literature in recent years. The matter is quite open as there is still debate on the most suitable methodologies for approaching the huge volume of data on international trade. In part, the increased interest in quality concern comes from the observation that as globalization and intra-industry trade advances, firms (and countries) increasingly tend to specialize in “varieties” of vertically differentiated products rather than in products themselves.

This body of evidence poses an important challenge to “traditional” or “new” international trade theories that have viewed international trade as motivated, respectively, by cross-country differences in endowments or technologies (Heckscher-Ohlin) or by a product differentiation and imperfect competition (Krugman 1979 and Helpman and Krugman 1985). Although the latter helps explain trade between relatively similar countries, it treats all firms in a given sector symmetrically and, in particular, predicts that either all firms in a given sector and country will export or none will. The last new paradigm in the international trade field originated with the work by Melitz (2003). It is motivated by firm-level evidence and assumes that firms are heterogeneous in productivity. This “New New” Trade theory (Antràs 2012) is able to account for firm-level facts such as that, in general, only a small fraction of firms export; exporters are said to be significantly different from non-exporters (larger, more productive, pay higher wages and are skill intensive).

The significance of these New Trade insights is clearly illustrated in the work of Schott (2004), Hummels and Klenow (2005), among others (see Bernard *et al.* (2012) for a survey of the literature). Schott (2004) documents that the unit value (i.e., the ratio export price/quantity) of a large number of products imported by the United States varies substantially and systematically, reaching differences up to a factor of 30, depending on the exporting country. Furthermore, Schott (2004) finds that the U.S. import unit values are positively associated with exporter countries’ GDP per capita, capital endowments and production techniques across time and industries. Hummels and Klenow (2005) establish that only international trade models that include product differentiation produce empirical predictions that are supported by evidence. They also provide insights by decomposing export growth into the extensive margin (exporting to new markets) and the intensive margin (exporting more to current export destinations), the latter being the result of increasing quantities and unit prices (i.e., price over quantity). They find that the extensive margin dominates the intensive, and within the intensive margin, quantities largely dominate unit prices. These works have been very influential and dozens of papers have since then attempted to measure the quality content of exports. However, beyond the evidence of massive cross-country variation in export prices, there is a diversity of empirical approaches toward pinning down quality estimates.

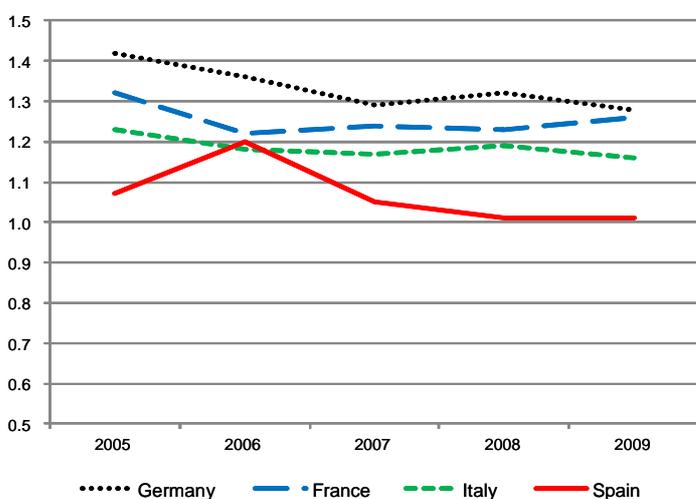
Some have used micro data at the firm level to estimate the quality of the exports of a given industry in a given country (see Martin (2012) and Crozet *et al.* (2011) for France, Crinò and Epifani (2012) for Italy, Bastos and Silva for Portugal and a number of papers for China). These

studies are often quite specific in their economic models, empirical methodology and data sources, which makes it very hard to make meaningful comparisons among them.

More central to the topic of the present paper, some other works have attempted to make cross-country comparisons of the *average* quality of exports and thus examine the location of countries in the global value-added supply chains. This type of analysis has to be carried out within narrowly defined product categories, since it only makes sense to draw conclusions about the “quality” of products if the product is defined with sufficient precision. In practice, this means working with a large volume of data of “varieties” of product, defined at 10, 8 or 6 digits of certain product classifications, like Combined Nomenclature (CN) or Harmonized System (HS). The general procedure in this type of papers consists of calculating a quality proxy for each variety and then computing averages at different levels of aggregation in order to recover overall average quality indicators for the country’s exports. In general, there have been two main approaches to identifying the quality proxy: some works have basically assumed the export price (or unit value) as a proxy for quality, without any fundamental adjustment, and some others have made more sophisticated assumptions on the basis that there are numerous factors other than quality that affect prices (exchange rates; differences in endowments; horizontal -and not only vertical- differentiation; intentional mark-up reductions).

In the first group, the paper with more up-to-date evidence about European cross-country differences in export quality is, to the best of our knowledge, by Gordo and Tello (2011) who also examine the group of EMU4 countries. They find that the unit price patterns of the EMU4 countries, relative to those of the rest of world exports for a given product, have been largely stable since 2000 with, if any, a mild tendency to converge and compress. More specifically, while the German, French and Italian exports have, on average, prices that are 20% - 30% higher than those of the rest of the world for the same products, the Spanish price margin is below 10% and approaching 0%, i.e., Spanish export prices are roughly equal to the world average (Figure 13). These results are consonant with those obtained by Cuadras *et al.* (2009), who studied the exports of a set of countries, including the EMU4 economies, using data up to 2007 but with a smaller product coverage, and concluded that Spain was exporting at lower relative prices than Germany from 1999 to 2007 and lower than France and Italy from 1999 to 2005.

**Figure 13**  
**Relative price component in the intensive margin of exports to the world**



Source: Gordo and Tello (2011).

As mentioned before, some recent papers have relaxed the so-called “price-equals-quality” assumption and have worked out more sophisticated methodologies to better identify product quality, most notably Khandelwal (2010) and Hallak and Schott (2011). Khandelwal (2010) studies the quality of the products imported by the United States, relying not only on the prices but also on market shares by assuming that, conditional on price, imports with higher market share must have higher quality. The paper finds that the correlation of unit value ratios with the inferred quality content of products depends on the extension of the quality ladder, i.e., the range of qualities within a given product market.

Hallak and Schott (2011) propose a different refinement of unit values, based on trade surpluses, to proxy for quality. Their model allows price-variation induced by factors other than quality (e.g., comparative advantage, currency misalignment) and decomposes export prices between quality vs. quality-adjusted price components. They find that cross-country quality differentials tend to compress over time, with product quality in developing countries approaching rich countries’ standards. This is also the case for the EMU4 countries, the relative product quality of which approaches the median country between 1993 and 2003. In consonance with Gordo and Tello (2011), Hallak and Schott (2011) show that the EMU4 countries can be clearly divided into two groups in terms of the average quality-proxy of their exports: Spain on the lower bound, even below the world quality average in 2003, and the other three countries with quality-proxy premiums in the range of 40%-50% (Table 10).

**Table 10**  
**Countries’ average export quality in relative terms to the world’s mean country**

	1993	2003
<b>Germany</b>	193%	151%
<b>France</b>	180%	152%
<b>Italy</b>	172%	140%
<b>Spain</b>	115%	90%

Source: Hallak and Schott (2011).

Finally, a paper by Goldman Sachs (2011) provides complementary perspective on this issue. Relying on the work by Aiginger (1997), Goldman Sachs (2011) derives a ranking for the “importance” of quality versus price in 66 product categories, according to the SITC two-digit trade classification. They focus on EU27 countries and their rationale is the following: if, on average, countries run a quantity trade surplus in low-unit-value product category, then the category is price dominated; if countries run a surplus in a high-unit-value good, then the implication is that it is a quality-dominated market. Following this approach, they rank product categories and find that the more elaborated commodities (chemical products, motor vehicles, pharmaceuticals) appear to be “quality-dominated,” while on the other hand, commodities sold in highly competitive markets where price is the chief consideration (raw materials, petroleum products, natural gas) are “price-dominated.” On the basis of this ranking, Goldman Sachs (2011) constructs an index of the average quality-importance of EU countries’ overall performance, with the appropriate weighting. They find that Spanish exports are the EU’s least elastic to price (and more sensitive to quality considerations), German exports are the second least elastic, and French and Italian exports rank in the seventh and ninth place, respectively.

## 5. Conclusions

This paper has shown robust evidence of a marked divergence in the evolution of the competitiveness of the Spanish economy. The *aggregate* domestic price-cost conditions have deteriorated since 1999 but, in relative terms, the export performance of the Spanish economy outperformed even Germany, the EU export leader. To reconcile this dual behavior, a mixture of partial explanations is needed. First, it is clear that the aggregate deterioration of price-cost competitiveness masks two very different realities at the firm level: large, efficient and good-exporting Spanish firms coexist with smaller ones that face tougher productivity (and probably financial) problems. Second, the available evidence points out that Spanish firms may have increased their world market share by producing better varieties of the same type of products and exporting them to fast-growing markets.

Thus, in terms of policy recommendations to bridge the evident competitiveness gap of the Spanish economy, it seems more appropriate to deepen the capitalization of the economy on all its fronts (human, physical and technological capital) than to impose further domestic devaluations. The latter reaction will be better suited to respond to a real appreciation problem, for which it is hard to find consistent support from a combined macro-micro perspective. Instead, it seems more sensible to pivot toward policies that put stronger weight on the “non-price” factors that underpin improvement in competitiveness, such as product-quality upgrading and abilities and skills enhancing.

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