

# Non-price competitiveness factors and export performance: The case of Spain in the context of the Euro area

Ramon Xifré<sup>1</sup>

**Empirical evidence suggests that internal non-price/cost factors dominate over strictly price/cost elements in determining the external competitiveness of the five largest EA economies. Building on this observation, internal devaluation policies are likely to have only a limited impact on restoring competitiveness compared to those aimed at strengthening capitalization and providing the right incentives for exporters.**

*This paper examines, for the five largest euro area economies – Germany, France, Italy, Spain and the Netherlands (EA5) –, the evolution of the leading price/cost (internal) competitiveness indicators, and the association between them and export performance. First, we show that the most prominent price/cost competitiveness indicators have oscillated with different orders of magnitude in the five countries. The smallest oscillations correspond to Germany and the Netherlands, and the highest (more than four times higher) to Italy. We also show that although Italy and Spain have had similar trajectories up to 2008, Spain appears to have recovered by the end of 2015 virtually all of the cost-competitiveness lost between 2000 and 2008, while in Italy what is left to recover exceeds the corrections made so far. Concerning the association of these internal developments with the behaviour of exports, this paper finds, in line with previous literature, that the link appears to be rather weak. This suggests that other, non-price/cost factors are more important for export growth. To the extent that this hypothesis could be proved, policies in support of competitiveness should rebalance priorities away from internal devaluations and incentivize the capitalization of the EA5 economies with more important challenges, in particular in Spain.*

The competitiveness of an economy is a key economic policy priority. In the wake of the 2008 economic and financial crisis the issue is even more central, particularly for the European Union (EU) and the Euro area (EA) countries. The European Commission and EA economic establishment in its flagship policy paper to

revitalize the European Union identified the task of “boosting competitiveness” as the most urgent one (Five Presidents Report, 2015).

However, beyond its prominence in the policy debate, there is no unequivocal way of understanding the competitiveness of an economy,

<sup>1</sup> ESCI-Universitat Pompeu Fabra and Public-Private Sector Research Center, IESE Business School.

but rather there are two basic approaches: internal and external competitiveness (Draghi, 2012). This distinction is not only academic, but also holds significant policy relevance.

For example, in the case of Spain, the fourth largest economy in the EA, both concepts of competitiveness have evolved in opposite directions since the introduction of the euro in 1999. By most standards of measurement, internal (price-cost) competitiveness has deteriorated while the external (export-related) has improved. This is known as the “Spanish paradox” and it is likely to be the manifestation of a deeper dual economic structure in the country. A handful of very competitive, internationally-oriented firms coexist with a larger set of smaller, more troubled, inward-looking ones. As the price-cost indicators tend to over-represent the latter ones, these indicators become less reliable.<sup>2</sup>

The textbook approach suggests that improvements in internal competitiveness translate into gains of external competitiveness: by reducing wages, cheaper products are sold better in international markets. This rationale, as simple as it might seem, has guided a fair share of policy interventions in the EA in the wake of the crisis.

---

*Since the introduction of the euro, in the case of Spain, internal (price-cost) competitiveness has deteriorated while the external (export-related) has improved – what is known as the “Spanish paradox”.*

---

In this paper, we examine this link for the five largest EA economies: Germany, France, Italy, Spain and the Netherlands (EA5). The following section introduces the different types of deflators

for the real effective exchange rates. Then, the article examines how they have evolved in the EA5 between 2000 and 2015. Subsequently, we disaggregate the variation of export shares in the EA5 into two components, one related to cost competitiveness and the other related to non-cost competitiveness. The final section provides a conclusion.

## Real effective exchange rates (REER)

Competitiveness is, by definition, a relative notion; firms, countries or regions are more or less competitive than their counterparts. The leading competitiveness indicator of an economy is the real effective exchange rate (REER). It is a generalization of the nominal exchange rate, which is the rate (or price) at which currencies are exchanged. The real effective exchange rate intends to capture the real price of a country’s currency, *i.e.* its relative price in terms of the currencies of its principal trading partners.

Formally, the REER of a country is defined as the weighted geometric average of the nominal exchange rate rates of the country’s main trading partners employing a particular deflator. That is, for a given country, if there is a set  $i=1, \dots, n$  of trading partners;  $e_i$ , the exchange rate;  $P_i^*$ , the deflator;  $\omega_i$ , the weight associated to trade partner  $i$  (a function of imports and exports), then the real effective exchange rate is,

$$REER = \prod_{i=1}^n \frac{P}{(P_i^* e_i)^{\omega_i}}.$$

See Giordano and Zollino (2016) and the references therein, for further details.

The REER is thus an approximation to the effective, relative price of the exports of one country in terms of the exports of its more relevant international competitors. Constructed in this

<sup>2</sup> On this topic, see Spanish Prime Minister Economic Bureau (2010), chapter 4; Antràs *et al.* (2010); Crespo-Rodríguez *et al.* (2012); Cardoso *et al.* (2012); European Commission (2013); Xifré (2014); Andrés and Doménech (2015); and Giordano and Zollino (2016).

way, increases in a country's REER (or, REER appreciations) imply a loss in competitiveness – its products or services become more expensive relative to its trading partners.

There are several versions of the REER because there are several ways to deflate and compare currencies. Depending on the type of relative deflator  $P_i^*$  in the equation above, whether it is a price or a cost, the REER is price- or cost-based.

The European Commission provides five of the most widely used deflators and in this article we will limit our attention to those.

- Harmonised index of consumer prices (HICP) deflator. This deflator includes goods and services but it covers only consumer goods. So it does not take into account differences in the prices of capital and intermediate goods across countries.
- Price deflator of the GDP at market prices (GDP). This deflator includes goods and services and all levels of activity. However, they are not fully comparable across countries due to the different national measurement of services activities.
- Price deflator of exports of goods and services (EXPGS). This deflator follows the same logic of the previous, with the same limitations, but it covers only the exports of goods and services.
- Nominal unit wage cost for the manufacturing sector (NUWC-M) deflator. This deflator takes into account differences across countries in the ratio between productivity and total compensation per employee in the manufacturing sector. This deflator does not take into account other costs of production, such as the cost of intermediate inputs or the firms' mark-ups.

- Nominal unit labour cost for the total economy (NULC-TE) deflator. This deflator is an adaptation of the previous one but covering all sectors of the economy.

A price-based REER (deflated by HICP, GDP or EXPGS) increases when the corresponding measure of domestic inflation is larger than the average inflation in the trading partners. A cost-based REER (deflated by NUWC-M or NULC-TE) increases in a country when either labour costs become higher, labour productivity decreases, or both, with respect to the trading partners.

### The evolution of price-cost competitiveness indicators in the EA

For the particular case of the EA countries, the nominal exchange rate between member countries has remained constant since the adoption of the euro in 1999. However, EA countries' real effective exchange rates have diverged for the afore-mentioned reasons: inflation rates, wages and labour productivity have had idiosyncratic dynamics in each country.

Exhibits 1 – 5 represent the REER based on the five deflators above for Germany, France, Italy, Spain and the Netherlands respectively between 2000 and 2015. In all cases, the trading partners are a set of 37 industrialized economies and, as mentioned above, the weight of each particular trading partner depends on the importance of trade flows.<sup>3</sup> The series are normalized in terms of the year 2000.

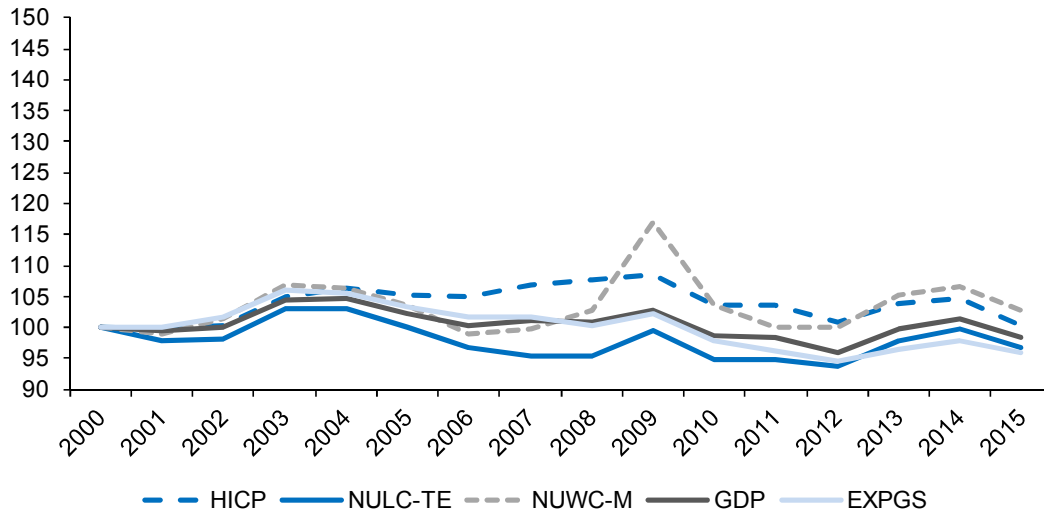
The first observation is that the five countries have followed three differentiated patterns regarding the dispersion of the deflators, particularly in the post-crisis period. Exhibit 6 represents, for each country, the yearly standard deviation – a standard measure of dispersion – of the five deflators for 2000–2015.

<sup>3</sup> For more information about these series, see [http://ec.europa.eu/economy\\_finance/db\\_indicators/competitiveness/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/competitiveness/index_en.htm)

Exhibit 1

**Real effective exchange rates (REER) of Germany versus IC37 according to various price and cost deflators**

Index (2000 = 100)



Source: European Commission.

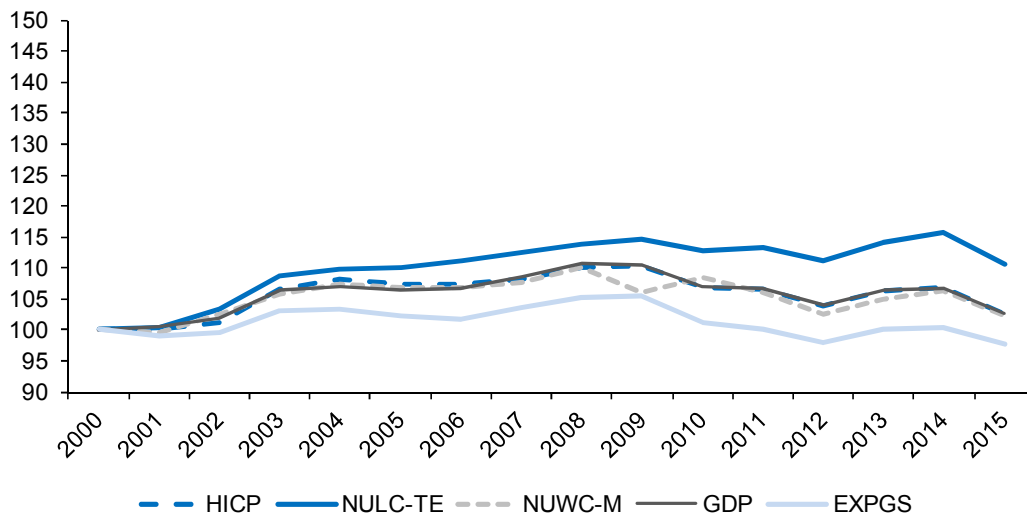
In Germany and the Netherlands the various REER have remained relatively stable and similar to each other, with the maximum REER

appreciations confined to be below 15% during the period, both countries reaching a standard deviation of the five deflators of 2.5 percentage

Exhibit 2

**Real effective exchange rates (REER) of France versus IC37 according to various price and cost deflators**

Index (2000 = 100)

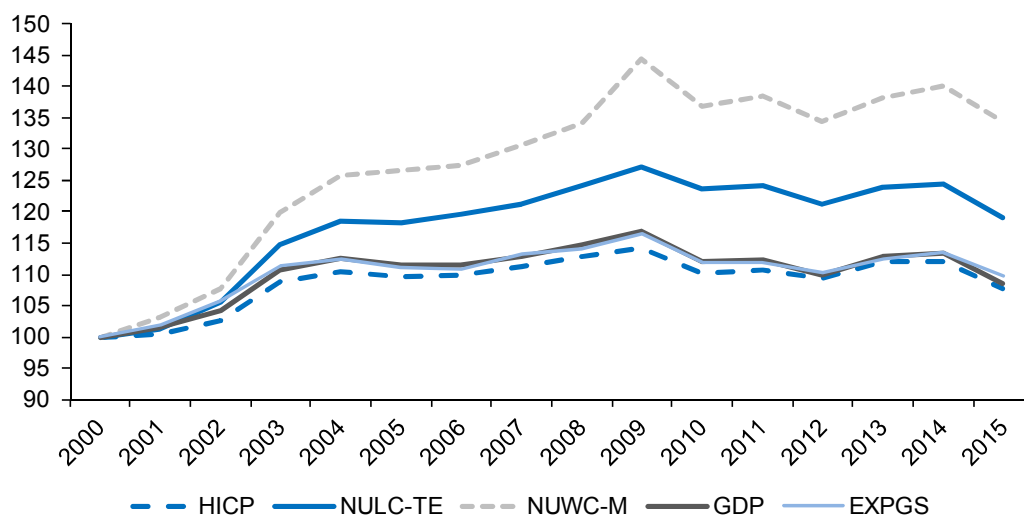


Source: European Commission.

Exhibit 3

**Real effective exchange rates (REER) of Italy versus IC37 according to various price and cost deflators**

Index (2000 = 100)



Source: European Commission.

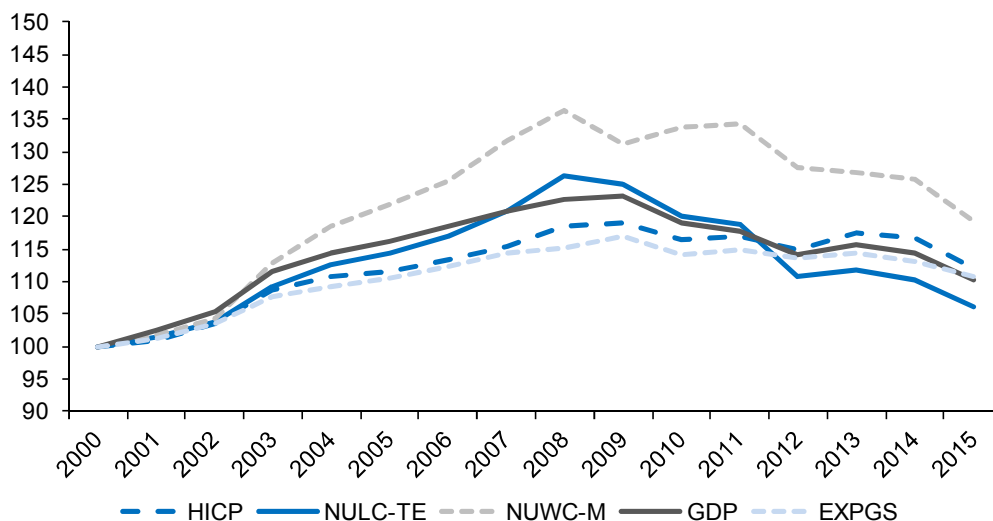
points by 2015. France and Spain constitute the next group, with higher dispersions of the REER over the period, resulting in standard deviations

close to 5 percentage points by 2015. Finally, Italy is a particular case of high volatility of the REER and significant differences among the indicators,

Exhibit 4

**Real effective exchange rates (REER) of Spain versus IC37 according to various price and cost deflators**

Index (2000 = 100)

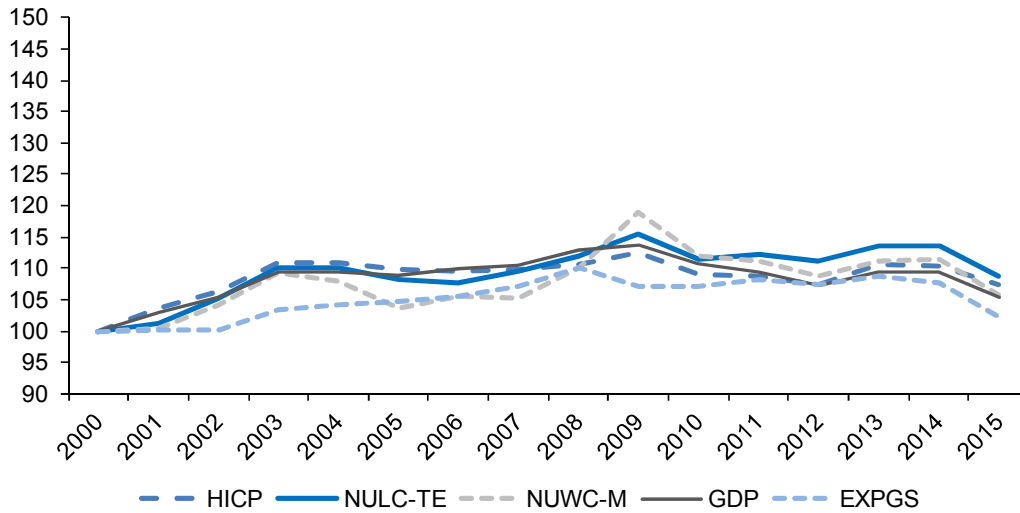


Source: European Commission.

Exhibit 5

**Real effective exchange rates (REER) of the Netherlands versus IC37 according to various price and cost deflators**

Index (2000 = 100)



Source: European Commission.

reaching a standard deviation of the five deflators close to 12 points in 2015.

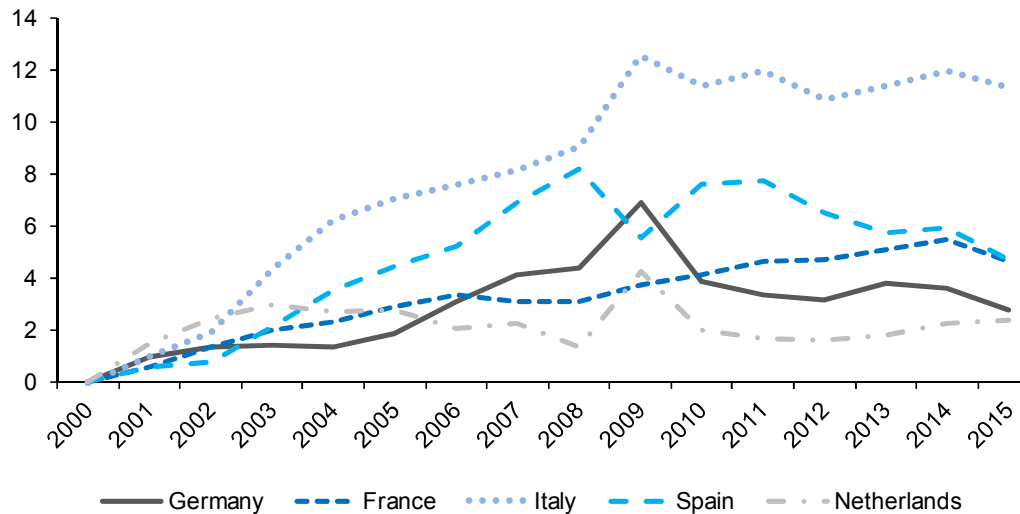
A second observation is that, beyond the differences in REER for a given country, Italy

and Spain have experienced the highest appreciations, *i.e.* competitiveness losses, in the period. The largest appreciations correspond, in both countries, to the REER based on the unit labour cost for the manufacturing sector

Exhibit 6

**Dispersion of the REER indicators**

Yearly standard deviations



Source: European Commission.

(NUWC-M). This suggests that this sector has concentrated large competitiveness problems in these two countries, in comparative terms to the rest of the EA5.

Thirdly, there is one important difference between Italy and Spain regarding the behaviour during and after the crisis. In Spain, the year 2008 clearly marks a halt in the process of competitiveness loss and the beginning of a recovery – in four out the five deflators, the appreciation level in 2015 is barely 10% of that of 2000. In contrast, the case for a recovery in Italy is less clear – the appreciation of labour costs for the total economy in 2015 represents 20% of the level in 2000 and the appreciation of labour costs in manufacturing remain at 35%.

---

*In Spain, the year 2008 clearly marks a halt in the process of competitiveness loss and the beginning of a recovery – in four out the five deflators, the appreciation level in 2015 is barely 10% of that of 2000.*

---

More generally, there are a number of works that have looked at the recent evolution of real effective exchange rates for the EA countries that provide interesting insights that are consistent with our own findings.

Giordano and Zollino (2016) have exposed the informational limitations of the main REER indicators we have been considering. Building on the previous literature (Bayoumi *et al.*, 2011), they emphasize two important limitations: REER indicators provide conflicting signals for a given country (as we have shown) and these competitiveness indicators are not strongly associated with the countries' exports (as we will show in the next section).

<sup>4</sup> These authors make the assumption, following the literature, that the price elasticity of export equals -1.25. We maintain this assumption in our calculations.

On the source of export growth, Storm and Naastepad (2014) emphasize, relying on previous empirical literature, that EA countries' exports growth depends more on exports having the 'right' structure (exporting high-demand products to high-growth destinations) than on REER depreciations.

---

*Empirical literature shows that EA countries' exports growth depends more on exports having the 'right' structure (exporting high-demand products to high-growth destinations) than on REER depreciations.*

---

As a result, both Giordano and Zollino (2016) and Storm and Naastepad (2014), emphasize the role of "non-price" elements in supporting export performance and, more generally, competitiveness in the EA in recent times. We will address this point below for the EA5.

## Disaggregation of export shares

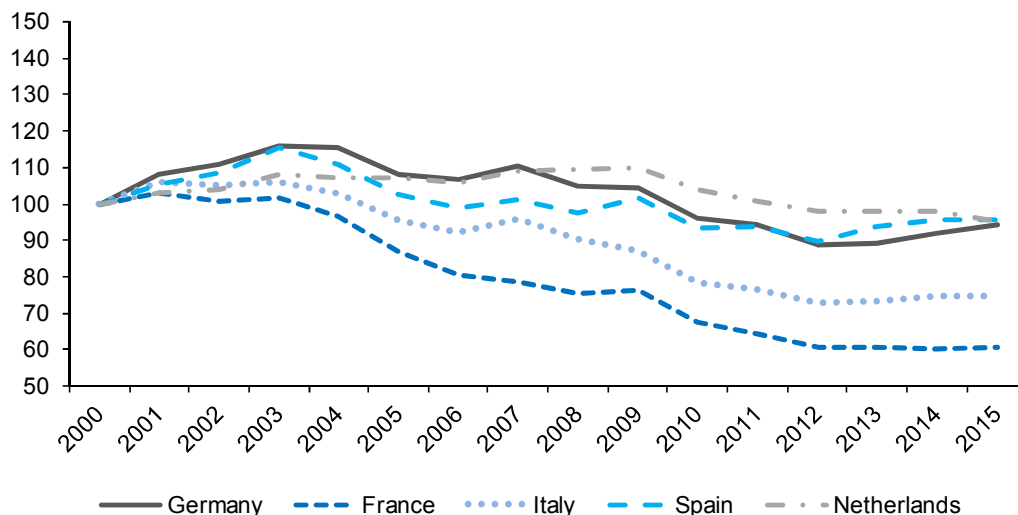
The works by Correa-López and Doménech (2012) and Cardoso *et al.* (2012), covering data from 1999 to 2011, are our main reference for the empirical work. They disaggregate the change in export shares of a county into two components: the variation of the relative price of the country's exports and the variation of non-price determinants.

In the underlying macroeconomic model, exports of one country to the rest of the world depend negatively<sup>4</sup> on the price of the exports and positively on these non-competitiveness elements, which are deemed to capture "all relevant factors to the export market share different from relative prices". These factors include, according to the authors, firm-level

## Exhibit 7

**World's export share in merchandise trade**

Index (2000 = 100)



Source: WTO.

conditions and decisions, such as company size, investment in capital, skill-intensity in the labour force, R&D spending, product quality, expansion to high-growth markets, product differentiation and diversification decisions, etc.

We adopt their methodology with some adaptations. We use exports of goods alone, rather than exports of goods and services as they do; and we proxy the price of the exports of goods by the REER based on the unit labour costs (ULC) for the total economy, rather than on the price deflator of exports of goods and services, as they do. We analyse merchandise trade alone because three of the EA countries we study (France, Italy and Spain) have relatively large tourism industries and this could distort the comparison among the five economies.

Exhibit 7 represents for each EA5 country its world share in merchandise trade between 2000 and 2015. These series are computed as the exports of goods of each country divided by total exports in the world, in current U.S. dollars, from data by the World Trade Organization (WTO). These series are normalized so that they all equal 100 in the

year 2000. France has lost 40% of its export share in the period, followed by Italy (with a loss of 25%) while Germany, Spain and the Netherlands have experienced only minor decreases (of roughly 5%) in their world's export share. The exact variations appear in the first column of panel A in Table 1. Losses in export share are generally interpreted as losses in external competitiveness, likely reflecting the fact that products of other nations' firms have replaced the domestic products in international markets.

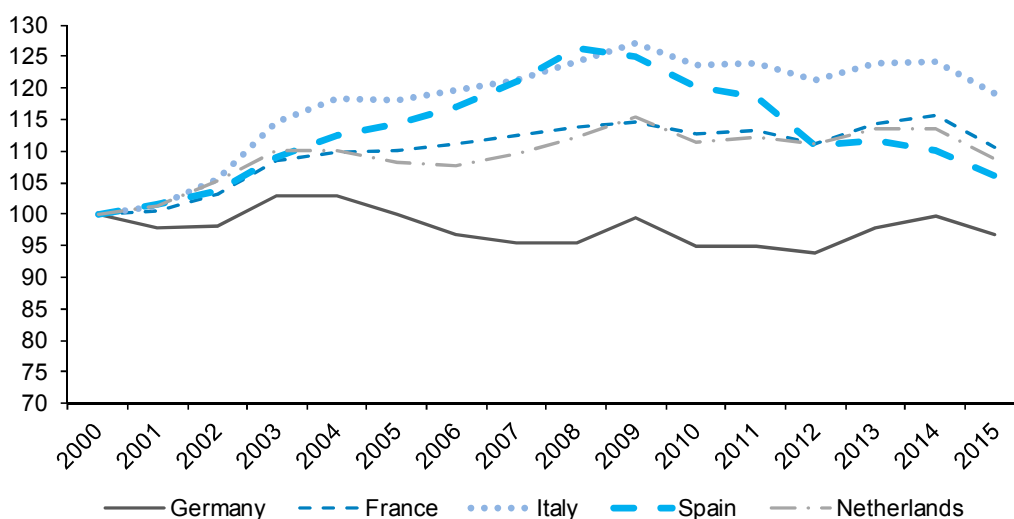
Exhibit 8 represents the internal counterpart of the competitiveness trends in these five countries by displaying the REER based on unit labour costs for the total economy. These series correspond to the NULC-TE variables of Exhibits 1–5. As explained above, the REER is an approximation to the real value of the currency and, as such, increases in the REER (appreciations) are considered cost-competitiveness losses and, conversely, decreases in the REER (depreciations), cost-competitiveness gains. The deflator used in these series, the unit labour cost, increases with the wage costs and decreases when labour productivity rises.



Exhibit 8

**Real Effective Exchange Rate (REER) based on Unit Labour Costs for the total economy versus IC37**

Index (2000 = 100)



Source: European Commission.

Exhibit 8 shows that Germany is the only country where ULC-based competitiveness has improved in the period 2000 – 2015 (slightly above 4%). In the other four economies, competitiveness worsened, although with different intensities. Spain, after registering a record-high loss of more than 26% in 2008, recovered much of this and ended in 2015 with a REER appreciation of less than 8% compared to 2000. France and the Netherlands have had similar cost-competitiveness trajectories to each other, resulting in appreciations in 2015 slightly above 10% with respect to 2000. Finally, Italy, which initially followed the deteriorating trend of Spain up to 2009, did not recover so strongly and by 2015 it was suffering a competitiveness loss of nearly 25% with respect to 2000.<sup>5</sup>

Exhibits 7 and 8 also show that there has been no clear association between cost-competitiveness and export performance in France, Italy and Spain between 2000 and 2015. The country where the

export share fell the most, France, shows just a rather moderate REER appreciation. For the cases of Spain and Italy, while the losses in export share before 2008 could be associated with the REER appreciations, this logic breaks after the crisis. After 2008, there have been relatively large REER depreciations (competitiveness improvements) in both countries, which however are not reflected in sizeable export share gains. The cases of Germany and the Netherlands, with flatter profiles in both measures, could be considered as weakly supporting the link between both forms of competitiveness. In these countries, the export share has remained relatively stable and there have been no large REER fluctuations either.

This point can be extended by means of a simple quantitative analysis that follows the methodology of Correa-López and Doménech (2012) and Cardoso *et al.* (2012). Table 1 presents our results,

<sup>5</sup> At this point, it is necessary to mention that Giordano and Zollino (2016) have convincingly shown that the ULC-based indicators “may provide unreliable insights into competitiveness trends” for the particular case of Italy, mainly due to the different trends in ULCs in some of that country’s main trading partners.

distinguishing the whole period, 2000–2015, and three sub-periods that correspond to pre-crisis (2000-2008), crisis (2008-2011) and post-crisis (2011-2015).

*Results point out that non-price factors have largely dominated price-cost factors in the crisis and post-crisis periods, while the reverse is true for the pre-crisis period.*

Panel A reports the changes in the countries' export market share; where a positive sign represents a gain in this share; panel B reports the part of these changes that can be attributed

to changes in cost-competitiveness conditions (variations of the unit labour cost over the period); and, panel C presents the residual part, calculated as the corresponding cell in panel A minus the cell in panel B.

Consistently with Correa-López and Doménech (2012), the signs in panels B and C are to be interpreted as follows. Positive signs in panel B represent cost-competitiveness gains (*i.e.* REER depreciations) and therefore positive contributions to export shares. Positive signs in panel C represent net positive contributions from the “non-price” factors to external competitiveness, *i.e.* improvements in the firms-related factors such as company size, product quality or expansion to high-growth export markets.

Table 1

### Variation in merchandise exports' shares and the contribution from ULC-TE based REER (Percentage)

Panel A. Variation in world's export share				
	2000-2015	2000-2008	2008-2011	2011-2015
Germany	-5.6	4.7	-10.2	0.4
France	-39.5	-24.8	-14.7	-5.6
Italy	-25.2	-9.8	-15.0	-2.4
Spain	-4.2	-2.4	-4.0	2.3
Netherlands	-4.7	9.4	-7.8	-5.4
Panel B. Contribution from Unit Labour Costs				
	2000-2015	2000-2008	2008-2011	2011-2015
Germany	4.2	5.7	0.8	-2.4
France	-13.3	-17.4	0.7	2.9
Italy	-23.8	-30.1	0.1	5.1
Spain	-7.8	-32.8	7.5	13.1
Netherlands	-10.9	-15.1	-0.2	4.0
Panel C. Residual (C=A-B)				
	2000-2015	2000-2008	2008-2011	2011-2015
Germany	-9.8	-0.9	-11.0	2.8
France	-26.2	-7.5	-15.4	-8.5
Italy	-1.4	20.3	-15.1	-7.5
Spain	3.6	30.4	-11.5	-10.9
Netherlands	6.2	24.5	-7.6	-9.4

Sources: WTO and European Commission.

By comparing the absolute value of cells in panels B and C, our results point out that non-price factors have largely dominated price-cost factors in the crisis and post-crisis periods, while the reverse is true for the pre-crisis period.

In the years 2000–2008, price-cost conditions worsened in the Netherlands, France and, more acutely, in Italy and Spain. These adverse developments were very intense and, in particular, stronger than the export share losses of Italy, Spain and France during that period. The role played by the residual, non-price competitiveness factors was positive and sizeable in Italy, Spain and the Netherlands but insufficient to compensate for the price-cost competitiveness loss. In Germany, and most notably in France, the residuals were negative in the pre-crisis period. All in all, in the pre-crisis period, price-cost factors exerted a stronger impact on export shares than non-price factors.

During and after the crisis, the pattern changed and non-price factors dominate. Between 2008 and 2011, price-cost competitiveness was virtually flat in Germany, France, Italy and the Netherlands while it improved in Spain (third column of panel B), likely reflecting the wage and price restraints of the period. However, export shares dropped in all five countries. This implies that the non-price competitiveness conditions worsened significantly, the negative shock being particularly acute for France and Italy (third column of panel C) where the non-price elements deteriorated 15% in these four years. This is likely to reflect that other factors, not related to prices and costs of the exported goods, played adversely against these countries. Given that the major destinations of all EA5 exports are typically other members of the group, part of the explanation for this surely lies in the fact that the crisis affected them all. As a result of the crisis, each of the five countries reduced its imports and this impacted negatively in the aggregate exports of the rest of EA5.

In the post-crisis period, between 2011 and 2015, non-price factors are again generally stronger

(fourth column of panel C). For all countries except Germany, the non-price competitiveness factors were still having a negative impact, reflecting thus adverse developments related in terms of market destination, product composition or firms' general performance. With the exception of Spain, these negative effects outplay the improvements in price-cost competitiveness, resulting in market share losses in France, Italy and the Netherlands.

---

*The rise in external demand, rather than internal devaluations, has been more closely associated with the increase of exports in Spain.*

---

The singular improvement (depreciation) in the real effective exchange rate in Spain during this period, probably reflects the wage cuts and the very high levels of unemployment in the country (Andrés and Doménech, 2015). However, it is still an open issue the particular role these nominal depreciations have played in boosting Spanish exports. The recent work by Crespo and Rodríguez (2016) suggest that it is the rise in external demand, rather than internal devaluations, that has been more closely associated with the increase of exports in Spain.

## Conclusions

This article finds evidence that suggests that internal non-price/cost factors dominate over strictly price/cost elements in determining the external competitiveness of the five largest EA economies. Non price/cost factors are those conditions associated with the firms' attributes and behaviour (such as firm's size, labour force skills, technology intensity, etc.) as well as the 'right' structure of exports: that is, exporting the right type of products (high margin products) to the right type of destinations (high growth markets).

Building on this observation, it follows as a corollary that internal devaluation policies to recover competitiveness in the two largest periphery countries of the Euro area, Italy and Spain, are likely to have only a limited impact.

In so far as exports are more closely associated to non-price/cost elements, it is recommendable that the policy focus shifts towards:

- a) Strengthening the capitalization of the economies of these two troubling economies in all fronts: human, physical, technological; and,
- b) Providing the right incentives and support mechanisms so that their companies upgrade their export strategy and put more emphasis on selling high value-added products and services to high growth markets.

devaluación interna," *Papeles de Economía Española*, 150: 114-126.

CRESPO, A.; PÉREZ QUIRÓS, G., and R. SEGURA-CAYUELA (2012), "Competitiveness indicators: The importance of an Efficient Allocation of Resources," *Bank of Spain Economic Bulletin*, January.

DRAGHI, M. (2012), Competitiveness of the euro area and within the euro area. Speech by the President of the ECB at the colloquium, *Les défis de la compétitivité*, organised by Le Monde and l'Association Française des Entreprises Privées (AFEP).

EUROPEAN COMMISSION (2013), In-depth review for Spain in accordance with Article 5 of Regulation No 1176/26011 on the prevention and correction of macroeconomic imbalances.

FIVE PRESIDENTS REPORT (2015), Completing Europe's Economic and Monetary Union. Report by Jean-Claude Juncker in close cooperation with Donald Tusk, Jeroen Dijsselbloem, MARIO DRAGHI and MARTIN SCHULZ.

GIORDANO, C., and F. ZOLLINO (2016), "Shedding Light on Price- and Non-price-competitiveness Determinants of Foreign Trade in the Four Largest Euro-area Countries," *Review of International Economics*, 24(3): 604–634.

STORM, S., and C. W. M. NAASTEPAD (2014), "Europe's hunger games: Income distribution, cost competitiveness and crisis," *Cambridge Journal of Economics*, 39(3): 959–986.

SPANISH PRIME MINISTER ECONOMIC BUREAU (2010), Informe Económico del Presidente del Gobierno 2010. Oficina Económica del Presidente del Gobierno.

XIFRÉ, R. (2014), "Four years of economic policy reforms in Spain: An analysis of results from an EU perspective," *Spanish Economic and Financial Outlook (SEFO)*, vol. 3, no. 5.

## References

ANDRÉS, J., and R. DOMÉNECH (2015), *En busca de la prosperidad. Los retos de la sociedad española en la economía global del siglo XXI*, Ed. Deusto.

ANTRÁS, P.; SEGURA-CAYUELA, R., and D. RODRÍGUEZ RODRÍGUEZ (2010), *Firms in International Trade (with an Application to Spain)*, SERIES Invited Lecture.

BAYOUMI, T.; HARMSSEN, R., and J. TURUNEN (2011), Euro Area Export Performance and Competitiveness, *IMF Working Paper*, 11/40.

CARDOSO, M.; CORREA-LÓPEZ, M., and R. DOMÉNECH (2012), *Export shares, price competitiveness and the 'Spanish paradox*, Voxeu.org. Available at: 'http://voxeu.org/article/export-shares-price-competitiveness-and-spanish-paradox.

CORREA-LÓPEZ, M., and R. DOMÉNECH (2012), The Internationalisation of Spanish Firms, *BBVA Research Working Papers*, 12/30.

CRESPO, A., and A. GARCÍA RODRÍGUEZ (2016), "¿Ha mejorado la competitividad exterior gracias a la