



What caused current account imbalances in euro area periphery countries?

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External imbalances may exacerbate the vulnerability of countries. As regards euro area periphery countries, the widening of these imbalances began in 1996, before the introduction of the euro. This Rue de la Banque tests different explanations for the build-up of these imbalances since 1996. Account is taken of the role played by changes in economic agents' expectations which could have been triggered by the announcement, in December 1995, of the exact timeline of the transition to the single currency. Current account and real exchange rate imbalances in the euro area periphery countries were largely driven by an anticipated decrease in relative (to the core countries) external borrowing costs and not by a catching-up process (i.e. capital was not flowing simply towards countries with higher current or expected rates of return).

Recent developments in the euro area suggest that external imbalances, in particular current account and real exchange rate misalignments, have increased the vulnerability of member countries in the periphery. What caused these imbalances? On the one hand, standard theory suggests that catching-up economies, with higher growth prospects and/or higher rates of return, experience increasing current account deficits (Blanchard and Giavazzi, 2002). Subsequently, these deficits will be rebalanced by surpluses, generated by an increased production capacity.

In this respect, expected increases in productivity, especially in the tradable sector (Giavazzi and Spaventa, 2010), could be interpreted as the main source of the negative current account balances generated during a catching-up process. On the other hand, other studies suggest that financial market dynamics (e.g. Lane, 2013 and Hale and Obstfeld, 2016) or demand increases

(e.g. Gaulier and Vicard, 2012 and Kang and Shambaugh, 2013) have been the main drivers of EMU imbalances.

In this *Rue de la Banque*, we aim to clarify this debate by testing different possible explanations for euro area imbalances.

Three key stylised facts

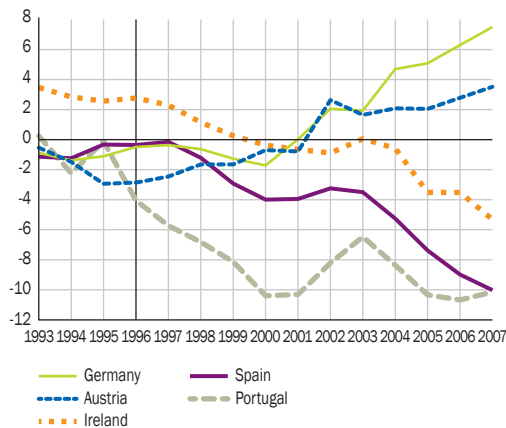
Three macroeconomic facts characterised Ireland, Portugal and Spain (henceforth IPS) from 1996 up to the Great Recession.¹ First, IPS current account deficits

¹ We do not include Greece in the analysis because of data incompatibility issues for the period preceding this country's entry into the euro area.

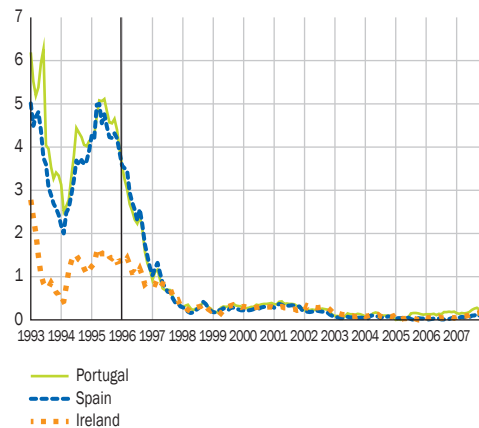
C1 Current account, real GDP, real exchange rate and bond yield spreads

(%, index for real exchange rate)

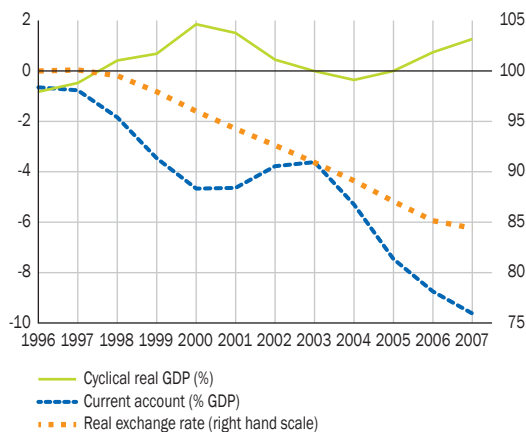
a) Current account dynamics (% of GDP)



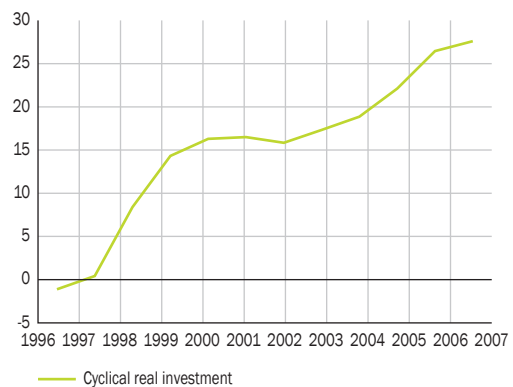
c) Government bond yield spread vs. German Bund



b) Cyclical real GDP and external imbalances in Ireland, Portugal and Spain



d) Ireland Portugal and Spain investment



Notes:

In chart 1(b), cyclical real GDP is the log deviation of GDP from a deterministic trend (%), and the real effective exchange rate (REER) is calculated against the EU-12 countries and expressed as an index (1996 = 100). Cyclical real GDP, the current account and the REER are weighted averages for all three countries (Ireland, Portugal and Spain). Annual HICP relative household consumption expenditure shares are used as weights.

In chart 1(c), the spreads between long-term government bond yields are calculated based on central government bond interest rates on the secondary market, gross of tax, with a residual maturity of around 10 years.

In chart 1(d), cyclical real investment is the log deviation of the average IPS investment from the GDP-implied trend (%), weighted as in chart 1(b).

Source: Eurostat.

began to increase as of 1996, i.e. before the introduction of the euro, while other countries, Germany and Austria for example, experienced increasing surpluses (Chart 1a). Second, at the same time, IPS were growing faster than trend, investment was increasing and the real exchange rate was experiencing a persistent appreciation with respect to the rest of the area (Chart 1b,1d).² Third, around 1996, the long term borrowing cost premium that IPS had to pay with respect to euro area core countries started to decline dramatically (Chart 1c).

Due to the timing of these three stylised facts, which began before the actual introduction of the euro, our analysis will also take into account the role played by changes in economic agents' expectations regarding macroeconomic variables.

² Portugal stopped growing faster than trend after the year 2000. However, the years of increasing current account deficits (1995-2000) were the ones characterised by high GDP growth and increasing investment.

The role of expectations

On 15-16 December 1995, the European Council meeting in Madrid decided the exact timeline of the transition to the single currency. This announcement was an important signal to economic agents and changed their expectations regarding, for example, the future cost of goods imported from the rest of the monetary union, and the future cost of financing. Even though those changes were only anticipated, i.e. there were no actual changes in the fundamentals of the economies, this information could have had important implications for economic agents' behaviour.

Therefore we test theoretically and empirically if changes in conditional expectations have been an important driver of the observed imbalances. Our estimation procedure assumes that expected future events happen with certainty (news shocks).³

How to disentangle observationally equivalent current account dynamics generated by different sources?

Current account deficits have different economic and policy implications depending on their trigger.⁴ In order to assess the sources of EMU imbalances, we rely on a theoretical estimated structural model.⁵ The use of a model allows us to test different hypotheses by jointly focusing on a complete set of international variables, highlighting the importance of interconnections between them. First we identify the drivers of IPS imbalances. Second, we quantify the role of each possible explanation.

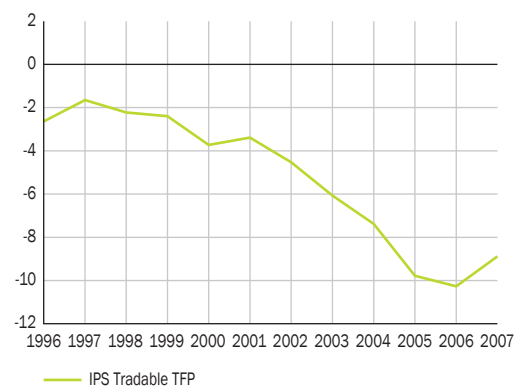
Results

We test the three main explanations put forward by the literature: the catching-up process, demand increase and financial factors. These three sources are all compatible with a pronounced increase in the current account deficit in IPS.

The catching-up process (defined in the model as an anticipated increase in productivity) cannot be the main driver of the observed current account deficits. The reason is that an increase in productivity (in the current period or expected in the future) generates (immediately or with a lag) real exchange rate depreciation, not an appreciation. The intuition is that an increase in productivity generates a decrease in marginal costs of production which decreases prices. Only changes in long-run productivity expectations restricted to the tradable sector, similar

C2 Productivity in Ireland, Portugal and Spain in the tradable sector

(year % change)



Note: Total factor productivity path in the tradable sector calculated as a percentage deviation from the trend. The trend is calculated as the average TFP in 1981-2007 for Spain, in 1989-2007 for Ireland and in 1996-2007 for Portugal.

Source: EUKLEMS database and Siena (2014).

to the Harrod-Balassa-Samuelson effect, can trigger a persistent appreciation of the real exchange rate. However, a catching-up in the tradable sector fails to explain the persistent current account deterioration as it implies an increase in international competitiveness. In addition, the catching-up hypothesis is hard to reconcile with the evidence that total factor productivity in IPS, especially in the tradable sector, was indeed decreasing (as pointed out also by Gopinath *et al.*, 2015 and shown in Chart 2).

The second explanation, put forward by Gaulier and Vicard (2012) and Kang and Shambaugh (2013), is that the deficit was generated **by a demand shock** in IPS to imported goods but also to housing (and non-tradable goods in general). The theoretical model shows, however, that an increase in current account deficits due to a boom in demand would have been combined with a fall in investment, generated by consumption crowding out savings, and not the observed increase (Chart 1d).

³ The theoretical results are, however, robust to the assumption of some uncertainty around future changes in expectations (noise shocks).

⁴ See for example Obstfeld and Rogoff (1995) and Bussière *et al.* (2006).

⁵ We build and estimate a two-sector New Keynesian Dynamic Stochastic General Equilibrium small open economy model of a monetary union. For details of the model, refer to Siena (2014). The model is estimated on a weighted average of IPS data in the period from January 1996 to December 2007.

Conversely, the third explanation focusing on **financial factors** (e.g. contemporaneous and expected decreases in the yield spread with respect to EMU core countries) can explain the current account deficits, the appreciation of the real exchange rate and above-trend growth. In fact, a decrease in the relative cost of international borrowing results in an increase in aggregate demand, through an increase in both consumption and investment. This pushes domestic prices up (both in the sector producing tradable goods but mostly in the non-tradable sector, e.g. housing) which results in a real exchange rate appreciation. In turn, the appreciation of the real exchange rate and the increased import demand generate negative net exports and current account deficits. These effects on the economy are longer lasting if the decrease in the international borrowing cost is anticipated. This is due to the fact that economic agents prefer to adjust consumption and investment smoothly. Indeed, between 1996 and 2007, IPS experienced a large and unprecedented decrease in the relative cost of borrowing (Chart 1c), which started when people accepted in 1996 that the transition towards the EMU was indeed happening.⁶

Assessing the empirical relevance of the different explanations

The estimation of the model, through Bayesian techniques, allows us to quantify the relative importance of the plausible explanations listed above. We focus in particular on the dynamics of the current account, the real exchange rate and real GDP. First, expectations played an important role in the fluctuations of the current account and the real exchange rate but less so for real GDP (explaining respectively two-thirds, half and one third of the fluctuations; see Table 1).

Second, as shown in Table 2, the catching-up hypothesis can explain up to 23% of current account fluctuations but only 7% of real exchange rate movements. The increase in demand does better, as it can explain 25% of the current account and 13% of the real exchange rate fluctuations. However, the main drivers of IPS current account imbalances and real exchange rate misalignment

T1 Share of the variance explained by contemporaneous and anticipated fluctuations

(%)

Source	Δ Real GDP	Δ CA	Δ RER
Contemporaneous	65	38	52
Anticipated	35	62	48

Note: CA stands for current account and is in percent of GDP, RER stands for real exchange rate.

Source: Siena (2014).

T2 Share of the variance explained by the three proposed explanations

(%)

Source	Δ Real GDP	Δ CA	Δ RER
Catching up	11.3	22.8	7.1
Demand shock	21.2	25.3	13.3
Financial factors	18.0	26.9	39.7
Others	49.5	25	39.9

Note: CA stands for current account and is in percent of GDP, RER stands for real exchange rate. Catching up stands for anticipated tradable and non-tradable productivity shocks, Demand shocks for both unanticipated and anticipated demand shocks and financial factors for unanticipated and anticipated yield spread shocks.

Source: Siena (2014).

are fluctuations in the relative international borrowing cost. The movements in the yield spread account for 27% of current account and 40% of real exchange rate fluctuations.

All in all, current account and real exchange rate imbalances in the euro area periphery countries were largely driven by an anticipated decrease in relative (to the core countries) external borrowing costs and not by the catching-up process.

⁶ The decrease in the long term relative cost of borrowing for IPS happened in two phases: a strong decrease between 1996 and 1998 and a slower but persistent decrease in the period between 2002 and the third quarter of 2006.

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