# Macroeconomic imbalances within the European Monetary Union. Could they even get worse?

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## Main message of the paper

Macroeconomic imbalances are a feature not only of the global economy, but also of the EMU. The present crisis has further aggravated the consequences of imbalances across the EMU.

We argue that the widening opposite trends of real depreciation in many Core and real appreciation in Peripheral EMU economies depend on the **inconsistency between growing spillovers and the inadequate governance of macroeconomic imbalances across the EMU**.

## EMU: Nominal Convergence= successful Real convergence= disappointing

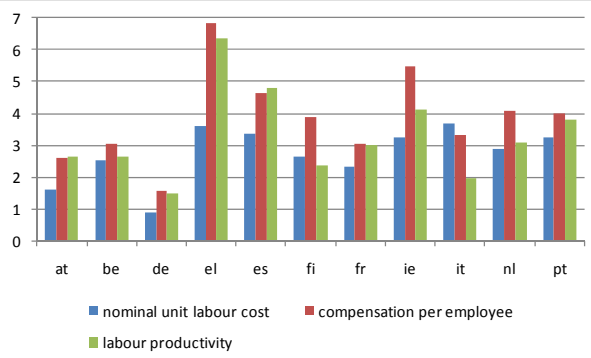
**Two interpretations:**

**1. $\Delta ULC_C < \Delta ULC_P$ (Fig.1: Ie,El,Es,Pt,It)**
**(moral hazard view: Peripheral countries are exploiting the advantage of the belonging to EMU)**

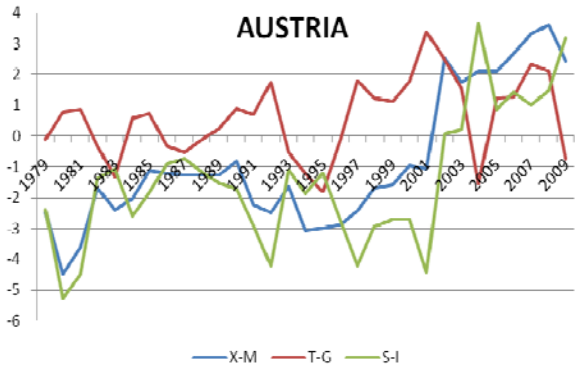
**2. Also macroeconomic imbalances matter (Figg.2: Peripheral countries: S < I ).**

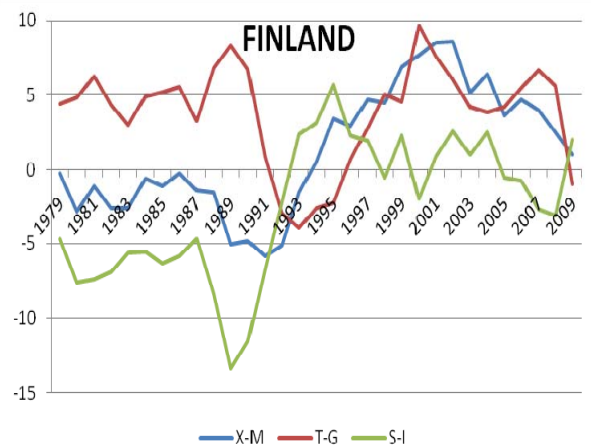
**Economic and monetary integration magnified spillovers (German banks made profits out of Spanish public bonds; ECB monetary policy has caused excess credit and bubbles in higher-than-average inflation Peripheral countries, etc.).**

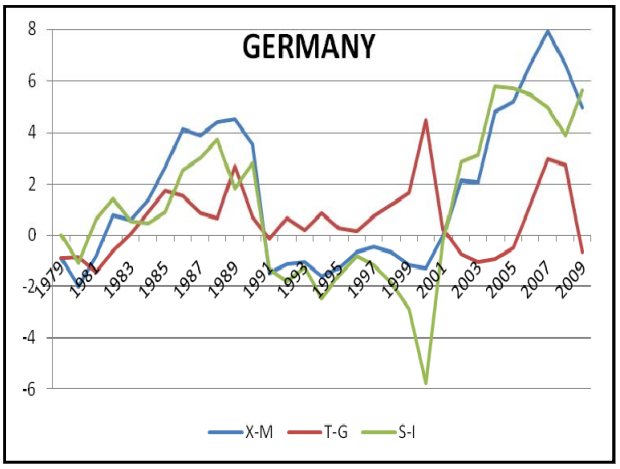
## FIGURE 1. Growth rates of ULC in the EMU economies (1999-2009)




## Figures 2: Macroeconomic imbalances

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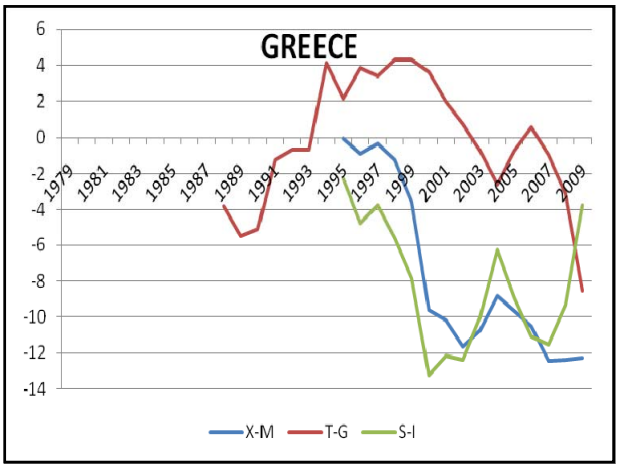
X-M
T-G
S-I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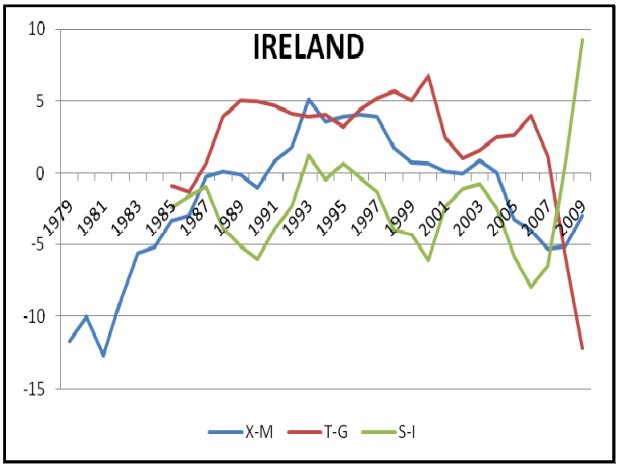
X-M
T-G
S-I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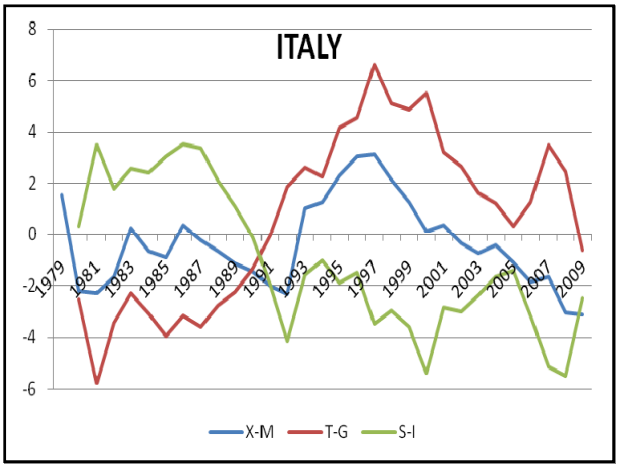
X-M
T-G
S-I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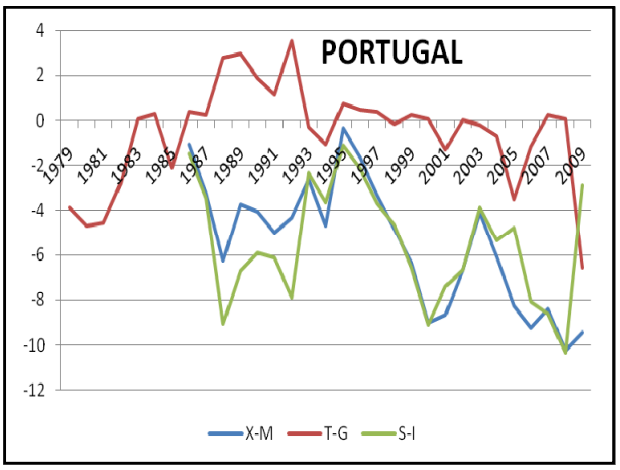
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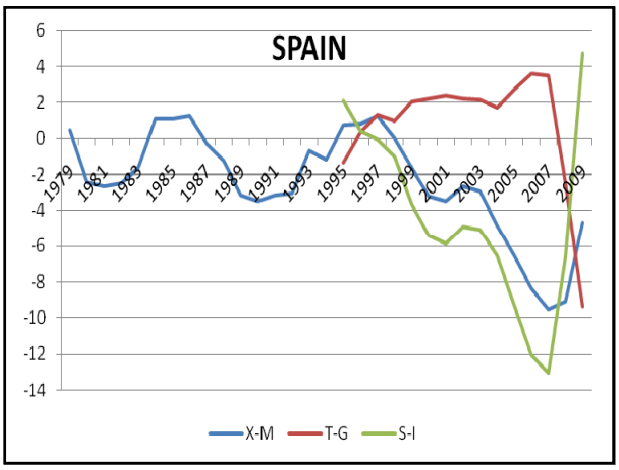
X-M
T-G
S-I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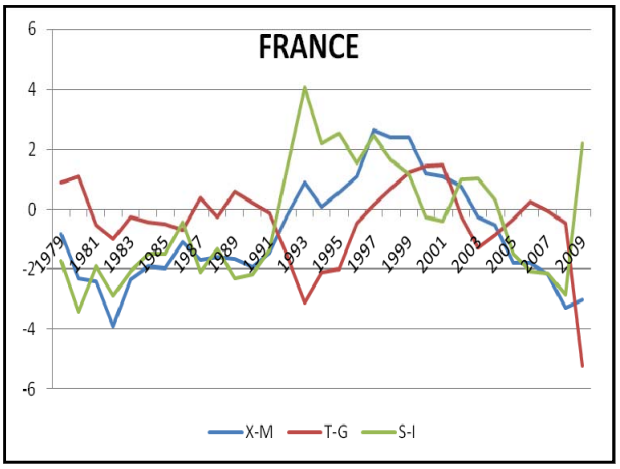
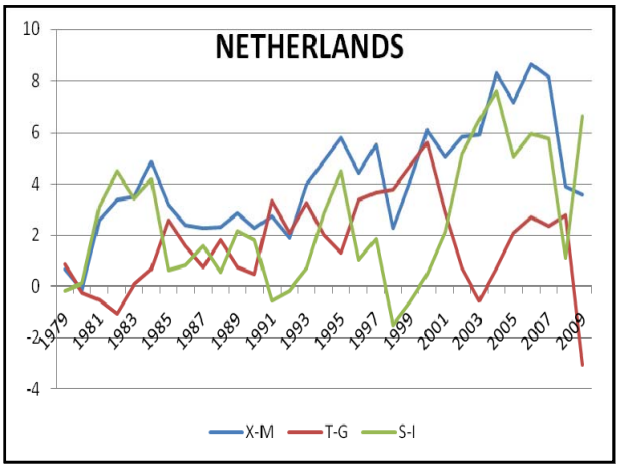
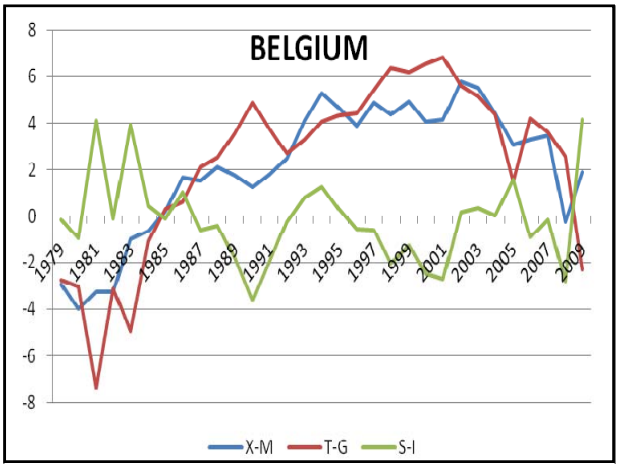
X-M
T-G
S-I



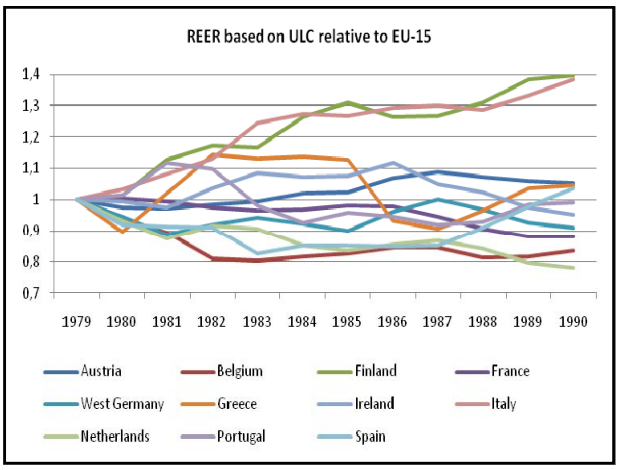



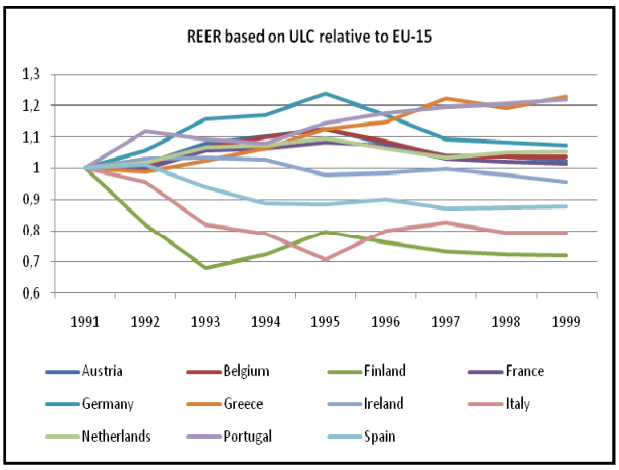



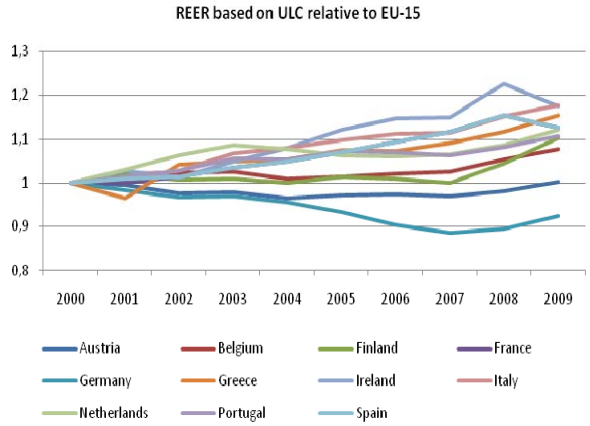

## REER *vis-à-vis* the EMU-15 average (Figures 3)

From the "small bands" EMS (1979-1992), to the Maastricht period (1993-99), to the 10 years of monetary union (2000-09), the REER volatility (standard deviation) smoothly declines.

A sharp **drop in REER volatility** in moving from a flex to a fixed e.r. regime → evidence of **nominal rigidities** (Monacelli, 2005).






## REER. Evidence for the European countries

In the EMU, the **REER trends keep diverging.**

The nominal e.r. adjustment is now missing, but the market adjustment through wage and price reductions seem to be sluggish.

We first investigate the determinants of the evolution of the ULCs along the three phases of the monetary integration process.

$$\Delta \log REER_t = \alpha_t + \beta_1 \Delta \log REER_{t-1} + \beta_2 outputgap_{t-1} + u_t$$

**Regression 1**: Changes in the REER (based on the national ULCs relative to the European average) as a function of both changes in the lagged REER (measuring the inertia in the market adjustment), and the lagged output gap ( measured as the deviation of actual from potential output computed by the Commission services, for each country relative to the GDP-weighted output gap of the remaining countries).

## Regression 1 . Results

$$\Delta \log REER_t = \alpha_t + \beta_1 \Delta \log REER_{t-1} + \beta_2 outputgap_{t-1} + u_t$$

| | 1979/09 | 1979/90 | 1979/99 | 1991/99 | 1991/09 | 2000/09 |
|---|---|---|---|---|---|---|
| $\Delta \log REER_{t-1}$ | 0.21449 | **0.22502** | 0.21633 | **0.19116** | 0.19334 | **0.13495** |
| t | (4.3822) *** | (2.9751) *** | (3.6300) *** | (1.9111) * | (2.8963) *** | (1.4443) |
| output gap $_{t-1}$ | 0.31846 | **0.27141** | 0.31587 | **0.39111** | 0.36286 | **0.30298** |
| t | (4.7441) *** | (2.3548) *** | (3.5030) *** | (2.6042) *** | (4.4434) *** | (4.6457) *** |
| $R^2$ | 0.1319 | 0.1120 | 0.1237 | 0.1419 | 0.1549 | 0.1836 |
| nobs | 341 | 132 | 231 | 99 | 209 | 110 |

Significance levels: *** significant at 1%; ** significant at 5%; * significant at 10%

$$\Delta \log REER_t = \alpha_t + \beta_1 \Delta \log REER_{t-1} + \beta_2 outputgap_{t-1} + u_t$$

1. **The positive sign of the OG coefficient (national *vis-à-vis* the rest-of-area OG) means that after a negative shock (negative OG) a reduction in ULC secures some relief to the domestic economy. On average, 1/3 of the relative output gap is absorbed (the highest coefficient is in the Maastricht period).**

**2. Yet, the closer the period to the inception of the monetary union, the more the coefficient of the lagged REER shrinks, thus expressing inertia (lower speed of adjustment). Without the support of nominal devaluations, national inflation and output gaps become more persistent (falling coefficients in the Maastricht and EMU periods). Moreover, significance fades out in the EMU period.**

**We then ask to what extent the integration process strengthened the market adjustment, independently from the X and M elasticities considered in the REER**

## To what extent the integration process strengthened the market adjustment?

The strategy is to have the price level as the dependent variable. Regression 2 insulates changes in the GDP deflator within the European economies. The price reaction to the output gap, measured independently from the export and imports elasticities, allows verifying to what extent the integration process strengthened the market adjustment.

## Regression 2. Results

$$\Delta \log P_t = \alpha_t + \beta_1 \Delta \log P_{t-1} + \beta_2 outputgap_{t-1} + \beta_3 \Delta \log NEER_{t-1} + u_t$$

| | 1979/09 | 1979/90 | 1979/99 | 1991/99 | 1991/09 | 2000/09 |
|---|---|---|---|---|---|---|
| $\Delta \log P_{t-1}$ | 0.65547 | **0.73492** | 0.70749 | **0.58714** | 0.49346 | **-0.07931** |
| t | (16.5009) *** | (15.5036) *** | (19.3070) *** | (9.47927) *** | (6.9128) *** | (-0.4325) |
| output $gap_{t-1}$ | 0.25005 | **0.23797** | 0.22059 | **0.19092** | 0.22444 | **0.35223** |
| t | (5.8192) *** | (3.9902) *** | (5.0556) *** | (3.0421) *** | (3.7792) *** | (3.4642) *** |
| $\Delta \log NEER_{t-1}$ | -0.21632 | **-0.19770** | -0.17838 | **-0.10209** | - | - |
| t | (-6.3291) *** | (-4.7218) *** | (-5.7039) *** | (-2.1232) *** | - | - |
| $R^2$ | 0.6290 | 0.8058 | 0.7574 | 0.6811 | 0.2523 | 0.1013 |
| nobs | 341 | 132 | 231 | 99 | 209 | 110 |

$$\Delta \log P_t = \alpha_t + \beta_1 \Delta \log P_{t-1} + \beta_2 outputgap_{t-1} + \beta_3 \Delta \log NEER_{t-1} + u_t$$

**Regression 2**

1. **<u>In the "hard EMS" to the "Maastricht" period</u>, the coefficients of the price reaction to OG are very. The contribution of price flexibility to competitiveness is much lower than the one in Regression 1 (comprehensive of the effect of nominal devaluations on the REER).**
2. **<u>In the EMU</u>, large and significant OG coefficient.**
3. **Yet, for the lagged P variable (speed of adjustment), in the last period statistical significance fades out.**

**Hyp.: Macroeconomic imbalances→ widening real divergence between Core and Peripheral countries.**

$$currentacc\,ount_t = \alpha_t + \beta_1 \log REER_{t-1} + \beta_2 outputgap_{t-1} + \beta_3 primarybal\,ance + u_t$$

Regression 3: The current account (the indicator of price, and quality, competitiveness) as a function of two lagged independent variables (the REER and the output gap), and the primary balance.

<u>MAIN RESULTS</u>

(i) A robust negative relationship between the current account and both lagged dependent variables of regression 1 (output gap and REER) during both the EMS (1979/90) and the Maastricht (1991/99) period. When investment lags behind savings, Δ REER ↓ and the trade balance ↑.

Yet, <u>during the EMU period (2000/09) the coefficient significance is lost.</u>

## Regression 3. Results

$$currentacc\,ount_t = \alpha_t + \beta_1 \log REER_{t-1} + \beta_2 outputgap_{t-1} + \beta_3 primarybal\,ance + u_t$$

| | 1979/09 | 1979/90 | 1979/90 | 1979/99 | 1991/99 | 1991/09 | 2000/09 |
|---|---|---|---|---|---|---|---|
| constant | 0.76396 | 0.34260 | 0.38401 | 0.61926 | 0.82150 | 0.83929 | 0.54993 |
| t | (8.072)*** | (2.828)*** | (3.005)*** | (5.996)*** | (3.623)*** | (4.352)*** | (1.058) |
| log $REER_{t-1}$ | **-0.37596** | **-0.17062** | -0.19136 | -0.30596 | **-0.40526** | -0.41332 | **-0.26594** |
| t | (-8.028)*** | (-2.863)*** | (-3.043)*** | (-6.019)*** | (-3.613)*** | (-4.307)*** | (-1.020) |
| $outgap_{t-1}$ | **-0.56273** | **-0.47739** | -0.51930 | -0.48915 | **-0.73119** | -0.69890 | **-0.08709** |
| t | (-3.542)*** | (2.789)*** | (-2.874)*** | (-3.917)*** | (-4.716)*** | (-3.453)*** | (-0.252) |
| primary balance | **0.54487** | **0.09739** | 0.18941 | 0.41145 | **0.73472** | 0.78602 | **0.61440** |
| t | (7.527)*** | (1.166) | (1.737)* | (6.312)*** | (7.291)*** | (9.182)*** | (4.916)*** |
| dummy periphery | -0.95716 | -0.66442 | -0.67207 | -0.98402 | -1.0775 | -0.78414 | **-0.80361** |
| t | (7.635)*** | (-4.698)*** | (-4.837)*** | (-7.869)*** | (-4.265)*** | (-3.057)*** | (-1.031) |
| drift periphery REER | **0.45382** | 0.32282 | 0.32532 | 0.48151 | 0.52210 | 0.36294 | **0.36030** |
| t | (7.277)*** | (4.617)*** | (4.752)*** | (7.797)*** | (4.164)*** | (2.842)*** | (0.929) |
| drift periphery prim.balance | - | - | **-0.00332** | - | - | - | |
| t | - | - | (-2.540)** | - | - | - | |
| $R^2$ | 0.4190 | 0.2221 | 0.2368 | 0.3260 | 0.4698 | 0.5374 | 0.6511 |
| nobs | 341 | 132 | 132 | 231 | 99 | 209 | 110 |

(ii) Positive correlation CA-PB (Primary Balance drift in1979-90), strengthening in 1991-99 coherently with Maastricht. Fiscal retrenchment in Periphery → current account improvement : "the twin surpluses"?

(iii) The Core / Periphery heterogeneity comes to light by including a dummy (Peripheral countries) and a drift on lagged REER. Both coefficients statistically significant till 1999, but in the EMU the dummy is significant and the drift is not (with a change in sign).

**<u>DISCUSSION</u>**

**Sign switch in Periphery drift = the c.a. improves (worsens) depending on the REER moving in opposite directions:** *vis-à-vis* **EMU-average, a falling (rising) REER in Core, a rising (falling) REER in Periphery.**

**This is a clue that the major determinant of the current account differs for the two groups of countries:**

**while in the Core countries the current account balance could be mainly determined by the REER, in Periphery domestic demand seems more important**.

## Conclusions

**Regressions 1 and 2**: REER has reacted to OGs more through the X and M elasticities than through price flexibility, but **larger p reaction in the EMU**.

**Regressions 3: Core = REER ↓ ; ca ↑**
**Per. = REER ↑ ; ca ↑ ↓ (depending on domestic demand ↓ ↑ )**

Macroeconomic imbalances need to be governed even at risk of moral hazard ("firemen deal with a fire before the judicial sanctions start").
Given the increase in public deficit and debt over GDP after the crisis, larger exports could (should) help the recovery of peripheral countries' growth rates.

- [1] "Stronger relative demand pressures in a given Member State tend to fuel im anport demand and depress the current account. Differences in export performance – and therefore price competitiveness – have also contributed to the divergence of current accounts but, in most Member States, this has been of secondary importance compared with domestic demand factors." (European Commission, 2010, p.8).

- Hence, the complementarity between enhanced labour market flexibility and fiscal consolidation – the cuts in wages and in public expenditures invoked by the European Commission (Buti, Rűgen, and Turrini, 2009) - could provoke a huge fall in output ending in a long-lasting deflation. Instead, the substitutability between the labour market and the public deficit adjustment should be preferred, as the peril of a depressed aggregate demand after *spillovers* fuelled by the complementarity strategy would be avoided Under low inflation, the best mix is a fiscal contraction with nominal wage increases, while under low real interest rates, a fiscal expansion with wage moderation has to be preferred.[1]
- For this strategy to be welfare-enhancing for the whole Eurozone, negative *spillovers* across countries are to be minimized
[1] "For a better coordination of wage and fiscal adjustments (…) it would have been better for Portugal to combine *fiscal contraction and wage increases* in the 1990s, in exchange for *fiscal expansion and wage decreases* in the 2000s" (Blanchard, 2007, p.32; italics in the next). This approach to the EMU macroeconomic governance, alternative to the European Commission one, ascribes macroeconomic imbalances to the growing interconnectedness across globalized financial markets

## Spillovers

While in perfect mkts any voluntary exchange is mutually beneficial to both parties involved in the trade, a **spillover** is a cost or a benefit which cannot be reflected in a price. Welfare economics shows that the existence of externalities results in outcomes that are not socially optimal. Those who suffer from external costs do so involuntarily, while those who enjoy external benefits do so at no cost.