1918
TALLINNA TEHNIKAÜLIKOOL
TALLINN UNIVERSITY OF TECHNOLOGY

10th Euroframe Conference
"Towards a better governance in the EU?"
Warsaw, Poland, 24 May 2013

# The Euro Plus Pact: Competitiveness and External Capital Flows in the EU Countries

KARSTEN STAEHR
Tallinn University of Technology, Estonia
Eesti Pank, Estonia

Joint with Hubert Gabrisch, IWH, Halle, Germany

*All viewpoints personal!*

## Next 20 minutes

1. The Euro Plus Pact
2. Briefly on the literature
3. Data
4. Granger causality tests
5. VAR models
6. Final comments

Gabrisch & Staehr (2012)

- Working Papers of Eesti Pank, no. 5/2012
- IOS Working Paper, no. 324

# 1. The Euro Plus Pact

- Late 2010 → *Pact of competitiveness*
- Early 2011 → *Pact for the euro*
- Adopted on 25 March 2011 → *Euro Plus Pact*

Euro Plus Pact → countries are crisis countries because of weak competitiveness!

Competitiveness ↓ (e.g. Unit Labour Cost = ULC ↑)

⇒

"Deterioration" of Current Account balance, CA ↓

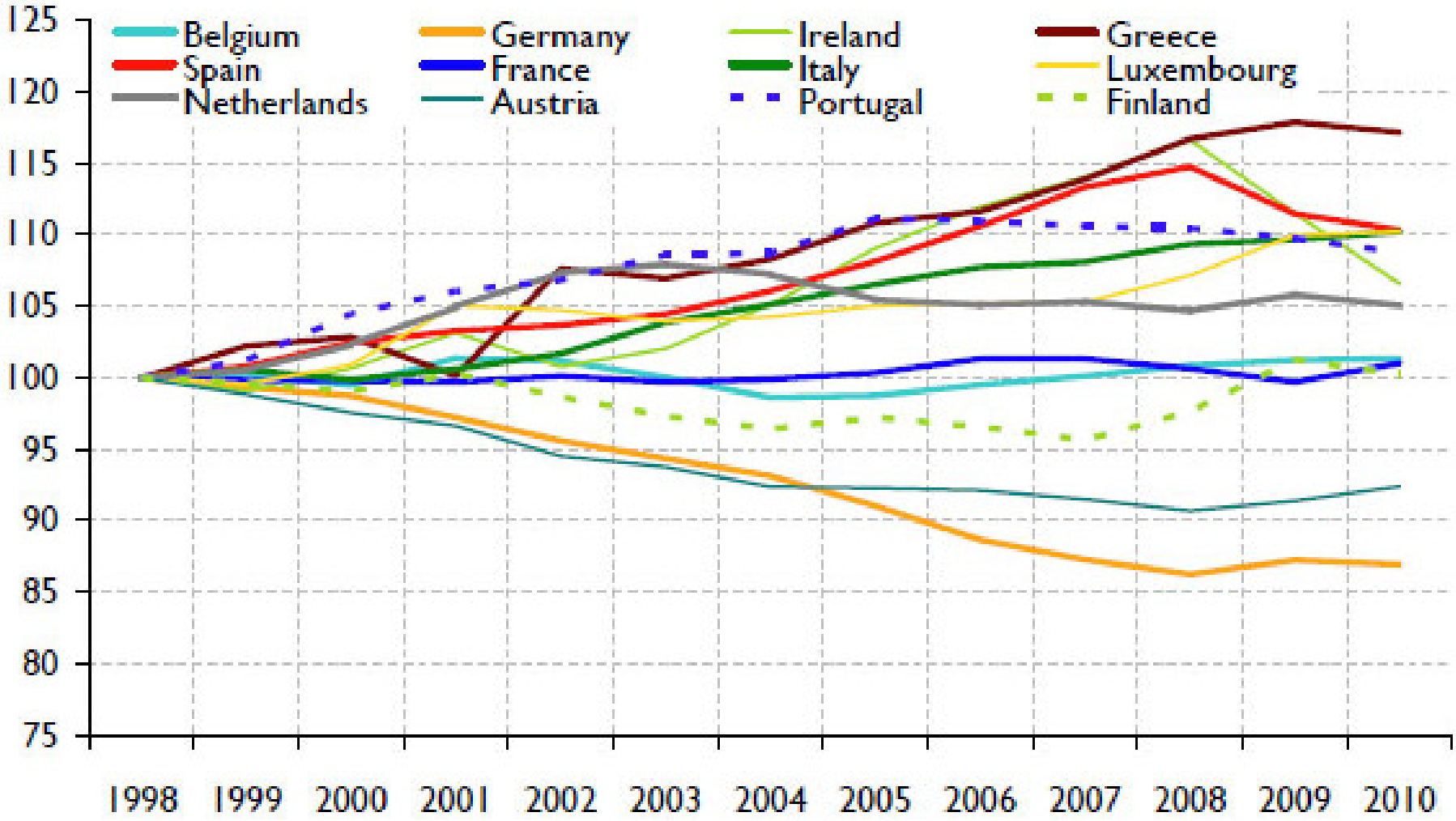
⇒

Crisis in case of financial shock

Gros (2011, p. 1):

> *The (relative) unit labour costs of GIP(S) countries Greece, Ireland, Portugal and Spain have increased: this is the fundamental cause of their problems as export performance must have been bad, pushing them into current account deficits.*

**Figure:** Unit Labour Costs relative to euro area average, 1998 = 100




Note: ULC is computed as the ratio between compensation per employee and real GDP per employed person

*Source: European Commission*

This paper → is the implied / assumed direction of linkage/"causality" correct?

- Does improved competitiveness reduce financial imbalances?
- Does relative ULC ↓ ⇒ current account ↑?
  - Time-based identification of direction of linkage… ☺

## 2. Briefly on the literature

## Discussion of Euro Plus Pact

Mostly commentaries / blogs from spring and summer 2011

Gros & Alcidi, Gros (Eurointelligence), Schiliro, Wyplosz

- How to measure competitiveness?
  - Why not start ULC index series in 1992?
  - ULC ↑ if more attractive product ☺
- Levels vs. changes in ULC?
- Adjustment by deficit countries vs. surplus countries
- Urgent crisis, but slow-working instruments

## Linkages between capital flows and competitiveness

Competitiveness ↓ ⇒ current account balance ↓

*Theory*

Real exchange rate appreciation / ULC ↑ / competitiveness ↓ ⇒ NX ↓ ⇒ current account ↓

- Marshall-Lerner
- *j*-curve

*Empirics* [← many studies of Marshall-Lerner condition]

Belke, Ansgar & Christian Dreger (2011): "Current account imbalances in the euro area: catching up or competitiveness", DIW Discussion Papers, no. 1106, Deutsches Institut for Wirtschaftsforschung.

Jaumotte & Sodsriwiboon (2010): "Current account imbalances in the Southern Euro Area", IMF Working Paper No. 10/139

## CA ↓ (capital inflow) ⇒ Competitiveness ↓

*Theory*

- Capital inflow ⇒ demand for non-traded products ↑ ⇒ wages etc. ↑ ⇒ unit labour costs ↑ / real exchange rate appreciation [← "demand story"]
  - The *transfer effect* → the *transfer paradox*, cf. of post-WWI reparation recipients ☹
  - *Dutch disease* → foreign exchange earnings ↑ ⇒ real exchange rate appreciation

*Empirics* [← many papers, in particular for emerging markets]

- Calvo, Guillermo A., Leonardo Leiderman & Carmen M. Reinhart (1993): "Capital inflows and real exchange rate appreciation in Latin America", *IMF Staff Papers*, vol. 40, no. 1, pp. 108-151.

- Bakardzhieva *et al.* (2010): "The impact of capital and foreign exchange flows on the competitiveness of developing countries", IMF WP/10/154

## 3. Data

Panel

- 27 EU countries
- Annual data 1995-2011

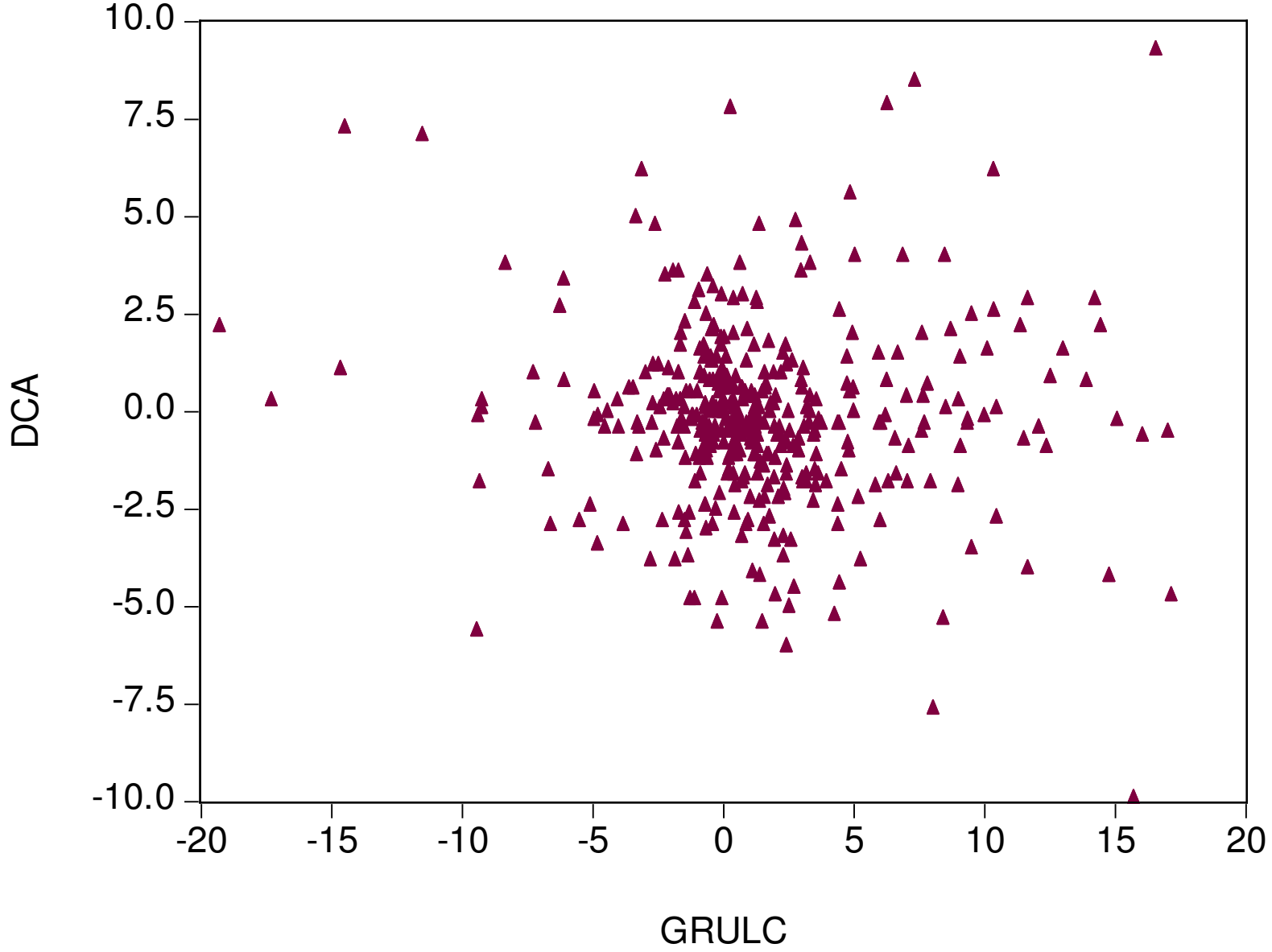
Notation

- RULC = Relative Unit Labour Costs (in euro, relative to EA12 average)
  - RULC ↑ ⇒ competitiveness ↓
- **GRULC** = percentage Growth in Relative change in Unit Labour Cost
  - GRULC > 0 ⇒ competitiveness ↓
- CA = Current Account balance in percent of GDP
  - CA < 0 → negative current account balance → capital inflow
- **DCA** = Difference in Current Account balance in percent of GDP
  - DCA < 0 → "deterioration" of current account balance → capital inflow ↑

"Preparations"

- GRULC, DCA → panel stationary in sample 1997-2011 ☺
  - CA → borderline case [← use DCA in baseline regressions]

**Figure:** Changes in competitiveness vs. changes in capital inflows (EU27)




[Cheney]

## 4. Granger causality tests

Which direction of linkage/"causality"? → Granger causality

Questions

- Does DCA Granger-cause GRULC? → does lagged DCA help explain GRULC?
- Does GRULC Granger-cause DCA? → does lagged GRULC help explain DCA?

Estimations (1 year lag)

- $DCA = \alpha_0 + \alpha_1 DCA(-1) + \alpha_2 GRULC(-1) + \varepsilon_{CA}$
- $GRULC = \beta_0 + \beta_1 GRULC(-1) + \beta_2 DCA(-1) + \varepsilon_{GRULC}$

- GRULC $\not\Rightarrow$ DCA if $H_0$: $\alpha_2 = 0$ cannot be rejected
- DCA $\not\Rightarrow$ GRULC if $H_0$: $\beta_2 = 0$ cannot be rejected

Panel data estimations

- Few observations along time dimension
- "Average effect" across EU countries ☺

NB1: Few observations along time dimension → 1 and 2 year lags
NB2: Most often → country fixed effects

Clustered standard errors in ( )-brackets, *p*-values in [ ]-brackets

**Table 2:** Panel data Granger causality tests. Dependent variable DCA

| | (2.1) | (2.2) | (2.3) | (2.4) | (2.5) | (2.6) |
|---|---|---|---|---|---|---|
| **DCA(-1)** | 0.130<br>(0.069) | 0.143<br>(0.101) | 0.144<br>(0.054) | 0.115<br>(0.092) | -0.061<br>(0.141) | 0.188<br>(0.117) |
| **DCA(-2)** | .. | .. | .. | -0.221<br>(0.046) | 0.061<br>(0.057) | -0.241<br>(0.057) |
| **GRULC(-1)** | 0.059<br>(0.046) | 0.064<br>(0.038) | 0.132<br>(0.063) | 0.051<br>(0.038) | -0.058<br>(0.094) | 0.055<br>(0.046) |
| **GRULC(-2)** | .. | .. | .. | 0.044<br>(0.035) | 0.017<br>(0.061) | 0.061<br>(0.043) |
| **Granger causality**[a] | 1.60<br>[0.217] | 2.84<br>[0.093] | 4.36<br>[0.037] | 1.15<br>[0.333] | 0.20<br>[0.826] | 1.42<br>[0.264] |
| **Time sample** | 1997-2011 | 1997-2011 | 1998-2011 | 1998-2011 | 1998-2011 | 1998-2011 |
| **Countries** | EU27 | EU27 | EU27 | EU27 | EA12 | CEE |
| **Observations** | 381 | 381 | 381 | 356 | 163 | 128 |
| **Estimation** | FE | OLS | System GMM | FE | FE | FE |

"Wrong sign"

**Table 3:** Panel data Granger causality tests. Dependent variable GRULC

| | (3.1) | (3.2) | (3.3) | (3.4) | (3.5) | (3.6) |
|---|---|---|---|---|---|---|
| **DCA(-1)** | -0.397<br>(0.109) | -0.378<br>(0.089) | -0.462<br>(0.161) | -0.300<br>(0.113) | -0.217<br>(0.097) | -0.321<br>(0.156) |
| **DCA(-2)** | .. | .. | .. | -0.282<br>(0.079) | -0.305<br>(0.086) | -0.360<br>(0.098) |
| **GRULC(-1)** | 0.072<br>(0.054) | 0.117<br>(0.060) | 0.122<br>(0.061) | 0.671<br>(0.050) | 0.230<br>(0.101) | 0.046<br>(0.059) |
| **GRULC(-2)** | .. | .. | .. | -0.148<br>(0.048) | -0.113<br>(0.054) | -0.168<br>(0.062) |
| **Granger causality**[a] | 13.34<br>[0.001] | 17.88<br>[0.000] | 8.25<br>[0.004] | 8.40<br>[0.002] | 6.34<br>[0.015] | 8.61<br>[0.008] |
| **Time sample** | 1997-2011 | 1997-2011 | 1998-2011 | 1998-2011 | 1998-2011 | 1998-2011 |
| **Countries** | EU27 | EU27 | EU27 | EU27 | EA12 | CEE |
| **Observations** | 381 | 381 | 381 | 356 | 163 | 128 |
| **Estimation** | FE | OLS | System GMM | FE | FE | FE |

Summary of results of Granger causality tests

- No effect from GRULC(-1) to DCA
- Effect from DCA(-1) to GRULC
  - Sign "correct" → DCA ↓ ⇒ GRULC ↑
  - Magnitude reasonable (-0.4 to -0.6)
- Robustness → similar but slightly less "clear" results with CA

## 5. VAR models

Advantages

- Model dynamic linkages between endogenous variables
- Allow contemporaneous effects

Panel Vector AutoRegressive models → GRULC, DCA ~ I(0)

Results

- Estimates from GRULC to DCA (violet) → small and statistically insignificant
- Estimates from DCA to GRULC (orange) → larger (in numerical terms) and statistically significant

Country fixed effects

**Table 4:** Estimation of panel VAR models, GRULC and DCA

| | (4.1) | | (4.2) | | (4.3) | |
|---|---|---|---|---|---|---|
| | **DCA** | **GRULC** | **DCA** | **GRULC** | **DCA** | **GRULC** |
| **DCA(-1)** | 0.115<br>(0.092) | -0.300<br>(0.113) | -0.061<br>(0.141) | -0.217<br>(0.097) | 0.188<br>(0.117) | -0.321<br>(0.156) |
| **DCA(-2)** | -0.221<br>(0.046) | -0.282<br>(0.079) | 0.061<br>(0.057) | -0.305<br>(0.086) | -0.241<br>(0.057) | -0.360<br>(0.098) |
| **GRULC(-1)** | 0.051<br>(0.038) | 0.671<br>(0.050) | -0.058<br>(0.094) | 0.230<br>(0.101) | 0.055<br>(0.046) | 0.046<br>(0.059) |
| **GRULC(-2)** | 0.044<br>(0.035) | -0.148<br>(0.048) | 0.017<br>(0.061) | -0.113<br>(0.054) | 0.061<br>(0.043) | -0.168<br>(0.062) |
| $R^2$ | 0.129 | 0.219 | 0.042 | 0.281 | 0.167 | 0.221 |
| **Time sample** | 1998-2011 | | 1998-2011 | | 1998-2011 | |
| **Countries** | EU27 | | EA12 | | CEE | |
| **Observations** | 381 | | 163 | | 128 | |

NB: Estimates like (2.4)-(3.4), (2.5)-(3.5) and (2.6)-(3.6), but standard errors not clustered

Impulse responses…

Problem → identification!

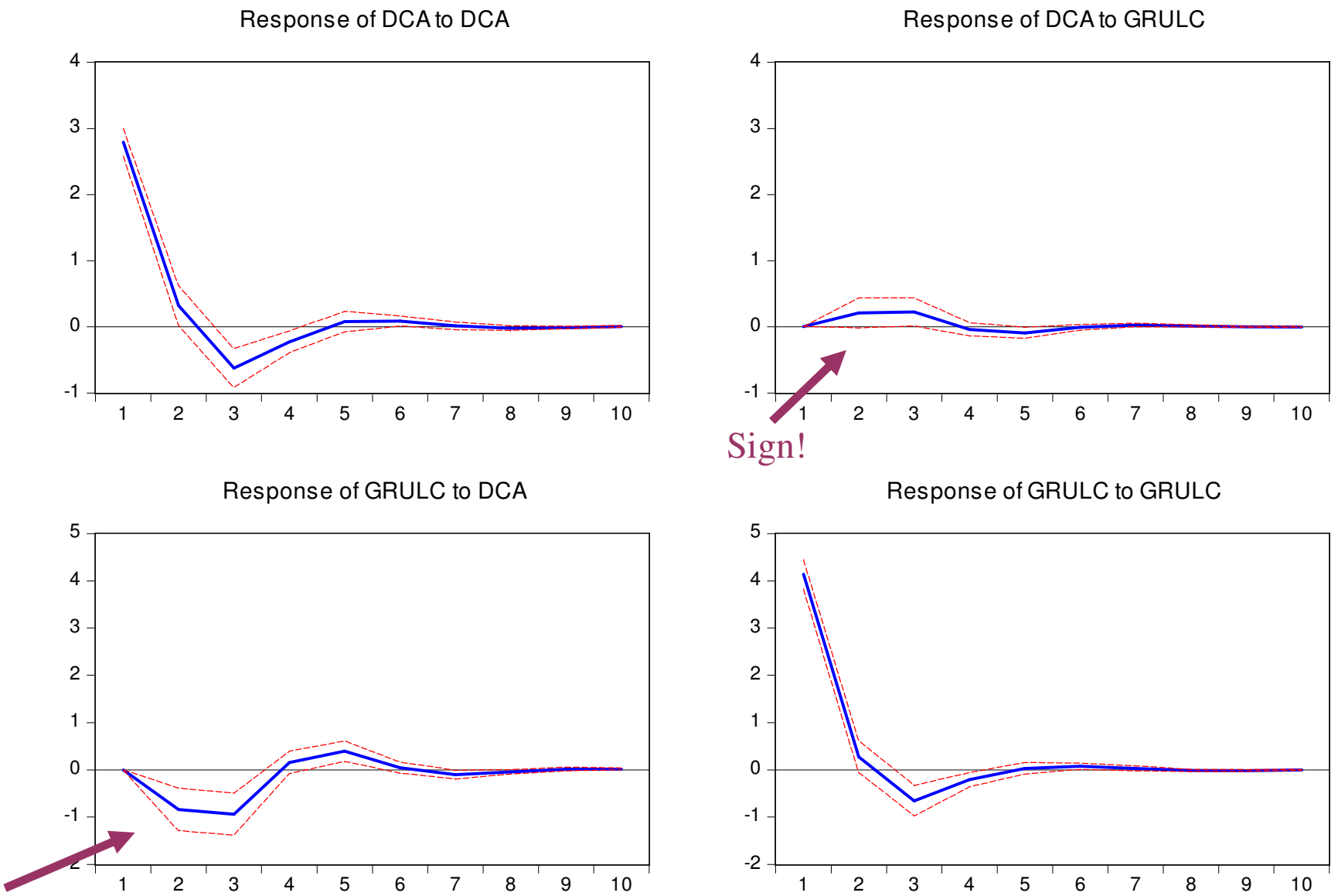
**a)** No contemporaneous effects (over-identification)

**b)** Contemporaneous effect from DCA to GRULC, but not the other way (Cholesky orthogonalisation)

**c)** Contemporaneous effect from GRULC to DCA, but not the other way (Cholesky orthogonalisation)

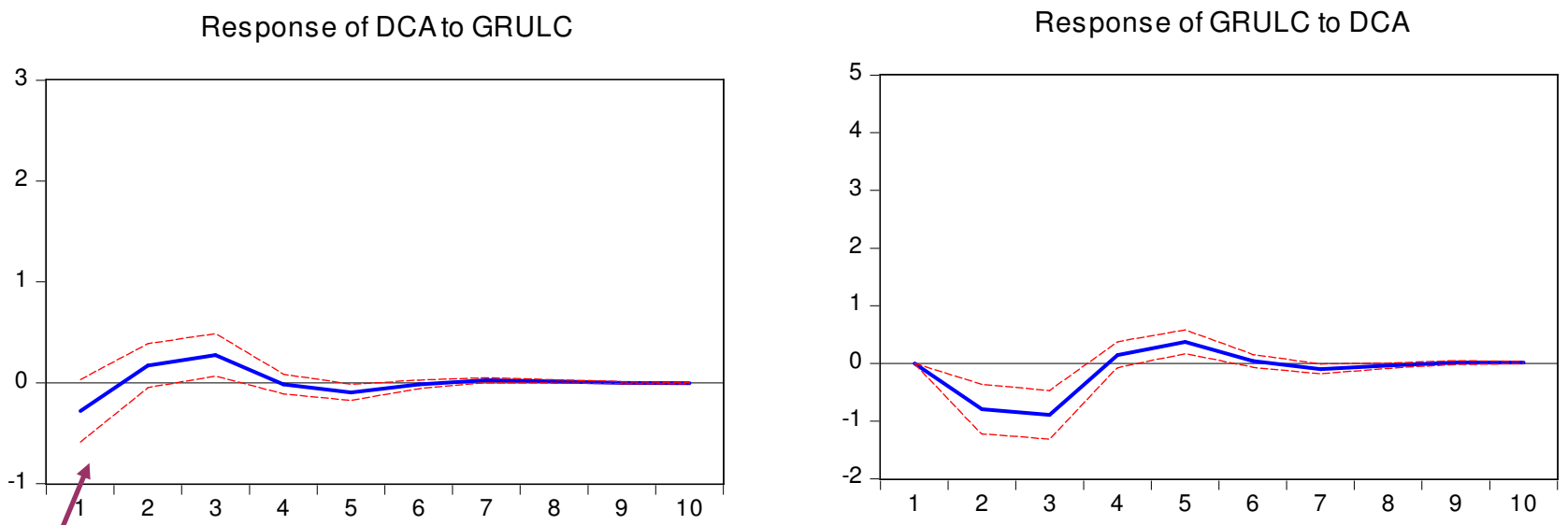
Impulse responses with **+/–** 2 S.E. confidence interval

# **Figure 2:** a) Over-identification → <u>no contemporaneous effects</u>




(a) Non-factorised innovations

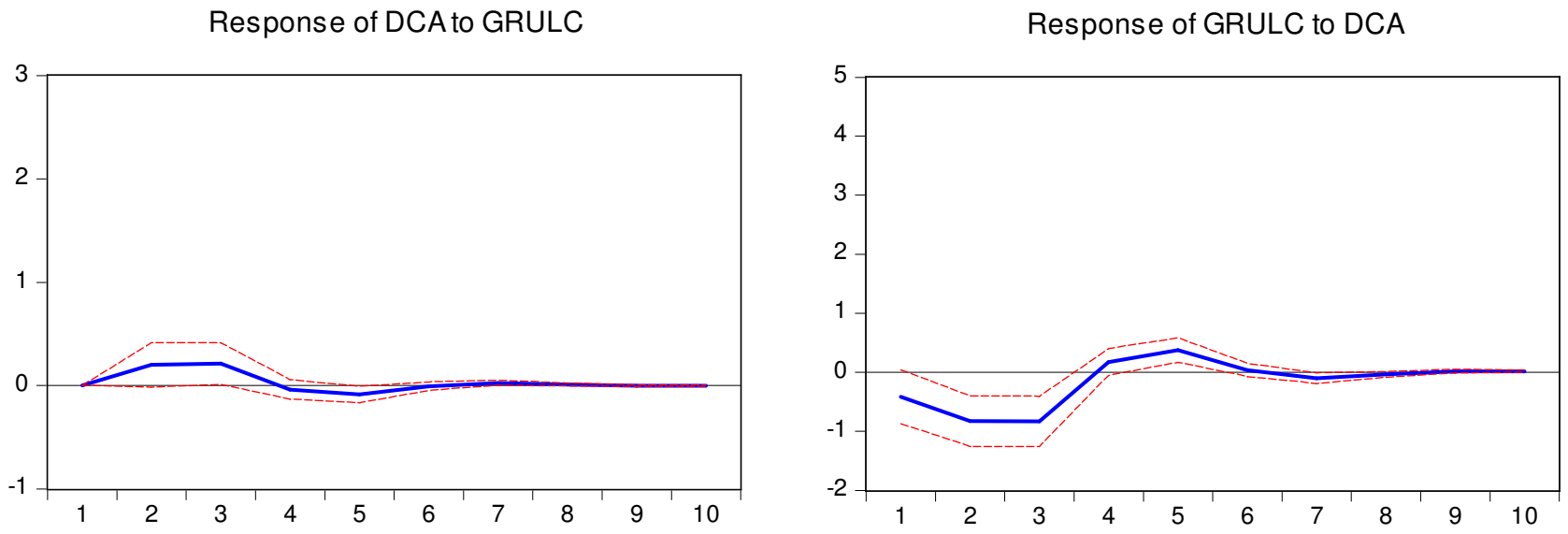
# **Figure 3:** b) Contemporaneous effect <u>from GRULC to DCA</u>, but not the other way




(b) Cholesky decomposition, only contemporaneous effects from GRULC to DCA

<u>If</u> negative effect ("correct sign"), then small and short-lived

**Figure 3:** c) Contemporaneous effect <u>from DCA to GRULC</u>, but not the other way




(c) Cholesky decomposition, only contemporaneous effects from DCA to GRULC

## Results

- Competitiveness ↑ ⇒ capital inflow / current account **0**
  - Possible "wrong" effect (non-Euro Plus Pact) in 2-3 years perspective → confidence effect?
- Capital inflow ↑ ⇒ competitiveness 2-3 year ↓ ☺

## Robustness

- Without country fixed effects
- EA12, CEE
- Sample shortening (not so strong for EA12…)
- CA level (but results of CA ↑ on GRULC less clear…)

## 6. Final comments

Summary

- No / few signs of effect from competitiveness to current account balance
- Effect from current account balance to competitiveness
  - Increased capital inflow ⇒ real exchange rate appreciation in the short term

Policy implications

- Competitiveness "very endogenous" variable
  - Why focus on competitiveness if capital flows are the concern
- Euro Plus Pact → the cart in front of the horse
  - Focus or diversion?
- Euroframe conference → "Towards a better governance in the EU?" → tjooo….