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

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Joint with Hubert Gabrisch, IWH

All viewpoints personal!

Next 19½ 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 ↓

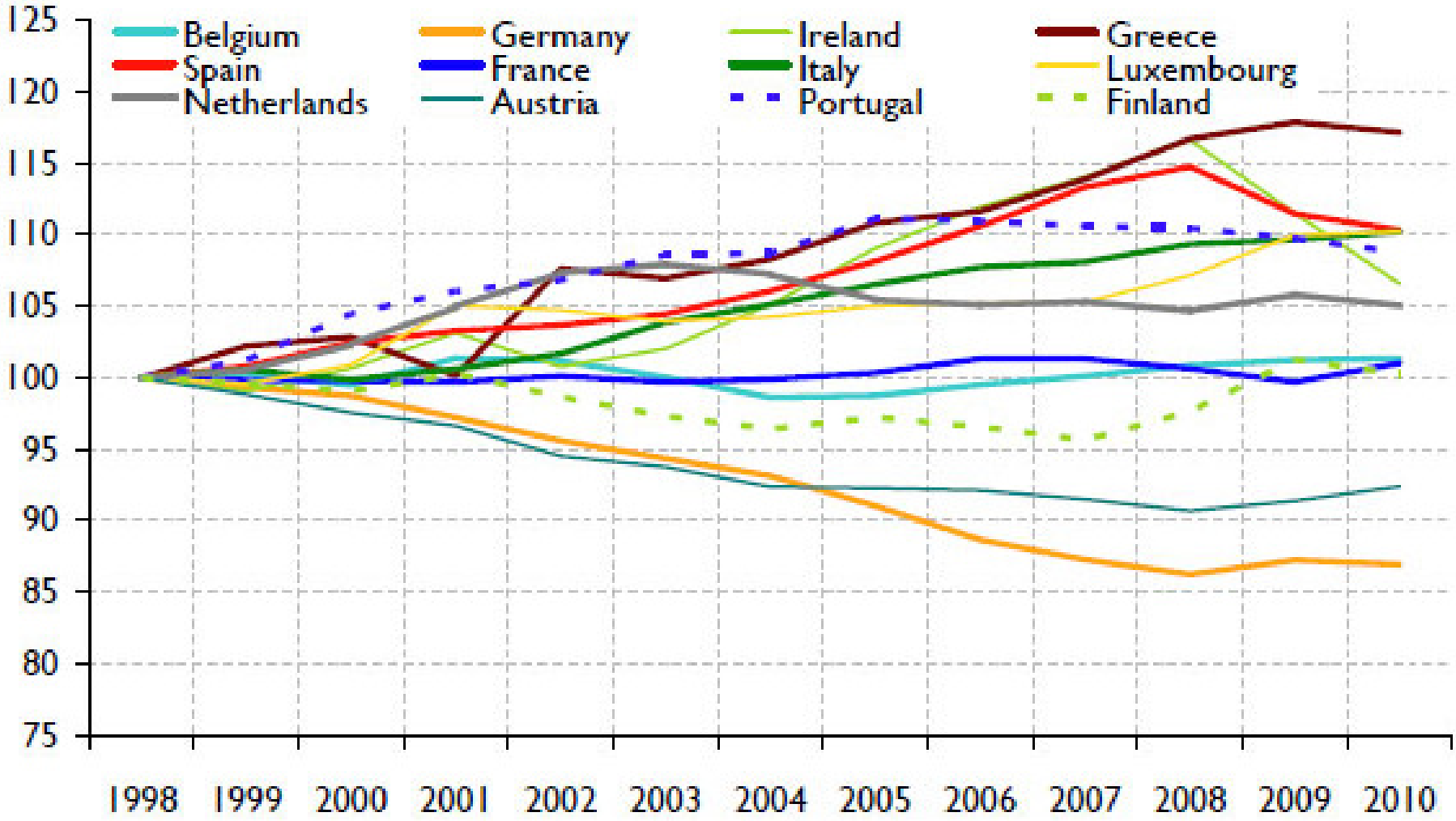
⇒

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 causality correct?

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

2. Briefly on the literature

Discussion of Euro Plus Pact

Mostly 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 ☺
- 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"]
  - *Dutch disease* → foreign exchange earnings ↑ ⇒ real exchange rate appreciation
  - The *transfer paradox* → post-WWI reparation recipients ☹

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

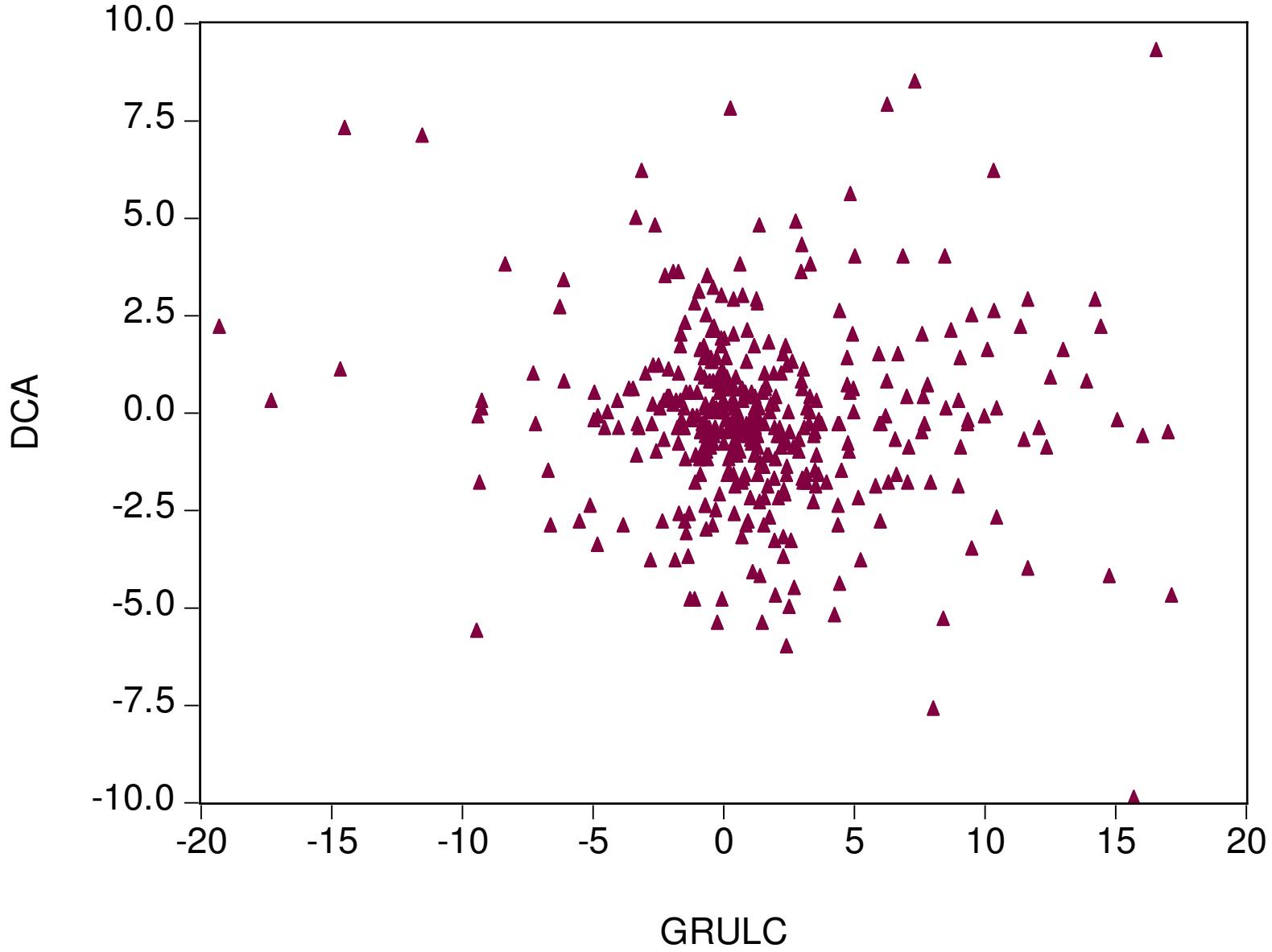
Notation

- 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 and changes in capital inflows (EU27)



4. Granger causality tests

Which direction of 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 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 (0.069)	0.143 (0.101)	0.144 (0.054)	0.115 (0.092)	-0.061 (0.141)	0.188 (0.117)
DCA(-2)	..	..	..	-0.221 (0.046)	0.061 (0.057)	-0.241 (0.057)
GRULC(-1)	0.059 (0.046)	0.064 (0.038)	0.132 (0.063)	0.051 (0.038)	-0.058 (0.094)	0.055 (0.046)
GRULC(-2)	..	..	..	0.044 (0.035)	0.017 (0.061)	0.061 (0.043)
Granger causality[a]	1.60 [0.217]	2.84 [0.093]	4.36 [0.037]	1.15 [0.333]	0.20 [0.826]	1.42 [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 (0.109)	-0.378 (0.089)	-0.462 (0.161)	-0.300 (0.113)	-0.217 (0.097)	-0.321 (0.156)
DCA(-2)	..	..	..	-0.282 (0.079)	-0.305 (0.086)	-0.360 (0.098)
GRULC(-1)	0.072 (0.054)	0.117 (0.060)	0.122 (0.061)	0.671 (0.050)	0.230 (0.101)	0.046 (0.059)
GRULC(-2)	..	..	..	-0.148 (0.048)	-0.113 (0.054)	-0.168 (0.062)
Granger causality[a]	13.34 [0.001]	17.88 [0.000]	8.25 [0.004]	8.40 [0.002]	6.34 [0.015]	8.61 [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 (0.092)	-0.300 (0.113)	-0.061 (0.141)	-0.217 (0.097)	0.188 (0.117)	-0.321 (0.156)
DCA(-2)	-0.221 (0.046)	-0.282 (0.079)	0.061 (0.057)	-0.305 (0.086)	-0.241 (0.057)	-0.360 (0.098)
GRULC(-1)	0.051 (0.038)	0.671 (0.050)	-0.058 (0.094)	0.230 (0.101)	0.055 (0.046)	0.046 (0.059)
GRULC(-2)	0.044 (0.035)	-0.148 (0.048)	0.017 (0.061)	-0.113 (0.054)	0.061 (0.043)	-0.168 (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!

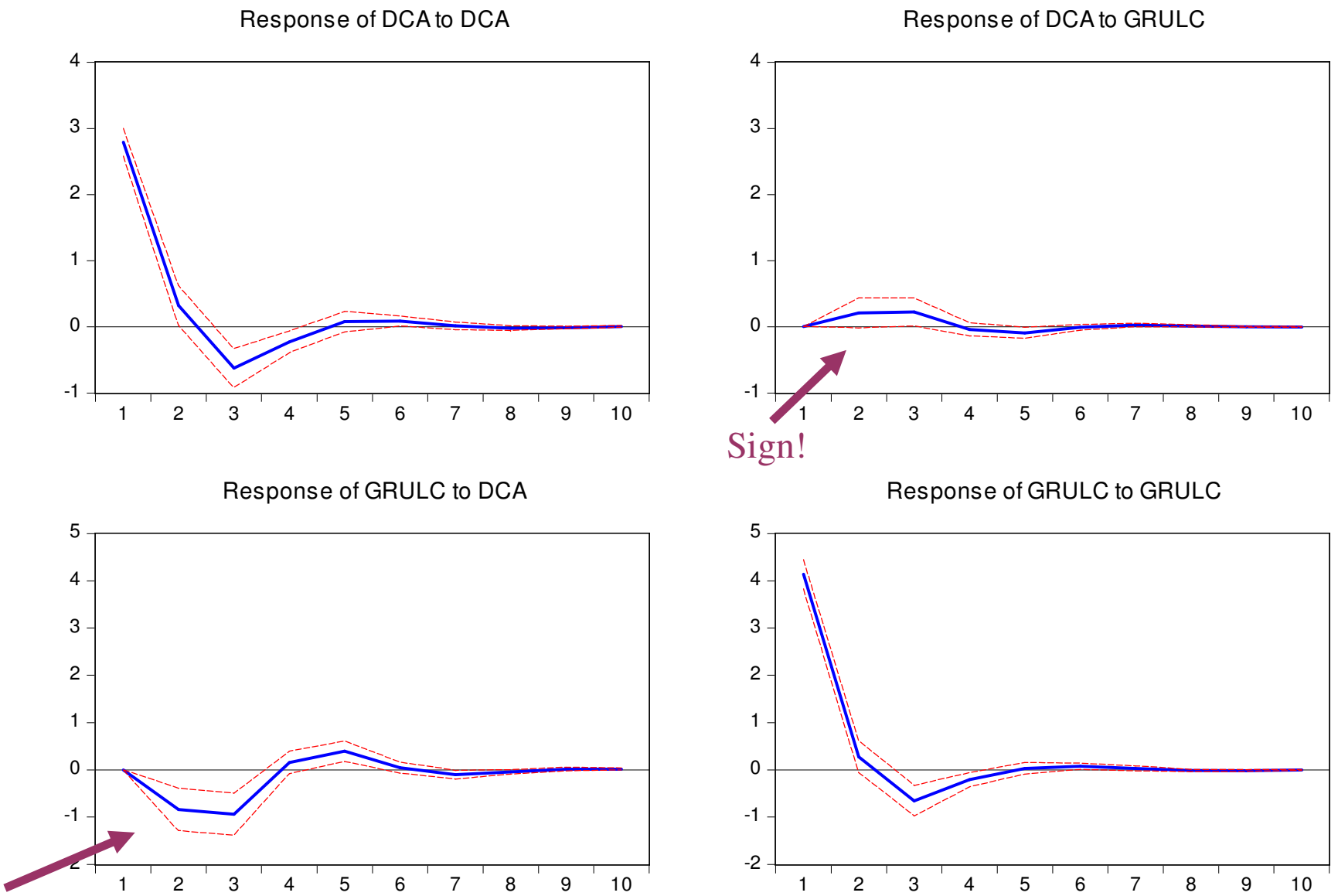
a) No contemporaneous effects (over-identification)

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)

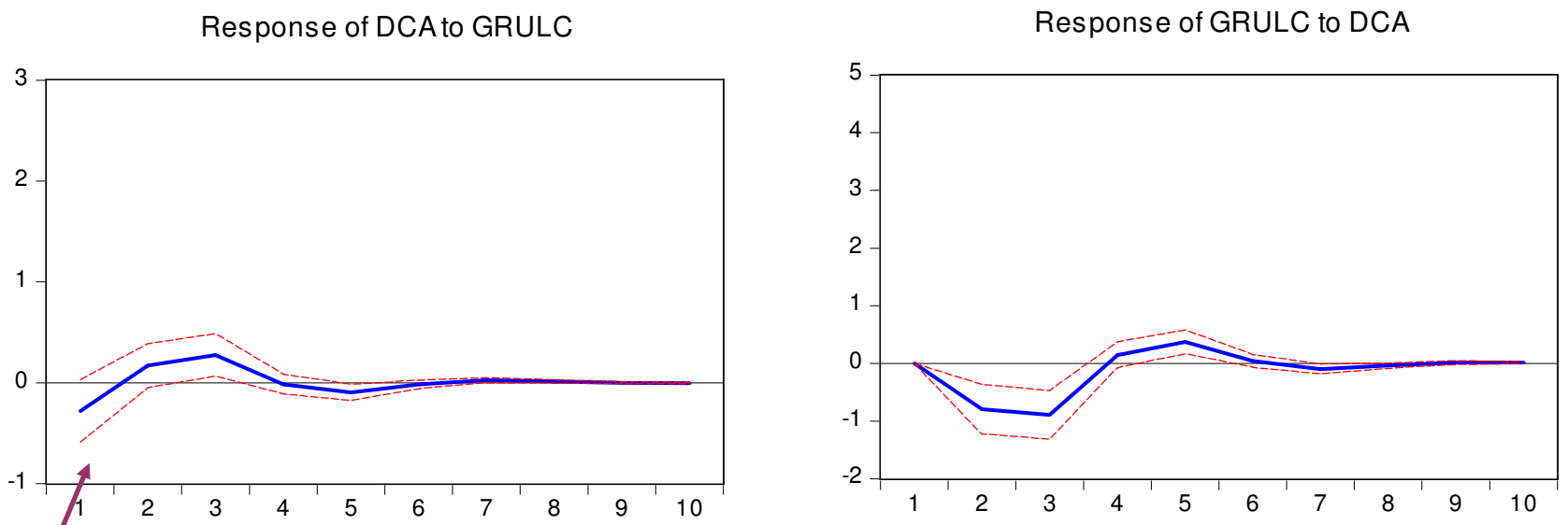
Impulse responses with **+/–** 2 S.E. confidence interval

Figure 2: a) Over-identification → no contemporaneous effects



(a) Non-factorised innovations

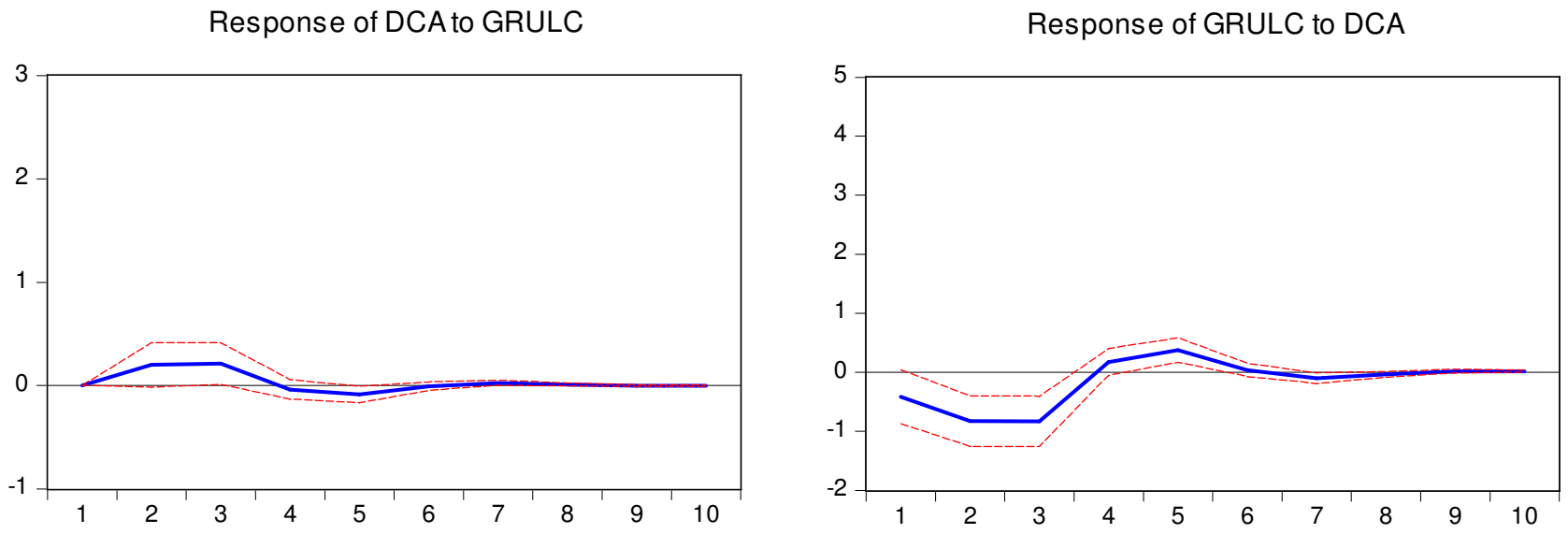
Figure 3: b) Contemporaneous effect <u>from GRULC to DCA</u>, but not the other way



(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**
  - At short-term "positive" effect, possible counter-intuitive effect in longer term
- 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 ← dependent on capital flows…
  - Focus on (excessive) capital flows?
- Euro Plus Pact → the cart in front of the horse
  - Focus or diversion?

More work ← *CompNet?*

- Other means of identification than time dimension?
- Different effects of different types of capital flows?
- Different effects across different exchange rate regimes?
- Richer VAR models with aim to test different theories?