Macro-Financial Implications of Corporate (De)Leveraging in the Euro Area Periphery

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Outline

- High corporate indebtedness implications
- Summary of main results summary
- What led to indebtedness?
- Empirical methodology, data and results
- Corporate (de)leveraging
- Policy implication and concluding remarks

High corporate indebtedness implications

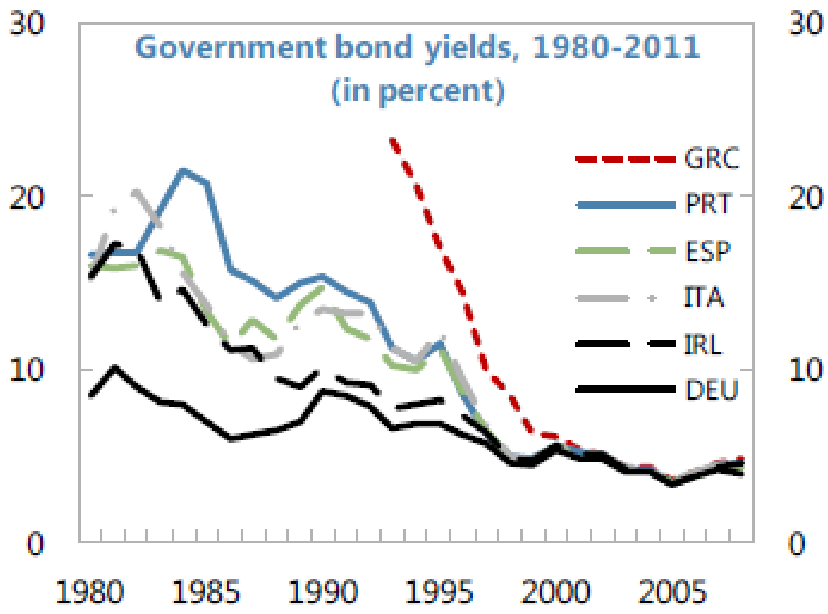
- Drag on companies profitability, investment and Growth (Fazzari et al. (1988), Bernanke et al. (1999), Vermeulen (2000), Farinha (1995) and Barbosa et al. (2007))

- Increased credit risk -> NPL↑ -> potential fiscal implications and on-> sovereign credit risk ↑.

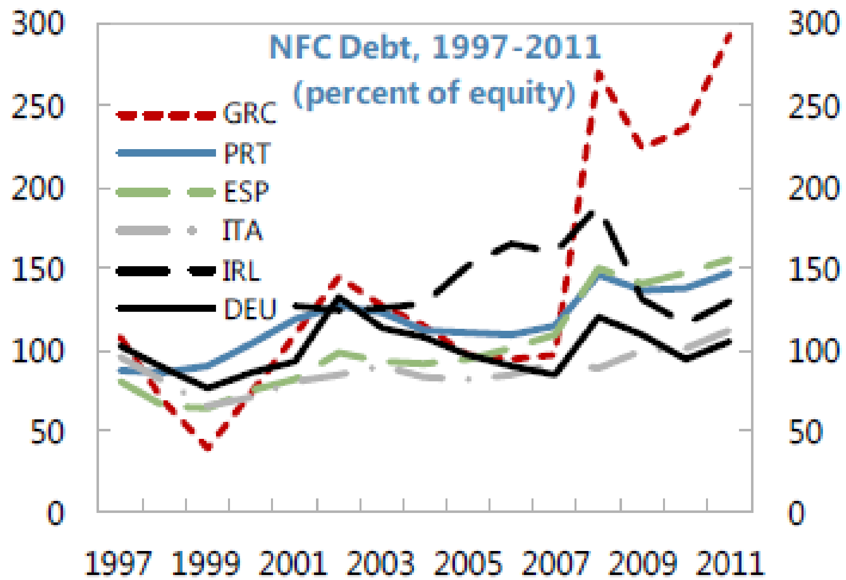
Summary of main results

- We find a negative relationship between corporate investment and indebtedness.
- Significant asymmetric effect beyond certain threshold levels of indebtedness.

What led to indebtedness?



Source: IFS.



Source: Eurostat, WEO, and staff own estimates.

$$\Delta D = (I + \Delta FA - IF) - \Delta E = \text{Corporate Gap} - \Delta E,$$

Hypothesis 1: Investment affected by indebtedness?

- Vermeulen (2000) – Panel Approach:

$$IK_{it} = \alpha + \beta\, IK_{it-1} + \gamma\, SK_{it-1} + \delta\, D_{it-1} + \varepsilon_{it} \quad [1]$$

- Ik_{it}: investment-to-capital ratio of firm *i* at time *t*
- D: debt-to-equity or interest coverage ratio (ICR)
- SK: lagged sales-to-capital ratio SK to control for standard sales-accelerator effects
- Δ sensitivity of the investment rate to indebtedness
- BACH, 21 sectors, Austria, Belgium, France, Germany, Italy, Netherlands, Portugal and Spain

Hypothesis 2: threshold effect?

- Literature: Jaeger (2003), IMF (2004), Coricelli et al. (2010) and Cecchetti et al. (2010).
- We estimate:

$$IK_{it} = \alpha + \beta\, IK_{it-1} + \gamma\, SK_{it-1} + \bar{\delta}\, D_{it-1} \times 1\{D_{it-1} \geq \tau\} + \underline{\delta}\, D_{it-1} \times 1\{D_{it-1} < \tau\} + \varepsilon_{it} \quad [2]$$

- Threshold: debt-to-equity above 25^{th} percentile of the representative Euro area firms in the sample.

BACH Database: Summary Statistics of Regression Variables

		Mean	Std. Dev.	25th Perc.	Median	75th Perc.
IK: Investment to capital ratio	Euro area	15.48	12.28	8.70	14.64	22.08
	Italy	14.16	8.26	8.55	13.72	18.33
	Portugal	8.83	13.04	5.17	9.27	13.46
	Spain	10.10	6.67	3.64	10.01	13.74
SK: Sales to capital ratio	Euro area	3.45	3.74	1.14	2.32	3.96
	Italy	4.01	3.76	1.46	2.71	4.79
	Portugal	2.25	2.34	0.71	1.22	2.88
	Spain	2.24	1.66	1.10	1.62	2.99
DE: Debt to equity ratio	Euro area	2.08	2.70	1.24	1.74	2.39
	Italy	2.34	1.04	1.64	2.11	3.15
	Portugal	2.45	4.71	1.11	1.63	2.54
	Spain	1.43	0.52	1.08	1.36	1.77
ICR: Interest coverage ratio	Euro area	5.20	5.42	2.73	4.34	6.44
	Italy	6.07	3.57	3.77	5.49	7.52
	Portugal	4.21	8.26	1.88	2.86	4.34
	Spain	4.76	2.17	3.66	4.79	5.97

Source: BACH database and staff own estimates.

Results

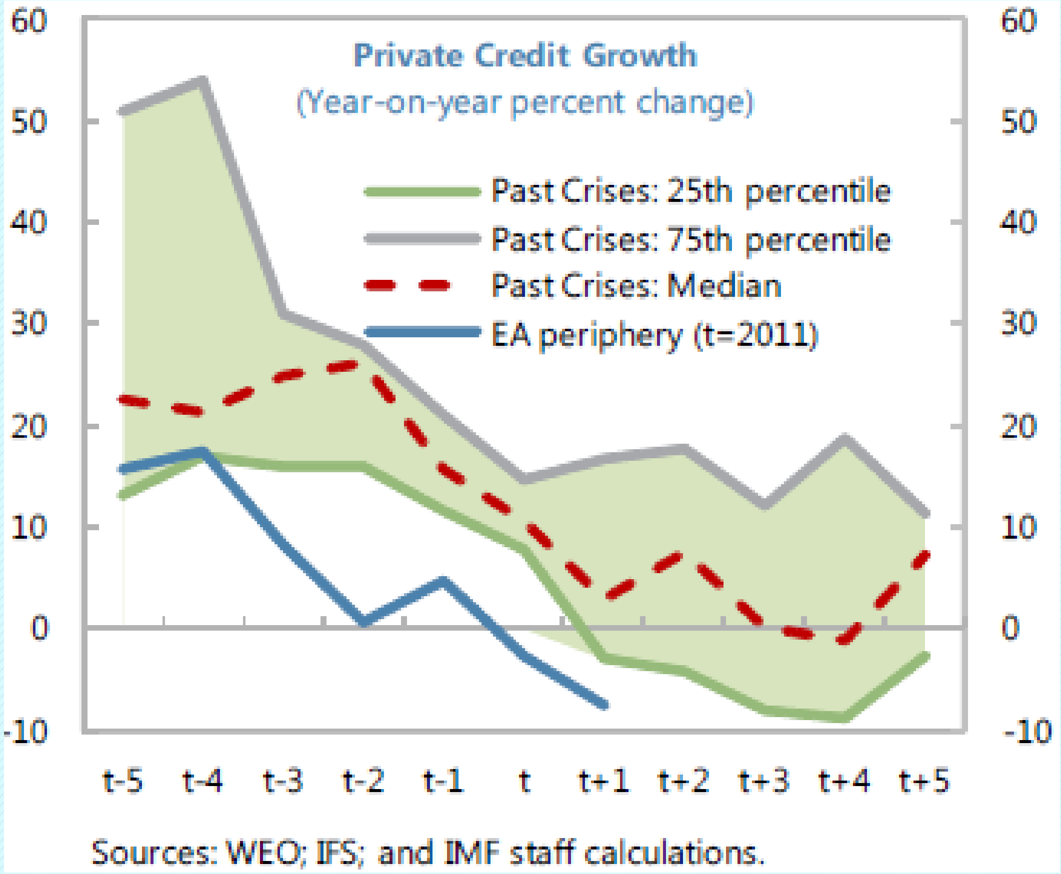
Corporate Debt Overhang and Investment Ratio

	D=DE		D=ICR	
	(1)	(2)	(1)	(2)
Constant	8.58***	7.53***	5.32***	5.60***
IK_{it-1}	0.05***	0.06***	0.05***	0.05***
SK_{it-1}	1.83***	2.07***	2.11***	2.01***
D_{it-1}	-0.23***		0.37***	
$D_{it-1} \times 1\{D_{it-1} < \tau\}$		0.30***		-1.81***
$D_{it-1} \times 1\{D_{it-1} \geq \tau\}$		-0.19***		0.39***
AR(1) test	-2.43**	-2.43**	-2.43**	-2.44**
AR(2) test	0.44	0.59	0.53	0.61
Hansen test	53.54	65.38	58.43	62.59
Obs.	965	965	965	965

Notes: Dynamic panel data with GMM two-step system estimator. ***, **, * indicate significance at 1, 5, and 10 percent level.

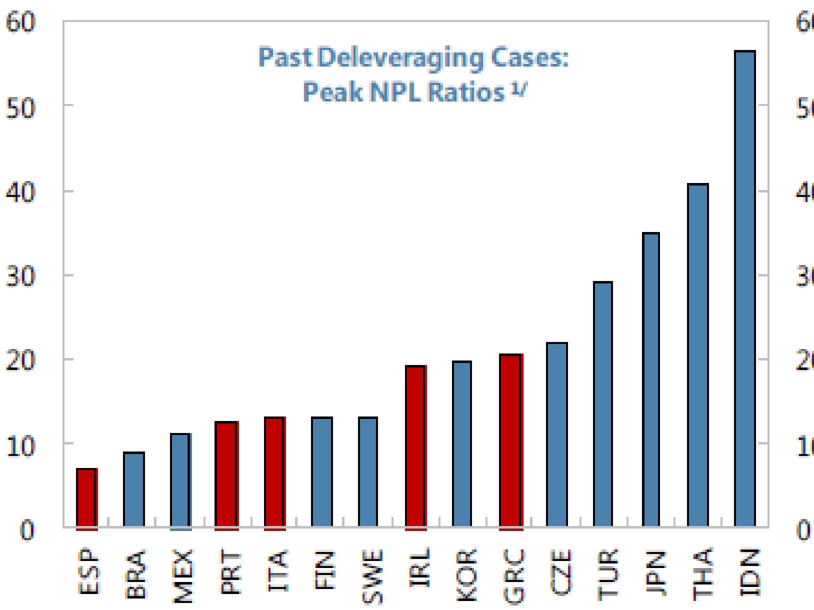
Goretti and Souto (2013)

Corporate (de)leveraging EA periphery versus past crises

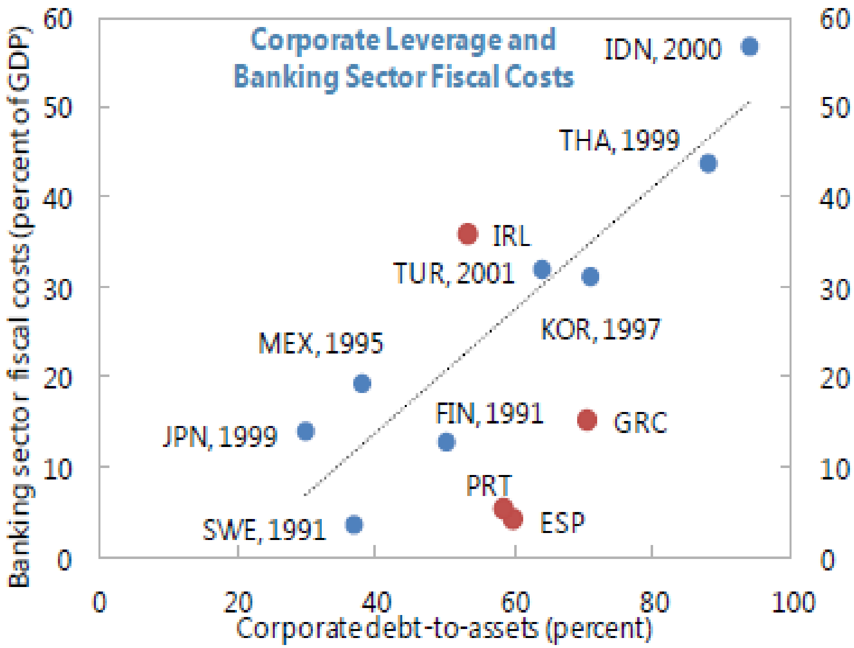


Goretti and Souto (2013)

Past crises, NPLs and fiscal costs

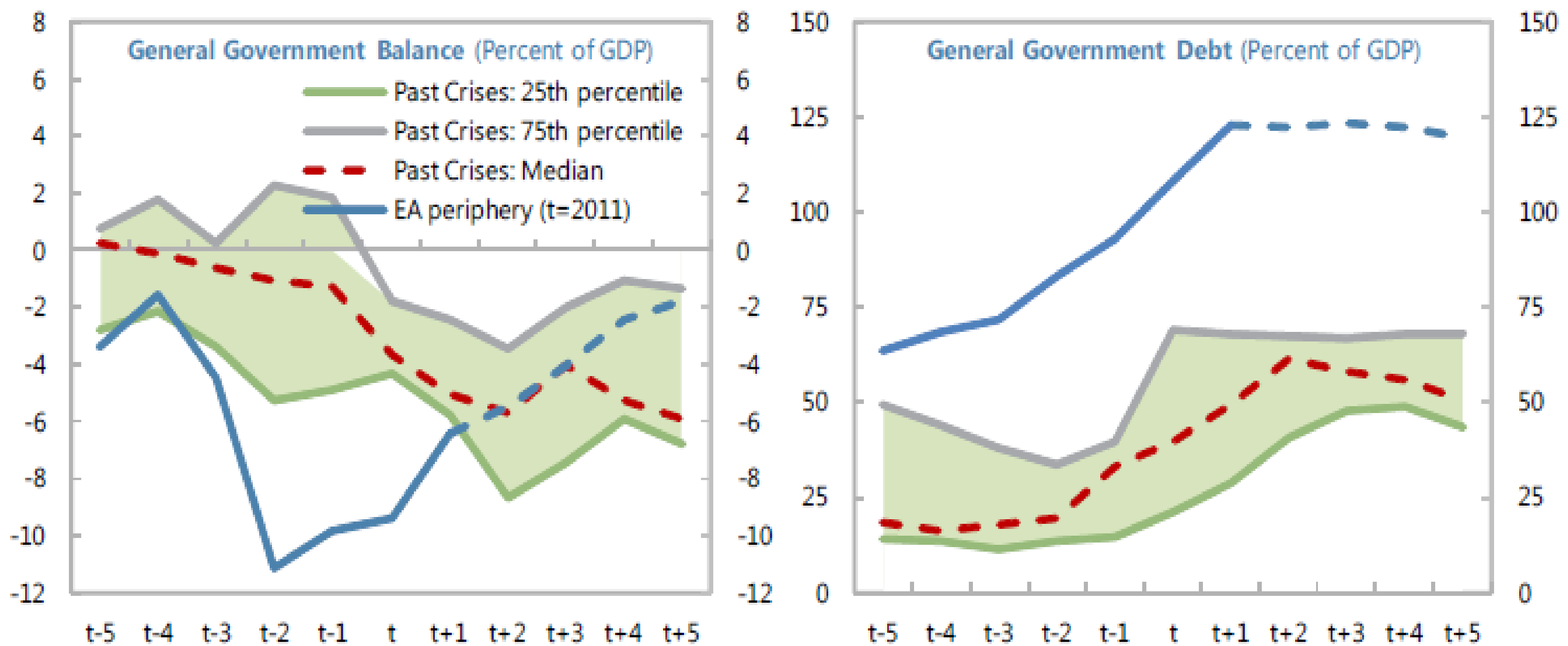


Sources: Claessens (2005); IMF FSI Database; Laeven and Valencia (2008). 1/ Data are not fully comparable due to differences in data sources and classification. The figure for the EA periphery refers to the latest available data for 2012.



Sources: Claessens (2005); Laeven and Valencia (2008); Spring 2013 Fiscal Monitor (table 5); Eurostat; National Authorities; and IMF staff estimates.

Increased sovereign indebtedness



Sources: WEO; and IMF staff estimates.

Goretti and Souto (2013)

Policy implications and concluding remarks

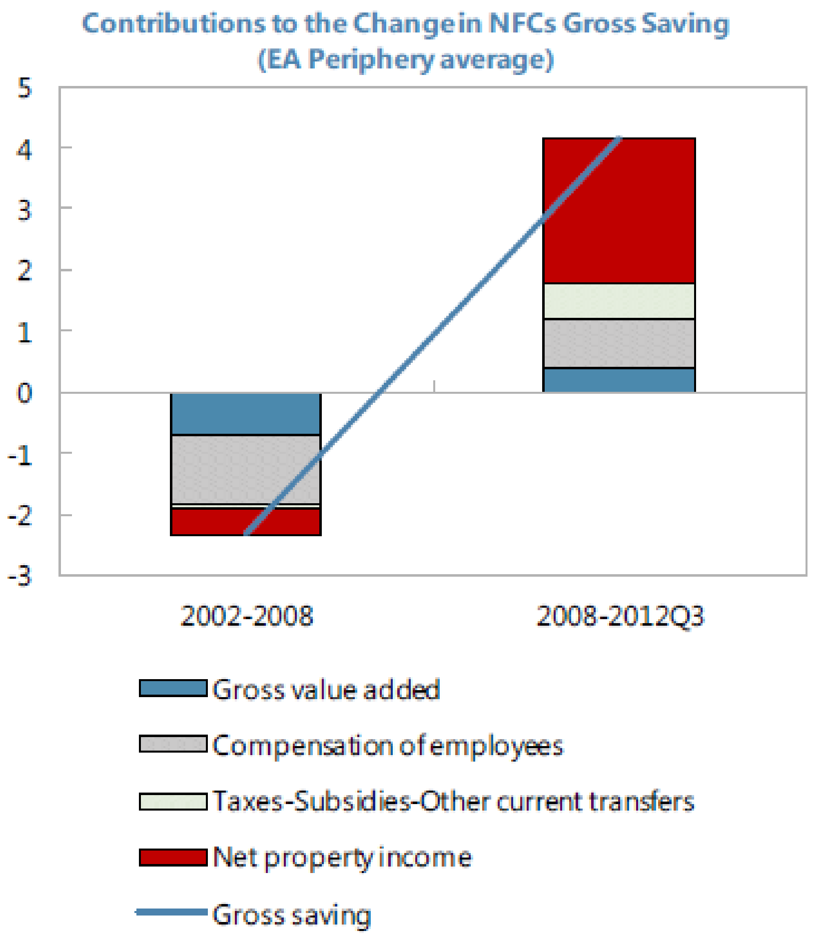
- Corporate debt restructuring
- Finding alternative funding
- Banks properly recognize expected losses and provision accordingly
- Promoting transparency and information sharing
- Targeted fiscal incentives

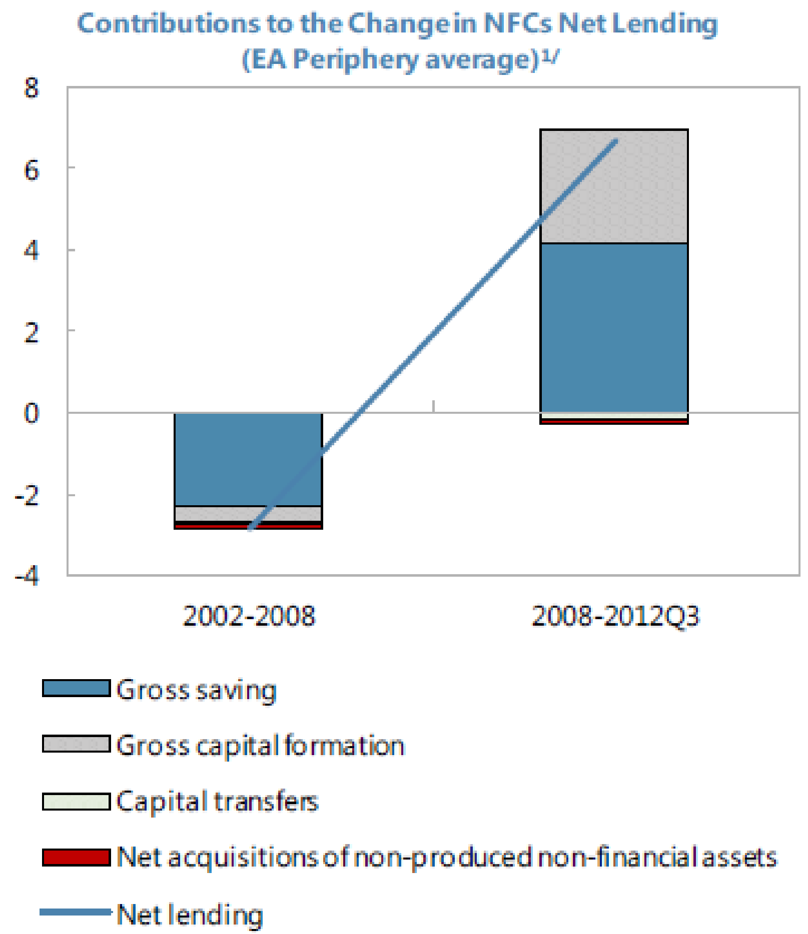
Thank you

Annex

Figure 1. EA Periphery: Evolution of Non-Financial Corporations Balance Sheets

(In percent of GDP)





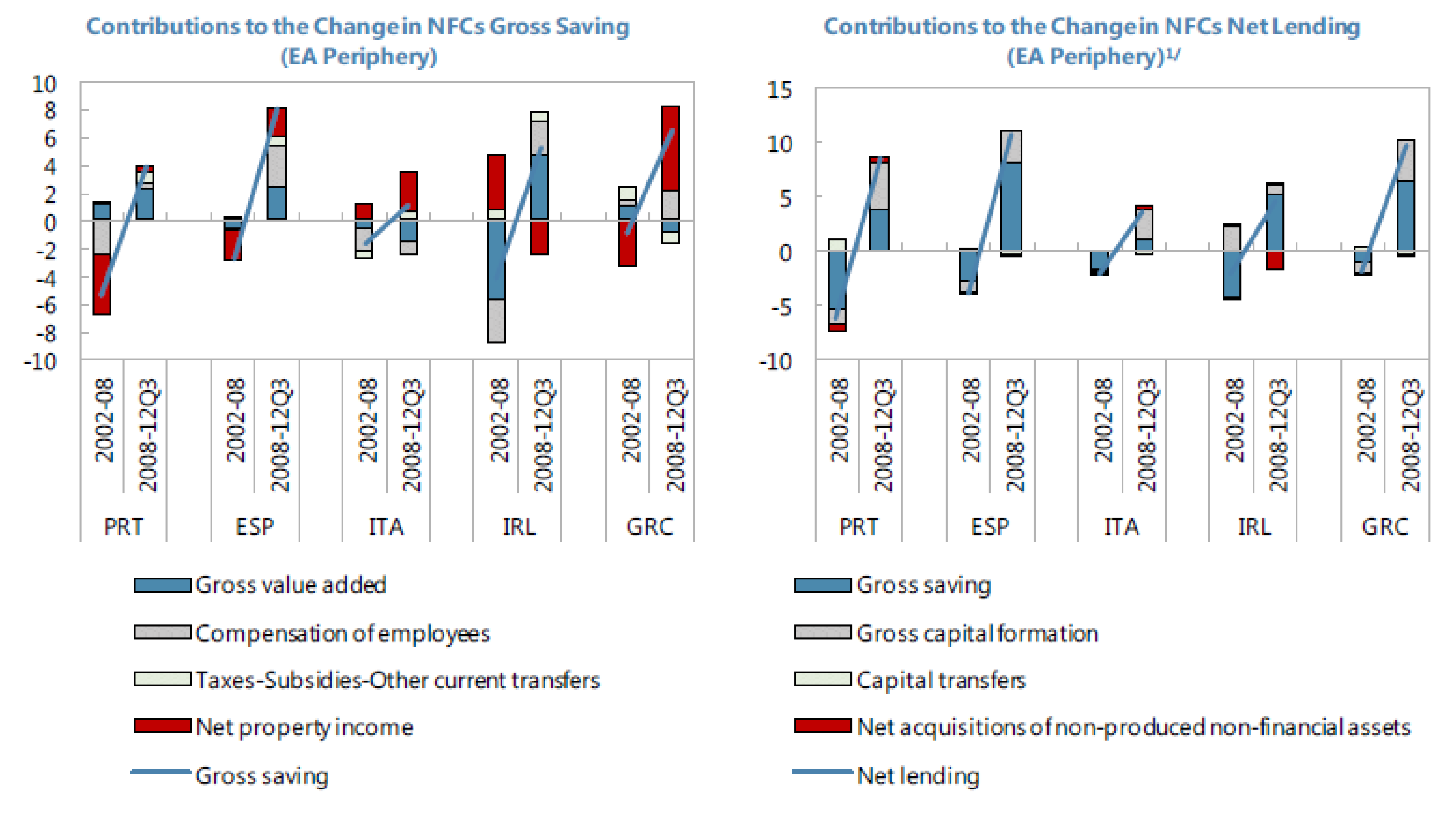
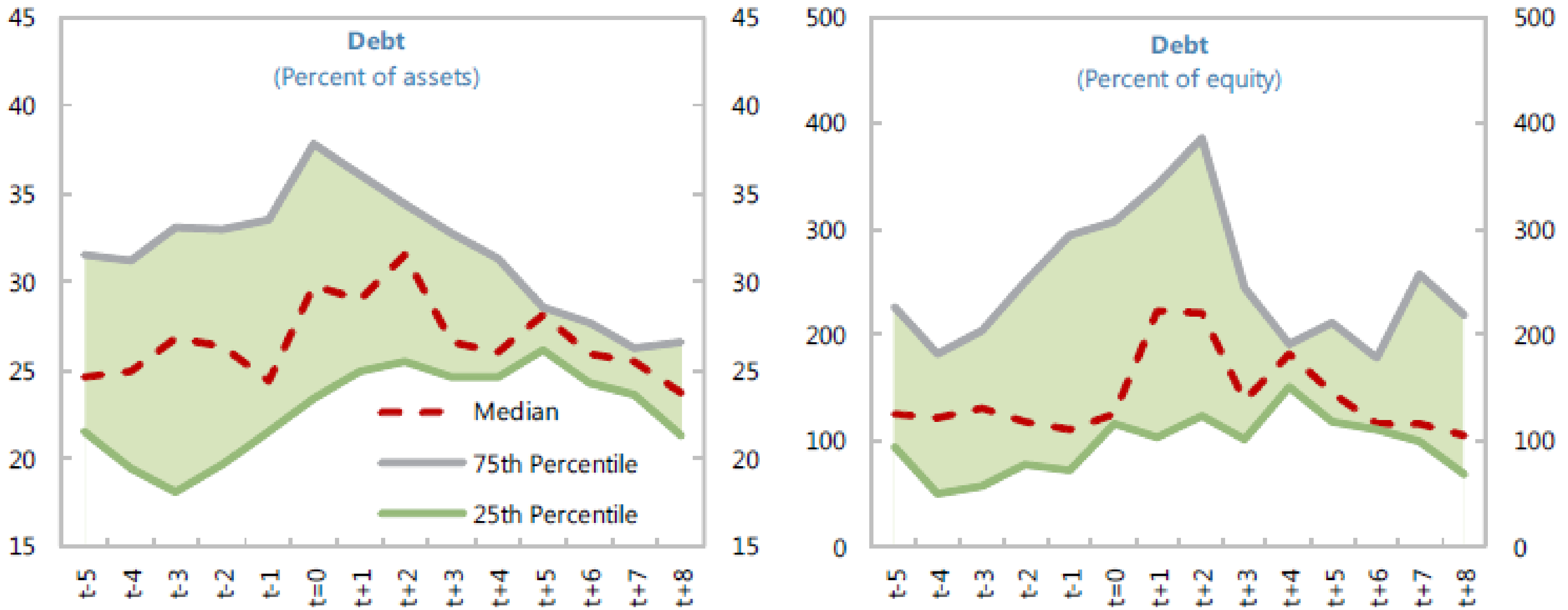

Contributions to the Change in NFCs Gross Saving
(EA Periphery)
10
8
6
4
2
0
-2
-4
-6
-8
-10
2002-08
2008-12Q3
PRT
ESP
ITA
IRL
GRC
Gross value added
Compensation of employees
Taxes-Subsidies-Other current transfers
Net property income
Gross saving
Contributions to the Change in NFCs Net Lending
(EA Periphery)1/
15
10
5
0
-5
-10
Gross saving
Gross capital formation
Capital transfers
Net acquisitions of non-produced non-financial assets
Net lending

Figure 3. Corporate Balance Sheet Adjustment in Past Crisis Episodes 1/



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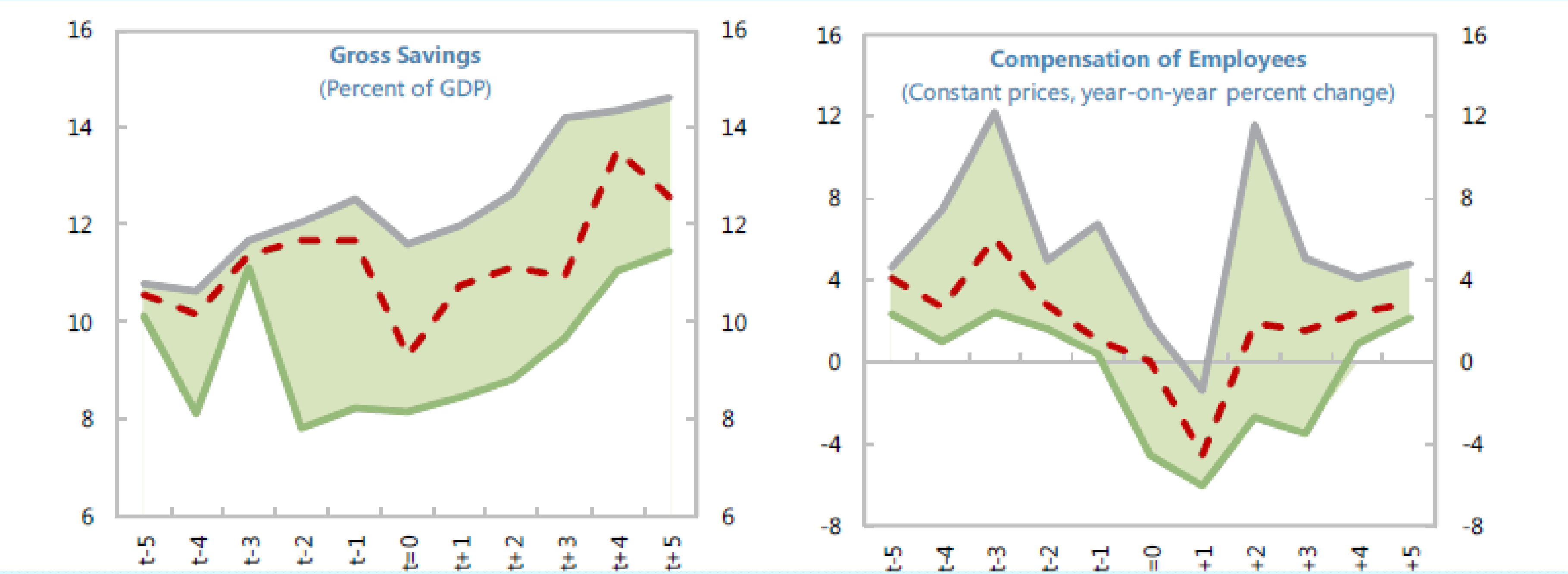
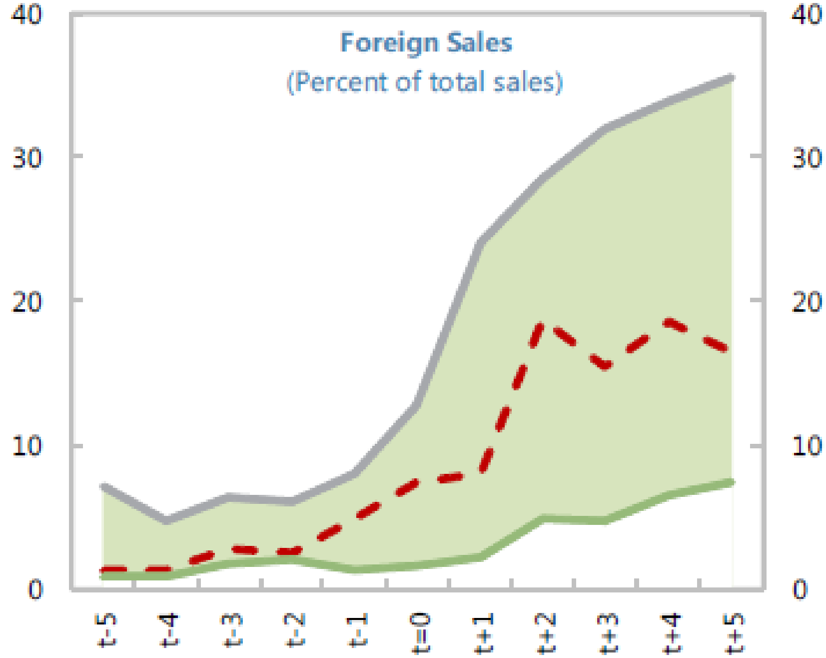
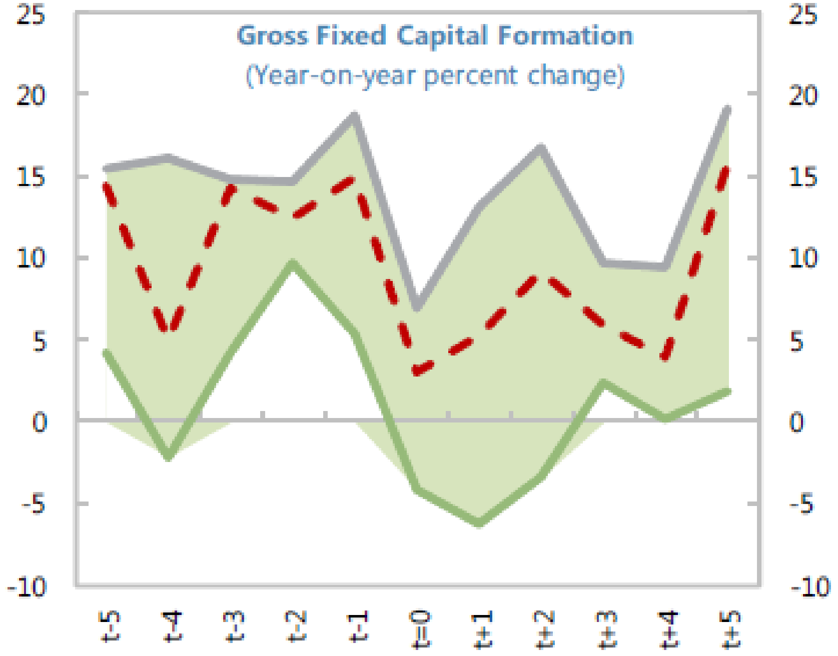

Gross Savings
(Percent of GDP)
16
14
12
10
8
6
t-5
t-4
t-3
t-2
t-1
t=0
t+1
t+2
t+3
t+4
t+5
Compensation of Employees
(Constant prices, year-on-year percent change)
16
12
8
4
0
-4
-8





Sources: OECD; U.N.; National authorities; IMF, IFS; and IMF staff estimates.

1/ Beginning of deleveraging episode at year t. Crisis countries include Brazil (1998), Czech Rep. (1997), Finland (1990), Indonesia (2000), Japan (1997), Korea (1998), Mexico (1995), Sweden (1990), Thailand (1997), and Turkey (2001). t is set to 2011 for the EA periphery (median values of Greece, Ireland, Italy, Portugal, and Spain).

Goretti and Souto (2013)