Government debt and corporate leverage: international evidence

Discussion

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The views are those of the author and do not necessarily reflect those of the European Commission

Focus and value added

- Long-standing claim that government deficits may raise capital cost for firms and have an impact on investment

Channels

- Reduction of national savings in absence of Ricardian equivalence (e.g., Elmendorf and Mankiw, 1998…)
- Asset substitutability in investors' portfolio (e.g., Friedman, 1978…)
- Preferred capital structure by firms : this paper

Focus and value added

- Questions
  - What is the response of corporate leverage to government debt?
  - Which **debt, country, firm** characteristics affect the response?
  - How to deal with the issue of endogeneity?

- Method
  - Multi-county settings
  - Relate macro-variables with aggregated corporate finance variables computed from firm-level balance sheet data (Compustat)
  - Exploit both country/time variation and firm variation in large firm-level datasets

Focus and value added

- Findings
  - Various measures of corporate leverage and corporate debt appear to be negatively related to government debt t-1, both in panel datasets with aggregate data at country level, and in cross country firm-level databases
  - The negative response of corporate debt to government debt is stronger in:
    - Countries where a large share of government debt is held abroad
    - countries with developed equity markets, less bank-dependent firms
    - Large and profitable firms
  - EMU completion helps identifying crowding-out effects, by creating an integrated corporate bond market

Focus, interpretation of results

- Negative response of corporate debt to government debt interpreted as "crowding-out".
- What is the type of substitution that matters?
  - Investors' portfolio govt. vs. corp. bonds ("standard view")
    - Consistent with the finding that large (and safer) firms issue bonds that are stronger substitute with government bonds thereby being more subject to crowding out
    - The finding of stronger crowding-out in countries with developed equity markets less obvious from this perspective
  - Alternative sources of financing from firms' viewpoint
    - But what about implications for corporate investment?

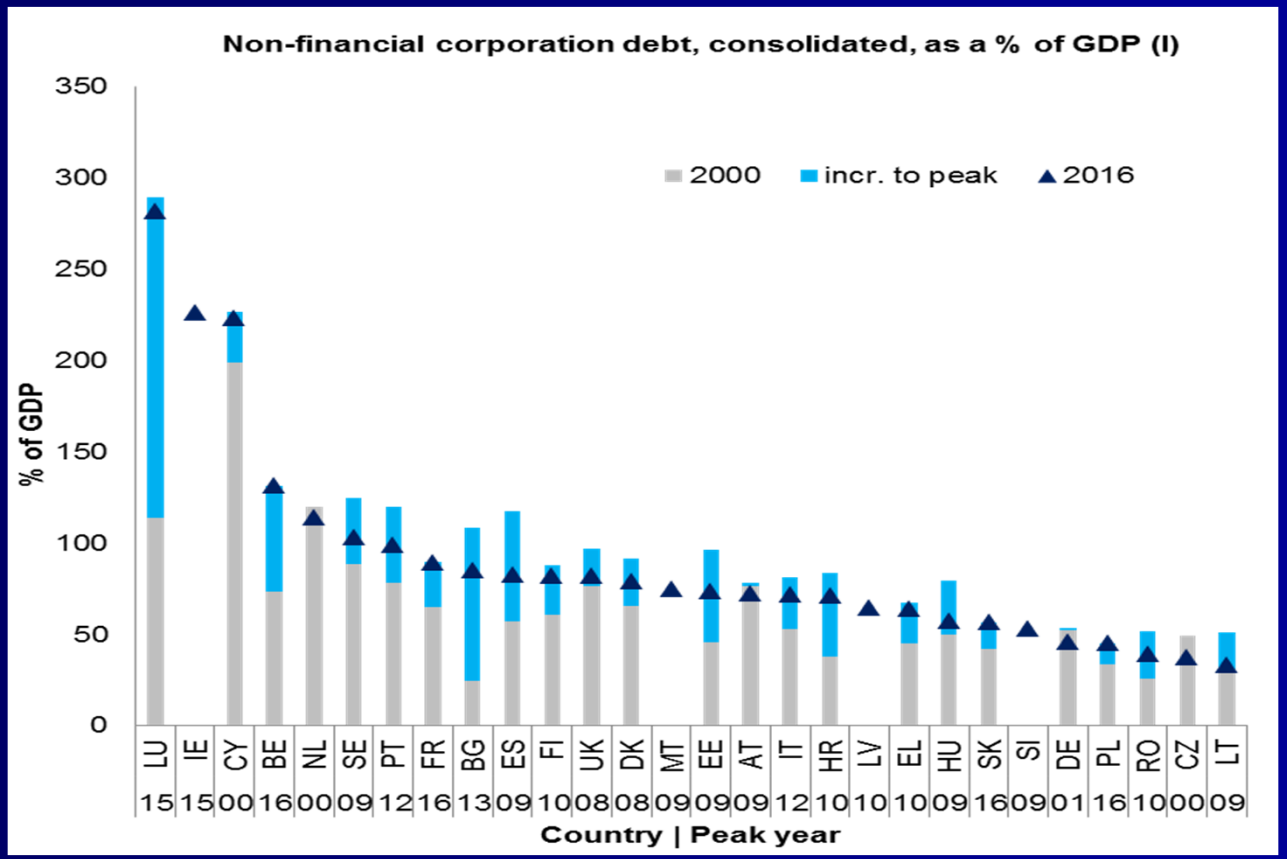
Data

- Aggregates constructed from firm-level data
  - Able to reproduce aggregates from financial sectoral accounts (surprisingly low share as % GDP)?
  - Equally representative for different countries (sample size, representation by firm type, extent of intra-firm loans…)?
  - Any bias (e.g., if large firms over-represented implying less bank-dependence compared with overall population?)

Data

Governmment, HH, NFC debt, %GDP

EU, 1999-2016



Baseline regressions

- Control variables
  - Expected sign? Interpretation? (e.g., cpi, exchange rate)
  - Often insignificant coefficients: move to more parsimonious specification?

- Dynamic specifications

  - Leverage data (debt /assets or GDP) are the dependent variables: likely persistent

  - Omitting lagged dependent variable implies
    - Auto-correlated disturbances → inefficiency; incorrect inference . Addressed via clustering standard errors
    - Omitted variable bias: sign given by Cov(levt, Levt-1) * Cov (levt-1, Govdebtt-1)
    - Specification in differences can be a solution: why are country effects omitted in the tables provided in the appendix?

  - More generally, why not cointegration framework in a more parsimonious model?

Baseline regressions

Private debt/GDP and government debt/GDP in a panel of 36 high-income countries, 1990-2016

	(1)	(2)	(4)	(5)
	priv_debt/gdp		d.priv_debt/gdp	
priv_debt, lag		0.873**		
		[11.21]		
gov_debt, lag	-0.392+	-0.105*		
	[-1.860]	[-2.674]		
log_gdp_ppp_ph, lag	19.75	3.927		
	[0.685]	[0.831]		
d.gov_debt, lag			-0.0980	-0.159+
			[-0.816]	[-1.778]
d.log_gdp_ppp_ph, lag			6.899	7.438
			[0.990]	[0.718]
Constant	1.449	-9.618	0.957	2.886**
	[0.00469]	[-0.172]	[0.862]	[2.596]
Country effects	Y	Y	Y	N
Year effects	Y	Y	Y	Y
Observations	805	801	787	787
R-squared	0.572	0.897	0.101	0.101
Number of cn	36	36	36	36

Robust t-statistics in brackets
** p<0.01, * p<0.05, + p<0.1

Endogeneity issues

Instrumentation

- Government debt is instrumented with government expenditure
  - Stock vs. Flow; Cash vs. accrual. Why not instrumenting d.debt and specification in differences?
  - Why included with 2 lags? (all other variables have 1 lag). Robust with respect to this assumption?

- Additional tests
  - Exogeneity of excluded instrument (Hansen test)
  - Wald text for exogeneity of government debt

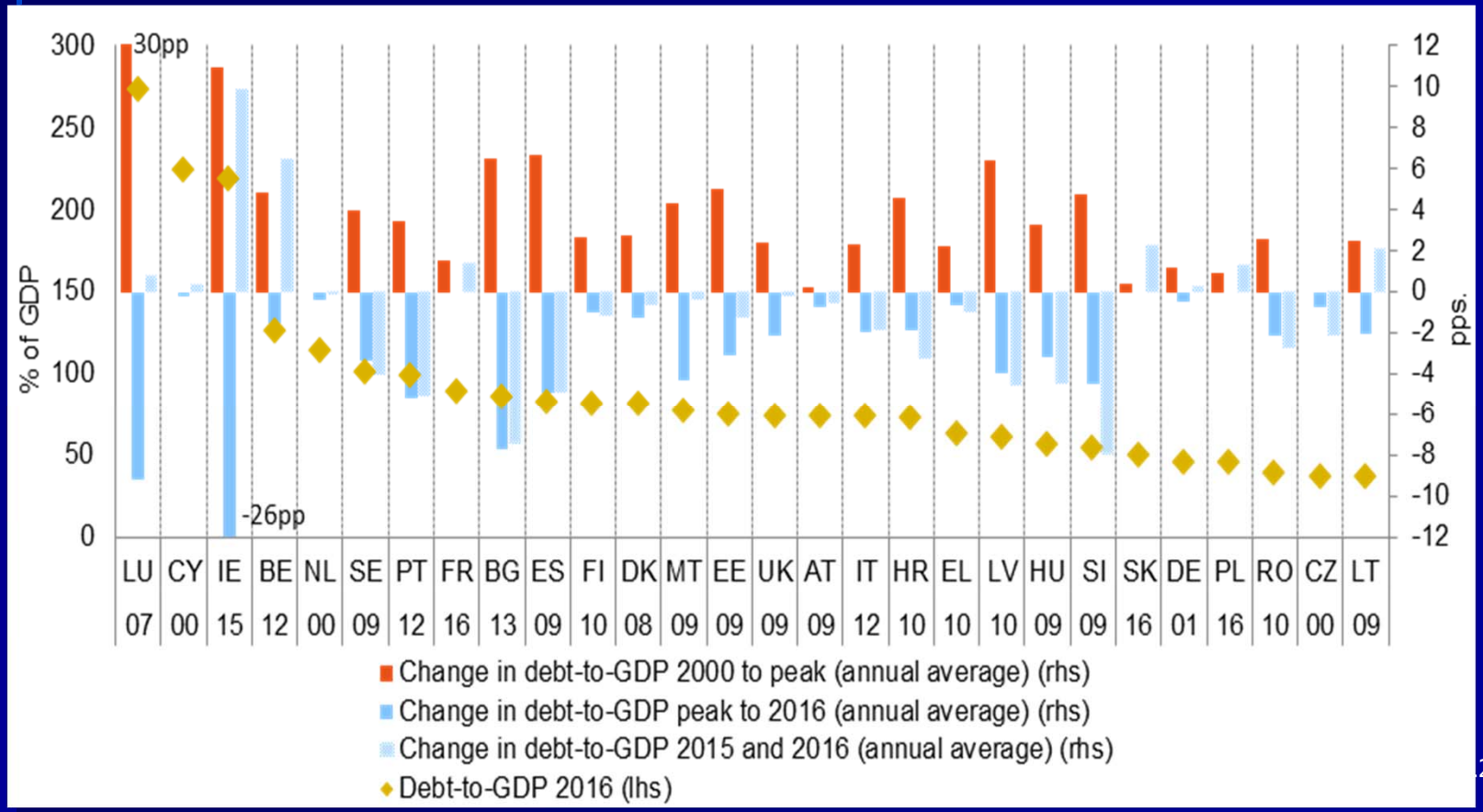
Endogeneity issues

Implications of EMU membership

- Different findings in previous papers in the US case (e.g., Graham et al., 2016): growing integration of corporate and government bond going hand in hand
- Could EMU variable be capturing additional factors?
  - Fast corporate deleveraging
  - Rapidly improving corporate net lending positions
  - Need to control for
    - Varying corporate deleveraging needs
    - increased post-crisis relative riskiness of corporate bonds in EMU

Corporate deleveraging in EU

Pace of deleveraging of non-financial corporations



Corporate deleveraging in EU

Euro area net borrowing/lending per sector