

Determinants of Capital Structure in Non-Financial Companies

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Workshop

Dealing with excessive corporate indebtedness

Wednesday, 2nd of December 2015

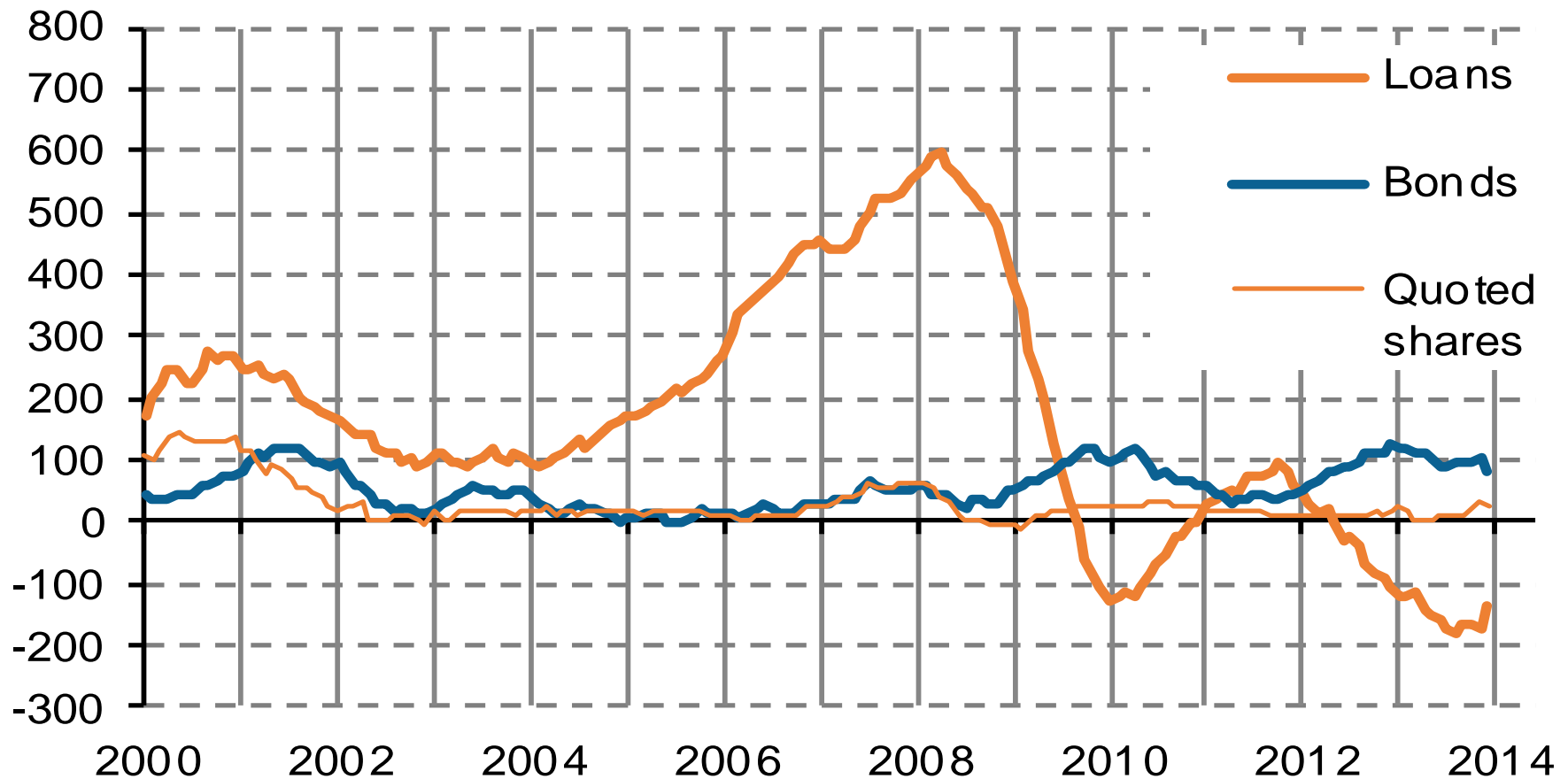
European Commission, Brussels

Motivation & questions

Economic Activity

- ❑ Recent financial crisis reversed trend of financial market integration, does this show up in firm-level data?

Evolution of the funding structure of non-financial corporations in the euro area (12-month cumulative monthly flows)



Motivation & questions

Economic Activity

- ❑ Recent financial crisis reversed trend of financial market integration, does this show up in firm-level data?
- ❑ Potential link between access to finance, firms' decisions on leverage, and financial stability?
- ❑ Cross-country variation in firm-level leverage or industry-level dynamics: which drivers are more relevant?

Theoretical Shortfalls

- ❑ Capital structure theories can only partially explain data
 - ➔ empirical validity of theories is ambiguous

Research questions

- ❑ *What are the main drivers of leverage in NFCs?*

- ❑ *Do we find industry or country patterns in capital structures?*

We evaluate firm-, industry- and country-specific factors determining a firm's capital structure

Method

- Panel regression analyses to determine leverage *drivers*
 - ➔ firm-level data with very large cross-section
 - ➔ firm-, industry- & country-specific parameters

Data limitations reflect the dominance of private firms in the sample:

Annual data

Lack of granular view on funding instruments

Results

- ❑ Leverage *increases* with increasing
 - tangible assets (long-term),
 - debt tax shield,
 - firm size,
 - firm growth, and
 - industry leverage
- ❑ Leverage *decreases* with increasing
 - firm profitability,
 - firm liquidity
- ❑ 12% improvement over Rajan-Zingales (1995) four-factor model: important macro-variables such as capital inflow
- ❑ Results robust against different panel estimators, decomposition, over time

Detailed discussion

Literature review

Capital structure theories

- ❑ *Trade-off* theory: optimal leverage in tax vs risk
- ❑ *Pecking order* theory: info asymmetries vs capital costs
- ❑ Not discussed: *free cash flow* theory, *market timing* theory, other

Empirical studies

- ❑ *Firm-level* drivers: Rajan/Zingales (1995)
- ❑ *Industry-level* drivers: Faulkender/Petersen (2006), Brav (2009), Frank/Goyal (2009), Degryse et al. (2012)
- ❑ *Macroeconomic* drivers: Antoniou et al. (2008), Fan et. al (2012), Köksal et al. (2013)

Our contribution is two-fold

- ❑ Panel data set with *very large cross-section* to tackle problems with selection bias
- ❑ *More variation explained* compared to previous studies with firm-, industry- and country-specific factors

Data

Structure of our data sample

- ❑ Annual data 2003-2012
- ❑ 1,189,708 firms → 6,365,842 firm-year observations
- ❑ 5-8 observations per firm (few data points in 2012)
- ❑ Geography: Europe (EU, non-EU), U.S., Japan

Data sources

- ❑ ORBIS (BvD): 2003-2012, Europe, USA, Japan
- ❑ WDI, World Bank: macroeconomic data

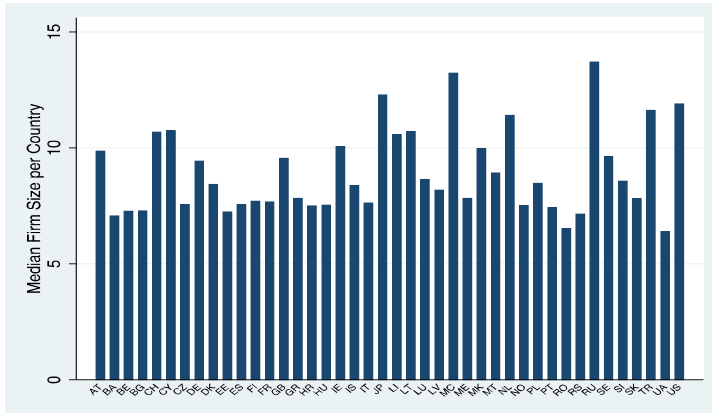
Variables

- ❑ LHS: total, long-term, short-term leverage ratios (D/A)
- ❑ Firm-level: size, growth, profitability, tangibility, liquidity, Nickell
- ❑ Industry-level: median leverage, median growth
- ❑ Macro-level: business cycle, capital flows, debt tax shield

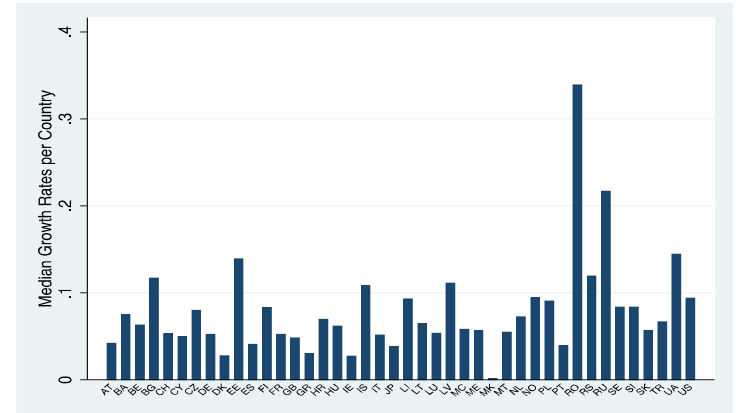
Descriptive / summary stats

Variable	Mean	Median	Std. Dev.	Min.	Max.
St LR	0.545	0.561	0.267	0	1
Lt LR	0.105	0.005	0.181	0	1
Total LR	0.650	0.696	0.249	0	1
Firm Size	7.824	7.681	1.808	0	20.457
Firm Growth	0.393	0.058	3.048	-1	100
Profitability	0.080	0.056	0.127	-1	1
Tangibility	0.329	0.249	0.282	0	1
Liquidity	0.127	0.059	0.164	0	1
Nickell	0.293	0.059	43.068	-18505	83094
St Ind. LR	0.548	0.579	0.108	0.164	0.745
Lt Ind. LR	0.020	0.006	0.029	0	0.325
Total Ind. LR	0.693	0.694	0.053	0.381	0.821
Ind. Growth	0.058	0.065	0.057	-0.288	0.244
Tax Shield	0.005	0.005	0.005	0	0.063
Inflation	2.807	2.166	2.789	-4.480	25.296
GDP Growth	1.359	1.725	3.089	-17.955	12.233
Capital Flows	0.003	0.001	0.005	-0.020	0.042
Unemployment	8.806	8.400	3.479	2.300	37.300
Stock Prices	9.072	13.076	35.392	-82.190	189.230

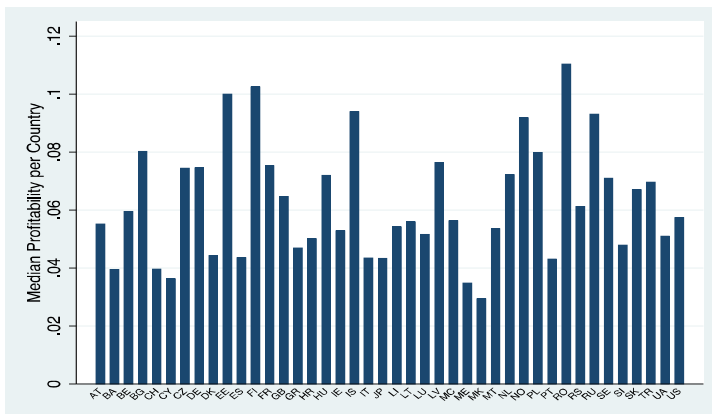
Heterogeneity across Countries (1)



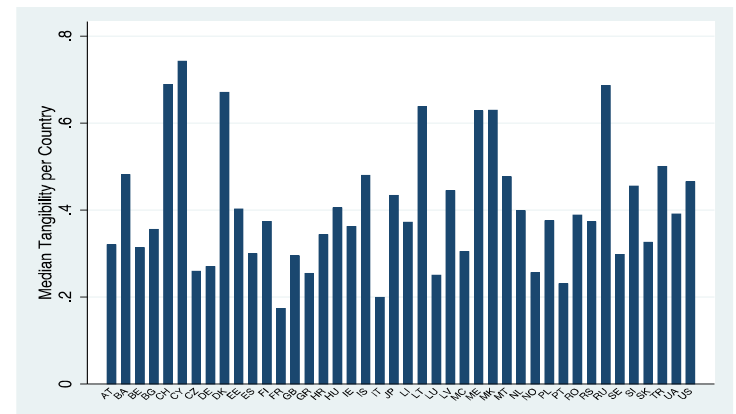
Firm Size



Firm Growth

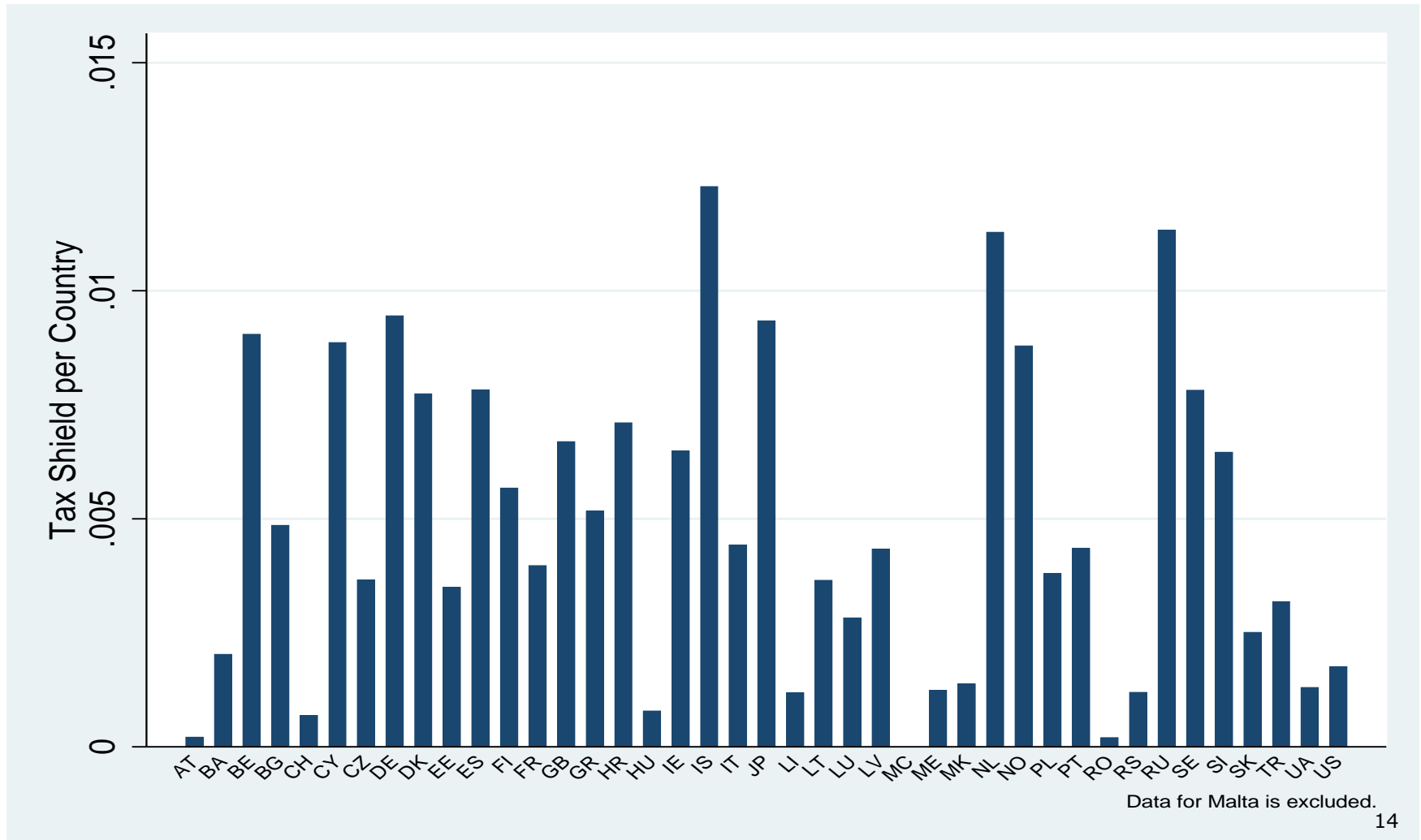


Profitability

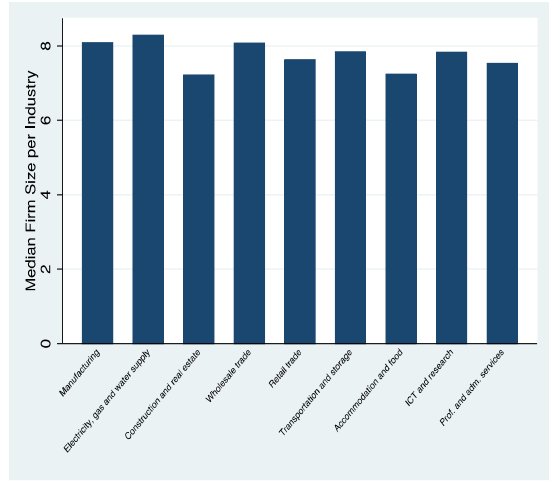


Tangibility

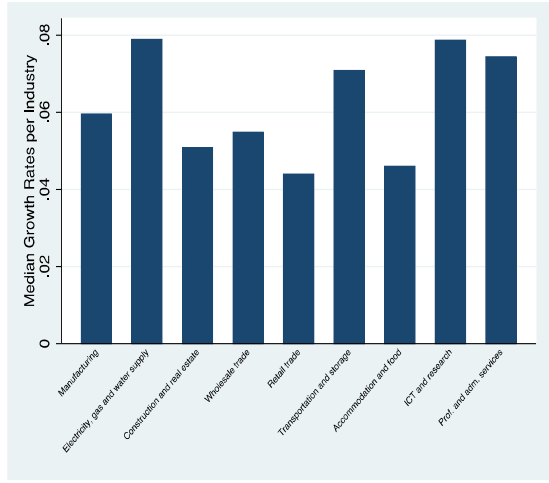
Heterogeneity across Countries (2)



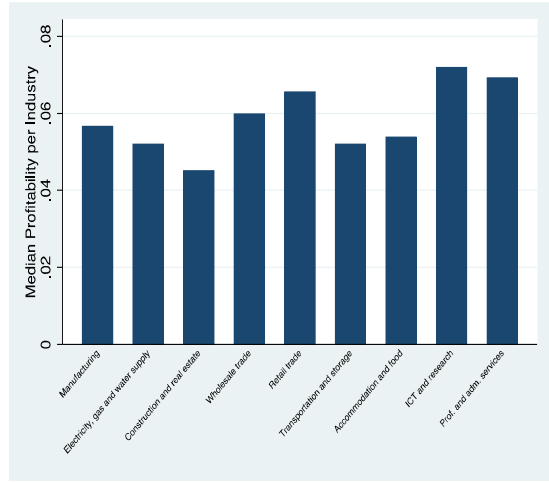
**Heterogeneity
 across
 industries**



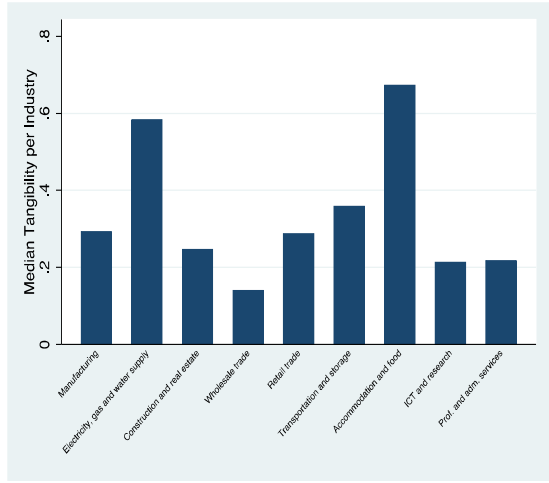
Firm Size



Firm Growth



Profitability



Tangibility

Empirical strategy

Fixed effects panel regressions of the form

$$L_{i,t} = \alpha_z + \beta X_{i,t-1} + \gamma Y_{s,t-1} + \rho Z_{k,t-1} + \delta_t + \epsilon_{i,t}$$

- ❑ i, s, k indicate the levels of *firm, industry, country*
- ❑ t is the *time* period (year)
- ❑ L is the *leverage ratio* for firm i in period t
- ❑ X is the vector of *firm characteristics*
- ❑ Y is the vector of *industry-specific* factors
- ❑ Z is the vector of *country* factors

Baseline regression results

Variables	(1) Total Leverage	(2) Long-term Leverage	(3) Short-term Leverage
Firm Size	0.005*** (0.000)	0.001*** (0.000)	0.003*** (0.000)
Firm Growth	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)
Profitability	-0.159*** (0.001)	-0.062*** (0.002)	-0.128*** (0.001)
Tangibility	-0.028*** (0.001)	0.103*** (0.002)	-0.103*** (0.001)
Liquidity	-0.080*** (0.001)	-0.003** (0.002)	-0.075*** (0.001)
Nickell	0.000 (0.000)	0.000*** (0.000)	-0.000 (0.000)
Total Ind. LR	0.144*** (0.008)		
Lt Ind. LR		-0.094*** (0.013)	
St Ind. LR			0.158*** (0.007)
Ind. Growth	0.008*** (0.002)	-0.025*** (0.002)	0.031*** (0.002)
Tax Shield	1.097*** (0.020)	1.504*** (0.088)	-0.421*** (0.025)
Inflation	0.001*** (0.000)	-0.000 (0.000)	0.002*** (0.000)
GDP Growth	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)
Capital Flows	0.226*** (0.033)	-0.209*** (0.044)	0.465*** (0.039)
Unemployment	-0.002*** (0.000)	0.002*** (0.000)	-0.002*** (0.000)
Stock Prices	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Year FE	Y	Y	Y
Firm FE	Y	Y	Y
Constant	Y	Y	Y
Observations	3,265,810	1,794,355	3,263,935
Number of firms	887,514	596,868	887,197
R-squared	0.099	0.136	0.204

Results compared to main theories' expected impacts and results obtained in the literature

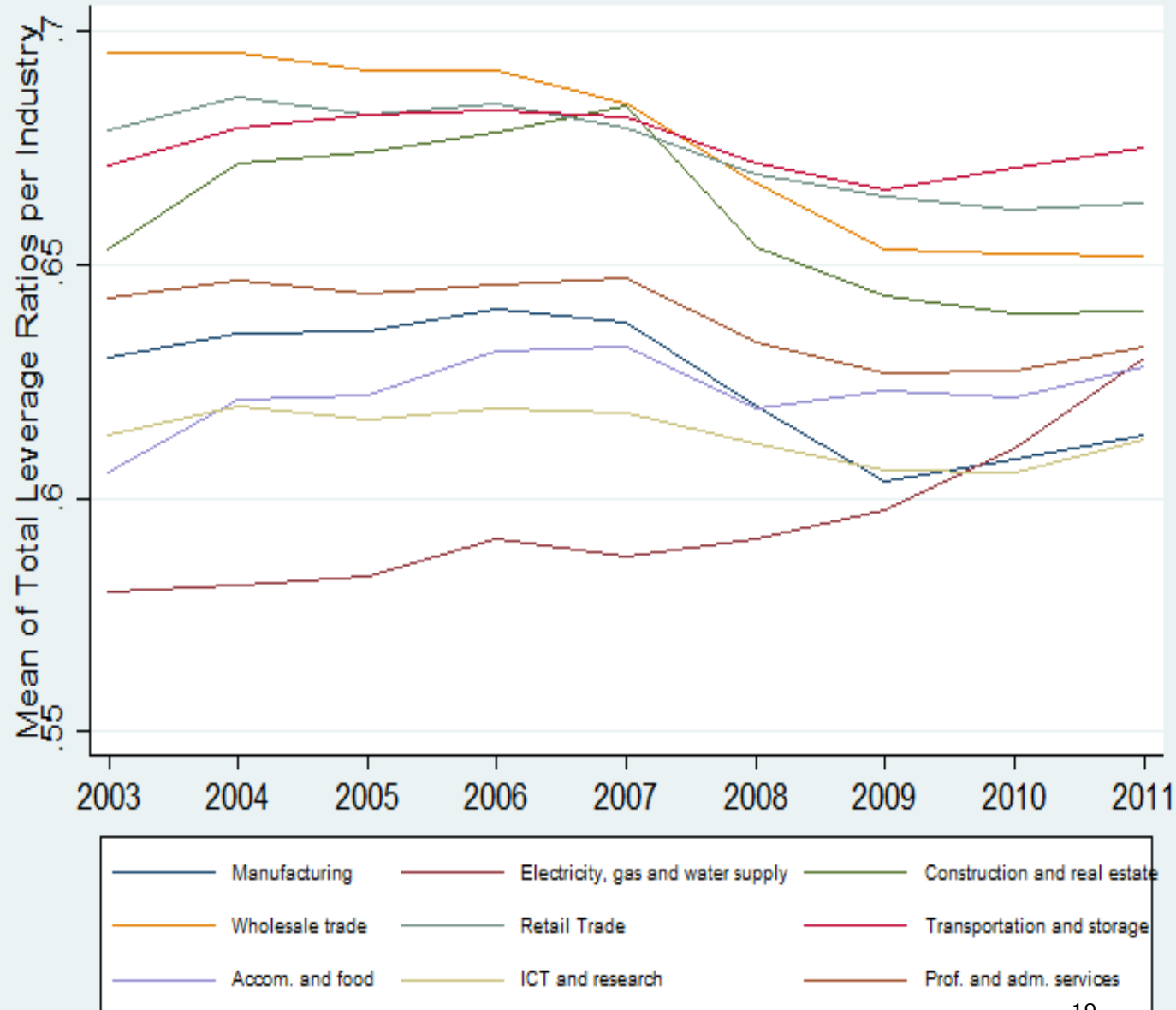
Variables	Pecking Order Theory	Trade-off Theory	Rajan/ Zingales (1995)	Faulkender/ Petersen (2006)	Antoniou et al. (2008)	Brav (2009)	Frank/ Goyal (2009)	Psillaki/ Daskalakis (2009)	Chen/ Yu (2011)	La Rocca et al. (2011)	Degryse et al. (2012)	Fan et al. (2012)	Köksal et al. (2013)	Our Data
Firm Size	?	+	+	-	+	+	+	+	-	+	+	+	+	+
Firm Growth	+	-	-	-	-	+	-	?	?	+	+	-	?	+
Profitability	-	?	-	-	-	-	-	-	-	-	-	-	-	-
Tangibility	+	+	+	+	+	+	+	-	+	+	+	+	+	-
Liquidity	?	?	n.a.	-	?	-	-	?	?	-	?	?	-	-
Nickell	n.a.	n.a.	n.a.	n.a.	-	n.a.	-	n.a.	n.a.	n.a.	+	n.a.	n.a.	?
Total Ind. LR	?	+	n.a.	+	n.a.	n.a.	+	n.a.	n.a.	n.a.	+	n.a.	+	+
Ind. Growth	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	+	n.a.	n.a.	n.a.	+
Tax Shield	n.a.	+	+	+	+	n.a.	?	n.a.	n.a.	n.a.	+	+	+	+
Inflation	n.a.	+	n.a.	n.a.	n.a.	n.a.	+	n.a.	n.a.	n.a.	n.a.	-	+	+
GDP Growth	+	n.a.	n.a.	n.a.	n.a.	n.a.	+	n.a.	n.a.	n.a.	n.a.	+	-	+
Capital Flows	n.a.	n.a.	n.a.	n.a.	+	n.a.	n.a.	n.a.	+	n.a.	n.a.	+	+	+
Unemployment	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-
Stock Prices	-	n.a.	n.a.	-	-	n.a.	-	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	?

Notes: +/- = sign of significant coefficients in respective regressions where total leverage ratio is the dependent variable, ? = theories are ambivalent or results are inconclusive (either coefficient is not significant or switching signs), n.a. = factor was not included in study

Leverage – industry dynamics

☐ highest:
trade and
transportation
sectors

☐ lowest:
utilities



Sub-sampling (1): industries

Variables	Manufacturing Total Leverage	Electricity Total Leverage	Construction Total Leverage	Wholes. trade Total Leverage	Retail trade Total Leverage	Transportation Total Leverage	Accom. & food Total Leverage	ICT & res. Total Leverage	PAS Total Leverage
Firm Size	0.004*** (0.001)	0.011*** (0.002)	0.003*** (0.000)	0.008*** (0.001)	0.004*** (0.001)	0.010*** (0.001)	0.003 (0.002)	0.004*** (0.002)	0.006*** (0.001)
Firm Growth	0.001*** (0.000)	0.001** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Profitability	-0.187*** (0.003)	-0.174*** (0.010)	-0.136*** (0.003)	-0.165*** (0.003)	-0.177*** (0.004)	-0.166*** (0.005)	-0.169*** (0.006)	-0.128*** (0.005)	-0.130*** (0.003)
Tangibility	-0.038*** (0.002)	0.002 (0.009)	-0.054*** (0.003)	-0.025*** (0.003)	0.011*** (0.004)	0.012** (0.005)	-0.004 (0.006)	-0.028*** (0.006)	-0.017*** (0.004)
Liquidity	-0.101*** (0.002)	-0.063*** (0.010)	-0.085*** (0.002)	-0.073*** (0.002)	-0.079*** (0.004)	-0.080*** (0.005)	-0.060*** (0.006)	-0.064*** (0.005)	-0.065*** (0.003)
Nickell	0.000*** (0.000)	0.000*** (0.000)	-0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000 (0.000)
Ind. Growth	0.030*** (0.003)	-0.022** (0.010)	-0.034*** (0.007)	-0.040*** (0.009)		-0.174*** (0.029)	-0.075* (0.043)	-0.084*** (0.024)	0.052*** (0.008)
Tax Shield	1.140*** (0.039)	1.198*** (0.162)	1.248*** (0.047)	0.910*** (0.039)	0.890*** (0.063)	0.999*** (0.095)	1.364*** (0.134)	1.175*** (0.127)	1.166*** (0.071)
Inflation	0.002*** (0.000)	0.001*** (0.000)	0.002*** (0.000)	0.000*** (0.000)	0.000** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)
GDP Growth	0.001*** (0.000)	-0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	-0.000 (0.000)	0.000 (0.000)	0.001*** (0.000)
Capital Flows	0.304*** (0.062)	1.110*** (0.240)	0.149* (0.084)	0.029 (0.063)	-0.055 (0.107)	0.422*** (0.145)	0.200 (0.191)	0.436** (0.201)	0.421*** (0.136)
Unemployment	-0.001*** (0.000)	-0.005*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.000)	-0.002*** (0.000)	0.000 (0.000)	-0.001*** (0.000)	-0.002*** (0.000)
Stock Prices	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	-0.000 (0.000)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Constant	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	778,647	58,756	709,282	719,252	295,702	161,189	115,135	111,451	316,396
Number of firms	199,457	16,231	204,332	187,186	79,622	45,485	32,492	31,499	91,210
R-squared	0.094	0.051	0.125	0.110	0.090	0.062	0.051	0.059	0.081

Notes: The nine industry clusters in the columns are "Manufacturing", "Electricity, gas and water supply", "Construction and real estate", "Wholesale trade", "Retail trade", "Transportation and storage", "Accommodation and food", "ICT and research" and "Professional and administrative services". Following Petersen (2009), we employ two-dimensional clustering of robust standard errors at firm-level and year-level. *** p<0.01, ** p<0.05, * p<0.1

Sub-sampling (2): regions

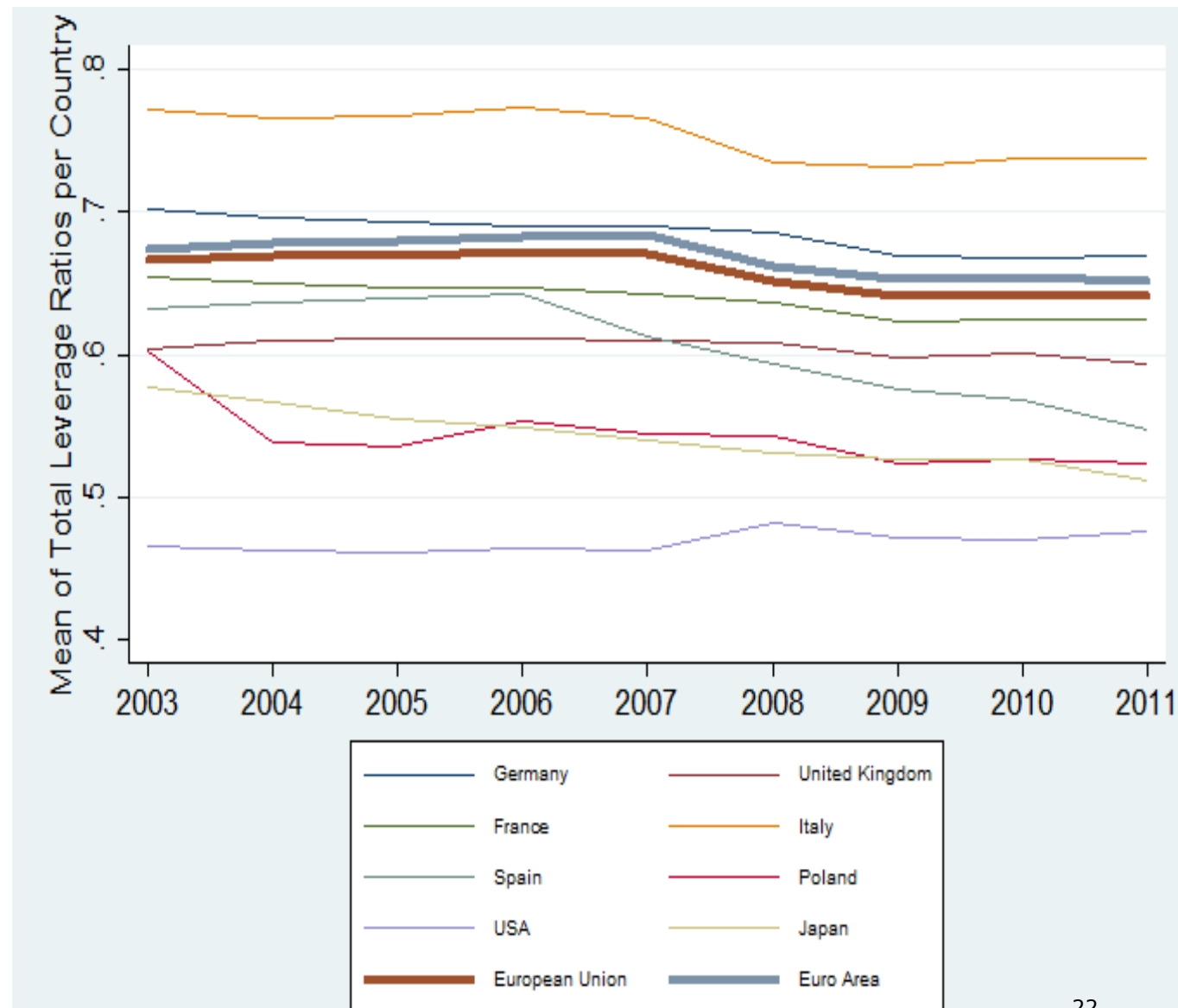
Variables	Control Group [§] Total Leverage	EU27 [†] Total Leverage	Euro Area [‡] Total Leverage	all without USA Total Leverage	all without Japan Total Leverage	all without US/JP Total Leverage
Size	0.005*** (0.001)	0.006*** (0.000)	0.006*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)
Firm Growth	0.000** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Profitability	-0.096*** (0.004)	-0.173*** (0.001)	-0.179*** (0.001)	-0.159*** (0.001)	-0.159*** (0.001)	-0.159*** (0.001)
Tangibility	0.026*** (0.005)	-0.026*** (0.001)	-0.032*** (0.001)	-0.028*** (0.001)	-0.028*** (0.001)	-0.028*** (0.001)
Liquidity	-0.059*** (0.004)	-0.081*** (0.001)	-0.083*** (0.001)	-0.080*** (0.001)	-0.080*** (0.001)	-0.080*** (0.001)
Nickell	0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Total Ind. LR	0.159*** (0.021)	0.091*** (0.009)	0.066*** (0.008)	0.138*** (0.008)	0.143*** (0.008)	0.137*** (0.008)
Ind. Growth	0.067*** (0.007)	0.009*** (0.002)	0.008*** (0.002)	0.008*** (0.002)	0.008*** (0.002)	0.008*** (0.002)
Tax Shield	0.693*** (0.065)	1.098*** (0.021)	1.066*** (0.022)	1.087*** (0.020)	1.108*** (0.020)	1.098*** (0.020)
Inflation	0.001 (0.001)	0.001*** (0.000)	-0.000 (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
GDP Growth	-0.001** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Capital Flows	-9.900*** (1.117)	0.126*** (0.034)	1.151*** (0.050)	0.218*** (0.033)	0.221*** (0.033)	0.214*** (0.033)
Unemployment	0.012*** (0.001)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
Stock Prices	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Year FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Constant	Y	Y	Y	Y	Y	Y
Observations	197,398	2,959,093	2,547,956	3,249,051	3,251,341	3,234,582
Number of firms	46,064	809,574	674,827	883,581	884,243	880,310
R-squared	0.079	0.108	0.113	0.099	0.099	0.100

Notes: Robust standard errors clustered at firm-level in parentheses. ; § includes EFTA states (Iceland, Liechtenstein, Norway, Switzerland), USA and Japan. † excludes Croatia. ‡ includes Monaco and Montenegro, excludes Latvia. *** p<0.01, ** p<0.05, * p<0.1

Country dynamics

☐ highest:
Germany, Italy,
Monaco, Norway

☐ lowest:
Liechtenstein,
Macedonia,
Montenegro,
Turkey, Ukraine,
USA



Kühnhausen & Stieber (2014)
Determinants of Capital Structure

Sub-sampling (3): countries

Variables	Germany Total Leverage	Un. Kingdom Total Leverage	France Total Leverage	Italy Total Leverage	Spain Total Leverage	Poland Total Leverage	USA Total Leverage	Japan Total Leverage
Size	0.006*** (0.002)	0.003 (0.002)	0.011*** (0.001)	0.005*** (0.000)	0.004*** (0.001)	0.007** (0.003)	-0.004 (0.003)	0.013** (0.006)
Firm Growth	0.000* (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001** (0.000)	-0.001* (0.001)	0.013*** (0.004)
Profitability	-0.116*** (0.007)	-0.127*** (0.007)	-0.176*** (0.002)	-0.199*** (0.003)	-0.171*** (0.004)	-0.171*** (0.010)	-0.135*** (0.012)	-0.224*** (0.023)
Tangibility	0.017** (0.008)	0.017* (0.009)	0.031*** (0.003)	-0.101*** (0.002)	0.006** (0.003)	0.019* (0.011)	-0.044** (0.022)	-0.000 (0.022)
Liquidity	-0.056*** (0.006)	-0.067*** (0.007)	-0.085*** (0.002)	-0.087*** (0.002)	-0.066*** (0.003)	-0.062*** (0.010)	-0.193*** (0.021)	-0.144*** (0.022)
Nickell	0.000 (0.000)	-0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	-0.000 (0.000)	0.000 (0.000)
Total Ind. LR	0.256*** (0.026)	0.010 (0.049)	0.196*** (0.018)	-0.057*** (0.013)	0.265*** (0.029)	0.375*** (0.057)	0.047 (0.076)	0.218*** (0.075)
Ind. Growth	-0.000 (0.007)	0.025*** (0.010)	0.018*** (0.004)	-0.022*** (0.003)	0.048*** (0.005)	0.010 (0.013)	0.015 (0.019)	-0.006 (0.011)
Tax Shield	0.730*** (0.111)	1.692*** (0.176)	0.322*** (0.037)	0.997*** (0.033)	2.145*** (0.075)	1.345*** (0.275)	3.721*** (0.943)	1.090*** (0.242)
Inflation	0.003*** (0.001)			0.015*** (0.000)	0.003*** (0.001)		0.008 (0.006)	
GDP Growth	-0.000*** (0.000)	-0.001* (0.000)	0.000** (0.000)	0.002*** (0.000)	0.003 (0.003)	0.003*** (0.001)	-0.002 (0.002)	0.000 (0.000)
Unemployment			0.003*** (0.001)	0.016*** (0.000)	0.006*** (0.002)	0.003*** (0.000)	-0.009*** (0.001)	
Stock Prices	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.000*** (0.000)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Constant	Y	Y	Y	Y	Y	Y	Y	Y
Observations	97,139	86,652	760,558	840,289	436,980	45,646	16,759	14,469
Number of firms	33,904	29,507	175,923	207,442	147,272	14,857	3,933	3,271
R-squared	0.065	0.061	0.105	0.168	0.145	0.098	0.111	0.234

Capital flows are excluded for collinearity reasons as are inflation and unemployment for some countries. Following Petersen (2009), we employ two-dimensional clustering of robust standard errors at firm-level and year-level. *** p<0.01, ** p<0.05, * p<0.1

Firm characteristics

Public vs Private

Variables	public firms Total Leverage	private firms Total Leverage
Firm Size	0.009*** (0.001)	0.004*** (0.000)
Firm Growth	0.000*** (0.000)	0.001*** (0.000)
Profitability	-0.183*** (0.004)	-0.155*** (0.001)
Tangibility	-0.045*** (0.003)	-0.025*** (0.001)
Liquidity	-0.095*** (0.003)	-0.075*** (0.001)
Nickell	0.000** (0.000)	0.000** (0.000)
Total Ind. LR	0.230*** (0.018)	0.064*** (0.009)
Ind. Growth	0.011*** (0.004)	0.003 (0.002)
Tax Shield	1.771*** (0.057)	1.009*** (0.024)
Inflation	0.002*** (0.000)	0.001*** (0.000)
GDP Growth	0.001*** (0.000)	0.001*** (0.000)
Capital Flows	0.929*** (0.062)	-0.033 (0.042)
Unemployment	-0.002*** (0.000)	-0.002*** (0.000)
Stock Prices	0.000*** (0.000)	0.000*** (0.000)
Year FE	Y	Y
Firm FE	Y	Y
Constant	Y	Y
Observations	533,609	2,280,129
Number of newid	135,724	634,245
R-squared	0.166	0.115

Following Petersen (2009), we employ two-dimensional clustering of robust standard errors at firm-level and year-level. *** p<0.01, ** p<0.05, * p<0.1

Small vs Large

Variables	small firms Total Leverage	large firms Total Leverage
Size	-0.001 (0.001)	0.007*** (0.001)
Firm Growth	0.000** (0.000)	0.001*** (0.000)
Profitability	-0.085*** (0.006)	-0.180*** (0.004)
Tangibility	-0.066*** (0.005)	-0.013*** (0.004)
Liquidity	-0.069*** (0.007)	-0.067*** (0.004)
Nickell	0.000* (0.000)	0.000 (0.000)
Total Ind. LR	-0.051* (0.029)	0.277*** (0.019)
Ind. Growth	-0.067*** (0.012)	-0.004 (0.004)
Tax Shield	1.821*** (0.141)	1.020*** (0.061)
Inflation	0.004*** (0.000)	0.001*** (0.000)
GDP Growth	0.001*** (0.000)	0.000 (0.000)
Capital Flows	2.192*** (0.208)	0.505*** (0.111)
Unemployment	0.001*** (0.000)	-0.001*** (0.000)
Stock Prices	0.000*** (0.000)	0.000*** (0.000)
Year FE	Y	Y
Firm FE	Y	Y
Constant	Y	Y
Observations	230,489	358,206
Number of firms	109,319	103,892
R-squared	0.035	0.108

Following Petersen (2009), we employ two-dimensional clustering of robust standard errors at firm-level and year-level. *** p<0.01, ** p<0.05, * p<0.1

Conclusions

- ❑ Capital structure choice theory could be highly *relevant* for economic activity and policies (but different findings in literature)
- ❑ Present paper: panel regression analyses to determine leverage *drivers*
 - ➔ draw on data with very large cross-section
 - ➔ firm-, industry- & country-specific parameters
- ❑ LR (+): tangible assets (long-term), debt tax shield, firm size, firm growth, and industry leverage
- ❑ LR (-): firm profitability, firm liquidity
- ❑ 12% improvement over RZ (1995) four-factor model: important macro-variables such as capital inflow
- ❑ robust against different panel estimators, decomposition, over time

Thank you for your attention!

Background slide: LHS variable evolution over time

