

Sovereign debt exposure and the bank lending channel

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Research Questions

What is the role of sovereign securities held by banks in the propagation of financial shocks to the real economy?

How does the holding of sovereign affect the credit supply by banks?

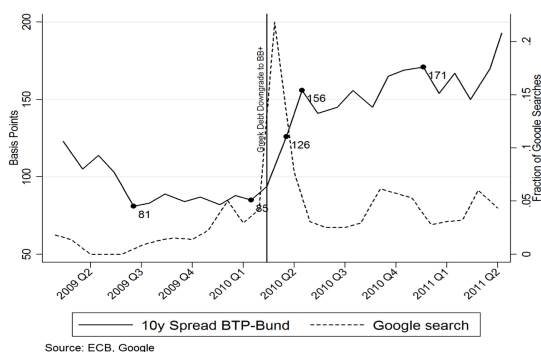
Did credit contraction affect the real economy?

The Greek Crisis, Sovereigns, and Banks

Context: Italian credit market.

Event: first Greek bailout (2010)

- changed market perception of sovereign risk for European bonds
- large, unexpected contagion across Europe ("Wake-up Call" theory).



Identification: exploit variation in (pre-bailout) holdings of Italian sovereigns across financial intermediaries lending to Italian corporations.

Outcomes: change in firms' credit supply and firm policies before-to-after the Greek bailout.

Effect on Credit Supply

$$\Delta \ln(Loans_{ib}) = \delta_i + \beta \cdot Sovereigns_b + \delta X_b + \varepsilon_{bi}$$

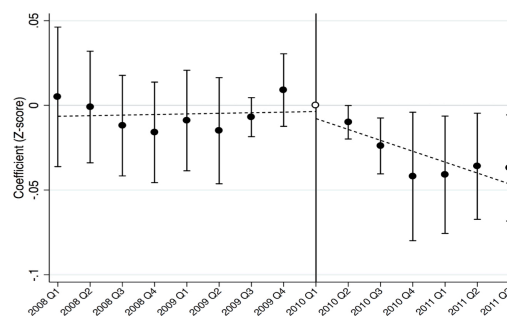
Dep. Var:	$\Delta \ln(Loans)$		Cut Credit	
	(1)	(2)	(3)	(4)
Sovereigns _{2010Q1}	-0.285*** (0.105)	-0.285*** (0.022)	0.053*** (0.025)	0.053*** (0.007)
Firm FE	Y	Y	Y	Y
Bank Controls	Y	Y	Y	Y
Relationship Controls	Y	Y	Y	Y
Sample	Multiple	Multiple	Multiple	Multiple
Cluster	Bank	Firm	Bank	Firm
Adj. R ²	0.599	0.599	0.585	0.585
Observations	424191	424191	464435	464435

Sample: Firms with multiple lending relationships appearing in the Credit Register

Comparing change in bank lending to the *same firm* by two banks one SD apart in terms of pre-crisis sovereign exposure:

- reduction credit supply
- more likely termination of credit relationship.

Small firms cannot substitute borrowing from other banks, especially if operating in local credit markets highly exposed to the shock.



Counterfactual exercise: drop 2% of aggregate credit supply driven by *banks' direct holdings* of sovereign securities.

Effect on Firms' Real Activities

$$\Delta y_i = \delta_i + \beta \cdot Sovereigns_i^{AVE} + \delta X_i^{AVE} + \alpha_p + \alpha_j + \varepsilon_i$$

Comparing change in activity of firms whose lenders are differently exposure to sovereigns:

- *real effects on small firms' activity*
 - drop in corporate investments
 - drop in employment, if operate in industries highly dependent on external finance
- *no real effect on larger firms' activity.*

Balance Sheet Shock and Bank Capital

Dep. Var:	$\Delta \ln(Loans)$						
	(1)	(5)	(2)	(3)	(4)	(6)	(7)
Sovereigns _{2010Q1}	-0.174** (0.083)	-0.347** (0.137)	-0.227** (0.103)	-0.304*** (0.099)	-0.392*** (0.141)	-0.275*** (0.103)	-0.275*** (0.103)
interaction with:							
Low Capital	-0.235* (0.137)					-0.507*** (0.173)	-0.507*** (0.173)
Ratio _{2010Q1}							
Tier1 _{2010Q1}		0.349 (0.366)					-0.508 (0.548)
Bad Loans _{2010Q1}			-1.541 (1.131)			-1.763 (1.123)	-1.763 (1.123)
Net Interbank				-0.139 (0.156)		0.128 (0.155)	0.128 (0.155)
Borrower _{2010Q1}						0.156 (0.117)	0.156 (0.117)
Deposits _{2010Q1}					0.101 (0.069)	0.134 (0.117)	0.134 (0.117)
Top5 _{2010Q1}						0.134 (0.339)	0.134 (0.339)
Bank Controls	Y	Y	Y	Y	Y	Y	Y
Relation. Controls	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y
Sample	Multiple	Multiple	Multiple	Multiple	Multiple	Multiple	Multiple
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Adj. R ²	0.599	0.599	0.599	0.600	0.599	0.600	0.600
Observations	424191	424191	424191	424191	424191	424191	424191

Sample: Firms with multiple lending relationships appearing in the Credit Register

Sharper tightening of credit supply among banks closer to the regulatory capital constraint (8-10% Tier1 ratio).

Conclusions

Understanding how *financial frictions faced by banks' and firms interplay* is crucial to assess transmission of financial shocks to the economy.

Burden of financial instability falls disproportionately on small firms due to combination of exacerbated financial frictions and credit market segmentation.