Discussion of:

Sharing the Pain? Credit Supply and Real Effects of Bank Bail-ins

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Bank Bail-ins

- **Recent crises $\rightarrow$ bank bail-outs**
  - Large government losses (see Irish Pyrrhic victory)
  - Moral hazard by banks
  - Very unpopular (see recent Italian political campaign)
  - Bank defaults are costly

- **This Paper**
  - Exploit unexpected collapse of Banco Espirito Santo (BES)
  - Bail-in affected:
    1) Shareholders
    2) Junior bondholders
    3) **Other banks**
  - Exploit Portuguese credit register
  - Effect of bail-in on bank credit, employment, investment

Summary of Results

- **Exposed banks cut credit more than not exposed banks**
  - 5.7% per cent more (granted credit lines)
  - Especially to firms that had bailed-in bank as main lender
  - Especially to large, high-profitability, and safe firms
- **Firms able to undo the contraction but pay higher rates**
  - but SMEs subject to credit contraction
- **Negative effect on investments and employment**
  - $\uparrow \sigma$ firm bail-in exposure $\rightarrow -2.0\%$ in investments
  - $\uparrow \sigma$ firm bail-in exposure $\rightarrow -1.5\%$ in employment
  - Stronger effects for illiquid SMEs that increase cash holdings in response to the funding shock

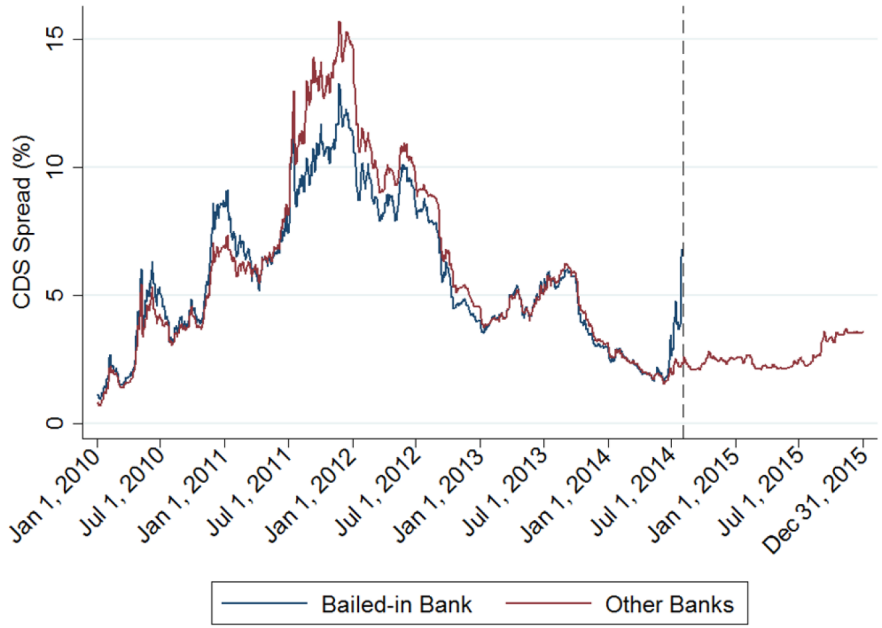
The Collapse of Banco Espirito Santo

- **Aug14: central bank applies resolution measure to BES**
  - Caused by losses from parent family-controlled companies
  - Third largest bank in Portugal
  - Followed the EU Bank Recovery and Resolution Directive
- **Assets divided in:**
  - "Good bank" (Novo Banco) with €4.9bn capital
  - "Bad bank" for shareholders and junior bondholders
- **Good bank capital provided by a resolution fund + govt**
  - Contribution by the government: €3.9bn

  → Contribution by 8 large banks: €0.7bn

Bail-in Shock

- Unexpected shock, no contagion



- **Is this shock to banks economically large?**
  - Hits only 8 banks for €0.7bn (and it's a *loan* to the fund)
- **Is this a *bail-in* shock?**
  - Looks similar to other cash flow shocks (e.g., hurricane)
  - Might even be a *positive* shock for banks other than BES

Supervisory Data

1) **Central Credit Register**
   - Quarterly information on all loans >€50 in Portugal
   - Loans to non-fin firms by all banks operating in Portugal
   - Total amount, short-term, long-term, past due
   - Information on credit drawn and granted
2) **Individual Information on Interest Rates**
   - Matched firm-bank interest rate information on new loans
3) **Central Balance Sheet Database**
   - Firm-level info on virtually all Portuguese firms
   - Assets, year of incorporation, equity, net income, no. employees, debt, cash holdings
4) **Bank Supervisory Database**
   - Bank balance sheet data

Within-Firm Analysis

$$\Delta log(Credit)_{bi} = \beta BankExposure_b + \delta' X_b + \alpha_i + \epsilon_{bi}$$

- **Changes in credit supply within firms ...**
  - LHS is log change in granted credit
  - Khwaja-Mian FEs α_i
  - Bank-level controls X (missing control for funding mix)
- **... based on *BankExposure***
  - Percentage of assets of each bank exposed to the bail-in

  → Share of assets that was effectively bailed-in for BES is **6.8%**

  → Contribution (€0.7bn loan) to the Resolution Fund granted by 8 banks ranges from **0.04%** to **0.37%** of tot assets

  → **0%** for all other banks (how many?)

Within Firm Estimation

	$\Delta logTotalCredit_{bi}$				$\Delta logCreditLines_{bi}$	
	(1)	(2)	(3)	(4)	(5)	(6)
Bank Exposure	-0.989***	-1.143***	-1.520*		-2.723***	
	(0.311)	(0.320)	(0.824)		(0.863)	
Bank Exposure × SMEs				-1.441*		-2.659***
				(0.829)		(0.881)
Bank Exposure × Large Firms				-3.133***		-4.048***
				(0.836)		(0.866)
No. Observations	116,245	116,245	116,245	116,245	39,573	39,573
No. Firms	40,927	40,927	40,927	40,927	14,320	14,320
Adj. R^2	0.001	0.047	0.049	0.050	0.103	0.103
Bank Controls	N	N	Y	Y	Y	Y
Firm FE	N	Y	Y	Y	Y	Y
No. Bank Relationships > 1	Y	Y	Y	Y	Y	Y
Credit Lines with $\neq$ Banks	N	N	N	N	Y	Y

- (3): +1 StDev Bank Exposure (0.020) $\rightarrow$ -3.0% bank credit supply
- Show estimates of bank controls
- Show here estimation in the full sample of firms (now online appendix)

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Firm FE	N	Y	Y	Y	Y	Y
No. Bank Relationships > 1	Y	Y	Y	Y	Y	Y
Credit Lines with $\neq$ Banks	N	N	N	N	Y	Y

- Effect stronger for large firms **and safer firms**.
- Firms with stronger relationship with the resolved bank suffered more
- What about the extensive margin? Rates?

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Firm FE	N	Y	Y	Y	Y	Y
No. Bank Relationships > 1	Y	Y	Y	Y	Y	Y
Credit Lines with ≠ Banks	N	N	N	N	Y	Y

- Focus on granted credit lines (sample firms now $\approx 1/3$)
- Stronger effects for credit lines (Ippolito et al, 2016)
- (3): +1 StDev Bank Exposure (0.020) $\rightarrow -5.7\%$ bank credit supply

Looking for a Counterfactual

- ***BankExposure* obviously not randomly assigned**
  - Show summary stats of exposed and non-exposed banks
  - We already now that exposed banks are 9 very large banks
- **What is the counterfactual?**
  - Bailout with public funds?
  - Bail-in with a well funded resolution fund?
  - Bail-in with a fund with loans from all banks?

Effect on Total Firm Credit and Real Effects

- **Firms might "undo" the credit contraction**
  - Firms might start new relationships
  - Firms might borrow more from unaffected banks
  - Collapse data at the firm-level

$$\Delta log(Y)_i = \beta(FirmExposure)_i + \tau' F_i + \delta' \overline{X}_i + \widehat{\alpha}_i + \epsilon_i$$

- **Exploit firm-level heterogeneity in *indirect* bail-in exposure**
  - $\Delta log(Y)_i$ is log change in *total* bank credit and real effects
  - F are firm characteristics and industry and district FE
  - $\overline{X}$ are the indirect bank controls
  - $\widehat{\alpha}$ firm-specific demand shock

Firm Cross-Sectional Estimation

	$NewLending$ $Relationship_i$			$\Delta logCredit_i$ (Except Bailed-in Bank)		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Exposure	0.535	-0.659		4.020***	4.566***	
	(0.352)	(0.423)		(0.518)	(0.558)	
Firm Exposure × SMEs			-0.674			4.540***
			(0.433)			(0.585)
Firm Exposure × Large Firms			-0.220			5.359***
			(0.809)			(1.042)
No. Observations / Firms	40,927	40,927	40,927	40,927	40,927	40,927
Adj. R^2	0.012	0.058	0.058	0.018	0.342	0.342
Firm Controls	N	Y	Y	N	Y	Y
Bank Controls	N	Y	Y	N	Y	Y
Credit Demand	N	Y	Y	N	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y	Y
No. Bank Relationships > 1	Y	Y	Y	Y	Y	Y

- Firms are able to "undo" the credit contraction

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Industry FE	Y	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y	Y
No. Bank Relationships > 1	Y	Y	Y	Y	Y	Y

- Contraction in credit lines granted to more exposed SMEs
- Real effects on investments and employment

Overall

- Excellent paper, very relevant question
- Opens up interesting questions about how to design bail-ins
- Few comments about identification