Corporate Runs and Credit Reallocation

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Motivation

- **Bank failures** can cause large declines in credit and economic activity (e.g., Bernanke, 1983; Calomiris and Mason, 2003; Ashcraft, 2005; Huber, 2018)
- As the events in the U.S. in the Spring of 2023 reminded us **bank runs** (i.e., sudden large deposit withdrawals) remain a key source of bank fragility that can lead to bank failures
- Know a lot about the **depositors' behavior** (households) during bank distress (e.g., Iyer and Puri, 2012; Iyer et al., 2016; Artavanis et al., 2022; Acharya et al., 2023)
- Know much less about **asset-side** dynamics of bank distress

Motivation

- A **novel aspect** of the 2023-banking turmoil: large & rapid deposit withdrawals from non-financial corporations

- Corporations can impact bank stability for two key reasons:

1. Their deposits are **substantial** (EU: 25%) & **uninsured**
2. They are also **borrowers** $\rightarrow$ potential simultaneous relocation of their new 'loan business' to other banks
   - **Why?** To guarantee access to future liquidity (see e.g., Detragiache, Garella, and Guiso, 2000)
   - Especially single-rel firms with good investment opportunities
   - If best borrowers leave early $\rightarrow$ endogenous deterioration of bank asset side

This Paper

- We study the period leading-up to the failure of two regional banking groups (6 banks) in Italy in 2017 - **'distressed banks'**
- Shed light on their **corporate clients'** behavior on **both sides** of the banks' balances sheets during the unfolding distress:
  - Track their **deposit flows** & **loan applications** to other banks
  - Study their impact on the distressed banks' **loan portfolios** as well as **spillovers** on other banks

Preview of Findings

- **Deposit runs** at the distressed banks
  - Begin as soon as the banks' problems become public
  - Firms $\neq$ households: timing, intensity, & choice of new banks
- **Deterioration of asset side** of the distressed banks
  - Creditworthy, single relationship firms leave (apply elsewhere)
  - They secure new lending relationship with stronger banks
  - Credit line drawdowns ('runs), especially from high-risk firms
- **Firm outcomes**
  - Because creditworthy firms are able to switch, negative real effects are confined to the riskiest firms
- **Spillover effects** at other banks
  - Faced with a better borrower pool, other banks cut credit to their own risky clients (capital constrained)

Data Sources

We rely on 4 main datasets available at the Bank of Italy:

1. Deposit volumes at bank-province-level, monthly, by counterparty (households vs. firms)
2. Bank-firm credit data (credit volumes, loan applications, interest rates) from the Italian Credit Register (CR)
3. Bank balance-sheet data
4. Firm balance-sheet data from Cerved (investment, wage expenses, sales, Z-scores)

Des Stats 1 Des Stats 2

The 'Experiment'

The failure of two large mutual savings groups in Italy ($\approx$ €40 billion in assets each) in one of Italy's wealthiest regions

Their failure provides an ideal empirical setting:

- The origin of distress was **idiosyncratic**, allowing us to isolate its impact on borrowers' behavior
  - Due to accounting frauds (inflating regulatory capital)
  - Clear timing: article leak and supervisory actions
- Medium-size on a national scale (10^{th} & 11^{th}), still **regionally significant** to have material spillover effects in the region
  - 25% of firms in the region had loans with the distressed banks

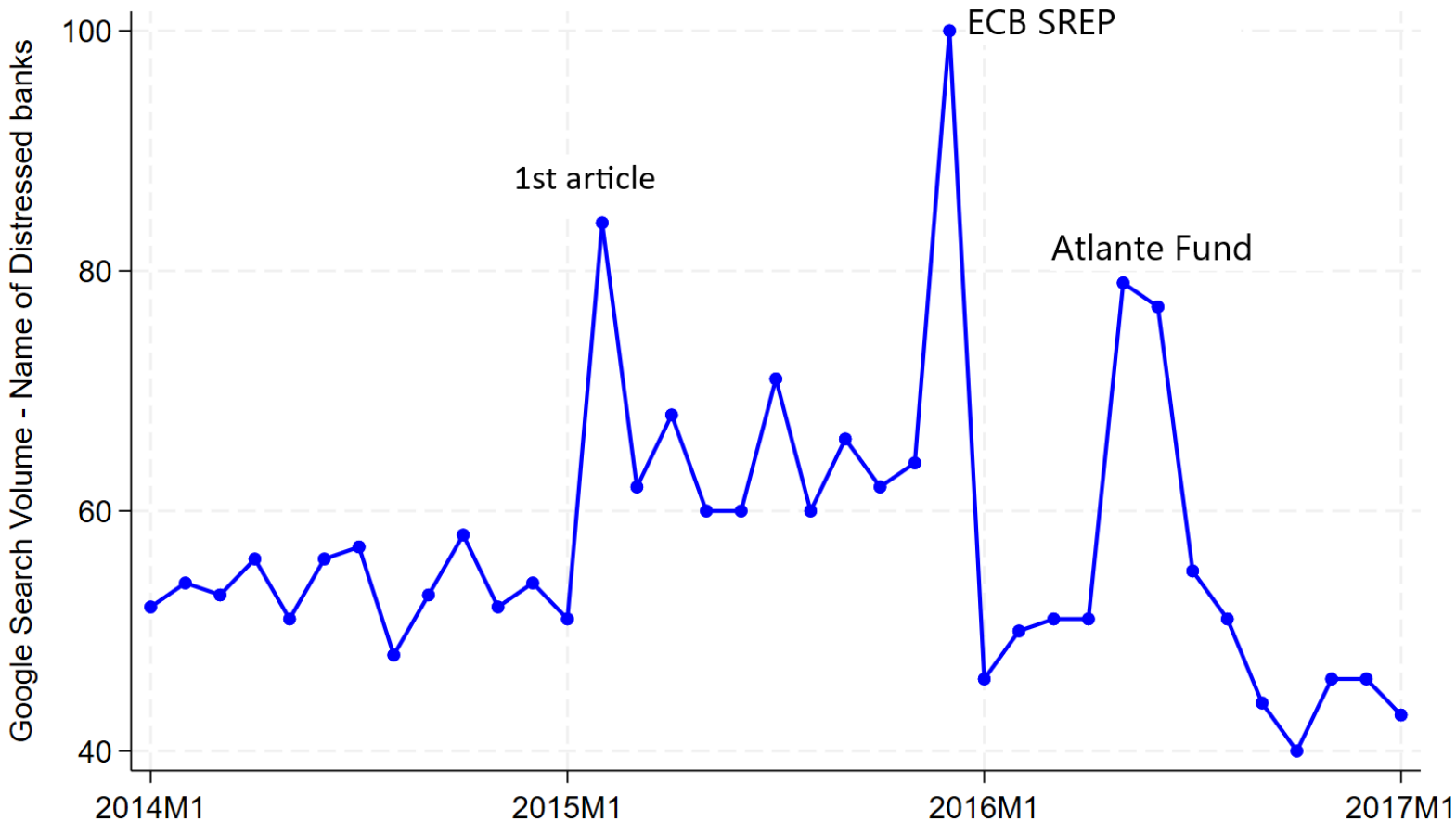
Timeline of Distress

The period leading-up to their ultimate failure is characterized into two periods of escalating distress:

- **Post 1** (Feb 2015 - Nov 2015)
  - The press leaked that the distressed banks were inflating their regulatory capital since 2012 using "loan-for-shares" schemes
  - Negative press coverage continues with more improprieties
- **Post 2** (Dec 2015 - Dec 2016)
  - ECB's SREP report found "loan-for-shares" practices more widespread, creating significant capital shortfalls
  - Try to get listed in early 2016 (intervention by Atlante fund)
  - Recapitalization ultimately fails, sealing the banks' fate (bought by national bank in June 2017)

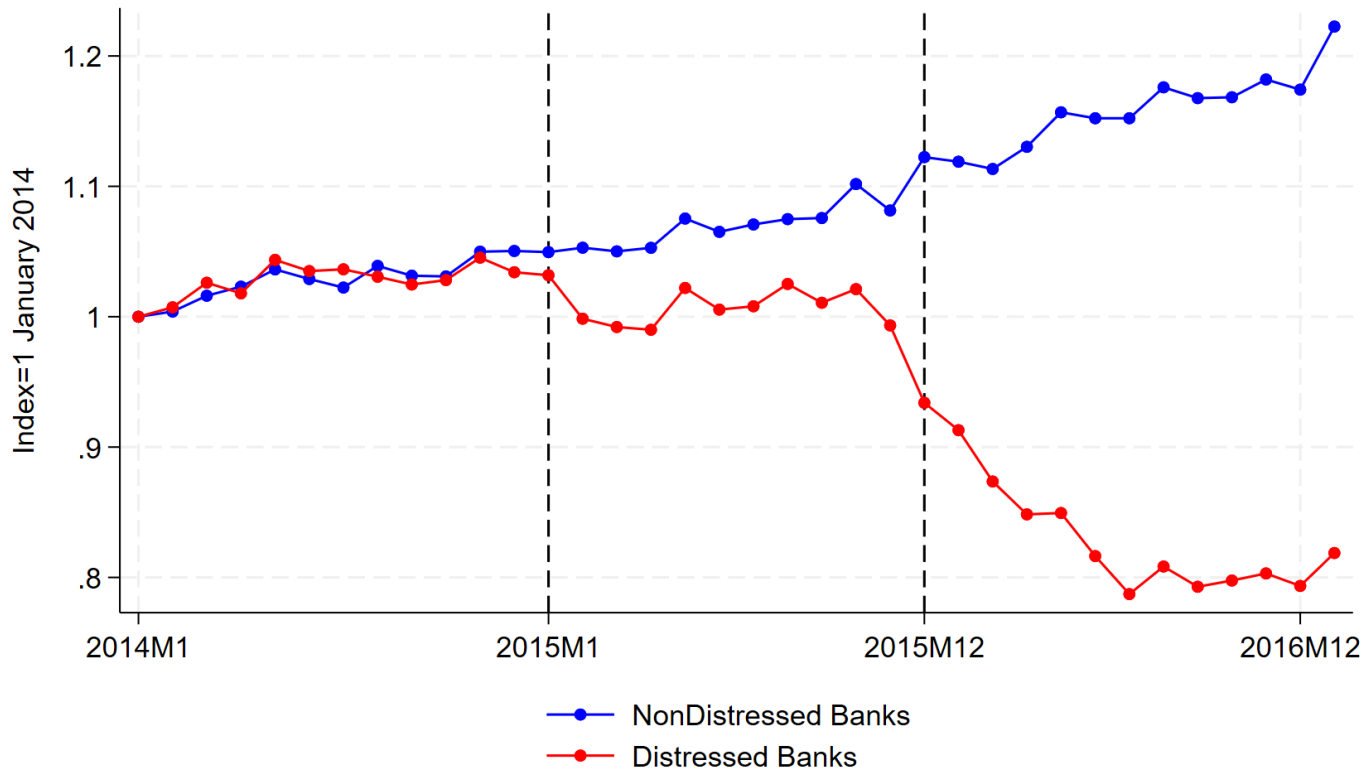
Google Trends

- **Feb 2015**: 1st article in the press, disclosing their problems, triggered a significant increase in public attention (1st spike)
- This marks the **start** of a period of escalating distress



Deposit Outflows

- Deposit outflows began right after the 1st article disclosed they were inflating their regulatory capital
- Larger outflows followed much later, after the SREP



- Event window: 2014:Q1-2016:Q4
- Distinguished into: Pre, Post 1, & Post 2

Results

1. Deposits
2. Credit
3. Firm outcomes
4. Spillovers on other banks

Depositor Runs - Empirical Specification

We estimate:

$$\begin{aligned}\log(Dep)_{b,t} =& \beta_1 \ D_b \times \text{Post 1} + \beta_2 \ D_b \times \text{Post 2} \\ &+ \alpha_b + \alpha_t + \epsilon_{b,t}\end{aligned} \tag{1}$$

where:

- $Log(Dep)_{b,t}$ denotes the log of firm or households deposits in bank b at time t
- $D_b = 1$ if bank b is one of distressed banks, and $= 0$ otherwise
- $Post1$ and $Post2$ split distress-period in two sub-periods
  - Post 1 $= 1$ btwn Feb 2015 to Nov 2015, and $= 0$ otherwise
  - Post 2 $= 1$ btwn Dec 2015 to Dec 2016, and $= 0$ otherwise
  - Pre: Jan 2014 - Jan 2015 (omitted group)

Depositor Runs - Baseline Results

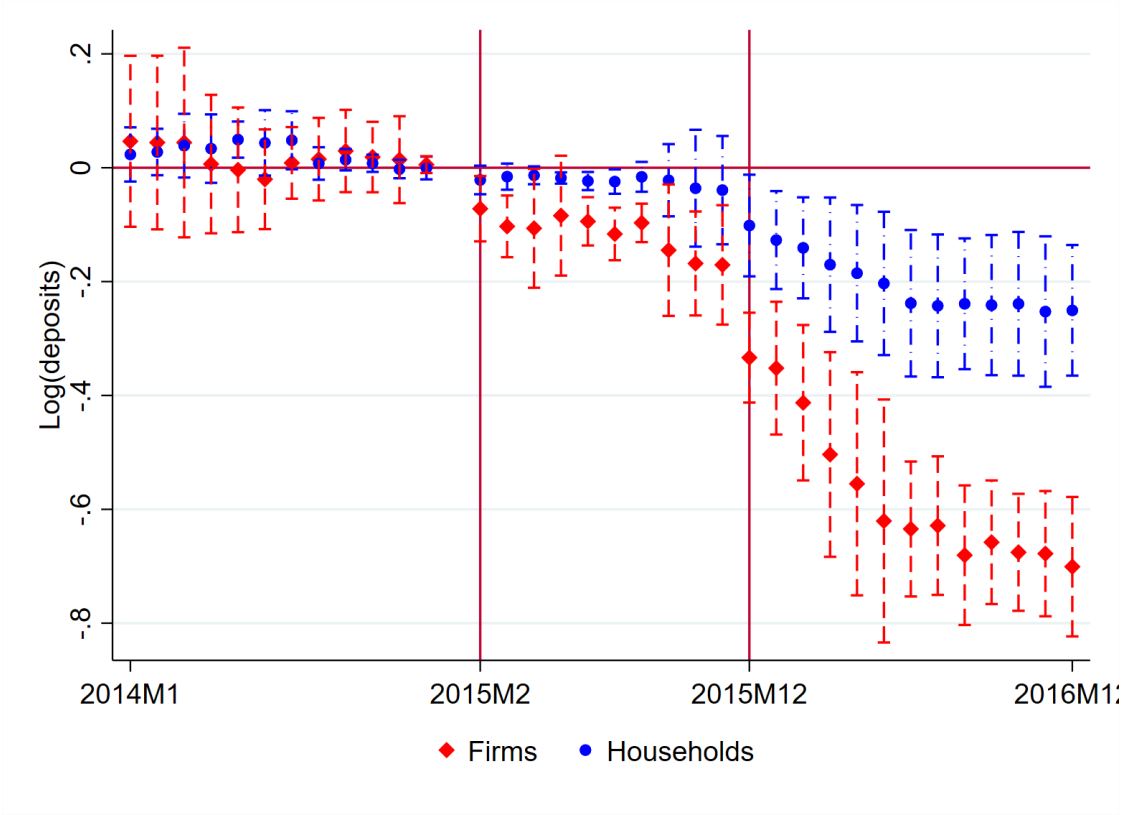
- Firms run before households

	All	Firms	Households
	(1)	(2)	(3)
$D_b \times$ Post 1	-0.068**	-0.132***	-0.045
	(0.030)	(0.041)	(0.029)
$D_b \times$ Post 2	-0.344***	-0.588***	-0.224***
	(0.076)	(0.102)	(0.074)
Fixed Effects			
Bank	Yes	Yes	Yes
Year-Month	Yes	Yes	Yes
Observations	16,804	16,804	16,804

Notes: Standard errors in parentheses are clustered at the bank-level

Depositor Runs - Dynamic DiD

- Firms begin running as soon as the distressed banks' problems become public (i.e., start of Post 1), and intensify in Post 2



Unconditional

Deposit Re-allocation

Where do depositors go?

- Households $\rightarrow$ large banks, regardless of capital
  - Iyer et al. 2019; Acharya et al., 2022; Caglio et al., 2023
- Firms $\rightarrow$ better capitalized banks, regardless of size

Deposits Re-allocation

Loan Applications to Outside Banks

$$\begin{aligned} ApplOut_{f,t} =& \beta_1 SD_{f,2013} \times \text{Post 1} + \beta_2 SD_{f,2013} \times \text{Post 1} \\ &+ \gamma' X_{f,t-4} + \alpha_{k,p,s,t} + \lambda_{j,t} + \mu_f + \epsilon_{f,t}, \end{aligned}$$

where:

- $ApplOut_{f,t} = 1$ if firm f applies for a loan to an outside bank in quarter t, and $= 0$ otherwise
- $SD_{f,2013}$ share of firm's f loans from the distressed banks in 2013 (takes values from 0 to 1),
- $X_{f,t-4}$ are time-varying firm controls (e.g., size, z-score, roa)
- $\alpha_{k,p,s,t}$ are industry$\times$province$\times$size$\times$year-quarter FEs
- $\lambda_{j,t}$ are credit score$\times$year-quarter FEs
- μ_f are firm FEs

Firm Balance NPLs

Loan Applications to Outside Banks

- From Post 1, **low-risk** firms with **single-relationships** began applying for loans at other banks (Detragiache et al., 2000)

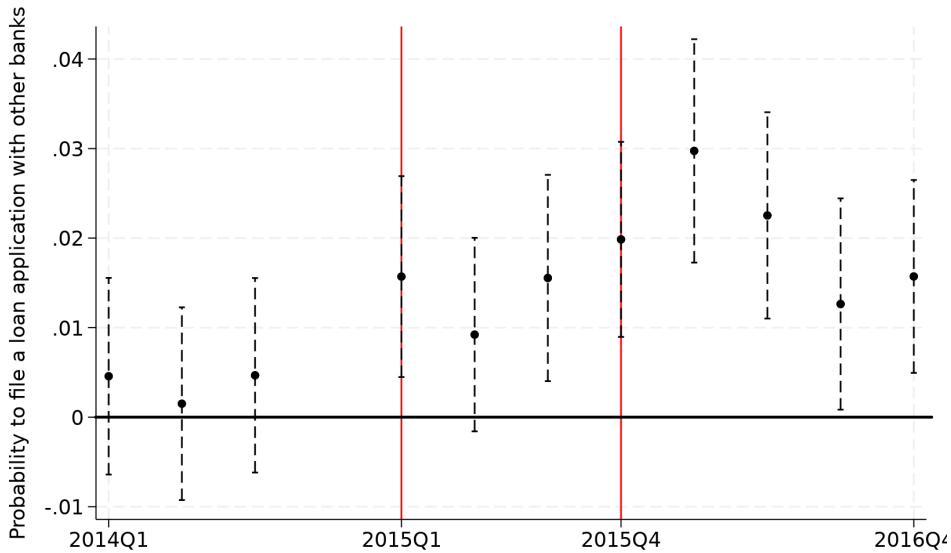
	I(Loan Applications to Outside Banks)					
	All		Low-Risk		High-Risk	
			Single	Multiple	Single	Multiple
	(1)	(2)	(3)	(4)	(5)	(6)
$SD_{f,2013}$	-0.001					
	(0.08)					
$SD_{f,2013} \times Post1$	0.010***	0.011***	0.014***	0.010	0.008	0.001
	(2.82)	(3.01)	(2.77)	(1.42)	(0.89)	(0.01)
$SD_{f,2013} \times Post2$	0.017***	0.017***	0.015***	0.030***	0.007	0.006
	(5.34)	(5.34)	(3.11)	(4.71)	(0.83)	(0.56)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	Yes	Yes	Yes	Yes
Industry×Province × Size×YearQ FEs	Yes	Yes	Yes	Yes	Yes	Yes
CreditScore×YearQ FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	627,044	627,044	145,820	314,343	44,880	98,208
R-squared	0.082	0.211	0.304	0.22	0.420	0.336

Notes: Standard errors in parentheses are clustered at the firm-level

Low-risk better | Single are low-risk | Maturing Loans

Loan Applications - Dynamic DiD

- Applications to outside banks begin at the start of Post 1, long before formal supervisory intervention in Post 2



Borrowers Establishing New Relationships

New lending relationships

- Low-risk firms able to **establish** new lending relationships
- Primarily with **better capitalized** & **larger** banks
  - Higher capacity to accommodate increased credit demand
  - More reliable and stable credit supply

New Relationships

Credit Lines Drawdowns

- Firms draw on their credit lines from banks facing funding shocks (Ivashina and Scharfstein, 2010; Ippolito et al., 2016, Chodorow-Reich et al., 2022)
- Test if the same firm, at the same time, draws more on credit lines from the distressed banks in Post1 and Post2:

$$ShareDrawn_{b,f,t} = \beta_1 \, D_b \times \text{Post 1} + \beta_2 \, D_b \times \text{Post 2} + \alpha_b + \mu_{f,t} + \epsilon_{b,f,t}$$

  - $ShareDrawn_{b,f,t}$ is the share of drawn credit lines over granted amount from bank b to firm f in quarter t.
  - $D_b = 1$ for the distressed banks, and 0 otherwise
  - Post 1 $= 1$ in 2015Q1-2015Q3, Post 2 $= 1$ in 2015Q4-2016Q4
  - The 'pre-period' is 2014Q1-2014Q4
  - α_b and $\mu_{f,t}$ are bank and firm$\times$quarter fixed effects

Credit Lines Drawdowns

	Share of Credit Lines Drawn					
	All Firms		Low-Risk		High-Risk	
			Single	Multiple	Single	Multiple
	(1)	(2)	(3)	(4)	(5)	(6)
$D_b \times$ Post 1	0.003*	0.001	-0.006	0.001	0.024**	0.001
	(0.001)	(0.008)	(0.001)	(0.001)	(0.004)	(0.007)
$D_b \times$ Post 2	0.018***	0.011***	-0.004	0.009***	0.029*	0.017**
	(0.002)	(0.003)	(0.003)	(0.002)	(0.015)	(0.008)
Fixed Effects						
Bank	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Size ×Province×Time	Yes	No	Yes	No	Yes	No
Firm×Time	No	Yes	No	Yes	No	Yes
Observations	1,064,925	862,530	119,196	703,444	28,952	159,084
R-squared	0.171	0.705	0.215	0.702	0.336	0.649

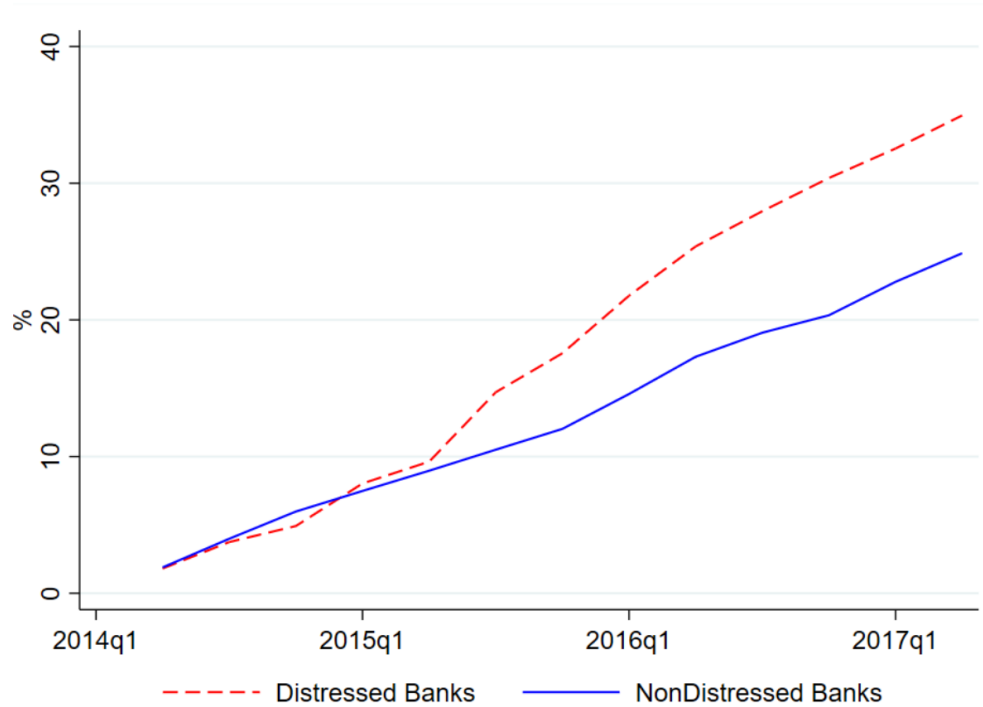
Within-Borrower Analysis

- Within-borrower analysis (Khwaja & Mian, 2008), shows that in Post 1 the distressed banks began charging:
  - lower interest rates to low-risk borrowers
  - higher interest rates to high-risk borrowers
- In Post 1, the distressed banks were **trying to retain** their best clients & decrease credit supply to riskier customers

Khwaja & Mian, 2008

Credit Re-allocation

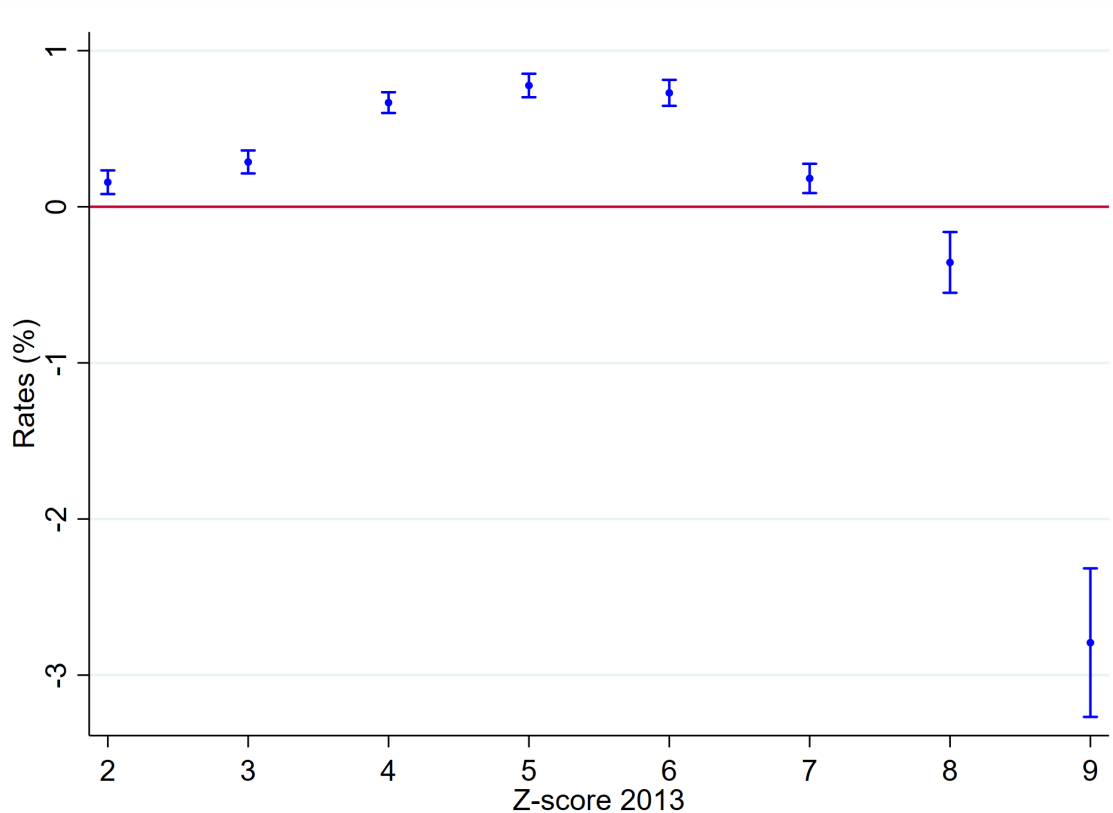
- **Lost 'loan business' to outside banks**
  - Cumulative value of outside loans as % initial loans
  - Distressed banks lose 10% more than other banks
  - Most loss before Post 2 & driven by low-risk firms



Low-Risk vs. High-Risk

Banks' Expected Loan Returns and Firm Risk

- Accounting for expected losses, low-risk firms (especially, score 4-6) are the banks' **most profitable clients**:



- Similar result in Benetton and Buchak (2025): highest NIM for middle risk group in business credit cards

Firm Outcomes

- The distressed banks' borrowers see a decline in total credit
- Because creditworthy firms leave, the decline is small & temporary for low-risk firms
- High-risk firms, unable to leave and forced to draw down on existing credit lines, see decline in total credit granted
- Because of this, adverse effects on investment confined to high-risk firms

TotalCreditTable InvestmentTable

Spillovers Effects

- Banks receiving more applications from the borrower of the distressed banks (high $Exp_{b,t}$), decrease credit to own risky firms – effect stronger for banks with lower capital ratios

	(1)	(2)	(3)	(4)
$Exp_{b,t}$	-0.0062	-0.001		
	(-0.52)	(-0.13)		
$Exp_{b,t} \times HighRisk_{f,2013}$		-0.019***	-0.019***	-0.079***
		(-5.54)	(-5.34)	(-2.14)
$Exp_{b,t} \times HighRisk_{f,2013} \times CapitalRatio_b$				0.010***
				(2.24)
$Exp_{b,t} \times HighRisk_{f,2013} \times Log(Assets)_b$				-0.023
				(-0.57)
$Exp_{b,t} \times HighRisk_{f,2013} \times Interbank_b$				-0.095
				(-1.05)
Fixed effects				
Industry*Province*Quarter	Yes	Yes	Yes	Yes
Bank	Yes	Yes	-	-
Bank*Quarter	No	No	Yes	Yes
BankCharacteristics×High-Risk	No	No	No	Yes
Firm controls	Yes	Yes	Yes	Yes
Observations	661,016	661,016	661,016	661,016

Notes: Standard errors in parentheses clustered at the bank-level

Conclusions

- Corporate clients can exacerbate bank distress
  - They run **early** & on **both sides** of the banks' balance sheet
  - Deteriorating asset side of failing banks (Correia et al., 2023)
- While they may be destabilizing for the distressed banks, they can have a **stabilizing** role on the **system**:
  - They turn to healthier banks
  - They have cleansing spillover effects on other banks
- Bank **capital requirements** seem to play a key role in deposit & credit re-allocation
- **Earlier recapitalization** of distressed banks essential
- Importance of timely and well-targeted interventions, especially as online banking and social media increase the speed of runs (Cookson et al., 2023; Koont et al., 2023).

Summary statistics - Part 1

	A. Bank characteristics as of 2013Q4					
	Obs.	Mean	St. Dev.	Median	5th pct.	95th pct.
Total Assets (€mil.)	480	5988	48444	503	76	8987
Capital Ratio (%)	480	12.461	3.994	12.045	6.700	19.679
Deposits/Assets (%)	480	42.018	12.515	41.957	20.322	61.431
Firm Deposit Share (%)	480	24.785	14.900	22.372	7.954	51.621
	B. Firm characteristics as of 2013Q4					
	Obs.	Mean	St. Dev.	Median	5th pct.	95th pct.
Total Assets (€mil.)	56,505	4.001	9.687	1.061	0.063	70.668
Sales (€mil.)	56,505	4.007	9.874	1.025	0.019	70.917
Age (years)	56,505	17.334	11.816	14	2	54
EBITDA/Assets	56,505	0.072	0.129	0.069	-0.504	0.467
Altman Z-score	56,505	4.921	2.067	5	1	9
High-Risk	56,505	0.279	0.0448	0	0	1
Single Relationship Firm	56,505	0.428	0.494	0	0	1
Rel. with Distressed Banks (DBs)	56,505	0.266	0.442	0	0	1
Share Credit Distressed ($SD_{f,2013}$)	56,505	0.117	0.260	0	0	1
$SD_{f,2013}$ if Rel. with DBs=1	15,033	0.441	0.334	0.322	0.02	1

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Summary statistics - Part 2

	C. Bank Credit (bank-firm-quarter level)					
	Obs.	Mean	St. Dev.	Median	5th pct.	95th pct.
Loan Applications ($ApplOut_{f,t}$)	627,044	0.046	0.209	0	0	1
Rel. with DBs=1	160,425	0.061	0.239	0	0	1
Rel. with DBs=0	473,435	0.041	0.197	0	0	1
New Relationship	25,436	0.273	0.445	0	0	1
Rel. with DBs=1	8,478	0.293	0.455	0	0	1
Rel. with DBs=0	16,957	0.262	0.439	0	0	1
	D. Firm-year panel, 2014-2016					
	Obs.	Mean	St. Dev.	Median	5th pct.	95th pct.
Δlog(Credit)*100	135,520	-3.348	44.572	0	-73.086	65.356
Investment Rate	135,520	0.606	13.667	-0.456	-5.819	10.142
Δlog(Sales)	135,212	-0.331	32.203	1.952	-50.376	42.3504
Δlog(Wages)	123,318	-1.493	28.221	-2.450	-39.641	40.439

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Deposits: Firms vs. Households

Firms begin running before households right after the distressed banks' problems become publicly known (-40% by 2016Q4)

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Deposit Reallocation

Firms turn to better capitalized banks & households to large systemically important banks

	Firms				Households		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$HS_{p,2013} \times$ Post 1	0.116**						
	(2.39)						
$HS_{p,2013} \times$ Post 2	0.219***						
	(2.87)						
$HS_{p,2013} \times$ Post 1 $\times$ $HighCapital_{b,2013}$		0.318***		0.323***	-0.153		-0.077
		2.99)		(2.99)	(-1.64)		(-0.85)
$HS_{p,2013} \times$ Post 1 $\times$ $HighCapital_{b,2013}$		0.257		0.243	-0.181		-0.113
		(1.63)		(1.51)	(-1.45)		(-0.91)
$HS_{p,2013} \times$ Post 1 $\times$ $LargeBank_{b,2013}$			-0.104*	0.027		0.359***	0.431***
			(-1.97)	(0.60)		(2.69)	(3.58)
$HS_{p,2013} \times$ Post 2 $\times$ $LargeBank_{b,2013}$			-0.197**	-0.084		0.311**	0.376***
			(-2.32)	(-0.98)		(2.47)	(3.14)
Fixed Effects							
Bank×Year-Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province×Year-Month	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195,010	195,010	195,010	195,010	172,453	172,453	172,453
R-squared	0.475	0.480	0.480	0.480	0.438	0.438	0.438

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Firm Characteristics Balance

At the start, firms borrowing from distressed and non-distressed banks were similar, except for size

	Existing Borrowers	
	Distressed banks (1)	Non-distressed banks (2)
Total Assets (€mil.)	6.62	3.05
	(0.23)	(-0.23)
Revenues (€mil.)	6.88	2.96
	(0.25)	(-0.25)
Age (years)	18.72	16.83
	(0.16)	(-0.16)
Z-score	5.15	4.84
	(0.15)	(-0.15)
High-Risk	0.30	0.27
	(0.07)	(-0.07)
Profitability	0.06	0.07
	(-0.08)	(0.08)
Manufacturing	0.38	0.28
	(0.16)	(-0.16)
Retail & Wholesale Trade	0.24	0.23
	(0.02)	(-0.02)
Construction	0.05	0.06
	(-0.03)	(0.03)

Notes: Numbers in parentheses are normalized differences, calculated as the difference between the averages in the two groups, normalized by the square root of the sum of the corresponding variances (Imbens and Wooldridge (2018)). Values exceeding 0.25 indicate an unbalanced sample in that covariate.

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NPLs: Distressed Banks vs. System

Until 2014, the distressed banks' NPLs were similar to other banks

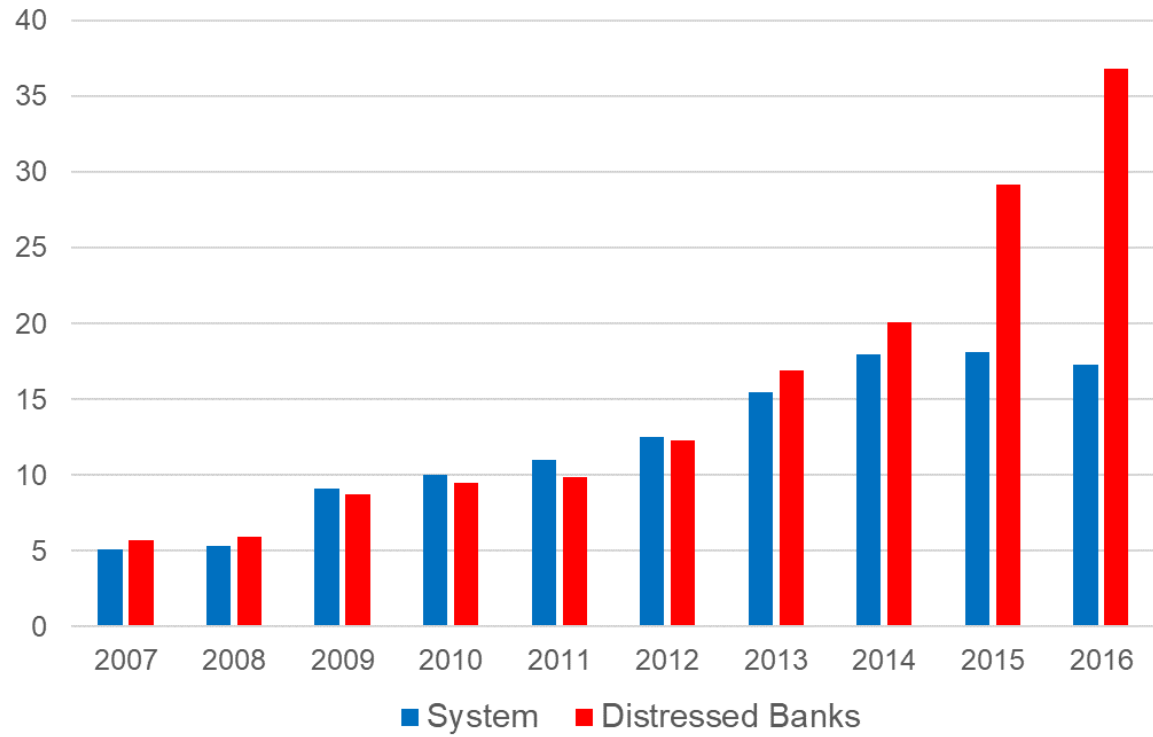

Figure: Non-Performing Loans to Total Loans

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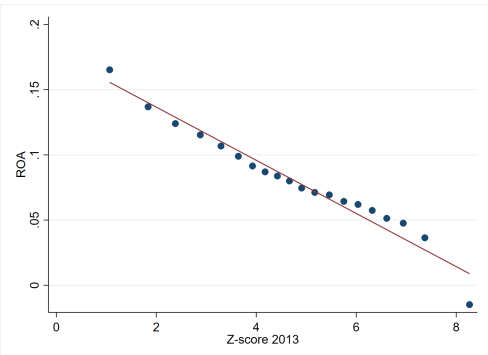
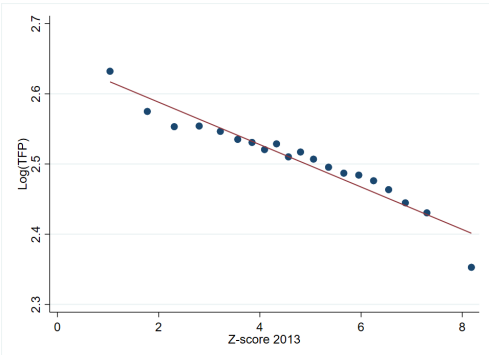
Credit Risk & Firm Quality

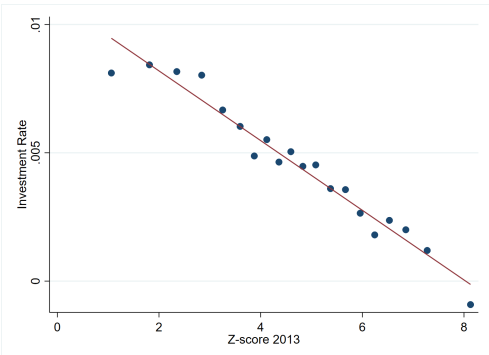
Lower risk firms are generally better firms (more profitable, more productive, with higher investment rate)



Profitability



Productivity



Investment Rate

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Single vs. Multiple

Single relationship firms are on average less risky on average

	I(Single relationship borrower)			
	(1)	(2)	(3)	(4)
High-Risk	0.00501	-0.0550***	-0.0689***	-0.0902***
	(1.16)	(-13.52)	(-16.23)	(-21.07)
Log(Assets)		-0.143***	-0.132***	-0.129***
		(-129.11)	(-104.43)	(-93.78)
EBITDA/Total Assets			-0.0341**	-0.0290**
			(-2.55)	(-2.09)
Log(Age)			-0.0537***	-0.0458***
			(-18.81)	(-16.07)
Fixed-effects				
Province×Industry	No	No	No	Yes
Observations	61,493	58,197	57,485	57,437
R-square	0.276	0.293	0.263	0.272

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Loan Applications - Maturing Loans

Borrowers of distressed banks with more loans maturing within 1-year are more likely to apply for loans elsewhere in Post 1

	Loan Applications to Outside Banks			
	All		% Maturing in 1-Year	
			Above 50%	Below 50%
	(1)	(2)	(3)	(4)
$SD_{f,2013}$	-0.001			
	(0.08)			
$SD_{f,2013} * Post1$	0.10***	0.011***	0.013***	0.008
	(2.82)	(3.01)	(3.17)	(1.05)
$SD_{f,2013} * Post2$	0.017***	0.017***	0.0024***	0.005
	(5.34)	(5.34)	(6.32)	(0.73)
Fixed Effects				
Firm	No	Yes	Yes	Yes
Industry × Province × Size × Year-Quarter	Yes	Yes	Yes	Yes
CreditScore × Year-Quarter	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Observations	627,044	627,044	473,966	121,526
R-squared	0.082	0.211	0.178	0.223

Notes: Standard errors in parentheses are clustered at the firm-level

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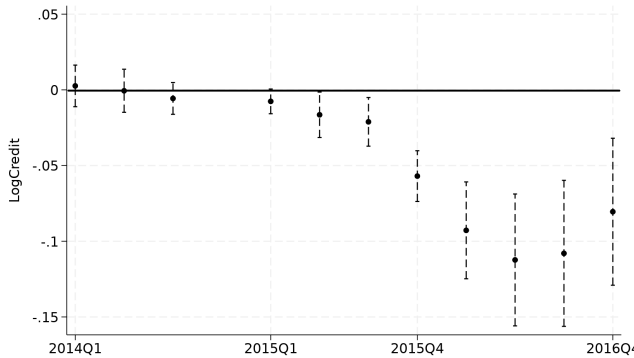
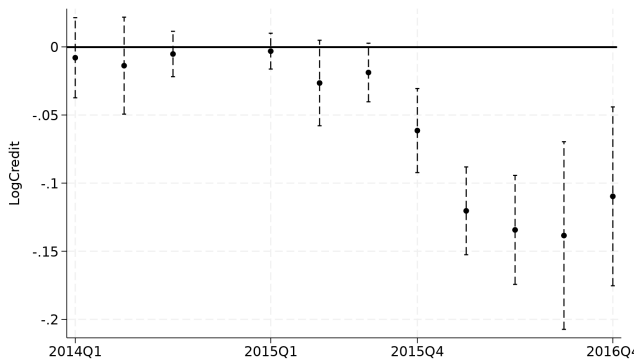
Demand vs. Supply

A. Low-Risk Firms



B. High-Risk Firms



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Appendix - Within firm credit

			Low-Risk		High-Risk	
	All	Only multiple	All	Only multiple	All	Only multiple
	(1)	(2)	(3)	(4)	(5)	(6)
	Credit volume $Log(Credit_{bft})$					
$D_b \times$ Post 1	-0.020**	-0.014**	-0.021***	-0.014*	-0.014	-0.009
	(0.0077)	(0.00621)	(0.007)	(0.007)	(0.008)	(0.011)
$D_b \times$ Post 2	-0.099***	-0.094***	-0.098***	-0.089***	-0.101***	-0.104***
	(0.021)	(0.019)	(0.019)	(0.020)	(0.023)	(0.021)
	Loan interest rates $LoanRate_{bft}$					
$D_b \times$ Post 1	-0.047	-0.078	-0.085	-0.123	0.25**	0.234**
	(0.155)	(0.134)	(0.159)	(0.137)	(0.097)	(0.097)
$D_b \times$ Post 1	0.237	0.165	0.189	0.113	0.532***	0.555**
	(0.384)	(0.347)	(0.406)	(0.358)	(0.190)	(0.221)
Fixed Effects						
Bank	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Province×Size×Time	Yes	No	Yes	No	Yes	No
Firm×Time	No	Yes	No	Yes	No	Yes
Observations	1,053,092	916,727	951,079	828,892	96,120	87,835
R-squared	0.214	0.615	0.214	0.608	0.387	0.566

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New Relationships

From Post 1, **low-risk** borrowers of distressed banks more likely than others to establish new relationships, especially with **better capitalized** & **larger** banks

	Firms			Banks			
				Bank Capital		Bank Size	
	All	Low-Risk	High-Risk	Low	High	Small	Large
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$SD_{f,2013}$	0.00335	0.00391	-0.00194	-0.0374	0.0320	0.0203	-0.0540
	(0.12)	(0.11)	(-0.03)	(-0.89)	(0.78)	(0.56)	(-1.12)
$SD_{f,2013} \times$ Post 1	0.102**	0.124**	0.0247	0.0810	0.169***	0.0975*	0.168**
	(2.52)	(2.45)	(0.27)	(1.35)	(2.89)	(1.76)	(2.52)
$SD_{f,2013} \times$ Post 2	0.0621	0.0905*	-0.0649	0.0933	0.0362	0.0553	0.119*
	(1.46)	(1.77)	(-0.68)	(1.46)	(0.61)	(0.94)	(1.79)
Fixed Effects							
Industry × Province × Size × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CreditScore × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,791	15,426	3,736	10,533	10,565	12,584	8,051
R-squared	0.182	0.190	0.330	0.231	0.232	0.212	0.261

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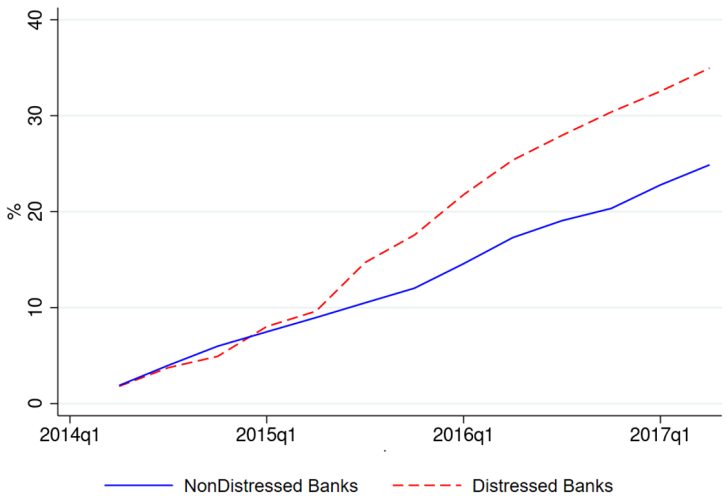
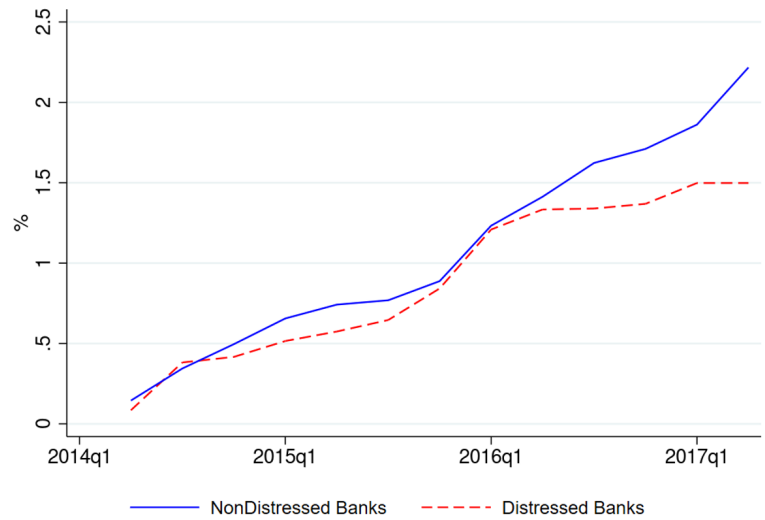
Lost 'loan business': Low-Risk vs. High-Risk

Lost 'loan business' to outside driven by low-risk firms

A. Low-Risk Firms



B. High-Risk Firms



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Firm Outcomes - Total Credit

	$\Delta Log(Credit)$					
	All	High-Risk	Low-Risk	All	High-Risk	Low-Risk
	(1)	(2)	(3)	(4)	(5)	(6)
$SD_{f,2003}$	0.001	-0.020*	0.007			
	(-0.24)	(-0.76)	(1.12)			
$SD_{f,2003} \times Pre$				0.012	0.006	0.015
				(1.31)	(0.31)	(1.41)
$SD_{f,2003} \times Post1$				-0.032***	-0.061***	-0.019*
				(3.13)	(2.88)	(-1.68)
$SD_{f,2003} \times Post2$				0.016	-0.013	0.026**
				(1.51)	(-0.57)	(2.21)
Fixed-effects						
Province*Industry*Year	Yes	Yes	Yes	Yes	Yes	Yes
$I(CreditScore)$*Year	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	135,520	31,715	103,519	135,520	31,715	103,519
R-square	0.055	0.105	0.047	0.055	0.105	0.047

Notes: Standard errors in parentheses are clustered at the firm-level

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Firm Outcomes - Investment Rate

	Investment Rate					
	All	High-Risk	Low-Risk	All	High-Risk	Low-Risk
	(1)	(2)	(3)	(4)	(5)	(6)
$SD_{f,2003}$	-0.124	-0.254*	-0.0094			
	(-1.64)	(-1.78)	(-1.05)			
$SD_{f,2003} \times Pre$				-0.011	-0.165	0.067
				(-1.10)	(-0.80)	(0.50)
$SD_{f,2003} \times Post1$				-0.214*	-0.355*	-0.174
				(-1.79)	(-1.66)	(-1.21)
$SD_{f,2003} \times Post2$				-0.070	-0.275	-0.201
				(-1.29)	(-1.02)	(-1.34)
Fixed-effects						
Province*Industry*Year	Yes	Yes	Yes	Yes	Yes	Yes
$I(CreditScore)$*Year	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	135,520	31,715	103,519	135,520	31,715	103,519
R-square	0.035	0.069	0.040	0.035	0.069	0.040

Notes: Standard errors in parentheses clustered at the firm-level

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