

Does Increased Shareholder Liability Always Reduce Bank Risk

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Motivation

- Bank took excessive risks during the 2007-2009 crisis
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- Bank took excessive risks during the 2007-2009 crisis
 - poor incentives under limited liability and public deposit insurance
 - In response to the crisis, a number of countries substantially increased the coverage of their safety nets
- Financial reforms tightened regulatory and supervisory controls
 - These policies do not address the fundamental moral hazard problem
 - Other policies are aimed to improve the corporate governance of banks
 - One proposal-Increasing Shareholder Liability
- Does increased shareholder liability always reduce bank risk-taking?

Motivation

- **Double liability:** institutional architecture for reducing bank risk and increasing depositor protection until the 1930s
 - if a bank failed, shareholders were liable up to the par value of their shares to pay depositors and other creditors
 - *in addition* to the losses from their initial investment

Motivation

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- Our question: **Did double liability reduce bank risk-taking?**
 - It forced shareholders to absorb losses when a bank failed
 - It insulated depositors from losses when a bank failed
- Wealth transfer between shareholders and depositors: what does that mean for bank risk-taking behavior?

What We Do

- A model demonstrating two competing effects of double liability on risk-taking:
 - ① A reduction in bank risk due to greater “skin in the game”
 - ② An *increase* in bank risk due to endogenous reduction in market discipline by depositors

What We Do

- A model demonstrating two competing effects of double liability on risk-taking:
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 - ② An *increase* in bank risk due to endogenous reduction in market discipline by depositors
- Novel identification strategy to test the effectiveness of double liability on:
 - ① Bank risk immediately prior to the Great Depression
 - ② Bank runs during the Great Depression

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- We do find evidence that double liability increased deposit stickiness during the Great Depression
- Takeaway:
 - 1 double liability helped mitigate *ex post* bank runs,
 - 2 which weakens market discipline,
 - 3 and may have failed to reduced *ex ante* moral hazard

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- Stickier deposits, reduced withdrawal risk for bankers (Calomiris and Kahn 1991, Diamond and Rajan 2001)
- 1 Double liability reduces *ex-post* deposit outflows when negative information arrives
 - 2 Effect on *ex-ante* risk-taking is unclear

Identification

- Identifying the *ceteris paribus* effectiveness of double liability is not easy
- Ideal empirical test would be to compare banks with:
 - ① Identical regulation (e.g., capital and reserve requirements and branching restrictions)
 - ② Identical supervision
 - ③ Identical local economic conditions
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- Our strategy: compare national banks and state Federal Reserve member banks in New York and New Jersey (2nd district)

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- 3 NY and NJ state fed-member banks supervised by NY Fed vs all national banks supervised by OCC
 - **Identifying Assumption:** Differences between state fed-member and national banks that are *not* due to liability structure are the same in NY and NJ.
 - ⇒ comparing means across four types of banks
 - ⇒ a diff-in-diff style analysis

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1 Bank risk-taking before the Great Depression:

$$y_{i,t} = \beta_0 + \beta_{sb}SB_i + \beta_{nj}NJ_i + \beta_t T_t + \beta_{sb,nj} \times SB_i \times NJ_i + X_{i,t} + \varepsilon_{i,t}$$

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2 Deposit outflows (controlling risk characteristics), pre vs post:

$$\Delta \log(Dept) = \beta_0 + \beta_{sb}SB_i + \beta_{nj}NJ_i + \beta_t T_t + \beta_{sb,nj} \times SB_i \times NJ_i + X_{i,t} + \varepsilon_{i,t}$$

Table: Bank Risk (Dec. 1925 - Jun. 1929)

	(1) Cash Ratio	(2) Cash Ratio	(3) Cash Ratio	(4) Cash Ratio	(5) Capital Ratio	(6) Capital Ratio	(7) Capital Ratio	(8) Capital Ratio
NJ	-0.007 (0.687)		0.059 (0.676)		-0.062 (1.243)		-0.098 (1.220)	
State Fed-member	-0.917** (0.429)	-0.543 (0.406)	-0.866* (0.453)	-0.336 (0.419)	-0.752 (0.986)	0.177 (0.848)	-1.082 (0.895)	0.230 (0.675)
State Fed-member x NJ	0.806 (0.656)	0.478 (0.695)	0.825 (0.623)	0.578 (0.632)	0.580 (1.304)	-0.122 (1.349)	1.410 (1.056)	0.935 (0.838)
Log Bank Age			0.128 (0.178)	0.389* (0.221)			-0.250 (0.330)	-0.289 (0.317)
Lag Log Assets			-0.176 (0.192)	-0.565** (0.247)			-2.072*** (0.338)	-2.874*** (0.321)
County FE	No	Yes	No	Yes	No	Yes	No	Yes
Time (Semi-annual) FE	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.009	0.101	0.010	0.113	0.001	0.156	0.157	0.378
Observations	1674	1674	1674	1674	1674	1674	1674	1674

Table: Deposit Growth Rates (Dec. 1925 - Jun. 1929)

	(1) $\Delta \log$ <i>Dept</i>	(2) $\Delta \log$ <i>Dept</i>	(3) $\Delta \log$ <i>Dept</i>	(4) $\Delta \log$ <i>Dept</i>	(5) $\Delta \log$ <i>Dept</i> < 0	(6) $\Delta \log$ <i>Dept</i> < 0	(7) $\Delta \log$ <i>Dept</i> < 0	(8) $\Delta \log$ <i>Dept</i> < 0
NJ	3.135*** (1.007)		1.920 (1.179)		-0.081*** (0.024)		-0.070*** (0.024)	
State Fed-member	-0.419 (0.569)	-0.552 (0.519)	-0.926 (0.892)	-1.130 (0.856)	0.013 (0.025)	0.012 (0.030)	0.033 (0.027)	0.023 (0.031)
State Fed-member x NJ	-0.199 (1.224)	-0.024 (1.347)	0.275 (1.141)	0.559 (1.207)	0.044 (0.053)	0.045 (0.060)	0.019 (0.055)	0.019 (0.062)
Log Bank Age			-2.234*** (0.500)	-1.539*** (0.538)			0.024* (0.013)	0.016 (0.016)
Lag Cash Ratio			0.021 (0.138)	-0.093 (0.145)			0.011*** (0.003)	0.013*** (0.003)
Lag Cap. Ratio			0.684*** (0.144)	0.865*** (0.166)			-0.006*** (0.002)	-0.007*** (0.002)
Lag Log Assets			-0.641* (0.325)	-0.682* (0.371)			0.032** (0.014)	0.045*** (0.015)
County FE	No	Yes	No	Yes	No	Yes	No	Yes
Time (Semi-annual) FE	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.010	0.030	0.179	0.220	0.005	0.036	0.032	0.069
Observations	1671	1671	1671	1671	1671	1671	1671	1671

Table: Deposit Growth Rates (Dec. 1929 - Dec. 1932)

	(1) $\Delta \log$ <i>Dept</i>	(2) $\Delta \log$ <i>Dept</i>	(3) $\Delta \log$ <i>Dept</i>	(4) $\Delta \log$ <i>Dept</i>	(5) $\Delta \log$ <i>Dept</i> < 0	(6) $\Delta \log$ <i>Dept</i> < 0	(7) $\Delta \log$ <i>Dept</i> < 0	(8) $\Delta \log$ <i>Dept</i> < 0
NJ	-0.670 (0.754)		-0.493 (0.959)		0.042* (0.024)		0.039 (0.025)	
State Fed-member	-1.081 (0.776)	-0.512 (0.794)	-1.139 (0.699)	-0.613 (0.687)	0.008 (0.027)	-0.002 (0.030)	0.016 (0.028)	-0.000 (0.030)
State Fed-member x NJ	-0.952 (0.851)	-1.624* (0.909)	-2.364** (0.943)	-2.748** (1.039)	0.057 (0.039)	0.063 (0.039)	0.083** (0.037)	0.079** (0.039)
Log Bank Age			-0.874* (0.499)	-0.117 (0.490)			0.029* (0.016)	0.003 (0.018)
Lag Cash Ratio			-0.362*** (0.110)	-0.279** (0.121)			0.010*** (0.003)	0.007** (0.003)
Lag Cap. Ratio			0.584*** (0.190)	0.627*** (0.197)			-0.012*** (0.003)	-0.011*** (0.003)
Lag Log Assets			0.791*** (0.264)	0.534* (0.270)			-0.018** (0.008)	0.002 (0.011)
County FE	No	Yes	No	Yes	No	Yes	No	Yes
Time (Semi-annual) FE	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.002	0.115	0.072	0.179	0.005	0.104	0.034	0.123
Observations	1709	1709	1709	1709	1709	1709	1709	1709

Summary of Results

- No evidence that double liability reduced risk-taking pre G.D.
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 - if anything, fewer capital and liquidity buffers for double liability banks
- No evidence that double liability affected deposit growth before the Great Depression
- But do find deposit outflows (runs) were lower for double liability banks during GD
 - Single liability banks faced a 2.75 percentage point larger deposit outflow on average *per six months*
 - 8 % more likely to experience a net deposit outflow
- Consistent with the model's prediction

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- Banking system was inherently fragile under double liability
 - Conflict between shareholder incentive alignment and depositor market discipline
- Why do we care with deposit insurance?
 - Most countries have coverage limits
 - In the U.S., over 40 percent of deposits are uninsured
 - In emerging countries, deposit insurance is not credible
- CoCo bonds, bail-in, clawback provisions...
 - Shifting liability from creditors to shareholders,
 - but also changing creditor incentives?