

TWO CENTURIES OF SYSTEMIC BANK RUNS

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June 11, 2026

MOTIVATION

- ▶ Maturity transformation and bank runs (Diamond and Dybvig, 1983)
- ▶ Renewed interest since 2023 Silicon Valley Bank collapse
- ▶ Much of the literature: bank crises (equity declines) and failures
- ▶ Little direct evidence of bank runs and their macroeconomic ramifications

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- ▶ Little direct evidence of bank runs and their macroeconomic ramifications
- ▶ **What we do:** $T \uparrow$ and $N \uparrow$, allowing us to systemically study bank runs

THIS PAPER

- ▶ Bank runs and macro aftermath across 185 countries over 1800-2024
 - New global narrative chronology covering 405 bank runs
 - New cross-country dataset on bank deposits
- ▶ *Systemicness*: 174 narrative runs *with* aggregate deposit contractions
- ▶ Narrative chronology to detect macro- or micro-fundamental causes
 - Compare systemic bank runs with different degrees of strategic complementarities

DEFINING BANK RUNS

- ▶ “Depositors rush to withdraw their deposits because they expect the bank to fail” (Diamond and Dybvig, 1983, p. 401)
- ▶ Bank is defined as any depository institution
 - Run on individual banks (of any size or type) or clusters
- ▶ Retail deposits by households and non-financial firms
- ▶ Runs in consecutive years counted separately unless clearly same event
 - Keep only first bank run episode within a three-year window

DATA CONSTRUCTION

Narrative chronology

- ▶ 662 sources
- ▶ Additional run events through pipeline of LLMs
- ▶ **405 retail run episodes, 185 countries, 1800-2024**
- ▶ Validated by 20+ readers, 100+ page appendix

Banking sector deposits

- ▶ 51 primary/secondary sources
- ▶ Definition: retail deposits by non-bank customers
 - Total, demand & time deposits (where possible)
 - Nominal deposits (to avoid attributing outflows to price changes), results robust to using real deposits

▶ Bank Runs and Deposit Withdrawals

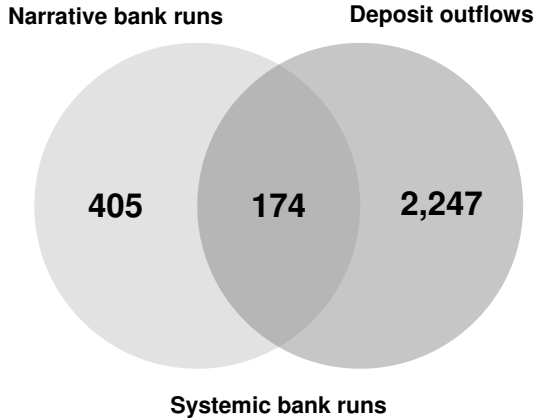
USING DEPOSIT DATA TO IDENTIFY “SYSTEMIC” BANK RUNS

- ▶ Uhlig (2010): bank i faces deposit withdrawals, which increases the probability that bank j faces deposit withdrawals, etc.
- ▶ Diamond and Rajan (2005): individual bank-level panics can be contagious, leading to run cascades and aggregate liquidity shortages
- ▶ Amador and Bianchi (2024): a bank run is systemic if a sufficiently large *share* of banks face a run

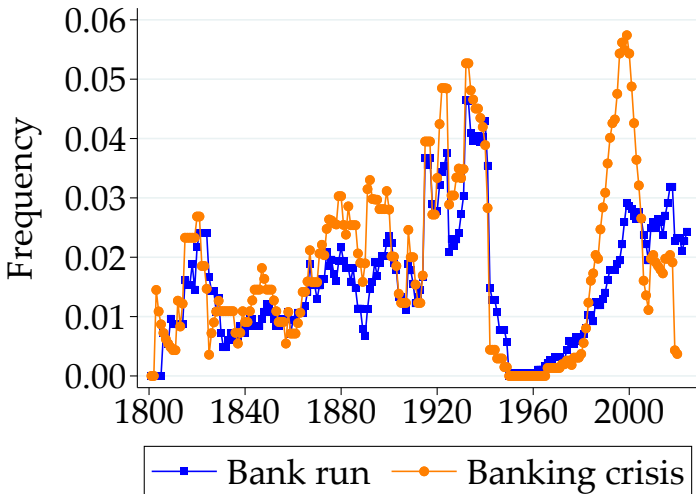
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- ▶ **Baseline definition of a systemic run: narrative run + a negative growth rate of deposits**

SYSTEMIC BANK RUNS



BANK RUNS AND BANKING CRISES: 1800-2024



► Unified Measure of Banking Crises

► Advanced and Emerging Economies

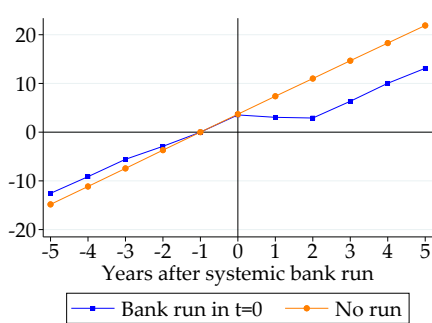
HOW LIKELY ARE BANK RUNS?

	Probabilities of bank runs			
	Narrative bank run	Deposit contraction	Systemic bank run	Non-systemic run
Unconditional	2.4	9.2	1.3	1.1
Conditional on a banking crisis	53	44	32	21
Conditional on a banking panic	66	47	37	29

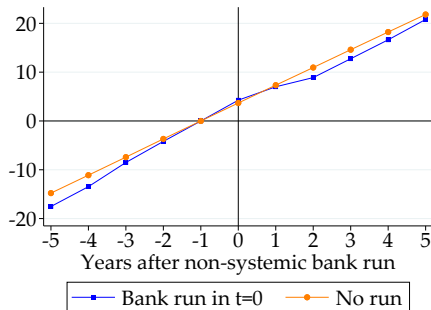
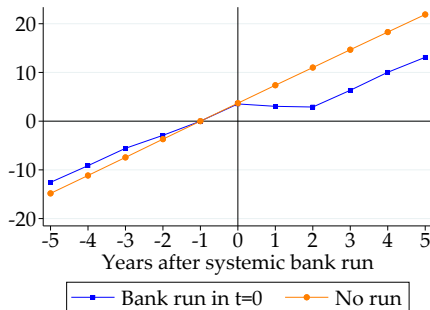
	Probabilities of banking crises	Probabilities of banking panics
Unconditional	2.7	3.5
Conditional on a narrative bank run	50	36
Conditional on a deposit contraction	10	6
Conditional on a systemic bank run	57	39
Conditional on a non-systemic bank run	42	33

► Frequencies Pre and Post 1933

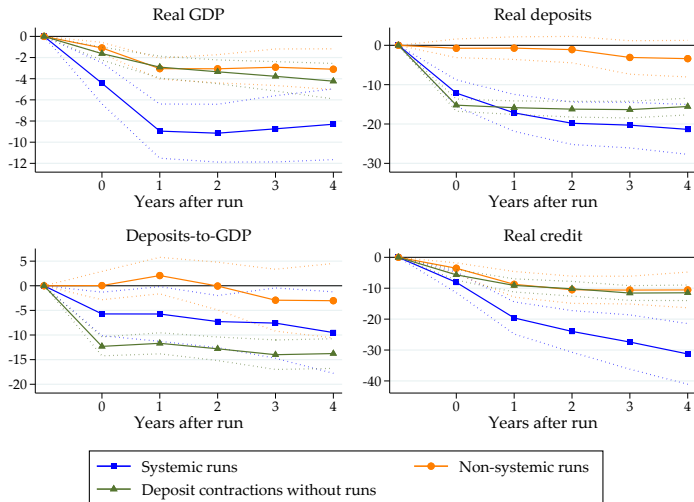
OUTPUT PATH AROUND (SYSTEMIC) RUNS



OUTPUT PATH AROUND (SYSTEMIC) RUNS



MACRO AFTERMATH OF SYSTEMIC BANK RUNS



► Table with Estimates

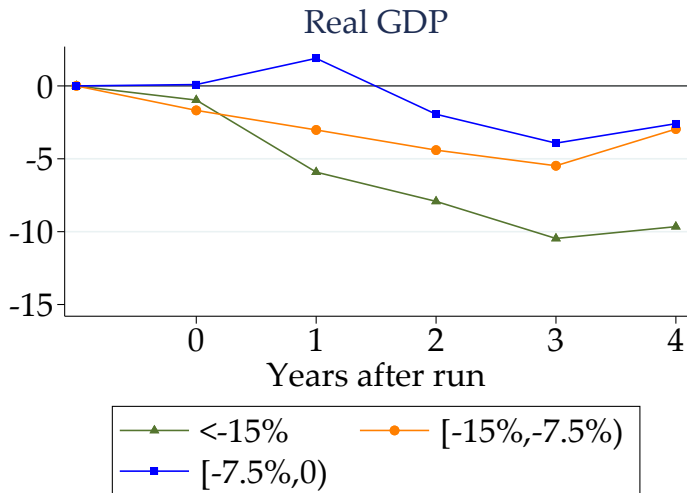
► Different Thresholds

► Real Deposits

► False Negatives

► Density Deposits

THE MORE DEPOSITS FALL, THE WORSE THE RECESSION



BANK-LEVEL DATA

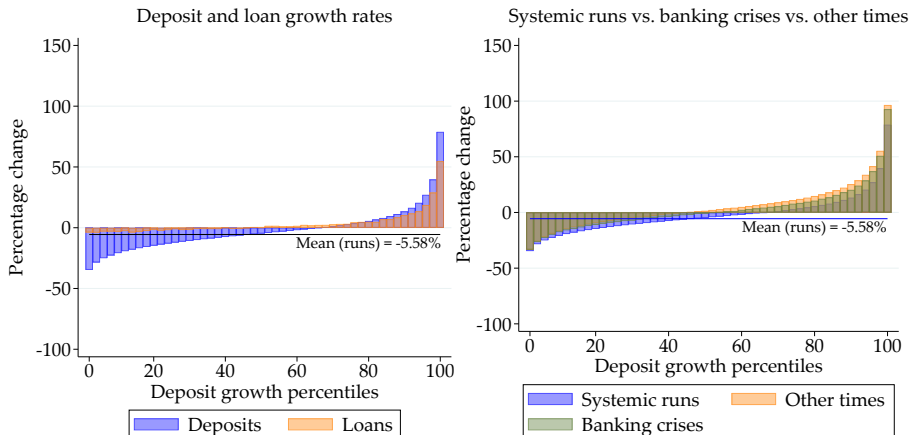
1. United States

- US Office of the Comptroller of the Currency (OCC) (Carlson, Correia, and Luck, 2022): national banking era, 1867-1904
- US Call Reports: modern banking era, 1976-2020

2. International coverage

- Compustat Bank and Compustat Global: 1987Q1-2026Q1

DEPOSIT REALLOCATION DURING RUNS (US)

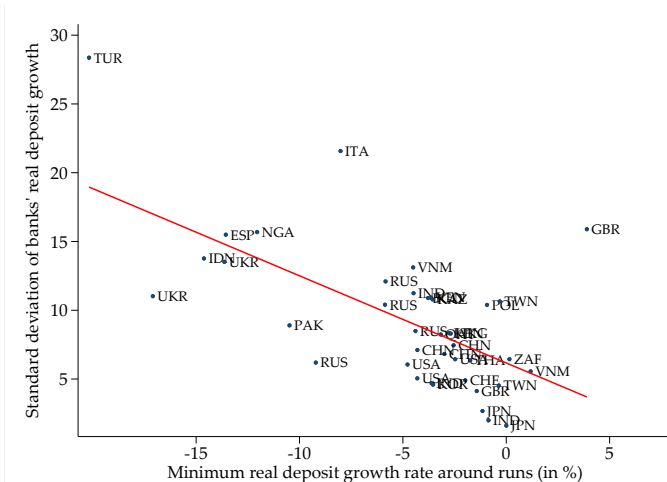


US banks, 1867-1904, 1976-2020

► Where Did Money Flow Then?

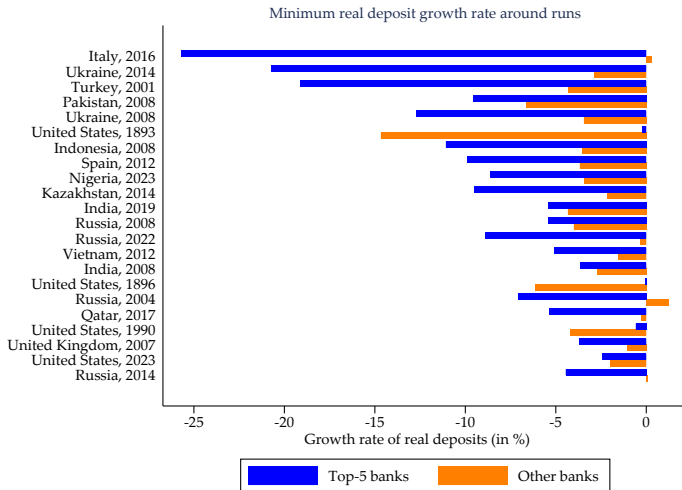
► Where Does Money Flow Now?

DEEPER AGGREGATE CONTRACTIONS FEATURE HIGHER DISPERSION (INTERNATIONAL EVIDENCE)

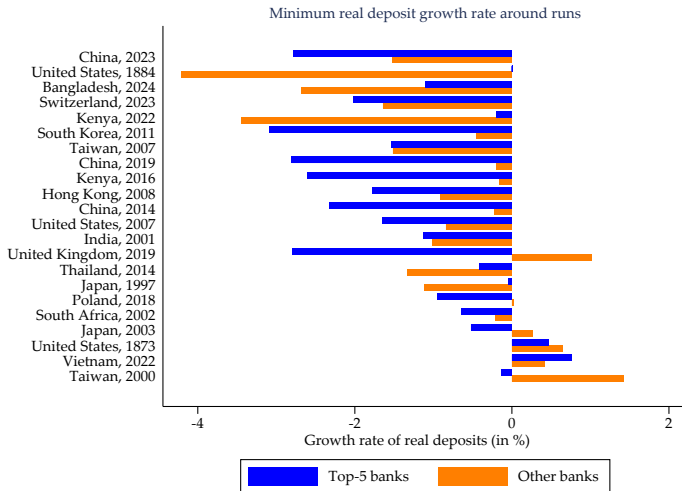


- The more aggregate deposits fall, the less likely depositors are to run indiscriminately on banks

WITHDRAWALS FROM TOP 5 VS. OTHER BANKS



WITHDRAWALS FROM TOP 5 VS. OTHER BANKS

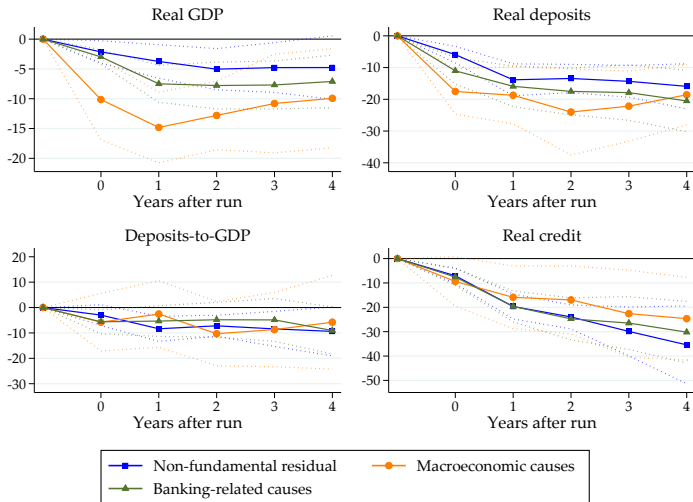


- Top 5 driven deposit contractions somewhat more severe
⇒ partial reallocation to small banks

WHY ARE BANK RUNS DAMAGING TO THE MACROECONOMY?

1. Self-fulfilling prophecies; the “sunspot” residual (Diamond and Dybvig, 1983; Diamond and Kashyap, 2016)
2. Optimal outcomes and deteriorating fundamentals (Bryant, 1980; Allen and Gale, 1998; Kashyap, Tsomocos, and Vardoulakis, 2024)
 - Consistent with evidence that bank failures are predominantly about solvency (e.g., Iyer, Puri, and Ryan, 2016; Correia, Luck, and Verner, 2026)
3. Both (Goldstein and Pauzner, 2005; Bocola and Dovis, 2019)
 - ▶ Narrative coding for events w/ sources mentioning clear macroeconomic (e.g., currency devaluation or recession) or banking-related causes
 - ▶ 27 of 174 systemic bank runs lack macro- or micro-fundamental causes

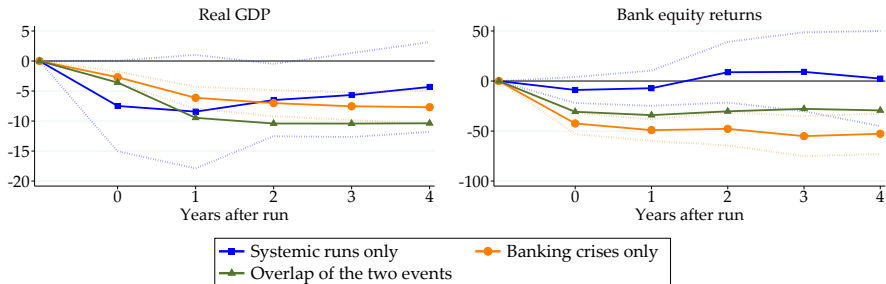
FUNDAMENTAL VS. "SUNSPOT" RUNS



► Withdrawals based on Credit-to-Deposits Ratio

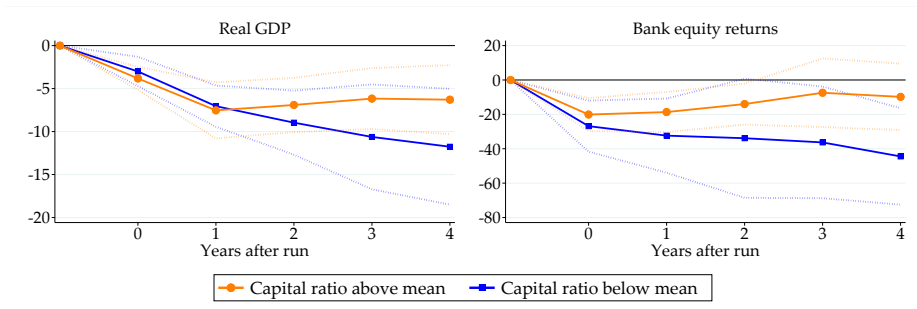
► (Aggregate) Solvency matters, but **insufficient** to explain output losses

GDP ALSO DROPS WITHOUT A BANKING CRISIS



- The worst crises are accompanied by systemic runs, but runs alone still predict a downturn

GDP ALSO DROPS AFTER RUNS IF BANKS ARE WELL CAPITALIZED



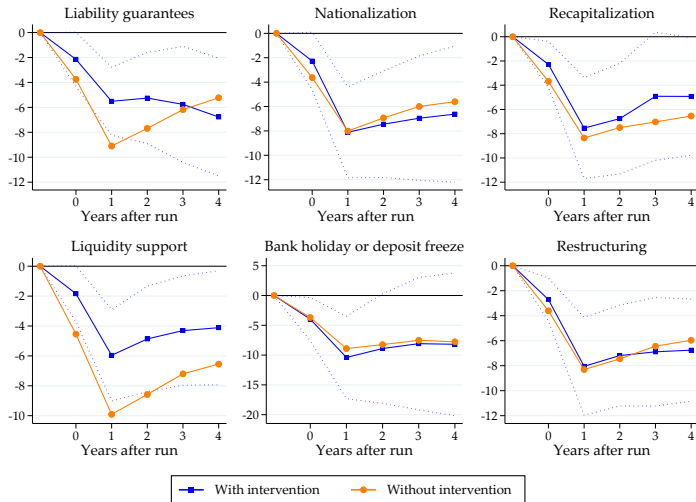
EX-ANTE GOVERNMENT POLICIES

	Country-year-level regressions					
	$1_{i,t}^{\text{run}} \in \{0, 1\}$			$1_{i,t}^{\text{sysrun}} \in \{0, 1\}$		
	(1)	(2)	(3)	(4)	(5)	(6)
Central bank exists	-0.002 (0.012)			-0.016 (0.013)		
DI exists		-0.008 (0.007)			-0.016*** (0.006)	
DI with ex-ante funding			-0.006 (0.008)			-0.017** (0.007)
Country-level controls	Y	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y
Mean of DV	0.03	0.03	0.03	0.02	0.02	0.02
Observations	2,685	2,685	2,667	2,679	2,679	2,662
R ²	0.02	0.03	0.02	0.02	0.02	0.02

► Run-level Regressions

► Aftermath of Runs with Ex-ante Regulation

EX-POST GOVERNMENT INTERVENTIONS



► The aftermath of systemic runs can be tamed by stabilizing bank funding

WHAT DO WE LEARN FROM 225 YEARS OF DATA FROM ACROSS THE GLOBE?

▶ **Retail runs are damaging but manageable**

- $\approx 2\%$ probability, $\approx 9\%$ GDP loss over five years
- Deposit insurance reduces frequency of systemic retail runs

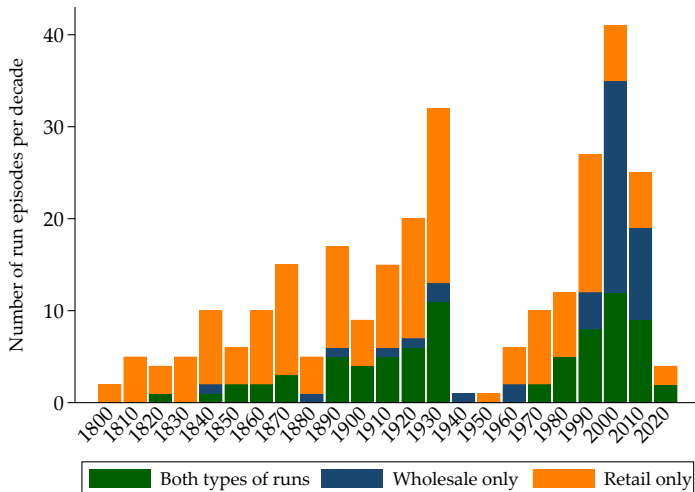
▶ **Liability disruptions matter over and above solvency**

- Points to aggregate value of funding stability (role of liquidity regulation)

▶ **What's next?**

- Banks' funding has shifted toward wholesale creditors
- Deposit insurance possibly reallocates fragility

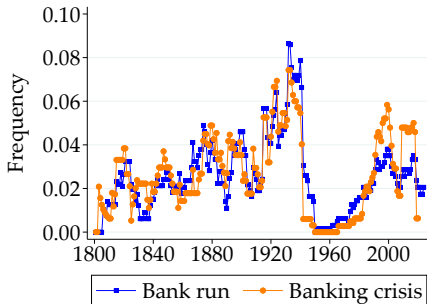
WHOLESALE RUNS ARE NOW MORE COMMON THAN EVER (ADVANCED ECONOMIES)



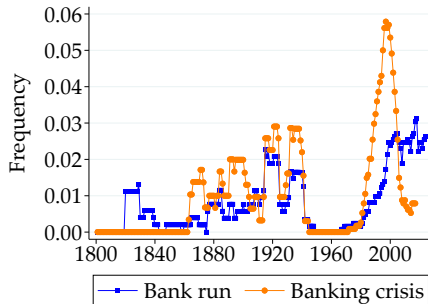
Appendix

- ▶ How do bank runs compare to general-form banking crises?
- ▶ Unified indicator combining four widely used chronologies
 - Start with [Baron, Verner, and Xiong \(2021\)](#), who also combine narrative evidence with quantitative data (bank equity declines)
 - Add, in this order, [Laeven and Valencia \(2018\)](#), [Jordà, Schularick, and Taylor \(2017\)](#), [Reinhart and Rogoff \(2009\)](#)
 - “New” events not preceded by another crisis within the previous 3 years
- ▶ In addition: banking panics from [Baron, Verner, and Xiong \(2021\)](#)

(A) Advanced economies



(B) Emerging economies



► Classification based on World Bank

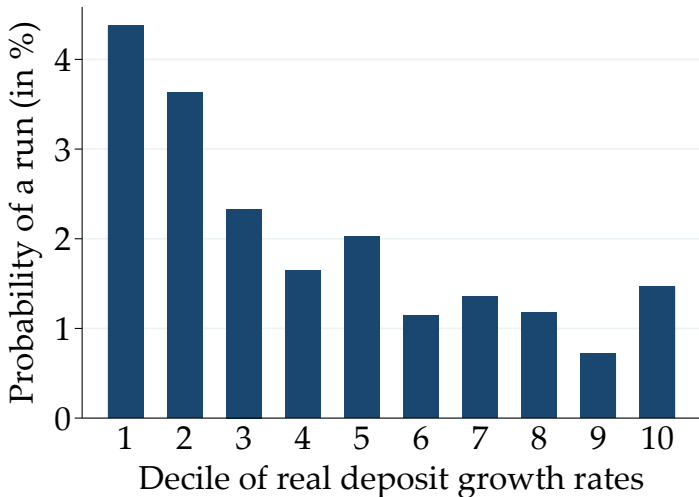
FREQUENCIES PRE AND POST 1933

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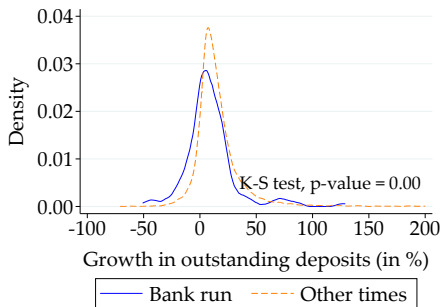
	Pre-1933		Post-1933	
	Run prob.	Share systemic	Run prob.	Share systemic
Average	5.6	78.5	1.7	34.9
<i>By region:</i>				
East Asia and Pacific	5.3	89.5	3.5	20.8
Europe and Central Asia	5.7	71.4	2.3	46.6
Latin America and Caribbean	4.3	92.9	1.6	35.9
Middle East and North Africa	N/A	N/A	0.9	81.8
North America	11.6	82.6	7.3	30.8
South Asia	1.3	100.0	1.8	22.2
Sub-Saharan Africa	1.1	100.0	0.6	11.8
<i>By income level:</i>				
Advanced economies	7.3	85.5	2.1	39.7
Emerging economies	5.1	71.4	1.8	32.4
<i>By financial development:</i>				
Low	5.9	71.4	1.0	27.6
Medium	6.9	84.6	2.2	30.8
High	7.1	75.0	2.4	40.3
<i>By deposit insurance:</i>				
No	5.6	78.5	1.1	34.7
Yes	N/A	N/A	3.5	35.0

RUN FREQUENCY BY DEPOSIT GROWTH DECILES

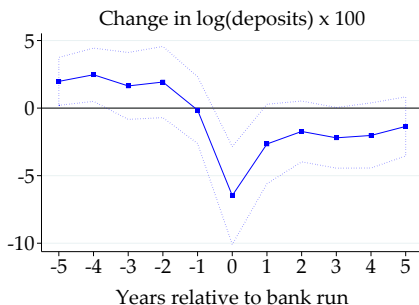
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(A) Distribution of Deposit Growth Rates

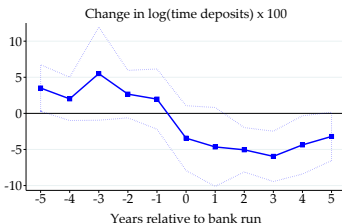
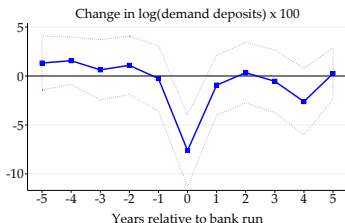


(B) Deposit Contractions Around Runs



CONTRACTIONS OF DEMAND AND TIME DEPOSITS AROUND RUNS

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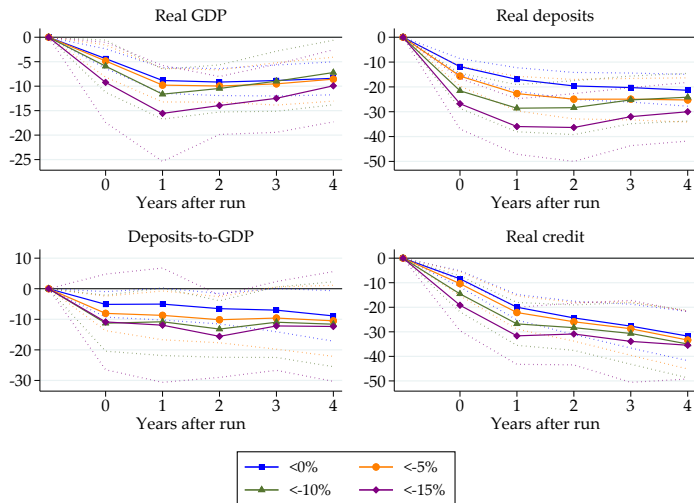


BANK RUNS AND OUTPUT LOSSES [▶ GO BACK](#)

	ΔGDP_t^r	ΔGDP_{t+2}^r	ΔGDP_{t+4}^r
Systemic Runs	-4.562*** (1.002)	-9.434*** (1.400)	-8.652*** (1.723)
Non-Systemic Runs	-1.224*** (0.282)	-3.335*** (0.685)	-3.409*** (0.975)
Deposit Contractions w/o Runs	-1.681*** (0.317)	-3.466*** (0.574)	-4.347*** (0.859)
Observations	8,588	8,588	8,479
Countries	178	178	178
Systemic Runs	81	81	81
Deposit Contractions	621	621	617
Non-Systemic Runs	95	95	93
R ²	0.13	0.20	0.24

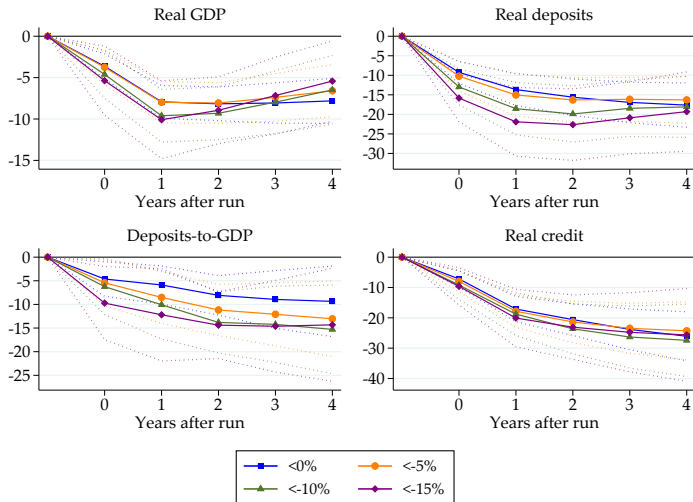
DIFFERENT THRESHOLDS OF NOMINAL DEPOSIT WITHDRAWALS

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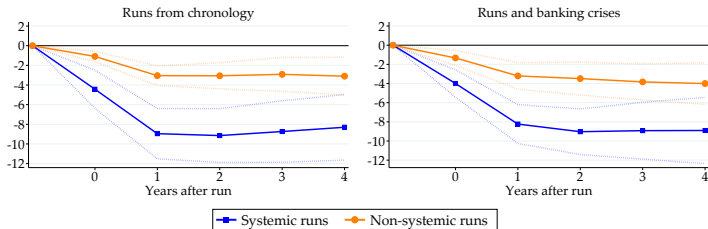
DIFFERENT THRESHOLDS OF REAL DEPOSIT WITHDRAWALS

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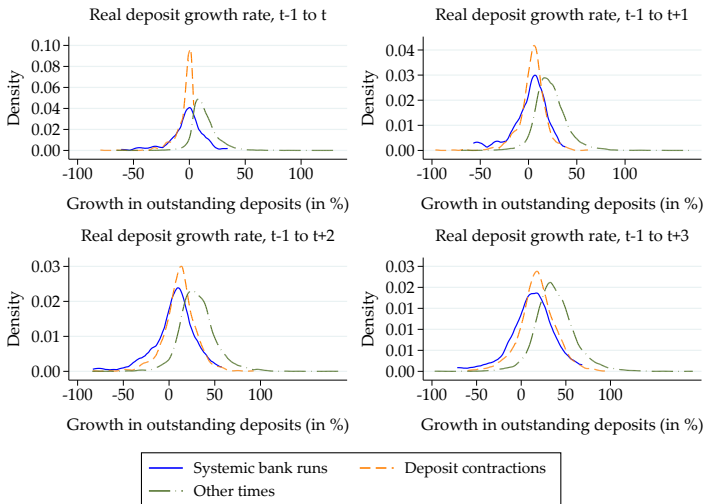


TESTING FOR FALSE NEGATIVES IN BANK RUN CHRONOLOGY

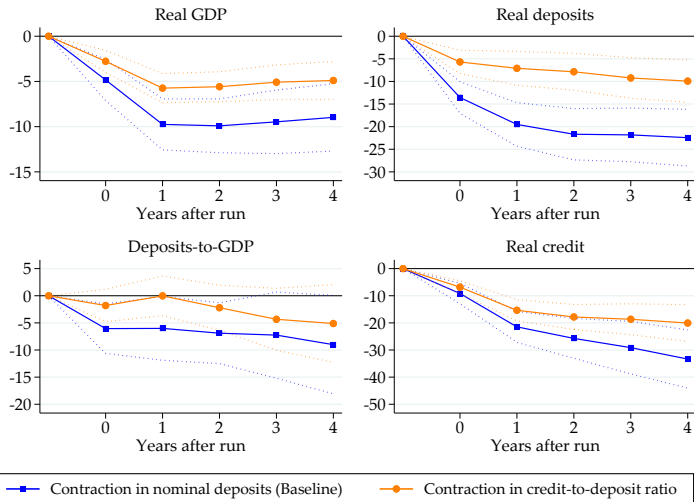
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DEPOSIT GROWTH RATES AROUND SYSTEMIC RUNS AND DEPOSIT CONTRACTIONS

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WITHDRAWALS BASED ON CREDIT-TO-DEPOSITS RATIO

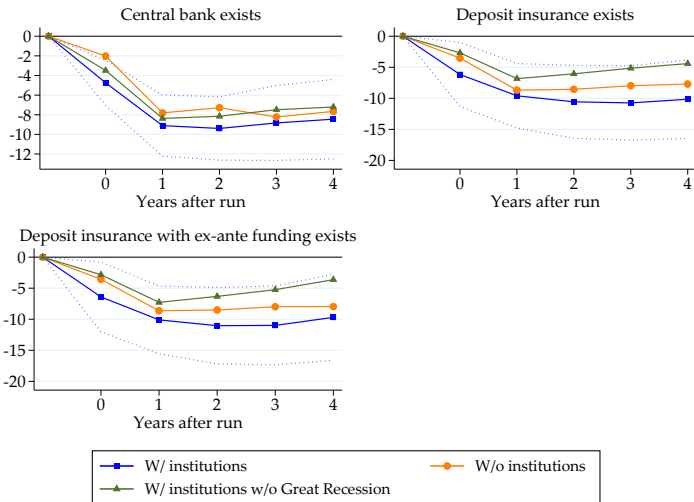
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EX-ANTE GOVERNMENT POLICIES [▶ GO BACK](#)

	Run-level regressions					
	$\mathbf{1}_{i,t}^{\text{sysrun}} \in \{0, 1\}$					
	(1)	(2)	(3)	(4)	(5)	(6)
Central bank exists	-0.383*** (0.127)	-0.429*** (0.136)				
DI exists			-0.369*** (0.128)	-0.370*** (0.123)		
DI with ex-ante funding					-0.349** (0.133)	-0.322** (0.134)
Country-level controls	N	Y	N	Y	N	Y
Country FE	Y	Y	Y	Y	Y	Y
Mean of DV	0.57	0.51	0.57	0.51	0.58	0.51
Observations	171	78	171	78	168	76
R ²	0.28	0.61	0.28	0.60	0.27	0.59

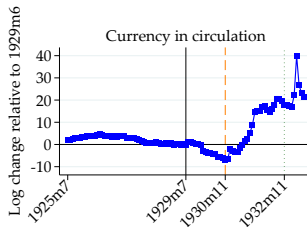
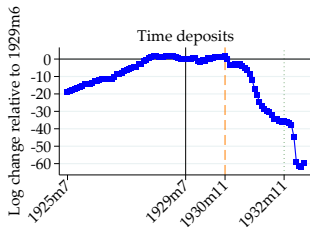
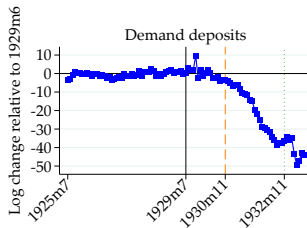
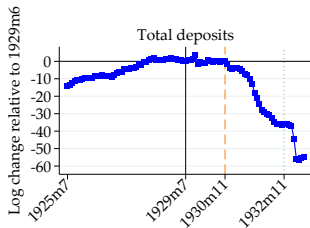
AFTERMATH OF BANK RUNS WITH EX-ANTE REGULATION

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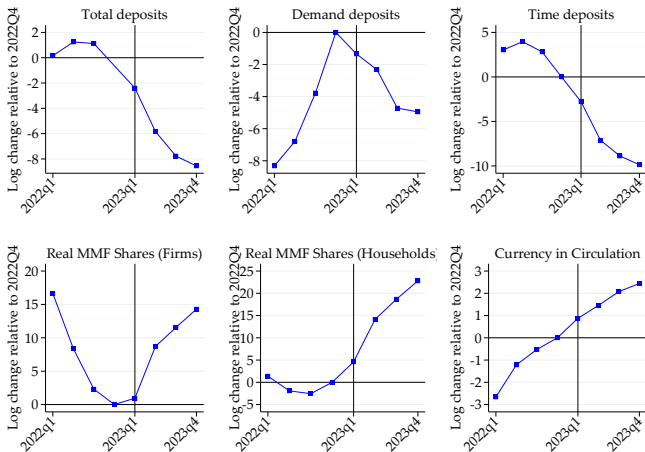
WHERE DOES MONEY FLOW DURING BANK RUNS?

CASE STUDY: THE GREAT DEPRESSION

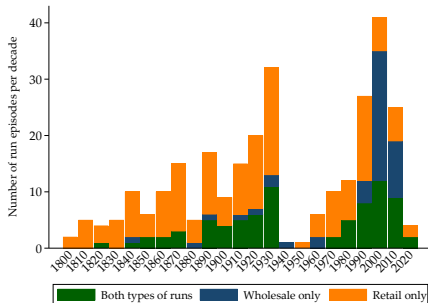
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WHERE DOES MONEY FLOW DURING BANK RUNS?

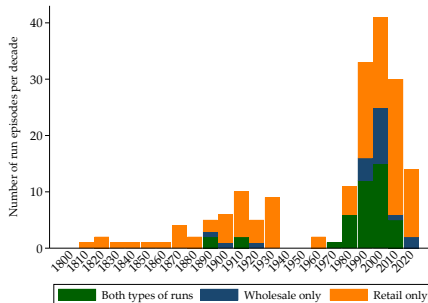
CASE STUDY: SILICON VALLEY BANK RUN

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(A) Advanced economies



(B) Emerging economies



► Classification based on World Bank

REFERENCES I

- Allen, Franklin and Douglas Gale. 1998. "Optimal Financial Crises." *Journal of Finance* 53 (4):1245–1284.
- Amador, Manuel and Javier Bianchi. 2024. "Bank Runs, Fragility, and Credit Easing." *American Economic Review* 114 (7):2073–2110.
- Baron, Matthew, Emil Verner, and Wei Xiong. 2021. "Banking Crises Without Panics." *Quarterly Journal of Economics* 136 (1):51–113.
- Bocola, Luigi and Alessandro Dovis. 2019. "Self-Fulfilling Debt Crises: A Quantitative Analysis." *American Economic Review* 109 (12):4343–4377.
- Bryant, John. 1980. "A Model of Reserves, Bank Runs, and Deposit Insurance." *Journal of Banking & Finance* 4 (4):335–344.
- Carlson, Mark, Sergio Correia, and Stephan Luck. 2022. "The Effects of Banking Competition on Growth and Financial Stability: Evidence from the National Banking Era." *Journal of Political Economy* 130 (2):462–520.
- Correia, Sergio, Stephan Luck, and Emil Verner. 2026. "Failing Banks." *Quarterly Journal of Economics* 141 (1):147–204.
- Diamond, Douglas W. and Philip H. Dybvig. 1983. "Bank Runs, Deposit Insurance, and Liquidity." *Journal of Political Economy* 91 (3):401–419.
- Diamond, Douglas W. and Anil K. Kashyap. 2016. "Liquidity Requirements, Liquidity Choice, and Financial Stability." *Handbook of Macroeconomics* 2:2263–2303.
- Diamond, Douglas W. and Raghuram G. Rajan. 2005. "Liquidity Shortages and Banking Crises." *Journal of Finance* 60 (2):615–647.

REFERENCES II

- Goldstein, Itay and Ady Pauzner. 2005. "Demand–Deposit Contracts and the Probability of Bank Runs." *Journal of Finance* 60 (3):1293–1327.
- Iyer, Rajkamal, Manju Puri, and Nicholas Ryan. 2016. "A Tale of Two Runs: Depositor Responses to Bank Solvency Risk." *Journal of Finance* 71 (6):2687–2726.
- Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. 2017. "Macrofinancial History and the New Business Cycle Facts." In *NBER Macroeconomics Annual 2016*, vol. 31, edited by Martin Eichenbaum and Jonathan A. Parker. University of Chicago Press.
- Kashyap, Anil K., Dimitrios P. Tsomocos, and Alexandros P. Vardoulakis. 2024. "Optimal Bank Regulation in the Presence of Credit and Run Risk." *Journal of Political Economy* 132 (3):772–823.
- Laeven, Luc and Fabian Valencia. 2018. "Systemic Banking Crises Revisited." Working Paper WP/18/206, International Monetary Fund.
- Reinhart, Carmen M. and Kenneth S. Rogoff. 2009. "The Aftermath of Financial Crises." *American Economic Review* 99 (2):466–472.
- Uhlig, Harald. 2010. "A Model of a Systemic Bank Run." *Journal of Monetary Economics* 57 (1):78–96.