

Who Runs? The Importance of Relationships in Bank Panics

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Bank Panic

- Most of the theories of bank runs assume depositors are identical except in terms of timing of liquidity needs (Diamond and Dybvig, 83).
- Depositors differ in many dimensions
 - Relationship with the bank
 - Social networks
 - Distance (geographical proximity)

Why should depositor characteristics matter?

- Relationships with the bank could reduce depositor incentive to run
 - Benefits of bank-firm relationship (Peterson and Rajan, 94; Drucker and Puri, 2005; Bharath et al., 2006)
- Distance (proximity to the bank)
 - Reduce depositor incentive to run (Lower information asymmetry: Mian, 2006)
 - Increase incentive to run (lower shoe-leather costs of running)
- Social networks
 - Word of mouth contagion (Kelly and O'Grada, 2001)
- Deposit insurance coverage limit

Focus of the paper

- What affects depositor panic?
- Are there differences in depositor characteristics among panickers?
- Are the effects of the panic long lasting?

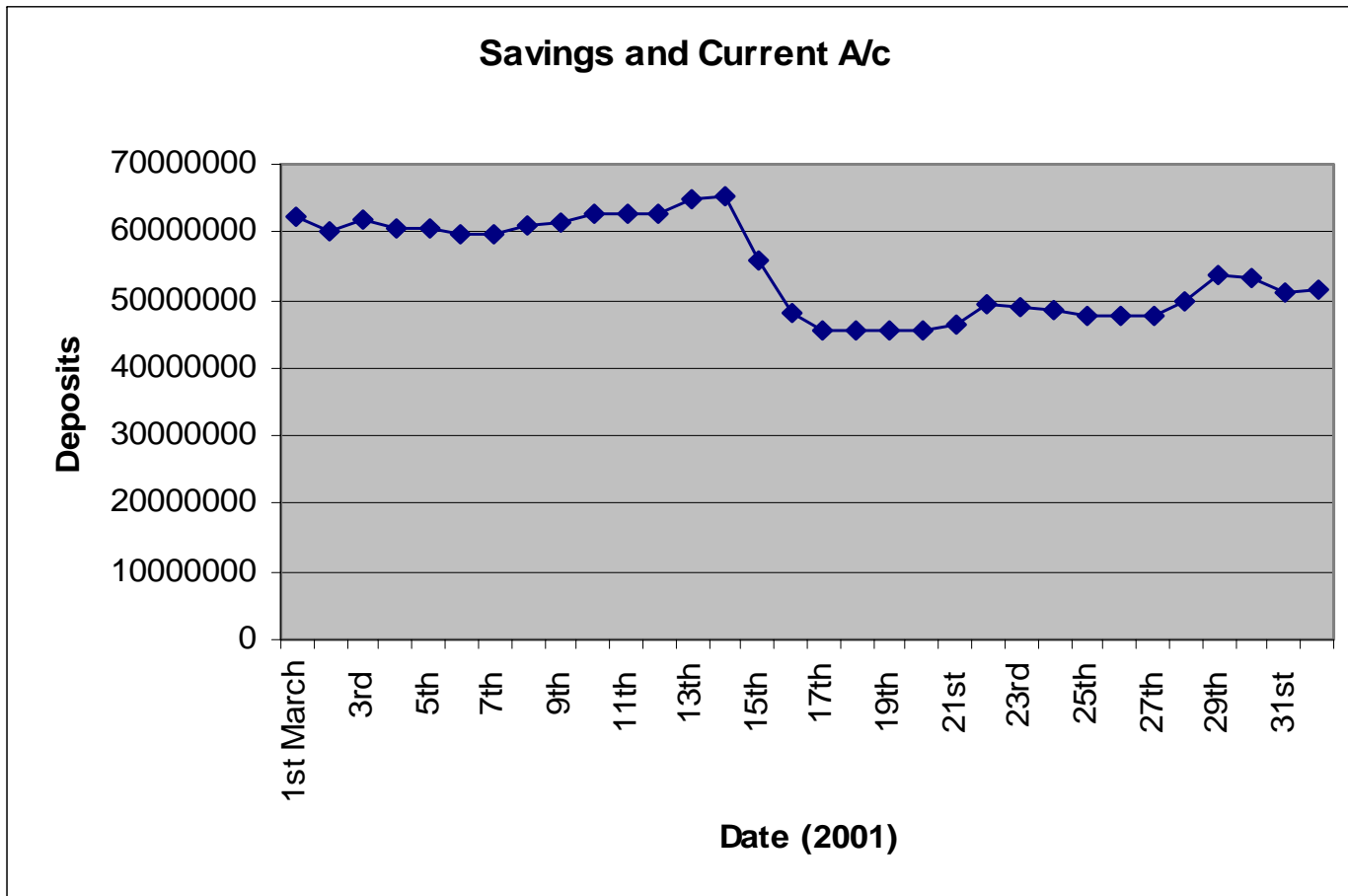
Identification

- Need a shock that triggered runs
- Individual depositor data
- Create proxies for different dimensions in which depositors differ

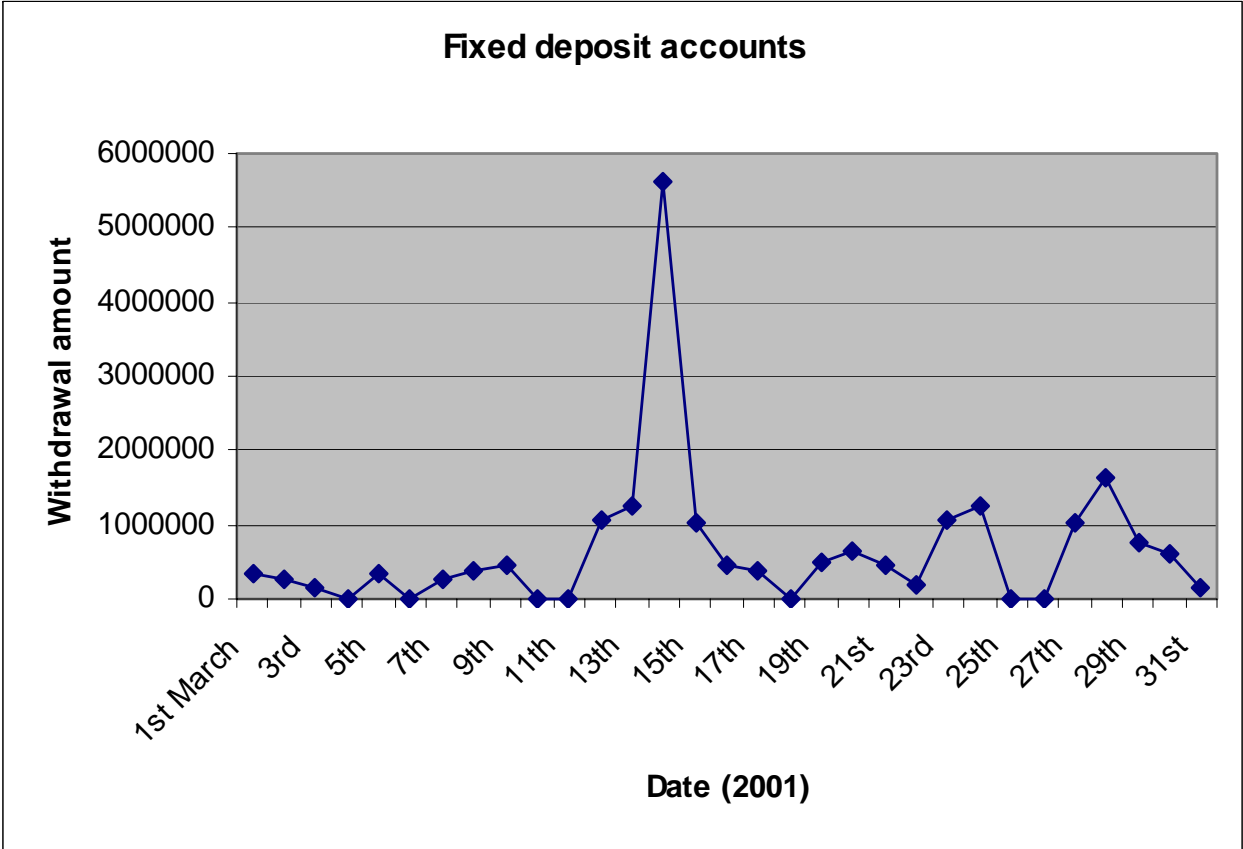
Our strategy

- Shock triggered by failure by of a large bank due to a fraud
- The bank that we use did not have any interbank linkages or correspondent banking relationship with the failed bank
- Experienced runs for a few days immediately after the failure and survived.
- Bank is a co-operative bank (small depositors)

Transaction account (Evolution)



Fixed deposit (evolution)



Empirical strategy

- Panicker: if more than 75% of deposits outstanding is liquidated in the crisis period (3 days)
- Relationships with the bank
 - Age of the account
 - Loan linkages (Household has/had a loan with the bank)
- Social networks
 - Ethnic groups of depositors
- Distance (same zip code as the bank)
- Size of the account (Deposit insurance cover)

The Effect of depositor characteristics

	Fixed Deposit accounts		Savings & Current accounts	
	Withdrawals>75%		Withdrawals>75%	
		(2)	(3)	(4)
Minority community	0.244*** (0.068)	0.206*** (0.077)	0.179** (0.073)	0.150* (0.081)
Above Insurance cover	0.674** (0.292)	0.668** (0.294)	5.869*** (0.225)	5.818*** (0.228)
Opening balance	0.090*** (0.024)	0.090*** (0.024)	0.528*** (0.020)	0.524*** (0.020)
Loan linkage	-0.754*** (0.360)	-0.745** (0.361)	-0.556*** (0.181)	-0.557*** (0.183)
Age of account	-0.155*** (0.026)	-0.151*** (0.026)	-0.112*** (0.036)	-0.114*** (0.036)
No of transactions				0.0004 (0.0003)
Vicinity of the bank		0.091 (0.075)		0.012 (0.069)
Change in withdrawals			0.613* (0.356)	0.587* (0.355)
Change in deposits			0.056*** (0.024)	0.057*** (0.024)
Savings a/c				0.145* (0.082)
Constant	-1.642*** (0.302)	-1.684*** (0.305)	-5.355*** (0.338)	-5.432*** (0.344)
N	4935	4935	10772	10772
Pseudo R2	0.034	0.035	0.3700	0.3712

Primary findings

- Loan linkages: Reduce likelihood of withdrawal
- Higher the age of account lower the likelihood of withdrawal
- Depositors over insurance coverage limit are more likely to withdraw
- Higher account balance increases likelihood of withdrawal
- Minority community depositors more likely to withdraw
- Distance does not matter

What drives behavior of depositor with loan linkages?

- Natural hedge for a depositor (set off deposits against loan outstanding in case of failure)
- Hold up by the bank
- Depositors with loans differ in unobservable dimensions
- Relationship with the bank
- Restrictions on liquidation of deposits for accounts with loan linkages

The effect of past loan linkage

	Fixed Deposit accounts		Savings & Current accounts	
	Withdrawals>75%		Withdrawals>75%	
	(1)	(2)	(3)	(4)
Outstanding loan linkage		-0.725** (0.361)		-0.702** (0.320)
Past loan linkage	-0.745** (0.361)	-0.756** (0.361)	-0.462** (0.226)	-0.476** (0.225)

Depositors with loan linkage in the past also less likely to withdraw

- Set-off not applicable
- Hold-up by the bank unlikely to be an issue

The effect of future loan linkage

Depositors who get loans differ in un-observable dimensions

- Future loan linkage: Depositors with no loans in the past but avail of a loan after the crisis (also have a deposit account with the bank on the crisis date)

	Fixed Deposit accounts		Savings & Current accounts	
	(1)	(2)	(3)	(4)
Loan linkage	-0.748*** (0.258)		-0.559*** (0.183)	
Outstanding loan linkage		-0.731** (0.361)		-0.704** (0.320)
Past loan linkage		-0.763** (0.361)		-0.479** (0.226)
Future loan linkage	-0.344 (0.290)	-0.345 (0.290)	-0.190 (0.443)	-0.190 (0.443)

The effect of loan linkages on minority community and depositors above insurance cover

	Withdrawals>75%			Withdrawals>75%	
	Fixed Deposit	Savings & Current		Fixed Deposit	Savings & Current
	(1)	(2)		(3)	(4)
Minority with loan link	0.720 (0.548)	****	Minority community	0.197** (0.077)	0.150* (0.081)
Minority with no loan link	0.190** (0.077)	0.163** (0.081)	Above Insurance with loan link	****	****
Above Insurance cover	0.667** (0.295)	5.834*** (0.229)	Above Insurance with no loan link	0.679** (0.295)	5.862*** (0.230)

- Minority with loan linkages less likely to withdraw
- Depositors above insurance cover and loan linkages less likely to panic

The effect of loan size and no of loan types

	Fixed Deposit accounts		Savings & Current accounts	
	Withdrawals>75%			
	(1)	(2)	(3)	(4)
Minority community	0.196** (0.077)	0.191** (0.077)	0.149* (0.080)	0.150* (0.080)
Above Insurance cover	0.669** (0.294)	0.669** (0.295)	5.824*** (0.228)	5.812*** (0.228)
Opening balance	0.089*** (0.025)	0.089*** (0.025)	0.524*** (0.020)	0.522*** (0.020)
No of loan types	-0.657*** (0.228)		-0.446*** (0.165)	
Loan Amount		-0.084*** (0.030)		-0.034** (0.015)
Age of account	-0.154*** (0.026)	-0.154*** (0.026)	-0.114*** (0.036)	-0.113*** (0.036)
Number of transactions			0.0004 (0.0003)	0.0004 (0.0003)
Vicinity of the bank	0.093 (0.076)	0.097 (0.076)	0.015 (0.069)	0.014 (0.069)
Change in withdrawals			0.573 (0.352)	0.568 (0.352)
Change in deposits			0.056** (0.024)	0.057** (0.024)
Savings a/c			0.146* (0.082)	0.146* (0.082)
Constant	-1.645*** (0.306)	-1.643*** (0.306)	-5.429*** (0.344)	-5.426*** (0.344)
N	4935	4935	10772	10772
Pseudo R2	0.0393	0.0406	0.3714	0.3704

Minority community depositors

- Weaker relationship: Bank board dominated by members of the non-minority community (7/10)
- Split Minority depositors based on their last name
 - Last name similar to board of directors
 - Last name different from that of the board of directors
- No ex-ante differences in these two groups in observable dimensions

Minority with same director last name

	Withdrawals.>75%	
	Fixed Deposit	Savings & Current
	(1)	(2)
Minority with director last name	0.100 (0.154)	0.021 (0.164)
Minority with other last name	0.212*** (0.081)	0.175** (0.085)
Above Insurance cover	0.660** (0.294)	5.813*** (0.228)
Opening balance	0.089*** (0.025)	0.523*** (0.020)
Loan linkage	-0.742*** (0.257)	-0.553*** (0.183)
Age of account	-0.155*** (0.026)	-0.116*** (0.036)
No of transactions		0.0004 (0.0003)
Vicinity	0.096 (0.075)	0.011 (0.069)
Change in withdrawals		0.578 (0.355)
Change in deposits		0.056** (0.024)
Savings a/c		0.146* (0.082)
Constant	-1.641*** (0.305)	-5.415*** (0.345)
N	4935	10772
Pseudo R ²	0.0389	0.3715

How long lasting are the effects?

- Is the bank able to substitute with fresh deposits/capital?
- Do depositors that panic redeposit?
- Does the deposits of the bank recover in the short term?
- Findings:
 - No short term recovery
 - Bank deposits remain at the same level even after 3 months of the crisis
 - 1% of the depositors that panicked redeposit to the pre-crisis level

Contributions and policy implications

- Highlights the importance of relationship banking in panics
 - Loan linkages
 - Length of the relationship with the bank
- Cross-selling of products by a banks helps reduce depositor panic
 - Complementary insurance mechanism
- Coexistence of deposit taking and lending
 - Tying of deposit taking and lending to the same depositor
- Effects of the panic are long lasting