Deposit Inflows and Outflows in Failing Banks: The Role of Deposit Insurance

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Disclaimer

- The analysis, conclusions, and opinions set forth here are those of the author(s) alone and do not necessarily reflect the views of the Federal Deposit Insurance Corporation.

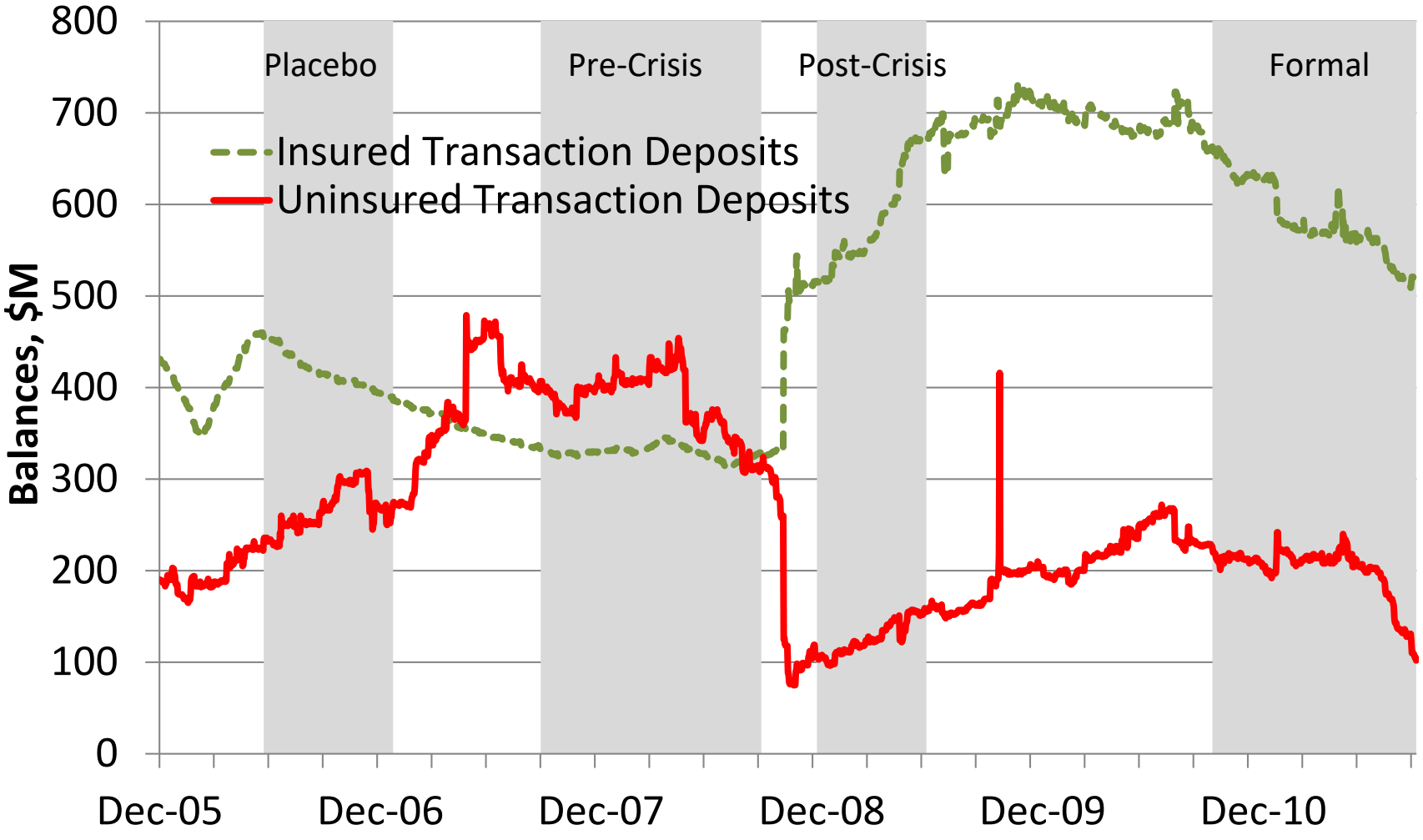
Motivation

- Unstable funding was central to the financial crisis.
- Little academic empirical evidence on measures of liquidity, stability and regulation.
- How effective were crisis-era liquidity programs?
  - Higher deposit insurance limits
  - Temporary expansion of insurance (TAG and DFA)
- How suitable are the new liquidity regulations?
  - Liquidity coverage ratio (LCR)
  - Net stable funding ratio (NSFR)
- Which depositors withdraw?
- Do depositors discipline banks?
- Are deposit inflows material?

Contributions

- Data from a $2 billion failed bank closed by FDIC.
- Detailed daily deposits by account for over 5 years.
- We contribute to the literature:
  - Detailed micro panel instead of aggregated data
  - Consider *gross* flows instead of *net*
  - Examine account- and depositor-level characteristics
  - Measure effect of temporary deposit insurance
  - Observe different economic conditions
  - Evaluate new liquidity regulations

Transaction Balances



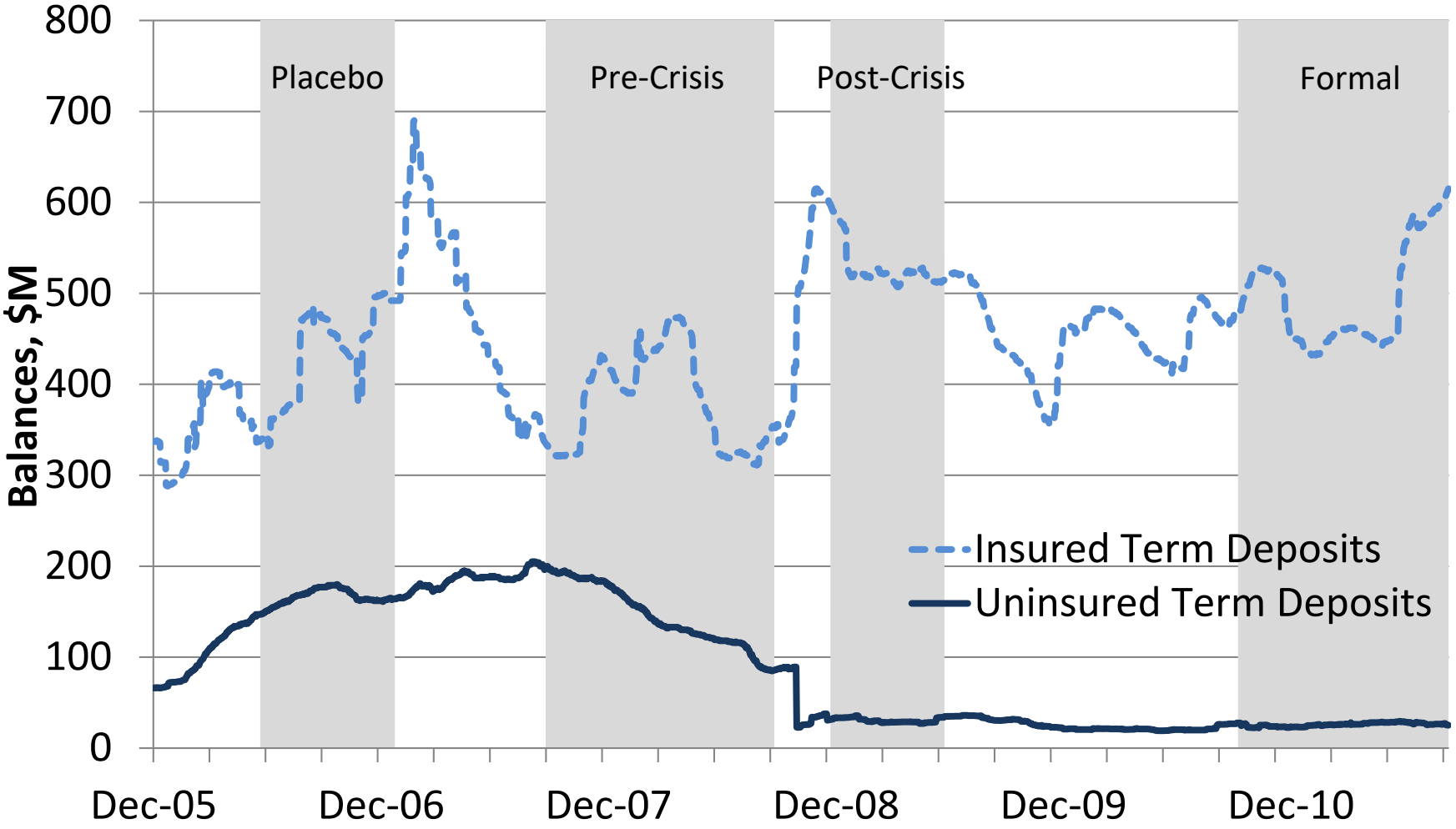
Who Withdraws? Transaction

	Placebo	*Pre-Crisis*	*Post-Crisis*	*Formal*
	(1)	(2)	(3)	(4)
Uninsured	1.140**	1.067	1.444**	1.919***
	(2.27)	(1.53)	(2.41)	(10.00)
Checking & Uninsured	1.164	1.152	0.708	0.844
↪*Later Covered by TAG/DFA*	(1.07)	(1.36)	(−1.45)	(−1.11)
Checking	0.526***	0.591***	0.697***	0.805***
	(−11.01)	(−10.43)	(−5.40)	(−4.38)
Direct Deposit	0.648***	0.647***	0.502***	0.735***
	(−5.87)	(−7.14)	(−6.61)	(−3.87)
Log(Age)	0.989	0.986	0.990	0.936***
	(−1.00)	(−1.05)	(−0.42)	(−3.11)
Prior Transactions	1.071***	1.053***	1.052***	1.013***
	(23.40)	(18.95)	(13.14)	(3.95)
Prior Transactions^2	0.999***	0.999***	0.999***	1.000***
	(−16.86)	(−15.30)	(−10.81)	(−4.77)
Institutional - Any	0.874	1.076	1.069	0.997
	(−1.17)	(0.88)	(0.71)	(−0.04)
Trust	0.966	1.014	0.739**	1.169**
	(−0.25)	(0.13)	(−2.07)	(2.11)
Branch Controls	Yes	Yes	Yes	Yes
N	6125877	9897521	4835656	7032455
Log Likelihood	−91348.3	−132171.2	−59487.6	−74902.1
Model P-Value	< 0.001	< 0.001	< 0.001	< 0.001
No. of Liquidations	8920	12960	5841	7547

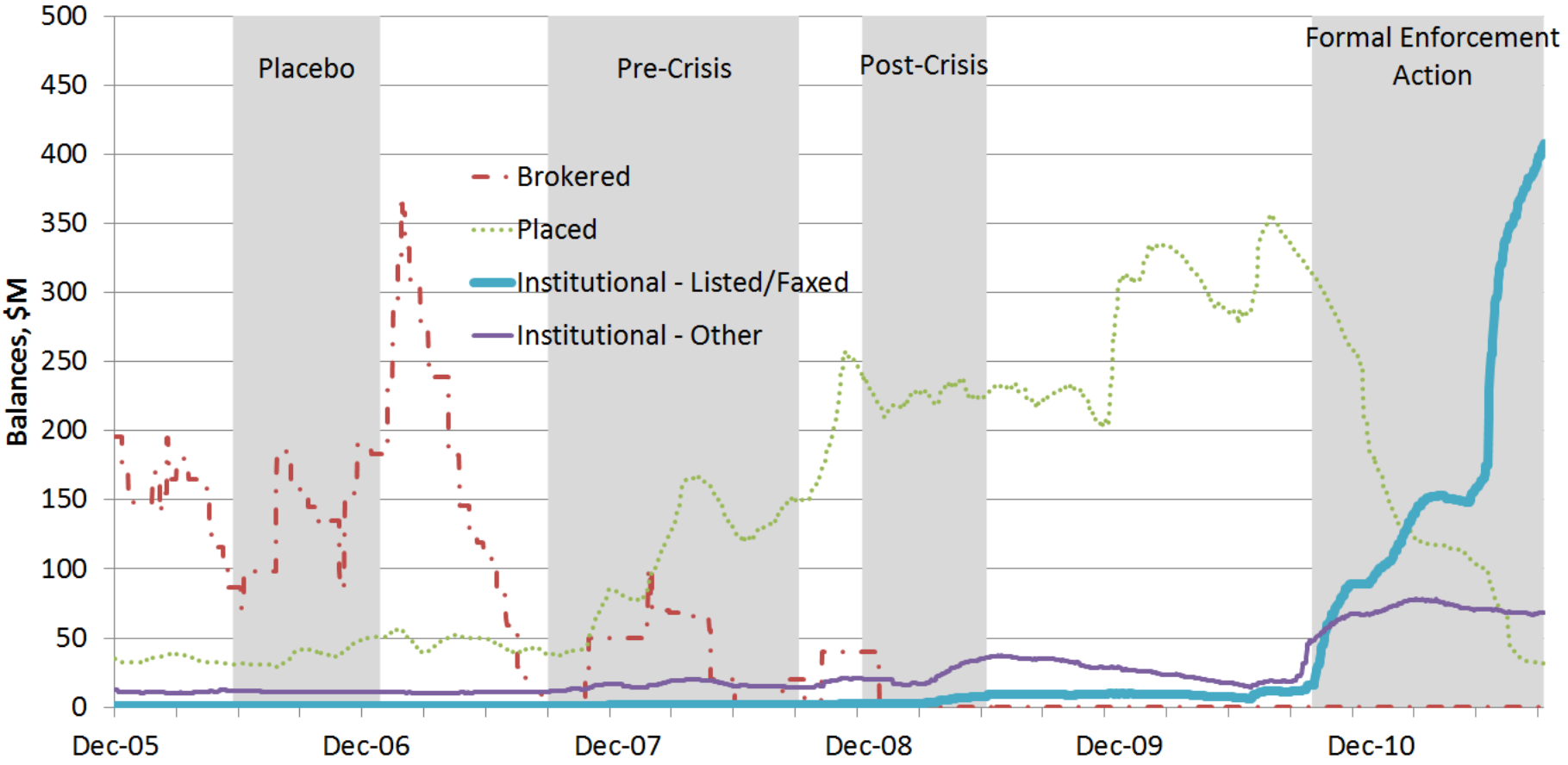
Uninsured Account Migration

			Deposit Insurance Limit = $100,000			
Bin Range	*<$1*	*$1 - 2,000*	*$2,000-8,000*	*$48,000-98,000*	*$98,000-102,000*	*>$102,000*
Placebo	5.8%	8.2%	11.4%	10.3%	11.7%	52.6%
Pre-Crisis	9.0%	8.1%	9.9%	15.5%	16.2%	41.3%
			Deposit Insurance Limit = $250,000			
Bin Range	*<$1*	*$1 - 2,000*	*$2,000-123,000*	*$123,000-248,000*	*$248,000-252,000*	*>$252,000*
Post-Crisis	2.1%	6.0%	14.5%	12.0%	1.7%	63.7%
Formal	21.7%	6.4%	21.9%	14.4%	7.8%	27.6%

Term Deposit Balances



Shift in CD Composition



Who are these new depositors?

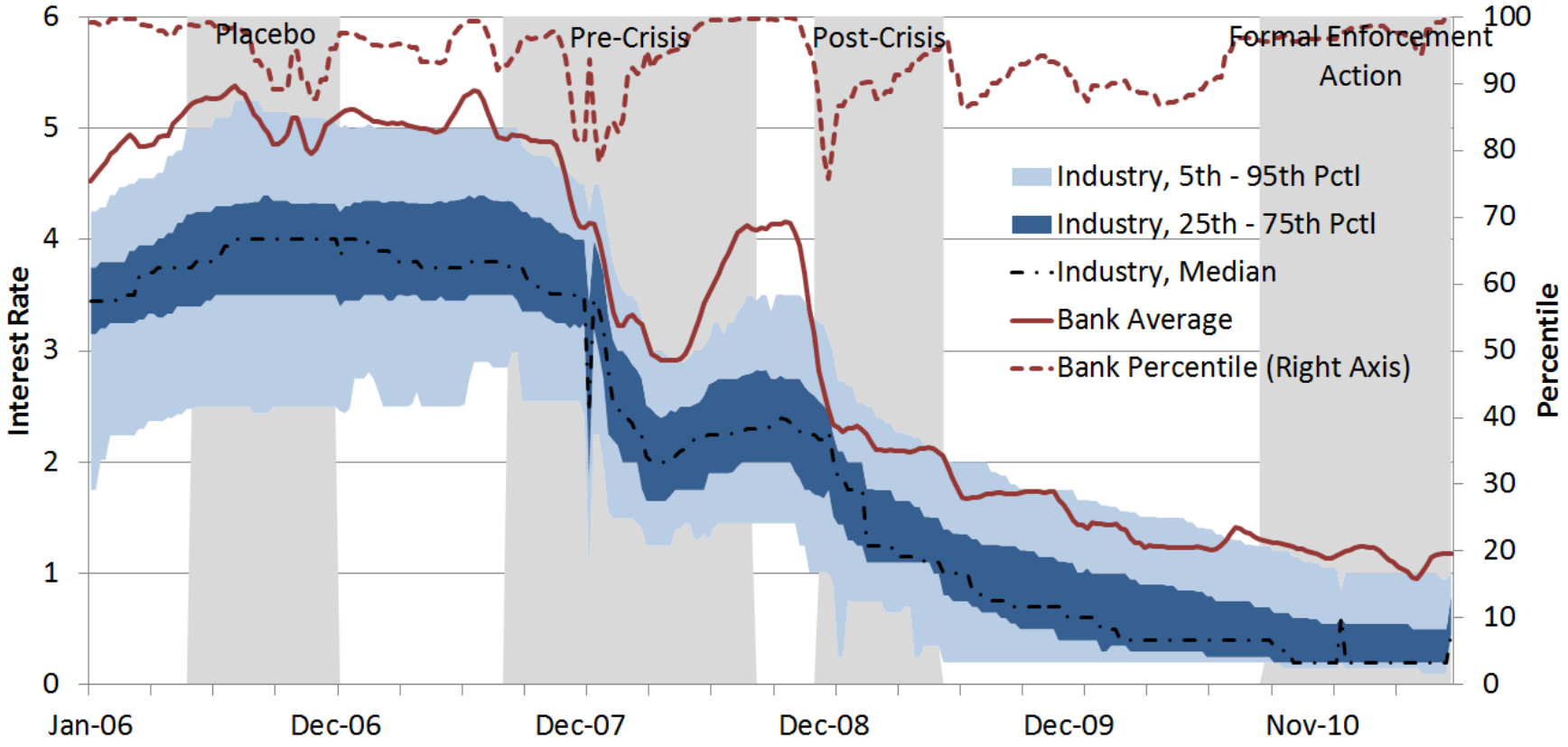
New Depositors over Time

	Placebo	Pre-Crisis	Post-Crisis	Formal
Number of New Accounts	2858	1872	813	2199
New Depositors Per Day	13.355	5.128	4.492	6.525
Over FDIC Limit at Start of Account	0.040	0.024	0.010	0.006
Starting Balance	28111	33482	66207	168262
CD	0.446	0.498	0.406	0.869
Savings	0.504	0.386	0.424	0.070
Checking	0.049	0.116	0.170	0.061
Checking & Over FDIC Limit	0.009	0.006	0.005	0.000
↪ *(TAG/DFA-covered accounts)*				
Starting Interest Rate	4.698	3.468	1.552	1.191
Starting Interest Spread to Market	2.883	1.919	0.877	0.693
Types of Account At Bank	1.097	1.076	1.084	1.016
Institutional - Listed	0.000	0.002	0.004	0.574
Institutional - Faxed	0.000	0.005	0.028	0.178
Institutional - Other	0.028	0.222	0.225	0.066
Placed	0.001	0.029	0.181	0.009
Trust	0.037	0.031	0.082	0.037

New Depositor Volume

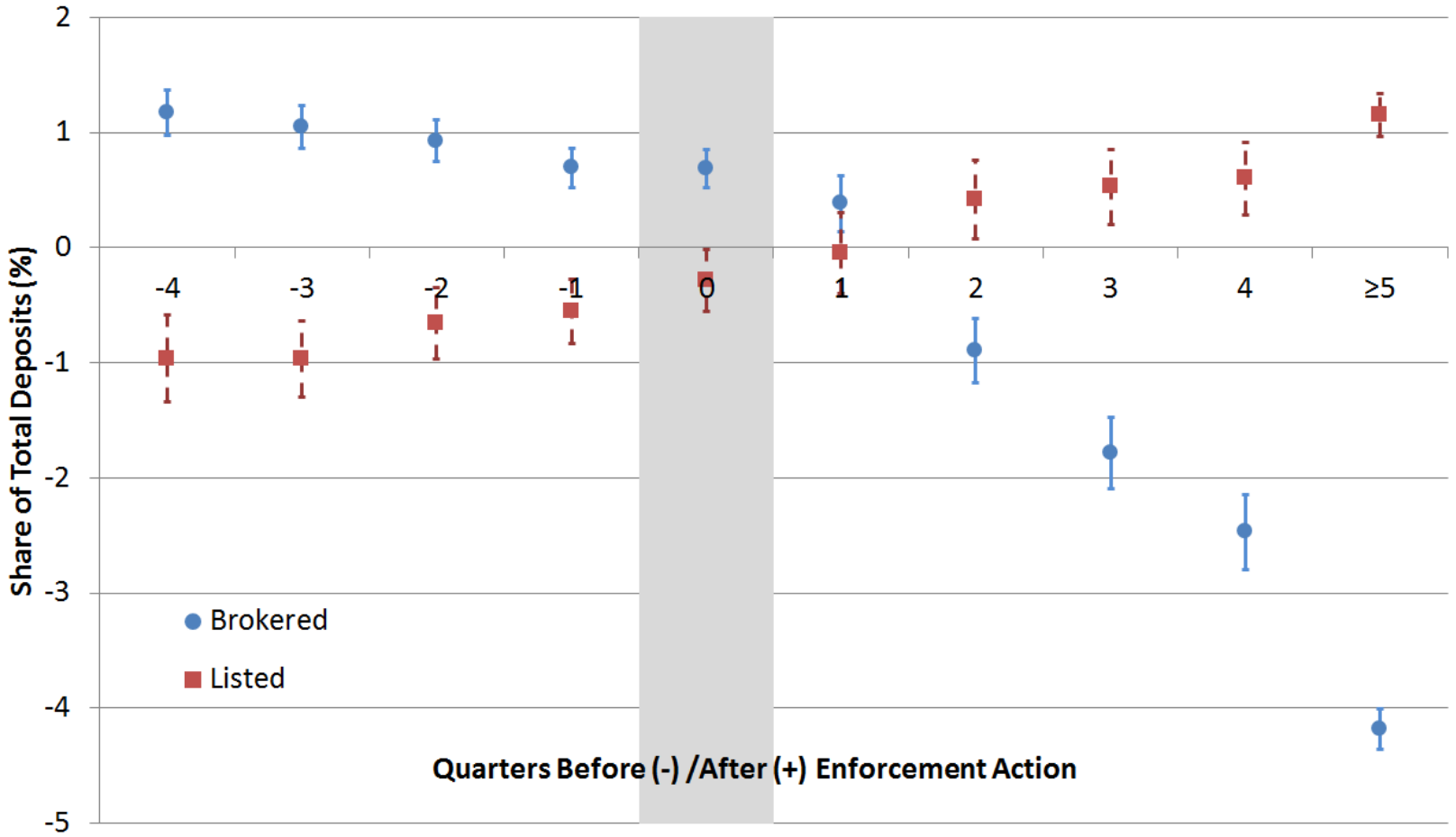
	(1)	(2)	(3)
Time Period Dummies:			
Pre-Placebo	0.000509***	0.000139	0.000142
	(2.68)	(1.50)	(1.58)
Placebo to Pre-Crisis	0.000179*	0.000141**	0.000150**
	(1.77)	(2.03)	(2.19)
Pre-Crisis	−0.000159***	0.0000226	0.0000323
	(−2.94)	(0.16)	(0.24)
Crisis	0.000000299	0.000200	0.000191
	(0.00)	(0.86)	(0.86)
Post-Crisis	−0.0000613	0.000214	0.000215
	(−0.96)	(0.80)	(0.84)
Post-Crisis to Formal	−0.000134**	0.000114	0.000106
	(−2.37)	(0.48)	(0.47)
Formal	0.000535***	0.000570**	0.000578**
	(2.58)	(2.16)	(2.27)
Macro Controls:			
Log(VIX)		0.000225***	0.000224***
		(2.71)	(2.74)
GDP Growth		0.0000246***	0.0000266***
		(2.60)	(2.67)
Housing Starts		0.000000325	0.000000314
		(1.46)	(1.47)
Daily S&P500 Return		0.00240*	0.00221*
		(1.78)	(1.68)
Daily Deposit Growth			0.0146
			(1.64)
AR(1)		0.448***	0.436***
		(13.63)	(12.88)
Constant	0.000295***	−0.000993**	−0.000980**
	(5.94)	(−2.21)	(−2.25)
N	2079	2078	2078
Model P-Value	< 0.001	< 0.001	< 0.001

12-month CD Rates

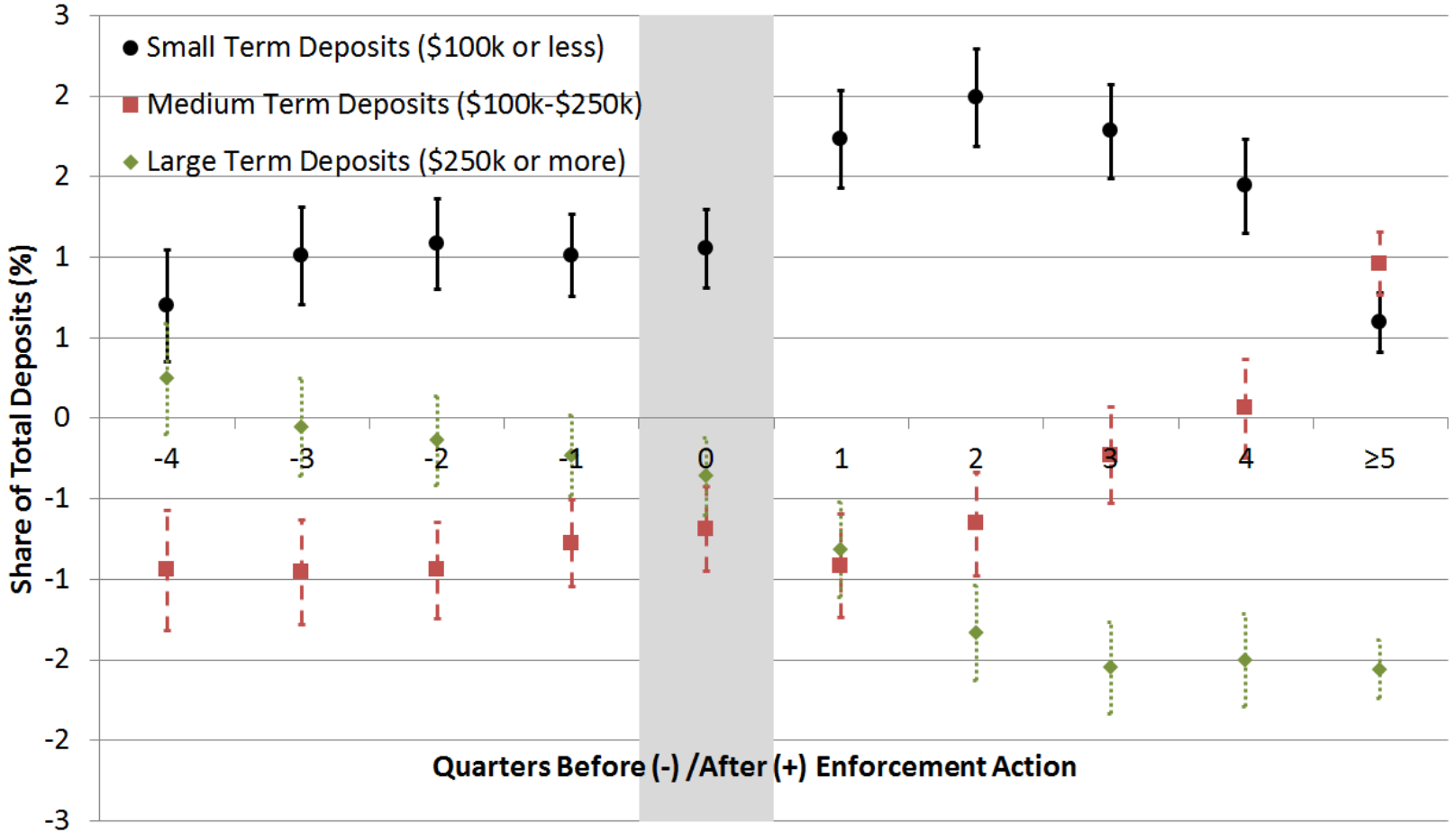


Depositor Discipline? Risk Shifting?

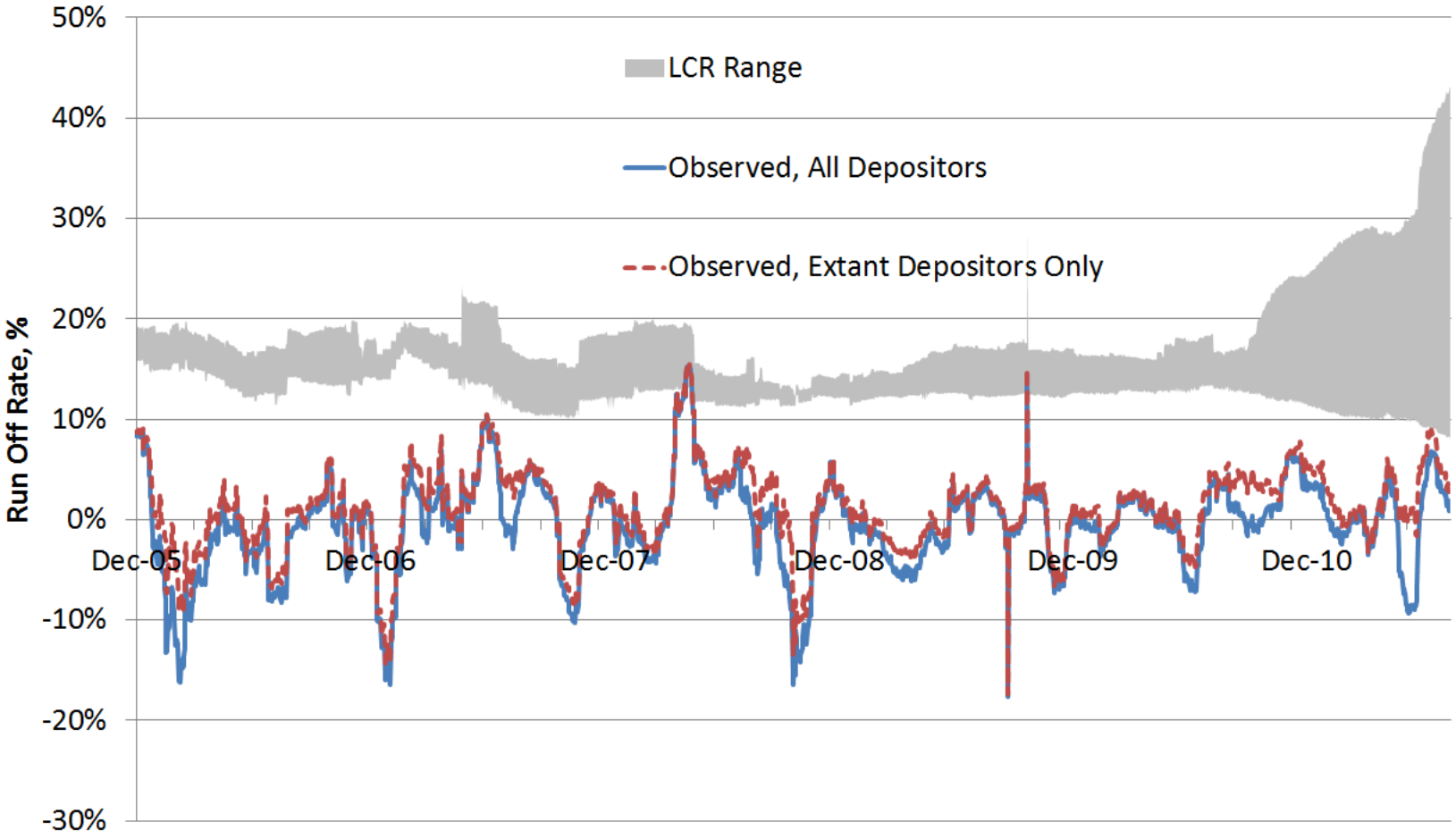
Generalization



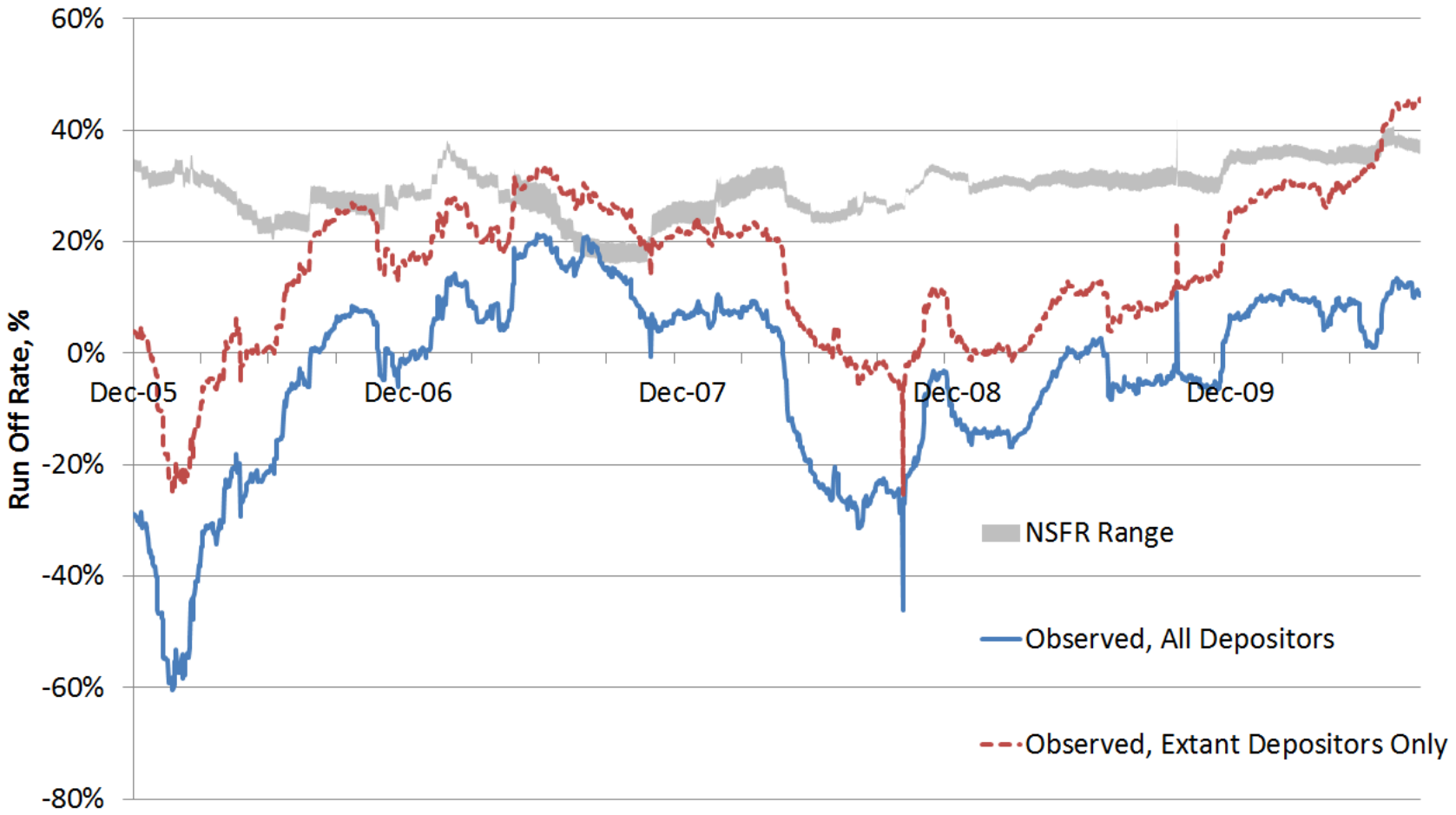
Generalization



30-day Run-Off and LCR



1-year Run Off and NSFR



Conclusion

- Used novel, rich dataset to examine deposit funding stability in a failing bank.
- Characterized the changes in deposit composition as the bank failed.
  - Found banks are able to attract large quantities of insured deposits even as they are failing; raises concerns about market discipline.
  - Perhaps surprisingly, CDs are less sticky than demandable deposits.
  - Results generalize to other banks experiencing similar conditions.
- Identified some drivers of deposit liquidation behavior.
  - Deposit insurance is effective, as was TAG.
  - Checking accounts and older accounts are more stable.
- Provided evidence that LCR runoff rate is sufficiently high, but NSFR may not be.