How Do Government Guarantees Affect Deposit Supply?

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- Less understood how banks might adjust their liabilities/deposit structure to capitalize on this subsidy.
- Importantly, not only may some banks receive larger subsidies than others, but this subsidy may vary greatly over time as the aggregate risk in the banking sector changes.

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  - Under the assumption that assessments only imperfectly capture bank risk, variation in the level of risk will capture variation in the overall subsidy.
- Construct an instrumental variable to rule out reverse causality and previously documented channel: higher subsidies cause banks to choose riskier asset portfolios.

Economic Magnitude Likely Substantial

- A bank with \$100 of assets and \$80 of deposits.
- Return on asset: 1%
- Typical deposit insurance premium: 20 bps (range: 0-60 bps)
- Effect of a 30 bps change in DIP on ROA: 0.24% on ROA
- Effect of a 30 bps change in DIP on ROE: 3.75% on ROE
  - Effects stronger for higher σ and lower equity banks.

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2. In the panel regressions, we show that when banks become riskier, they raise more insured deposits.
   - Consistent with larger deposit insurance subsidies encourage banks to maximize the value they can extract from these guarantees

3. Although riskier banks may be at risk of losing uninsured deposits, we document that the net effect is an increase in total deposits.

Data

Data Source: Call Reports (quarterly bank regulatory filings), FDIC Summary of Deposits, RateWatch

Key Variables:

- **Deposits:** Insured deposits, total deposits, share of insured to total deposits, total branch level deposits
- **Bank Risk (NPL Ratio):**
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Sample Period: 1986-2021

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Endogeneity Concern: Banks with more risk-insensitive deposits may increase risk through:

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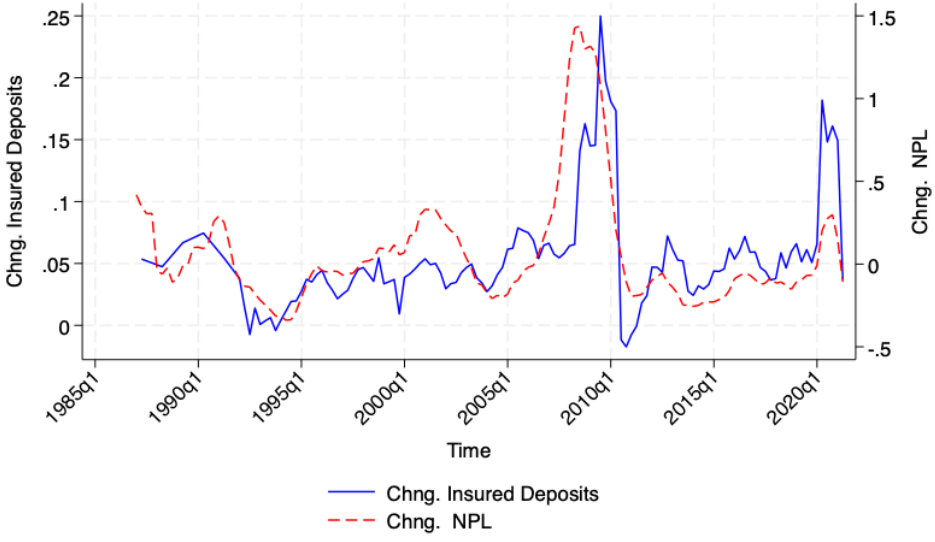
- Portfolio Weight $\text{IV}_{b,t} = \sum_i w_{b,i} \cdot s_{i,t}$
- **Intuition:** Banks that happened to hold more of asset class i many years ago will mechanically have higher NPLs today if their business model is persistent and that asset class experiences aggregate stress.

Time Series Evidence



Time Series Evidence Interpretation

- When the aggregate banking sector becomes riskier, banks raise more insured deposits.
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  - Changes in insured deposits are consistent with our proposed channel and points to an aggregate effect

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- Up next: To better pin down the channel, we would like to understand whether:
  - When certain banks become riskier and enjoy larger subsidies, do they raise more insured deposits?

Bank-Level: Deposit Composition Effects

	Insured Fraction		
	(1)	(2)	(3)
NPL Ratio	0.011***		
	(28.80)		
$\widehat{\text{NPL Ratio}}$			0.030***
			(18.19)
Portfolio-Weight-IV		0.018***	
		(17.28)	
Book Equity to Book Assets	-0.005***	0.002**	0.004***
	(-8.00)	(2.18)	(5.01)
Bank Size	-0.049***	-0.058***	-0.058***
	(-23.88)	(-19.12)	(-19.55)
Qtr-Year FE	✓	✓	✓
Bank FE	✓	✓	✓
Observations	973,702	732,115	732,112
R^2	0.7706	0.7987	0.0104

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- Instrumental variable shows a stronger effect, meaning results are not driven by reverse causality.
- Up Next: To show if this is a shift in the supply curve of insured deposits, we next examine the interest rates on insured deposits at RateWatch. That is, are banks attracting more insured deposits by paying higher prices.

Bank-Level: Insured Deposit Prices

	Wholesale Insured Rate		Submarginal Insured Rate	
	(1)	(2)	(3)	(4)
NPL Ratio	0.006**		0.011***	
	(2.26)		(2.65)	
$\widehat{\text{NPL Ratio}}$		0.074***		0.066**
		(3.65)		(2.24)
Bank Size	-0.007	0.008	-0.002	-0.002
	(-1.08)	(1.02)	(-0.21)	(-0.18)
Book Equity to Book Assets	-0.008	0.008	-0.003	0.003
	(-1.13)	(0.73)	(-0.34)	(0.25)
No. Branches	-0.014*	-0.025	0.006	0.051**
	(-1.77)	(-1.27)	(0.30)	(2.49)
County × Qtr-Year FE	✓	✓	✓	✓
Branch FE	✓	✓	✓	✓
Observations	250,298	133,231	198,297	76,305

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- So we examine how higher bank risk is associated with total bank deposits to see what the net aggregate effect is.
  - An advantage here is that, unlike insured deposits, we observe total deposits at the branch level.
  - Branch-level regressions also weight larger banks and banks with more branches – so also more represenative of aggregate effects.

Branch-Level: Total Deposits

	Log(Branch Deposits)			
	(1)	(2)	(3)	(4)
NPL Ratio	0.022***	0.026***		
	(5.42)	(4.99)		
$\widehat{NPLRatio}$			0.185**	0.206**
			(2.33)	(2.09)
Book Equity to Book Assets	-0.061***	-0.063***	-0.040***	-0.041***
	(-5.97)	(-6.13)	(-5.54)	(-5.39)
No. Branches	-0.061***	-0.073***	-0.126***	-0.139***
	(-3.13)	(-3.85)	(-5.24)	(-5.57)
Bank Size	0.019**	0.012	0.002	-0.001
	(1.97)	(1.38)	(0.27)	(-0.16)
Observations	1917159	1911341	1342116	1337414
Time FE	No	No	No	No
Branch FE	Yes	Yes	Yes	Yes
State × Time FE	Yes	No	Yes	No
County × Time FE	No	Yes	No	Yes

Conclusions

- Propose novel economic channel, in which value of deposit insurance subsidy encourages banks to expand their insured deposit base
- Show empirical evidence that support this channel both in the cross-section of banks and in aggregate in the time series.
- Findings have important implications for thinking about the design of deposit insurance.
- Potential implications for designing insurance assessments to account for how bank risk evolves over time