The Effects of Banking on the Real Economy

Session Chair:
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Common Thread

- A safe and sound financial system is essential for the financial security of American households.
- Beyond that, shocks to financial institutions may have spillover effects on the real economy.
- These papers explore aspects of the interplay between banks and real economic outcomes.

Canary in the Coal Mine: Bank Liquidity Shortages and Local Economic Activity

The Question

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- The authors find that "deposit rates capture fluctuations in local economic conditions and thus are an early indicator of economic activity."

- Run the following estimation:

$$Y_{c,t+k} = \beta_1 \cdot Rate_{c,t} + \alpha_c + \alpha_t + \epsilon_{c,t}$$

Primary Findings

Table 2: Economic Activity and Deposit Rate

Panel A: GDP Growth						
Δln(GDP)	1 Year Ahead	2 Years Ahead	3 Years Ahead	1 Year Ahead	2 Years Ahead	3 Years Ahead
Rate	-0.0012	-0.0044***	-0.0037***	-0.0032	-0.0075*	-0.0136***
	(0.0013)	(0.0013)	(0.0011)	(0.0040)	(0.0044)	(0.0049)
County FIPS FE	✓	✓	✓	✓	✓	✓
Year FE				✓	✓	✓
N	4,545	4,268	4,008	4,545	4,268	4,008
R^2	0.0009	0.0116	0.0083	0.0003	0.0016	0.0049
Panel B: Business Formation						
ln(Applications)	1 Year Ahead	2 Years Ahead	3 Years Ahead	1 Year Ahead	2 Years Ahead	3 Years Ahead
Rate	-0.0489***	-0.0541***	-0.0755***	0.0062	-0.0103	-0.0275
	(0.0045)	(0.0052)	(0.0061)	(0.0172)	(0.0188)	(0.0182)
County FIPS FE	✓	✓	✓	✓	✓	✓
Year FE				✓	✓	✓
N	3,894	3,615	3,357	3,894	3,615	3,357
R^2	0.0589	0.0718	0.1430	0.0001	0.0003	0.0022

Primary Findings

Table 3: Economic Activity and Deposit Rate: 2010-2015

Panel A: GDP Growth						
Δln(GDP)	1 Year Ahead	2 Years Ahead	3 Years Ahead	1 Year Ahead	2 Years Ahead	3 Years Ahead
Rate	-0.0144	-0.0306***	-0.0097	0.0158	-0.0505***	-0.0198
	(0.0095)	(0.0076)	(0.0115)	(0.0241)	(0.0153)	(0.0202)
County FIPS FE	✓	✓	✓			
Year FE				✓	✓	✓
N	1,456	1,436	1,423	1,456	1,436	1,423
R^2	0.0029	0.0143	0.0019	0.0007	0.0082	0.0016
Panel B: Business Formation						
ln(Applications)	1 Year Ahead	2 Years Ahead	3 Years Ahead	1 Year Ahead	2 Years Ahead	3 Years Ahead
Rate	-0.1251***	-0.2568***	-0.4099***	0.0444	-0.0127	-0.1247**
	(0.0223)	(0.0298)	(0.0388)	(0.0364)	(0.0521)	(0.0627)
County FIPS FE	✓	✓	✓	✓	✓	✓
Year FE				✓	✓	✓
N	1,478	1,456	1,441	1,478	1,456	1,441
R^2	0.0579	0.1528	0.2633	0.0022	0.0002	0.0134

Economic Magnitudes

- A one standard deviation increase in deposit rates is associated with:
  - a 0.4 percentage points lower GDP growth two years ahead.
  - a 0.3 percentage points lower GDP growth three years ahead.
  - increased likelihood of a recession two years ahead by 37.44%
  - increased likelihood of a recession three years ahead by 32.80%.

- Results were larger in the 2010 to 2015 timeframe, outside of the credit crisis.

Comments

- Analysis is of single-state banks. How relevant are these banks to their regions?
  - What is the predictability of deposit rates when such banks serve 10% of deposits in the state versus 90%?
  - Does it matter what percentage of small business loans are extended by these banks?
- Policy Implications?
  - Should state legislators allocate resources based on this variation in local deposit rates?
  - Should bank supervisors incorporate relative deposit rates into CAMEL ratings?

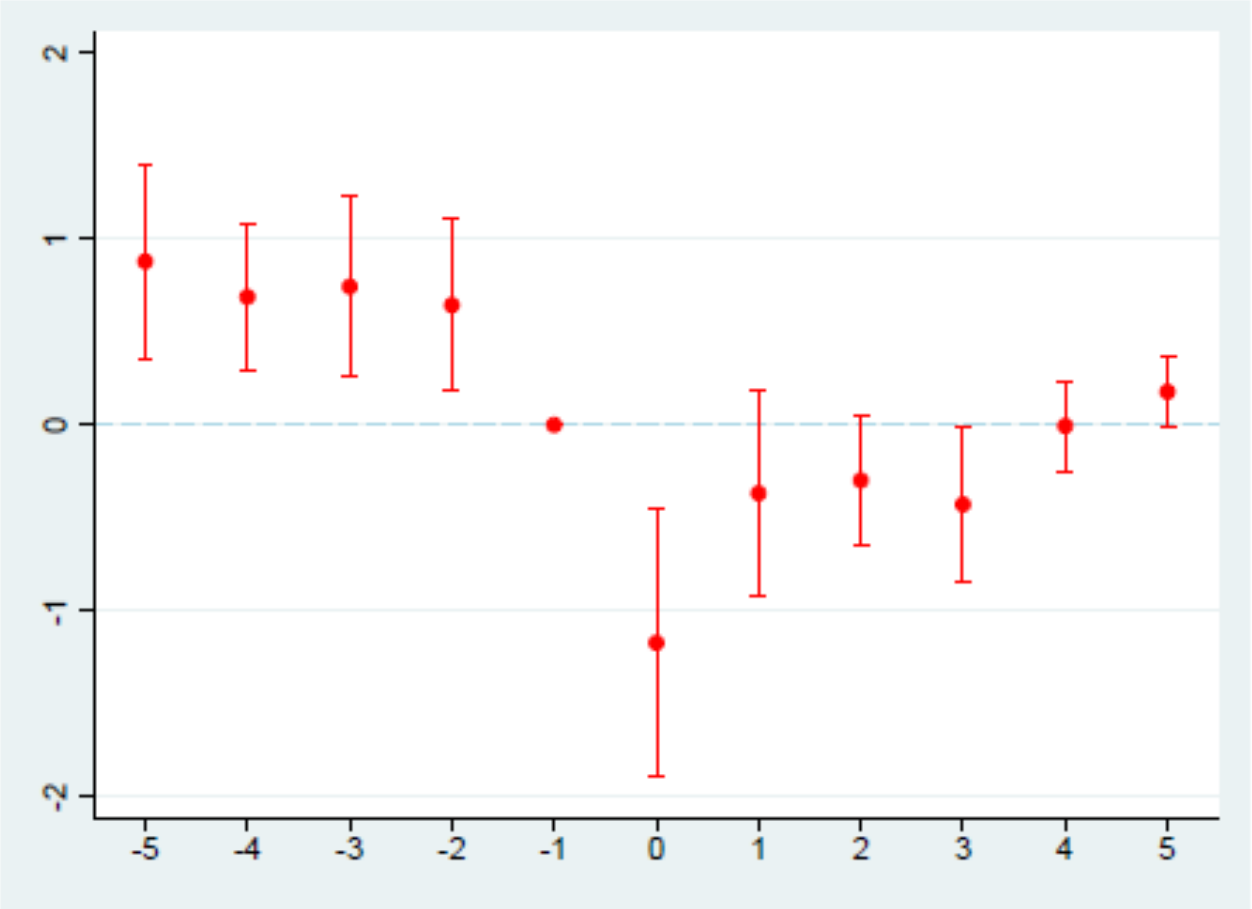
Nationalistic Labor Policies Hinder Innovation

The Question

- Do restrictions on the hiring of high-skilled foreign nationals hinder domestic firms' production of cutting-edge innovation?

- Use the Employ American Workers Act (EAWA) as a natural experiment.
  - It banned US financial institutions participating in TARP from hiring new high-skilled foreign nationals until the full repayment of TARP funding.

H1B-sponsored STEM Employment



H1B-sponsored STEM Employment

	Continuous Treatment				Discrete Treatment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EAWA	0.0400	0.0773	0.1109	0.1001	0.1238***	0.1381***	0.1771***	0.1660***
	(0.55)	(0.92)	(1.28)	(1.13)	(4.57)	(3.57)	(4.15)	(3.91)
EAWA × Treated	-1.3450***	-1.5180***	-1.5731***	-1.5739***	-0.8137***	-0.8612***	-0.8987***	-0.8981***
	(-3.34)	(-3.57)	(-3.68)	(-3.67)	(-3.67)	(-3.75)	(-3.86)	(-3.82)
Post		0.0586	0.0895	0.0783		0.0229	0.0868**	0.0758**
		(0.90)	(1.32)	(1.14)		(0.59)	(2.32)	(2.03)
Post × Treated		-0.2579	-0.4143**	-0.4123**		-0.0719	-0.2067	-0.2061
		(-1.29)	(-2.03)	(-2.01)		(-0.49)	(-1.41)	(-1.39)
$H1B_{-3} > 0$			0.2580***	0.2578***			0.2522***	0.2520***
			(3.72)	(3.70)			(3.66)	(3.64)
$STEM_{-3} > 0$			-0.2069**	-0.2078**			-0.2032**	-0.2041**
			(-2.17)	(-2.16)			(-2.12)	(-2.11)
Constant	0.2417***	0.2454***	0.2002***	0.2023***	0.2417***	0.2452***	0.2012***	0.2033***
	(55.85)	(15.73)	(7.49)	(7.46)	(54.18)	(15.48)	(7.45)	(7.42)
N	11,808	11,808	11,808	11,808	11,808	11,808	11,808	11,808
adj. R^2	0.66	0.66	0.67	0.68	0.67	0.67	0.67	0.68
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Year-Month FE	No	No	No	Yes	No	No	No	Yes

H1B-sponsored Patent Activity

	Continuous Treatment				Discrete Treatment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EAWA	0.0178	0.0192	0.0182	0.0157	0.0220	0.0274	0.0251	0.0225
	(0.93)	(1.06)	(1.01)	(0.87)	(1.03)	(1.43)	(1.31)	(1.19)
EAWA × Treated	-0.1700***	-0.1877***	-0.1849***	-0.1877***	-0.0914**	-0.1069***	-0.1035***	-0.1045***
	(-2.83)	(-3.13)	(-3.05)	(-3.07)	(-2.43)	(-3.19)	(-3.05)	(-3.06)
Post		0.0024	0.0004	-0.0010		0.0085	0.0024	0.0011
		(0.20)	(0.03)	(-0.08)		(0.95)	(0.28)	(0.12)
Post × Treated		-0.0262	-0.0067	-0.0062		-0.0235	-0.0066	-0.0064
		(-0.49)	(-0.13)	(-0.12)		(-0.88)	(-0.27)	(-0.26)
$H1B_{-3} > 0$			-0.0103	-0.0105			-0.0112	-0.0113
			(-1.20)	(-1.21)			(-1.38)	(-1.39)
$STEM_{-3} > 0$			0.0257*	0.0258*			0.0260*	0.0261*
			(1.70)	(1.70)			(1.74)	(1.74)
Constant	0.0842***	0.0851***	0.0841***	0.0844***	0.0842***	0.0851***	0.0843***	0.0847***
	(116.16)	(33.57)	(26.41)	(26.74)	(113.11)	(33.67)	(25.84)	(26.12)
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Year-Month FE	No	No	No	Yes	No	No	No	Yes
N	11,808	11,808	11,808	11,808	11,808	11,808	11,808	11,808
adj. R^2	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57

Comments

- Do we have enough categories of banks in the regression specification? It currently includes:
  - TARP banks with foreign workers, TARP banks without foreign workers, and non-TARP banks
    - Evaluated pre-EAWA, during EAWA, and post EAWA
  - Don't the non-TARP banks need to be split between those with and without foreign workers? Aren't the most important control banks those with foreign workers during the EAWA period?
- Did non-TARP, high foreign worker banks also reduce foreign hiring during the financial crisis?

Comments

- Boundaries of the firm
  - Why can't I just contract around the ban? Were banks precluded from long-term contracts with technology firms who could hire the foreign workers?
- What are the magnitudes?
  - I saw patent reduction percentages but the discussion of employment did not seem to include how many fewer workers were hired

Bank Stress Tests and Consumer Credit Markets: Credit and Real Impacts

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  - Solution: Use the surprise component of the stress test result over the previous nine quarters.

$$Capital\ GAP = min\left[(Capital\ Ratio_{BHC})_{Q_1,\ldots,Q_9}\right] - min\left[(Capital\ Ratio_{FR})_{Q_1,\ldots,Q_9}\right]$$

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- What is the impact of negative bank stress test results on credit activity?

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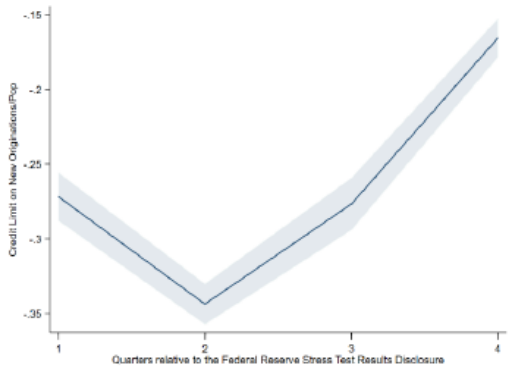
  - Solution: Use the surprise component of the stress test result over the previous nine quarters.

$$Capital\ GAP = min\left[(Capital\ Ratio_{BHC})_{Q_1,\ldots,Q_9}\right] - min\left[(Capital\ Ratio_{FR})_{Q_1,\ldots,Q_9}\right]$$

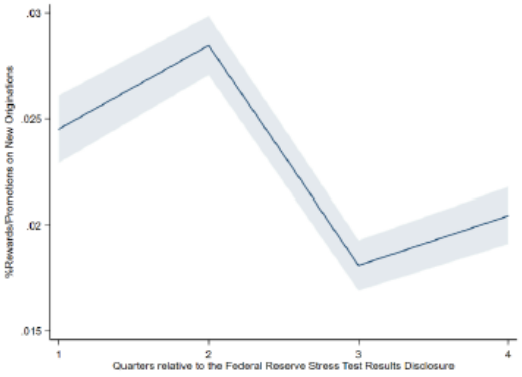
- Regress this on local credit outcomes.

Stress Test Effects on Consumer Credit Supply

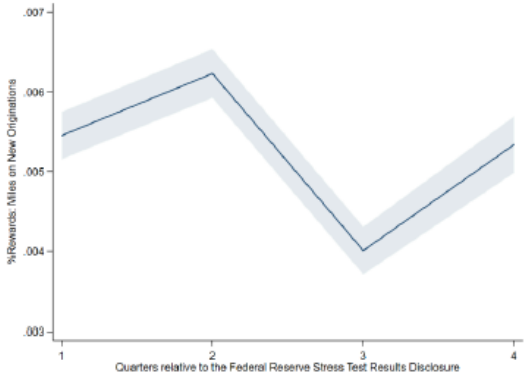
Panel A: Credit Limit/County Population



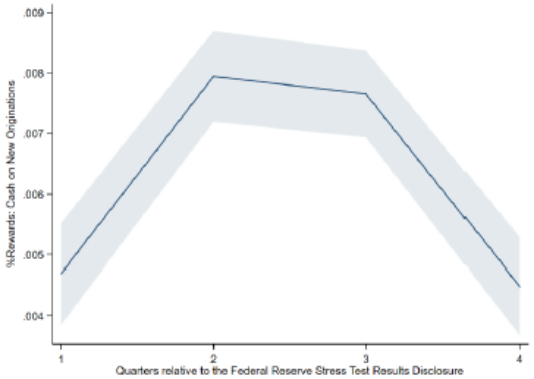
Panel B: % Rewards/Promotions



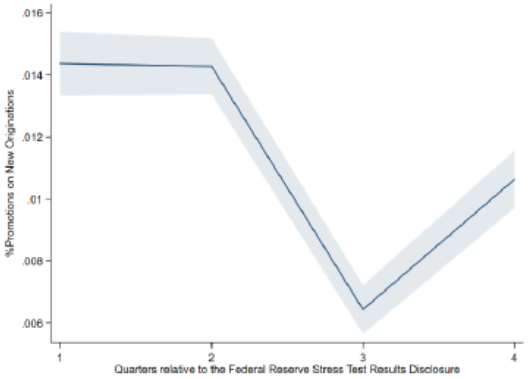
Panel C: % Rewards: Miles



Panel D: % Rewards: Cash



Panel E: % Promotions



Individual Credit Card Limits

Independent Variables:	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable = Credit Limit for New Originations					
	FICO <620	FICO [620, 680)	FICO [680, 720)	FICO [720, 760)	FICO [760, 800)	FICO ≥800
Stress Test Measures						
Tier 1 Capital GAP	-62.4610***	10.1219	-25.1247	-37.6219*	-11.6921	-60.4730**
	(17.035)	(8.907)	(15.657)	(21.587)	(25.213)	(26.900)
Consumer & Loan Characteristics	YES	YES	YES	YES	YES	YES
BHC Characteristics	YES	YES	YES	YES	YES	YES
County × Month-Year FE	YES	YES	YES	YES	YES	YES
BHC FE	YES	YES	YES	YES	YES	YES
Observations	84,103	332,761	269,774	258,159	245,882	361,361
Adj R-squared	0.288	0.345	0.282	0.302	0.313	0.365
Dependent variable mean	*745.7*	*1,961.1*	*3,947.7*	*5,993.8*	*8,291.6*	*9,636.7*

Question: Would the results be more monotonic if this were natural log of the credit limit rather than the nominal dollar value?

Questions / Comments

- Construction of the Capital GAP
  - Should it be the minimum minus the minimum or should it be the minimum difference in a particular quarter?
- Capital GAP near the threshold versus Capital GAP far from the threshold
  - Should we expect the impacts to be symmetric?
- Observations are county-bank-time, not bank-time.
  - The standard errors are clustered at the county level. Shouldn't there be clustering at the bank level since it's the same observation over and over again?