

# The Impact of Supervision on Bank Performance

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ACPR: Regulation and Systemic Risk

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# Supervision and regulation

Supervision is distinct from regulation, but the two activities are often conflated:

- **Regulation** involves defining the rules:
  - Who can own and control commercial banks
  - What are permissible activities for banks
  - Minimum operating requirements (e.g., capital and liquidity ratios)

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- **Regulation** involves defining the rules:
  - Who can own and control commercial banks
  - What are permissible activities for banks
  - Minimum operating requirements (e.g., capital and liquidity ratios)
- **Supervision** involves monitoring and enforcement:
  - Verifying compliance with rules
  - Monitoring for unsafe and unsound practices
  - Determining and overseeing remediation steps

# How does supervision affect bank outcomes?

Supervision may reduce firm risk...

- Heightened supervisory powers are associated with less risk-taking and increased operating efficiency in cross-country studies (Barth et al. (2013), Chortareas et al. (2012) and Klomp and Hahn (2012))
- Scheduled exams and enforcement actions result in lower bank risk (Agarwal et al. (2014), Rezende and Wu (2014), Deli and Staikouras (2011))

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- Scheduled exams and enforcement actions result in lower bank risk (Agarwal et al. (2014), Rezende and Wu (2014), Deli and Staikouras (2011))

...but at the expense of growth?

- Tougher supervisory standards are associated with slower loan growth (Bassett et al. 2012, Berger et al. 1998, Peek and Rosengren 1995, Swindle 1995)

# Our contribution

## What is the impact of supervisory attention?

- ① Encompass traditional and modern supervisory activities
- ② Novel identification strategy:
  - Variation in supervision under a common regulatory regime
  - Overcome endogeneity of supervision and performance

# Supervision is composed of many activities

Traditional activities backward-looking:

- Monitor for compliance with statutes
- Verify asset quality via exams
- Issue formal enforcement actions

Modern, prudential supervision is more forward-looking:

- Risk-management practices
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⇒ **We focus on supervisory attention to capture the totality of supervisory efforts**



# Overcoming endogeneity

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- Our solution:
  - Supervision of Bank Holding Companies (BHCs) in the U. S. is delegated to local Reserve Banks
  - 12 Reserve Bank districts based on regional banking centers as of 1913
  - Location of BHC headquarters determines supervisory assignment

**Identifying Assumption: Ceteris paribus, the largest institutions in a District receive additional supervisory attention**

# What do we do?

- ① Use confidential data on supervisors' hours to validate identification assumption (2006Q1-2014Q4)
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  - The largest banks in a district receive more supervisor hours than similar banks elsewhere
- ② Compare outcomes for top ranked banks in a District to similar banks elsewhere:
  - Better performing loans and similar provisioning behavior
  - Less volatile earnings
  - Less volatile market returns

# Outline

- 1 Background
- 2 Empirical Strategy
- 3 Results
- 4 Conclusion

# Topic

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# What is supervision? How is it organized in the Federal Reserve System?

- What are the objectives?
- How do supervisors interact with supervised firms?
- What tools do supervisors have to change behavior?

Based on *Supervising Large Complex Financial Institutions: What do Supervisors Do?* Eisenbach, Haughwought, Kovner, Lucca, and Plosser (2016)

## Goals of Supervision: In the Fed's own words

*Through its supervision, the Federal Reserve **promotes a safe, sound, and stable banking system** that supports the growth and stability of the U.S. economy.*

– Board of Governors, Dodd-Frank Act Stress Test 2015: Supervisory Stress Test Methodology and Results. (March 2015)

*The objectives of supervision are **to evaluate, and to promote, the overall safety and soundness of supervised institutions** (micro-prudential supervision), the stability of the financial system (macro-prudential supervision), and compliance with relevant laws and regulations.*

– Federal Reserve Bank of New York website (accessed October 2014)

*The Federal Reserves consolidated supervision activities closely complement its other central bank responsibilities, including the objectives of **fostering financial stability and deterring or managing crises.***

– Board of Governors, "Bank Holding Company Supervision Manual." (January 2015)



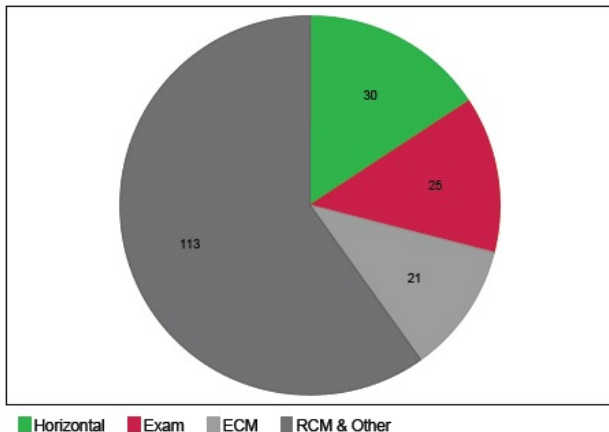
## “Safety and soundness”

- Not hard-coded in regulation – developed by supervisory institutions and communicated to supervisors
  - Supervisor manuals and training
  - Supervision and Regulation Letters (SR Letters)
- Role for judgment in combination with data
  - Cross-firm comparisons
  - Multidisciplinary
- Trade-off between flexibility and predictability
  - Can adjust to new practices and financial products
  - But desire for firms to have reasonable expectations

# What do supervisors do?

- Continuous monitoring:
  - Meet with senior management, business lines, risk departments, boards
  - Review internal reports (risk, performance, budget, strategy)
  - Conduct independent analysis
- Enhanced continuous monitoring (e.g. examinations)
  - Deeper dives into particular areas of concern
  - Can be intended to fill a knowledge gap, assess controls, or identify weaknesses
  - Can focus on an individual firm or a several firms
- On-going programs for the large, complex firms:
  - Comprehensive Capital/Liquidity Analysis and Review (CCAR/CLAR)
  - Supervisory Assessment of Recovery and Resolution (SRP)

# How do NY Fed supervisors spend their time?



Source: Federal Reserve Bank of New York internal supervisory hours allocation data.

Notes: "Horizontal" includes cross-firm programs such as the Comprehensive Capital Analysis and Review (CCAR) and Comprehensive Liquidity Analysis Review (CLAR). "Exam" refers to nonhorizontal examination activities.

ECM is enhanced continuous monitoring; RCM and other is regular continuous monitoring and all other activities (including non-supervisory ones). LISCC is Large Institution Supervision Coordinating Committee.

## Enforcement and other supervisory actions

- Require firms to address unsafe or unsound practices, violations of law
- From mildest to strongest:
  - Memorandum Requiring Immediate Attention (MRA, MRIA) (confidential)
  - Memorandum of Understanding (MOU), 4(m) agreements (confidential)
  - Formal actions: Written agreements, cease and desist orders, fines (public)
- Actions outline a timeline for remediation
- BHC ratings (confidential) and stress-testing (CCAR) can also limit activities

# Takeaways

- What are the objectives?  
→ **More than regulations – “safety and soundness”**
- How do supervisors interact with supervised firms?  
→ **Beyond exams – primarily through less formal interactions**
- What tools do supervisors have to change behavior?  
→ **Many tools – most prolific are unobserved**

# Topic

① Background

② Empirical Strategy

③ Results

④ Conclusion

# Validating our empirical strategy

## **Identifying Assumption: Ceteris paribus, the largest institutions in a District receive additional supervisory attention**

- ① Verify size distribution varies across districts
- ② Proxy for supervisory attention and test
- ③ Consider other confounding factors correlated with district rank

# Size distribution across districts

Fed District	Assets by Size Rank (\$bn)						Median	
	1st	2nd	3rd	4th	5th	6th-10th	Assets	N
1	274.1	133.0	118.4	22.5	9.5	6.2	1.1	82
2	2573.1	1842.5	856.3	801.5	515.6	291.3	3.2	92
3	248.1	115.9	25.0	18.7	17.1	6.2	1.0	61
4	345.2	138.7	93.9	66.3	24.9	10.0	1.0	56
5	2106.8	309.1	186.8	30.1	12.3	5.8	1.0	89
6	190.4	119.9	27.1	24.3	21.6	15.2	0.9	136
7	151.8	109.9	83.1	26.8	20.0	11.4	1.0	157
8	25.7	24.0	15.0	13.3	11.6	7.9	0.9	98
9	402.5	19.4	9.2	8.6	8.3	2.6	0.9	63
10	29.1	24.0	17.5	17.5	14.5	7.7	0.9	89
11	130.4	83.2	69.5	28.3	21.5	10.6	1.2	100
12	1687.2	154.6	89.8	57.2	39.4	27.9	1.5	98



## Proxy for attention: Supervisor time use

- Confidential data on Federal Reserve supervisor hours
  - Supervision personnel are required to self-report time use
  - When applicable they indicate time spent directly supervising a particular institution
- Quarterly panel, aggregated to the parent BHC
  - Sample period: 2006Q1-2014Q4
  - Hours are reported for 60% of BHCs and 96% of assets
  - Linked with consolidated financials from Y-9Cs (BHC filings)

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  - Sample period: 2006Q1-2014Q4
  - Hours are reported for 60% of BHCs and 96% of assets
  - Linked with consolidated financials from Y-9Cs (BHC filings)
- Potential Issues
  - Reporting standards might vary across districts
  - Certain subsidiaries demand more attention from the Fed
  - Does not account for quality of supervision

# Do highly ranked banks receive more hours?

Panel regression indexed by BHC,  $i$ , and quarter,  $t$ ,

$$\ln(hours_{it}) = \beta Top_{it} + \mathbf{\Pi}_{it} + \Gamma Controls_{it} + \varepsilon_{it}$$

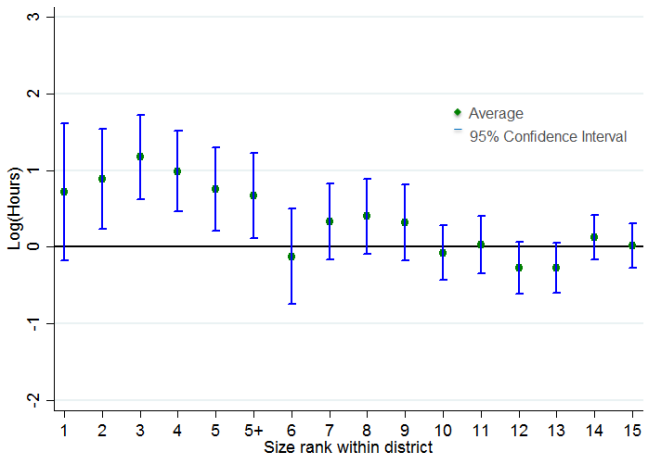
- $Top$  is an indicator for being top-ranked (e.g. top five) in a district
- $\mathbf{\Pi}$  are district-quarter fixed effects
- Controls:
  - Size and complexity: assets, number of legal entities
  - Bank type: State member banks, national banks, public
  - Balance sheets: Loans/Assets, Deposits/Liabilities, HHI of assets
- Sample includes above median BHCs (excl. foreign held and banks with atypical business models)

# OLS: Log(hours) on rank

ln(hours)	(1)	(2)	(3)	(4)	(5)
Top Five	3.492*** (18.12)	0.818*** (3.51)	0.725*** (4.05)	0.730*** (4.07)	
Top Five Plus					0.730*** (4.26)
log(Assets)		2.244*** (3.14)	1.389** (2.22)	1.426** (2.31)	1.214* (1.96)
log(Assets) Squared		-0.049** (-2.21)	-0.020 (-0.99)	-0.021 (-1.06)	-0.015 (-0.74)
log(Entities)		0.427*** (4.34)	0.423*** (5.64)	0.421*** (5.95)	0.418*** (5.92)
Bank Type Controls			+	+	+
Balance Sheet Controls				+	+
Observations	14955	14955	14908	14908	14908
District-Quarter FE	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.07	0.22	0.31	0.51	0.52

Note: Contains results from regressions of log of supervisory hours on a dummy indicating Top 5 or Top 5+ (Top size-rank in a district and controls). Bank Type Controls: Asset share for SMBs >\$10bn, SMBs <\$10bn, and National Banks. Balance Sheet Controls: Loans/Assets, Deposits/Liabilities, and HHI of assets. Each regression includes district-quarter fixed effects. Observations are BHC-quarters from 2006Q1 to 2014Q4. Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# Average log hours by district size rank



Note: Log(hours) on the y-axis are the residuals from a regression of log of supervisory hours on district-time fixed effects, controls for bank characteristics, the log of assets and the log of assets squared. Size rank is determined by book asset size within a district-quarter. Points reflect the average residual for a rank and brackets designate the 95% confidence interval.

# Robustness

In(hours)	(1)	No Large (2)	No D2 (3)	(4)	No Large (5)	No D2 (6)
Top Five	0.698*** (3.77)	0.594*** (3.08)	0.729*** (4.07)			
Top Five Plus				0.700*** (3.87)	0.600*** (3.23)	0.725*** (4.16)
Top Fifteen	0.149 (1.02)	0.151 (1.05)	0.084 (0.56)	0.096 (0.65)	0.103 (0.71)	0.029 (0.19)
Size Controls	+	+	+	+	+	+
Bank Type Controls	+	+	+	+	+	+
Balance Sheet Controls	+	+	+	+	+	+
Observations	14908	14762	14049	14908	14744	14049
District-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.52	0.50	0.52	0.52	0.50	0.52

Note: Contains results from regressions of log of supervisory hours on a dummy indicating Top 5 or Top 5+ (Top) size-rank in a district and controls. Columns 2 and 4 exclude banks that are larger than the largest non-Top Five BHC. Columns 3 and 6 exclude District 2 BHCs. Bank Type Controls: Asset share for SMBs >\$10bn, SMBs <\$10bn, and National Banks. Balance Sheet Controls: Loans/Assets, Deposits/Liabilities, and HHI of assets. Each regression includes district-quarter fixed effects. Observations are BHC-quarters from 2006Q1 to 2014Q4. Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# Confounding factors?

Identification rests on the assumption that rank is exogenous

- Do banks opportunistically move HQs?
  - Headquarter locations are persistent
  - From 1991 to 2014, 353 unique BHCs appear in the top 10 but only 5 move districts (less than 2%)

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  - Results suggest otherwise



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- Do top-ranked banks have market power?
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  - Controlling for market share does not alter findings
- Higher rank correlated with forbearance/capture?
  - Forbearance or capture will bias away from finding effects

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# Assessing the impact of supervisory attention

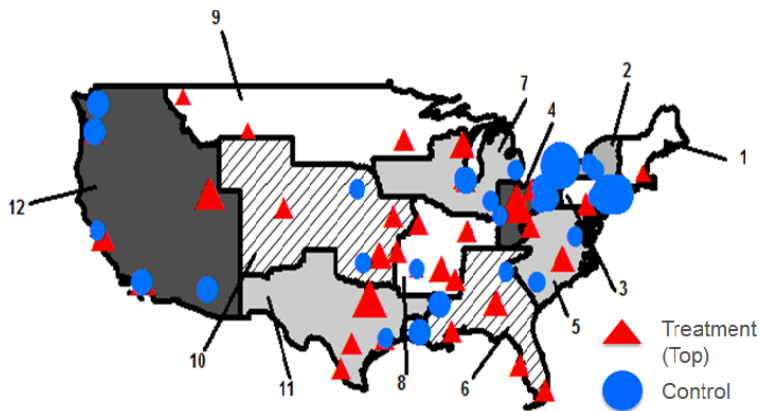
- ① Match top-ranked banks to non-top banks in another district
  - Two nearest neighbors
  - Keep only common support
- ② Estimate impact on bank outcomes, 1991-2014
  - Risk/Return (accounting and market)
  - 'Discretionary' behavior
- ③ Use 2SLS to consider magnitudes, 2006-2014

## Matched panel: 1991Q1-2014Q4

Control Variables	Top Five +			Matches			$\Delta$ Means	<i>p</i> -value
	Mean	SD	N	Mean	SD	N		
Log of Assets	16.07	0.86	3,027	16.10	0.89	6,054	-0.03	0.77
Log of Entities	3.14	0.81	3,027	3.19	0.88	6,054	-0.06	0.59
% SMB (> \$10B)	5.94	22.88	3,027	4.88	20.84	6,054	1.05	0.67
% SMB ( $\leq$ \$10B)	7.16	22.17	3,027	9.14	25.03	6,054	-1.98	0.53
% Nat. Bank	40.34	44.02	3,027	40.11	44.75	6,054	0.24	0.97
% Loans/Assets	61.29	12.63	3,027	62.00	10.82	6,054	-0.71	0.66
% Deposits/Liab.	83.81	9.25	3,027	83.29	10.01	6,054	0.52	0.70
HHI of Assets	0.19	0.07	3,027	0.18	0.08	6,054	0	0.88
Public Indicator	0.83	0.37	3,027	0.84	0.36	6,054	-0.01	0.85
Rank	4.28	1.72	3,027	10.61	5.51	6,054	-6.33***	0.00

Note: % SMB is the percentage of assets held in state member banks. % Nat. Bank is the percentage of assets held in a national bank. Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# Matches are dispersed



Note: Illustrates the HQ location of Top banks and their matches in 2014Q1. Shapes are sized based on total assets where the categories are in billions of dollars. Size rank is determined by book asset size within a district-quarter. Top includes the top 5 banks plus any additional banks within 25% of the book assets of the 5th largest bank. Numbers indicate Federal Reserve Districts.

# Match example

Ticker

Headquarters

District

Rank

Assets (2014)

Branches



WBS

Waterbury, CT

1 (Boston)

4

\$24bn

CT, MA, RI, NY



First Midwest Bankcorp

FMBI

Itasca, IL

7 (Chicago)

8

\$24bn

IN, IA, IL



F.N.B. Corporation

FNB

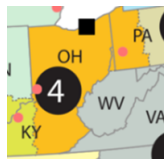
Pittsburgh, PA

4 (Cleveland)

6

\$24bn

PA, OH, MD, WV



# Estimate impact on bank outcomes, 1991-2014

Panel regression of outcomes on proxy for supervisory attention in matched sample:

$$Y_{ijt} = \beta Top_{ijt} + \alpha_{ijt} (+ \mathbf{\Pi}_{it}) + \varepsilon_{ijt}$$

- $Y_{ijt}$  is bank  $i$ 's outcome at time  $t$
- $\alpha_{ijt}$  is a fixed effect for a treatment observation and its matches
  - $j$  indexes treatment BHC match groups (treated BHCs  $i=j$ )
- $\beta$  is the estimated treatment effect



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  - $j$  indexes treatment BHC match groups (treated BHCs  $i=j$ )
- $\beta$  is the estimated treatment effect
- Alternative specification controls for district-quarter FE ( $\mathbf{\Pi}$ )
  - Match all top 15 banks to similar banks elsewhere
  - $\beta$  estimates within district variation in outcomes (DiD)

# Bank outcomes: Risk and return measures

## Balance sheet:

- Capital ratios
- Non-performing loans (NPL)
- Loan loss reserves (LLR)
- Asset growth

## Income statement:

- Level and volatility of return on assets
- Z-Score (distance to default)

## Market:

- Market/Book
- Level and volatility of returns
- Left tail events

# Balance sheet results

Dep. Variable	Excl. D-Q FE		Incl. D-Q FE		Sample
	$\hat{\beta}$	$p$ -value	$\hat{\beta}$	$p$ -value	Mean
% of RWA/Assets	0.18	0.92	-0.613	0.65	71.3
Tier 1 Ratio (%)	-0.47	0.29	-0.221	0.52	12.5
% of NPL	-0.34*	0.08	-0.236**	0.05	1.5
SD of NPL/Loans	-0.120**	0.03	-0.123***	0.00	0.4
% of Loan Loss Res.	0.01	0.88	-0.065	0.25	1.7
SD of LLR/Loans	-0.01	0.51	-0.010	0.45	0.2
% Asset growth (YoY)	0.510	0.58	-0.495	0.54	11.1

Note: SD of accounting based measures based on 8Qs forward. The Z-score is accounting based measure of distance to default. Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# Income results

Dep. Variable	Excl. D-Q FE		Incl. D-Q FE		Sample
	$\hat{\beta}$	<i>p</i> -value	$\hat{\beta}$	<i>p</i> -value	Mean
ROA	0.06	0.35	-0.019	0.65	0.9
SD of ROA	-0.22**	0.01	-0.164**	0.01	0.5
Sharpe Ratio of ROA	1.54**	0.04	1.354**	0.02	7.3
Log Z-Score	0.28**	0.03	0.228**	0.02	3.8

Note: SD of accounting based measures based on 8Qs forward. Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# Market results

Dep. Variable	Excl. D-Q FE		Incl. D-Q FE		Sample
	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value	Mean
Market Cap/Equity	0.09	0.34	0.153***	0.00	1.64
Quarterly Excess Return %	0.50	0.27	0.005	0.31	0.85
SD of Daily Return	-0.001	0.41	-0.002**	0.01	0.02
Sharpe Ratio (Daily)	0.006	0.23	0.002	0.55	0.04
Bottom Return Decile	-0.03**	0.04	-0.031*	0.07	0.10

Note: Excess return based on Fama-French 3 Factor model. Standard errors are clustered by BHC. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

# Takeaways

## Balance Sheet:

- Similar loan provisioning and growth
- Less risky and less volatile loan performance
- Greater conservatism effectively increases ability to weather losses

## Income Statement:

- Similar ROA
- But less volatile earnings and greater distance from default

## Market:

- Lower likelihood of a severely negative return
- Some evidence of less volatile returns and higher M/B

# Volatility and discretionary accounting

Dep. Variable	Excl. D-Q FE		Incl. D-Q FE		Sample Mean
	$\hat{\beta}$	$p$ -value	$\hat{\beta}$	$p$ -value	
<b>Earnings Volatility</b>					
SD NIM/Assets	-0.01*	0.07	-0.007**	0.04	0.05
SD Nonint. Inc./Assets	-0.01	0.29	-0.017**	0.02	0.06
SD Loan Loss Prov./Assets	-0.01	0.12	-0.011*	0.10	0.07
SD NIE (less Comp & FA)/Assets	-0.01	0.30	-0.007	0.47	0.07
<b>Discretion</b>					
Disc. %LLP	-0.01	0.28	-0.010***	0.01	0.06
Disc. Security Gains	0.00**	0.04	-0.002	0.15	0.01
Discretionary Earnings	0.17	0.12	-0.000	0.90	0.00
Disc. Earnings	0.00	1.00	-0.005**	0.04	0.04

Note: Discretionary LLP modeled as the residual from a regression of LLP% on NPLs, district-quarter fixed effects, the change in NPLs, and the change in NCOs. Discretionary security gains are the residuals from a regression of security gains/(losses) to assets on quarter fixed effects and unrealized gains/(losses) on AFS securities to assets. Discretionary earnings sum these measures (normalized by assets). Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## Estimate impact on bank outcomes, 2006-2014

2SLS of outcomes on proxy for supervisory attention:

$$Y_{it} = \beta \ln(\widehat{hours}_{it}) + \mathbf{\Pi}_{it} + \varepsilon_{it}$$

- $Y_{it}$  is bank  $i$ 's outcome at time  $t$
- First stage regress hours on top-rank indicator
- $\mathbf{\Pi}$  are district-quarter fixed effects
- Controls as before: Size, complexity, bank type, balance sheets
- Sample is above median BHCs on common size support



## 2SLS results

Dep. Variable	$\hat{\beta}$	SE	N	F-Stat	Samp. Mean
<b>Balance Sheet</b>					
% of RWA/Assets	0.786	(1.374)	14,709	18.19	73.4
Tier 1 Ratio	-0.935*	(0.541)	14,713	19.39	12.7
% of NPL	-0.847**	(0.409)	14,663	19.25	2.3
SD of NPL/Loans	-0.291*	(0.153)	11,889	16.91	0.8
% of Loan Loss Reserves	-0.052	(0.126)	14,767	19.17	1.7
SD of Loan Loss Reserves/Loans	-0.054	(0.042)	11,874	16.31	0.2
% Asset growth (YoY)	-1.230	(1.424)	14,498	19.40	7.5
<b>Earnings</b>					
ROA	0.073	(0.140)	14,676	19.02	0.6
SD of ROA	-0.479*	(0.256)	11,858	14.67	0.8
Sharpe Ratio of ROA	2.197*	(1.316)	11,825	15.18	4.1
Log Z-Score	0.589*	(0.341)	11,698	15.00	3.3
<b>Market</b>					
Market Cap/Equity	-0.094	(0.091)	7,970	17.67	1.21
Quarterly Excess Return %	-0.003	(0.80)	7,697	19.72	(1.44)
SD of Daily Return	-0.001	(0.001)	7,851	18.33	0.03
Sharpe Ratio	-0.005	(0.005)	8,004	17.90	0.02
Bottom Return Decile	-0.002	(0.021)	7,869	19.65	0.11

Note: Contains results 2SLS where log of supervisory hours is instrumented using Top 5+ indicator. Regressions include district-quarter FE. Bank Type Controls: Asset share for SMBs >\$10bn, SMBs <\$10bn, and National Banks. Balance Sheet Controls: Loans/Assets, Deposits/Liabilities, and HHI of assets. Each regression includes district-quarter fixed effects. Observations are BHC-quarters from 2006Q1 to 2014Q4. Standard errors are clustered by BHC. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# Impact of doubling hours

	Matched '01-'14		'06-'14
	Incl. FE	Excl. FE	2SLS
% NPL	-22%	-16%	-26%
% Loan Loss Res.	1%	-4%	-2%
ROA	6%	-2%	9%
SD of ROA	-47%	-35%	-41%
SD Returns	-5%	-9%	-3%
Bottom Return Decile	-31%	-32%	-1%

Note: Contains percent impact on variable for a doubling of supervisory hours (0.7 change in Ins). Blue shading indicates underlying coefficients are statistically significant.

## Other findings

Any differences in supervisory actions?

- Increased attention results in more closed MRA/MRIAs, but no difference in stock of outstanding issues
- No difference in supervisory rating

Did supervision drive risk off balance sheet?

- No evidence of greater securitization, slight increase in unused commitments

Are these effects cyclical?

- Coefficients appear to be stable across business cycles

Is there an impact on bank governance?

- Difficult to measure, statistically weak evidence that top-ranked firms have a Chief Risk Officer

# Topic

① Background

② Empirical Strategy

③ Results

④ Conclusion

# Final thoughts

Results suggest that greater supervisory attention:

- Lowers earnings volatility
  - Reflects less variable loan losses and income
- All else equal, more conservative accounting increases loss-bearing capacity
- Suggestive evidence that market measures are less volatile with a commensurate trade-off in market returns

# Final thoughts

Results suggest that greater supervisory attention:

- Lowers earnings volatility
  - Reflects less variable loan losses and income
- All else equal, more conservative accounting increases loss-bearing capacity
- Suggestive evidence that market measures are less volatile with a commensurate trade-off in market returns

Caveats:

- Does not speak to the efficiency of supervision – is this worth it?
- Open question as to which specific measures accomplish these tasks