Impact of Audit on Bank Failure Probability

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Research Question

- **Does the type of audit affect the probability of bank failure?**
- External audits provide oversight function for banks beyond regulatory scrutiny
- Interest in the role of auditing in preventing bank failures escalated in late 1980's
- Focus on two audit variables:
  - Traditional audit vs. other assurance types for banks under $500M
  - Integrated vs. financial statement-only audits for banks between $500M and $1B

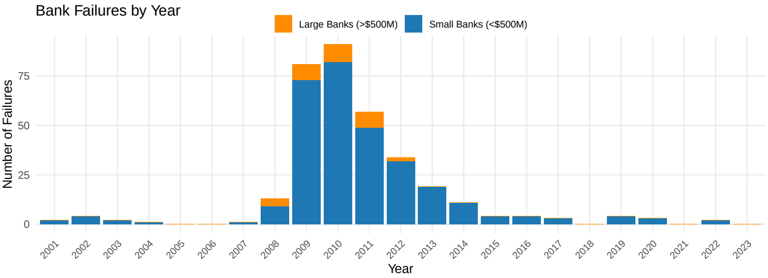
Significance

- Audit creates:
  - Possible operational efficiencies (Barton, Hodder, & Shepardson, 2025)
  - Additional layer of oversight to compensate for managerial loss of control (Abdel-Khalik, 1993)
  - Potential early warning signal for bank distress (Jin, Kanagaretnam, & Lobo, 2013)
- Banking system stability is crucial to economic health
- Regulatory implications for audit requirements in banking (ICBA, 2025)

Data Sources

- **FDIC Call Reports**: Quarterly financial data for US banks (2000-2023)
- **Audit Type Data**: RCON6724 from March Call Report (indicates audit type for previous year)
- **FDIC Failed Bank List**: Historical record of bank failures (available from 2001 on FDIC website)

Bank Failures by Year



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- Financial crisis (2008-2010) shows **significant spike** in failures
- Small banks (<$500M) experienced disproportionate failure rates
- Recent years show relatively few failures in this sample, possibly due to regulatory easing during the covid pandemic.

Key Variables

Variable	Description
Failurep1	Bank failure in t+1 period (binary)
audit	Received any kind of audit (binary)
integrated	Received integrated audit only (binary)(only avilable post-2016)
fsonly	Received financial statement-only audit (binary)(only avaiable post-20
size	Log of total assets
charge-offs	Net charge-offs to total loans ratio
npa	Non-performing assets ratio
comre	Commercial real estate concentration
mortgage	Mortgage concentration
c&i	Commercial and industrial concentration
consumer	Consumer concentration
capital	Tier 1 capital ratio
all	Allowance for loan and lease losses to total loans ratio
br_ratio	Brokered deposits ratio
subchapterS	Subchapter S bank (binary)

Logit Regression Model

- **Binary outcome variable**: Bank failure in period t+1
- **Key predictor variables**: Audit type indicators (audit, integrated, fsonly)
- **Controls**: Asset size, loan portfolio composition and health ratios, capital ratios, etc.

Model Specification

$$Pr(Failure_{i,t+1}) = \beta_0 + \beta_1 Audit_{i,t} + \beta_2 Size_{i,t} + \beta_3 Controls_{i,t} + \gamma_t + \delta_j + \epsilon_{i,t}$$

Where:

- γ_t represents year fixed effects
- δ_j represents Federal Reserve district fixed effects

Regression Results

Table 2: Logit Regression Results (Coefficients)

Variable	Small Banks (<$500M)	Large Banks ($500M-$1B)
Audit	-0.563**	
Integrated Audit		-.290
Size	-0.414***	-1.386*
Charge-offs	-0.307+	25.825*
NPA	13.830***	22.942**
Comre	-1.259+	-1.467
Mortgage	1.005	-2.479**
Comind	.452	5.341*
Cons	-7.123***	-6.1**
Capital	-59.283***	-17.520
ALL	7.042	51.287+
Brokered Deposits	2.008**	-2.628
Subchapter S	-.182	-.922
Observations	*102,522*	*8,555*
Pseudo R^2	*0.575*	*0.267*
Year FE	*Yes*	*Yes*

Key Findings

- Traditional audits associated with **lower failure probability** for all banks < $500M in assets
- For the 2017 - 2022 sample, integrated audits show **no significant association** with failure
- Integrated audit sample suffers from lower # of observations and economic issues which may distort results
- Control variables align with prior banking literature expectations (Jin, et al., 2013a; Beck, Nicoletti, & Stuber, 2022)

What Did We Learn?

- **Audit reduces probability of bank failure** : Having an audit is associated with a decrease in the probability for faulure in banks $<$ \$500M in assets
- **Integrated audit effectiveness inconclusive**: Problems with the data or with the model may have distorted the results
- Banks voluntarily choosing to be audited may have better governance, which may introduce an omitted variable that is difficult to proxy

Implications

- **Policy considerations**: Proposed change of regulatory threshold for integrated audit to $5B may have little effect on bank failure
- **Early warning signals**: Audit type transitions may signal changing risk profiles
- **Future research**: Considering changes to the integrated audit model to account for economic effects and other omitted variables

References

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