Forecasting Bank Failures and the Resolution of Failed Banks

- Modeling and forecasting the default process of banks has long toped the research agenda both of academics, regulatory and supervisory authorities.
- This comes as no surprise given the special nature of the banking sector, and also the vast direct and indirect costs pertinent to bank failures.
- Therefore scrutinizing the default process is crucial for avoiding it when possible but also minimizing its subsequent costs when unavoidable.

Econometric methodologies

- The first, employs binary choice techniques (probit, logit) to model the dichotomous dependent variable that categorizes banks between default and non-default categories (Martin, 1977; Bovenzi et al., 1983; Espahbodi, 1991; Thomson, 1991; Cole and Gunther, 1998; Estrella et al., 2000; Kolari et al., 2002; Arena 2008).
- The second adopts survival analysis (hazard function) in order to assess the instantaneous default rate as well as the time until a bank failure occurs (Lane et al., 1986; Whalen 1991; Cole and Gunther, 1995).

CAMEL Factors

- Such models are not restricted by the input of predetermined predictive variables inherent to the use the relevant model.
- This implies that these models can contain all variables which are on beforehand expected to be of significant relevance.
- Researchers typically start out with either a vast number of predictive variables that proxy all risk factors that are expected to be of significant relevance or select a small set of predictive variables that were found to be of significant relevance in earlier empirical research on bank failures.
- By and large, the extant literature has focused on modeling default at the bank level with the so-called CAMEL taxonomy being the workhorse for selecting default 'predictors'. CAMEL is the acronym for **C**apital Adequacy, **A**sset Quality, **M**anagement, **E**arnings, and **L**iquidity, which refers to the five components of the regulatory rating system implemented during on-site exams (Cole and Gunther, 1998).

- the Federal Reserve System, the Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of the Currency (OCC), developed a numerical CAMEL rating system on which they based the frequency of their on-site examinations. Whereas banks with a sound CAMEL rating were examined every 18 months, problem banks with lower CAMEL ratings were examined more frequently
- In evaluating the financial performance and condition of banks, regulators use a combination of on-site examinations and off-site surveillance systems.
- During an on-site exam, regulators visit a bank's offices to evaluate its financial soundness and compliance with laws and regulatory policies, to assess the quality of its management team, and to evaluate its systems of internal control.
- Based on the findings of the exam, regulators assign the bank a composite rating, known by the acronym CAMEL

- Regulators use the information obtained through on-site exams to rate the five components of bank performance included in the CAMEL rating system on a scale of 1 to 5 as follows:
- 1: strong performance;
- 2: satisfactory performance;
- 3: performance that is flawed to some degree;
- 4: marginal performance that is significantly below average; and
- 5: unsatisfactory performance that is critically deficient and in need of immediate remedial action.

- Once the five component ratings have been assigned, a composite, or overall rating is derived, again on a scale from 1 to 5.
- 1: an institution that is **basically sound in every respect**;
- 2: an institution that is **fundamentally sound but has modest weaknesses**;
- 3: an institution with financial, operational, or compliance **weaknesses** that **give cause for supervisory concern**;
- 4: an institution with **serious financial weaknesses that could impair future viability**; and
- 5: an institution with **critical financial weaknesses that render the probability of failure extremely high in the near term**.

A list of the most widely used CAMEL proxies

Proxy for CAMEL factor	CAMEL -1	CAMEL-2	CAMEL-3
C	Equity / risk weighted assets (-)	Core capital ratio (-)	Total risk capital / risk weighted assets (-)
A	Loan loss provisions / risk weighted assets (+)	Non-performing loans / risk weighted assets (+)	Assets 30-89 days past due / risk weighted assets (+)
M	Inefficiency ratio (+)	Inefficiency ratio (+)	Inefficiency ratio (+)
E	Earnings coverage / net charge-offs (-)	Cost of earning assets (+)	Earnings coverage / net charge-offs (-)
L	Brokered deposits / risk weighted assets (+)	Brokered deposits / risk weighted assets (+)	Brokered deposits / risk weighted assets (+)
Off-balance sheet	Derivatives / risk weighted assets (+)	Derivatives / risk weighted assets (+)	Derivatives / risk weighted assets (+)

Resolution process

- The **resolution process** involves valuing a failing (federally) insured depository institution, marketing it, soliciting and accepting bids for the sale of the institution, determining which bid is least costly to the insurance fund, and working with the acquiring institution(s) through the closing process (or ensuring the payment of insured deposits in the event there is no acquirer).
- The **receivership process** involves performing the closing function at the failed bank or thrift; liquidating any remaining failed institution assets; and distributing any proceeds of the liquidation to the FDIC, to the failed institution's customers who had uninsured deposit amounts, to general creditors, and to those with approved claims.

- Protecting insured deposits in the event of a bank or thrift failure is one of the Federal Deposit Insurance Corporation’s (FDIC) most critical roles.
- When an insured depository institution is about to fail, the FDIC takes immediate action to resolve it. Any resolution process should be performed quickly and smoothly.
- In the case of a **small bank or thrift**, swift resolution **minimizes disruption to the local community**.
- In the case of a **very large institution**, a failure can have **national economic implications**, and speed in resolving the problem is critical.

The basic resolution methods for failing institutions

- A **purchase and assumption (P&A) transaction** is a closed institution transaction in which a healthy institution (generally referred to as either the acquirer or the “assuming” bank or thrift) **purchases some or all of the assets** of a failed bank or thrift and **assumes some or all of the liabilities**, including all insured deposits.
- Occasionally, an acquirer may receive assistance from the FDIC as insurer to complete the transaction. As a part of the P&A transaction, the acquirer usually pays a premium to the FDIC for the assumed deposits, which decreases the total resolution cost.

- In a **deposit payoff,** as soon as the appropriate chartering authority closes the bank or thrift, the FDIC is appointed receiver.
- The FDIC as insurer **pays all** of the failed institution's **depositors with insured funds** the full amount of their insured deposits.
- Depositors with **uninsured funds and other general creditors** (such as suppliers and service providers) of the failed institution do not receive either immediate or full reimbursement; instead, the FDIC as receiver issues them receivership certificates.
- A receivership certificate entitles its holder to a portion of the receiver's collections on the failed institution's assets.

- In an **open bank assistance (OBA) transaction**, the FDIC as insurer **provides financial assistance** to an operating insured bank or thrift determined to be in danger of failing. The FDIC can make loans to, purchase the assets of, or place deposits in a troubled institution.
- Where possible, an assisted institution is expected to repay its assistance loan
- Due to restrictions imposed under the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 and under The Resolution Trust Corporation Completion Act of 1993 which amended the Federal Deposit Insurance Act of 1950, OBA **is no longer a commonly used resolution method**

Timeline

- a bank or thrift institution must obtain a charter from a recognized chartering authority in order to obtain federal deposit insurance and do business.
- The chartering authority typically **closes an institution** when **the institution becomes insolvent**, **critically undercapitalized**, or **unable to meet requests for deposit withdrawals**
- Although the FDIC monitors troubled banks, its formal resolution activities begin when a financial institution's chartering authority sends a "failing bank letter" advising the FDIC of the institution's imminent failure
- Once the FDIC receives a failing bank letter, a planning team from the FDIC contacts the chief executive officer of the failing bank or thrift to discuss logistics, to address senior management's involvement in the resolution activities, and to obtain loan and deposit data from the institution or its data processing servicer

Asset Valuation

- the FDIC begins a review of the failing institution's assets using *valuation models* to *estimate the liquidation value of the assets*. This estimate is used in calculating the cost of a deposit payoff.
- Because the FDIC does not have enough time to assess every asset, it uses a *statistical sampling procedure*.
- *Loans are divided into categories*, such as real estate, commercial, and installment loans, and within each category **the loans are identified as either performing or nonperforming**.
- For each subcategory of loans, FDIC specialists identify a sample and carefully review the selected loans to establish an estimated liquidation value for each loan.
- The liquidation value is driven by the future cash flows and the expenses likely to be incurred during the collection of the loans. Adjustments are made to discount future cash flows and to account for liquidation expenses.
- **The loss factor that results from that estimate is then applied to the subcategory of loans that were not reviewed**.

Determining the Resolution Structure

- All of the information gathered during the FDIC's review of a failing institution is used to determine the appropriate resolution structures to offer to potential bidders.
- In developing the marketing strategy, the FDIC considers four factors:

1) the asset and liability composition of the failing institution;

2) the competitive and economic conditions of the institution's market area;

3) any prior resolution experience with similar institutions in the same market; and

4) any other relevant information, such as potential fraud at the institution.

- Based on this information, the FDIC determines how best to structure the sale of the bank or thrift.

The primary decisions include the following factors:

- How to market the institution; that is, whether to sell it as a whole or in parts. Portions of the bank or thrift, such as its trust business, its credit card division, or its branches may sell best as separate transactions.
- Which types or categories of assets should be offered to prospective purchasers.
- How to package saleable assets; for example, should the acquirer be required to purchase them, should they be sold with loss sharing, or should they be offered as optional asset pools
- At what price the assets should be sold; for example, at book value, at a fixed value estimated by the FDIC, or at the reserve price.

Marketing a Failing Institution

- Once the information has been gathered and the resolution options to be offered have been selected, the FDIC, while still cognizant of confidentiality concerns, begins to market the failing bank or thrift as widely as possible to encourage competition among bidders.
- The FDIC's bank examination force compiles a list of potential acquirers consisting of approved financial institutions and private investors
- In compiling the list, the FDIC takes into account the failed institution's geographic location, competitive environment, minority-owned status, overall financial condition, asset size, capital level, and regulatory ratings. Private investors wishing to bid on a failing institution must have adequate funds and be engaged in the process of obtaining a charter to create a new institution.

The Information Meeting

- The FDIC invites all approved bidders to an information meeting.
- After signing confidentiality agreements, bidders receive copies of the information package, which includes financial data on the institution, legal documents, and descriptions of the resolution options being offered.
- At the meeting, the FDIC provides details on the failing institution, the resolution methods being offered, the legal documents, the due diligence process and the bidding procedures

Bidder Due Diligence

- Approved bidders who have signed confidentiality agreements are invited to conduct due diligence at the failing institution.
- Due diligence is the bidder’s on-site inspection of the books and records of the institution and the bidder’s assessment of the value of the franchise, and is performed so the bidder can submit an educated bid.
- The failing institution’s board of directors must pass a board resolution authorizing the FDIC to conduct on-site due diligence before bidders visit the institution, because the institution is still an ongoing entity under private ownership.
- All bidders performing due diligence are provided the same information so no one bidder has an advantage.

Bid Submission

- A bid has two parts: one amount, called the **premium**, *is for the franchise value of the failing institution's deposits*; and the second amount, known as the **discount** *is what the bidder is willing to pay to acquire the institution's assets.*
- *The first figure generally represents the bidder's perception of the value of the customer base; and the second amount reflects the bidder's perception of the imbedded losses and the level of risk associated with the assets*

- The auction's outcome is crucial because the winning bid's magnitude determines a large fraction of the FDIC's own cash contribution, funded by the Deposit Insurance Fund (DIF hereafter).
- To put things into perspective note that, while the FDIC nominally maintains **a hard target reserve ratio of 1.25%,** due to the recent wave of failures the ratio has rapidly been depleted, reaching a negative territory since the third quarter of 2009, while on September 30, 2010 it stood at -0.15%.
- *Note that the DIF's **main funding source** is fees paid by insured financial institutions*. However, if losses from bank failure resolutions exceed the FDIC’s reserves and its capacity to replenish the reserve fund, the losses will eventually be funded by the Federal Government and thereby by the taxpayers via the US Treasury's devoted line of credit.
- Hence, studying the factors that shape the winning bid's magnitude is of utmost importance for the regulator and ultimately the taxpayers.
- In 2009 the FDIC requested that the US Treasury's line is increased from 30 billion US dollars to 500 billion.

An actual Bid Summary

Security Bank of North Fulton Alpharetta, GA Closing Date: July 24, 2009			
Bidder	Type of Transaction	Deposit Premium/(Discount) %	Asset Premium/(Discount) $(000) / %
Winning bid and bidder: State Bank and Trust Co., Pinehurst, GA	All deposit whole bank with loss share	0.00%	$(17,000)
Cover (second place): Hamilton State Bank, Hoschton, GA	All deposit whole bank with loss share	1.00%	$(18,000)
Other bid	P&A with Optional Loan Pool	0.1619%	N/A
Other Bidder Names: Georgia Commerce Bank, Atlanta, GA			

Other relevant issues

- One of the FDIC's primary missions is to maintain public confidence in the U.S. financial system. When a bank fails, the FDIC accomplishes this by ensuring the prompt and efficient payment to customers with insured deposits, by minimizing the impact of an institution failure on the local economy, by finding an assuming or agent institution to handle insured deposits, and by transferring as many of the failed bank or thrift's assets as possible back into the private sector.
- Experience suggests that failing financial institutions should be resolved as quickly as possible. Asset and franchise values are preserved and maximized, making them more desirable to healthy institutions.
- Normally, the more quickly an institution is resolved, the lower the cost. Finally, failing financial institutions can have negative effects on the markets in which they compete, and their quick exit from those markets minimizes those effects.

- It has always been the FDIC's practice to offer a failing institution to both operating financial institutions and investors who qualify for and have been given conditional approval for a charter to create a new institution (called a *de novo* institution).
- A concern that arises during the bidders' due diligence is the fair and equitable treatment of all due diligence participants. Bidders should be given as much time as possible to perform their reviews, while keeping in mind the time constraints of the resolution process.
- Assistance can be gained and goodwill can be created by sharing with the local media as much information as possible about the resolution. Announcements through television, radio, and the local newspapers should provide failed institution customers with information about how the resolution will be handled. For some institutions, especially those in small towns or where there has not been a closing for some time, it can be beneficial to conduct a town meeting to answer questions about the failure, the resolution process, the closing process, the transfer of insured deposit accounts, and other general questions.