Financial Institutions and System

Week 9: Economic Analysis of Financial Regulation
Banking Industry: Structure and Competition

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Agenda

1. Economic Analysis of Financial Regulation
2. Banking Industry: Structure and Competition
3. Class Activity

1. Economic Analysis of Financial Regulation

Asymmetric Information and Regulation

- FIs help mitigate **adverse selection** and **moral hazard** through private loans.
- This creates a **new asymmetric info problem**: depositors can't evaluate loan quality.
- This can trigger **bank panics**.

Bank panics occur when:

- Adverse shocks lead to insolvency for some banks.
- Depositors, unsure which banks are sound, **rush to withdraw funds**.
- First-come-first-served nature encourages mass withdrawals ("bank run").

Contagion and the Case for a Safety Net

- Uncertainty can lead to runs on both good and bad banks (contagion).
- U.S. history: major panics every 20 years pre-1930s.
- **Deposit insurance** breaks the panic cycle.

Example: FDIC (U.S.)

- Established in 1934
- Bank failures dropped from >2,000/year (1930–33) to <15/year until 1981.

Two Methods for Dealing with Bank Failures

1. Payoff Method

- Let the bank fail.
- Insured depositors paid up to the limit ($250K).
- FDIC joins queue with other creditors for remaining assets.

2. Purchase & Assumption Method

- Find merger partner to assume liabilities.
- FDIC may subsidize partner or buy toxic assets.
- More costly but avoids panic.

Government as Lender of Last Resort

- Central bank lends to troubled banks.
- Government guarantees may also:
  - Cover all creditors (even uninsured)
  - Temporarily take over failed institutions

Goal: Contain systemic risk and restore confidence.

Global Perspective: Is Deposit Insurance Always Good?

- World Bank research: in **weak institutional environments**, deposit insurance may **increase crises and slow financial development**.
- Without strong supervision, it **encourages risk-taking**.

Policy implication: Emerging markets need robust legal & supervisory frameworks before adopting broad insurance schemes.

Drawbacks of the Government Safety Net

Moral Hazard

- Depositors don’t discipline risky behavior.
- Banks take on excessive risk.

Adverse Selection

- Risk-lovers are drawn to banking.
- Depositors have no incentive to monitor.

Too Big to Fail (TBTF)

- Regulators reluctant to close large institutions.
- **Uninsured creditors get bailed out**.
- Encourages risk-taking at the largest banks.
- Promotes use of the **purchase & assumption method**.

Financial Consolidation Challenges

- Mergers across banking, insurance, real estate, etc.
- TBTF risk worsens.
- Safety net **extends to more risky activities**.
- Observed in 2008 Global Financial Crisis.

Eight Types of Financial Regulation

1. Restrictions on asset holdings
2. Capital requirements
3. Prompt corrective action
4. Chartering and examination
5. Assessment of risk management
6. Disclosure requirements
7. Consumer protection
8. Restrictions on competition

Asset Restrictions and Diversification

- Limit banks from investing in risky or concentrated assets.
- **Prohibit stock holdings**.
- Encourage portfolio **diversification**.

Goal: reduce risk-taking encouraged by deposit insurance.

Capital Requirements

- Ensure banks have skin in the game.
- More capital → lower incentive to take risk.

Two forms:

1. **Leverage ratio** (capital/assets)
   - > 5% = well-capitalized; <3% = regulatory action
2. **Risk-weighted capital (Basel Accords)**
   - Adjust capital needs based on asset risk

Basel Accord (Original 1988)

- Require capital ≥ 8% of **risk-weighted assets**
- Global standard (100+ countries)
- Risk Weights:
  - 0%: OECD gov't bonds
  - 20%: claims on OECD banks
  - 50%: mortgages
  - 100%: corporate loans

Limitations of Basel I

- **Regulatory arbitrage**:
  - Same weight for risky and safe assets
- Banks shift to risky portfolios

→ Response: Basel II (2004) and Basel III (2010)

Basel II: Three Pillars

1. Capital linked to actual risk

- Market, credit, operational risk
- More asset categories

2. Supervisory review

- Stress risk management quality

3. Market discipline

- Enhanced public disclosure of risks, controls, and management

Weaknesses Revealed in 2008

- Underestimated systemic risk
- Reliance on flawed credit ratings
- Procyclical (amplifies booms & busts)
- Ignored liquidity risk

→ Basel III introduced in 2010

Prompt Corrective Action (FDICIA 1991)

- Early intervention to avoid collapse:
  - Capital restoration plans
  - Limit asset growth
  - Approvals for new branches
  - Liquidation

Chartering & Examination

- **Chartering**: screen new entrants (adverse selection)
- **Examinations**:
  - Capital adequacy
  - Asset quality
  - Management quality
  - Earnings
  - Liquidity
  - Sensitivity to market risk (CAMELS)

Risk Management Assessment

Evaluates management practices:

- Oversight quality
- Risk limits & policies
- Measurement systems
- Internal controls

Also applies to:

- Interest rate risk policies
- Use of **stress testing** and **VaR** (value at risk)

Disclosure Requirements

- Adhere to accounting standards
- Public info = **market discipline**

Promoted under:

- Basel II (Pillar 3)
- SEC rules

Competition Restrictions

- Rationale: competition increases risk-taking
- But can **raise costs** & **reduce efficiency**

→ Balance between market discipline & financial stability

International Financial Regulation

- Global banks operate across borders
- Regulator coordination problems:
  - Who monitors what?
  - How to share data?

Solution: Basel + Home-country regulator model

- Global standards with national enforcement

Coordination through Basel Accords

- Require global operations be under home-country supervision
- Empower foreign regulators to act if oversight is weak
- Promote information sharing

Summary

- Asymmetric info → regulation needed
- Deposit insurance solves some problems but creates others
- Key tools: capital rules, asset limits, supervision, and disclosure
- Basel Accords aim for global consistency but require adaptation

Challenge: Preventing systemic crises while preserving innovation

2. Banking Industry: Structure and Competition

Historical Development of the Banking System

- Bank of North America chartered in 1782
- National Bank Act of 1863:
  - Federally chartered banks
  - Office of the Comptroller of the Currency
  - Dual banking system
- Federal Reserve System created in 1913

Supervisory Responsibility (USA case)

- **Federal Reserve**: state member banks, bank holding companies
- **FDIC**: insured state banks not members of Fed
- **State authorities**: banks without FDIC insurance

Financial Innovation & Shadow Banking

- Innovation driven by **profit motives**
- Financial engineering in response to:
  - Interest rate volatility
  - Advances in IT

Demand-Side Innovations: Interest-Rate Volatility

- **Adjustable-rate mortgages**:
  - Lower initial rates
  - Protect lenders from rising rates
- **Financial derivatives**:
  - Hedge against interest rate risk
  - Example: interest rate swaps

Supply-Side Innovations: Information Technology

- Bank credit/debit cards → lower transaction costs
- Electronic banking: ATMs, online banking
- Growth of junk bonds and commercial paper market

Securitization & Shadow Banking

- Converts illiquid assets into marketable securities
- Expanded subprime mortgage market (mid-2000s)
- Shadow banking: non-bank intermediation

Avoidance of Regulation

- **Loophole mining**:
  - Reserve requirements = deposit tax
  - Disintermediation led to:
  - Money market mutual funds
  - Sweep accounts

Case: Bruce Bent & 2008 Crisis

- Creator of money market mutual funds
- Panic during 2008 → industry nearly collapsed
- Prompted calls for stricter regulation

Decline of Traditional Banking

- Declining market share in lending
- Rise in off-balance sheet income (e.g., fees, guarantees)
- Traditional banks now compete with shadow banks

Liquidity Management Tools

Assets		Liabilities	
Reserves	$10M	Deposits	$100M
Loans	$90M	Bank Capital	$10M
Securities	$10M		

Assets		Liabilities	
Reserves	$0	Deposits	$90M
Loans	$90M	Bank Capital	$10M
Securities	$10M		

- Reserves = legal requirement
- Excess reserves = buffer

Borrowing to Cover Shortfalls

Assets		Liabilities	
Reserves	$9M	Deposits	$90M
Loans	$90M	Borrowing	$9M
Securities	$10M	Bank Capital	$10M

- Borrowing incurs interest cost

Selling Securities

Assets		Liabilities	
Reserves	$9M	Deposits	$90M
Loans	$90M	Bank Capital	$10M
Securities	$1M		

- Transaction/brokerage costs involved

Borrowing from the Fed

Assets		Liabilities	
Reserves	$9M	Deposits	$90M
Loans	$90M	Borrow from Fed	$9M
Securities	$10M	Bank capital	$10M

- Discount rate applies to loans

Reducing Loans

Assets		Liabilities	
Reserves	$9M	Deposits	$90M
Loans	$81M	Bank Capital	$10M
Securities	$10M		

- Most costly method
- Risks damaging customer relationships

Asset Management

Goals:

1. Maximize return
2. Minimize risk
3. Ensure liquidity

Tools:

- Screen borrowers
- Diversify assets
- Choose securities with high return-to-risk

Liability Management

- Emerged post-1960s
- Overnight markets, negotiable CDs
- Shift from reliance on deposits

Capital Adequacy

- Prevents failure, absorbs losses
- Affects ROE
- Subject to regulation

Bank Capital & Return Measures

High Capital Bank				Low Capital Bank			
Assets		**Liabilities**		**Assets**		**Liabilities**	
Reserves	$10 million	Deposits	$90 million	Reserves	$10 million	Deposits	$96 million
Loans	$90 million	Bank capital	$10 million	Loans	$90 million	Bank capital	$ 4 million

High Capital Bank				Low Capital Bank			
Assets		**Liabilities**		**Assets**		**Liabilities**	
Reserves	$10 million	Deposits	$90 million	Reserves	$10 million	Deposits	$96 million
Loans	$85 million	Bank capital	$ 5 million	Loans	$85 million	Bank capital	–$1 million

- ROA = Net Profit / Assets
- ROE = Net Profit / Equity
- Equity Multiplier = Assets / Equity
- ROE = EM × ROA

Capital Trade-Off

- **Pros**: reduces risk, protects depositors
- **Cons**: reduces ROE
- Decision depends on risk appetite & regulation

Strategy: Managing Bank Capital

- Raise equity (stock issuance)
- Adjust dividends
- Increase assets → leverage returns
- Low capital → reduce assets → contraction in lending

Capital Crunch & Credit Crunch (2008)

- Mortgage losses ↓ capital
- Capital shortfall → stricter lending
- Economy-wide slowdown

Managing Credit Risk

- Screening & Monitoring:
  - Know your borrower
  - Enforce covenants
- Specialization improves info

Additional Credit Risk Tools

- Long-term relationships
- Loan commitments
- Collateral/compensating balances
- Credit rationing

Summary

- U.S. banking system is shaped by historical, regulatory, and technological factors
- Financial innovation has shifted intermediation outside traditional banks (shadow banking)
- Technology and deregulation led to new financial instruments and services
- Traditional banking faces competition from nonbank financial firms
- Capital management, credit risk control, and regulatory oversight are key to modern bank operations

Understanding these trends is critical for analyzing financial system stability and future policy design.

3. Class Activity

Any QUESTIONS?

Thank You!

Next Class

- (May 09)
  - **Chap 12.** Financial Crises in Advanced Economies
  - **Chap 13.** Financial Crises in Emerging Market Economies