

Lecture notes on risk management, public policy, and the financial system

Overview of financial regulation

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Purpose of financial regulation

Structure of financial regulation

Financial regulation of banks

Purpose of financial regulation

Rationale of financial regulation

Core problems in economic regulation

Structure of financial regulation

Financial regulation of banks

Public policy goals of financial regulation

Safety and soundness or **prudential** regulation: overall health of banks, moral hazard risk, e.g. deposit insurance, (→)TBTF

- Including **consumer protection** against losses due to intermediary failures or fraud
- More in forefront in bank than in securities firm regulation

Financial stability or **macroprudential** regulation:

- Rules intended to promote overall stability of financial system
- Avert and protect against broader consequences of failures of banks, other intermediaries

Efficiency, growth and competitive advantage: improve economic outcomes

- Making the financial system more efficient by fostering competition or economic growth
- Protecting against foreign competition or thwarting foreign attempts at protection

Economic arguments for financial regulation

Arguments generally rest on some form of information problem or **market failure** that distorts financial markets

Externalities: intermediary activities and intermediary failures have consequences for other market participants

- Soundness of one intermediary or market participant may impact soundness of others

Asymmetric information: different parties to contract possess different sets of relevant information

- Leads to **principal-agent problems** at different levels of financial system
- Principal lacks complete information on nature or behavior of “agent,” the party being compensated or incentivized

Intermediaries' monopoly power permits pricing and other business policies that harm consumers and borrowers

The principal-agent problem in financial regulation

- Asymmetric information leads to **principal-agent problems**
 - Principal lacks complete information on nature or behavior of “agent,” the party being compensated or incentivized
- Takes different forms at different levels of financial system
- Intermediaries versus customers/beneficiaries
 - Retail customers: argument for consumer protection
 - Asset management focus on short-term results
 - Institutional investor demand for highly-rated products, reliance on rating agencies
- Internal to financial firms
 - Management or firm owners may have principal-agent conflict with employees, argument for regulation of compensation structures
- Regulators lack information internal to regulated firms

Core problems in regulation

- Problems common to regulation and supervision of financial as well as non-financial firms
- Problems are combined and interactive

Regulatory evasion: market participants adapt form but not economic nature of regulated activity to conform

Regulatory capture: regulators, supervisors and industry staff constitute unitary labor pool

- Regulators adopt industry's special-interest viewpoint

Unintended consequences and moral hazard

Excessive complexity: closely related to unintended consequences

Lack of knowledge: regulators and supervisors lack familiarity with regulated firms and market

- **Example:** AIG securities lending program

Regulatory evasion

- **Example:** money market funds originated to evade Regulation Q ceilings on demand deposit interest rates
- Multiple regulators introduce potential for **jurisdiction shopping:** changing form or location of intermediation activities so as to come under supervision by lenient regulators

Excessive complexity

- Expansion of number and detail of financial regulations
 - E.g. DFA requires 390 rules, many years of formulation
- Increasing amount of quantitative modeling regulated intermediaries must carry out
- Presumes better knowledge of circumstances in which rules will be applied than regulators could have
- Interacts with other core problems, esp. regulatory evasion, unintended consequences
- Example: evolution of Basel capital accords from simple risk weights to internal models
 - Cannot be applied consistently across regulated banks
 - Risk-weighting scheme has less predictive efficacy than simple leverage for 2008–09 failures
- Attempt to address complexity through leverage ratio reflects recognition of problem

Purpose of financial regulation

Structure of financial regulation

Financial regulatory authorities

Methods of regulation

Financial regulation of banks

Regulated firms and markets

- Regulatory bodies may be responsible for regulating
 - **Intermediary types:** banks, insurance companies, securities dealers, investment advisers, exchanges
 - **Markets, activities and contract types:** securities markets, derivatives
- Most regulated intermediaries come under authority of several regulators
 - Intermediaries may be organized in holding companies that include subsidiaries of different types, e.g. both a bank and a securities dealer
 - A firm or its subsidiaries may engage in multiple activities coming under authority of different regulators, e.g. providing investment advice and derivatives trading
 - A firm may be regulated at different levels of government
- In U.S., each bank has a **primary regulator**

Levels of government in U.S. financial regulation

- Federal system of U.S. government → **dual-banking system** of state, national bank regulation
- Federal regulation includes
 - **Office of the Comptroller of the Currency (OCC)** est. by **National Bank Act (1863)**
 - Primary regulator for national banks
 - Federal Reserve est. 1913, primary regulator for **bank (BHCs)** and **financial holding companies (FHCs)**, state-chartered member banks, U.S. offices of **Foreign Banking Organizations (FBOs)**
 - **Federal Deposit Insurance Corporation (FDIC)** est. 1933, regulates national and state-chartered banks with (→)insured deposits
 - Primary regulator for state-chartered nonmember banks
 - Title 12 of Code of Federal Regulations (CFR): Banks and Banking
- Each state regulates its own state-chartered banks, e.g. **New York State Department of Financial Services**
 - In addition to any supervision by FDIC or Fed

U.S. regulation of non-bank intermediaries

- U.S. securities markets regulated primarily at national level by **Securities and Exchange Commission (SEC)** est. 1934
 - Includes stock and bond markets, broker-dealers, investment advisors, and mutual funds
 - Derivatives exchanges regulated by **Commodities Futures Trading Commission (CFTC)** est. 1974
- Insurance companies regulates at *state* level, no national regulator
 - Insurance commissions in each state, informally coordinated through **National Association of Insurance Commissioners (NAIC)**
 - But participation since financial crisis in national oversight of largest intermediaries (→Dodd-Frank, FSOC)
- Federal Reserve regulates **financial market utilities (FMUs)**: payments, clearing, and settlement systems

Central banks and government in bank regulation

- Central banks and governmental regulatory authorities: shared responsibility for financial-sector regulation
 - Central banks generally the lead regulator for larger banks
- Shared role in financial crises
 - Central banks: generally exclusive responsibility for monetary policy, emergency liquidity, lender of last resort
 - Treasury/finance ministry: recapitalize banks if deemed necessary
- Debate: should bank supervision be housed within central banks?
 - Desire to have financial regulator share in better-established central bank independence
 - But concern over possible conflict between regulatory and monetary policies, e.g. fragile banks jeopardized by interest-rate increase

National and international regulation

- International committees set standards for regulation in a number of areas, esp. regulatory capital and liquidity
 - International bodies purely advisory/recommendations
 - Legally binding regulation promulgated at national level
- International standard setting facilitated by
 - Group of Ten (G10)**, est. early 1960s: finance ministers and central bank governors of 11 countries
 - Basel Committee on Banking Supervision (BCBS)**, est. 1974 by G10, sets international bank regulatory standards
 - Financial Stability Board (FSB)**, est. 2009, sets standards focused on financial stability for banks, insurance and securities firms
 - Bank for International Settlements (BIS)** in Basel, est. 1930, banking services for central banks, hosts G10, BCBS, and FSB
 - International Organization of Securities Commissions (IOSCO)**
 - International Association of Insurance Supervisors (IAIS)**
- European Union has instituted agencies to coordinate regulation across member states, in addition to local agencies

Functional and institutional supervision

Functional supervision: organize regulatory bodies by *activity* in financial system

- Response to wider range of bank activities, e.g. trading, securities issuance
- And to increasing share of nonbanks in intermediation

Institutional supervision: Organize regulatory bodies by type of firm regulated

- Remains predominant structure, product of historical accident
- Can lead to different regulators for BHCs and banks they own
- And generally to multiple regulators for banks

Legal structure of U.S. federal regulation

Legislation underpins the regulatory system

Regulation must be based on or called for by law, and follow rulemaking procedure

- “Notice-and-comment” rulemaking, enshrined in **Administrative Procedure Act** (APA) of 1946
- Following legislation, development of draft rule by an agency
- Publication of **Notice of Proposed Rule in Guidance**
- Public comment period, typically 60 days
- Publication of **Final Rule** in **Federal Register**

Administrative guidance documents may provides more specific information on regulatory policies and how they will be enforced than contained in laws and rules

- Federal Reserve **Supervision and Regulation Letters**:, e.g. *Interagency Guidance on Leveraged Lending* of 21Mar2013
- Guidance may have large impact on direction of policy

Overview of regulatory tools

Chartering of and **scope restrictions** on intermediaries: permitted and prohibited activities of regulated intermediaries

Minimum capital standards: limits on intermediaries' debt funding

Liquidity standards intermediaries to hold a minimum of cash and liquid assets

Resolution mechanisms specific to failing financial firms

Accounting standards that differ in key respects from those of nonfinancial firms

On-site supervision and **monitoring** of individual firms

Regulatory stress tests assess liquidity and capital adequacy in adverse scenarios

Deposit insurance guarantee par value of bank deposits in the event of failure

Bank regulation: chartering and scope restrictions

- **Charter** or licence specifying permitted activities required to conduct banking business since earliest days of banking
 - U.S.: national or state banking licence required
 - Often requires specific approval by sovereign or legislature
 - **Free banking** or entry—minimal charter requirements—rare
- **Universal banking**: relative absence of scope restrictions, common in Europe
 - Objection: loss of diversification benefits
- **Examples** of scope restrictions, proposed and enacted:
 - Banking Act of 1933 (Glass-Steagall)**: separation of commercial from investment banking
 - Volcker rule** prohibiting proprietary trading by commercial banks
 - Vickers ring-fencing**: retail separate from investment banking within BHC (2011 U.K. Independent Commission on Banking)
 - Narrow banking**: equity-financed lending only, separation of banks' payments and lending functions

Bank supervision: monitoring banks and the industry

- Regulation—rule-setting vs. supervision—monitoring to ensure compliance
- Consists of ongoing monitoring and more in-depth on-site examinations/inspections
 - Permanent on-site supervisors
 - Meetings with firms' senior management
 - “Horizontal” supervision comparing multiple firms
- U.S. supervisors also issue ratings for
 - CAMEL ratings** for banks, encompassing capital, asset quality, management and internal controls, earnings, liquidity
 - RFI/C(D) ratings** for BHCs, encompassing “Risk management (R); Financial condition (F); and potential Impact (I) of the nondepository entities on the subsidiary depository institutions” (Board’s BHC Supervision Manual)

Supervisory actions in the U.S.

- Informal actions—not made public—include (in order of seriousness)
 - Matters Requiring Attention** (MRAs)
 - Matters Requiring Immediate Attention** (MRIAs)
 - Memoranda of Understanding** (MOUs)
- Publicly-disclosed and more severe actions include
 - Formal Agreements** requiring specific actions if informal actions don't work
 - Prompt Corrective Actions** (PCAs) to remedy capital deficiencies
 - Cease and Desist Orders** for potential violations of law
- **Regulatory forbearance:** refraining from taking supervisory actions, generally due to stability motivations
 - **Examples** in many countries, incl. U.S. prior to S&L crisis

Deposit insurance

- Rationale: prevent runs, protection of depositors
- Drawbacks: moral hazard, incentives to excessive risk-taking, e.g. S&L crisis, feedback to solvency of sovereign guarantor (→sovereign debt crises)
- Implicit unlimited deposit insurance: FDIC resolution of failed banks via merger with healthy ones
- Alternative: **narrow banks**, deposits entirely backed by safe assets, e.g. 100% reserve bank, MMMF, **Chicago Plan**

Purpose of financial regulation

Structure of financial regulation

Financial regulation of banks

- Credit and market risk losses in banks

- Resolution of financial firms

- Regulatory developments of recent decades

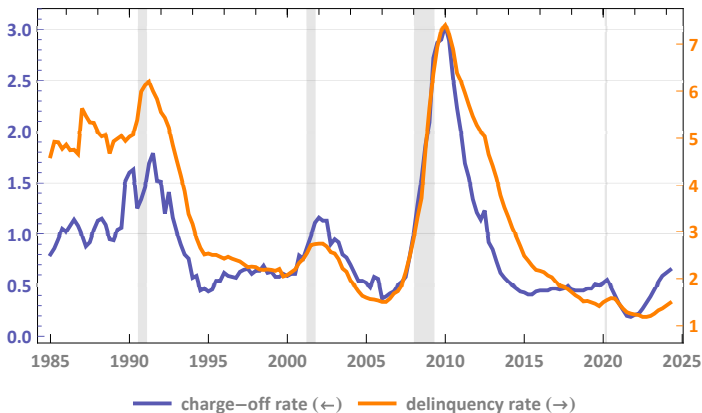
Banks: economic and accounting loss concepts

- Accounting, regulatory and tax rules influence timing of loss recognition and impact lender's reported income and balance sheet
- Regulation requires banks to report an **allowance** or **reserve for loan and lease losses** (ALLL) account
 - Contra-asset account entry corresponding to expense item **provision for loan losses** on income statement
- ALLL represents amount not expected to be collected, intended to make financial statements more informative
- When loss recognized, loan assets and ALLL account reduced by **charge-off** or **write-down**
 - Income statement not affected unless losses differ from initial estimate
 - **Loss provisioning**: if losses expected to be greater than initially estimated, banks add to ALLL account

The new standard for estimating banks' credit losses

- ALLL sets **probable incurred loss** standard
 - Concept of credit loss focuses on when loss becomes likely
 - But criticized for tardy recognition of credit losses
 - And can be manipulated to smooth earnings, gain tax advantages
- **Current expected credit losses** (CECL) methodology introduced 2016
 - Based on bank's forward-looking estimate of loan losses over entire life of the loan.
 - And determined at time loan is extended
- Critiques of CECL standard
 - Requires forecasts of state of economy over loan life that are generally highly inaccurate
 - Neglects offsetting revenue from higher risk compensation in lending rates
 - Leading to procyclicality: CECL estimates increase required capital when economic downturns appear
- Initial implementation dates extended under 2020 Coronavirus Aid, Relief, and Economic Security (CARES) Act
 - Large banks nonetheless have begun implementation

Bank charge-off and delinquency rates 1984–2024



All commercial banks, all loans. Percent of aggregate loan balances, seas. adj. ann. rate, Q4 1984–Q1 2024. Charge-offs are the value of loans removed from the books and charged against loss reserves, net of recoveries. Delinquent loans are those past due 30 days or more and still accruing interest as well as those in nonaccrual status. Vertically shaded intervals denote recessions, as determined by the National Bureau of Economic Research (NBER). *Source:* Federal Reserve Board, via FRED.

Bank securities holdings

- In addition to loans, banks, insurance companies and other financial services firms hold marketable securities
 - Broker-dealers follow somewhat different accounting guidance
- Securities portfolios a large and growing share of interest-earning assets on bank balance sheets
- Fall into accounting categories

Trading: securities purchased and held principally for the purpose of selling in the near term

- Valued at fair value

Available for sale (AFS): debt securities purchased with the intent of selling if the need (e.g. liquidity) arises

- Generally the largest part of the regulatory (→) **trading book**
- Valued at fair value

Held to maturity (HTM): debt securities intended to be held as investments to maturity

- Valued at amortized cost

Accounting treatment of bank securities holdings

- Two basic types of change must be accounted for:

Changes in market or fair value: mark-to-market (MTM) gains and losses affect trading and AFS, but not HTM securities

- Trading: flow through earnings/net income
- AFS: affect capital account through **accumulated other comprehensive income** (AOCI) account
 - MTM gain (loss) in-(de)creases AOCI, but not earnings/net income
 - AOCI a component of **shareholders' equity**
 - Alongside other components: **paid-in capital, retained earnings**

Changes in creditworthiness affect trading, AFS, HTM securities

- **Other than temporary impairment** (OTTI) reflected in earnings/net income
- Analogous to loss provisioning for bank loans
- Problem of opportunistic reclassification
 - E.g. Citibank Q1 2011 (reported in *FT Alphaville* 19Apr11): round-trip transfer to HTM, then to trading
 - To discourage reclassification, selling any HTM securities causes *entire* HTM portfolio to be reclassified as AFS and fair-valued

Credit Valuation Adjustment

- **Credit Valuation Adjustment** (CVA) is the difference between the market value of the derivatives contract and its market value if it were free of credit risk
 - Thus equal to expected loss due to counterparty default
 - Market value of counterparty risk, equal in principle to hedging cost
 - Net of collateral
- Required for fair-value hedge accounting and by Basel capital standards
 - If derivatives contract closed out without loss, CVA returned to P&L
 - Contra-asset account, similar to banks' ALL account
- CVA measured using estimates of exposure and credit risk parameters: default probability, recovery, etc.
 - Methods based on full simulation of future exposures and defaults
 - Simpler approaches based on current exposures
- **Debt Valuation Adjustment** (DVA) is the reduction in CVA resulting from the firm's own default risk
 - DVA controversial: reduction in DVA due to own credit deterioration → reduction in liabilities
 - Permitted under accounting, but not under Basel capital rules

Financial firms and contracts resolved differently

- ⇔ Court-supervised process applied to nonfinancial firms
- In U.S., bank resolution via **Federal Deposit Insurance Corporation** (FDIC)
 - Depositors senior to other unsecured creditors
 - Problem of **regulatory forbearance**
- Broker-dealers excluded from Chapter 11 under **Securities Investor Protection Act** of 1970 (SIPA)
 - But not their holding companies, e.g. Drexel Burnham bankruptcy 1990
- Important exceptions to automatic stay for derivatives and some types of short-term credit
- Post-crisis changes, esp. for (→) **systemically important financial institutions** (SIFIs)
- Outstanding issue: **cross-border resolution regime** to be applied to global intermediaries, esp. banks

Rationale for an administrative procedure

If it were done when 'tis done, then 'twere well

It were done quickly... Shakespeare, *Macbeth* 1.7

- Complexity of financial intermediaries
- Potential for disruption of financial system (→**systemic risk, contagion**)
 - Nonfinancial economy dependent on uninterrupted flow of credit
 - (→)Contagion
 - Maintain clearing and payment systems
- ⇒Need to resolve speedily
 - Standard resolution generally involves lengthy negotiations
 - **Example:** Lehman Bros. Holdings Inc. bankruptcy filing 15Sep2008, still ongoing
- Need for predictability in financial resolutions→limit judicial discretion
- Protection of retail customers, taxpayers
 - And correspondingly reduced emphasis on rights of creditors and shareholders

Postwar U.S. regulatory trends

- Removal of price controls, outright prohibitions, interest rate ceilings
- Easing of restrictions on bank structure: interstate branching, **unit banking**
- Capital adequacy standards and coronation of ratings
- Financial conglomerates, activities of BHCs, but no ownership of nonfinancial companies in U.S.
- Issuance and registration requirements for public securities, qualified investors under Rule 144a
- Accounting and bankruptcy privileges: Rule 2a7 for MMMFs, close-out netting, financial accounting standards (FAS)
- Increasing frequency of crises and public-sector rescues

Regulatory and legislative milestones

Depository Institutions Deregulation And Monetary Control Act
(Garn-St. Germain Act, 1980)

Basle Capital Accord (1988)

Interstate Banking and Branching Efficiency Act (Riegle-Neal Act,
1994)

Financial Institutions Reform, Recovery, and Enforcement Act
(FIRREA, 1989)

Federal Deposit Insurance Corporation Improvement Act (FDICIA,
1991)

Financial Services Modernization Act (Gramm-Leach-Bliley Act,
1999)

Dodd-Frank Wall Street Reform and Consumer Protection Act
(2010)

Post-crisis regulatory revisions and additions

- Focused primarily on mitigating **systemic risk**
- U.S.
 - **Housing and Economic Recovery Act (HERA)** of 2008 authorizes Treasury rescue of housing GSEs
 - **Dodd-Frank Wall Street Reform and Consumer Protection Act** of 2010
- European Union
 - **Single Supervisory Mechanism (SSM)** under ECB coordinates bank regulation across countries
 - Deposit insurance remains sticking point
- Outstanding issue in regulation: resolution of large internationally-active banks

Key provisions of Dodd-Frank Act

“Volcker Rule” (§619) bans **proprietary trading**—using balance sheet to trade for profit—by banks

Mandatory derivatives clearing attempts to limit OTC markets

Consumer Financial Protection Bureau independent of but housed at, budget paid by the Federal Reserve

Financial Stability Oversight Council (FSOC) charged with identifying **Systemically Important Financial Institutions** (SIFIs)

Rationale: offset deposit insurance, too-big-to-fail incentives to risk taking (→systemic risk)

- International: FSB identifies **Global Systemically Important Banks** (G-SIBs)

Credit ratings no longer mandatory, provisions intended to improve rating agency incentives

Regulatory stress testing in addition to CCAR

Securitization reform: risk-retention or “skin in the game” requirements

Volcker Rule: no trading by depository institutions

- Rationale: offset deposit insurance, too-big-to-fail incentives to risk taking (→systemic risk)
 - Proprietary trading widely blamed for global financial crisis
- Final Rule adopted 10Dec2013, compliance in stages by 2017
- Activities prohibited for all insured banks
 - Short-term proprietary trading of securities, derivatives
 - Exceptions: U.S. Treasury and municipal securities, repo, clearing activities, currencies
 - Private equity and hedge fund sponsorship and ownership
 - **“Covered fund”** includes most CDOs and CLOs
- Hard to distinguish proprietary positions from market-making inventories and hedging
 - →New compliance, reporting requirements
- Some critiques:
 - Loss of business-line diversification
 - Impact on transactions liquidity, e.g. compliant dealers lose flexibility in hedging inventories
 - Regulatory evasion via migration to non-banks