Bank Regulation 101

October 10, 2019

BANK POLICY INSTITUTE

Regulation, Examination and Enforcement

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Regulators Use Three Different Forms of Oversight

Regulation	– The rules under which banks are required to operate
Examination	– The review of a bank’s books and records to determine its financial soundness and compliance with law
Enforcement	– The use of legal tools to compel compliance and penalize those responsible for imprudent or improper conduct

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Regulation: What is a "Bank"?

- U.S. law and regulation generally view a "bank" as an entity that:
  - Takes deposits;
  - Makes loans; and
  - Pays checks and transacts payments.

- The U.S. bank regulatory framework takes as its primary point of focus the first of these functions – deposit-taking.
  - Generally, an entity must be chartered and licensed as a bank in order to accept deposits.
  - This is not true of lending or payments activities.

- Thus, for example, note the following are NOT banks:
  - Paypal, Venmo, and other payment processors;
  - Lending Club, Quicken Loans, and other companies that make loans but don't take deposits; and
  - Money market and other mutual funds.

The Theory of Bank Regulation

- Why do state and federal bank charters limit bank activities, contrary to the general approach for U.S. corporations?
- Why does the government monitor and restrict the risks taken, and the capital and liquidity held, by banks in a way it does not for other U.S. corporations?
- Three basic and overlapping concerns:
  - Moral hazard (arising primarily from deposit insurance)
  - Potential loss to taxpayer
  - Minimization of subsidy

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The Consequences of Being a Bank

The Benefits of Structuring a Business as a Bank

- Cheap, widely available debt funding (in the form of deposits)
- Funding stability provided by the Federal safety net
  - Federal Deposit Insurance Corporation, or "FDIC," insurance
  - Access to Federal Reserve emergency loans (i.e., the "discount window")
- Operational flexibility and simplicity of preemption of (some) state laws and regulation

The Costs of Structuring a Business as a Bank

- Limitations on activities (what the bank can do) and affiliations (what the bank's parent and affiliate companies can do)
- Prudential regulation of the balance sheet, governance, and risk management
- Government supervision and examination

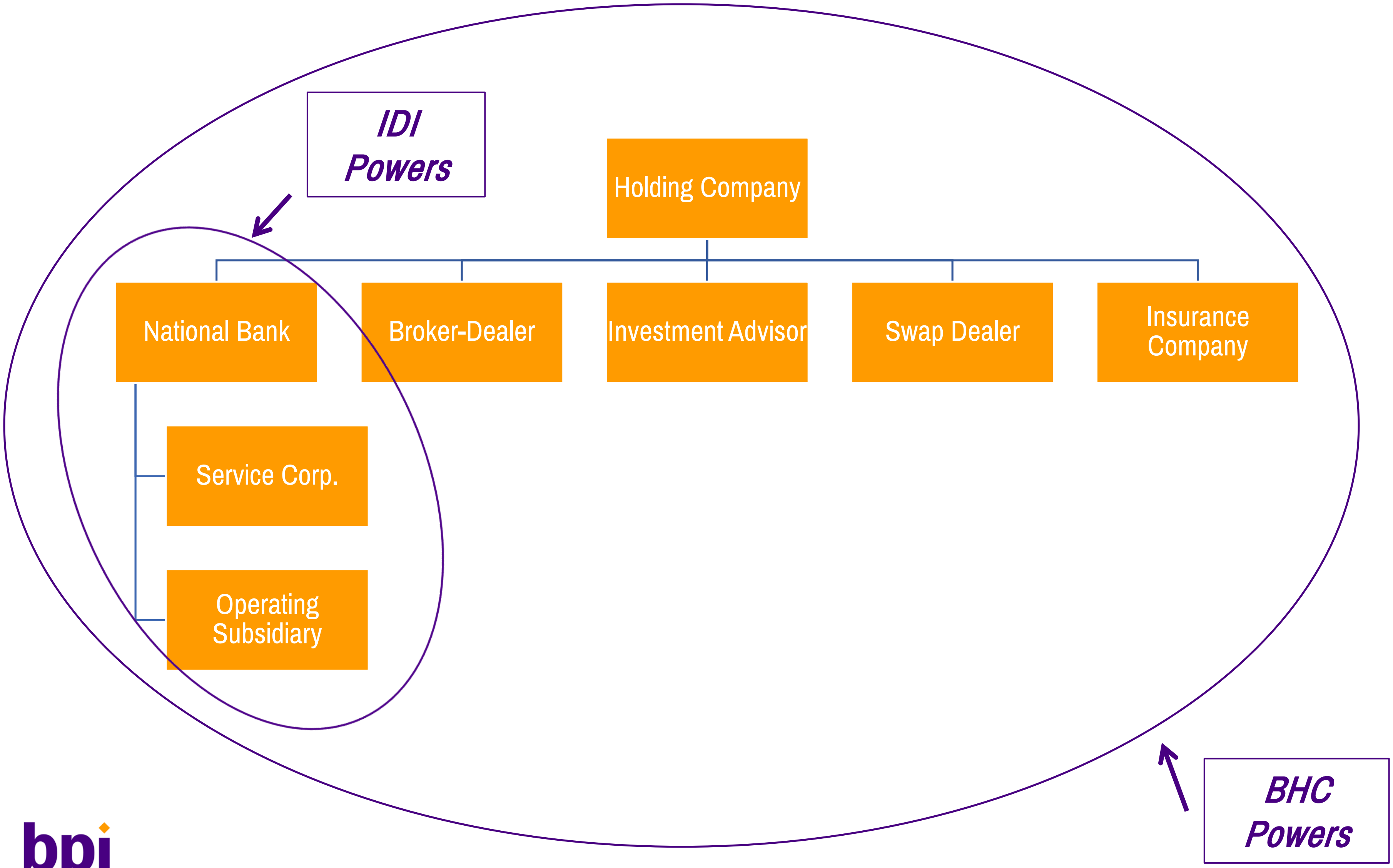
The Structure of Bank Regulation: Three Big Ideas

1. Deposit-taking activities may only take place within a specially chartered and licensed form of legal entity – the "insured depository institution" or "IDI"
   - The IDI's deposits must be insured by the FDIC
   - The IDI's activities must be limited to banking and incidental activities

2. An IDI may affiliate with companies engaged in a broader range of activities closely related to banking or other financial activities under a Bank Holding Company ("BHC") (e.g., securities brokerage or dealing, asset management, or insurance)

3. An IDI may not affiliate with companies engaged in commercial activities
   - This reflects the "separation of banking and commerce" that is a key element of the U.S. framework for banks

The Structure of Bank Regulation – Illustrated



Banking Regulation: Bank Powers and Activities

- Deposit-taking
- Lending and leasing
- Payments activities
- Some derivatives dealing (but very limited securities and insurance activities – generally agency securities); examples include acting as a securities or insurance broker, but not as a dealer or underwriter
- Trust/fiduciary activities (not automatic – subject to regulatory approval); examples include acting as trustee or custodian for trusts
- Limited investment activities (generally can invest in high-quality bonds and other debt securities, but not stocks)
- Important Note: Under sections 16 and 21 of the Glass-Steagall Act (1933), a depository institution is prohibited from engaging directly in securities underwriting and dealing activities, and a securities firm is prohibited from accepting deposits. Contrary to popular misconception, these core provisions have never been repealed, and remain in place today. Also, because of restrictions on inter-affiliate funding, again contrary to popular misconception, universal banks cannot use bank deposits to fund most securities dealing.

Banking Regulation: Restrictions on Expansion

- **Bank Merger Act:** Generally requires federal agency review and approval of any acquisition of deposit liabilities
- **Change in Bank Control Act:** Generally requires federal agency review and non-objection of any acquisition of (i) more than 25% of any class of voting securities by a company or (ii) more than 10% of any class of voting securities by a person
- **Size Caps:**
  - Riegle-Neal Nationwide Deposit Cap: restricts transactions that would result in any single bank holding more than 10% of national deposits
  - Statewide deposit caps
  - Dodd-Frank Cap: restricts transactions that would result in a single firm holding more than 10% of financial sector liabilities
- **Non-public restrictions:**
  - As discussed below, most post-crisis growth restrictions were not imposed under statute or regulation but rather using the non-public examination process to inform certain banks that they could not acquire, merge, or even branch.

Bank Holding Company Powers & Activities: A Brief History

- The powers of bank parent companies and affiliates (whose liabilities do not receive deposit insurance) have traditionally been broader than bank activities. They have evolved over time:
  - **1900 to 1956:** Emergence of BHC structure, but no restriction/regulation of BHC activities (other than Glass-Steagall barriers and affiliate transaction rules)
  - **1956:** Bank Holding Company Act ("BHCA") enacted, limits activities in which BHCs and their subsidiaries can engage
  - **1970:** BHCA amended to eliminate "one bank holding company" loophole, which had previously allowed bank holding companies to engage in commercial activities so long as they owned no more than one bank
  - **1999:** Gramm-Leach-Bliley Act ("GLBA") enacted, creates new "financial holding company" designation and expands permissible financial (but not non-financial) activities
    - Affiliation of banks and securities firms that underwrite and trade in corporate equity and debt
    - Affiliation of banks and merchant banks (which make equity investments)
    - Note: Title 5 of the GLBA also established a comprehensive Federal privacy framework that applies to banks and other financial institutions

BHC Powers & Activities

- Bank Holding Company Act applies to any company that controls a bank – including all of its subsidiaries
- Core requirements of BHC status include:
  - Need Fed approval to become a BHC, acquire an interest in additional banks, and engage in nonbanking activities
  - Limits on activities conducted throughout the BHC – "financial in nature" or complementary thereto
  - Prudential regulation and supervision of entire BHC
  - Post-crisis, the stringency of regulation and supervision imposed on the bank (with deposit insurance) varies little from the stringency imposed on a non-bank affiliate, even though moral hazard, taxpayer risk and subsidy are all arguably lower

BHC Powers & Activities: Scope

- BHCs can engage in banking and control or manage banks – § 3 of the BHCA
- BHCs can also engage in activities closely related to banking – § 4 of the BHCA:
  - Making/acquiring/brokering/servicing loans;
  - Leasing real/personal property;
  - Operating a thrift or trust company;
  - Acting as investment/financial advisor;
  - Securities – brokerage, private placement, underwriting/dealing in a limited set of bank-eligible securities (e.g., Treasuries);
  - Management consulting;
  - Courier/check/payments services;
  - Community development; and
  - Processing banking/financial/economic data

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Financial Holding Companies

- As part of the GLBA in 1999, Congress created a new "type" of BHC, which is defined by statute as a "financial holding company," or "FHC"
  - In general, FHCs are authorized to engage in a somewhat wider range of financial activities
  - FHCs are also potentially subject to a wider range of restrictions
- In order for a BHC to become and remain an FHC, it must be "well-capitalized" and "well-managed"; in order to become a BHC, it must have a satisfactory Community Reinvestment Act ("CRA") record
  - Difficult issues in the event a management rating is downgraded
- For qualifying FHCs, expanded powers include "activities that are financial in nature" under § 4(k) of the BHCA:
  - Full range of securities dealing and underwriting activity through a registered broker dealer;
  - Insurance activities (unused);
  - Merchant banking activities; and
  - Activities deemed by the Fed to be "complementary" to a financial activity (e.g., commodities trading activities)

Types of Banks & Their Charters

- Key elements to understand:
  - What type of bank is it?
  - Under what law is the bank *chartered* (i.e., incorporated)?

- Understanding the types of banks and their charters is crucial, because this will determine:
  - Who regulates the bank;
  - Which laws and regulations apply to the bank; and
  - What activities the bank can engage in

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Types of Banks & Their Charters: National Banks

- Chartered under federal law – National Bank Act of 1864
- Regulated and examined by the Office of the Comptroller of the Currency ("OCC")
- Typically engage in a variety of deposit-taking, retail lending (e.g., mortgage lending) and commercial lending
- Primary charter choice for larger banks, particularly over the last 25 years
- Deposits must be insured by the FDIC

Types of Banks & Their Charters: State Banks

- Chartered under state law – individual state laws vary
- Powers now generally the same as those of a national bank (not historically so)
- Deposits are insured by the FDIC just as with a national bank
- Importantly, do not enjoy nationwide preemption of state law on interest rates and other powers
- Regulated and examined by *both*
  - their home state banking agency (e.g., New York Department of Financial Services)
  - a federal banking agency – either the Fed or the FDIC
- A state bank can choose whether it wants the Fed or the FDIC. If it chooses the Fed, it is called a "state member bank" (that is, member of Fed system); if FDIC, it is called a "state non-member bank"
  - Powers between member and non-member banks used to be different but no longer are; so, simply a choice of regulator

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U.S. Bank Regulatory Agencies: Core Concepts

- Regulatory authority is driven on a legal-entity, not functional, basis
- Overall framework is one in which multiple regulatory agencies often have similar or overlapping authority for the same banking organization
  - For example, various parts of the largest U.S. banks are overseen by Fed (bank holding company), OCC (national bank), FDIC (any insured bank), SEC (broker-dealer and/or asset manager), CFTC (swap dealer), CFPB (consumer lending) and others.
  - This trend was entrenched by the Dodd-Frank Act

U.S. Bank Regulatory Agencies: Federal Reserve Board

- Created in 1913
- Primary Federal regulator for bank holding companies and financial holding companies
- Federal regulator for state member banks
- The Federal Reserve also serves as regulator of any foreign bank operating in the United States
  - Foreign banks typically operate in the U.S. through a branch or subsidiary bank
  - Foreign banks may also engage in a range of other financial activities in the U.S. through subsidiaries; the Federal Reserve has required foreign banks with larger U.S. operations to consolidate all such subsidiaries and activities in an "intermediate holding company" (IHC)
- Federal Reserve Board exercises rulemaking authority but in practice often delegates examination duties to local Federal Reserve Banks

U.S. Bank Regulatory Agencies: Office of the Comptroller of the Currency

- Created in 1864
- Primary Federal regulator for national banks and Federal savings association
  - Authority also extends to subsidiaries of national banks
- Performs its examination functions through a combination of its principal office in Washington, D.C. and regional offices throughout the United States
- More examiner than regulator

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U.S. Bank Regulatory Agencies: FDIC

- Created in 1933
- Three discrete roles:
  - Insurance company (insures retail deposits, and charges banks premiums for that insurance)
  - Resolver of failed banks (effectively, a bankruptcy judge)
  - Examiner of state-nonmember banks (most community banks)
- Resolution authority
  - Traditionally responsible for closing any failed insured depository institution (IDI)
  - Under Dodd-Frank Act, also has special authority to resolve parent holding companies
  - Also, along with Fed, has authority for determining whether each large bank has a credible “living will” – i.e., pre-packaged bankruptcy plan
    - This authority has been used to establish a non-public regulatory regime that includes liquidity restrictions beyond those imposed by regulation
- Also gained regulatory authority post-crisis, as it was granted joint rule writing authority in a variety of areas (e.g., Volcker), on theory that voice of insurer was necessary

Special Case: Industrial Loan Companies (ILCs)

Industrial Loan Companies (ILCs) – In General

- State-chartered depository institutions that may engage in a wide range of banking activities, including accepting FDIC-insured deposits (though not demand deposits) and engaging in unlimited payments and lending activities
- However, not treated as a "bank" under the BHC Act; therefore,
  - May be owned by commercial/non-financial companies
  - Are not subject to holding company capital and liquidity rules
  - Are not examined by the Federal Reserve (or any other regulator)
- Seven states offer ILC (or industrial bank) charters, but most larger ILCs are chartered in Utah or Nevada.
- Major issues raised when Wal-Mart applied in 2006 to establish an ILC: led to regulatory and then legislative moratorium
- Current applications pending from Square and Rakuten

Current 15 Largest ILCs

(USD, in thousands)

Name	State	Deposits	Assets	Owned by a Commercial/Nonfinancial Company?
UBS BANK USA	UT	$48,516,990	$56,096,450	No
SALLIE MAE BANK	UT	$21,557,119	$29,485,766	No
BMW BANK OF NORTH AMERICA	UT	$6,471,085	$10,384,602	Yes
OPTUM BANK, INC.	UT	$8,370,878	$10,300,041	Yes
COMENITY CAPITAL BANK	UT	$7,355,921	$9,697,956	No
BEAL BANK USA	NV	$2,607,020	$5,269,206	No
MERRICK BANK	UT	$3,060,819	$3,929,460	No
WEX BANK	UT	$2,564,453	$3,191,732	No
ENERBANK USA	UT	$2,134,349	$2,416,734	Yes
USAA SAVINGS BANK	NV	$323,745	$1,866,188	No
MEDALLION BANK	UT	$927,758	$1,109,361	No
TOYOTA FINANCIAL SAVINGS BANK	NV	$850,976	$1,032,966	Yes
WEBBANK	UT	$751,237	$924,603	No
CELTIC BANK	UT	$672,695	$898,493	No
THE PITNEY BOWES BANK, INC.	UT	$594,128	$724,925	Yes

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Examination Authority

- Federal Reserve examines the bank holding company
  - Significant, given that modern bank management tends to be centralized
  - The Fed defers to the SEC and CFTC with respect to a securities subsidiary's compliance with the securities laws.

- The OCC examines a subsidiary national bank; the FDIC a subsidiary state nonmember bank; and the Fed a state member bank. The state banking regulator also examines state banks.

- The CFPB examines banks with assets greater than $10 billion for compliance with the consumer financial protection laws, though the frequency and intensity of those examinations vary greatly.

- In many areas, the agencies duplicate examinations.

Examination

- **Option 1:** Delegate authority to the bank's onsite examination teams
  - Benefit: that team understands the bank
  - Cost: that team is prone to capture (or reverse capture); it also lacks a broader perspective and some subject matter expertise
- **Option 2:** Centralize examination authority in Washington, and rely on "horizontal reviews" by subject matter experts to enforce common standards
  - Benefit: a broader view with experts going bank to bank
  - Cost: examiners don't understand each bank's unique business models or expertise and impose one-size-fits-all standards (e.g., "industry MRAs", without any notice and comment process)
- Currently, OCC is Option 1, and Fed is Option 2

CAMELS Rating System

CATEGORIES	Capital	Asset Quality	Management	Earnings	Liquidity	Sensitivity to risk

SCORES	1 Strong	2 Satisfactory	3 Less than Satisfactory	4 Deficient	5 Critically deficient

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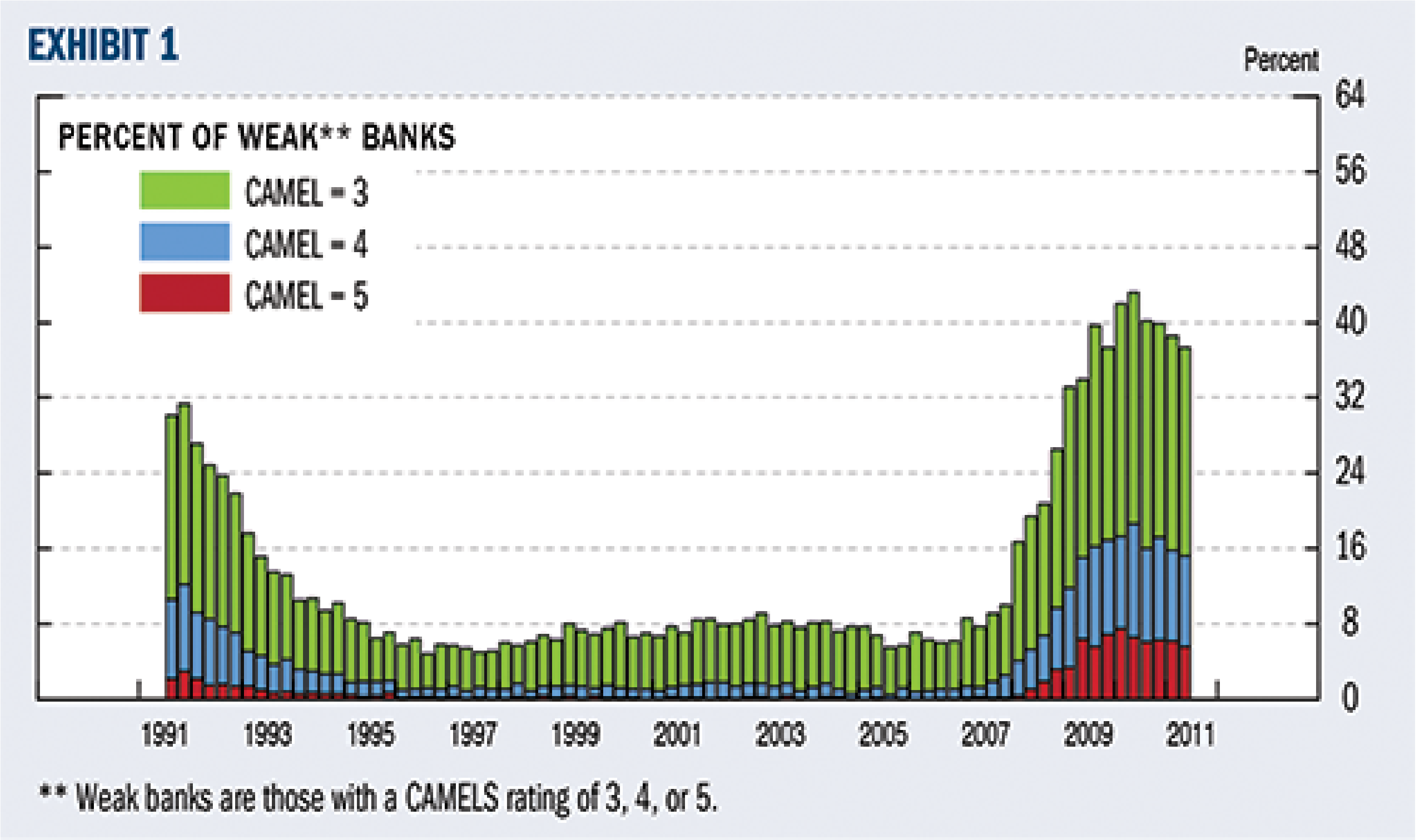
How Do the C-A-M-E-L-S Add up to a Composite Rating?

- CAMELS System: no statutory mandate; invented by banking agencies circa 1978; has never been meaningfully reviewed since (other than adding an "S" in 1996)
- At a time prior to regulatory capital and liquidity standards, detailed financial reporting and detailed call reports – and before most large banks were publicly traded – an examiner rating was the best and often only objective assessment of a bank's financial condition.
- As capital and liquidity regulation has become more quantitative and objective, CAMELS ratings have become more qualitative and subjective: a 1996 update to the CAMELS standards stated that "the management component is given special consideration when assigning a composite rating." Over time, it has become the predominant consideration.
- Ratings tend to cluster at 2s and 3s. Game theory:
  - A "1" puts an agency at risk in the event the bank later has troubles.
  - A "4" comes with significant restrictions on activity, and might be contested by the bank.
  - A "5" basically means insolvency.

Are CAMELS Ratings Accurate?



Consequences of a Low Rating or Other Examiner Criticism: The "Penalty Box"

- Colloquially known as the "penalty box," regulators post-crisis used the confidential examination process to prohibit a bank (without taking a public or formal enforcement action) from expanding through investment, merger, or adding a branch. There were various ways into the penalty box.
- A "3" rating for management has been an automatic halt on expansion. Under section 4(k) of the Bank Holding Company Act, a financial holding company whose subsidiary bank receives a "3" rating for management must receive Federal Reserve approval to expand certain non-banking activities. Regulators extended that prohibition to include almost any type of expansion.
- Under Federal Reserve SR 14-02, a wide range of supervisory examination concerns triggered a ban on expansion.
- Theory is that a bank lacks the managerial resources to both remediate the identified compliance problem and expand at the same time. Organic growth generally (but not always) is permitted
- Unique to banking regulation. Contra: Volkswagen; Boeing; Facebook.
- In recent years, penalty box has shrunk in practice, though it has not been publicly disavowed or reformed.

Consumer Examination Authority

- Section 1025 of DFA grants the CFPB "exclusive authority to require reports and conduct examinations on a periodic basis of an insured depository institution with total assets of more than $10 billion and any affiliate thereof" for purposes of—
  - Assessing compliance with the requirements of "Federal consumer financial laws;"
  - Obtaining information about the activities subject to such laws and the associated compliance systems or procedures of such persons; and
  - Detecting and assessing associated risks to consumers and to markets for consumer financial products and services.
- Section 1025 also grants the CFPB primary authority to enforce "Federal consumer financial laws" for those institutions. A banking agency may enforce only after (i) it has referred its concern to the CFPB, and (ii) the CFPB has failed to initiate an enforcement action within 120 days of the referral.
- "Federal consumer financial law" includes, among others, Equal Credit Opportunity Act, Fair Credit Reporting Act and Home Ownership and Equity Protection Act, and Fair Debt Collection Practices Act.
- Banking agencies have continued to examine and enforce.

Examiners Issue Two Types of Findings

Matters Requiring Attention

Matters Requiring Immediate Attention

- No statutory or regulatory definition
- Come with no prescribed penalties for their issuance or a failure to remediate
- In practice, they are treated by regulators and bank compliance staff as binding legal orders.
- Failure to remediate in practice can lead to downgrade in management rating or entry into “penalty box.”

Confidential Supervisory Information (CSI)

- The examination process and examination ratings are secret.
  - They are exempt from disclosure under Freedom of Information Act (FOIA)
  - The agencies take the position that any exam-related information is government property and thus that its disclosure is a conversion of federal property, so a federal crime
- Post-crisis, agencies have designated a much wider set of information as “confidential supervisory information.”
  - Requests for information
  - “Industry MRAs”

Appeals of Examination Ratings

- There is, as a purely legal matter, an appeals process for disagreements as to ratings and findings (including MRAs)
- It is rarely utilized – for fear of retaliation – and unlikely to be successful, as the appeal is to others within the agency
  - Julie Andersen Hill, When Bank Examiners Get It Wrong: Financial Institution Appeals of Material Supervisory Determinations , 92 Wash. U. L. Rev. 1101, 1143-1148, 1165-1167 (2015)
- Contested cases generally occur only when individuals are charged

Enforcement: Formal Actions

- Formal Written Agreement
- Cease & Desist (C&D)
- Personal Cease and Desist Order (PC&D)
- Prompt Corrective Action (PCA)
- Safety and Soundness Directive
- Termination of FDIC Insurance
- Removal or Suspension of Institution Affiliated Party (IAP)
- Civil Money Penalties (CMPs)

In practice, only C&Ds and CMPs are used, as the "penalty box" has displaced the others.

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Bank Balance Sheets

Bill Nelson, EVP & Chief Economist, BPI

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Introduction

- Balance Sheet
  - Assets
  - Liabilities
  - Capital
- Banking issues in current public policy
  - Optimal capital
  - Loan quality
  - Optimal liquidity
  - Industry concentration

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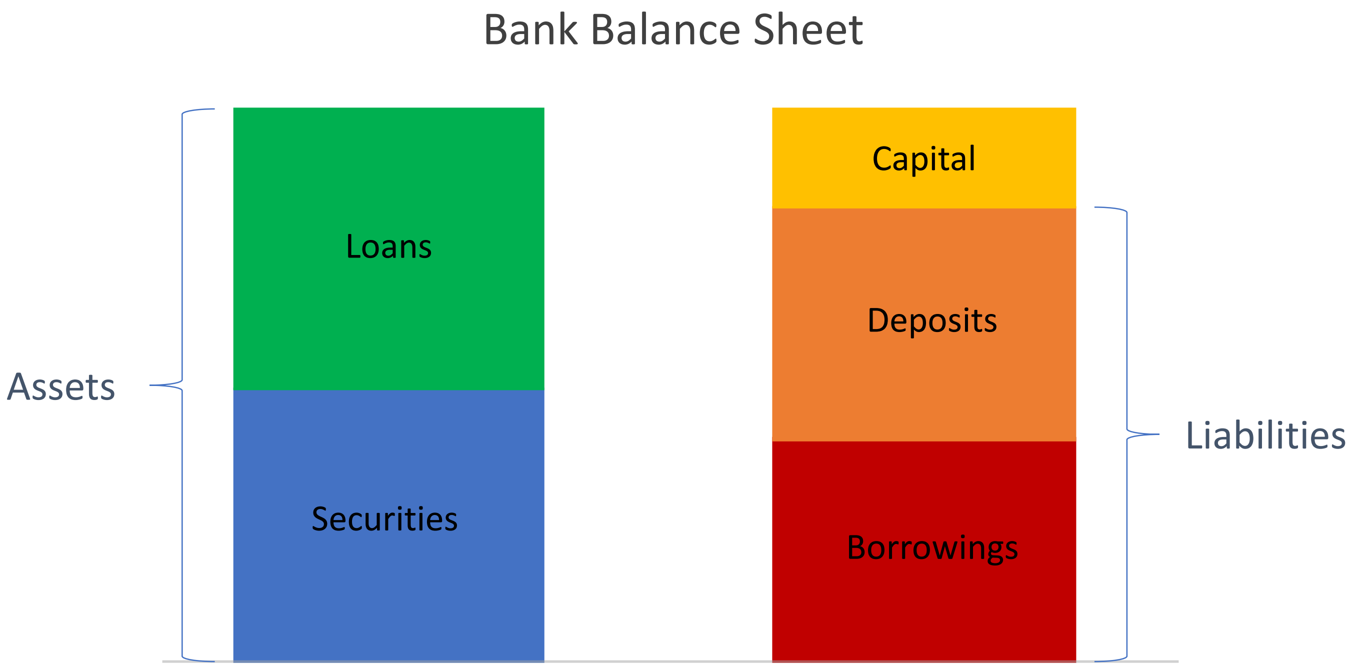
Simplified Balance Sheet of a Commercial Bank

- Bank assets are loans the bank has made and securities the bank has purchased. It is money owed to the bank.
- Bank liabilities are deposits the bank has received and other borrowings by the bank. It is money the bank owes to others.
- Capital is neither a liability nor an assets. It is the difference between the bank's assets and its liabilities. Capital reflects the owners' interest.



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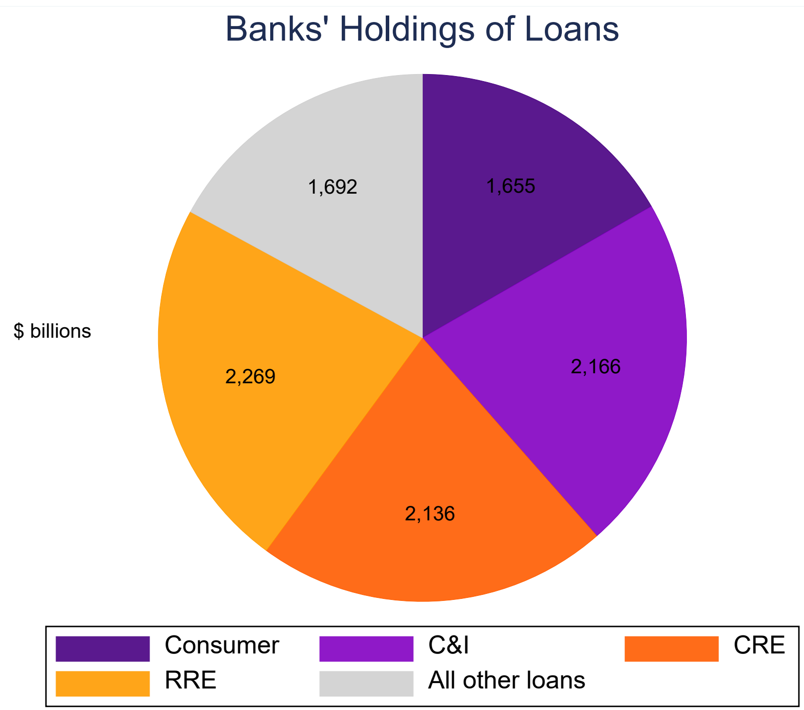
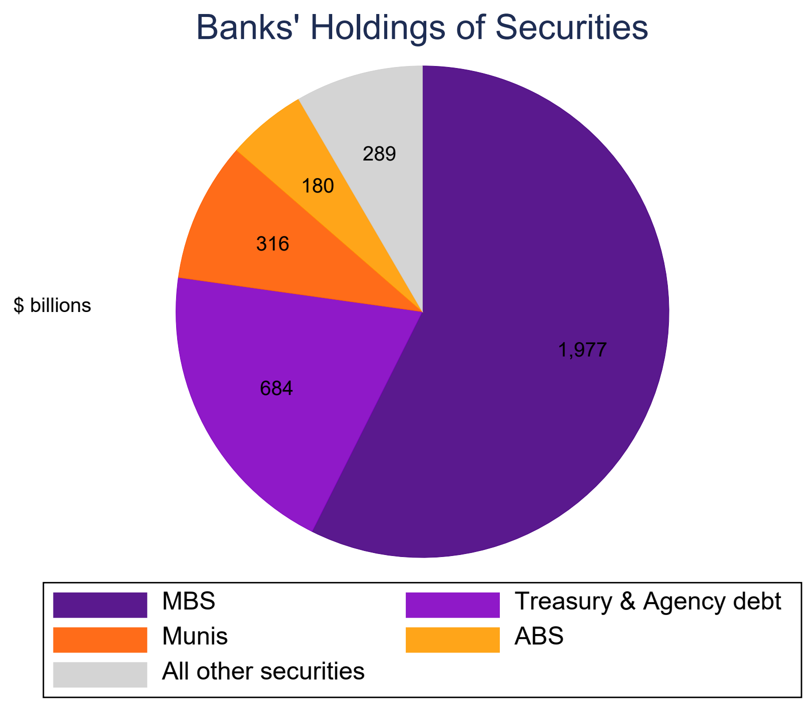
Bank Assets: Loans

- In the first quarter of 2019, banks had $10 trillion in loans outstanding on their books:
  - The "outstanding" amount is the amount currently owed the bank. It is a stock.
  - The "origination" amount is the amount originated by the bank. It is a flow.
- Real estate loans include residential real estate (RRE) and commercial real estate (CRE) loans.
- Commercial and Industrial (C&I) loans include all loans to nonfinancial businesses that are not CRE loans.
- Consumer loans include loans to households that are not RRE loans (eg. auto, student, and credit card loans).



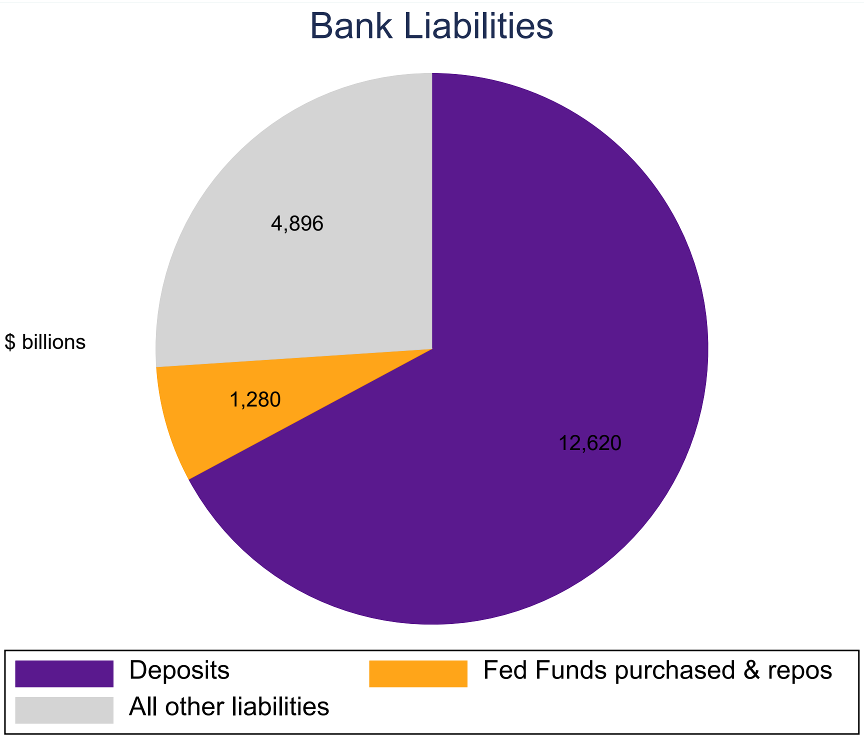
Bank Assets: Securities

- When a bank buys a security it provides credit to the economy just like when it makes a loan.
- In the first quarter of 2019, banks owned $3.4 trillion in securities.
- Of those, nearly $2 trillion are agency mortgage-backed securities (MBS (guaranteed by Fannie, Freddie, or Ginnie).
- The remainder is split about equally between Treasury securities and private securities (corporate bonds and asset-backed securities (ABS)).
- ABS fund loans to business and households.
- Banks hold securities in investment accounts (16.4% of assets) and trading accounts (7.9% of assets).



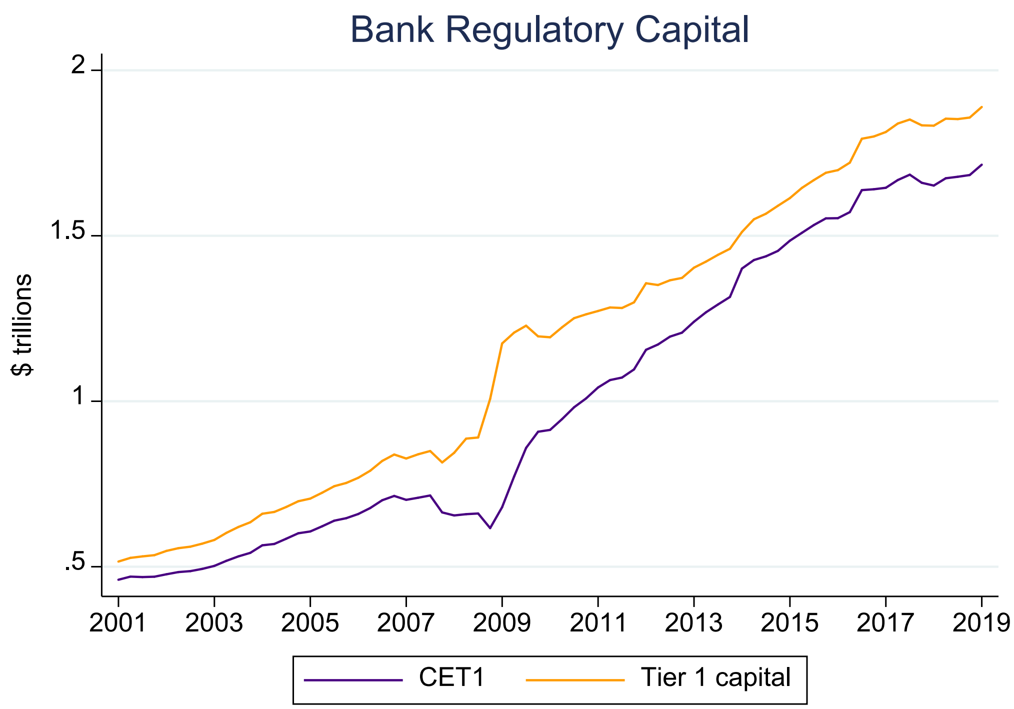
Bank Liabilities

- In the first quarter of 2019, bank liabilities equaled $18.8 trillion.
- Over $12½ trillion were deposits.
  - Deposits include checking and savings accounts and certificates of deposit.
  - 49% of bank deposits are insured.
  - A Eurodollar deposit is a dollar deposit received at a bank's London branch. "LIBOR" is the interest rate on Eurodollar deposits.
- The remainder include borrowings.
  - Short-term borrowings include repo – the bank buys a security with an agreement to resell – and fed funds – an unsecured borrowing from a bank or agency.
  - Long-term borrowings include bonds that can be converted into equity if the bank fails.



Bank Capital

- Capital is the difference between assets and liabilities, about $2.35 trillion in the first quarter of 2019.
  - Often people talk about capital as if it were a pile of safe assets, but that's a misunderstanding.
- A bank can increase its capital by selling shares or retaining profits.
- A bank can reduce its capital by paying a dividend or buying back shares.
- There are two main types of regulatory capital.
  - "CET1" – Common stock
  - "Tier 1 capital" – CET1 plus "preferred stock" (gets priority to a dividend).



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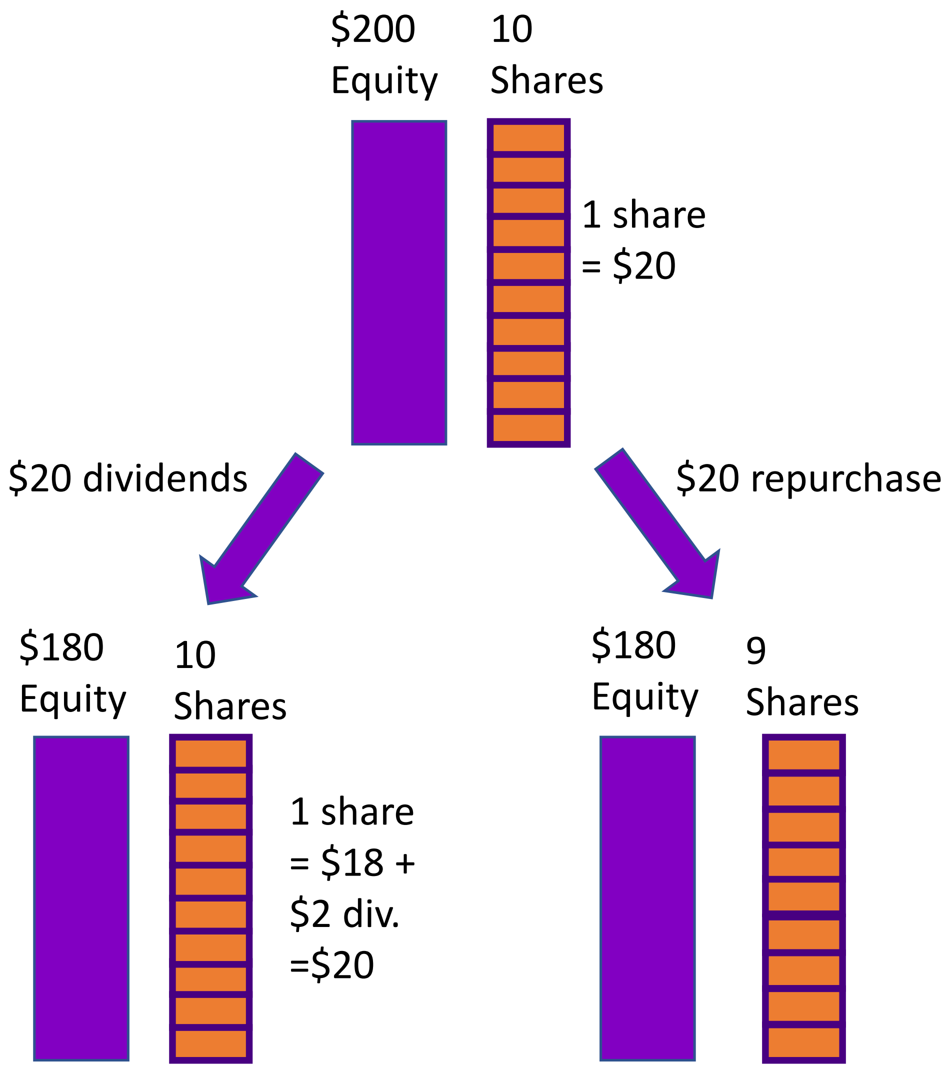
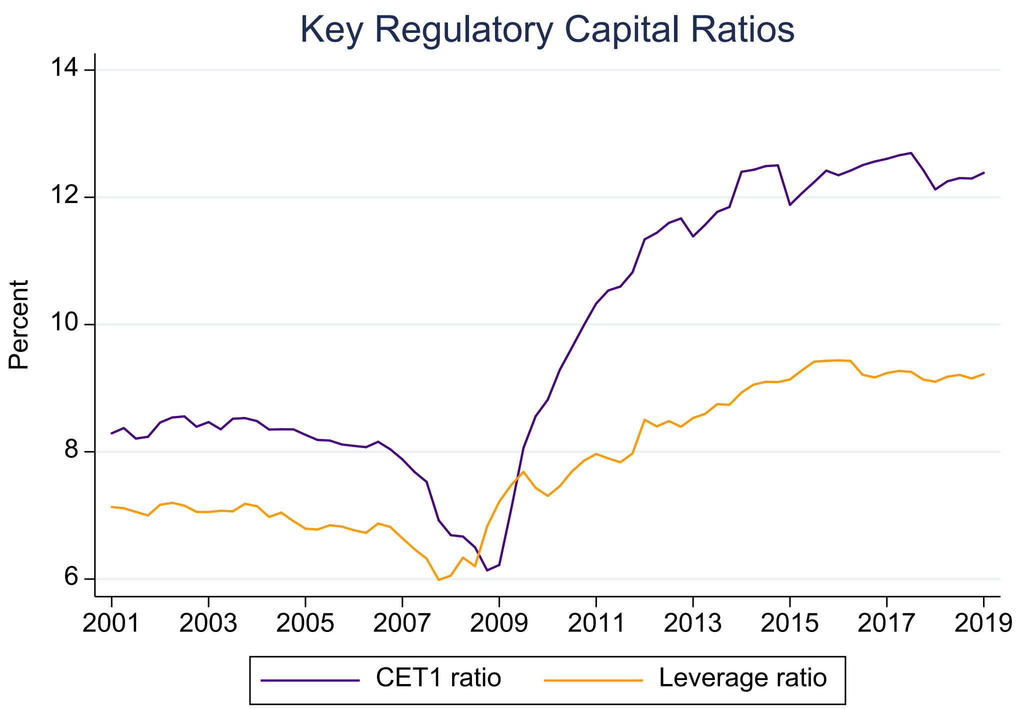
What are Stock Buybacks?

- Businesses disperse funds to their investors by paying a dividend or buying back stock.
  - A dividend is a direct payment to stockholders, with each share receiving the same amount.
  - In a stock buyback, the corporations use the funds to purchase shares at the market price.
- In theory, the value of the business and the gain to shareholders is independent of whether it pays a dividend or repurchases stock
  - In practice, buybacks have some advantages.



What are Capital Ratios?

- Capital ratios are a measure of bank capital divided by a measure of bank assets.
- Risk-based capital ratios weigh each category of bank assets by risk.
  - For example, a C&I loan receives a weight of 100%, an agency MBS receives a weight of 20%.
  - “Advanced approaches” risk-weights are determined using bank models.
- Leverage ratios are not weighted for risk; each asset gets a weight of 100%.
- Because risk-weighted assets are less than total assets, risk-based capital measures are typically higher than leverage ratios.



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Why is Capital Important?

- Capital absorbs losses to the bank.
- A bank with a lot of capital has assets that exceed its liabilities by a significant amount.
- The bank can therefore suffer a bigger loss without its assets falling below its liabilities.
- A bank whose assets are worth less than its liabilities is insolvent.
- Even a bank whose assets are above its liabilities by a small amount may be unable to function because the market will not have confidence in it.

So why not make banks fund themselves entirely with capital?

- Funding bank assets with capital (money raised by selling equity shares or retaining income) is more expensive than funding it with debt (money raised through borrowings including deposits).
- As a result, the more a bank funds itself with capital, the more it must charge for loans. In other words, the supply of bank credit for businesses and households decreases.
- For the same reason, more capital means lower deposit rates and fewer deposits.

What are the Costs and Benefits of Capital Requirements?

- There are costs and benefits to society of bank capital requirements.
  - Higher capital requirements reduce the likelihood of future financial crisis.
  - But higher capital requirements reduce the availability of credit and so economic output.
- Academic studies have come up with a wide range of estimates of optimal bank capital to risk-weighted bank assets ratios. Estimates range from 7--26%.
- U.S. banks, in aggregate, have a ratio of 13.6%.

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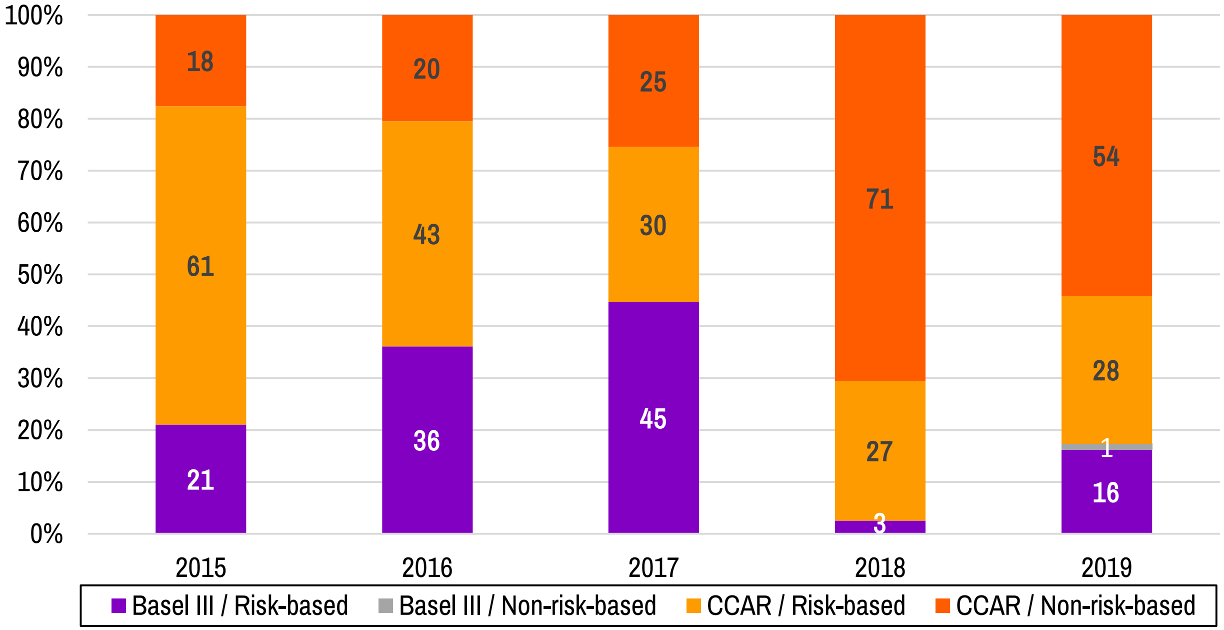
Stress Tests

- Initially created by the Fed during the crisis to help restore confidence in the banking system and size potential TARP injections of capital.
- Each year, the Fed conducts the Comprehensive Capital Analysis and Review (CCAR) of large banks.
  - Fed forecasts banks' capital ratios for 9 quarters assuming a recession more severe than the Great Recession.
  - Bank capital ratio must remain above regulatory minimums over the projection horizon.
- Also each year, the Fed and the banks execute the Dodd-Frank Stress Test (DFAST).
- Each bank forecasts its own capital ratios under the Fed scenario.

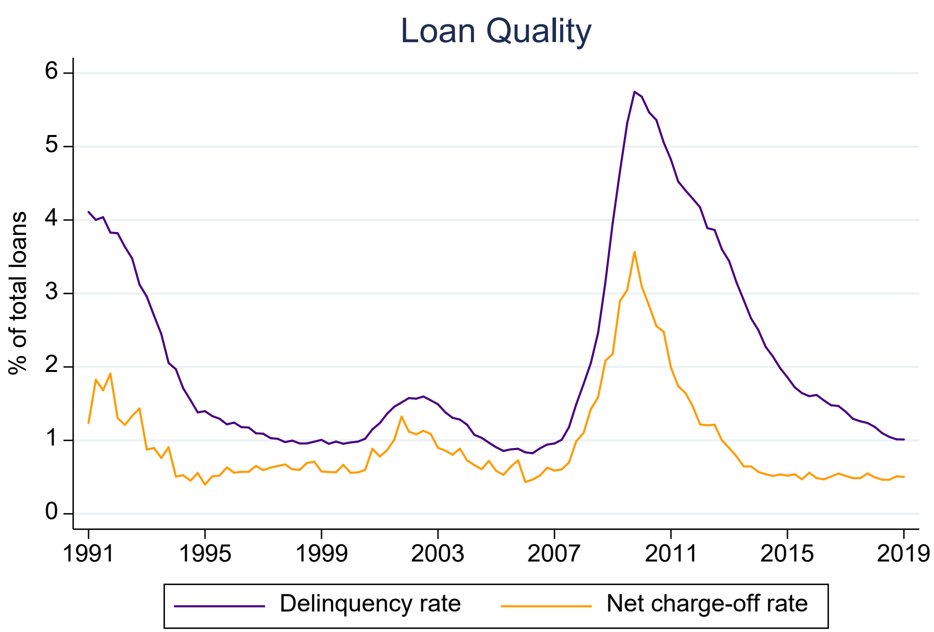
Capital Requirements More Likely to Bind



Note: Bars are weighted by RWA. Sample includes all stress-tested banks in a given year.

Loan Quality

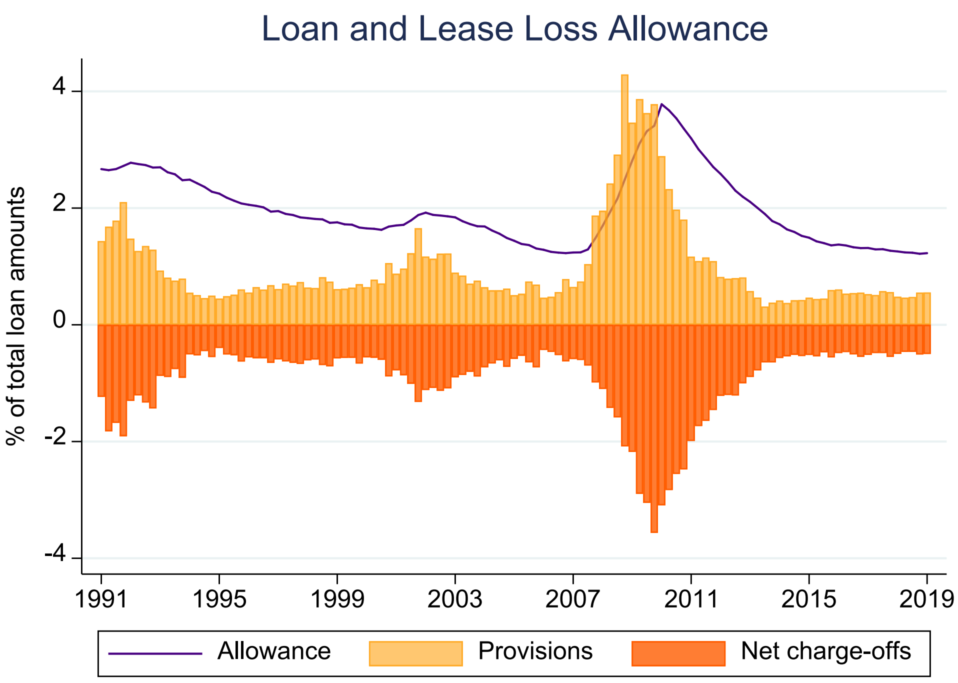
- Loan performance is measured using:
  - **Delinquency rates** – the percent of loan amounts that are delinquent in payments
  - **Net charge-off rates** – the percent of loan amounts banks conclude will not be paid back minus recoveries.
- Consumer delinquency rates have ticked up.
- Lending standards for large business loans that banks make but do not hold have deteriorated somewhat.
- Total delinquency and net charge-off rates are currently very low.



Note: Loan delinquency is defined as 90 days or more past due or nonaccrual.

Loan Loss Provisioning

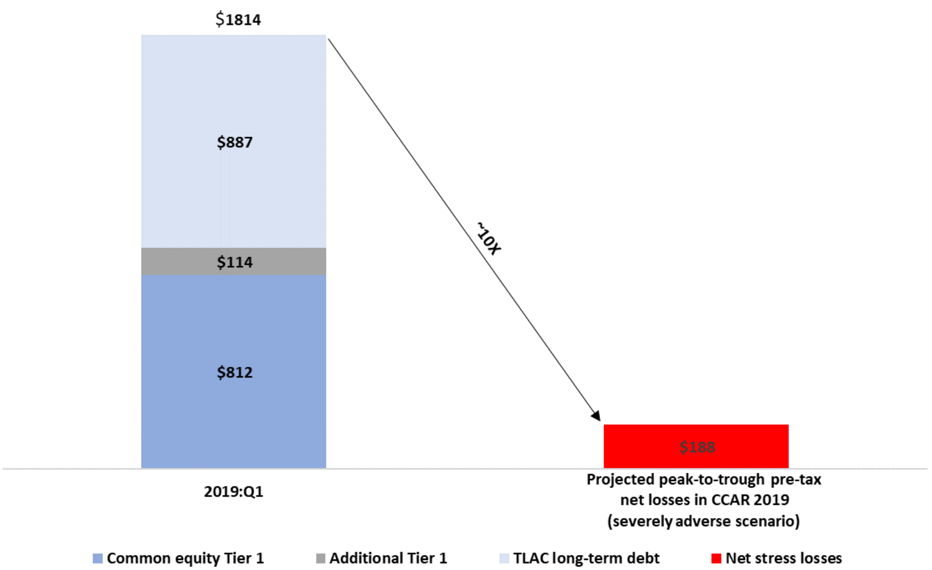
- When a bank concludes it has made a loss on a loan, it "provisions" / "takes a reserve" against the loss.
- Provisions are deducted from income and added to the loan and lease loss allowance.
- The allowance is a "contra asset" (a negative asset) and so reduces bank capital.
- Charge-offs reduce the allowance but not income. Because loan and allowance both decline, capital is unaffected.
- FASB has recently changed the rules for when a bank takes a provision. The new rules are called the "current expected credit losses," or "CECL" standard.



Total Loss Absorbency

- If a bank incurs a loss, the loss would first be absorbed by the loan and lease loss allowance and then capital.
- If the bank failed, its long-term debt would be converted to equity to recapitalize the new bank.
- At the end of 2018, the eight largest U.S. banks had $1.8 trillion in loss absorbing resources.
- In the Fed's 2019 stress test, assuming a recession worse than the Great Recession, the Fed projected losses of $188 billion for the same set of banks.

Loss Absorbing Resources of the U.S. GSIBs Combined ($ billions)



Source: S&P Global and Market Intelligence, Federal Reserve Board, Company Reports (10-Qs).
TLAC = Total Loss Absorbing Capacity.

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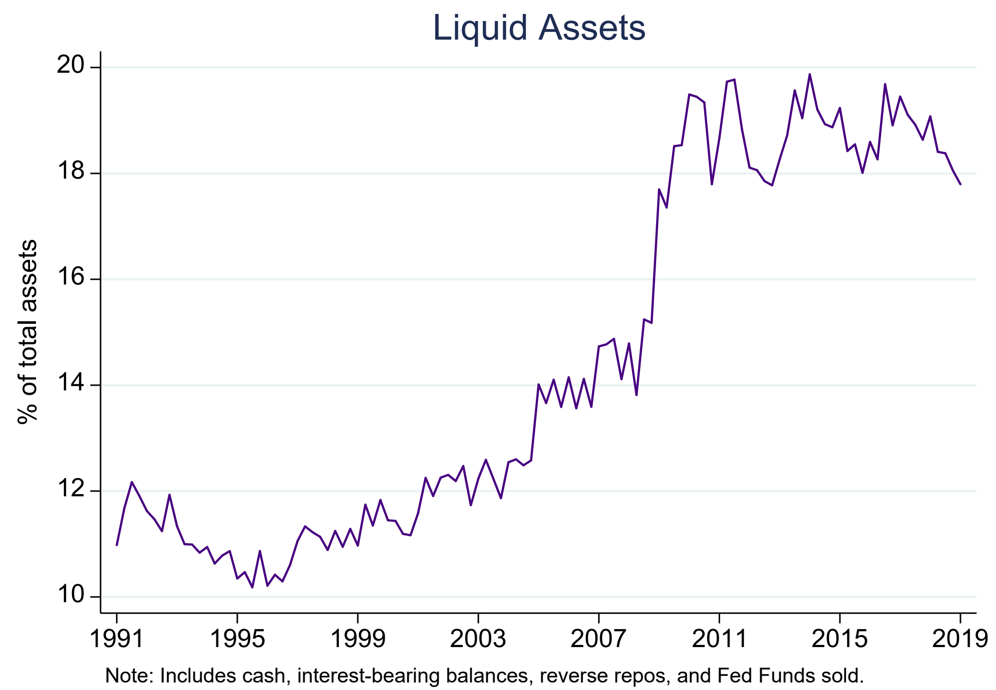
What is Liquidity?

- The term “liquidity” has two related but distinct meanings in finance.
- An asset is liquid if it can be bought or sold quickly in size without moving the price.
- An institution is liquid if it can meet its scheduled payments or demands for funds without incurring high costs.
- Bank liquidity refers to the latter meaning but also depends on the former.
- A bank is liquid if it can repay borrowers when due, meet deposit withdrawals, and satisfy draws on lines of credit that it has extended without paying inordinately in funding markets or selling assets at fire-sale prices.



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Banks are Inherently Illiquid

- Banking at its core is the business of funding illiquid assets—loans—with highly liquid liabilities—deposits. That is, banks engage in liquidity transformation (often called "maturity transformation") and are inherently illiquid.
- Banks deal with illiquidity by (1) borrowing and lending in the interbank market and (2) maintaining a stock of high-quality liquid assets (HQLA) to sell or repo.
- Because banks serve a valuable purpose and because bank runs are contagious, society also address bank illiquidity through deposit insurance and providing a lender of last resort (the Fed).

Liquidity Requirements

Basel III created two new liquidity requirements:

- **Liquidity Coverage Ratio (LCR):** Banks must maintain hiqh-quality liquid assets (HQLA) to meet a 30-day period of severe idiosyncratic and market stress.
  - HQLA consists mostly of deposits at the Fed ("reserves"), Treasuries, and (subject to a haircut) agency-MBS.
  - Medium-sized banks must hold HQLA equal to 70% of the requirement.
- **Net Stable Funding Ratio (NSFR)**: Banks must have enough sticky funding to fund illiquid assets over a year. Precise meaning is no longer clear.
  - The U.S. has adopted the LCR but not yet the NSFR.
- Large banks must hold liquidity to fund their orderly resolution. Details are largely secret.
- Large banks must conduct monthly liquidity stress tests at the one-day, one-week, 30-day, 90-day, and one-year horizon.
- Large banks are subject to an annual horizontal review of their liquidity practices.

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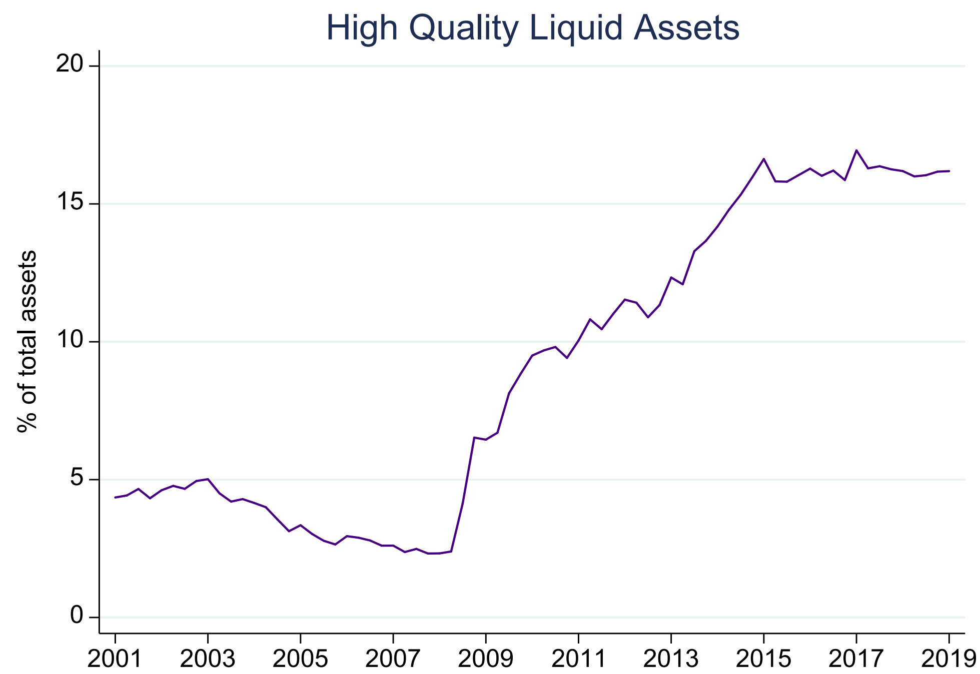
How much HQLA should banks be required to hold?

- There has been less research on optimal liquidity requirements than on optimal capital requirements.
- Requiring banks to hold more HQLA results in banks lending more to the government and less to main street.
- A 2016 BIS study estimated that requiring banks to hold more HQLA resulted in a 3-6% permanent decline in lending.
- A 2010 BIS study estimated that compliance with liquidity regulations reduces the annual probability of a crisis by 0.20%.
- A 2016 Fed working paper argues that the benefit of liquidity requirements is buying time to ensure a bank is solvent before providing LOLR assistance.



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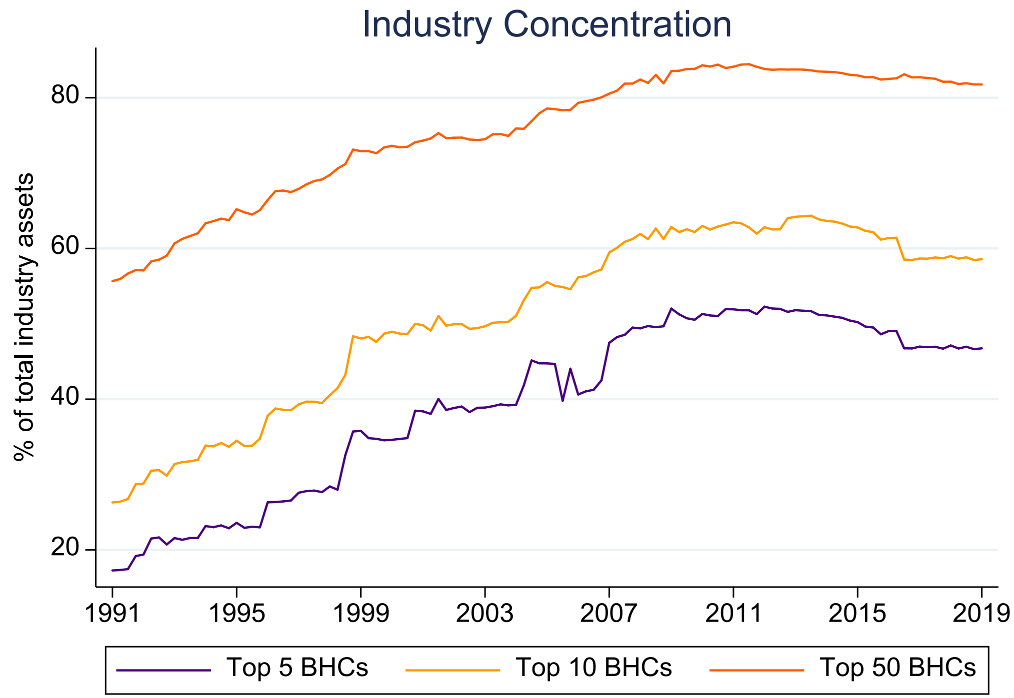
Concentration

- After rising for decades, industry concentration has edged down since the crisis.
- As calculated by the New York Fed, the share of assets at the 5, 10, and 50 largest bank holding companies has edged down.
- The Herfindahl index, a standard measure of concentration, has also fallen.
- Some other measures have edged up, however, such as share of top 5 measured at the bank level (not holding company).
- The robust conclusion is that concentration has been little changed since the crisis.



Current Events in Financial Services

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Recent Money Market Turmoil

Bill Nelson, EVP & Chief Economist, BPI

Artificial Intelligence

Fabrice Coles, VP of Government Affairs, BPI

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Artificial Intelligence (AI)

- What is AI?
  - In general, AI is associated with the development and implementation of computer systems to perform tasks that traditionally would have required human cognitive intelligence, such as thinking and decision making. Machine learning is a subset of AI that generally refers to the ability of a software algorithms to identify patterns and automatically optimize and refine performance from processing large data sets with little or no human intervention or programming.
- AI Could Provide Big Benefits to Underserved Borrowers: A “Second Look” to Increase Access to Credit
  - AI and machine learning offer the potential for a leap forward for the accuracy and fairness of decisions on consumer credit. AI can integrate and analyze richer data sets than conventional credit underwriting, and more accurately assess a consumer’s creditworthiness using factors ordinarily not considered by conventional underwriting systems. This increased accuracy will benefit borrowers who are shut out of low-cost bank credit under conventional underwriting approaches.
- Policymakers are Examining Whether or Not the Existing Rules Work for this New Set of Tools
  - Consumer protection and risk management rules and guidance were developed before the at scale development and use of machine learning tools for credit decision purposes. As a result, policymakers and regulators are thinking about how to properly monitor the use of these powerful tools to balance the improvements in access to credit they can bring with the needs to mitigate any potential issues posed by their use.
- The Big Picture
  - Consumer protection and risk management rules and guidance were developed before the at scale development and use of machine learning tools for credit decision purposes. As a result, policymakers and regulators are thinking about how to properly monitor the use of these powerful tools to balance the improvements in access to credit they can bring with the needs to mitigate any potential issues posed by their use.

Artificial Intelligence (AI)

- Issues for Policymakers:
  - **How to Ensure Fair Outcomes:** Under current law, lenders generally must not use prohibited basis data or proxies for discrimination in their credit underwriting systems meaning they cannot choose to lend or not lend on the basis of protected classifications such as race, gender or national origin. Policymakers must decide if this framework applies in the same ways when dynamic data science and machine learning models are being used to help inform the decision.
  - **How to Promote Innovation While Keeping the Financial System Safe & Stable**: AI systems are dynamic, and the rules that some regulators are considering applying to them were based on static models, which creates the risk that the rules are not a good fit for the current environment. If these models are meant to be deployed at scale, clarity will need to be provided to ensure that industry participants, regulators and consumers are all on the same page.
  - **Limits on Data Use:** Policymakers are already passionately debating the complex topic of the appropriate use of consumer data to inform a credit decision. Most observers agree that non-traditional data sets could transform how lending to consumers is performed but there is a robust conversation already underway about how to properly calibrate the use of this data and whether some categories of data are appropriate to use at all.

Bank Secrecy Act

Gary Kalman, Executive Director, FACT Coalition (theFactCoalition.org)

Anti-Money Laundering

Cara Camacho & Mike Lee, SVPs of Government Affairs, BPI

Bank Secrecy Act / Anti-Money Laundering (BSA/AML)

- Bank Secrecy Act (BSA)
  - Passed in 1970, largely unchanged
  - Banks are effectively deputized to prevent, identify, and report suspicious activity, including terrorist financing
  - Banks submit certain reports or records that have a "high degree of usefulness" to law enforcement or national security officials
  - Data shows that banks' compliance efforts are not yielding real results, falling well short of the goal of providing "usefulness" to law enforcement
- Reasons for Reform
  - Better leads for law enforcement
  - Increased efficiency--refocus compliance and enforcement on the most insidious financial crime.
  - Streamlined regime to better address the flow of criminal proceeds, terrorist and proliferation funds, and foreign money meant to influence our elections and destabilize our democracy.
- HR 2514: COUNTER Act of 2019 (Coordinating Oversight, Upgrading and Innovating Technology, and Examiner Reform)
  - Sponsored by Rep. Cleaver, passed House Financial Services Committee unanimously on May 8, 2019

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Bank Secrecy Act / Anti-Money Laundering (BSA/AML)

HR 2514, COUNTER Act:

1. Amends the definition of the Bank Secrecy Act to include "protect our national security, to safeguard the integrity of the international financial system".

2. Strengthens Treasury Department role in AML/CFT

3. Improves the Suspicious Activity Reporting (SAR) regime to provide more useful information to law enforcement.

4. Modernizes the AML system by encouraging the use of innovation in BSA compliance.

5. Does <u>not</u> include a Beneficial Ownership requirement (HR 2513, Corporate Transparency Act of 2019, Rep. Maloney).

Bank Secrecy Act / Anti-Money Laundering (BSA/AML)

S. 2563, ILLICIT CASH Act: Improving Laundering Laws and Increasing Comprehensive Information Tracking of Criminal Activity in Shell Holdings Act

- Sponsored by Senators Warner (D-VA), Cotton (R-AR), Jones (D-AL), Rounds (R-SD), Menendez (D-NJ), Kennedy (R-LA), Cortez Masto (D-NV) and Moran (R-KS)

1. Establishes national exam and supervision priorities for BSA compliance

2. Strengthens Treasury Department role in AML/CFT (FinCEN comp, FinCEN liaison, rotational/detail, privacy and innovation subcommittees)

3. Improves the Suspicious Activity Reporting (SAR) regime to provide more useful information to law enforcement.

4. Modernizes the AML system by encouraging the use of innovation in BSA compliance (transaction monitoring/bulk data reporting)

5. Includes the establishment of a Beneficial Ownership directory

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