

The Traditional Finance Industry (“Tradfi”)

MGT 4074 Fintech & Crypto Tokens, Spring 2025

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August 27, 2025

Welcome

No quiz today! Roll Call instead.

For next class (after Labor Day), please read:
“Bank Runs, Deposit Insurance, and Liquidity”
By Diamond and Dybvig

<https://www.journals.uchicago.edu/doi/abs/10.1086/261155>

This is our longest and hardest reading yet, but you have 7 full days to do it, and I will instruct you on how to read this paper.

Schedule Today

- In the News: Lisa Cook and Federal Reserve Independence
- Guided Discussion: Seeing Like a Bank
- How to Read an Economic Theory Paper
- The Traditional Financial System
 - Debt and Equity Contracts
 - Market Structure
 - Financial Intermediaries
 - Transaction Costs
 - Asymmetric Information
 - Moral Hazard
 - Deposit Insurance

In the News: Fed Independence

Trump fires Fed Gov. Lisa Cook 'effective immediately'



President Trump posted a letter on social media addressed to Federal Reserve Gov. Lisa Cook, informing her that he was terminating her due to allegations of mortgage fraud. The move is likely to tee up an unprecedented legal fight over the Fed's independence.

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Q: What does it mean to fire Lisa Cook “with cause”?

A: “With cause” tends to mean due to gross misconduct or fraud. Governor Cook has announced she will appeal the firing in court. Federal courts will now decide whether the alleged misrepresentation she made on her mortgage application qualified as cause for firing. The markets will watch closely.

Market Reactions



- Equities priced in dollars have not moved (is this expected?)

Market Reactions



- Gold is up slightly (is this expected?)

Seeing Like a Bank

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- The essay likens bank systems to “sedimentary layers.” What does that mean?
- Why do regulations require secrecy in Suspicious Activity Reports?
- If some customers never grasp basic banking math, is the failure theirs, society's, or the bank's? How should banks respond?

Seeing Like a Bank: My Answers

This is how I, personally, would answer each of these discussion questions:

- “Tiers” of customer support act as a funnel where customers are **assumed to be unsophisticated and financially illiterate until proven otherwise**. This can improve efficiency, but harm service quality especially for a bank’s highest-value customers.

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- Suspicious Activity Reports must be generated when a customer may be a criminal. Therefore banks are sometimes prohibited by law from serving their customers transparently.
- Low financial literacy persists across society and gives sophisticated counterparties ample opportunities to take advantage. My opinion? Banks should deal in good faith and build reputations for honesty and quality, not count on optimized contract language to immunize them from lawsuits.

How to read an economic theory paper

My system:

- ① Print out the paper. block out one hour to read it with **no other screens or notifications**, just a notepad and pen
- ② Copy down key terms in the abstract that you don't understand
- ③ Read through the paper, copying down any **definitions of the key terms** as you encounter them
 - Take as many one-hour sessions as you need with breaks in between. The sessions should be uninterrupted.
- ④ At the end, re-read the abstract, the intro, and the conclusion
- ⑤ Write down the **main result** of the paper (the key argument which is proven true in the body of the paper) in two sentences or fewer, in your own words. Bookmark the page in the paper where you believe the statement of the key result is given.

Debt and Equity Contracts

- **Debt:** a contract to repay a **fixed dollar amount** on a specific schedule
 - Failing to pay a debt contract results in **corporate bankruptcy**: a court gives the senior debt-holders complete control and ownership of the company (their debt is *converted* into equity)

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The theory of **Townsend** (1979) argues that debt and equity are *THE optimal combination of contracts* between investors and entrepreneurs who face information asymmetry, when it is costly for investors to verify the reports from entrepreneurs.

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 - Credit cards include “**revolving debt**” contracts governed by **credit limits** and interest charged on unpaid (“revolving”) balances
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- **Q:** If you wanted to raise debt or equity from the public, do you know what you’d need to do?
 - Legally incorporate a company with an independent board of directors
 - File a “Prospectus” with the SEC including audited financial statements
 - Find a venue to sell your shares to, either via an investment bank (an “IPO”) or a securities exchange directly (a “direct listing”)
 - **Skipping these steps is illegal under federal law!**

Structure of Financial Markets

Most financial markets can be classified as either **Money Markets** or **Capital Markets**: **Money market**:

- **Definition**: a financial market in which only short-term debt instruments (original maturity less than one year) are traded.
- **Usage**: corporations, banks, and households store excess money in these instruments to earn a bit of interest while staying perfectly **liquid**

Capital market

- **Definition**: a financial market in which longer-term debt instruments (original maturity one year or greater) and equity instruments are traded
- **Usage**: investors with long time horizons (such as pension funds or young high earners) invest in capital markets to maximize long-run return

Structure of Financial Markets

Primary Markets: new issues of a security (a bond or a stock) are sold.

- Often take place privately between the issuer and a financial institution such as an investment bank
- Investment banks **underwrite** securities: they buy a corporation's securities at a negotiated price, then offer them to the public (this is called an **Initial Public Offering (IPO)**)

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Secondary Markets: previously issued securities (stocks and/or bonds) are traded

- **Example:** The New York Stock Exchange and NASDAQ (National Association of Securities Dealers Automated Quotation System)
- Key market participants:
 - **Brokers:** match buyers with sellers of securities, earning percentage **commission**.
 - **Dealers:** intermediate between buyers and sellers by trading securities, earning **profit from price differences**.
 - Many financial institutions perform both functions and are “**broker-dealers**”

Structure of Financial Markets

Secondary markets: (1) Exchange and (2) over-the-counter (OTC) market

Exchange:

- **Definition:** buyers and sellers of securities (or their agents or brokers) meet in one central location to conduct trades.
- **Features:** via physical location and computers, highly competitive, more regulated
- **Examples:** New York Stock Exchange for stocks and the Chicago Board of Trade for Commodities

Over-the-counter (OTC) market

- **Definition:** **Dealers** at different locations who have an inventory of securities stand ready to buy and sell securities “over the counter” to **anyone** who comes to them and is willing to accept their prices
- **Features:** via computers, very competitive, larger amount, less regulated
- **Examples:** markets for U.S. government bonds, negotiable certificates of deposit, federal funds, and foreign exchange.

Structure of Financial Markets

TABLE 1 Principal Money Market Instruments

Type of Instrument	Amount (\$ billions, end of year)			
	1980	1990	2000	2013
U.S. Treasury bills	216	527	647	1,591
Negotiable bank certificates of deposit (large denominations)	317	543	1,053	1,762
Commercial paper	122	557	1,619	951
Federal funds and security repurchase agreements	64	388	768	1,919

Source: Federal Reserve Flow of Funds Accounts; <http://www.federalreserve.gov>

Structure of Financial Markets

TABLE 2 Principal Capital Market Instruments

Type of Instrument	Amount (\$ billions, end of year)			
	1980	1990	2000	2013
Corporate stocks (market value)	1,601	4,146	17,627	21,363
Residential mortgages	1,106	2,886	5,463	9,863
Corporate bonds	366	1,008	2,230	6,436
U.S. government securities (marketable long-term)	407	1,653	2,184	4,359
U.S. government agency securities	193	435	1,616	6,199
State and local government bonds	310	870	1,192	2,925
Bank commercial loans	459	818	1,091	1,175
Consumer loans	355	813	536	679
Commercial and farm mortgages	352	829	1,214	2,463

Source: Federal Reserve Flow of Funds Accounts; <http://www.federalreserve.gov>.

Financial Intermediaries

TABLE 3 Primary Assets and Liabilities of Financial Intermediaries

Type of Intermediary	Primary Liabilities (Sources of Funds)	Primary Assets (Uses of Funds)
Depository institutions (banks)		
Commercial banks	Deposits	Business and consumer loans, mortgages, U.S. government securities, and municipal bonds
Savings and loan associations	Deposits	Mortgages
Mutual savings banks	Deposits	Mortgages
Credit unions	Deposits	Consumer loans
Contractual savings institutions		
Life insurance companies	Premiums from policies	Corporate bonds and mortgages
Fire and casualty insurance companies	Premiums from policies	Municipal bonds, corporate bonds and stock, and U.S. government securities
Pension funds, government retirement funds	Employer and employee contributions	Corporate bonds and stock
Investment intermediaries		
Finance companies	Commercial paper, stocks, bonds	Consumer and business loans
Mutual funds	Shares	Stocks, bonds
Money market mutual funds	Shares	Money market instruments
Hedge funds	Partnership participation	Stocks, bonds, loans, foreign currencies, and many other assets

Financial Intermediaries

TABLE 4 Primary Financial Intermediaries and Value of Their Assets

Type of Intermediary	Value of Assets (\$ billions, end of year)			
	1980	1990	2000	2013
Depository institutions (banks)				
Commercial banks	1,481	3,334	6,469	12,670
Savings and loan associations and mutual savings banks	792	1,365	1,218	2,157
Credit unions	67	215	441	1,005
Contractual savings institutions				
Life insurance companies	464	1,367	3,136	6,035
Fire and casualty insurance companies	182	533	862	1,527
Pension funds (private)	504	1,629	4,355	7,966
State and local government retirement funds	197	737	2,293	4,846
Investment intermediaries				
Finance companies	205	610	1,140	1,474
Mutual funds	70	654	4,435	11,527
Money market mutual funds	76	498	1,812	2,678

Source: Federal Reserve Flow of Funds Accounts; <http://www.federalreserve.gov/releases/Z1/>.

Business Models of Financial Intermediaries

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Why does it matter if neobanks are tech firms or banks?

Valuation multiples on bank stocks (8-12x PE albeit mostly valued on a price-to-book value basis) and tech stocks (25-40x PE) are very different. But of course, growth, profitability, and returns on equity within a sector matter as well. There is reason that JP Morgan and Morgan Stanley trade on a premium to other large Western banks and it is the combination of steady growth and far superior profitability and returns. Many banks in fast-growing emerging markets trade on a large premium to even JP Morgan, reflecting market expectations of superior growth, and in certain cases, they have even better profitability. One country where all the private sector banks trade on relatively high PE multiples of around 20x is India.

Schedule for Today

- Quiz Review: Liquidity, Deposit Insurance and Bank Runs
- In the News: Tornado Cash, Luna-Terra Founders Guilty in Court
- The Traditional Financial System:
 - Transaction Costs
 - Asymmetric Information
 - Adverse Selection
 - Moral Hazard
 - A Story from my Grandfather
 - The Paradox of Information, aka the “No-Trade Theorem”
 - Tools for Solving Asymmetric Information
 - Deposit Insurance
 - Banking Crises and the Real Economy

Quiz Review

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Answer: Some agents will need to withdraw their money early, at a time when their money is invested in a long-term illiquid project

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Answer: There is a productive technology that gives a higher rate of return, but only if the capital is locked up for two periods

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3. True or False: A market with only the uninsured deposit contract has a unique equilibrium which is a bank run

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Answer: False. Without deposit insurance, multiple equilibria exist: you will run on the bank if others do, and vice versa.

Quiz Review

4. What is the role of deposit insurance in the model?

Quiz Review

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Answer: It eliminates the incentive for agents to ever withdraw early when they don't need to. No incentive for a bank run? No run materializes. The insurance is an effective deterrent even though it never pays out in equilibrium!

In the News: Feds Bust Tornado Cash, Luna-Terra

Founder Of Tornado Cash Crypto Mixing Service Convicted Of Knowingly Transmitting Criminal Proceeds

Wednesday, August 6, 2025

Share



For Immediate Release

U.S. Attorney's Office, Southern District of New York

PRESS RELEASE

Do Kwon Pleads Guilty To Fraud

Tuesday, August 12, 2025

For Immediate Release

Do Not Do This:

Tornado Cash advertised to customers that it provided untraceable and anonymous financial transactions, and STORM continued to provide this service with knowledge that Tornado Cash was transmitting large volumes of criminal proceeds. As proven at trial, STORM was personally aware of numerous instances in which criminals transmitted proceeds of criminal exploits using Tornado Cash, totaling more than \$1 billion in criminal proceeds.

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Maximum potential prison sentence: 5 years

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KWON touted Terraform as a self-contained and decentralized financial world that leveraged proprietary blockchain technology to offer its own cryptocurrencies, payment system, stock market, and savings bank. In reality and unbeknownst to Terraform investors and users, the core suite of Terraform products did not work as advertised and had been manipulated to create the illusion of a functioning and decentralized financial system.

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Financial intermediaries reduce transaction costs

- Economies of scale: average cost per dollar decreases with scale
 - Example: Mutual Funds
- Develop expertise to lower transaction costs
 - Robinhood and similar brokers charge zero transaction fees.

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- **Moral Hazard**

- Definition: problem that occurs **after** a transaction occurs.
- Example: **After** a loan is initiated, the borrower might engage in activities that are undesirable/immoral (high risk, or in personal interest). Consequently, lenders might decide not to make any loans in the first place.

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- **Medical insurance:** if medical care is free at the point of delivery, people (or their doctors) might order more procedures of questionable benefit
- **Corporate debt/limited liability:** A company with \$100,000 in assets but \$100,000 in debt might take excessive risks, knowing that they get the upside but debtholders would face the downside

George Akerlof (1970): 2001 Nobel Prize



Photo from the Nobel Foundation archive.

George A. Akerlof

George Akerlof demonstrated how a market where sellers have more information than buyers about product quality can contract into an *adverse selection* of low-quality products. He also pointed out that informational problems are commonplace and important. Akerlof's pioneering contribution thus showed how asymmetric information of borrowers and lenders may explain skyrocketing borrowing rates on local Third World markets; but it also dealt with the difficulties for the elderly to find individual medical insurance and with labour-market discrimination of minorities.

Adverse Selection in used-car market

“Adverse selection” was first formulated by **George Akerlof (2001 Economic Nobel Prize)** in used-car market

- **Two types of used cars:**
 - good (“peach”), fair value \$2000, probability: 50%
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 - Given buyer’s willingness to pay (\$1500), **“peach” owners do not want to sell and exit the market. Only “lemon” owners stay.**
 - Expecting the above situation, only “peach” are sold at \$1000.

Summary: since sellers of good cars (“peach”) have been driven out of the market **in favor of bad cars (“lemon”)**, the market has become **“adversely selected”**

A story from my grandfather

"If you walk into a bar, and a man offers you a \$10 bet that a fish will jump out of that barrel and spit in your eye.."

What do you do?

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What do you do?

"You do not take that bet. For if you do, as sure as you stand there, that fish will jump out of that barrel and spit in your eye, and you will lose \$10."

-My grandfather TR Peterson

The Paradox of Information, aka “No-Trade Theorem”

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Intuition: the fact that your counterparty wants to trade with you is sufficient to know that you *don't!*

What do we learn from this? Trade must be justified by different *preferences*, not by different *information*

Tools for Solving Asymmetric Information

Tools 1. Private production and sale of information

- **Hire firms for information production:**
 - **Example:** Standard and Poor's, Moody's, and Value Line gather information on firms' balance sheet positions and investment activities and sell them to subscribers

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 - **Example:** Standard and Poor's, Moody's, and Value Line gather information on firms' balance sheet positions and investment activities and sell them to subscribers
- **Free-rider problem**
 - **Definition:** when people who do not pay for information take advantage of the information that other people have paid for
 - **Example:** mutual fund A pays for S&P and buys good stocks. Price of good stocks rises until all stocks are fairly valued. Mutual fund B **indexes:** buys all stocks in proportion to the market. Both funds earn the same expected return!

Tools for Solving Asymmetric Information

Tools 1. Private production and sale of information

- **Hire firms for information production:**

- **Example:** Standard and Poor's, Moody's, and Value Line gather information on firms' balance sheet positions and investment activities and sell them to subscribers

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- **Consequence:** Anticipating above results, no one pays for the information produced by S&P. S&P would not profit, so it exits the business.

Summary: due to the **free-rider problem**, private production and sale of information cannot fully solve **adverse selection**.

Tools for Solving Asymmetric Information

Tools 2. Government regulation to increase information

- **Regulations compels firms to reveal their true quality:**
 - **Example:** In the United States, the Securities and Exchange Commission (SEC) requires public firms to conduct independent audits.
 - independent audits: accounting firms certify that the firm is adhering to standard accounting principles and disclosing accurate information about sales, assets, and earnings.
- **Government regulation lessens but not eliminate the adverse selection problem**
 - Bad firms have an incentive to make themselves look like good firms
 - When potential profit from fraud is high enough, managers might lie anyways, such as Enron or Theranos

Tools for Solving Asymmetric Information

Tools 3. Financial Intermediaries

- **Financial intermediaries can reduce costs of information production:**
 - economies of scale: costs per unit (dollar) decreases
 - develop expertise: better distinguish good vs. bad projects/firms.
- **Financial intermediaries can also avoid free-rider problems**
 - by making private loans rather than trading stocks and bonds in public market.

Tools for Solving Asymmetric Information

Tools 4. Collateral and net worth

- **Collateral:** property promised to the lender in default
 - reduces the consequences of adverse selection because it reduces the lender's losses in default
 - with collateral, borrowers can usually get a better rate.
 - Example: a house as collateral for a mortgage.
- **Net Worth:** the difference between a firm's assets (what it owns) and its liabilities (what it owes)
 - the more net worth a firm has in the first place, the less likely it is to default,
 - in default, the lender can take title to the firm's net worth, sell it off, and use the proceeds to recoup some of the losses

Tools for Solving Asymmetric Information

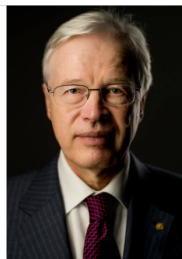
Digression: Used-car market

- **Private Production and Sale of Information:** third-party companies
 - Example 1: Carfax ([link](#)) provides vehicle history and maintenance tools.
 - Example 2: Edmunds ([link](#)) and Kelley Blue Book ([link](#)) provide used-car value calculator.
 - Example 3: GoogleMaps and Yelp provide reviews on car dealers
 - Example 4: After purchase, \$20-\$30 dollar for a thorough check in an auto shop.
- **Government regulation**
 - Arizona Lemon Law ([link](#)): Used vehicles are covered for 15 days after delivery or the first 500 miles, whichever comes first.
- **Intermediaries: car dealers**
 - sell used cars with information
 - back up information by its reputation
 - advantages:
 - (1) economics of scale;
 - (2) expertise (with potential brand certificate by car producers)

Hart and Holmstrom



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Mahmoud
Oliver Hart



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Mahmoud
Bengt Holmström

2016 Nobel Prize in Economic Science: Award for Hart and Holmstrom

Modern economies are held together by innumerable contracts. The new theoretical tools created by **Hart** and **Holmström** are valuable to the understanding of real-life contracts and institutions, as well as potential pitfalls in contract design.

Moral Hazard

Nobel Prize 2016 (Oliver Hart and Bengt Holmström)

- **Definition:** information or agency problems occurring **after** a financial transaction
- **Example:** managers take excessive risks or steal outright

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Moral Hazard in Equity Contracts: **the Principal-Agent Problem**

- **Equity contracts are subject to the principal-agent problem.**
 - The **principal** is the one whose money is on the line. The **agent** is the one making the decision.
 - In the stock market: when the stockholders (the principals) are not the managers (agent), managers may act in their own interest.

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 - Example: managers may engage in **empire-building**, expanding the company beyond its optimal size in order to gain prestige, fame, and private benefits (like a jet plane)

Moral Hazard

The Principal–Agent Problem

- **Example 1. Shirking**

Moral Hazard

The Principal–Agent Problem

- **Example 1. Shirking**

- An ice-cream store has two owners: you invest \$9000 while Steve invests \$1000.
- If Steve works hard enough, the profit will be \$50,000 per year. Steve will receive 10% (\$5,000) and you will receive 90% (\$45,000).
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Moral Hazard

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• Example 3. Personal use

- managers might buy a private jet with company's fund.

Tools to Help Solve the Principal–Agent Problem

Tool 1. Production of Information: Monitoring

- **Monitoring:** auditing the firm and checking on frequently
- **Why monitoring by owners is less efficient**
 - **Costly state-verification:** the cost of monitoring makes it less frequent and less efficient
 - **Free-rider problem:** most owners are less likely to monitor actively

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Tool 2. Government Regulation to Increase Information

- (1) force **Generally-Accepted Accounting Principles (“GAAP”)** that make profit verification easier
- (2) impose stiff criminal penalties on people who commit fraud.
- **Why Government Regulation cannot eliminate Principal–Agent Problem**
 - **catching fraud is not easy and very costly.**

Tools to Help Solve the Principal–Agent Problem

Tool 3. Financial Intermediation

- **Private equity** funds are financial intermediaries designed to solve the **free-rider problem**
- **Financial intermediaries' advantages:**

Tools to Help Solve the Principal-Agent Problem

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 - expertise: focus on a few sectors such as high-tech
 - long-term investment horizon: align incentives of entrepreneur and investor

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Tools to Help Solve the Principal–Agent Problem

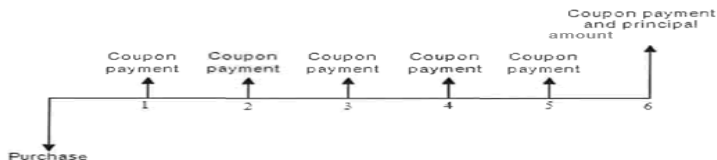
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 - long-term investment horizon: align incentives of entrepreneur and investor
- **Example: venture capital firm**
 - pool the resources of their partners and use the funds (as equity) to help budding entrepreneurs start new businesses
 - monitoring: demand representation in the board of directors
 - long horizon: wait until IPO or exit by selling to another VC (Uber and Amazon had many years of negative profits)

Tools to Help Solve the Principal-Agent Problem

Tool 4. Debt Contracts

- Suppose that it is **costly** for the principal to monitor the agent.
- Can we structure a contract so that the principal **rarely** needs to verify the reports from the agent (this is the theory of Townsend I mentioned)?



- **Fixed dollar amounts at periodic intervals:** does not need to monitor as long as periodic payment is satisfied. → **reduces costly state verification.**
 - Only when default occurs, debt holders need **costly state verification** and liquidation.

Moral Hazard Influences Financial Structure in Debt Markets

Example: Steve's ice-cream store

- Steves starts with \$1000 equity, and you lend Steve the \$9,000 as debt.
 - If Steve works hard enough, the profit will be \$50,000 per year. Steve will receive \$40,000, and you will receive \$10,000.
- **Steve's moral hazard:** might want to invest \$10,000 in highly risky project: chemical research project
 - 1-in-10 chance of inventing a diet ice cream and becoming a multimillionaire. You only get \$10,000
 - When failure occurs, both Steve and you get \$0

Tools to Help Solve Moral Hazard Problem in Debt Contracts

- **Tool 1. Net Worth and Collateral**

- **Make the debt contract incentive-compatible:** When borrowers have more at stake, moral hazard is greatly reduced.
- Example Steve's ice-cream store: increase Steve's equity
 - Now Steve's equity is \$910,000 instead of \$10,000.
 - If Steve is unsuccessful in chemical machines (prob is 90%), he will lose \$910,000 instead of \$10,000. → He is much less likely to take high risk.

- **Tool 2. Monitoring and Enforcement of Restrictive Covenants**

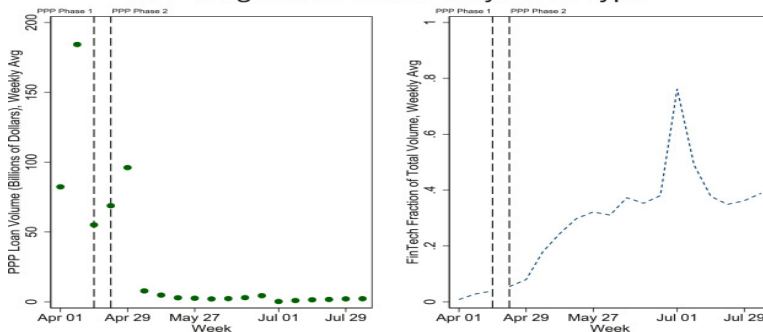
- **Discourage undesirable behavior:** (1) debt only finances finance specific activities; (2) restrict from risky business activities, such as purchasing other businesses.
- **Encourage desirable behavior:** maintain minimum holdings of certain assets relative to the firm's size
- **Keep collateral valuable:** Automobile loan contracts require a minimum amount of collision and theft insurance and prevent the sale of the car
- **Provide information**
- **Drawback:** (1) impossible to restrict all undesirable activities; (2) free-rider problem

Tools to Help Solve Moral Hazard Problem in Debt Contracts

Tool 3. Financial Intermediation

- Financial intermediaries avoid **free-rider problem** by private Debt
- Financial intermediaries' advantages:
 - (1) economics of scale (2) expertise: focus on a few sectors
- New tech reduces monitoring cost → nonbank lenders' market share increases.
 - Rise of FinTech Nonbank Lenders in Paycheck Protection Program (COVID-19):

PPP Origination Volumes by Bank Type



Regulation of the Financial System

Why Regulation?

- **To increase the information available to investors**
 - Reduce adverse selection and moral hazard problems
- **To ensure the soundness of financial intermediaries: avoid financial crisis**
 - Restrictions on entry (chartering process)
 - Disclosure of information (especially risks)
 - Restrictions on Assets and Activities (control holding of risky assets)
 - Deposit Insurance (avoid bank runs)
 - Limits on Competition (mostly in the past): (1) branching; (2) Restrictions on Interest Rates

Regulation of the Financial System

TABLE 5 Principal Regulatory Agencies of the U.S. Financial System

Regulatory Agency	Subject of Regulation	Nature of Regulations
Securities and Exchange Commission (SEC)	Organized exchanges and financial markets	Requires disclosure of information; restricts insider trading
Commodities Futures Trading Commission (CFTC)	Futures market exchanges	Regulates procedures for trading in futures markets
Office of the Comptroller of the Currency	Federally-chartered commercial banks and thrift institutions	Charters and examines the books of federally chartered commercial banks and thrift institutions; imposes restrictions on assets they can hold
National Credit Union Administration (NCUA)	Federally-chartered credit unions	Charters and examines the books of federally chartered credit unions and imposes restrictions on assets they can hold

Regulation of the Financial System

State banking and insurance commissions	State-chartered depository institutions and insurance companies	Charter and examine the books of state-chartered banks and insurance companies, impose restrictions on assets they can hold, and impose restrictions on branching
Federal Deposit Insurance Corporation (FDIC)	Commercial banks, mutual savings banks, savings and loan associations	Provides insurance of up to \$250,000 for each depositor at a bank, examines the books of insured banks, and imposes restrictions on assets they can hold
Federal Reserve System	All depository institutions	Examines the books of commercial banks and systemically important financial institutions; sets reserve requirements for all banks

Bank and Financial Crisis: Bernanke, Diamond, and Dybvig won 2022 Nobel Prize



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University

Their discoveries improved how society deals with financial crises

This year's laureates in the Economic Sciences, Ben Bernanke, Douglas Diamond and Philip Dybvig, have significantly improved our understanding of the role of banks in the economy, particularly during financial crises. An important finding in their research is why avoiding bank collapses is vital.

Deposit Insurance

Rational of Deposit Insurance for Banks: Diamond and Dybvig (1983) won Economic Nobel Prize in 2022

- **Banks: channel money from savers to borrowers**
 - savers (both households and firms): have idle money but may need money at any time due to unforeseen expenditures. Savers prefer a liquid account that allows for withdraw at any time.
 - borrowers (firms): need loans for long-term investment.
- **Under ordinary circumstances, banks can run businesses and earn profits safely**
 - Savers' unpredictable needs for cash are likely to be random and unlikely happen at the same time.
 - Banks need some reserve to cover random and small-size withdraw.

Deposit Insurance

Rational of Deposit Insurance for Banks: Diamond and Dybvig (1983) won Economic Nobel Prize in 2022

- **Banks' key constraint: cannot hold all money as reserve**
 - When many savers withdraw, banks are sure to fail since long-term loans cannot be returned immediately. Banks can only afford withdraw of first-come savers.
- Situations when many savers withdraw
 - Big aggregate shocks: natural disasters, wars, economic recessions
 - **“bank run” as Self-fulfilling prophecy:** When many savers believe other savers will withdraw (say a rumor), savers all have an incentive to rush to be the first in line to withdraw their funds.
- Given extremely bad recessions caused by bank failure, the most efficient method to avoid “bank run” is to provide **deposit insurance** by the Federal Reserve.

Why do banking crises (on paper) create (real) economic recessions?

Bernanke (1983): Some Banks' valuable knowledge is lost in a crisis.

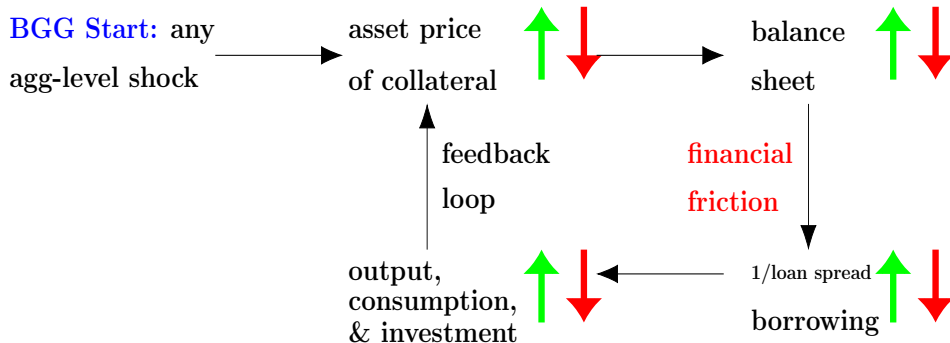
- **Banks take time to build knowledge capital about their customers**
 - Are the borrowers good at business? Are borrowers working hard and being honest?
- **In normal economic conditions:**
 - Bank A has built knowledge capital about corporate X1, X2, and X3.
 - Bank B has built knowledge capital about corporate Y1, Y2, and Y3.
- **In a banking crisis (even no economic crisis), Bank A fails.** → Corporate X1, X2, and X3 cannot get enough funds as Bank B has no knowledge of them even if
 - Corporate X1, X2, and X3 have good projects, working hard, and being honest.
 - Bank B has enough money.

Summary: **In this banking crisis, Bank A's lost knowledge as a financial friction that prevents economic runs (produces) at its full capacity**

Why do Financial Frictions Create Economic Recession?

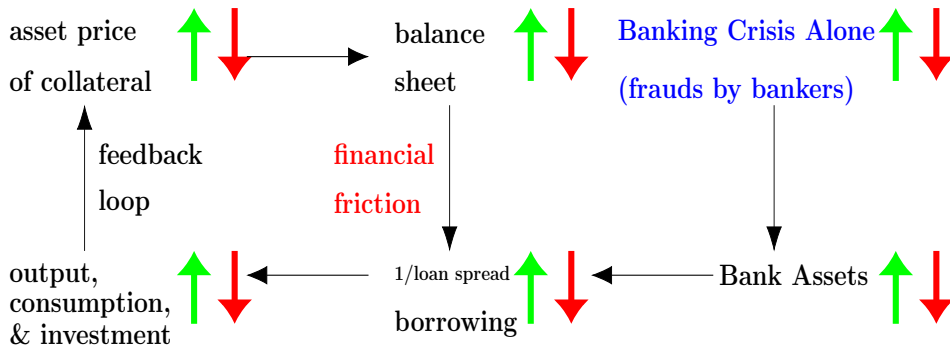
Bernanke, Getler, and Gilchrist (1999): Financial Accelerator: Collateral-based borrowing constraint tightens in a crisis + positive feedback loop

- The corporate borrowing constraint is often tightened by collateral value to reduce bad results due to asymmetric information.



Why do Banking Crises Create Economic Recessions?

BGG (1999) also explains another mechanism: banking crisis alone can cause economic recession



Based on this research, Bernanke, as the chairman of the Federal Reserve, insisted that the U.S. government needed to bail out banks in the 2008 Financial Crisis.