INVESTMENT BANKS

FINTECH 520
OCTOBER 25, 2022
NOVEMBER 1, 2022

An Investment Banking Transformation

So they can take loans from the FED and get money from congress

AIG insurance

Bear Stearns
- Sold to JP Morgan on March 16, 2008

Lehman Brothers
- Filed for bankruptcy on September 14, 2008
- Sold US operations to Barclays on September 16, 2008
- Sold non-US operations to Nomura on September 22, 2008

Merrill Lynch
- Sold to Bank of America on September 14, 2008

Goldman Sachs
- Converted to bank holding company on September 21, 2008

Morgan Stanley
- Converted to bank holding company on September 21, 2008

lost more in 2 quarters than made in 40 yrs

What are your observations?
What do these transactions have in common?

Post-Crisis Global Investment Banking Firms

9 key global firms that *encompass both investment banking and deposit-taking businesses* survived the global financial crisis in 2008

- Bank of America
- Barclays
- Citicorp

- Credit Suisse
- Deutsche Bank
- Goldman Sachs

- JP Morgan Chase
- Morgan Stanley
- UBS

Top Investment Banks

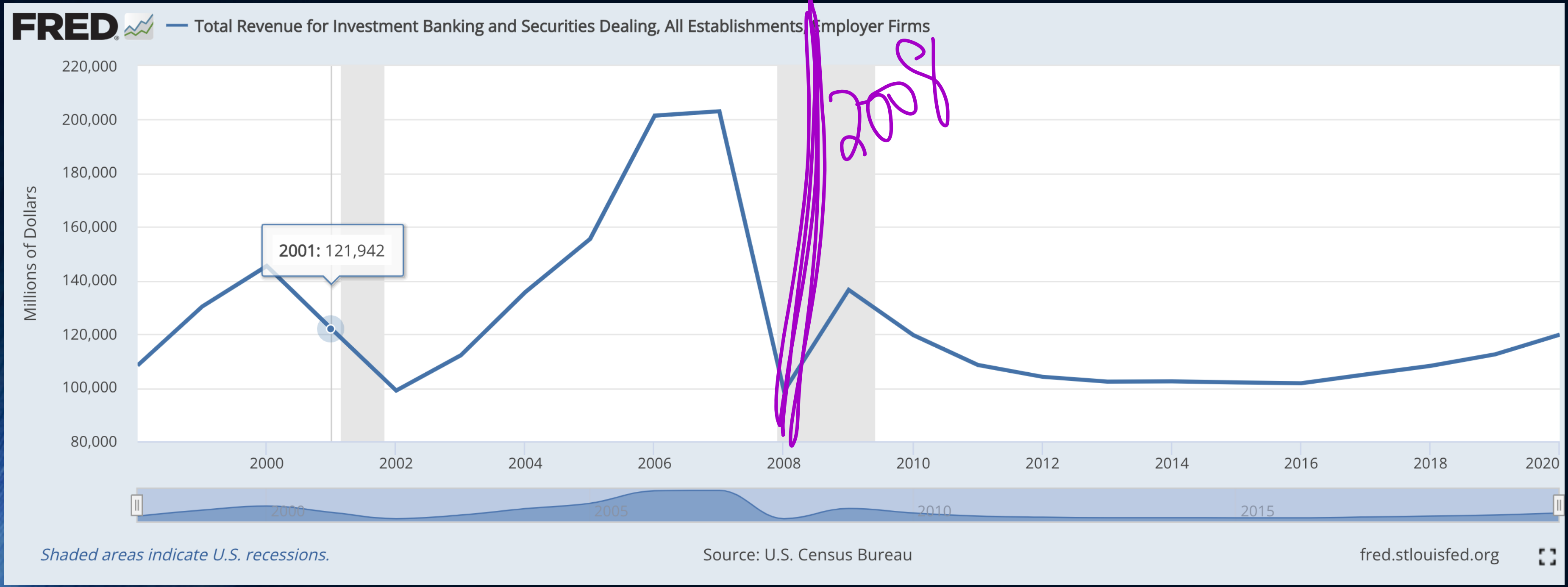
lower premium | Higher premium

Global Investment Banks	Large Regional Investment Banks	Boutique Investment Banks	Retail Brokerage Firms
• BofA Securities	• ABN AMRO	• Centerview Partners	• Charles Schwab
• Barclays	• BNP Paribas	• Evercore	• Edward Jones
• Citigroup	• China Int'l Capital Corp	• Greenhill & Co.	• Fidelity
• Credit Suisse	• CIBC	• Guggenheim Partners	• JP Morgan WM
• Deutsche Bank	• CITIC Securities	• Jeffries Group	• LPL
• Goldman Sachs	• Commerzbank	• Lazard	• Morgan Stanley
• JP Morgan Chase	• Credit Agricole CIB	• Moelis & Company	• Merrill Lynch WM
• Morgan Stanley	• HSBC	• Perella Weinberg	• Prudential
• RBC Capital Markets	• MUFG	• PJT Partners	• Robinhood
• UBS	• Nomura	• Qatalyst Partners	• Vanguard
• Wells Fargo Securities	• Standard Chartered	• Rothschild & Co.	• Wells Fargo Advisors

Investment Banks and Securities Dealing

margin pressure

- Difficult to keep expenses in check
- dont have pricing power anymore



2008

Principal Businesses of Investment Banks

structuring deals for client to raise capital

facilitating client trading
• bank sells it short

risk own capital to make $

- Investment Banking
- Client Trading
- Proprietary Trading and Principal Investing
- Wealth Management
- Asset Management

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

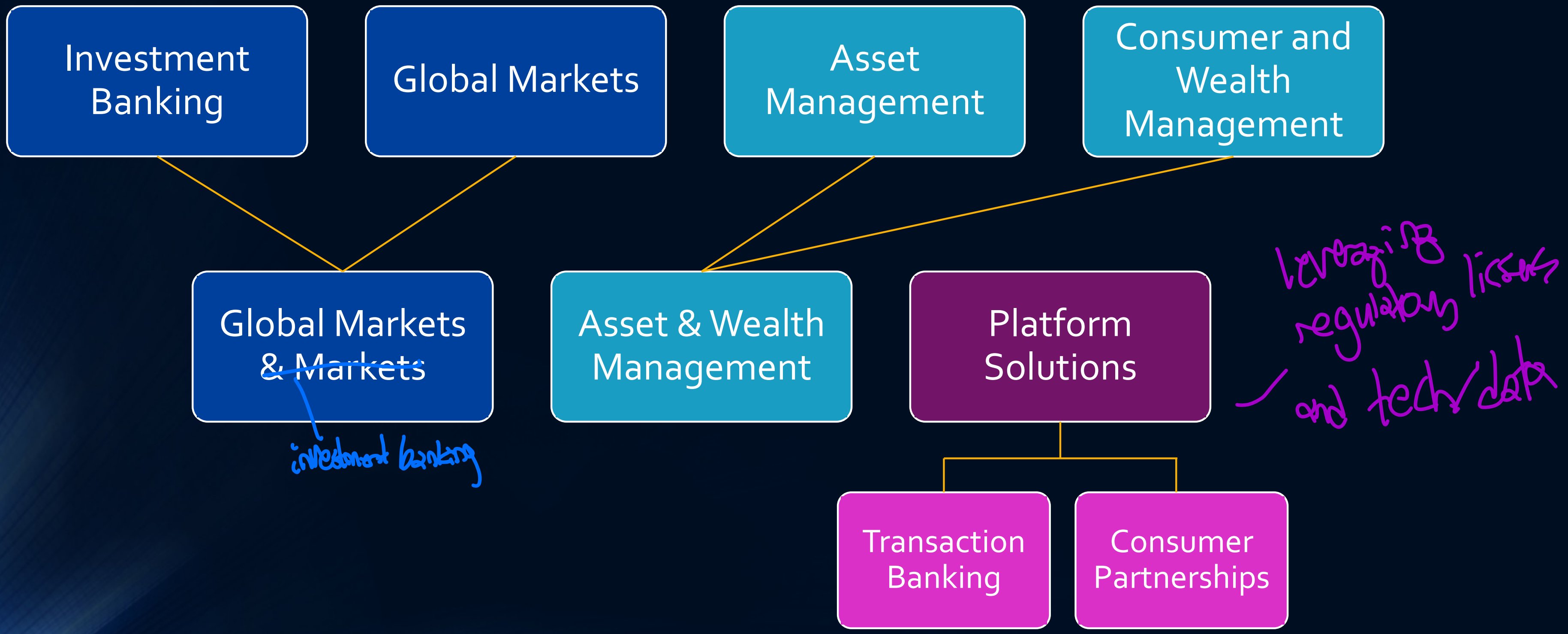
Client & prop

Goldman Sachs Business Segments

- **Investment Banking**
  - Financial Advisory
  - Underwriting
    - Structuring a deal
- **Global Markets** — trading
  - Fixed Income, Currencies, Commodities
  - Equities
- **Asset Management** — actively managed funds
  - Management and other fees
  - Incentive fees
  - Equity investments
  - Lending and debt investments
- **Consumer and Wealth Management** — banking
  - Wealth Management
  - Consumer Banking

Source: Goldman Sachs 3Q22 Earnings Results Presentation

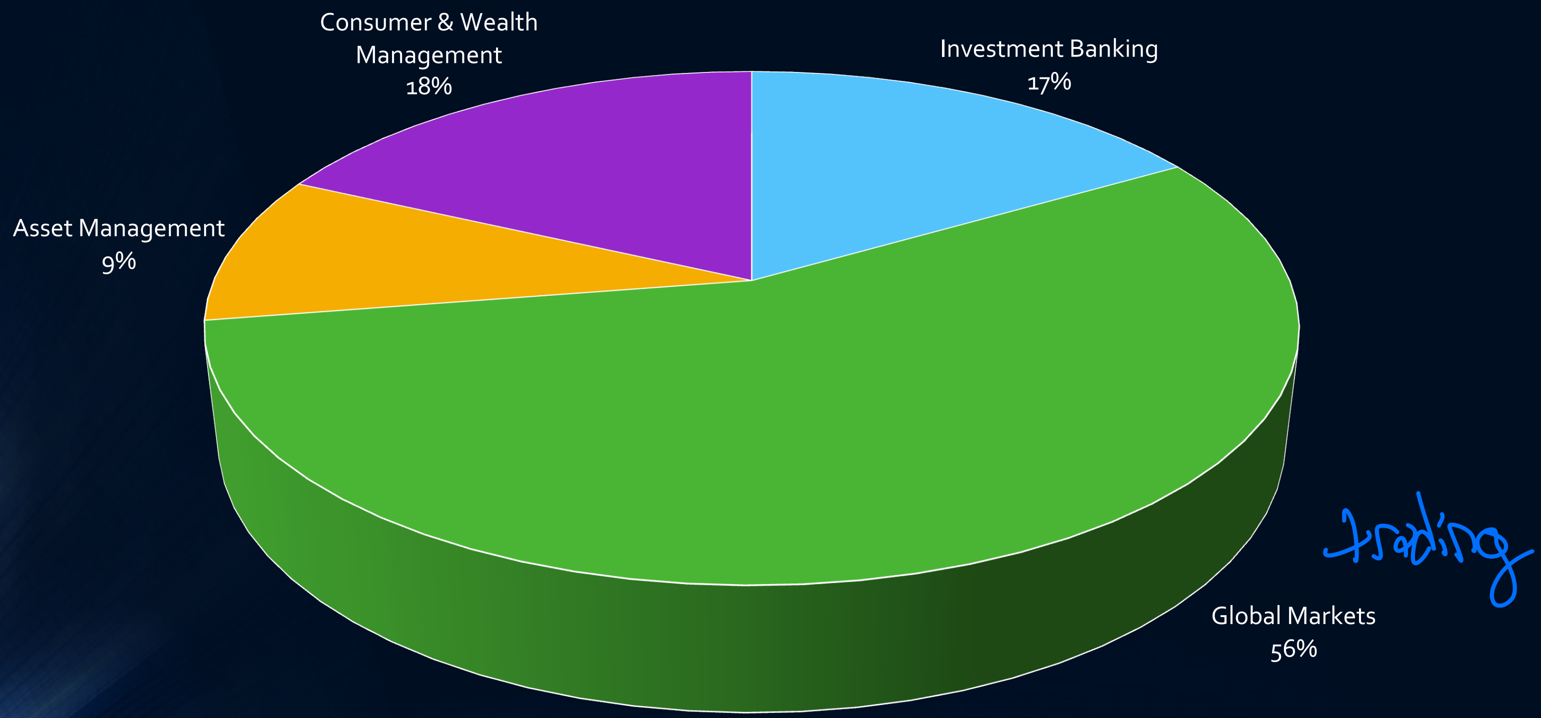
Goldman Sachs Reorganization 3Q22



"Enhancing our focus on building platforms that deliver digital financial services to corporate and institutional clients"

Source: Goldman Sachs 3Q22 Earnings Results Presentation

Goldman Sachs Revenue Mix by Segment



Source: Goldman Sachs 3Q22 Earnings Results Presentation

Morgan Stanley ***Business*** Segments

manufactors return

Institutional Securities

- Investment Banking
- Sales and Trading
- Corporate Lending
- Research

Products

Wealth Management

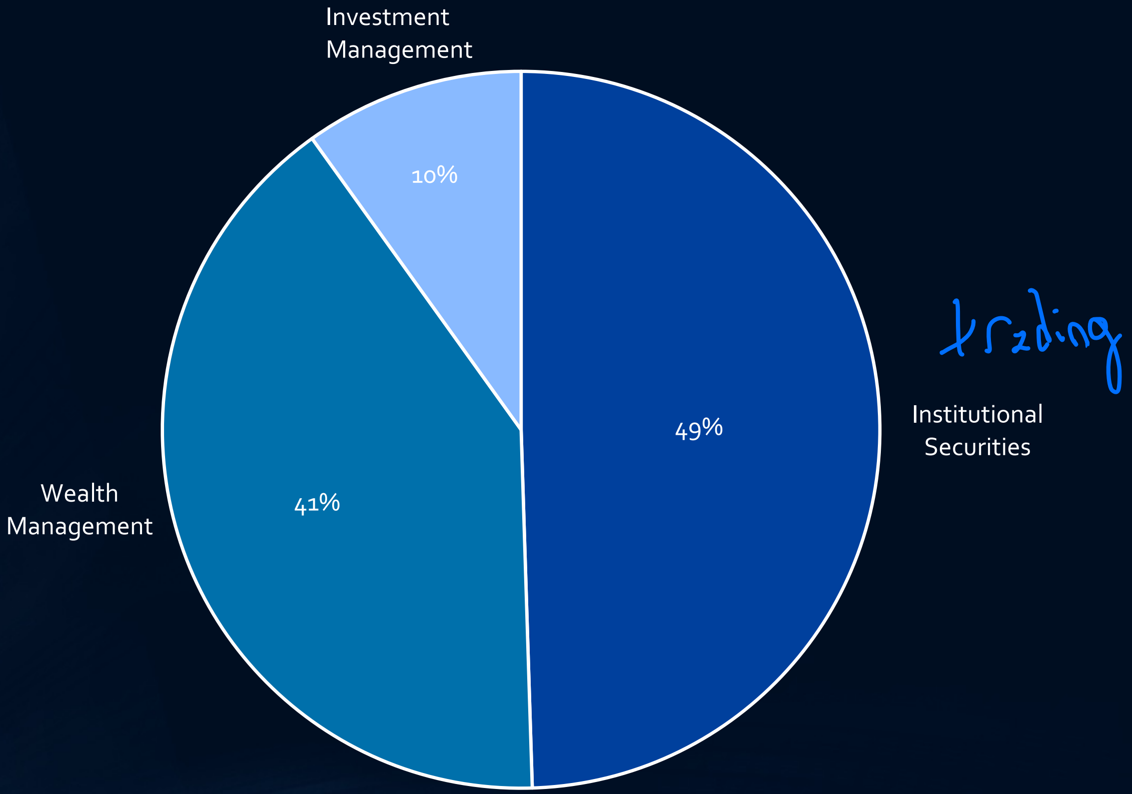
- Brokerage and Investment Advisory
- Wealth Planning
- Insurance Products
- Banking
- Retirement Plan Services

Investment Management

- Traditional Asset Management
- Alternative Asset Management
- Managed Futures
- Merchant Banking
- Real Estate Investing

Source: Morgan Stanley 2020 10-K

Morgan Stanley Revenue Mix by Segment



Source: Morgan Stanley 2021 10-k

Morgan Stanley *Client* Segments

arbitrage possible but laws prevent it

Institutional Securities

- Corporations
- Governments
- Financial Institutions
- UHNW Clients

billionaires

Wealth Management

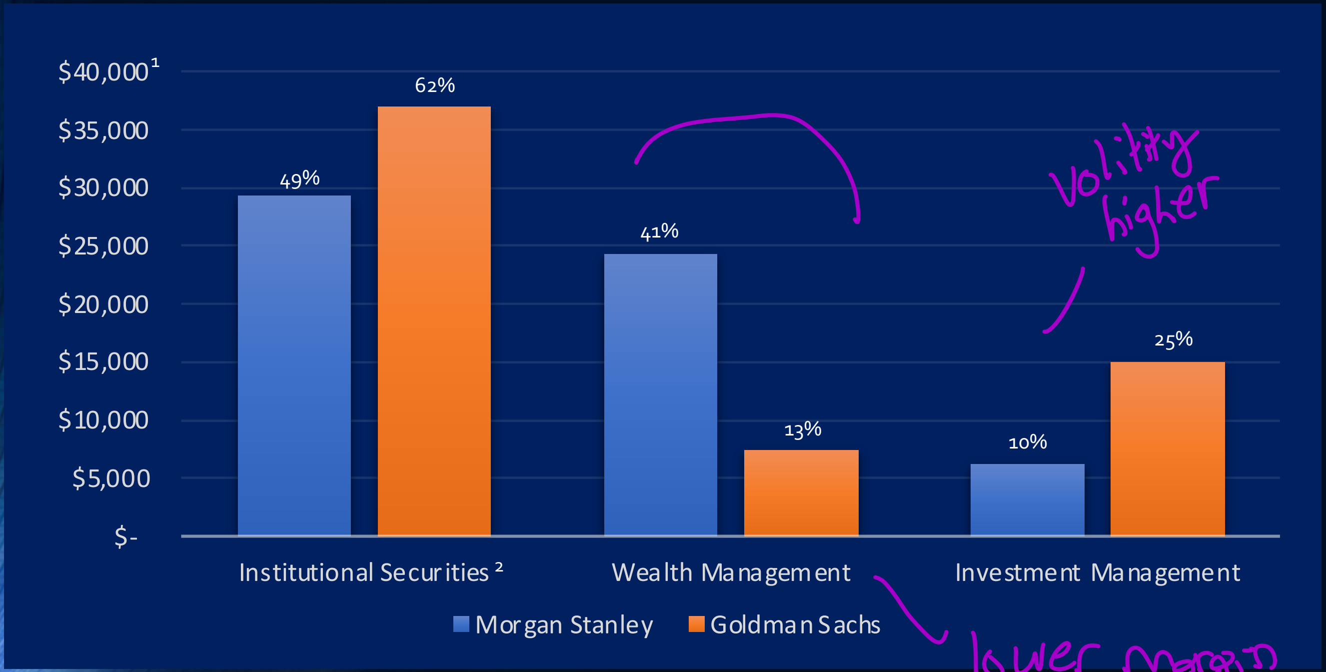
- Individuals
- Small to medium-sized businesses

Investment Management

- Pensions
- Foundations and Endowments
- Government Entities
- Sovereign Wealth Funds
- Corporations
- Individuals

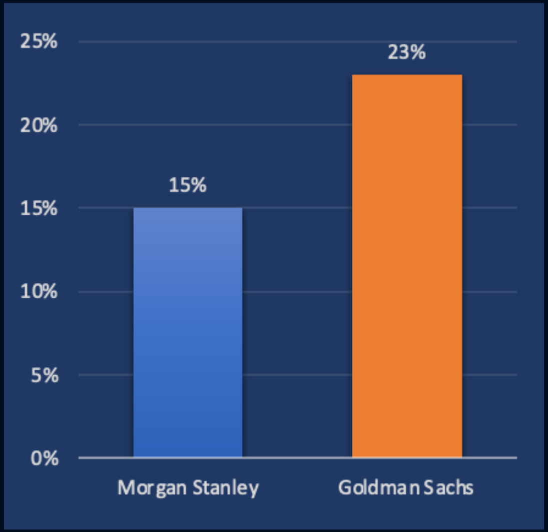
Source: Morgan Stanley 2020 10-K

Revenue Mix Comparison – 2021 full year results



lower margin buisness

Return on Equity Comparison



[1] ($000,000's)

[2] Goldman Sachs Institutional Securities includes Investment Banking and Global Markets revenue

Source: Morgan Stanley 2020 10-K, Goldman Sachs 4Q21 Earnings Results Presentation

Investment Banking Business

1. *Arrange financings for corporations and governments*
   - Provide access to public and private markets
   - Debt, Equity, Structured Finance, Leveraged Finance → products
   - Direct investments in corporate equity
   - Provide loans and manage debt syndicates for large debt facilities
2. *Risk-manage existing capital*
3. *Advisory*
   - Mergers and Acquisitions, Restructurings

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

Organization of Investment Banking Activities

Investment banking activities are organized by:

1. Clients
    - Industry specializations
2. Solution
    - Capital Markets – Equity
    - Mergers and Acquisitions

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

Client Coverage Bankers

be the first call

- Client Coverage Bankers are the *key relationship managers* for corporate clients of the investment bank
  - Develop in-depth understanding of a company's financial objectives, risks, and problems
  - Develop relationships with CEOs and CFOs with focus on how to enhance shareholder value
  - Assist companies to achieve an optimal capital structure (appropriate amount of equity, debt, and cash on the balance sheet)
- Client Coverage Bankers seek to become a "trusted advisor" to their clients
- Are typically organized by industry

Source: Sowell – *Intro to Investment Banks, Hedge Funds, and Private Equity*

Capital Markets Group

- Typically consists of 2 groups: 1) Equity Capital Markets and 2) Debt Capital Markets
- The Capital Markets Banker typically is brought into a transaction by the Client Coverage Banker and serves as the *subject matter expert* for a transaction
- The Capital Markets Banker executes the raising of capital by determining the transaction structure, pricing, timing, and size
- The Capital Markets Banker works in conjunction with the sales professionals and traders in the Sales and Trading Division

Source: Sowell – *Intro to Investment Banks, Hedge Funds, and Private Equity*

Equity Capital Markets (ECM)

Condition based equity classes

- ECM Bankers specialize in the issuance of 1) common stock, 2) convertible securities, and 3) equity derivatives
- Common stock issuance consists of initial public offerings (IPOs),follow-on offerings, secondary offerings, and private placements

  company issues equity — equity already exists — private buyer of equity

- Convertible security issuance takes the form of a preferred share or bond that can be converted into a predetermined number of the issuer's common shares
- Equity derivatives enable companies to raise or retire equity capital, or hedge equity risks, using options and forward contracts

  - Synthetic transactions
  - neutralizes risk

(fixed-income

Debt Capital Markets (DCM)

buying & selling of corporate bonds

- DCM Bankers specialize in the issuance of debt financings for corporate and governmental entities
- Issuances can be grouped by into 1) investment grade and 2) non-investment grade, and 3) debt derivatives
- DCM Bankers determine transaction structure, including timing, maturity, size, covenants, and call features
- DCM Bankers consider impact on a company's credit ratings and investor reaction to a potential offering

everything that is cashflow in company

Source: Sowell – *Intro to Investment Banks, Hedge Funds, and Private Equity*

Deal Considerations

- Impact on credit ratings
- Price risk borne by either the investment bank or the issuer
- Capital structure impact, including cost of capital
- Earnings per share (EPS) dilution ✓ addition of more shares
- Share price impact • market impact / IPO
- Use of proceeds
- Public sentiment
- Implications of covenants
- Regulatory filings

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

Corporate Capital Structure

Key areas of focus related to capital structure include EPS, credit ratings, financial flexibility, hedging activities, tax implications, and maintaining capital structure parity with principal competitors

RAISE CASH THROUGH:

1. Debt Issuance
2. Equity-related issuance
3. Selling assets - financial difficulties
4. Decrease capital expenditures
5. Cut dividend or reduce share repurchases

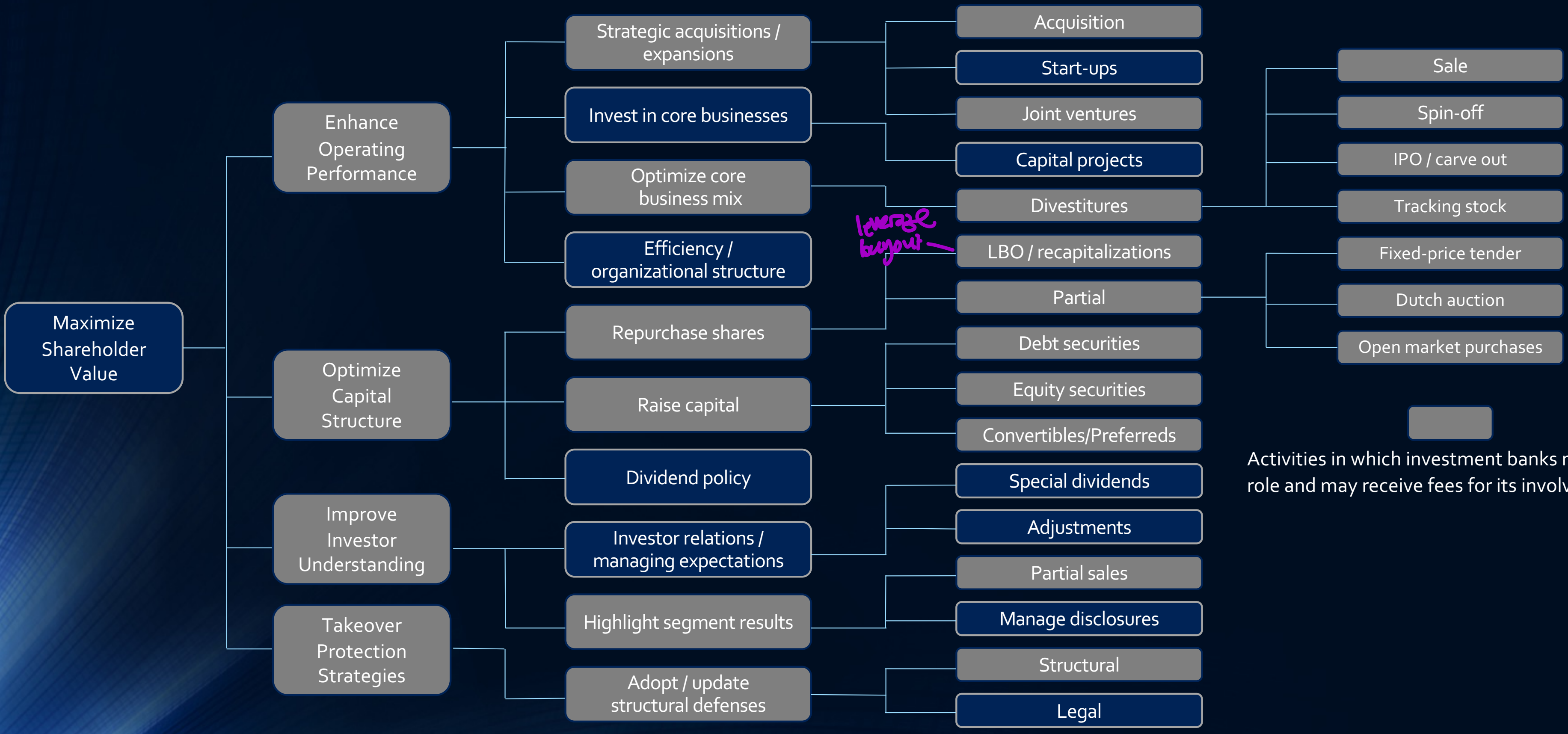
REDUCE CASH THROUGH - Public perception

1. Share repurchases
2. Asset acquisitions
3. Retire debt, convertibles, or preferred shares
4. Increase capital expenditures
5. Dividend payments

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

Don't memorize

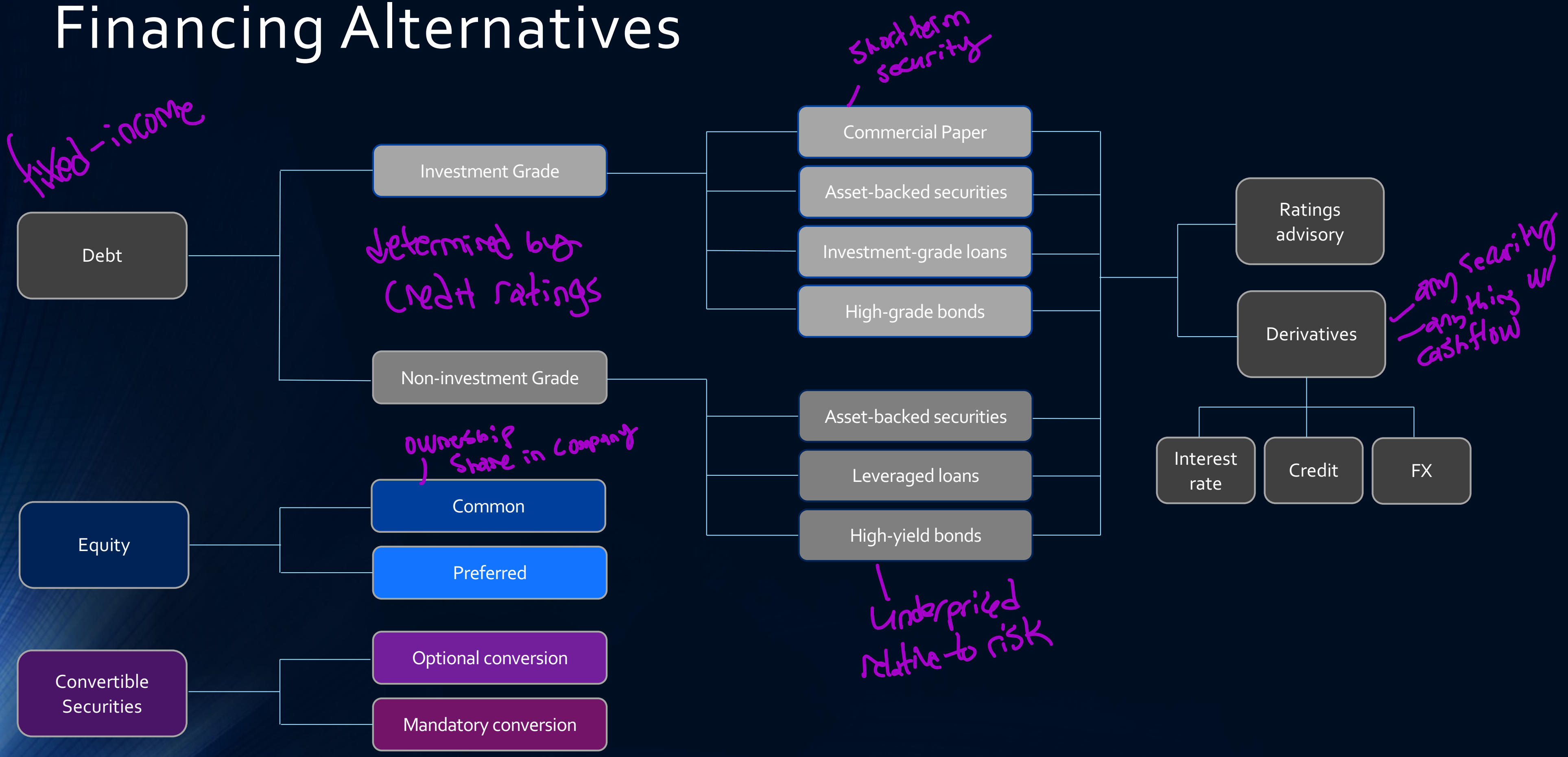
Investment Banking Template



Activities in which investment banks may play a role and may receive fees for its involvement

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

Financing Alternatives



Source: Sowell – *Intro to Investment Banks, Hedge Funds, and Private Equity*

Credit Ratings

Credit rating companies are paid by Company who is being rated

- Credit ratings are forward-looking opinions about the relative *likelihood* of whether *an issuer may pay its debts on time and in full*
- Credit ratings are used by issuers, intermediaries, and investors
- In 2020, *96 percent of all corporate defaults were of speculative grade*
- While investment grade tracked close to their historic default average, speculative grade bonds defaulted at a level far above historic projection
- Of the rated companies that defaulted in 2020 (and that were rated as of Jan. 1, 2020), 79% were rated 'B-' or lower at the start of the year

2008 - AAA always

Source: S&P Global

Credit Rating Scales

grades bonds

↑ Credit rating ↓ interest rate / yeild

↓ Credit rating ↑ interest rate / yeild

S&P	Moody's	Rating Definition
AAA	Aaa	Extremely strong capacity to meet financial commitments
AA	Aa	Very strong capacity to meet financial commitments
A	A	Strong capacity to meet financial commitments; somewhat susceptible to changes in circumstances
BBB	Baa	*Lowest category of investment grade*. Possess speculative characteristics; adequate capacity to meet financial commitments; more subject to adverse economic conditions
BB	Ba	*Highest category of speculative grade*. Uncertainties related to adverse business, financial and economic conditions
B	B	Has capacity to meet commitments; vulnerable to adverse business, financial and economic conditions
CCC	Caa	Vulnerable; dependent on favorable business, financial and economic conditions
CC	Ca	Highly vulnerable; default has not yet occurred, but is expected to be a virtual certainty
C	C	Highly vulnerable to non-payment; ultimate recovery expected to be lower than higher-rated debt
D		Typically, in default; little likelihood of recovery of principal and interest

Source: S&P Global, Moodys

Types of Bond Underwritings

Company bears the risk

Best Efforts	
• Comprises a majority of debt financings • Issuer of bond bears price risk	• Least expensive • Market deal
Bought Deal	
• Investment bank buys the bond at a predetermined rate • Generally seen in competitive markets	• Investment bank bears the risk of the transaction
Backstop Commitments	
• Rate is 'backstopped' or committed to, but the issuer will get the lower rate if it clears the market	• Investment bank commits to a worst-case price

bank takes risk

bank takes risk

bank wants interest rates to increase when they own risk

risk is shared

Bonds versus Loans

- *Prepayable versus non-prepayable debt*
  - Loans are generally prepayable at any time at par
  - Bonds are non-callable for some period of time, usually 4-5 years interest paid twice a year
- event driven *Bonds usually have no covenants* - loans do
  - Incurrence covenants versus maintenance covenants protection of banks money over course of loan
  - Usually less restrictive on incurring more debt
- *Loans require amortization* - paid off right away
- *Bond investors generally accept more risk and therefore receive higher returns*
- *Bonds have longer maturities*
- *Bonds are generally more expensive* but less conditions

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

How Investment Bankers Are Compensated

Fees are typically paid in the form of a ***gross spread*** (the difference between total proceeds of the offering and cash that the company receives before paying legal, accounting, and other offering expenses)

Paid as Part of deal

1. *Management fee* (typically 20% of the total fee)
   - Compensates the manager for their role in preparing and leading the offering
   - The lead manager receives a disproportionate share of this fee
2. *Underwriting fee* (typically 20% of the total fee)
   - Compensates for underwriting risk (typically 60% of the total fee)
   - Proportionally divided among managers according to their share of the underwriting
3. *Selling Concession*
   - Compensates underwriters for their selling efforts

     Percentage based

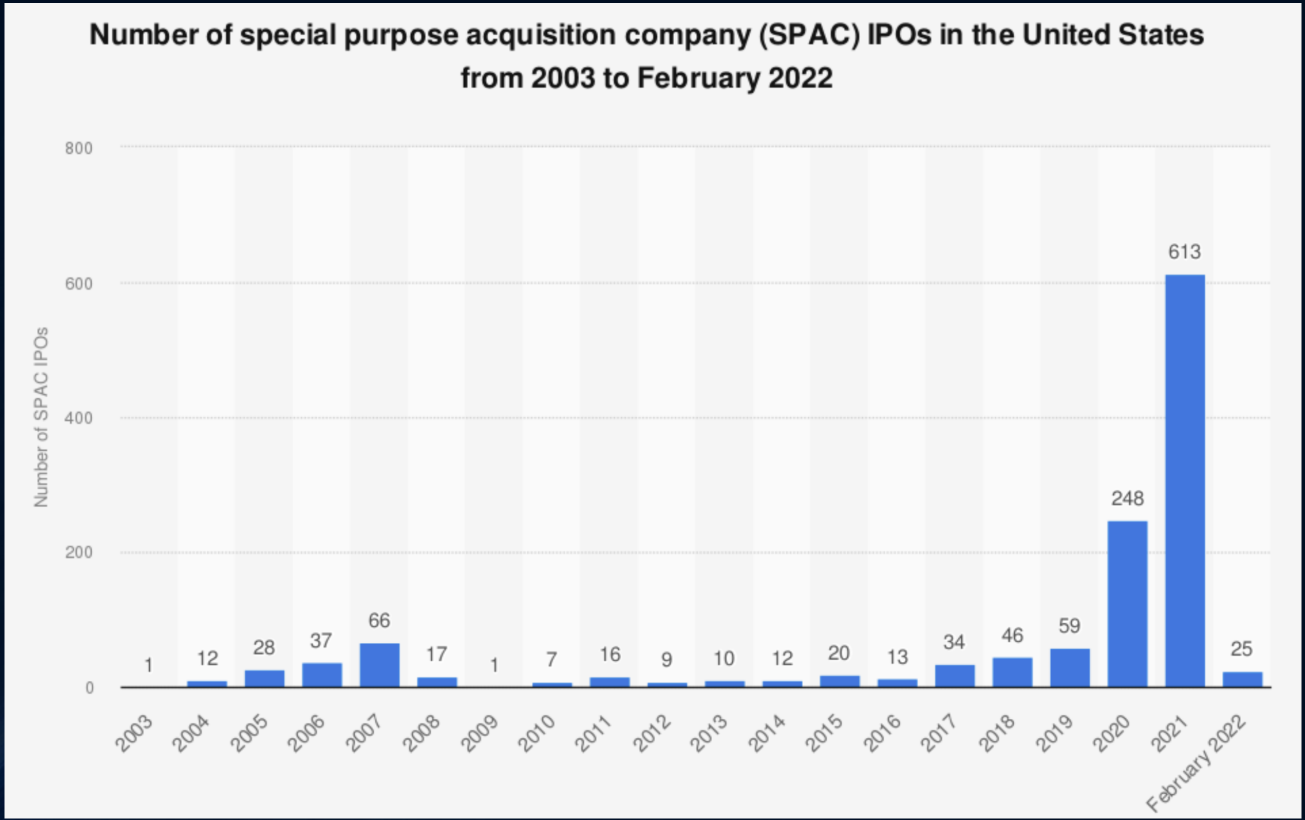
IPOs, SPACs, Direct Listings Defined

- An ***Initial public offering (IPO)*** is the process by which a private company can go public by sale of its stocks to general public
  - It could be a new, young company or an old company which decides to be listed on an exchange and hence goes public
- A ***special purpose acquisition company (SPAC)*** is a shell-company (no commercial operations) established solely to raise capital through an initial public offering (IPO) for the purpose of acquiring unspecified existing companies invest in an IPO, big risk
- ***Direct listings*** allow private companies to list and sell their shares on a stock exchange to investors without having to conduct an IPO
  - On the day of the direct listing, shares of the company are available to be bought and sold on the stock exchange by any investor

disintermediation

SPAC Proliferation

70% of SPACs have Ø investments but still keep investors money



Source: Statista

IPOs vs SPACs vs Direct Listings

investment banks may be / may be not a part of deal

Issue	IPO	SPAC	Primary Direct Listing
Role of Investment Banks	Underwriter	M&A Advisor for target investments; additional roles for SPAC	Financial advisor
New capital raised	Yes	Typically, yes	Yes (to date all direct listings have been secondary offerings)
Dilution	Yes (shares issued to the public)	Significant (typically, due to subsequent deal structures)	Yes (shares issued to the public)
Pricing flexibility	Flexible – must disclose range but can deviate based on market conditions	Privately negotiated	No flexibility – must disclose price and size range with no deviation possible
NYSE minimum float	$40 million	$100 million – surviving company must meet NYSE listing standards	$100 million – additional deal stipulations such as market cap
Fees	Typically, 7% to the investment banks, plus regulatory fees and expenses	Lacks transparency, expect >10%, fees include underwriting, M&A, legal, regulatory, etc.	Range from .15%-1.5% though trending higher, no regulatory filing fees, legal fees typically higher
Due diligence disclosure	Underwriter-led	Issuer/Target-led	Issuer-led
Disclosure subject to SEC Review	Yes, essentially the same level of disclosure about issuer and SEC review process		

Source: Regulatory filings

Advisory part of investment banks

Mergers & Acquisitions (M&A) Group

- M&A is the buying and selling of corporate assets in order to achieve one or more strategic objectives
- The role of the investment banker is to identify potential companies or divisions to be bought, sold, merged, or joint ventured
- A company must have a strategic rationale for completing an M&A transaction
- Financial buyers versus Strategic buyers

Opportunistic

Company synergies

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

M&A 'Products'

Sell-side assignment	• Involves the sale, merger, or disposition of a company • Highest priority since higher probability of completion
Buy-side assignment	• Involves the purchase of a company • Lower priority since lower probability of completion
Merger of equals	• The merger of two companies of equal assets that have comparable market values
Joint venture	• Two companies contribute assets and form a new entity to undertake economic activity together
Public market separation	• Includes carve-out, spin-off, and tracking stock • Completed in coordination with ECM group
Hostile defense	• Raid defense: defense against a specific take-over proposal • Anti-raid preparation: deter future unsolicited take-over activity • Advice to hostile bidders: strategic and tactical advice on initiating an unsolicited take-over

Source: *Sowell – Intro to Investment Banks, Hedge Funds, and Private Equity*

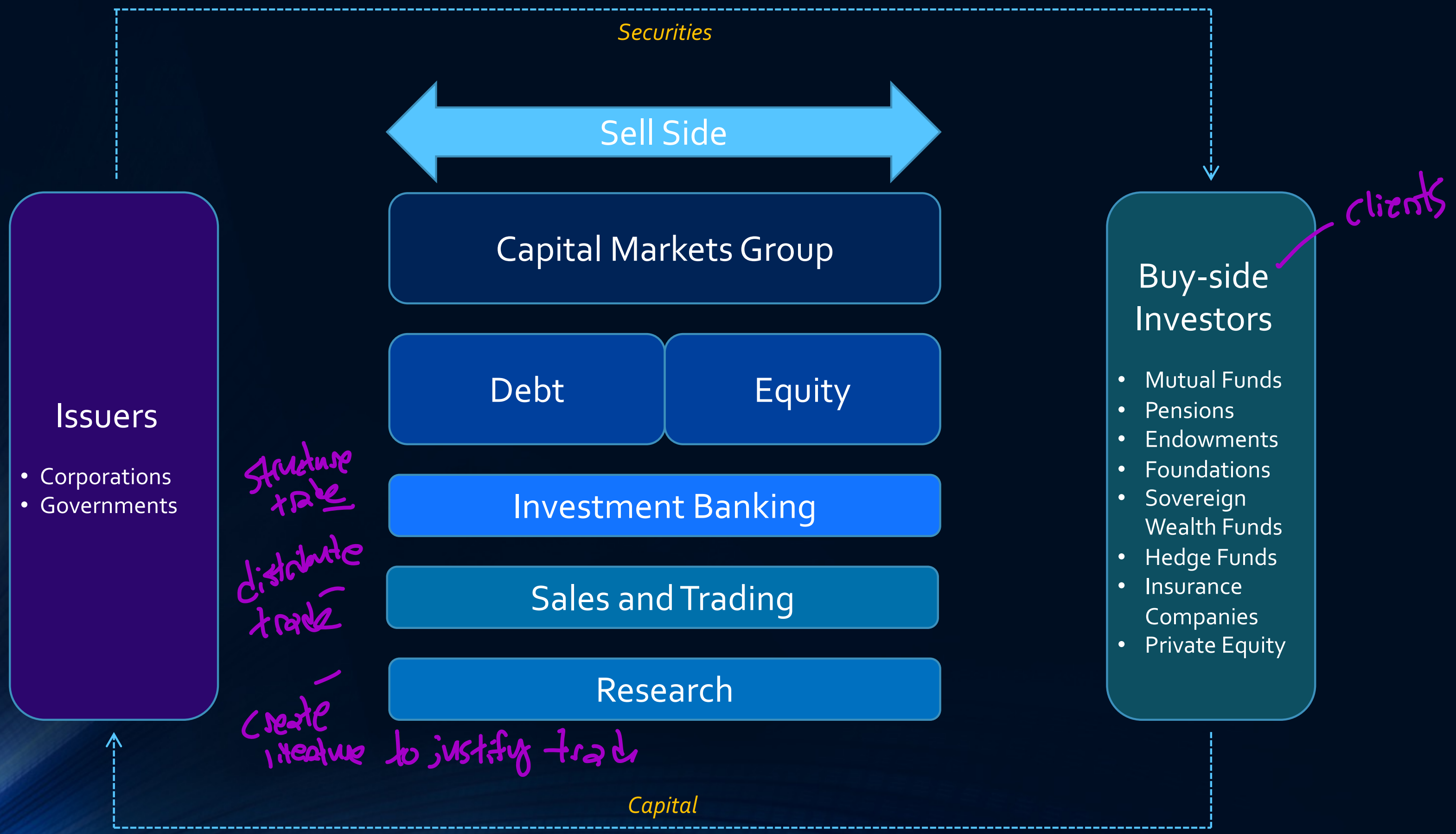
Brokers and Dealers

- *Brokers* are agents that arrange trades on behalf of their clients. They do not trade with their clients
- In contrast, *Dealers* are proprietary traders who trade with their clients
  - Dealers are often called *market makers* because they are willing to make a market (that is, trade on demand) in specified securities at their bid and ask prices

Broker/Dealer Activities

- *Client Trading*
  - Sells and trades securities and other financial assets as an intermediary on behalf of clients
  - Research
- *Proprietary Trading and Principal Investing*
  - Investment activity by the firm that affects the firm's accounts, but doesn't involve investing clients
  - Hedge Funds and Private Equity
- *Prime Brokerage*
- *Clearing Brokerage* /house – facilitates execution of trades
- *Wealth Management*

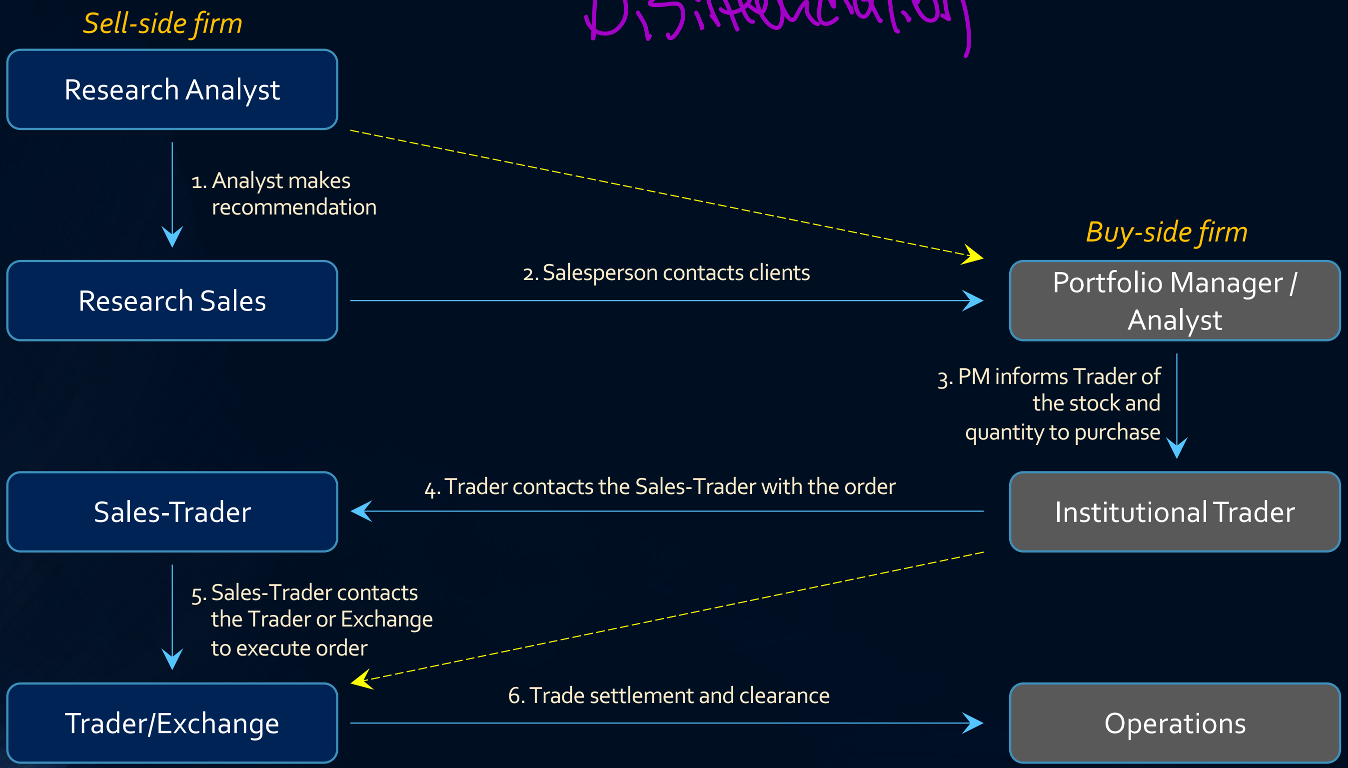
Sell-side and Buy-side Firms



Source: Sowell – *Intro to Investment Banks, Hedge Funds, and Private Equity*

An Evolving Equity Trading Process

Disintermediation



Source: Sowell – *Intro to Investment Banks, Hedge Funds, and Private Equity*

The Offices

directly w/ clients

Front Office

The front office consists of *client-facing activities* that provide direct revenue generation.

Middle Office

The middle *supports the client-facing activities* that take place in the front office

Back Office

The back office *houses the administrative and support functions* necessary to run the firm.

Front Office

clients, trading, trade data

Front Office

The front office consists of *client-facing activities* that provide direct revenue generation.

- The front office's functions include relationship management, deal execution—buying, selling, and hedging of physical commodities or financial instruments
- The front office is responsible for initial capturing and logging of a transaction's specific terms and conditions
- The front office (the trading group and any other party that can commit the company to a transaction) executes the company's risk taking and risk mitigation strategies

Middle Office

compliance, trade completion

Middle Office

The middle *supports the client-facing activities* that take place in the front office

- After a trade has been executed, the middle office is responsible for the steps to complete the trade
- Functional areas include trade processing, client onboarding and administration, unit pricing and fund accounting, KYC and AML
- The middle office provides a significant level of control and policing of the front office's activities through Compliance and Risk Management

Back Office

Security servises

Back Office

The back office *houses the administrative and support functions* necessary to run the firm.

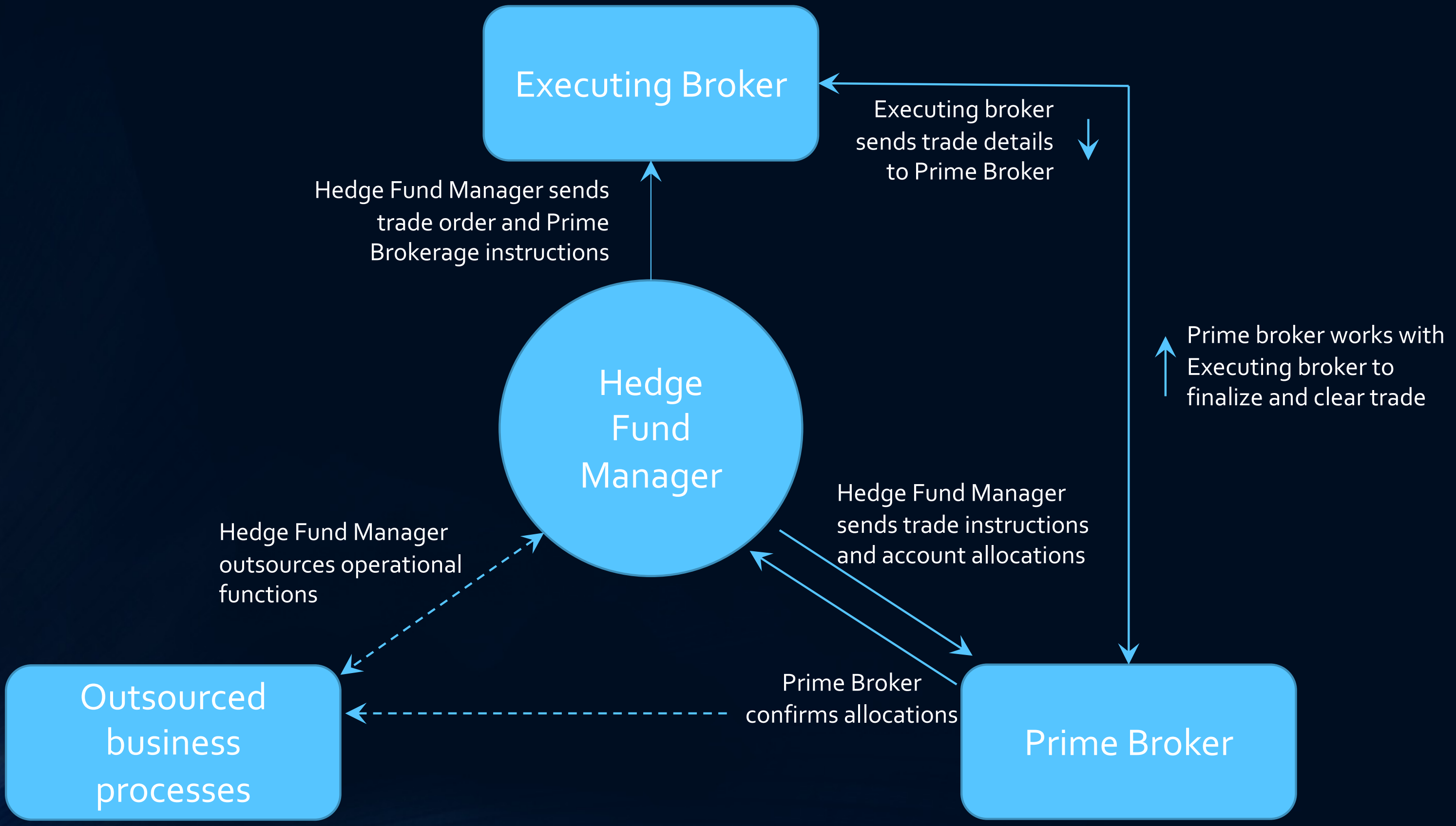
- Functional support areas include finance and accounting, human resources, payroll, audit , legal, IT, vendor management, training
- Back-office operational functions include custodial and trustee services, reference data management, fund administration, records management, statements, corporate actions, securities lending, collateral management

Prime Brokerage – offers leverage

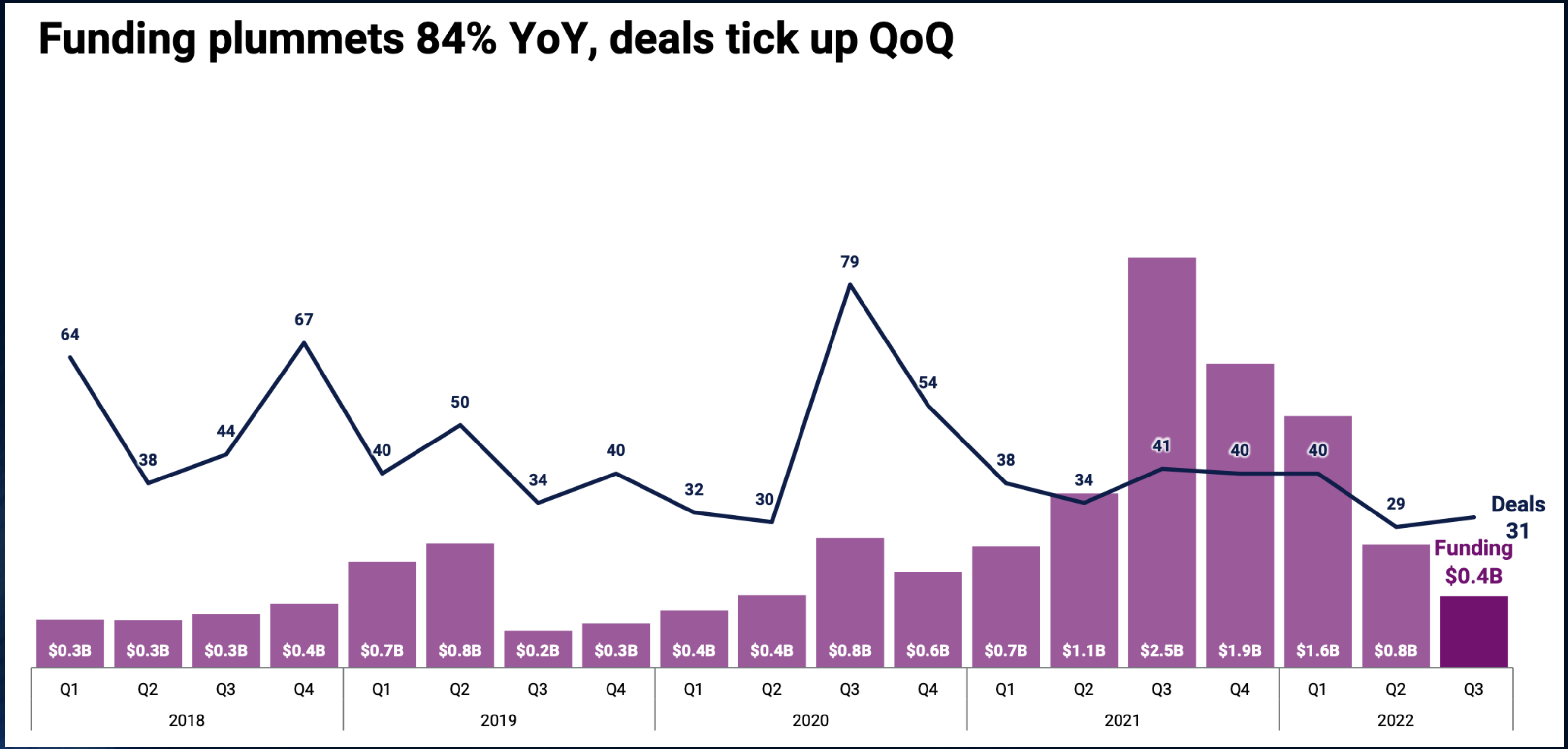
Prime brokerage services are offered by investment banks to investment firms, frequently hedge funds, to facilitate the investment firm's execution of globally complex investment strategies. The main services offered include:

- Global executions, custody, clearance, and settlement
- Financing – facilitates leverage-based investment strategies, including short sales, securities lending, synthetic financing, equity and loan financing, margin
- Middle office and operational support
- Facilitate introductions to businesses and individuals that can invest in the hedge fund
- Risk advisory – provide hedge funds with data and analysis across their positions, sectors and other exposures

Prime Brokerage



Capital Markets Fintech Funding



Source: CB Insights

Blockchain in Capital Markets

Shared Databases	Digitization of Assets	Smart Contracts
All participants have access to the same verified, immutable data, thus eliminating the need for multiple recordkeepers and helping to reduce errors	In addition to NFTs, digitization of assets will allow for new forms of fractional ownership—potentially expanding the market for hedge funds, REITs, pre-IPO securities, and other asset classes	Terms and agreements are embedded within the blockchain, which helps automate processes with speed and precision

Benefits of Blockchain

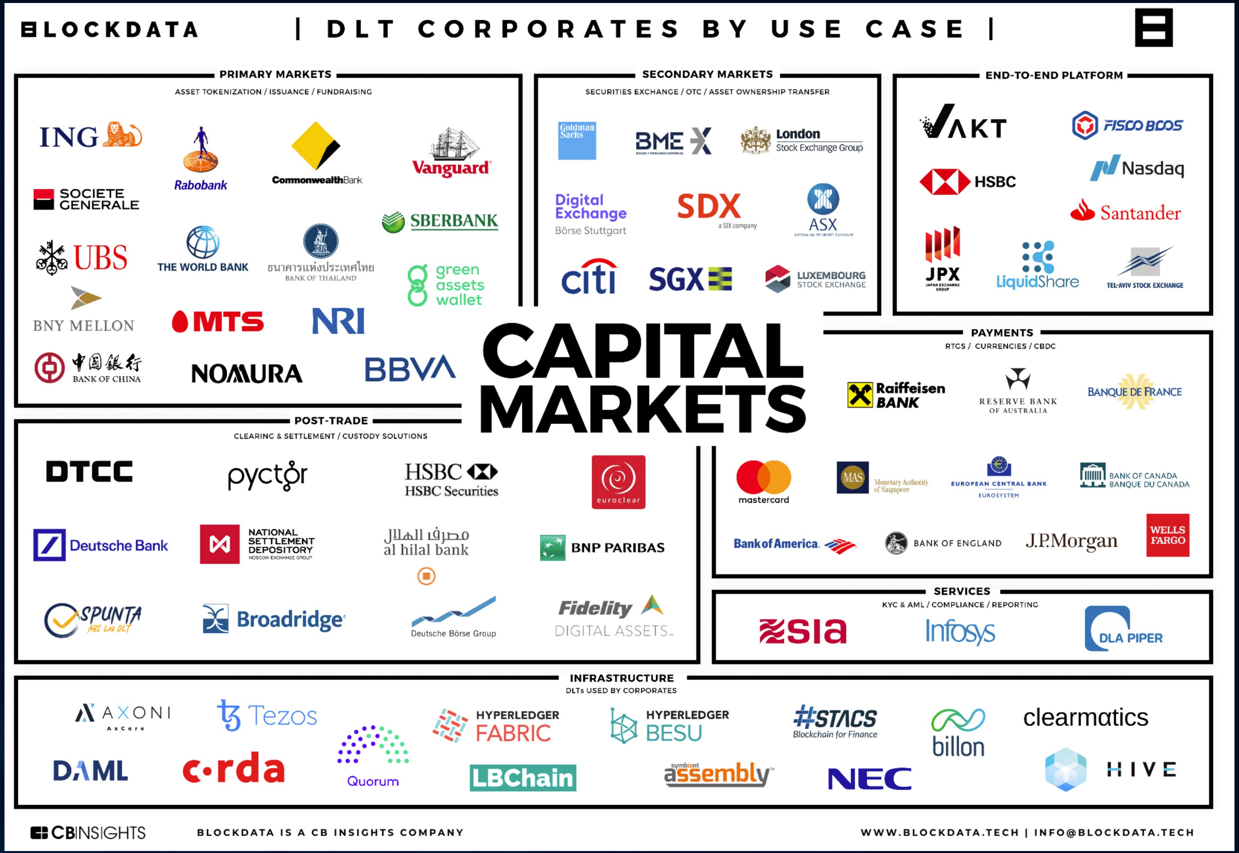
- Reduce the dependencies on multiple intermediaries
- Reduce costs by 35-65% for tokenization compared to traditional securitization
- Reduce settlement time
- Eliminate process redundancies
- Enable alternative forms of finance for all types of organizations

Source: CB Insights - Blockdata

Participant Impacts of Blockchain Adoption

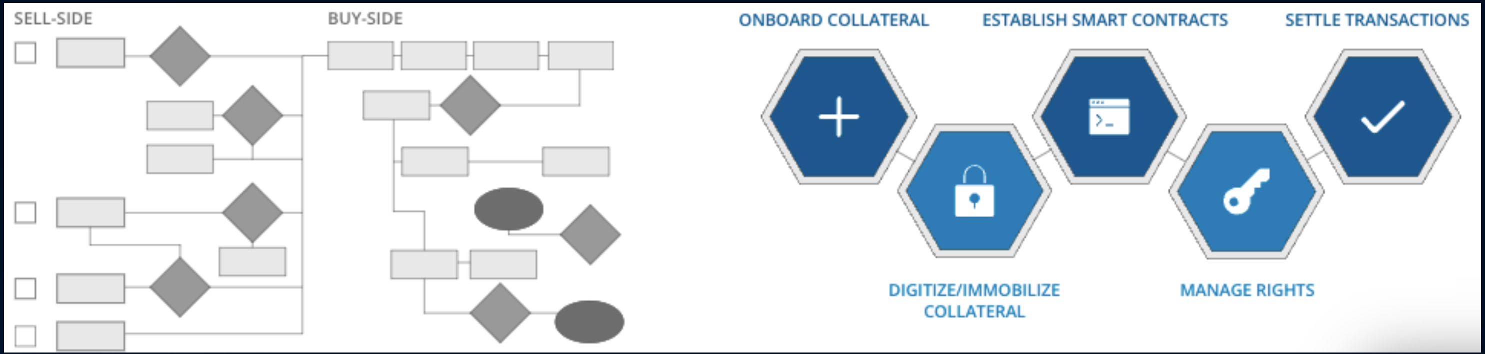
Issuers	*Lead Manager / Syndicate Members*	*Custodians*	*Intermediaries*	*Regulators*
• Reduction in costs of raising capital and securities servicing • Transparency in the end-to-end life cycle of securities issuance	• Reduced admin overhead via a unified view of the master book • Elimination of need for syndicate members to maintain their own copy	• Role is eroded and may narrow to 1) 'keeper of the tokens' and 2) ensuring operations are performed correctly	• Most administrative functions such as Issuing, Paying, Bill and Deliver, and Settle with Issuer Agents would cease to exist	• Greater accessibility to historical records of all transactions, • Improved audits

Capital Markets Market Map



Source: CB Insights

An Example … Blockchain Repo



HARD-DOLLAR SAVINGS	OPERATIONAL EFFICIENCIES	RISK REDUCTION	INCREASED LIQUIDITY
Reduce settlement and operational costs Reduce daylight overdraft fees	Immobilize and optimize use of collateral Eliminate reconciliations between counterparties Reduce disputes and fails	Automate repo processing and tracking Create a secure record of trade details	Reduce financing costs Increase liquidity in the securities lending market for all security types

Source: Broadridge

Capital Markets Market Map

Source: CB Insights