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McDonough School of Business

More than you ever wanted to know about market plumbing and MMTLP

Professor James J. Angel, Ph.D., CFP®, CFA Georgetown University



#### About me...



- Georgetown professor since 1991
- Courses include Investments, Fixed Income, Fintech
- BS Caltech, MBA Harvard Business School, Ph.D. U.C. Berkeley
- Academic director, FINRA Certified Regulatory and Compliance Professional (CRCP®) program at Georgetown
- CFP®: Certified Financial Planner
- CFA: Chartered Financial Analyst
- Testified 6 times before US Congress
- Psaros Center for Capital Markets and Policy
  - https://finpolicy.georgetown.edu/



## My specialty: Market structure (plumbing)

- Visited over 80 stock exchanges around the world.
- 12 patents on financial technology
- Visiting Academic Nasdaq
- Former Chair, Nasdaq Economic Advisory Board
- Board of Directors: Direct Edge Stock Exchange 2010-2014

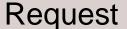




# For today: Market Plumbing & MMTLP

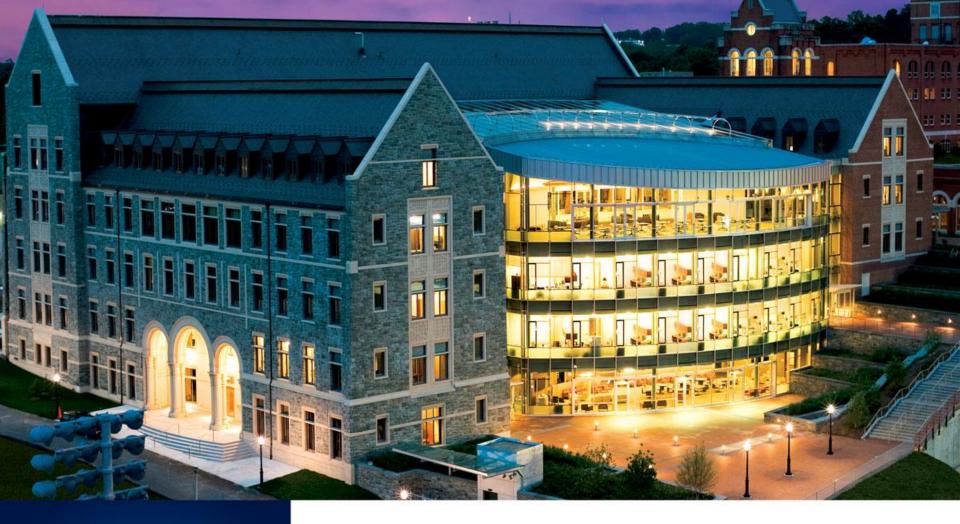
- Market plumbing
  - DTCC, DTC, NSCC, DRS, FINRA, SEC...
    - Investors hold shares at brokers
    - Brokers hold shares at Depository Trust Corporation
    - Stock trades settle two days after trade ("T+2")
      - Mostly done electronically at DTC
  - Short selling and "naked" short selling
- MMTLP
  - Torchlight Energy spun off MMTLP
    - MMTLP traded OTC
  - MMTLP spun off Next Bridge Hydrocarbons
    - Next Bridge not transferrable through DTC
    - Numerous allegations of skullduggery
- Implications for Congress
  - Who is protecting investors?
    - Hundreds of regulatory agencies at state and federal level
      - Don't play nicely together!
    - Need for an overhaul of the overall regulatory structure, not just Band-Aids.
    - Mystery Bonus: Easy payfor that will be popular in next tax bill







 Please interrupt with questions at any time! It keeps everyone awake.



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Market plumbing



## Stocks trade in many places...

- Listed stocks
  - 16 stock exchanges
    - Exchanges are Self Regulatory Organizations (SROs)
      - Enforce own regulations and US securities laws on their exchanges.
      - Regulated by SEC
  - Dozens of off-exchange trading platforms
    - Not SROs, regulated as brokers by FINRA
- Unlisted stocks trade Over The Counter (OTC)
  - Companies unwilling or unable to list on exchanges
  - OTC market regulated by Financial Regulatory Authority (FINRA)
    - FINRA is an SRO regulated by the SEC
    - All broker dealers must join
    - FINRA budget does not go through Congress!
      - FINRA has resources to do the job well, unlike SEC.



## What happens after the trade?

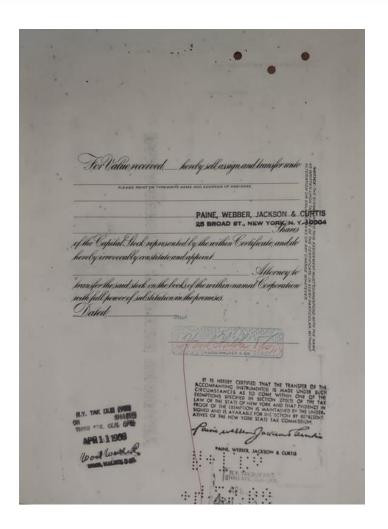
- How does the money get from buyer to seller?
- How does the ownership get transferred from seller to buyer?
- How (if ever) does the company find out?





# In the olden days...

- In the old days....
  - Seller signed certificate over to buyer
  - Buyer turned in signed certificate to company's transfer agent
  - Transfer agent printed new certificate for the buyer





## In the modern world...

- Shares usually held in "street name"
  - Convenient to use brokerage firm or custody bank
    - Brokers have strict rules to segregate customer assets from the firm's assets.
  - Brokers keep the shares at DTC
- Delivery of the shares is just an electronic transfer at DTC from the account of the selling broker to the account of the buying broker.
  - But you can usually get paper certificates if you want to pay \$\$\$



### Some shares are held in a DRS

- DRS: Direct Registration System
  - Transfer agent (e.g. AST or Computershare) keeps track of the shareholders.
  - Electronic system
    - No fancy certificates issued
  - Shares can be moved electronically to or from brokerage firms.
  - Or directly transferred to another party like a relative.
  - Companies know who owns the shares in their DRS.
    - They usually don't know who owns shares in street name.



# Depository Trust and Clearing Corporation (DTCC)



Leading financial services through the power of our ideas.

- NSCC and DTC are subsidiaries of DTCC
- "Clearance"
  - NSCC: National Stock Clearing Corporation
  - Figures out who owes what to whom
  - Nets all the buys and sells for each broker
  - Settlement
    - DTC: Depository Trust Corporation
    - Buyer pays and receives shares
      - DTC merged with NSCC to become DTCC



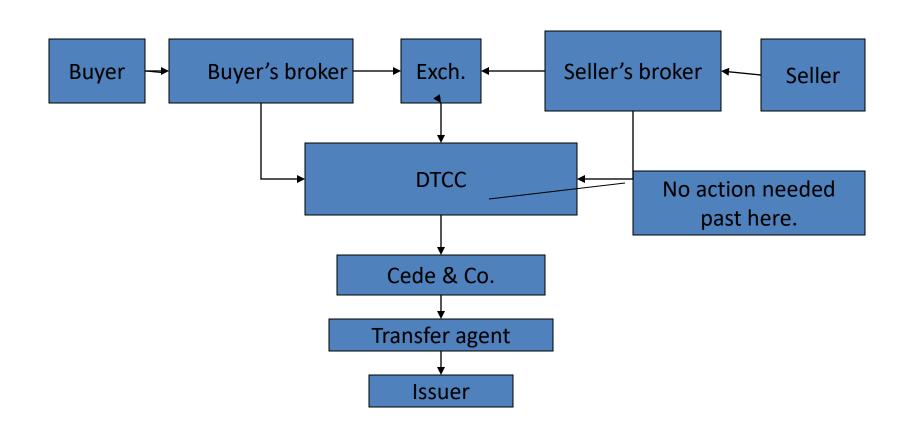
## Settlement occurs on T+2



- DTC operates vault on Washington Boulevard in Jersey City NJ
  - Paper stock certificates "immobilized" there.
    - Owns most shares in the name of "Cede and Company"
      - "Cede" = C.D. = Central depository
      - Cede & Co is the shareholder OF RECORD
      - The "real" owners are known as "beneficial" owners, not owners "of record."
- Trivia note: The threshold for requiring SEC registration is based on the number of shareholders, "of record", NOT the total number of beneficial shareholders!
  - Many NYSE- and Nasdaq-listed companies have only a handful of shareholders "of record" and could easily delist and deregister from SEC.



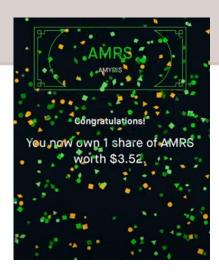
## Street name settlement

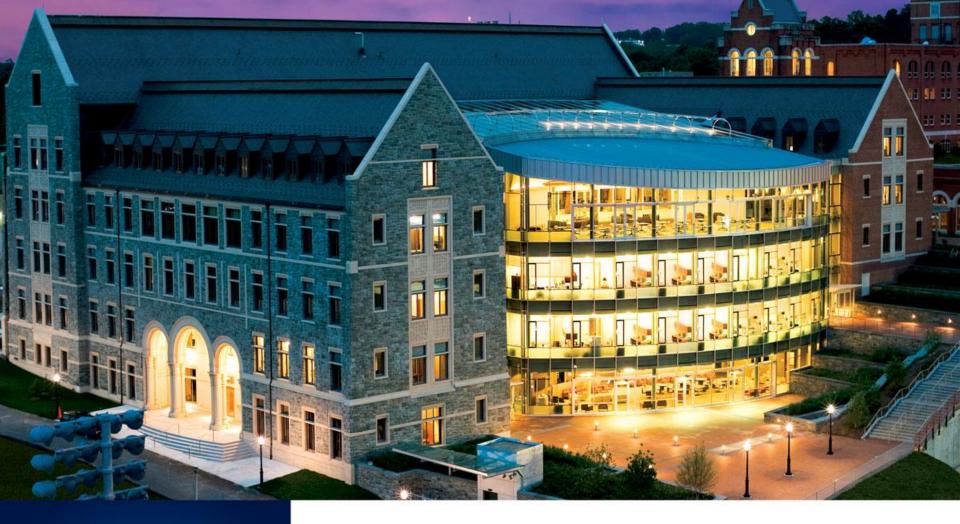




## **Timeline**

- Friday:
  - Alice enters buy order in AMRS through Robinhood.
  - Bob enters a sell order in AMRS through Merrill.
  - Orders match on an exchange or OTC.
  - Trades reported to the consolidated tape and NSCC.
- Monday:
  - NSCC figures out how much each member broker has to pay or deliver on the settlement date.
    - Nets all of the orders for each broker
      - Each broker only has to deliver/receive the net amount for all of their customers trades.
- Tuesday:
  - Settlement occurs electronically at DTC.
  - Shares moved from Merrill's account to Robinhood's account at DTC
    - Robinhood pays Merrill via DTC.
  - Robinhood's records show the Alice owns the shares and has less cash.
  - Merrill's records show that Bob no longer owns the shares but has more cash.
  - AMRS's records show no change: Cede & Co still hold the shares.





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Dividend plumbing



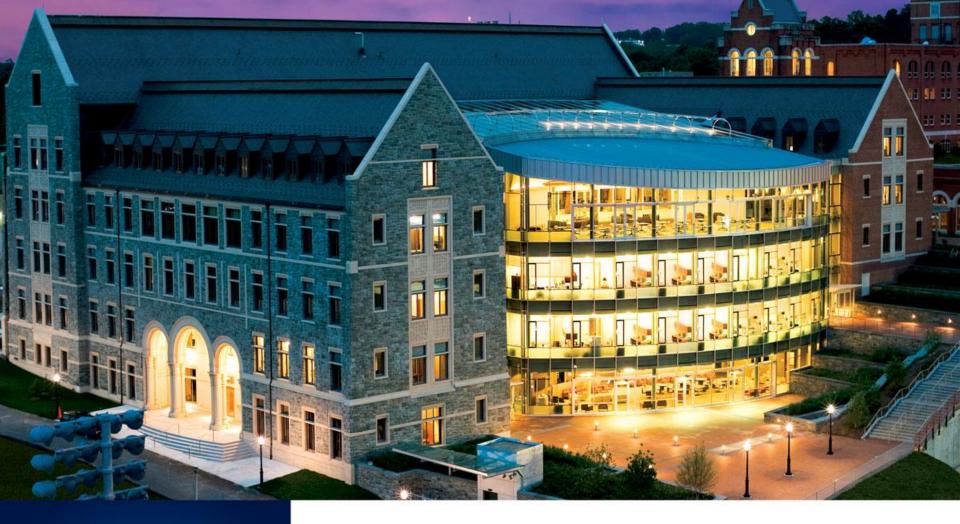
# Timing of dividends

- Announcement Date
  - Whenever
- Record Date
  - Must own shares on that date in order to receive the dividend.
  - Because shares settle on T+2, need to buy shares two business days before.



## Example

- Record date: Tuesday, December 12, 2022
- Last day to buy and get dividend: Friday, December 8, 2022
  - Because trades on December 8, 2022 settle on December 12, 2022.
- Ex-Dividend Date
  - First day company trades without dividend.
    - Monday, December 11
      - Buyer on that date would NOT get dividend.
- Distribution Date
  - Whenever company gets around to it.



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Short selling



#### Reasons to short

- 1. Arbitrage
  - Betting on prices between two related assets
  - Example:
    - Arbitrageur monitors and ETF and the stocks that go in it
      - If ETF is more expensive than the stocks:
        - » Short ETF and buy stocks
          - Pushes prices back into alignment

- 2. Hedging
  - Investor owns convertible bond that can be turned into stock.
  - Worried about risk stock could go down
    - Hedges by shorting stock.
      - Gain/loss on short position offsets loss/gain on bond.



# Important point!

- Neither arbitrageurs nor hedgers care whether the stock goes up or down.
  - They are NOT betting the stock goes down!
    - They are betting on the relative prices of related assets.



#### More reasons to short

- 3. Directional shorts
  - Investors betting that stocks will go down
- 4. Market making
  - Market makers are the used car dealers of the industry
    - They sell convenience to investors
      - Buy from those eager to sell at trade-in (bid) price
      - Sell to those eager to buy at retail (ask or offer) price
    - If a buyer comes in and the MM has no inventory, they short
      - Confident that a seller will come by in a few minutes.
  - Market makers try to keep inventory levels (long or short) as small as possible
    - Inventory ties up capital and incurs risk.
    - Their ideal is to "go home flat" with a zero position every night.



#### How a short sale works

- Investor borrows shares
  - Typically rented from institutions
    - Or loaned from brokerage margin accounts.
- Sells shares
- Later....
  - Obtains replacement shares
    - Typically bought on open market.
  - Returns to lender
- Makes money if cost of replacement shares less than proceeds from original sale.
  - Buy low and sell high, but in reverse order



## Alleged "counterfeit" shares

- Short sales create the equivalent of a derivative transaction
- Number of long positions goes up
  - Sometimes erroneously called "counterfeit" shares
- Example
  - Company has 100 shares outstanding
  - Institution lends out 10 shares to short seller who sells to others.
  - Lender still has economic exposure to company, but no vote
  - Buyer of shorted shares also has economic exposure to firm, and vote
- Result
  - Number of long positions = 110
  - Number of short positions = 10
  - Shares outstanding (and that can vote) still only 100
- Thus, institutions can report owning in aggregate more than 100% of the stock
  - Or short interest can be greater than 100%, like it was in GameStop



#### A short scenario in detail...

- Monday
  - Investor "locates" shares to borrow
    - » Required under Reg SHO
    - Someone agrees to lend
    - Brokers usually do this automatically for most shares that are easy to borrow.
  - Investor sells short at \$50
- Wednesday: Settlement date
  - Investor (through broker) borrows shares
  - Shares delivered in settlement
  - Share lender gets 102% of the value (\$51) in collateral
  - Broker demands whatever margin it chooses to require
    - Fed Regulation T may or may not apply



## Stock lending agreements

- Typically "demand" loans
  - Like with checking accounts
  - Lender can demand shares back anytime.
- Usually no fixed maturity date
  - Lenders usually happy to keep lending
  - If one lender recalls stock because they want to sell, broker arranges a different loan
- In case of dividends and other corporate actions
  - Pay distributions to lender
    - Payment in lieu of dividends
    - Non-cash distributions owed to lender
- Lender gets to keep interest on collateral
  - Typically rebates a portion of that to borrower
    - Except for very hard to borrow shares
  - Rent to lender = Interest on collateral rebates
- Lender loses voting rights
  - Votes go to whoever purchases the shares.



## Short positions are "marked to market"

- Thursday: Stock goes to \$60
- Short has to put up more \$10.20 in additional collateral to maintain collateral at 102% of the stock's value
- Collateral now (\$51 + \$10.20) = \$61.20



## Friday: Stock drops to \$1.00

- Required collateral was \$61.20
  - Now it drops to \$1.02
  - Short receives \$60.18 in cash.
- Stock stays at \$1.00 indefinitely
- Note that short originally put in \$11.20 in collateral (Plus any Reg T or other margin required by broker) and walked out with \$60.18, for a net cash inflow of \$48.98.
  - Not taxed until position closed out.



# Stock stays at \$1.00 indefinitely

- Nothing happens...
  - Collateral stays at \$1.02
    - Lender gets interest on \$1.02
      - Rebates some to borrower...
- Note that short originally put up \$11.20 in collateral
- Took out \$60.18,
- Net cash inflow of \$48.98 so far...
  - Will eventually get back rest of collateral.
- Not taxed until position closed out!



## Tax treatment of short sales

- Short sale profits are taxed as short-term capital gains.
- Taxed only when position is closed!
- A short with unrealized gains has an incentive to NOT close out position
  - But defer gains to the future.
  - And continue to bad mouth the company.
- Easy Pay For :
  - Tax short sales on unrealized gains each year.
    - Mark to market at end of year like futures



#### "Naked" short sales

- Selling short without borrowing shares
  - Results in a "fail to deliver"
  - When there is a fail to deliver, some counterparty is failing to receive!
    - Forced into making an involuntary stock loan to the short!
- WAS A BIG PROBLEM PRIOR TO 2008!
  - Major companies like NYSE and Overstock saw big fractions of their shares sold short and not delivered for months at a time!
  - SEC put its foot down with Rule 204T in 2008.
  - Most fails have been cleaned up.
  - Some still happen, but usually resolved quickly.
    - Operational issues with some ETFs.



#### Fails to deliver

- Sometimes the seller doesn't deliver the shares
  - Technology glitch
  - Problem finding shares
- Under Rule 204, the failing to deliver party must be bought in on the morning of the third day after the normal settlement date.
  - Put in place in 2008 after the financial crisis.
- There are some exceptions
  - Those failing to receive can force a buy-in sooner
    - They rarely do, as shares will come in soon enough.
  - Market makers get three more days before being bought in
  - More time for those waiting for delivery of share from convertible bond conversions, etc.



## Short can be forced to cover or bought in:

- 1. Lender recalls shares and broker can't find a replacement loan
- 2. Short fails to deliver and gets bought in
- 3. Stock goes up and borrower can't put up more collateral
- 4. Value of account goes down and broker wants more margin than short can put up
- 5. Stock goes up so much that short seller capitulates and covers to prevent further losses.



## Short squeeze

- Attempt to restrict supply of shares available for lending to short sellers
  - Forces shorts to buy shares and push price up
    - Pain forces more shorts to exit, creating an upward spiral of price.
- Tactics
  - Ask institutions not to lend (yeah, right)
  - Ask shareholders to restrict lending from their accounts
    - Right of shareholders
      - Unless they have a margin loan outstanding
        - » Broker can lend out 140% of the value of margin loans
          - SEC Rule 15c3-3
  - Ask shareholders to
    - Move shares from margin to cash accounts
      - Not needed unless investor owes money to broker
    - Move shares to DRS
    - Move shares to paper certificates
  - Attempt to remove shares from DTC eligibility



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## As a finance professor...

- I practice what I preach in terms of diversification
  - Long-term, buy and hold shareholder
- With zero commissions, it makes sense to hold a little bit of everything.
- "Direct indexing"
  - Investors can time realization of gains and losses strategically.
  - Personalize and optimize portfolios
  - Not at mercy of when other investors or portfolio managers buy/sell.
- I had a small holding in Torchlight Energy Resources (Nasdaq: TRCH)
  - Small oil and gas company



## 2019: Torchlight claimed to have struck oil...





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#### Torchlight Announces New Field Discovery 3rd Party Reserve Estimate of 3.678 Billion Barrels in Recovery Potential From **Unconventional Zones**



Torchlight Energy Resources, Inc.

Thursday, April 11, 2019 8:00 AM



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Receives Final Petrophysics Report on its Orogrande Basin Project

PLANO, TX / ACCESSWIRE / April 11, 2019 / Torchlight Energy Resources, Inc. (NASDAQ: TRCH) ("Torchlight" or the "Company"), today announced that the Company has received the final petrophysical report relating to its Orogrande Basin Project. The report will be utilized in the delivery of due diligence materials to industry suitors for potential M&A discussions with Torchlight. The final report, prepared by Stimulation Petrophysics Consulting out of Denver, outlines the potential recoverable reserves from the unconventional zones on Torchlight's 134,000 acres in the Orogrande Basin. The Orogrande is the western most sub-basin of the Greater Permian Basin.

The extensive report outlines a range of recoverable values based on standardized recovery factors. Described in Potential Barrels.

Low Case 2.321 billion BOE: Recovery Factor (7%)

Mean Case 3.678 billion BOE: Recovery Factor (11%)

Best Case 4.975 billion BOE: Recovery Factor (15%)

The following updates were previously disclosed:





#### 2021: TRCH→ MMAT

- On July 21, 2021
  - Torchlight merged with Meta Materials
    - Privately held materials processing company
    - Meta shareholders ended up with 75% of shares
- Reverse merger to take Meta public.

July 21, 2021

# InvestorNewsBreaks – Torchlight Energy Resources Inc. (NASDAQ: TRCH) Closes \$1.9 Billion Merger with Meta Materials Inc. (NASDAQ: MMAT)

 https://www.investorwire.com/investor-news-breaks/investornewsbreakstorchlight-energy-resources-inc-nasdaq-trch-closes-1-9-billion-merger-withmeta-materials-inc-nasdaq-mmat/



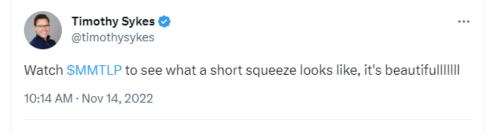
# 2022: MMAT spins off hydrocarbon assets to MMTLP

- Spinoff as a special class of preferred stock
  - Meta Series A Preferred Stock
  - Designed to receive proceeds of sale of oil and gas assets
- Management planned for spinoff to NOT be publicly traded.
  - May have thought it would "force" shorts to close.
  - If so, they were mistaken.
    - Shorts can stay short as long as lenders are willing to lend
  - Shares were registered with DTC
- MMTLP began trading "over the counter" on OTC Markets
  - Company required to be SEC registrant due to large number of shareholders
  - Brokers filed Form 15c2-11 indicating that information was available



## MMTLP → Next Bridge Hydrocarbons

- Company decides to spin off Next Bridge Hydrocarbon to MMTLP holders
  - Does NOT register shares with DTC
    - Shares can't be held or transferred there
    - Investors not able to trade Next Bridge through normal market infrastructure of brokers and DTCC.
      - Even though firm is an SEC registrant reporting 64,000 shareholders of record.
- Anticipation of short squeeze pushes up price



Record date for dividend of Next Bridge: December 12, 2022



# The Next Bridge Spinoff

- Imagine receiving a check written on an unknown bank.
  - You can't deposit in your local bank (broker)
  - Have to take in person to other bank across the country.
  - But have to wait for them to open next year.



#### Key dates

- November 23, 2022
  - Meta announces spinoff record date of Tuesday, December 12, 2022.
    - Requires buying on or before Friday, December 8 to get distribution because of T+2 settlement
    - Anyone who bought shares after December 8 would get nothing.
    - Press release does not mention anything about December 8.

Holders of Series A Preferred Stock who sell their shares on or before the record date will not be entitled to receive the shares of Next Bridge common stock in the distribution in respect of such shares of Series A Preferred Stock sold. Holders of Series A Preferred Stock who sell their shares after the record date but *before* the distribution date will be required to transfer the shares of Next Bridge common stock received in the distribution to the subsequent purchaser of Series A Preferred Stock.

 https://metamaterial.com/meta-materials-inc-board-of-directorsapproves-planned-completion-of-the-spin-off-of-next-bridgehydrocarbons-inc/



#### December 6, 2022

- FINRA announces "will not be quoted" in its Daily List along with 45 other corporate actions like dividends.
  - Company says nothing.
- "MMTLP shareholders with settled positions as of 12/12/22 Record Date will receive one (1) share of Next Bridge Hydrocarbons, Inc. for every one (1) share of MMTLP held on Pay Date of 12/14/22. Purchases of MMTLP executed after 12/8/22 will not receive the distribution. Will not be quoted Ex. MMTLP shares will be canceled effective 12/13/22."

#### Summary

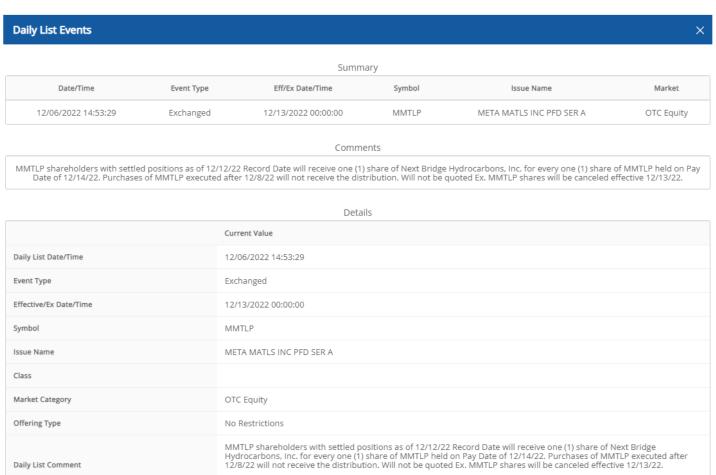
Date/Time	Event Type	Eff/Ex Date/Time	Symbol	Issue Name	Market
12/06/2022 14:53:29	Exchanged	12/13/2022 00:00:00	MMTLP	META MATLS INC PFD SER A	OTC Equity

#### Comments

MMTLP shareholders with settled positions as of 12/12/22 Record Date will receive one (1) share of Next Bridge Hydrocarbons, Inc. for every one (1) share of MMTLP held on Pay Date of 12/14/22. Purchases of MMTLP executed after 12/8/22 will not receive the distribution. Will not be quoted Ex. MMTLP shares will be canceled effective 12/13/22.



#### More details...



https://otce.finra.org/otce/dailyList



### December 7, 2018 email from Interactive Brokers

Meta Materials (MMTLP) Intends to Issue a Spin-off on a 1-for-1 Basis of Next Bridge Hydrocarbons, Inc. Shares

Dear Client,

Interactive Brokers was notified by Meta Materials (MMTLP) that they intend to issue a spin-off on a 1-for-1 basis of Next Bridge Hydrocarbons, Inc. shares.

The record date for this dividend is currently listed as **December 12**, **2022**, and the shares are set to be distributed on **December 14**, **2022**.

#### PLEASE NOTE:

- Meta Materials intends to cancel MMTLP shares immediately after the spin-off, and the Next Bridge Hydrocarbons, Inc. shares will be nontransferrable and non-tradable.
- Shortholders: Should account U\*\*\*\*2438 be in a borrow position after
  the close of business on December 8, 2022, you will be short a security
  for which there is no market to cover. In addition, there is potentially no
  market to cover moving forward. At this time, the only way to avoid this is
  to cover your short position. For further information regarding the risks of
  short selling, please see the following link: https://ibkr.info/article/2880
- Longholders: Should account U\*\*\*\*2438 be the owner of record past
   December 8, 2022, you will own shares of Next Bridge Hydrocarbons,
   Inc. shares that are non-transferrable and non-tradable. The only way to
   avoid this is to sell MMTLP any time prior to market close on December

   8, 2022.
- If shares of Meta Materials are sold after December 8, 2022 but prior to the cancellation date, sellers will be responsible for coordinating title ownership to new owner(s).



# December 8: Last day of trading

- Stock drops to \$2....
- FINRA halts trading December 9 (Code U3: Extraordinary event, D1 deleted)

#### **Trading Halts** Trading Halts 1 View Halt Code SEC Halt Date/Time Symbol Issue Name Mkt Ctr Origin Action Only Current MMTLP META MATLS INC PFD SER A D1 Halt 12/13/2022 00:00:00 OTC Equity All Halts Issue 12/09/2022 08:09:00 MMTLP META MATLS INC PFD SER A U3 OTC Equity Halt MMTLP 12/09/2022 00:00:00 MMTLP META MATLS INC PFD SER A U3 OTC Equity Halt Date Range Start:

- Investors who bought hoping to sell into the Mother of All Short Squeezes (MOASS) on December 11 or 12 left holding bag.
- https://otce.finra.org/otce/tradingHalts



## Allegations

- Numerous social media / YouTube postings
  - Reddit: MMTLP\_, Twitter: #FINRAFRAUD #MMTLP @InvestorTurf
- Allegations:
  - Trading halt part of massive conspiracy by FINRA/SEC/Wall Street
    - To protect MMs or short sellers by preventing forced closing of short positions?
  - Other pump and dump manipulation?
    - Claims of #FINRAFRAUD to deflect blame?
  - Insider scheme to walk away with hydrocarbon assets by depressing share price?
    - Illiquidity depresses share price
  - Amateurish attempt to squeeze shorts that backfired?
  - Some combination?
  - I am glad you are investigating!



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Implications for Congress



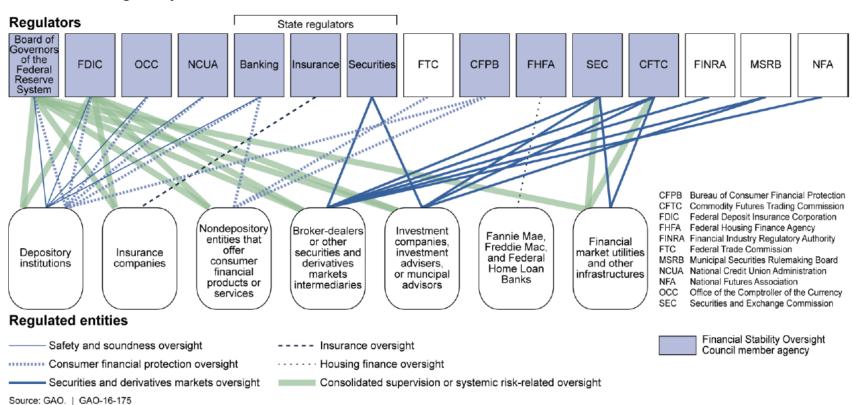
## Who is protecting the public?

- We have hundreds of financial regulatory agencies
  - Federal
    - SEC, CFTC, CFPB, FDIC, OCC, Fed, DOL, (Not insurance)
  - State
    - Securities, banking, insurance, money transmitters
  - Self-regulatory organizations
    - Exchanges, FINRA, NFA...
- They don't play nicely together!
  - Stuff falls between cracks.
  - Turf battles
- This hurts us in global negotiations!
  - No one entity speaks for the US
- Digital assets are a prime example of the inability of our structure to deal with new technologies.
  - Just like the 2008 crisis



# Just a small graphic...

#### U.S. Financial Regulatory Structure, 2016





# Who is educating the public?

- Low level of financial literacy
- Population unable to separate fact from misinformation.



#### Our securities laws....

- 1933 Securities Act, 1934 Securities Exchange Act, 1940 Investment Company Act.
- Like a 1933 Ford, patched up numerous time...
  - But still a 1933 Ford...
  - Our laws have not kept up with the changes in technology or society.





#### What needs to be done

- Begin the conversation for a major overhaul of the structure of our regulatory system
  - Lots of hearings on different parts
  - Will take years
- Issues include
  - Overall structure at federal level
    - One consolidated regulator like Japan's FSA?
    - "Twin peaks" like the UK?
      - » Conduct regulator (FCA) and solvency regulator (BofE)
        - With a Serious Fraud Office
    - Some combination of existing agencies?
  - State v. federal responsibilities?
    - Insurance?
  - Role of SROs?