

# “How to Define Illegal Price Manipulation”

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# The Value of Financial Markets

- Financial markets improve welfare in two ways:
  - Prices as Signals: enable more efficient resource allocation if more accurate
  - Markets as Trading Opportunities: Greater liquidity makes it less costly to transfer risk
    - Kyle (1984b)
    - Foster and Viswanathan (1990)
    - Pagano (1989)
    - Admati and Pfleiderer (1988)

# Informed Traders and Noise Traders

- Informed Traders
  - Make prices more accurate
  - Make markets less deep due to adverse selection
- Liquidity Traders = Noise Traders = Hedgers = Demanders of Liquidity
  - May make prices less accurate by adding noise
  - Make markets deeper by reducing adverse selection, a positive network externality
    - Chowdhry and Nanda (1991)
  - May attract more informed trading
- Liquidity trading “taxed” by informed trading to make prices more accurate
  - More liquidity trading may lead to more endogenous production of private information, making prices more accurate

# What is Illegal Price Manipulation?

- Violator intends to pursue a scheme which is “unambiguously bad” in that it makes matter worse it BOTH or two ways
  - Makes prices less accurate
  - Undermines market depth
- Pricing accuracy and Market Depth undermined throughout market
  - “Price Manipulation” = “Market Manipulation”

# “Pricing Accuracy” vs. “Market Efficiency”

- These are two different concepts
- Pricing Accuracy: Tendency for prices to provide signals for an efficient allocation of resources.
  - In a squeezed market, high nearby prices provide signals to mis-allocate resources.
- Market Efficiency: Predictability of returns base on available information
  - In a squeezed market, prices may accurately forecast the probability of a squeeze at all times.

# Inadequate Definitions of Illegal Manipulation

- Manipulation = Deceit
  - OPEC is public cartel involving no deceit
- Routine exploitation of market power
- Bayesian Nash Equilibrium
  - Pursuing self-interest not evil
    - Adam Smith (1776)
  - “Manipulation of beliefs” not evil
- Trading against information
  - Chakraborty and Yilmaz (2004): Selling when bullish
    - Rules out routine market-making
- Misunderstandings of derivatives and short-selling
  - “Index arbitrage” not intrinsically bad
  - Short-selling protects buyers from manipulators
  - Pre-Adam-Smith idea that arbitrage is immoral

# Examples of Illegal Manipulation

- Corners and Squeezes (“Repo squeeze”)
  - Inefficient distortions to intertemporal production.
- Reverse Corners and Squeezes
  - Also inefficient distortions to intertemporal production.
- “Pump and Dump” Schemes
  - Normally requires some disclosure fraud
  - What about “pump-and-dump” without disclosure fraud, e.g. an “honestly” over-optimistic CEO?
- Reverse Pump-and-Dump :Predatory Short-selling of “good” company
  - May also involve some disclosure fraud or circulation of false rumors.
  - What about predatory short-selling without misinformation?
- Fake Transactions to Influence Prices with false impressions of liquidity
- Failure to make required disclosures or making false disclosures

# Examples of Benign Strategies

- Routine hedging (even with market power)
- Routine market making (even with market power)
- Routine speculation
  - Attempt to profit from legitimately acquired private information.
  - Attempts to profit from providing risk-bearing service to others
- Bluffing and mixed strategies
  - Honest rumors (as in Bommel (2003), Black (1991)).
- Market Depth Arbitrage
  - “Fishing for Stops”
- “Punching the close” to replace expiring cash-settled contracts
  - Like taking delivery
- “Natural Squeeze”

# Examples of Illegal Strategies which are not Manipulation

- Abusing Agency Relationship
  - Front-running
  - Mishandling customer orders
- Quoting fake prices to influence cash-settled contracts
  - If doing so does not affect future trading opportunities

# EXAMPLES OF ILLEGAL PRICE MANIPULATION

# Corners and Squeezes

- Example is Hunt brothers silver squeeze, 1979-1980
- Monopolistic control over supply
  - Borrowing and lending of collateral expensive
  - Off-the-street financing diagnoses squeeze
  - Intertemporal prices distorted
- Kyle (1984a)
  - Squeeze makes prices send signals for inefficient resource allocation, even though markets are weak-form efficient
  - Deeper market makes squeezes easier
  - Possibility of squeezes lowers market depth by introducing unnecessary new source of adverse selection

# Reverse Corners and Squeezes

- Dumping collateral into the market when it is very costly to finance or store
  - Normally not applicable to financial assets where storage costs low and credit is supplied competitively
    - But: Hunt silver squeeze broken in part by Fed telling banks not to lend to finance commodity speculation
  - Applicable to storable commodities where storage facilities are expensive and in finite supply.
    - Example would be warehouses making only 50% of capacity available to stockpilers, when stockpiles equal more than 50% of warehouse capacity.

# Intertemporal Distortions to Production

- Oil
  - Shipping so much oil that prices reflect expensive above-ground storage costs when cheaper for manipulating producer to store in ground
  - Failure to ship oil when apparently profitable to do so by storing in ground despite falling forward price pattern
- Electricity
  - Flooding grid with electricity which cannot be stored, pushing prices to levels far below marginal cost of production with say natural gas.
  - Taking production offline for “maintenance” when prices are very high, to push prices higher

# Pump-and-Dump

- Usually involves false disclosure
  - Manipulator buys stock
  - Manipulator makes false bullish disclosure to gullible investors, perhaps publicly or perhaps through private newsletter
  - After prices rise as result of false disclosure, manipulator dumps stock at high prices.
- Prices provide inaccurate signals
- Market depth suffers since traders cannot trust disclosures which might be false

# Does Pump-and-Dump Require False Disclosures?

- “Bullish” CEO makes positive statements about company (“hype”), without saying anything which can be proven false.
- Market participants buy into CEO bullishness, and stock price rises.
- High stock price allow CEO to go on acquisition spree.
- Price fall back somewhat after acquisitions, but not enough to make the overall scheme unprofitable.
- Hard to enforce, since hard to read mind of “bullish” CEO

# Reverse Pump-and-Dump

- Manipulator (hedge fund) short-sells stock.
- Manipulator makes false bearish disclosures
- Company stock price falls as market believes false disclosures.
- Manipulator buys back stock at a profit.

# Does Reverse Pump-and-Dump Require False Disclosure

- Goldstein and Guembel (2006)
- Manipulator massively short-sells stock of “good” company which needs to raise capital to prosper.
- Stock price falls to such low level that managers and other traders, relying on stock price as signals, fail to provide needed financing to company.
- Company fails and stock price falls to zero.
- Manipulator exits with a profit.
- Very difficult to diagnose whether manipulator’s short-selling based on “sincere” belief that company is bad.

# Fake Transactions Creating False Impression of Market Depth

- Manipulator buys asset, pushing prices up.
- Manipulator engages in a large number of fake transactions, creating false impression of deep market.
- Naïve supplier of liquidity buys from manipulator, thinking asset will be easy to sell later.
- Manipulator has successfully exited, but supplier of liquidity is stuck with loss.
- Such schemes both distort pricing accuracy and undermine ability of suppliers of liquidity to rely on public data to make measurements of liquidity, so liquidity suffers too.

# False Disclosures, Failure to Make Require Disclosures

- Distorts pricing accuracy.
- But also makes markets less liquid, since market cannot rely on disclosures to substitute for private information.

# EXAMPLES OF BENIGN STRATEGIES

# Routine Speculation, Hedging, Market-Making

- Speculation
  - Informed trading makes prices more informative
  - Providing liquidity makes markets deeper.
- Hedging
  - Noise trading makes markets more liquid for others.
- Market making
  - Makes markets deeper

# Bluffing and Mixed Strategies

- Informed trader with bullish information may mix some sell trades (bluffing) into overall buying strategy
  - He extracts more liquidity for himself
  - His buying and selling may also slightly increase liquidity for others.
  - Ability to make greater profits from trading (using mixed strategies) encourages production of private information
- Back and Baruch (2004) show mixed strategies necessary for equilibrium.

# Market Depth Arbitrage and “Fishing for Stops”

- Kyle (1985) shows market depth arbitrage would be infinitely profitable out of equilibrium but does not occur in equilibrium.
- But might occur as part of equilibrium with relaxed assumptions.
- Effect is to smooth out liquidity over time or price levels, so depth may be improved for some traders in some states.
- Merely one aspect of Bayesian Nash equilibrium.

# “Punching the Close” with Cash Settlement

- When cash-settled contract expires, contracts automatically liquidated and risk exposure vanishes
  - But with physical delivery risk exposure unaffected by taking delivery
  - Taking delivery is normally benign
- To mimic taking delivery, trader long cash settling contracts buys to expiring contracts in cash market to replace them.
  - This preserves a hedged position.
- If counterparty with short position lets positions cash settle, this trader effectively buys in short position at cash settlement by not replacing position with a sell order.
- Casual observer who sees buy orders and upward price spike may mistakenly attribute price spike to buying,
- BUT: The price spike is due to the non-seller increasing his position by not selling.
  - The buyer is supplying some liquidity like at market maker and is not manipulating.
  - But the seller might be manipulating.
- Example is Avista case, involving OTC electricity derivatives cash-settling against NYMEX electricity futures.

# LEGAL ISSUES

# Consistency with Legal Theories of Manipulation

- Our approach consistent with traditional four-part test:
  - **Ability** implies market power or private information
  - **Intent** requires scheme undermining both pricing accuracy and liquidity
  - **Causation** implies scheme had intended effects
  - **Artificiality** implies inaccurate price and undermined liquidity

# In re Indiana Farm Bureau

- Recognizes that well-functioning market involves interplay between suppliers and demanders of liquidity.
- Focus on “illegitimate” or “extraneous” factors, rather than ultimate price
  - Not OK to distort prices in a manner which decreases trading opportunities for others
    - As in a corner or squeeze
  - OK to “distort” prices (hedging or unskillful speculation) in a manner which increases opportunities (liquidity) for others
    - Consistent with Friedman (1960), “In Defense of Destabilizing Speculation”
  - OK to profit from private information, making prices more accurate
- No obligation to provide liquidity to others because they demand it
  - Implies that “punching the close” is benign

# Principles-Based Code of Conduct

- A Principles-based code of conduct is consistent with our approach
- US law does not have explicit definition of illegal manipulation or even a set of principles
- UK's FSA and EU have moved towards principles-based code of conduct
  - Many similarities with our approach
    - E.g. corners and squeezes illegal
  - Some important differences
    - FSA and EU seem to dislike innocent “punching the close” strategies
  - EU Focus on misuse of information is different from our focus on market liquidity
    - Implies more focus on disclosure violations

# Enforceability

- We disagree with Fischel and Ross (1991) that manipulation should not be illegal due to enforcement issues
  - Corners and squeezes can be diagnosed by looking for “off-the-street” financing
- But we recognize that some types of illegal manipulation are difficult to prosecute due to difficulties to inferring intent
  - Is a bullish CEO engaging in “pump-and-dump” or merely over-optimistic?
  - Is a bearish short-seller engaging in “predation” or protecting buyers from paying too much?

# Disclosure

- Mandatory disclosure of otherwise private information may improve both price informativeness and market liquidity
  - If information is produced without speculative trading profits as incentive
- Public production and disclosure of information can improve both price informativeness and market liquidity
  - If publicly produced information is a substitute for private production of information to make trading profit
- We classify disclosure violations as manipulation since both informativeness and liquidity suffer.

# CONCLUSION

- Defines as illegal strategies which undermine both price informativeness and liquidity
- Defines as benign use of term “manipulation” to describe routine exercise of market power or description of the logic of a Bayesian Nash equilibrium.
- Our approach is consistent with trend toward principles-based definition of illegal manipulation
  - But some differences from FSA and EU in implementation details
- We recommend nothing revolutionary, rather a return to traditional legal approaches to illegal price manipulation.