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Chairman Jeb Hensarling
Financial Services Committee
2129 Rayburn HOB
Washington, DC 20515
VIA EMAIL

RE: U.S. Equity Market Structure Part I: A Review of the Evolution of Today's Equity Market Structure and How We Got Here, Tuesday, June 27, 2017

Honorable Chair Hensarling, Chairman Huizenga, Ranking Member Waters and Ranking Member Maloney,

It is a privilege to provide testimony on the state of U.S. capital markets from the perspective of the public companies whose shares trade every day in the markets here, and thank you for the opportunity.

ModernIR is a financial technology firm and the largest provider of next-generation market intelligence to publicly traded companies. For more than twelve years we've used proprietary software, algorithms and mathematical models to translate trade-execution data in context of market rules into discrete price-setting market behaviors. Our objective is to help clients understand and measure the modern U.S. equity market.

Since we're not traders, investors or market operators we have a unique perspective. Public companies ought to know where their shares are trading, who's trading them, and who owns them. These expectations are nearly impossible to meet today because regulations have not kept pace with market evolution. We will describe structural flaws in today's stock market and offer three simple actions Congress could take or spearhead that would improve conditions for public companies and their investors.

The Securities Exchange Act (SEA) enacted in 1934 and amended numerous times since expressly forbids discrimination against any stock-exchange constituency including by name issuers. Yet issuers are excluded from rulemaking processes and oversight for the market they depend on to raise capital.

The SEA obligates issuers to follow a set of disclosure rules, and the terms describing them – 10K, 10Q – reflect sections of the SEA. Yet public companies struggle to consistently know where their shares trade, who trades them, who owns them, or who is short their shares. The principal investment-disclosure document, Form 13F – which stands for section 13F of the SEA – is 42 years old and requires investors, albeit with a range of exceptions, to report shares they own 45 days after the end of each calendar quarter.

Disclosure rules and market action are wildly disparate. Routinely shares trade hundreds of times in a single second, most executions occur in milliseconds, some trading firms can execute more than 100,000

trades for clients in one second, and as of latter 2015 financial markets in New York and London could communicate electronically in less than three-thousandths of a second.¹ Form and function in the market have radically altered without commensurate adjustments to ownership and trading disclosures. The market is more opaque today than ever, despite a societal zeitgeist of transparency.

Regulation National Market System (Reg NMS), which stemmed from the Section 11A National Market System Amendments passed by Congress in 1975, is a 500-page dictum implemented in 2005 by the Securities and Exchange Commission. Among its four major tenets is a requirement that all trades wanting to be the best national buy or sell order be automated (so as to move fluidly and speedily around the data network comprising today's stock market) and that stocks trade only at a single price point, the National Best Bid or Offer (NBBO).

Thus was born "fragmentation," a word describing the fracturing of trading into tiny, rapidly repriced pieces. Now no single stock market platform – all the big market operators run multiple markets so as to set the bid and offer and create data to sell, which we'll shortly describe – has even 20% of trading.

Last week according to data from BATS Global, a stock-exchange operator now owned by The CBOE (Chicago Board Options Exchange), the NYSE's (owned by Intercontinental Exchange, the world's largest derivatives exchange) primary market led with 14.9% of trading, followed by the Nasdaq's lead market with 14.8%. The NYSE collectively led, with its platforms accounting for 24% of volume, the Nasdaq's, 18%, BATS Global with 18%, about 2% at the newest exchange, IEX, and 36% in so-called dark pools, markets operated by brokers.²

Consider the dilemma for public companies. Twenty years ago, stocks listed at the NYSE or Nasdaq traded there exclusively, and volume traced back to the firms executing the trades. Each market had data standards. Today, there is no uniform standard behind trading data for public companies. Each still pays fees to a listing exchange and yet it's probable the majority of trading occurs elsewhere.

Ostensibly, Reg NMS fostered "competition" by connecting stock markets and forcing them to share customers and prices. Since markets must do the same things save for slight variations around speed and automation, it's not competition but a system. The global head of electronic trading for a major institutional investor, who described the stock market to me as The Death Star – we have a diagram we'll happily share – said, "It's where efficiency goes to die."

Imagine walking into the grocery store to buy a bag of spinach and instead finding you had to buy it by the leaf, which was continually repricing before your eyes, and just when you'd reach for the leaf, half of it would vanish. It would be a hard and frustrating way to obtain salad fixings. But if you were running the machines moving spinach leaves, you'd have an awesome way to make money without risk.

After 15 years of personal study of market structure and over 20 years in the investor-relations profession (the liaison at public companies to Wall Street), much of it supplying data analytics on market structure to household-name public companies, we've learned a set of facts.

¹ Physics in Finance: Trading at the Speed of Light. Journal Nature, Feb 11, 2015.
<http://www.nature.com/news/physics-in-finance-trading-at-the-speed-of-light-1.16872>

² Summary market data provided publicly by BATS Global at
https://www.bats.com/us/equities/market_share/

All stocks must trade through a broker. All trades that buy or sell shares must meet at the best bid to buy or offer to sell, or between them. A great majority of trades thus occur at derivations of midpoint price such as volume-weighted average price (VWAP), time-weighted average price (TWAP), and variations on the “average” theme that peg, float or track how prices change.

Brokers trading for customers are required to give them “best execution,” which is defined as the amount of time it’s between the bid and offer. Ever fewer brokers are able to comply with the standard, so now about 15 brokers, according to our own research, are executing some 80% or more of customer orders, even though Finra regulates about 4,000 brokers. All the rest send their orders to one of these few. And these brokers’ trades then become the basis for best-execution standards, so they have a monopoly in effect.

Since exchanges must share customers and prices, they can’t distinguish themselves from the other exchanges – so they pay traders to set the best bid or offer. The term is a “trading rebate” or credit. Then the exchange has the best price, and trades under Reg NMS must move to the best price. All three big exchange groups operate multiple platforms so they can pay traders to both buy and sell, thus setting the bid and the offer.

Price-setting information then becomes valuable data that’s sold back to traders and brokers – the latter required to buy it in order to establish that they’re giving customers best prices. A study of financial results in public documents for the two largest U.S. stock-listing venues shows that a majority of net revenues are generated from data and services rather than stock-trading.

Without offense to the legacy exchanges, our intensive study of rules and trading behaviors has been revealing. The NYSE’s equity fee schedule is 25 pages long³. At the Nasdaq, Section 7018 of its rulebook, Nasdaq Market Center Order Execution and Routing⁴, is a dense compendium of pricing data in html so it’s difficult to compare accurately to the NYSE’s list (plus, one must include comparative sections for the Nasdaq’s BX, PSX and PHLX equity platforms⁵). But it’s lengthy.

Give these price lists to the Chief Financial Officer whose company’s shares are listed on the exchange and will he or she recognize the incongruity reflected in complex trading fees for a market supposedly serving issuers and investors? I don’t know. But in a time-priority continuous-auction marketplace built around a single price-point manifesting in multiple places, quote-share and trade-share will determine price. Therefore, setting price is what makes data valuable. How to set price? Offer incentives. Why do exchanges want to set price? Because it’s key to capturing data revenue.

Complex fee schedules reflect incentive plans for traders that I described above – paying traders for prices. Outside the opening and closing auctions when prices for making and taking liquidity are the same, traders bringing significant volume to the exchanges receive favored treatment.

All three big exchanges pay more for trades from big-volume customers than they charge, which is akin to spending more to buy products wholesale than one prices on the retail store floor. All three large exchange groups will also pay extra for trading securities from multiple tapes simultaneously⁶. For instance, trades for

³ https://www.nyse.com/publicdocs/nyse/markets/nyse/NYSE_Price_List.pdf

⁴ http://nasdaq.cchwallstreet.com/NASDAQTools/PlatformViewer.asp?selectednode=chp_1_1_4_6_5_8&manual=%2Fnasdaq%2Fmain%2Fnasdaq-equityrules%2F

⁵ <http://www.nasdaqtrader.com/Trader.aspx?id=PriceListTrading2>

⁶ Regulation National Market System capped access fees at \$0.30/100 traded shares and all three major US exchange groups offer trading rebates in excess of that level, ranging from \$0.31-\$0.45/100 traded shares.

both Tape A and Tape B securities, or Tape B and Tape C securities (that is, shares listed at either the NYSE or the Nasdaq that are paired with derivatives listed on Tape B) will generate a higher rebate for liquidity than trading just one. Implicit in that structure is the promotion of arbitrage.

That's not criticism per se. But for issuers, a structure that advances arbitrage as a principal price-setting device raises fundamental questions. It's at minimum misdirection for issuers that list their shares under the altruistic assumption that the market, as former SEC chair Mary Jo White said, exists for them and their investors⁷.

ModernIR is expert at studying trade-execution data to observe its purpose by how it comports with rules. Using software, algorithms and mathematical models we've discovered that some 85% of trading volume now is something other than rational, or fundamental, investment predicated on the information companies provide on quarterly earnings calls or in their 10K and 10Q regulatory filings.⁸

About 38% of trading by our measures is Fast Trading, where the purpose is to profit on price-differences in stocks and to own little or nothing at market-close each day. These computerized trading systems borrow shares heavily for less than a day (about 48% of daily trading volume, data from Finra show, come from borrowed shares⁹) and set prices in stocks but have no committed investment purpose. For perspective, at art auctions all bidders must prove financial capacity to own the painting to offer a price. Not so in trading. Often the price of shares at stock exchanges that executives and board members suppose reflects belief in corporate fundamentals is set by firms not at all interested in owning shares.

About 34% of daily market volume on average by our measures is passive investment, which neither listens to earnings calls nor uses broker equity research for decision-making. Passive investment tracks average prices, and market rules reinforce average prices, so market structure is a primary reason for the explosion in passive investment including indexes and Exchange Traded Funds (ETFs).

It should be noted too that ETFs are not direct investors in shares most times. Much ETF volume is a result of arbitrage as ETF shares slip minutely away from fund net asset value, diverge from the underlying index, diverge from the prices of shares of index components, or depart from pricing in options and futures on stocks, indexes, and ETFs.

Finally, about 13% of trading volume ties to this latter group – options and futures, and other derivatives such as swaps, reverse repurchases and forwards. What remains is what's fundamental, around 14% of trading volume.

Back to ETFs for a moment, they by law post daily holdings (paradoxically making them the most transparent investment vehicle – yet one built on arbitrage rather than investment). Any suggestion from investors that it's impossible to provide timely data defies observable facts. Form 13F anachronistically reflects a time when nearly all market volume tied back to rational investment with much longer horizons than most of today's trading activity.

⁷ <http://www.sec.gov/News/Speech/Detail/Speech/1370542004312>

⁸ Proprietary data analytics from ModernIR predicated on 2017 trading in U.S. markets derived from roughly \$1.5 trillion of client market-capitalization as of May 2017.

⁹ Daily Short volume reports published here, and other exchange sources, examined with proprietary ModernIR averaging techniques: <http://regsho.finra.org/regsho-Index.html>

The essential driver behind trades should be interested natural buyers and sellers, not arbitrage and incentives. But if that's the market Congress and regulators are going to perpetuate, then let's make it fairer and more transparent for public companies. We propose three simple improvements:

1. Amend the Securities Act to modernize institutional-ownership reporting requirements. Companies deserve information that reflects contemporary conditions, where speed dominates and much of market volume isn't investment behavior. Institutions should provide monthly 13F filings that list both long and short positions. Some will push back, wanting opacity. Markets should be transparent. There is a statutory prohibition on discriminating against issuers. To require companies to report on pain of criminal punishment a great deal of fundamental information that's used less and less by the money buying and selling shares without giving companies the capacity to fulfill fiduciary duties to shareholders – because they don't know who owns their shares – is wrong and should be corrected by this Congress.
2. Recommend to Finra, the regulatory authority overseeing brokers, which by rule trade every public share, that they publish a daily list of brokers executing trades, by symbol. For instance, any investor or public company ought to be able to tally the volume of the brokers trading a stock like NYSE:DOW and the total should equal publicly reported volume for that stock. Any broker who resists publishing its trading volume – which in no wise reflects how trading strategies are carried out or whether it was buying or selling – must have something to hide. Canada has this requirement, and the data posts after market close, much of it from the same brokers trading in U.S. markets. Should the American market be less transparent than our neighbor's?
3. Finally, direct the SEC to form an Issuer Advisory Committee, with members elected by public companies for representation and deliberation, a fundamental American principle, so they may have a voice and oversight in the market for their shares.

In sum, if the market exists for issuers and their investors, rules and standards should reflect it. The recommendations here are neither complicated nor onerous, and it's reasonable and right that public companies be treated as the equal constituency the SEA has made them in our financial markets.

Yours Sincerely,

A handwritten signature in black ink, appearing to read "Tim Quast", written in a cursive style.

Tim Quast
President and founder