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Introduction

Good afternoon Chairman Levin, Ranking Member McCain, Senators, Staff, ladies and gentlemen. Thank you for the opportunity to participate in this hearing and share our thoughts on issues affecting the US equity markets. My name is Brad Katsuyama and I am the President and Chief Executive Officer of IEX Group.

IEX would like to commend the Subcommittee for taking the time and interest to examine such a critical aspect of the U.S. equity markets given its importance to the overall economy. Forums such as this are a critical element in addressing the difficulty that many people, both inside and outside of our industry, have had in obtaining relevant information on how our markets operate. IEX hopes that we can assist in changing that dynamic and we appreciate the invitation to participate today.

IEX currently operates a non-displayed Alternative Trading System ("ATS"), or dark pool, for U.S. equities, and intends to pursue registration as a national securities exchange with the SEC later this year.

IEX is dedicated to institutionalizing fairness in the market by offering a balanced, simplified and transparent market model, and also through the use of cutting edge technology. IEX believes strongly in a marketplace's responsibility to ensure its rules and product offerings are designed to promote just and equitable principles of trade, as required by Section 6 of the Securities and Exchange Act of 1934 as amended ("the Act").

This principled approach began with IEX seeking to eliminate conflicts of interest in the operation and participation of our marketplace through our ownership and subscriber structure. Different from the other non-public markets in the US, IEX chose not to take investment from broker-dealers, and instead took investment from buy-side firms, family offices, individuals and employees as owners. To further neutralize conflict and create balance, we chose to allow only broker-dealer firms to become subscribers to our ATS.

In addition to our ownership and subscriber model, IEX has sought to further eliminate conflicts and promote fairness through the pricing structure, market design, and technology architecture of the IEX ATS. IEX has a fee/fee pricing model where we charge both sides the same fee for transactions, there are no rebates paid to the maker or taker of liquidity; we institute a time buffer to neutralize certain negative effects of structural inefficiencies in the national market system, and have a limited number of order types.

IEX believes that the U.S. equity markets have improved dramatically over the past twenty years as participants can now trade less expensively and faster than they did in the past. We believe this is in large part due to the inevitable improvements that technology has delivered across many industries – with financial markets being no exception.

We also believe that the current regulatory framework provides a viable balance between regulation and free market forces, designed to promote competition between markets and orders, and protection of the investor. We want to emphasize the point that IEX was created within the current regulatory framework, which shows that the spirit of the rules governing our market allow for different types of solutions to emerge if participants are properly incentivized to create them.

But despite all of the benefits that we can discuss, it has become apparent to our team and our supporters that the U.S. equity markets are also far from perfect.

We believe perfection is an impossible goal; however, consistent with the 1975 Amendments to the Act, we believe that the industry should constantly be striving towards improving the mechanisms of the National Market System for the betterment of all investors and society as a whole.

We believe in the current legislative and regulatory framework of the market and fully support the regulation and controls intended to support the public interest, protection of investors, and promotion of competition. We believe that all interests – commercial, regulatory, legal, and political – should be dedicated to serving the true purpose of the market, capital formation, and its fundamental role in the domestic and global economy.

IEX believes strongly in Congress' findings in the 1975 Amendments to the Act that:

1. *"The securities markets are an important national asset which must be preserved and strengthened*
2. *New data processing and communications techniques create the opportunity for more efficient and effective market operations.*
3. *It is in the public interest and appropriate for the protection of investors and the maintenance of fair and orderly markets to assure*
    a. *economically efficient execution of securities transactions;*
    b. *fair competition among brokers and dealers, among exchange markets, and between exchange markets and markets other than exchange markets;*
    c. *the availability to brokers, dealers, and investors of information with respect to quotations for and transactions in securities;*
    d. *the practicability of brokers executing investors orders in the best market; and*
    e. *an opportunity, consistent with the provisions of clauses (i) and (iv) of this subparagraph, for investors' orders to be executed without the participation of a dealer.*
4. *The linking of all markets for qualified securities through communication and data processing facilities will foster efficiency, enhance competition, increase the information available to brokers, dealers, and investors, facilitate the offsetting of investors' orders, and contribute to best execution of such orders."*

The rapid technological advancement of the markets over the last two decades has undoubtedly resulted in many benefits to participants. Faster electronic communication between, and information processing by, market systems have decreased uncertainty regarding the state of orders and trades in the market, improving the ability of investors and traders to manage market and opportunity risk.

These advancements have also presented the industry with the greatest potential for democratization of market access, fairness and objectivity in order handling, and the ability to supervise and surveil markets.

But we use the word *potential* very specifically – as we believe that this potential has not been fully realized.

Committee Ask: Address conflicts of interest affecting brokers charged with seeking best execution of customer orders, including conflicts posed by market rebates, access fees, and payments to retail brokers for customer order flow.

The potential conflicts of interest we see affecting brokers handling of customer orders primarily have to do with economics of trade execution and attribution of business handled, in particular the desire to increase or maintain market share in a broker-dealer's own dark pool.

Rebates and fees.

The so called “maker/taker” (and the inverse “taker/maker") model, where providers of liquidity are paid a rebate per share traded and takers of liquidity are charged a fee (or vice versa), with the market venue (i.e. exchange) keeping the difference, has increased venue competition since its emergence in the late 1990’s. The practice became nearly universal among U.S. equity exchanges by the time Regulation NMS was effected in 2007. The introduction of the rebate and the increased certainty of execution brought on by Regulation NMS has been a benefit to electronic market makers and created a competitive niche of trading strategies specifically focused on capturing the rebate. Intense competition for rebates among professional traders has reduced the likelihood of investor orders adding liquidity in maker/taker markets, either relegating those orders to the back of the exchange queue or requiring them to disproportionately take liquidity and therefore pay the access fee.

Today there are pricing models set at various price points for rebates and fees. The largest exchanges by market share pay high rebates and charge high take fees. These markets tend to have more competition to add liquidity, and therefore more interest at the inside price. These markets are also the most expensive markets on which to take liquidity (because they charge the highest fees), and at times may be avoided by a broker sensitive to its own economics, despite the market having the most liquidity at the inside price.

Broker challenges:

The landscape of execution costs presents brokers handling customer orders with a number of interesting challenges. When seeking to earn itself the rebate by posting an investor’s order passively, the broker risks the order joining the back of a long queue of older orders (exchanges generally execute orders at the same price in time priority, with the oldest orders receiving the highest priority), potentially missing a trading opportunity before the price moves away from it. Further, if the order does execute, since it is near the back of the queue it will likely do so immediately before the price moves into it, an undesirable outcome. A broker who posts an investor’s order on a taker/maker exchange places their client in a higher probability position to get passively filled at the inside price, a desirable outcome, but to do so the broker must be willing to incur the higher execution cost associated with paying the fee to add liquidity.

The impediments to executing orders as a provider of liquidity increase the probability of those orders needing to become takers of liquidity. Prices along a continuum from high fee to high rebate present a risk that economically sensitive order routing may lead to more predictable and recognizable broker-dealer behavior, leaking information and creating unintended adverse market impact.

Economic considerations have also led to the proliferation of broker dark pools. By internalizing customer flow, an agency broker can avoid incurring a sizable take-fee on the public exchanges. As a consequence, the evolution of market economics has created a clear incentive for an agency broker to isolate its customer orders in its own dark pool and given that each broker-dealer only represents a portion of total customer order flow, the likelihood of investor orders isolated in this manner interacting without intermediation decreases significantly.

The brokers’ dark pool dilemma

In order to increase the chance of an execution in their dark pools, broker-dealers looked to provide access to other broker-dealers, especially those handling customer orders. With nearly all of the major broker-dealers operating dark pools, the willingness of a given broker to route orders to another broker’s pool is diminished by the disincentive to improve the performance of a competitor. Orders executed in a dark pool contribute to that pools percentage of market share. Market share is an important metric by which trading venues, and those brokers who operate them, compete for customer business. This places in conflict the service of seeking liquidity for the customer orders on the best terms available across venues and the broker’s incentive to maintain dark pool market share relative to its competitors.

To further increase the chance of an execution, many pools grant access to electronic market making and other proprietary trading strategies. The service of these strategies is in large part to bring together interest widely dispersed across venues by intermediating between the buyer in one market and the seller in another. While in some cases strategies may have their own liquidity needs, in cases of cross-venue intermediation the motivation for the intermediary is economic, either a price inefficiency between markets, or the fees/rebates offered by the market center. Price inefficiency means that one or both of the orders being intermediated is paying for the service of intermediation, even though both orders were in the composite market at the same time with intersecting price limits.

Orders isolated on a dark pool are insulated from meaningful interaction with interest in the larger market. These orders may be subject to a disproportionately high level of interaction with principal interest, either from the broker-dealer operating the pool or proprietary high frequency trading strategies. While one of the stated objectives of dark pool trading is to minimize information leakage and market impact, it may also result in execution at unimproved prices, while permitting an intermediary to immediately capture a profit with an offsetting transaction in another venue.

The risk of transmitting an actionable signal may be low for single, large executions, and this is a proposed value of dark pools. Without quotes, information about a trade is communicated to the market only after the trade is complete as a report to the Consolidated Tape. Signal risk may be high, however, for portions of an order executed across multiple dark pools as an antecedent to accessing the displayed quotation in the public market. Signal risk would also likely be high in cases where a liquidity seeker accessed a single pool, such as the pool it operates, with an effort or frequency disproportionately high relative to other markets. In such an event the over-accessing could create a series of signals indicative to certain strategies that significant directional interest exists.

Committee Ask: Describe the role of high frequency trading in today's marketplace and the relationship between benefits attributed to high frequency trading, such as increased liquidity and narrowing spreads, and the above conflicts of interest.

The market benefits from a diversity of participants, and a diversity of trading strategies. In addition to natural investors, market making, arbitrage and speculative trading strategies contribute to the information available in the market, as well as providing and taking liquidity, improving efficiency and bridging geographic and temporal fragmentation. However, strategies that exist solely to exploit structural inefficiencies impose unnecessary cost and potential risk to the system.

It should be recognized that the most significant improvements in spread tightening in U.S. equities followed the Order Handling Rules, implemented in the latter half of the 1990's, and then by the conversion of the industry from fraction-based pricing to decimals. Both of these changes surround the adoption of Regulation ATS which greatly promoted competition among market centers by allowing an exemption from the requirement to register as a national securities exchange for alternative trading systems, which would compete directly and indirectly with exchanges. Order handling rules mandating that customer interest be represented in the market whenever not prohibited by customer instruction, decimalization, competition and continuous improvement in technological performance allowed the industry to more precisely and efficiently present demand and supply to the market. High frequency trading strategies both rely upon and contribute to these conditions, but to claim they are the reason for this improvement is debatable at best.

High frequency trading strategies were generally categorized by the SEC 2010 Concept Release on Equity Market Structure as: passive market making, arbitrage, directional, and structural. The first two of these provide the greatest social value to the market; liquidity provision, elimination of natural inefficiencies, promotion of price discovery and the intermediation of interest that would otherwise not interact.

Directional strategies may receive a more mixed review. These strategies compete with customer orders, in particular, when a trading is a result of order detection. Setting manipulative strategies aside as prohibited; it is an expected characteristic of a free and transparent market that some participants will react to pressures in the market. Competition among orders is an objective of the Act.

The last category, structural strategies, are strategies that exist solely to exploit a structural inefficiency, or to the extent that any strategy of the prior categories are materially benefitting from structural inefficiencies, must be considered with the most discriminating examination. The Act requires the "removal of impediments to and perfection of the mechanism of a national market system". Inefficiencies in the structure of the market; communication networks, trading and information systems, and market data dissemination, pose a particular risk to the integrity of the composite market place because the exploitation of such inefficiencies does not eliminate the inefficiency, and therefore the opportunity to extract value from the system is perpetual, as is not the case with other types of more natural inefficiency.

High frequency trading strategies operating in compliance with market rules are valid competitors for trading interest, provide liquidity, intermediation, and contribution to price discovery. The questions of value and fairness relating to high frequency trading must be answered by understanding the opportunities and advantages, as well as the disadvantages, imposed upon the national market system by the system itself.

Committee Ask: Describe other matters associated with high frequency trading, including order protection rules; market centers' use of proprietary and public data feeds in determining national best bid and offer; market latency and its impact on investors; the role of Regulation National Market System; and market participants' use of high speed, proprietary data feeds and co-location.

To best appreciate the potential impacts of structural inefficiencies in the market the Industry is still evolving its collective understanding of the relative utility of exceedingly small increments in time. In this highly automated, computerized market environment actionable windows of time are counted in micro-seconds, millionths of a second. The concepts of instantaneous, immediate and simultaneous must be reconsidered to include granularities to the millionth of a second or finer. The issue at hand is that of structural inefficiencies in the market creating asymmetries of information among participants which to some are of actionable duration while to others, previously, not considered to be relevant.

Regulation NMS established the requirement that each market participant and market center determine the best-priced protected quotations based on the market data feed or feeds of their choice. The most often discussed structural inefficiency related to this requirement is the difference in dissemination speeds between the two consolidated Securities Information Processors (SIP) and proprietary market data feeds offered commercially by market centers, including each of the national securities exchanges which comprise the governing committees of each of the SIPs.

The common criticism that the SIP feeds are significantly slower than proprietary data feeds is often met with a response citing the necessity for the SIP to process information from each of the exchanges and calculate the National Best Bid and Offer to be included in the disseminated consolidated quote feed. Consumers of proprietary data feeds have similar needs; they must process the messages to arrive at an understanding of the market. That private and commercial processors of proprietary feeds are significantly faster than the SIPs, and tend to have less variance in performance under stress raises questions of conflicted interests of those exchanges governing the SIPs.

Some exchanges offer multiple proprietary market data products, including differences solely based on the speed or content of a feed. Further adding to the potential for information asymmetry is the difference in dissemination between the various

market centers due to varying levels of technological capabilities and order book composition, with more advanced exchanges disseminating information faster than less advanced markets. This results in differences between their system processing performances, especially during times of high message rate related stress in the market.

Some markets have different means of accessing the market whereby participants can enter orders and cancels, and receive information from the exchange about those orders. The two main elements of speed of market access are order entry application program interfaces (API) protocols and co-location services. These two services present a number of benefits to the market, with co-location, in particular, solving the classic issue of the physical room around the specialists' post on the floor of an exchange.

Proximity to the market is now less restrained by physical space (for all intents and purposes), and the uniformity and fairness of that access is greatly enhanced when co-location services are part of an exchange's rulebook and subject to SEC approval and oversight. Discussions about co-location as advantaging one party over another, namely, the non-co-located party, are understandable, but practically off the mark. Proximity will always be a factor. To some it will be important and to others it will not. There is no solution for the relative difference in market access speed between a trader in California vs. a trader in New York. Similarly, where co-location is about the race to the front door of the market center, it is now available to any participant who wants it and can afford to pay for it.

It is our belief that concerns around co-location should focus on whether it enables a market's participants to be able to process and act on information more timely than the market center itself. Co-location should also be considered in light of how it may magnify latency and structural related trading opportunities.

Where these differences are material, noting that materiality may mean tens or hundreds of microseconds, the following negative/questionable effects may be found.

Concerns regarding negative effects structural inefficiencies

Order Anticipation/Detection - The negative effect in this case is the enabling of certain trading strategies to perceive and react to a change in the market, such as an investor order attempting to access all the currently displayed liquidity at once. "At once" is not a single instant in time; it is a series of moments over a very short time horizon. The issue is magnified when one party thinks its action occurs instantaneously, while others, who have the technological resources and skill, see the event as a series of sequential actions, thus creating a trading opportunity for the latter.

The question of fairness here centers on the market system providing information and allowing market access in such fine increments of time as to increase both the confidence of order detection and the window of time in which a participant may act on the received information. Considering the fact that the construct of the market system enables action being taken on an order as it seemingly enters the marketplace instantaneously is suggestive of an unnecessary and unproductive practice worth eliminating.

Fading Liquidity – The same principles apply to the issue of fading liquidity as certain high speed strategies respond to pressure in the market, including just their own orders being filled, and cancel their orders on other markets. In this case, technology revives the issue previously resolved by rule of non-firm quotations, or of orders "backing away".

In a single market's limit order book, an incoming order is processed against orders resting on the book according to that market's priority schema. In no case would a strategy with an order resting on the book be able to effect a cancellation prior to the time the order that is currently processing against that book has finished. All orders in the displayed market today are expected to be firm orders, and they are by rule and by computer code. Again due to the construct of the market system certain strategies are able to get out of the way of buy or sell interest as they are accessing the market in aggregate, which

calls into question the fairness of the inefficiencies which allow or enable such behavior, and the potential distortion of price discovery and of supply and demand.

Price Dislocation – There are several ways in which structural inefficiencies contribute to price dislocation. One of the most commonly talked about ways is arbitrage based upon the relative speed of market data feeds from the SIPs vs. proprietary feeds from the exchanges. A market center using SIP feeds to determine the NBBO, which is being accessed by a strategy using proprietary market data feeds, will be at a disadvantage if that strategy can enter order instructions into the market center in a timeframe within the difference in delivery time between the feeds. Even in the event that a market center is using proprietary feeds it is reasonable to expect that a market center system will take more time to process and propagate changes in market data than a participant system optimized to run a trading strategy.

As a result, a slower market center pricing orders resting on its book, for example to the midpoint of the NBBO, may provide a structural arbitrage opportunity when one of its trading participants possesses trading information that the market itself doesn't have. This is a structural inefficiency where any participant who has entrusted a market center with their resting order may be placed at a disadvantage to a high speed participant due to the slowness of the particular market where its order is resting.

Committee Ask: Provide any recommendations for policies that could reduce or eliminate conflicts of interest while maintaining liquidity and low investor costs, and enhancing public confidence in U.S. equity markets.

At IEX we believe that if a market and its participants are provided with adequate information and given the leeway to self-correct, the market as a whole will come to the best possible decision, and produce the solutions that it needs.

IEX suggests that the best policies to reduce or eliminate conflicts of interest are those that promote transparency and disclosure, with a particular emphasis towards standards that promote comparability. With better information each participant can make better choices. Disclosure of relationships, practices, and performance with a uniform reference enables comparison, and compels those with agency and fiduciary obligations, and other high standards of care to factor any such information into their decision making process.

The SEC and FINRA have taken positive recent steps towards making the markets more transparent – through the SEC Midas website and FINRA's ATS reporting rule– and we would encourage further pursuit of greater transparency in our markets through any regulatory means necessary.

IEX recommends that the following areas be considered for policies to improve transparency:

Standardization of Data:

1. When data is requested of participants, ensure that a standard for how the data should be derived and presented is clear and concise.
2. Require market systems, broker-dealers, exchanges, ATSs and SIPs, to time stamp messages sent, received and used internally to a standard granularity of at least microseconds with specificity on where in the system it was recorded.
3. Improve atomic clock synchronization from a one second tolerance to one millisecond or finer.

Data requirement examples:

1. Public disclosure of an anonymous breakdown of subscribers by volume on any registered trading venue (ATS and Exchange).

2. Public disclosure of an anonymous breakdown of message traffic and message to trade ratio by subscriber on any registered trading venue (ATS and Exchange).
3. A complete audit trail of how client orders are handled, including both routing and trading information, available to the client upon request.

Market Operation Disclosures:

1. Plain language rules and common use examples for proposed rules for products and services offered by exchanges.
2. Require public disclosure of alternative trading systems' Form ATS and subsequent products, services, and pricing.
3. Ensure an adequate amount of reporting between exchanges and brokers, as well as between brokers and clients – whereby execution data and routing data is standardized and available upon request.
4. Define acceptable tolerances for trading, market center and inter-market communication system performance to ensure there are no meaningful risks to the integrity of the system in the context of structural inefficiencies which could allow unfair advantages and disadvantages to certain market participants.

The most important aspect of transparency is that it brings accountability to all participants in our market. A better understanding of how our market works (this includes venue behavior, subscriber behavior, and inter-market behavior) will undoubtedly help us uncover problematic issues and ask critical questions, which ultimately reduces complexity and helps the industry to self-regulate and stabilize the market. With greater transparency, it will be much easier to evaluate new participants, products and services against the key principles of serving investors, companies, and the public interest. In many ways, increased transparency directly helps to mitigate the very real concern that IEX and many of our partners share – the overall health and stability of our market.

Conclusion

In conclusion, IEX has created a market based solution that addresses numerous market conflicts while also reducing the potential for predatory high frequency trading opportunities. We are currently implementing additional commercial solutions to make further advancements to our market model. Everything that we have implemented at IEX is within the current regulatory structure which we believe reflects the spirit of the rules as intended and we respectfully ask that when evaluating the extent by which Congress or the Commission seek to further modify the structure of the equity markets, a cost-benefit analysis should contrast potential regulation against commercially available solutions.

To the extent market participants choose to route orders through IEX, this confirms IEX's contribution to market quality. The optional nature of routing orders to IEX is inherent as part of a market-based solution. With regard to regulation, such optionality is not the case, and any new regulation that is imbedded in market structure brings the potential for uncertainty and implementation risk.

For this reason we support the Commission's thoughtful data driven approach and would suggest that the primary goal would be to collect greater amounts of information in a standardized form and to make that data publicly available.

In closing, IEX would like to echo SEC Chair White's recent statement in a speech given in New York on June 5, 2014. "The secondary markets exist for investors and public companies, and their interests must be paramount."

As we as an industry work through this period of change, we should never forget why the market exists in the first place.

Thank you.