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# A View of Market Structure from IEX

## I. IEX - The New Platform In Town

**A meeting with the now famous IEX management team.** Yesterday, we hosted an investor lunch with Brad Katsuyama, President & CEO, and Ronan Ryan, Chief Strategy Officer. IEX which launched in October 2013 was prominently featured in Michael Lewis's book "Flash Boys" released on March 31 and in the "60 Minutes" piece on high frequency trading (HFT) the evening before. IEX emphasizes that to avoid conflicts of interest, its ownership consist of buyside asset managers and that anyone that trades directly on IEX (i.e broker dealers) cannot be owners of the ATS.

**IEX Ownership Includes:**

| Type | Owners | |
|---|---|---|
| Mutual Funds and Hedge Funds | Greenlight Capital<br>Capital Group<br>Brandes Investment Partners<br>Senator Investment Group<br>Scoggin Capital Management | Belfer Management<br>Pershing Square<br>Cleveland Capital<br>Third Point Partners |
| Other Ownership | Other Family Offices and Individual Investors, Including IEX employees | |

Source: company website

**IEX is a non maker-taker platform whose current fees are ~4x higher than incumbent public exchanges.** On IEX, both sides of the trade pay fees of $0.09 per 100 shares. This is in contrast to the 13 exchanges who all operate with some form of the maker-taker model. The combined capture for 100 shares traded on IEX of $0.18 compares favorably with the NYSE's and Nasdaq's revenue capture of $0.05 and $0.04, respectively, in 4Q13.

**IEX operates a price/broker/time priority model where broker self matches are executed for free.** This means that provided the price is equal, brokers will go to the front of the line and match against themselves (i.e. similar to internalization). For example, price/broker/time priority would allow Goldman Sachs's prop trading desk on the sell side to meet Goldman Sachs's equity trading desk on the buyside in a specific stock. The free commission allows Goldman to "internalize" at IEX, removing a disincentive for Goldman not to route orders through IEX.

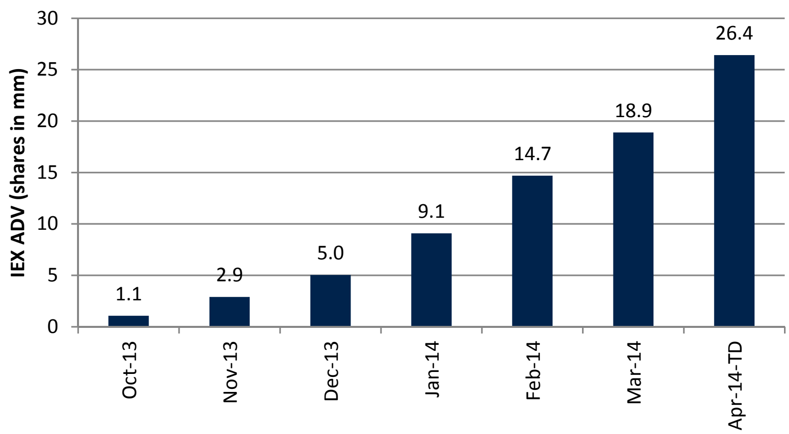
**IEX also differentiates itself in that it only offers 4 order types to its different clients**. According to Brad Katsuyama, the NYSE offers 87 different order types with most designed to allow the HFT/broker to capture the rebate in the maker taker model.

**But IEX currently remains a dark pool.** In other words, there are no displayed prices. IEX uses the national best bid or offer (NBBO), which incorporates the best prices from the other exchanges, to price its trades, usually at the midpoint of the NBBO. IEX uses proprietary feeds from 12 of the 13 exchanges in processing its trades and updating its prices. The media has reported IEX would like to become an exchange (which is required once they reach 10% market share in a particular stock) which would also require higher regulatory costs.

**IEX does not ban co-location but requires a 350 micro-second delay.** IEX's matching engine is in Weehawken, NJ in the same data center as BATS. However, IEX requires users of co-location services to be housed in a POP (point of presence) or gateway in an Equinix datacenter in Secaucus, NJ. IEX also coils its feeds to co-located clients to further delay the messages so that co-located customers receive information from IEX in a minimum of 350 micro-seconds -- commonly referred to as their "speed bump".

**Volumes have steadily improved and have continued to ramp post "Flash Boys".** Volumes had been improving steadily at IEX up nearly 4x in March (ADV of 18.9 mm single counted) vs December (ADV of 5.0 mm single counted). And with the release of "Flash Boys" on March 31st, IEX's volumes have improved another 40% to an ADV of 26.4 mm in April-to-date through the first 6 days of trading.

**IEX Monthly Average Shares Executed (single counted)**




Source: company website

## <u>II. A Semi Balanced View of Market Structure Issues</u>

**Intermarket arbitrage a perceived problem given the fragmentation in the U.S. equities markets.** The IEX team outlined the problem of marketplaces not being able to price and update their quotes as fast as the HFT, who IEX believes can update off a proprietary feed at ~190 microseconds. If HFT can process/reprice orders faster than the exchange or trading venue, this enables HFT to front run/scalp orders at other venues who have not received the updates from the original exchange/trading venue or simply have not updated prices themselves. He explained that's why IEX had put in the 350 microsecond speed bump or delay so that HFT could not get ahead of IEX's price updates.

**Providing some balance -- what the other exchanges say.** Other exchanges argue that (1) there is risk in any HFT performing such intermarket arbitrage as it assumes the HFT knows the orders behind the initial execution, (2) HFT's have execution risk in getting all the legs of the trade complete and could pay elevated "take fees" and (3) IEX is looking to solve a problem that doesn't exist.

**Dark pools are a problem both from a liquidity and "stale quote" perspective.** The IEX team explained that brokers are putting large orders in their own dark pools that sometimes could & should interact with other natural flow. The brokers allowed HFT's to enter their dark pools to help the match rate and bridge the liquidity divide between the disparate dark liquidity pools. Compounding the problem, IEX believes that certain dark pools have stale quotes as they recalculate prices based on the slow SIP. This allows fast HFT to arbitrage between stale prices in the dark pool and updated prices in the lit marketplace.

**But don't forget, IEX is still a dark pool.** And while IEX uses proprietary feeds to reprice (on 12 of 13 exchanges) and enforces a minimum delay of 350 microseconds into the HFT repricing process, we point out that IEX is still currently a "dark pool" itself using HFT's to help enhance match rates. IEX's average shares per trade is only ~750 shares per trade, higher than the average of the 5 largest ATSs of ~365 shares per trade but still far below the large block trading networks of Liquidnet and ITG POSIT Alert who average ~40k shares per trade.

**And to be clear, IEX does not consider all HFT predatory.** IEX CEO Katsuyama explained there are good HFT's and bad HFT's. Mr. Katsuyama stated that one firm estimated that 23% (or roughly half of HFT) are doing predatory strategies. He explained that HFT firms that signed up to use IEX and co-locate 350 microseconds away in a non maker taker model with high fees did not (i.e. were not able) to execute predatory latency or intermarket arbitrage and suggested connecting with IEX was a differentiator between good & bad HFT.

**IEX speaks up against payment for order flow (PFOF).** IEX believes the fact that large wholesale market makers are willing to pay for order flow is indicative of the profit these market makers garner from retail customer flow. And when asked about the 90% of price improvement realized on these retail trades the eBrokers 606 reports support, IEX believes that could be from "stale pricing" from the SIP as well. We note the results of the only publicly traded wholesale market maker, KCG, have been less than stellar even excluding its 2012 trading glitch. Please see our note on eBroker payment for order flow titled ,"eBroker Stocks and Payment For Order Flow Hit By Market Structure Debate", April 4, 2014 (click here for a link to our note).

# APPENDIX

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**Sandler O'Neill + Partners**

| | | | IB Serv./Past 12 Mos. | |
|---|---|---|---|---|
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| **HOLD [H]** | 149 | 52.65 | 36 | 24.16 |
| **SELL [S]** | 3 | 1.06 | 1 | 33.33 |

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