NSCP*Fundamentals*

U.S. Equity Market Structure

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Black Box

For many of us, the stock market is a black box. We don't know the details of how orders are executed, and we don't need to know. This is changing. On December 14, 2022, the SEC issued four separate proposals related to equity market structure:

- Disclosure of Order Execution Information[1]
- Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders[2]
- Order Competition Rule[3]
- Regulation Best Execution[4]

To appreciate the issues the rulemaking is intended to address, we must understand equity market structure and how stock orders are executed. Although the proposals only directly impact BDs that route or execute orders, there is indirect impact on introducing BDs and IAs.

Consider an IA that is performing a best execution review. Typically, a key component of this review is reviewing the custodian's execution quality statistics, specifically, percentage of price improvement. As of December 27, 2022, Fidelity Investments ("Fidelity") discloses 90.6% price improvement, $17.46 average savings per order and average execution speed of 0.08 seconds.[5] While these statistics appear to be monumentally impressive, they may be "suboptimal" if inferior compared to competitors.

A basic understanding of how orders are executed will provide the foundation for comprehending issues in equity market structure, proposed rulemaking and how to meet regulatory obligations such as best execution. Below are definitions and explanations of current equity market structures, and a brief summary of the new proposed rules.

Current Equity Market Structures

Principal versus Agency Transactions

A principal transaction is one where the broker takes the other side of the trade from their own inventory. The broker in this instance is acting as a dealer and the SEC refers to this as "internalizing" the trade.

An agency transaction is one where the broker facilitates the matching of a buyer and seller to consummate the transaction. In this case the broker is acting in the capacity of a broker and not a dealer.

This is where the term "broker-dealer" originates since they can act in one of two capacities to facilitate a transaction.

1. *See* "Disclosure of Order Execution Information" Proposed Rule, U.S. Securities and Exchange Commission Release No. 34-96493 (December 14, 2022), available at: Proposed rule: Disclosure of Order Execution Information (sec.gov).
2. *See* "Regulation NMS: Minimum Pricing Increments, Access Fees and Transparency of Better Priced Orders" Proposed Rule, U.S. Securities and Exchange Commission Release No. 34-96494 (December 14, 2022), available at: Proposed rule: Regulation NMS - Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders (sec.gov).
3. *See* "Order Competition Rule" Proposed Rule, U.S. Securities and Exchange Commission Release No. 34-96495 (December 14, 2022), available at: Proposed rule: Order Competition Rule (sec.gov).
4. *See* "Regulation Best Execution" Proposed Rule, U.S. Securities and Exchange Commission Release No. 34-96496 (December 14, 2022), available at: Proposed rule: Regulation Best Execution (sec.gov).
5. *See* "Commitment to Execution Quality", Fidelity Investments, available at: Commitment to Execution Quality | Trading with Fidelity.

Trading Centers[6]

Imagine an IA has an equity order and enters this order into Fidelity's interface. Fidelity will route the order to a trading center for execution. It is critical to understand that Fidelity does not actually execute orders, this is done by the trading centers to which Fidelity routes orders.

Trading centers can be divided into five categories:

1. *National securities exchanges* operating SRO trading facilities. Exchanges display quotations in consolidated market data and are known as "lit" trading centers. Per Reg NMS, all quotes and executions must be in penny increments ("tick size").

2. *Alternative trading systems ("ATSs")* that trade NMS stocks ("NMS Stock ATSs") - Electronic Communications Networks ("ECNs") and dark pools are considered ATSs. ATSs do not display quotes and are known as "dark" trading centers. ATSs are permitted to execute trades in sub-penny increments.

3. *Exchange market makers* as defined by Rule 600(b)(32) of Reg NMS as any member of a national securities exchange that is a registered specialist or market maker.

4. *Wholesalers* are OTC Market Makers as defined by Reg NMS Rule 600(b)(64). Wholesalers are any dealer that holds itself out as being willing to buy from and sell to its customers for its own account in amounts of less than block size. Most orders routed to wholesalers are internalized. Wholesalers are also allowed to execute trades in sub-penny increments.

5. *Any other broker-dealer that executes orders internally* by trading as principal or crossing orders as agent.

NMS Stock Traded Share Volume % of all NMS Stocks by Trading Center Type[7]

Type	Venue Count	Share Volume %	Off-Exchange Share Volume %
Exchanges	16	57.9%	-
ATSs	32	10.2%	25.2%
Wholesalers	6	23.9%	59.4%
Other BDs	232	6.3%	15.6%

Prior to 2005 trading was concentrated at the New York Stock Exchange, however, since then it has become widely dispersed among numerous trading centers as shown in the table above. There is a fine line between dispersion and fragmentation. To avoid market fragmentation, the SEC enacted Reg NMS to connect the various trading centers via the dissemination of consolidated quotations and trade reporting. Ideally, if all trading centers are integrated, then supply and demand are consolidated to provide aggregate liquidity and a more efficient marketplace. The reality is the marketplace is dispersed and not fully integrated with pockets of liquidity and some disparity in pricing among various trading centers. It is a matter of semantics as to whether the markets are fragmented.

6. *See* Rule 600(b)(95) of Regulation NMS which defines "trading center" as a national securities exchange or national securities association that operates a self-regulatory organization ("SRO") trading facility, an alternative trading system, an exchange market maker, an OTC market maker, or any other broker or dealer that executes orders internally by trading as principal or crossing orders as agent..
7. *See* "Order Competition Rule" Proposed Rule, Page 190, U.S. Securities and Exchange Commission Release No. 34-96495 (December 14, 2022), available at: Proposed rule: Order Competition Rule (sec.gov).

Order Routing

Order routing is the process by which a BD sends an order to one or more of the trading centers for execution. Most firms utilize "Smart Order Routing (SOR)" using sophisticated algorithms to seek best execution of trades while minimizing market impact. Reg NMS Rule 606 requires BDs to disclose their order routing practices. It is instructive to see an actual example of a Rule 606 Disclosure and using Fidelity as example: SEC Rule 606 reports | Quarterly reports | Fidelity. It is noteworthy that Fidelity routes 43% of orders to exchanges whereas other major custodians route nearly all of their orders to wholesalers.

Segmentation

Institutional orders (investment companies, pension funds, endowments, etc.) are typically much larger than retail orders and are handled differently, not by design, but driven by economic factors. This has resulted in clear segmentation of institutional orders from retail orders. More than 90% of marketable retail orders were routed to wholesalers and approximately 90% of these were internalized.[8] Citadel and Virtu captured 66% of the wholesaler executed share volume in 2022Q1. By logic if 90% of retail orders are going to wholesalers, the bulk of the 57.9% of orders executed on the exchanges are institutional orders.

> 84.7% of wholesaler orders had price improvement compared to only 8.8% of orders executed on exchanges.

Based on this statistic alone it is hard to argue that segmentation disfavors retail investors; however, the SEC states the price improvement is suboptimal and proposed Reg NMS Rule 615 (Order Competition Rule) to introduce order-by-order competition in an attempt to improve executions.

The SEC made the case that segmentation is due to adverse selection costs:

> *"Individual investor orders are segmented because they are "low-cost" flow — they impose lower adverse selection costs on liquidity providers than the unsegmented order flow routed to national securities exchanges. "Adverse selection" involves situations where buyers and sellers have different information, and specifically for a liquidity provider, refers to the extent to which prices move against it after a trade."*[9]

In simple terms, larger institutional orders are higher cost and entail more risk which is why they are not typically routed to wholesalers but instead routed to the exchanges.

Payment for Order Flow ("PFOF") and Access Fees

PFOF is when an exchange or a wholesaler pays a brokerage firm for orders that it sends to the exchange or wholesaler. This practice developed as an incentive to help exchanges or wholesalers attract orders from brokers. PFOF is controversial because it is a clear conflict of interest between the brokerage firm and its customers. However, since the most orders internalized by wholesalers are executed with price improvement, it is difficult to argue that PFOF should be banned. In 2020 there was a major enforcement action against Robinhood for accepting very high rates of PFOF resulting in poor executions. Robinhood violated their obligation to achieve best execution[10] so like excessive commissions, PFOF does need to be monitored.

8. Id. Page 200.
9. Id. Page 7.
10. *See* "In the Matter of Robinhood Financial, LLC", U.S. Securities and Exchange Commission Litigation Release No. 10906 (December 17, 2020) available at: Robinhood Financial, LLC (sec.gov).

Referring to the Fidelity Rule 606 Disclosure, Fidelity reports that it "does not receive payment for order flow or have a profit-sharing arrangement related to any order flow routed to wholesale market-makers."[11] With respect to the exchanges, Fidelity reports that it, "may incur fees or receive rebates for orders executed on specific equities exchanges."[12] Fidelity received payments from each of the exchanges it routed orders to during the periods; NYSE, NASDAQ, Members Exchange, and CBOE EDGX.

High-Level Overview of the SEC's Proposals to Reform the Markets

Disclosure of Order Information – This is an amendment to Reg NMS Rule 605 which basically broadens the scope of the rule such that more orders will be subject to disclosure. There are also minor refinements in the way the disclosure will be done but the major point is to broaden the scope of disclosure.

Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Priced Orders – In the section on Trading Centers above, we pointed out that per Reg NMS, exchanges have a penny tick size, however, ATSs and wholesalers can execute trades at sub-penny tick sizes. The proposal would implement variable tick sizes for the exchanges, that would allow better executions for securities they deem to be "tick constrained." This would be a step toward leveling the field. Exchanges and ATSs charge access fees and these would be subject to a statutory limit which are intended to lower trading costs. Finally, the provisions to achieve "Transparency of Better Priced Orders" is applicable to odd-lots which are orders for less than 100 shares. The vast majority of odd-lot orders are retail and by requiring transaction reporting of odd-lot trades the SEC seeks to improve market transparency and execution quality.

Order Competition Rule – The SEC views the internalization of order as potentially anti-competitive. The proposal would require orders to be subject to order-by-order competition prior to internalization, in the belief this will lead to better executions through a competitive bidding process. In the Order Competition Rule Proposal, the SEC makes the case that wholesaler internalization, while providing price improvement is suboptimal. However, the data presented to make their case also seems to indicate retail investors fare better than institutional investors and that wholesaler internalization is advantageous. The key question is whether this is a problem that needs to be addressed through potentially disruptive rulemaking.

Regulation Best Execution – This proposed rule is substantially similar to FINRA Rule 5310; however, there are significant differences in FINRA and SEC guidance. The most recent FINRA guidance is RN 21-23[13] which in broad terms emphasized the "what" but not the "how" to satisfy the best execution obligation. In the SEC's Best Execution Proposal Table 6 and Table 7 depict an execution quality comparison between exchanges and wholesalers. This analysis is highly instructive. If price improvement based on the National Best Bid or Offer ("NBBO") is limited because the "improvement" may be suboptimal, what is a better benchmark than the NBBO? Table 6 and Table 7 include numerous metrics based on the NBBO midpoint. The word "midpoint" occurs 176 times in the release. More importantly, we may have our answer that the NBBO midpoint is a better benchmark than the NBBO itself for assessing execution quality.

11. See "FIDELITY BROKERAGE SERVICES LLC - Held NMS Stocks and Options Order Routing Public Report", available at: 2022 Q3 FBS Quarterly Report (PDF) Doc | Fidelity Institutional.
12. Id..
13. *See* "FINRA Reminds Member Firms of Requirements Concerning Best Execution and Payment for Order Flow", FINRA Regulatory Notice 21-23 (June 23, 2021) available at: Regulatory Notice 21-23 | FINRA.org.

Conclusion

Equity market structure is highly complex with numerous trading centers of different types. Although Reg NMS is designed to harmonize trading among the various trading centers, we have seen a dramatic segmentation of retail and institutional orders. In response the SEC has four proposals to improve equity market structure, and hopefully the information presented in this article will provide a foundation to comprehend the issues the proposed rulemaking is intended to address. ■