Remarks of Chester S. Spatt, March 28, 2019, to the Investor Advisory Committee

I appreciate the opportunity to address the SEC's Investor Advisory Committee this morning as part of its panel on Stock Exchanges. I'd like to begin by introducing myself and background. I have been a long-time professor of finance at Carnegie Mellon University and currently a Visiting Professor at MIT. An important area of my academic expertise is market structure and trading. I was a member of the SEC's Equity Market Structure Advisory Committee during 2015 through 2017.

I served as the Commission's Chief Economist from 2004 to 2007, a period which included the adoption and implementation of Regulation NMS, the end of specialist system, the conversion of the New York Stock Exchange into a for-profit exchange and the founding of FINRA. Many of these developments highlight the potential value to reviewing the role and governance of exchanges in our regulatory system and especially the nature of their ongoing SRO responsibilities and potential conflicts between the profit-maximizing goal of their own exchanges and other market participants, such as broker-dealers. Because of the prior regulatory developments and changes in technology, the nature of the exchange model and its revenue base have evolved substantially, but on a number of fronts changes in the regulatory environment have not kept up.

A key aspect of our trading system at some of the major exchanges is the use of the maker-taker model. Limit order and liquidity providers receive rebates under the maker-taker model, while market orders or liquidity takers pay fees. While this approach pre-dated Regulation NMS, it continues under NMS with fees capped at 30 mils per share. A new, but somewhat less popular

system also has developed post-NMS—"taker-maker"—under which the liquidity provider pays a fee and those who complete the transaction receive rebates.

Because the rebates and fees are a fraction of a cent they change the effective pricing grid into sub-pennies, but even more fundamentally the system of fees and rebates leads to an agency problem. While the trade execution goes to the buy-side client, there is a fundamental agency problem as the brokers make the order routing decisions and the fees and rebates flow to the broker. Economic theory does point to alternative potential solutions to such an agency problem including in the alternative: a) clear disclosure at a transactional level, b) a pass-through requirement on fees and rebates or c) an outright ban on them. The first two approaches are problematic given the complexity and lack of contemporaneous knowledge of the rebates, even by the brokers. I am quite hopeful that the upcoming transaction pilot will provide valuable insight and perspective about the impact on routing of an outright ban on rebates or much more limited fees. Without ultimate substantial action on rebates and fees, I feel that it would be very important for the Commission to focus much more attention on the degree to which brokers fulfill their Best Execution obligation. Some of the problems in order routing at the current level of fees and rebates are illustrated by the Battalio, Corwin and Jennings paper in the *Journal of Finance* (2016).

Preliminary to discussion of pricing tiers for rebates, which is the subject of a recent academic paper that I have written, I should note that there are three dominant affiliate families that own most of the exchanges and control most of the stock exchange pricing decisions. The maker-taker platforms offer volume discounts or higher rebates to those brokers sending relatively larger amounts of orders that provide liquidity. In effect, this is a mechanism to price discriminate given the oligopolistic ownership and reward larger brokers. Under these pricing

arrangements the marginal rebate exceeds the average reward enhancing the incentive to route liquidity to the particular exchange relative to its competitors. In my paper I offer the simple analogy to airline frequent flyer programs in which such variables as qualifying spending, qualifying miles or segments can be the marginal basis that determines someone's status. The pricing schedules used by the exchanges themselves are much more intricate and use a number of conditions or hurdles that must be satisfied simultaneously with somewhat strange choices of variables. Indeed, RBC has documented the huge number of pricing tiers and distinct pricing variables that form the basis of these formulae, leading many observers to suspect customized pricing for particular clients in order to segment markets and price discriminate. I am doubtful that such customized pricing is consistent with the fair access requirement under the Exchange Act. Furthermore, Quantitative Investment Management raises important concerns in a recent comment by pointing out the lack of regard for exchange customers in the manner in which the exchanges change price tiers. The firm suggests requiring two week notice, limiting changes to quarterly, etc.

Of course, there is no disclosure of the extent to which different pricing formulae are actually used by different exchange clients. This would seem to be a simple issue for the Commission to fix—and perhaps even consider disclosure not only of the number of players who attain different pricing standards, but perhaps also which players attain which pricing. Of course, there is another path that the Commission could consider short of an outright ban on rebates, i.e., banning the pricing tiers and requiring the use of constant rebates. This would facilitate the ability of clients to reap the benefit from brokers of the rebate payments being received.

One of the problems in my view with price tiers for rebates is that they can impose an undue burden on competition, which is a key problem for exchange pricing to satisfy obligations under

the Exchange Act. At the level of the exchanges, the need to allocate sufficient volume at a major exchange to satisfy a key pricing threshold can divert volume from smaller platforms and act as an entry barrier. This is analogous to American Airlines, Delta and United using their tiers as an entry barrier vis-à-vis those airlines which do not provide as attractive a set of marginal incentives. There is a second problem associated with the rebate pricing tiers serving as an entry barrier—they act as a potential entry barrier for the brokers as well because of the nature of the volume discounts, which place small players at a cost disadvantage.

I also should emphasize that the use of pricing tiers helps sustain the agency conflict. Because the marginal incentives created by rebates flow back to the broker-dealer rather than the customer, the broker-dealer's routing incentive is maximized. Furthermore, the inability of the buy-side client to know the precise incentive received by the broker-dealer prevents the routing distortion from being fully neutralized, as it would be under an efficient contract when the client and the broker knew the rebate. The pricing tier structure prevents the rebate from being known by the brokers until the end of the month and even then it is not being disclosed to the buy-side client. This points to another important reason (i.e., mitigating the agency problem) to require constant rebates, assuming the presence of rebates is retained by the Commission.

Because the pricing of data and co-location are not volume-dependent, the pricing tiers (with associated quantity discounts) for liquidity and overall pricing heighten the incentive to allocate marginal activity that adds liquidity to exchanges. The major exchanges cross-subsidize trading to increase the value of the data and connectivity that they sell. But the resulting higher pricing for data and connectivity, which is structured as a fixed price is an entry barrier disadvantaging small market participants. Both the Nasdaq and CBOE have stated recently that five of its ten

largest clients receive net payments (even after data and co-location charges) monthly, pointing to one of the forms of significant cross-subsidization of some customers. This negative "all-in" pricing suggests that smaller brokers face a significant relative burden, potentially one inconsistent with the Exchange Act.

Though the SEC has been reluctant historically to regulate the pricing of proprietary data, each exchange has monopoly control of its data (as highlighted in the U. S. Treasury's (2017) Capital Markets report). In contrast, securities pricing does reflect regulated competition and explicit pricing constraints under Regulation NMS. Best Execution requirements serve to reinforce the monopoly power that exchanges possess with respect to selling their own (proprietary) data and co-location services.

While most of my remarks have been focused on exchanges and the structure of their pricing and disclosures, I also should point out that the disclosure regime for dark pools also would benefit from significant upgrading with respect to such basic features as venue reporting.

As I conclude, I would highlight a number of types of issues for the Investor Advisory Committee including the importance of the agency distortion for order routing created by the structure of fees and rebates and the potential value of transaction fee pilot, the incremental frictions created by tiered pricing which constant rebates and fees would eliminate, the value of enhanced disclosures and the potential significance of the Exchange Act for addressing various burdens on competition created by prevailing pricing.