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April 18, 2012

Via Electronic Delivery and Overnight Mail
Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-1090

Re: Order Granting Petition for Review and Scheduling Filing of Statements Concerning NASDAQ's "Platform Pricing" Proposal, Release No. 66667, File No. SR-NASDAQ-2011-10 (Mar. 28, 2012)

Dear Ms. Murphy:

The NASDAQ Stock Market LLC ("NASDAQ") appreciates the opportunity to comment on the Securities and Exchange Commission's order granting NASDAQ's Petition for Review of the decision of the Division of Trading and Markets disapproving NASDAQ's "Platform Pricing" proposal.[1] The Disapproval Order, issued pursuant to delegated authority, prevented NASDAQ from discounting previously filed fees for members that execute a high volume of investors' orders and also purchase a high volume of NASDAQ market data. In issuing the Disapproval Order, the Division ignored empirical evidence that such discounts are pro-competitive, and also failed to substantiate its conclusory assertions that the proposed discounts would somehow be unfair or discriminatory. Therefore, the Disapproval Order was arbitrary and capricious and could not survive judicial review.

As stated in further detail in NASDAQ's Petition, the Disapproval Order is deficient both substantively and procedurally. Substantively, the Disapproval Order contains a mere six pages of actual analysis and is devoid of any economic data or other empirical support for its sweeping conclusion that the "linking of market data fees to execution volume, and the linking of transaction credits to market data purchases, will . . . negatively impact the competition that exists today in these two markets." Order at 13. The Division ignored the expert reports and other evidence submitted by NASDAQ that

1 *See* Securities Exchange Act Release No. 34-63796, 76 Fed. Reg. 59,466 (Sept. 26, 2011) (SR-NASDAQ 2011-010) (Order Disapproving a Proposed Rule Change to Link Market Data Fees and Transaction Execution Fees) ("Disapproval Order").

showed that the markets for data and execution services are fluid and robust, and that a voluntary incentive to purchase both services in large quantities cannot be anti-competitive, unreasonable, or unfair.[2] The Division failed to cite or otherwise acknowledge NASDAQ's empirical evidence, much less attempt to refute it or explain where it fell short of the statutory standard.

NASDAQ's justification for the Platform Pricing Proposal is strengthened by recently-filed rule proposals by the EDGX Exchange and EDGA Exchange (collectively, the "Direct Edge Exchanges")[3] and the Chicago Board Options Exchange ("CBOE").[4] The Direct Edge Exchanges filed proposed rule changes that would modify pricing for the Exchanges' trading platforms to assess fees for EDGA and EDGX depth-of-book market data for the first time. In support of their filings, each of the Direct Edge Exchanges argues that "[r]evenue generated from such fees will help offset the costs that the Exchange incurs in operating and regulating a highly efficient and reliable platform for the trading of U.S. equities. This increased revenue stream will allow the Exchange to offer an innovative service at a reasonable rate, structured in a manner comparable to and consistent with other market centers who provide similar market data products." This rationale is consistent with NASDAQ's evidence showing that NASDAQ's proposed fees are but one of many pricing strategies that exchanges use to compete with one another on a "platform" basis to attract order flow, encourage different types of investors to purchase market data, and support the operation of trading systems and market data distribution as a joint product with shared costs and common customers. The evidence that NASDAQ submitted in this rulemaking that showed robust "platform" competition among equities exchanges is precisely the type of "reasoned" evidence of "competitive forces" that the D.C. Circuit has invited exchanges to submit in support of proposed market data fees. *NetCoalition v. SEC*, 615 F.3d 525, 544 (D.C. Cir. 2010).

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2 *See* **Exhibit A**, Statement of Janusz Ordover and Gustavo Bamberger (Dec. 29, 2010); **Exhibit B**, Letter from Joan Conley, Senior Vice President, NASDAQ OMX Group, Inc. (Apr. 4, 2011) (with exhibits); **Exhibit C**, Letter from Eugene Scalia, Gibson, Dunn & Crutcher LLP, on behalf of the NASDAQ Stock Market LLC (Aug. 1, 2011). For the Commission's convenience, referenced reports and comments are attached to this letter as exhibits and hereby incorporated by reference.

3 *See* SR-EDGX-2012-14 (April 10, 2012) (available at http://www.directedge.com/Portals/0/docs/Exchange%20Rule%20Filings/EDGX/2012/SR-EDGX-2012-14.pdf); SR-EDGA-2012-015 (April 10, 2012) (available at http://www.directedge.com/Portals/0/docs/Exchange%20Rule%20Filings/EDGA/2012/SR-EDGA-2012-15.pdf).

4 *See* Securities Exchange Act Release No. 34-66277 (Jan. 30, 2012) ("CBOE Pricing Proposal").

Second, CBOE was recently permitted to modify a form of bundled pricing that arguably poses a greater risk to competition than NASDAQ's Platform Pricing. Specifically, the CBOE Proprietary Product Sliding Scale, that allows certain CBOE members to pay reduced execution fees for trading single-listed CBOE proprietary products if they reach set volume thresholds in trading multiple-listed options. Like NASDAQ Platform Pricing, CBOE's Proprietary Products Sliding Scale offers members discounts from previously filed prices if they purchase substantial quantities of two products. CBOE's proposed rule took immediate effect upon filing, and neither the Division nor the Commission has taken action to disapprove it. NASDAQ believes that it would be arbitrary and capricious for the Commission to disapprove its rule proposal when the similar CBOE Proprietary Products Sliding Scale is already in effect.[5]

Procedurally, as NASDAQ explained at length in its Petition, NASDAQ's Platform Pricing proposal must be "deemed . . . approved" by the Commission because the Commission did not make a final determination approving or disapproving the proposed rule change within the 240-day deadline established by the Dodd-Frank amendments to the Exchange Act. 15 U.S.C. § 78s(b)(2)(D); *see also* NASDAQ Petition for Review at 7-11. The Division's order was issued pursuant to delegated authority and did not constitute action by the *Commission* because NASDAQ timely petitioned the Commission for review of the Division's order. *See* 15 U.S.C. § 78d-1(c). The Commission itself did not take any action on NASDAQ's proposed rule change before the statutory deadline expired on September 23, 2011. The "platform pricing" proposal is therefore already approved by operation of law.

5 *See* **Exhibit D**, Letter from Joan Conley, Senior Vice President, NASDAQ OMX Group, Inc. (Feb. 24, 2012).

If the Commission determines that NASDAQ's Platform Pricing proposal should not be deemed already approved, then in accordance with the evidentiary record, the Commission should set aside the Division's order and approve NASDAQ's proposed rule. If additional comments are submitted regarding NASDAQ's proposed rule change, NASDAQ reserves the right to file a response to those comments. [6]

Respectfully submitted,

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6 The Commission's practice is to permit parties to submit responses to comments after the comment-submission deadline established in the Commission's order granting a petition for review. *See, e.g.*, Comments on Order Granting Petition for Review and Scheduling Filing of Statements, Release No. 34-60989, File No. SR-ISE-2009-35 (*available at* http://www.sec.gov/rules/other/2009/sr-ise-2009-35/ise200935_statements.shtml); Order Setting Aside Action by Delegated Authority and Approving Proposed Rule Change Relating to NYSE Arca Data, Release No. 34-59039; File No. SR-NYSEArca-2006-21 (Dec. 2, 2008), at 10-11 & n.29 (*available at* http://www.sec.gov/rules/sro/nysearca/2008/34-59039.pdf) (listing comments received).

EXHIBIT A

Statement of Janusz Ordover and Gustavo Bamberger (Dec. 29, 2010)

Statement of Janusz Ordover and Gustavo Bamberger

I. INTRODUCTION.

1. I, Janusz Ordover, am a Professor of Economics at New York University and a former Director of the Masters in Economics Program. I served as the Deputy Assistant Attorney General for Economics in the Antitrust Division of the U.S. Department of Justice in 1991-1992. In that post, I was responsible for formulating and implementing the economic aspects of antitrust policy and enforcement of the United States Government, including co-drafting of the 1992 Agency Horizontal Merger Guidelines. I have also served as an advisor on competition and regulatory matters to the Department of Justice, the Federal Trade Commission, the governments of Poland, Russia, Hungary and Australia, as well as to the World Bank, the Organization for Economic Cooperation and Development, the Inter-American Development Bank, the Australian Competition and Consumer Commission and the New Zealand Commerce Commission. I have served on numerous American Bar Association and International Bar Association panels. I also am a Senior Consultant to Compass Lexecon, an economics consulting firm that specializes in the application of economic analysis to legal and regulatory issues.

2. I have authored and co-authored numerous articles on industrial organization economics, law and economics, antitrust, and intellectual property. In particular, I have authored or co-authored several articles dealing with market power and its abuse. In addition, I have written and testified on the issues of pricing of information as well as on the benefits and costs of regulatory interventions in markets. My curriculum vitae, which contains a complete list of my publications, is attached as Appendix A.

3. I, Gustavo Bamberger, am a Senior Vice President of Compass Lexecon. I received a B.A. degree from Southwestern at Memphis, and M.B.A. and Ph.D. degrees from the University of Chicago Graduate School of Business. I have provided expert testimony on a

variety of economic issues to federal courts, the U.S. Senate, the U.S. Federal Energy Regulatory Commission, the U.S. International Trade Commission, the U.S. Department of Transportation, U.S. state regulatory agencies, the Canadian Competition Tribunal, the New Zealand Commerce Commission and the High Court of New Zealand. A copy of my curriculum vitae is attached as Appendix B.

4. We have been asked by counsel for the NASDAQ Stock Market ("NASDAQ") to evaluate the extent to which competitive forces constrain NASDAQ's ability to set prices and terms for "proprietary" data products. We have also been asked to comment from an economic perspective on the proposed "Platform Pricing" schedule that offers discounts to non-institutional investors. Our submission builds upon and expands our earlier comments submitted in connection with a Notice of Proposed Order Approving Proposal by NYSE Arca, Inc. To Establish Fees for Certain Market Data and Request for Comment, Release No. 34-57917, June 4, 2008 released by the Securities and Exchange Commission ("the Commission").[1]

5. We conclude that NASDAQ is subject to significant competitive forces from other platforms. This means, in particular, that competition for orders constrains NASDAQ's freedom in setting the prices and other terms of proprietary data products. Competition among trading platforms can be expected to constrain the aggregate return each platform earns from the sale of the array of its products, including the joint products at issue here, which are execution services and proprietary data. In particular, cross-platform competition and the adverse effects of increasing the price of proprietary information on the volume of trading on the platform constrain the pricing of proprietary information. Similarly, overpricing of execution services will reduce the volume of trading on the platform and reduce the production of proprietary information. By definition, information that is proprietary to an exchange cannot be obtained elsewhere, but this does not enable the owner of such information to exercise monopoly power

1. See Statement of Janusz Ordover and Gustavo Bamberger, filed with the Securities and Exchange Commission, Release No. 34-57917, on behalf of NASDAQ Stock Market, August 1, 2008.

over that information vis-à-vis firms that purchase such information. Besides the fact that similar information can be obtained elsewhere, the feasibility of supra-competitive pricing is constrained by traders' ability to shift their trades elsewhere, which lowers the activity on the exchange and, in the long run, reduces the quality of the information generated by the exchange. The presence of these potent economic forces facing NASDAQ strongly suggests that there is no need to regulate the pricing of proprietary data, including pricing schedules like the proposed "Platform Pricing."

6. In our view, each platform should be free to determine how best to recover the costs – including a return on capital – of its joint products (i.e., execution of trades and proprietary information). This includes "bundling" of discounts across an array of products as contemplated in the "Platform Pricing" proposal being submitted by NASDAQ. Each platform will make its pricing and bundling decisions based on its individual circumstances and the business strategies of the platform. Moreover, these decisions can – and likely will – change over time as the forces of competition reveal whether these strategies are profitable or not. Regulatory forbearance is thus fully warranted in the absence of any showing that the pricing strategies will anti-competitively disadvantage rival platforms and some well-defined customer groups of the investing public.

7. The "Platform Pricing" proposal appears designed to benefit non-professional investors, a group which we understand is predominantly comprised of average (as measured by transaction volumes) individual investors. The discount is provided to NASDAQ members that receive the data and, acting as intermediaries, provide it to their non-professional brokerage customers generally as part of a service. By providing discounts to the intermediaries based on both order activity and qualifying data activity related to non-professional investors, the proposal should encourage the increased provision of data to that set of investors and stimulate their activity on the exchange.

8. As we discuss in this statement, the products at issue in this regulatory proceeding are produced under the conditions of high fixed costs, which are also joint and common to a range of products, and low (or zero) marginal or incremental costs of serving an additional customer. Economics amply demonstrates that marginal cost pricing in an industry with these cost characteristics is not feasible, and some deviations from marginal cost pricing are unavoidable. In general, economic efficiency in these circumstances requires that different customers pay different prices. Economists call this type of pricing structure "differential pricing" or "price discrimination." Price differentiation in markets with high fixed costs and low incremental costs is common, efficient, and not anticompetitive.

9. One might object perhaps that such pricing is "unfair." It is important to note that "fairness" is not a core concept of microeconomics or of industrial organization. In this submission, we discuss possible interpretations of a "fairness" standard and conclude that it most plausibly forbids cross subsidies among customers groups and capricious differential treatment that is unrelated to market fundamentals. We find that the rates proposed by NASDAQ in its "Platform Pricing" plan do not violate fairness standards as summarized above.

10. The remainder of our statement is organized as follows. In Section II, we show that competition between trading platforms constrains the price of market data sold by each platform. In Section III, we provide an economic analysis of NASDAQ's "Platform Pricing" proposal. We summarize our conclusions in Section IV.

II. COMPETITION BETWEEN TRADING PLATFORMS CONSTRAINS THE PRICE OF MARKET INFORMATION.

A. Background Information.

11. Since the Securities Act Amendments of 1975, the volume of equity trading in the United States has increased dramatically. Between 1976 and 1986, for example, total trading in stocks listed on the New York Stock Exchange ("NYSE") increased from 6.3 billion shares to

42.5 billion shares annually, an increase of about 575 percent. Annual trading in those shares further increased and reached 126.3 billion shares in 1996 and 1.43 trillion shares in 2009. Thus, between 1976 and 2009, trading in stocks listed on the NYSE increased by a factor of 227 (from 6.3 billion to 1.43 trillion shares per year).[2]

12. Along with the growth of volume, trading in exchange-listed stocks is increasingly occurring over a variety of platforms. In early 2002, for example, approximately 80 percent of trading volume in NYSE-listed stocks took place on the listing exchange (i.e., the NYSE). (For NASDAQ-listed stocks, this percentage was somewhat higher.) By October 2010, only 35.2 percent of trading on NYSE-listed stocks, in the aggregate, took place on the NYSE and NYSE Arca platforms.[3] The NYSE accounted for 22.6 percent of trading in NYSE-listed shares, and NYSE Arca for 12.0 percent.[4] In the same month, NASDAQ's share of trading in NASDAQ-listed securities was 29.5 percent.[5]

13. Furthermore, an exchange's share of trading in a given set of stocks overstates the share of information on total liquidity regarding these stocks that is generated by an exchange because trading platforms only hold a portion of the available liquidity on their books. Other liquidity exists on the trading desks of brokerage firms. We understand that such liquidity is readily available to those firms' clients.

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2. See "Consolidated tape volume by market (thous. of shares) (1976-2003)" and "Volume in NYSE Listed Issues (millions of shares), 2009," nyxdata.com/factbook.
3. See http://www.nyse.com/pdfs/NYSE_Euronext_Transactions_Data.pdf.
4. For October 2010, BATS Trading reports "consolidated volume" of 94.8 billion shares on "Tape A" (i.e., the NYSE). Of this amount, BATS Trading reports that the NYSE accounted for 21.4 billion shares (22.6 percent) and NYSE Arca accounted for 11.4 billion shares (12.0 percent). See http://www.batstrading.com/market_summary/ (and link to "Download last 30 days" of data). We understand that the NYSE and BATS Trading report trades on a somewhat different basis (e.g., the NYSE-reported consolidated volume for June 2010 for NYSE-listed stocks is about one percent larger than the amount reported by BATS Trading). For this reason, the shares derived from NYSE and BATS Trading data do not align exactly (e.g., the BATS Trading data imply that the aggregate share of the NYSE and NYSE Arca in October 2010 for NYSE-listed stocks was 34.6 percent, while the NYSE reports an aggregate share of 35.2 percent).
5 . See http://www.nasdaqtrader.com/trader.aspx?id=marketshare.

14. Rapid entry into the platform business is possible, which further constrains any incumbent's ability to act in non-competitive manner. For example, BATS Trading began trading on January 27, 2006.[6] By June 2008, it accounted for 7.5 percent of trading in NYSE-listed stocks and 10.3 percent of trading in NASDAQ-listed stocks.[7]

15. This evidence shows that no trading platform has a "monopoly" on generating market data on shares listed on that platform. As we discuss further later in this report, although any firm can be described as the "exclusive" seller of its branded product, it is not appropriate as a matter of economics to characterize every firm that sells such a product as a "monopolist" in any meaningful sense.

16. In the case of data jointly generated through trading on NASDAQ, the volume and quality of the information depends on the volume of orders and trades on the exchange. Here, by the "quality" of data we mean its informative value. For example, all else equal, the deeper is the "depth-of-book" information on an exchange, the more valuable it is. Consequently, exchanges compete for liquidity and thus for data quality, which, as we have seen, is linked to the volume of transactions.

17. As we discussed in our prior submission and will discuss again later in this statement, the volume of transactions on an exchange in a given stock and in the aggregate is determined in a competitive market for accessing liquidity on various platforms. Each platform's share of trades is not fixed but, rather, results from competition across a broad range of platforms on which the particular stock can be traded. From that perspective, therefore, the volume and quality of data relating to any particular stock is also determined by and as a result of the interplay of economic forces. As long as inter-platform competition is not impeded, NASDAQ neither has monopoly power in trading, even in a stock listed on NASDAQ, nor does it

6. See http://www.batstrading.com/data/daily_volume.php?period=2006Q1. BATS Trading traded 200 shares on January 27, 2006 (and 934,804,026 shares on June 30, 2008).
7. Also see Edgar Ortega, "Yahoo Will Offer Free Real-Time Stock Quotes From Bats Trading," Bloomberg, May 28, 2008 (BATS Trading "handles about 605 million shares a day, representing about 8.9 percent of the shares traded in the U.S.").

have a monopoly over the information pertaining to the depth of book in a stock, because other exchanges also will have such information (albeit determined by the depth-of-book on that exchange). As competition for the execution of trades shifts in response to market signals, so will the quality of information available from the alternative platforms. Hence, competition for listings and trading also affects competitive conditions in the "market" for information.

18. In theory at least, "network" (or "liquidity") effects could potentially lead to a situation where one platform captures a large share of all trades in one or more stocks or some other financial instrument. In such a case, the exchange would have a "monopoly" in trading in the stock as well over the information pertaining to that stock. Two points are worth making in this context. First, the demonstrated ability of platforms to capture a substantial percentage of trades of stocks listed on other exchanges indicates that such effects are generally mitigated in the market for equity trading, or that such effects have been offset by other forces (including the introduction of Regulation NMS), or that there is sufficient inter-platform product differentiation so that, given the large trading volumes, two or more exchanges can compete alongside each other. If anything, the empirical evidence on platform shares we have discussed indicates that there is no powerful trend towards concentration of trading in a given stock on a single exchange: quite the opposite. Second, at least from the competition (or antitrust) perspective, it is rather implausible that a single stock (or trading in a single stock) would constitute a relevant market. Hence, for the effects we have discussed to be a source of competitive concern, such effects would have to be powerful over a broad range of equities. Empirical evidence clearly shows that this is not the case.

B. Trading Platforms Produce "Joint Products."

19. Execution services and market data are an example of "joint products." This is because every execution of a trade automatically produces another potential product, namely information about that trade (such as the price and quantity traded). Similarly, depth-of-book

information is automatically produced when traders post limit orders on a platform. The production of joint products necessarily involves incurring "joint costs," i.e., costs that are not uniquely incurred on behalf of any one of the services provided by the exchange.[8] The total return that a trading platform earns reflects the revenues it receives from the sale of these joint products and other services, net of the joint cost and direct costs (i.e., costs that can be directly attributed to the relevant products) it incurs.

20. Trading platforms make simultaneous pricing decisions regarding liquidity rebates, execution fees, and market data fees. Liquidity rebates attract orders that create available liquidity by paying the order submitter a fee when the order executes; execution fees are incurred when an investor's order interacts with available liquidity resulting in a trade; and market data fees pay for access to information about, for example, currently available liquidity and past trades. All of these decisions are made with the goal of maximizing profits, or fostering other legitimate business objectives, subject to competitive and regulatory constraints.[9]

21. In general, there is no economic basis for placing some arbitrary regulatory caps on prices for one of the joint products in market situations where suppliers face competitive constraints across the range of their offerings.[10] The simple reason is that, in general, an "excessive" price for one of the products will, ultimately, have to be reflected in lower prices for

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8. It is widely accepted that there is no meaningful way to allocate "common" or "joint" costs across different joint products. For this reason, "cost-based" regulation of pricing of market data requires inherently arbitrary cost allocations. Furthermore, it is widely recognized that cost-based regulation can create significant inefficiencies and distortions. At least in part for this reason, such regulation has been widely abandoned or replaced with other forms of regulation in a variety of industries (e.g., telecommunications). For example, common costs are recovered from various services based on customers' willingness to pay. For a succinct and elegant treatment see, e.g., J-J. Laffont and J. Tirole, *Competition in Telecommunications*, MIT Press, 2000, especially. chapters 1 and 2.
9. For example, regulation requires that some information, such as a platform's best bid and offer, be provided at non-market determined rates.
10. For a discussion on the conditions under which regulation is appropriate in network industries, see R. D. Willig, "Economic Principles to Guide Post-Privatization Governance," in F. Besañes et al. (eds), *Can Privatization Deliver?*, Inter-American Bank, 1999.

other products sold by the firm or the firm will otherwise experience a loss in the volume of its sales that will be adverse to the overall profitability of the enterprise.

22. Exchanges compete with each other on a variety of dimensions. For example, U.S. exchanges compete with each other (and foreign exchanges) initially for new listings and subsequently for listing switches. With respect to a given stock, unless a stock is listed on an exchange, other platforms have nothing to produce, no market data and no executions. Once a stock has been listed on a particular exchange, rival exchanges and other trading platforms – such as electronic communications networks – compete to execute trades of shares in that stock. Thus, a listing exchange bestows a positive externality on its potential rivals.

23. Different platforms may choose different pricing strategies and ways of recovering total costs and earning a return on their investments. Some platforms may choose to pay rebates to attract orders, charge relatively low prices for market information (or provide market information "at no cost") and charge relatively high prices for accessing posted liquidity. Other platforms may choose a strategy of not paying liquidity rebates to attract orders, setting relatively high prices for market information and relatively low prices for accessing posted liquidity. Others may choose to foster trading on a platform by establishing ownership interests among customers that provide liquidity and consume market data. These strategies can vary over time in response to changing market, life-cycle, and regulatory factors. BATS Trading, for example, has chosen an initial strategy of setting low (or zero) prices for market data, mid-range prices for executions, and relatively high liquidity rebates.[11]

24. The economic evidence shows that exchanges and other trading platforms compete with each other on pricing. To illustrate, in 2007, NYSE Euronext changed its prices to compete more effectively with rival trading platforms:

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11. Pricing of services on an exchange may vary over the life of the exchange in response to its changing market position. For example, at the time of entry, pricing on an exchange may be motivated by the need to attract liquidity. At later stages, as the information flows from an exchange become richer and more relevant to consumers, the exchange may introduce fees for data, which help to recoup in part the initial up-front investments in the platform..

> NYSE Euronext introduced new pricing on [September 12, 2007], including higher rebates for stock trades on its exchanges, to better compete with aggressive pricing set by electronic rivals such as BATS Trading.
>
> Under the new pricing system effective Oct. 1, customers trading on the Big Board's all-electronic NYSE Arca platform will get a rebate of 25 cents for every 100 shares of NYSE-listed stocks traded, 5 cents more than the current rebate.
> . . .
>
> The exchange also lowered the charge for customers taking liquidity in Nasdaq-listed stocks out of its market by 5 cents, from 30 cents to 25 cents. Liquidity providers in Nasdaq-listed stocks will continue to get a rebate of 20 cents.
>
> . . .
> Upstart electronic platform BATS Trading recently introduced a pricing structure providing a rebate of 34 cents per 100 shares for customers providing liquidity in NYSE-listed stocks, and a charge of 24 cents per 100 shares for customers taking liquidity in NYSE-listed stocks away from BATS.
>
> "We're pleased at this reaction to BATS's consistently aggressive pricing," said Randy Williams, a spokesman [for BATS].[12]

25. Some trading platforms pay substantial sums in the form of liquidity rebates to induce customers to "post orders" on their platform.[13] For example, in 2009, NASDAQ paid $1.394 billion in liquidity rebates.[14] These posted orders allow NASDAQ to attract additional "order flow" that interacts with the posted orders by taking available liquidity and results in trades executing on its exchange. Posted orders, the liquidity-taking order flow, and the executed trades produce information that is valuable to investors.[15] Other platforms do not offer

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12. Anupreeta Das, "NYSE Euronext changes equities transaction pricing," Reuters, September 12, 2007.
13. In 2008, the National Stock Exchange ("NSX") introduced a new pricing structure that included "market data rebates embedded in liquidity rebates" (http://www.nsx.com/content/news/story/91#January312008). That is, NSX uses revenue it receives from selling market data to increase the rebates it pays for liquidity.
14. Form 10-K for NASDAQ Stock Market Inc., February 18, 2010, at 54.
15. Some commentors suggest that fees for proprietary data must be set "at cost." As we explain in this submission, there is no need to impose a cost-based pricing standard for such data and there is no unique cost basis that could be used for such a purpose. As we have discussed, the latter conclusion follows from the fact that the information at issue is a joint product and since the incremental cost of providing such information to an additional customer is small (or zero), marginal cost pricing is not feasible. Additionally, those commenters ignore that NASDAQ paid over a billion dollars in liquidity rebates in 2009 to

rebates to liquidity providers but instead offer lower fees or even free executions to liquidity-taking order flow. We understand that some exchanges, including the National Stock Exchange and the American Stock Exchange, offer equity ownership as an incentive/reward for active trading on their platforms.

26. Platforms also compete on data fees. For example, in June 2008, NASDAQ launched two proprietary "Last Sale" products. In each case, the terms included subscription rates and an "enterprise cap" rate designed for Web portals. The enterprise cap rates for the two products were $100,000 per month and $50,000 per month for the two products (i.e., a cap of $150,000 per month for customers who purchased both products). The majority of NASDAQ's sales were at the cap level. We understand that in early 2009 BATS offered an alternative product (BATS PITCH data) as a "free" alternative to the NASDAQ Last Sale products. Also in early 2009, NYSE Arca announced the launch of a competitive product with an enterprise price of $30,000 per month. In response, in April 2009, NASDAQ combined the two Last Sale products into one and reduced the enterprise cap to $50,000 per month (i.e., a reduction of $100,000 per month).

27. The fact that different exchanges adopt dissimilar pricing strategies suggests that customers have different preferences over the services provided by the exchanges as well as different willingness (or ability) to pay for these services. Thus, pricing heterogeneity partly reflects customer heterogeneity and adds to customer value as well as profitability.

28. Information on trading volumes further confirms that platforms compete actively for trading in listed stocks. For example, as we have noted, the NYSE accounted for about 80 percent of trading in NYSE-listed stocks in 2006; by October 2010, NYSE's share of trading in those stocks has fallen to as low as 22.6 percent, and the NYSE Group's share – i.e., the NYSE

(...continued)
induce trading on its platform and thereby generate the information that such commenters apparently want to obtain at a price that reflects only the cost of creating the proprietary data products (i.e., ignoring the costs of rebates and other joint costs).

and NYSE Arca – has fallen to 35.2 percent. Such large shifts in trading volumes across platforms indicate that traders can, and do, quickly move their orders from one exchange to another in response to market signals, which is clear evidence that platforms compete with each other. This intense competition among trading platforms can be expected to constrain the aggregate return each platform earns from its sale of all of its products.

29. Further increases in the price of proprietary data by a platform can be expected to reduce the volume of trading on that platform, which reduces the profitability of such a price increase and thus constrains the pricing of proprietary information. Conversely, a platform might reduce prices for proprietary information in order to maintain or increase the volume of trading on that platform. For example, we understand that in late 2009, a member notified NASDAQ that in the absence of a fee reduction for "non-displayed use" of depth data, the member would move order flow from NASDAQ to a competing platform. After meeting with the member and analyzing the potential loss of trading volume, NASDAQ sought and obtained SEC approval for an Enterprise License for non-displayed use of certain depth data.[16] NASDAQ's decision linked data revenue to transactions revenue, reflecting platform-based pricing and the nature of joint products.

C. The Role of Market Information in Trading Platform Competition.

30. Prior Commission rules mandate that certain types of market information must be made available to all customers. For example, in 1978, the Commission implemented the "Display Rule" which required information vendors and broker-dealers "to display a consolidated array of information for each stock including the single best quotation available in the reporting markets or a montage of all markets' best quotations, and the last sale data including price,

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16. See Securities Exchange Act Release No. 61700 (March 12, 2010); 75 F.R. 13172 (March 18, 2010) (approving SR-NASDAQ-2010-034).

place and volume."[17] Exchanges and other trading platforms are required to provide their trade (or "core") information to a "securities information processor" ("SIP") which consolidates data from all platforms to produce the mandated information.[18]

31. In addition to the information that trading platforms are required to provide to SIPs, exchanges and other platforms can, but are not required to, individually make available additional market data – sometimes referred to as non-core, or "proprietary", information. As we have discussed, the posting of trades on a platform, the execution of those trades, and market information about order flow to the platform and trades on the platform, are joint products.

32. There is no question that core data are valuable, which is reflected in the Commission's requirement that this base information be provided at reasonable fees to all parties. There is, of course, value in additional information flowing from the exchange. But there is no evidence that this additional information is of the same fundamental value to the financial markets as the information that exchanges are required to provide. Whether or not a customer purchases the incremental information depends on the cost/benefit analysis of the individual customer. Moreover, the decision of an individual customer not to purchase this incremental information is not likely to create a material negative externality on the trading public and thus a decision to buy or not is best left to individual customers while ensuring that competition among exchanges creates effective constraints on the pricing of proprietary data.

33. Market information is useful in a number of ways, including as an input into trading activities, for valuing securities and portfolios, and for evaluating the performance of a broker or trader.[19] Depth-of-book market information can help investors make better trading

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17. Sharon Brown-Hruska, "Competing Models for Market Data Dissemination: A Comparison of Stock and Futures Markets," at 7 (describing Rule 11Ac1-2).
18. Trade information is consolidated into three data streams – referred to as Tape A (for NYSE-listed shares); Tape B (for shares listed on the AMEX and regional exchanges); and Tape C (for NASDAQ-listed shares). One SIP compiles Tape A and Tape B information; a different SIP compiles Tape C information.
19. Market information can be useful to firms that act as intermediaries between trading

decisions. The decision to post an order that would be disseminated by a depth-of-book feed reflects a trade-off between the cost of offering a "free option" to the market and the benefit of attracting a taking order and thereby creating an execution.[20] The costs and benefits of posting an order will depend on the attributes of the platform where the order can be posted, including the platform fees, data quality and price and distribution of its data products. Without the prospect of a taking order seeing and reacting to a posted order on a platform with a depth-of-book feed, there would be little incentive to post a displayed order. Independent of trading, depth-of-book data also may be useful as a barometer of market sentiment. For example, a "deep" book with many orders at numerous prices near the current price may be considered to be a sign of investor confidence; conversely, a "thin" book with few orders may be considered a sign of investor uncertainty. Whether depth-of-book data are used for trading or not, a platform must attract orders, both posting and taking, to generate depth-of-book information.

34. It is important to keep in mind that a trader can participate in trading even without proprietary information from a particular platform regarding a particular stock or array of stocks. That is, while it is conceivable that proprietary information generated by NASDAQ could be potentially quite valuable to certain traders who wish to trade on NASDAQ, the key point is that a trader is not compelled to trade on NASDAQ in NASDAQ-listed stocks. Such a trader, while potentially benefiting from information generated by traders who trade on NASDAQ, contributes nothing to the recovery of joint costs incurred by NASDAQ.

(...continued)
platforms and the trading public but do not trade themselves. For example, web sites like Google and Yahoo! benefit in a variety of ways from attracting more visitors because such visitors are likely to "stick" to the website and generate other business and thus incremental revenues. Such web sites would not have an incentive to buy non-core data products if they were of no value to ultimate consumers. These web sites are thus engaged in joint production and have devised sophisticated pricing mechanisms to monetize their investments in the production of content.

20. See, for example, Notice of Proposed Order Approving Proposal by NYSE Arca, Inc. To Establish Fees for Certain Market Data and Request for Comment, Release No. 34-57917, June 4, 2008, released by the Securities and Exchange Commission, Appendix A, at 51-53.

35. Ubiquitous access to core data (e.g., National Best Bid and Offer, or NBBO, information) is perceived by the regulatory authorities as essential to the efficient functioning of the equity markets.[21] This conclusion does not, however, apply to proprietary products which are valuable to some traders but are not required to ensure baseline efficiency of the trading system. This being the case, and given that all costs of an exchange have to be recovered on a forward-looking basis, it makes economic sense that the beneficiaries of such proprietary information help to defray some portion of the joint and common costs incurred by the exchange.

36. Although proprietary data are jointly produced with trading activity on the exchange, such raw data needs to be further processed and stored in order to be usable to customers. Exchanges would have little or no economic incentive to expend resources on developing, processing, and maintaining proprietary data unless it were valuable to at least some customers and could generate income for the exchange directly or indirectly. For example, an exchange that offered for sale additional information – beyond what is mandated by regulatory fiat – must incur the costs of collecting, preparing and marketing that data, but would gain no commensurate revenues unless at least some customers considered it valuable and were willing to pay for it either directly or through fees on trades.[22]

37. Thus, even if certain information is generated every time customers post buy/sell orders or execute trades, that information has to be maintained and continuously updated on databases, processed using software packages, and disseminated out to the public, all at substantial cost. This alone suggests that such proprietary data should not be made available

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21. We understand that NASDAQ receives a share of the revenue generated from the sale of core data at regulated rates.
22. As we have discussed, different trading platforms may choose different pricing strategies. For example, a platform owner may choose to distribute non-core market information “at no cost” to increase demand for trade execution services on that platform. All else equal, that owner will thus be able to charge more for trade execution services than a platform owner that sells market information.

for free. Even more importantly, proprietary data are generated by the exchange using an expensive software and hardware infrastructure. These costs, together with the costs of executing trades, have to be recovered. As we shall explain in more detail later, sale of proprietary data should be called upon to contribute to the recovery of all the costs incurred by the exchange on behalf of all its products.[23]

38. Even if a trading platform had some unique information that is potentially valuable to (some) consumers, the total price of trading on that platform – which includes the price of market data available from the platform that the trader elects to purchase – is constrained by the total price of trading on rival platforms. Therefore, it is incorrect as a matter of economics to focus on whether any given information can only be obtained from a particular platform in order to gauge that platform's "market power." Proper economic assessment focuses on inter-platform competition which is driven by a variety of factors, including the availability and quality of platform-generated data and the extent to which that competition constrains pricing.

39. Because customers can choose between competing trading platforms, the competitive constraints faced by sellers of market data differ from the constraints faced by the sellers of regulated "monopoly" inputs. For example, consider the case of a Regional Bell Operating Company ("RBOC") that sold access to its "local loop" for residential customers (i.e., the connection to a customer's home). Beginning in the 1980s, residential customers could choose among long-distance operators, but typically had no choice of providers for local-loop service because each home was reached by only one "wire." Thus, a firm that wanted to offer

23. This point was recognized over a century ago by the British economist Alfred Marshall who noted that the total cost of raising and maintaining a sheep should be recovered from wool and mutton and not from either one alone, even though it is unavoidable that a sheep will produce both, unless there is no demand for mutton, for example. *See*, Alfred Marshall, *Principles of Economics,* Cambridge University Press, 1890. There is no danger in the instant case that there will be no demand for either execution or proprietary data on NASDAQ. The whole point is that there is demand for such data, but those who have such demand have balked (apparently) at paying for it.

long-distance service to a consumer had to buy "access" to that local-loop service from the monopoly provider in that area (i.e., the only way into a customer's home was through the wire owned by the local phone company).[24]

40. In contrast to the case of RBOCs selling local-loop access, individuals who want market data can obtain it from a variety of platforms, some of it even at no cost. Even though market information from one platform may not be a perfect substitute for market information from other platform(s), the existence of alternative sources of information can be expected to constrain the prices platforms charge for market data, especially when reinforced by inter-platform competition.[25]

41. For competitive concerns to conceivably arise in a setting like this, the quality (breadth and depth) of information from other platforms would have to be so inferior (and the incremental benefit from proprietary information so overwhelming), that the competitive viability of the alternative platforms would be undermined if traders had to pay market prices for the "dominant" platform's proprietary information. In such a case, these other platforms would not be in a position to offer attractive opportunities for traders and would not exercise a meaningful constraint on the dominant platform. This was precisely the market situation facing carriers that wished to connect to an RBOC's network. In essence, these carriers had to either pay the monopoly price or invest in costly and inefficient by-pass technologies. Regulatory constraint on pricing of access at the time may have been the most effective solution to the RBOCs' monopoly power. However, this concern is not present here because, as we have seen, other exchanges have been able to enter, flourish, and divert business from NASDAQ.

24. More recently, cable firms started providing a competitive alternative to RBOC local-loop access in some areas.
25. Competition among platforms is similar to "source competition" that keeps railroad rates down – if an electric utility can get coal from two sources, each of which is served by a "monopoly" railroad then both apparent railroad monopolies are undermined. Similarly, if a customer can purchase power from two different generators, each served by a single railroad, both apparent railroad monopolies are undermined.

IV. ECONOMIC ANALYSIS OF NASDAQ'S "PLATFORM PRICING" PROPOSAL.

A. Summary of NASDAQ's "Platform Pricing."

42. We understand that the "Platform Pricing" program introduces tiered pricing that reflects customers' *joint* activity on the exchange through trading volumes and purchases of proprietary data. A customer who is an active trader *and* an active consumer of data receives an aggregated discount relative to the fees paid by other customers. NASDAQ already offers volume discounts on trades and proprietary data spend. Hence, the only novel element of this proposal is the discounting based on the customer's aggregate activity. As such, in general, it should not trigger any regulatory concerns. However, below we comment on the possible situation in which such concerns could arise and find that these are not present in the instant case.

43. NASDAQ is introducing a discount of its proprietary depth-of-book products (TotalView, OpenView and Level2) sold to "non-professional" investors. "Non-professional" investors include traditional retail brokers such as AG Edwards, Raymond James and Merrill Lynch and online brokers such as Scottrade, Schwab, Fidelity, TD Ameritrade and E*Trade. Such investors can purchase depth-of-book information that will be used by their clients (i.e., retail investors) to make trading and other decisions. That is, customers who could qualify for "Platform Pricing" discounts purchase information on behalf of retail investors and will attempt to recover the costs of these valuable purchases from the ultimate consumer whether directly or indirectly (e.g., through increased trading). The likely effect of the volume discounts in the "Platform Pricing" proposal will be to "pass through" lower fees to the ultimate non-professional investors on whose behalf NASDAQ's customers purchase proprietary data.[26]

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26. We understand that non-professional proprietary spending includes expenditures associated with the distribution of the following products: TotalView, OpenView and Level2. This calculation includes the monthly usage, distributor fees and enterprise license fees for the firm. Members must meet both the volume requirement and the proprietary data

44. The “Platform Pricing” discounts are not available to “Professional” investors, which include trading firms that can connect directly to the NASDAQ trading platform (e.g., high frequency traders). Even prior to the introduction of “Platform Pricing,” NASDAQ charged different fees for its depth-of-book products to “professional” and “non-professional” investors. In particular, “professionals” pay substantially higher fees than “non-professionals.” For example, we understand that NASDAQ currently charges $15 per terminal for its TotalView product to non-professionals, while professional investors pay roughly five times the non-professional rate. Such pricing reflects the value of the service in a manner that is consistent with pricing rules advocated by economists in the presence of large joint and common costs and low incremental costs, as we discuss next.

B. The Economics of Pricing Products in the Presence of Scale Economies Stemming from Large Joint and Common Costs and Low Marginal Costs.

45. The products at issue in this regulatory proceeding are produced under the conditions of high fixed costs, which are also joint and common to a range of products, and low (or zero) marginal or incremental costs of serving an additional customer. In addition, other incremental costs (such as developing information on the depth of book of an additional security) are also low when compared to the volume of costs associated with operating an exchange, including the underlying information technology. Indeed, state-of-the art information technology is at the heart of a competitive and efficiently operated financial market (such as an exchange).

46. This cost structure characterizes content production and distribution industries. For example, in the software industry, developing new software typically requires a large initial investment (and continuing large investments to “upgrade” the software), but once the software is developed, the incremental cost of providing that software to an additional user is typically

(...continued)
requirement to be eligible for the discount.

small, or even zero (e.g., if the software can be downloaded over the internet after being purchased).[27] The same is true of newspapers, motion pictures, books, and so forth.

47. In the case of NASDAQ, the production process at the heart of this regulatory matter is even more complicated. In particular, besides being characterized by low incremental costs and high fixed costs, the products produced by NASDAQ (e.g., trade execution services and market data) are produced "jointly." There is no question that it is costly to build and maintain data bases that are needed to produce proprietary data, but providing that information to an additional customer involves little or no additional costs. Similarly, the incremental cost of trading an additional share of stock on an existing platform is likely to be low once the platform has been developed. The relevant products are produced jointly in the sense that the activities of trading and placing orders are *the* source of information that can be (and is) distributed to the interested parties and are subject to significant scale economies.[28]

48. There is a substantial economic literature that addresses the pricing principles for products and services in industries with this type of cost structure: i.e., scale economies and joint and common costs.[29] Economic analysis shows that charging prices equal to marginal cost is the most efficient pricing rule. However, given the cost structures noted above, marginal cost pricing is not economically feasible. That is, marginal cost pricing is not feasible when there are increasing returns to scale because if all sales were priced at marginal cost, the vendor would be unable to defray the forward-looking costs of providing the service and would (ultimately) go

27. See William J. Baumol and Daniel G. Swanson, "The New Economy and Ubiquitous *Competitive* Price Discrimination: Identifying Defensible Criteria of Market Power," *Antitrust Law Journal*, Vol. 70, No. 3 (2003).
28. This is not the case with Marshall's sheep farming. Sheep are likely produced with constant or increasing marginal cost and the pricing complication is confined to the most efficient recovery of the marginal cost of a sheep.
29. *See*, e.g., R. R. Braeutigam, "Optimal Policies for Natural Monopolies," in R. Schmalensee and R.D. Willig (eds.), *Handbook of Industrial Organization*, vol. I, North Holland Publishers, 1989, for a review of pricing rules in the presence of scale and scope economies.

bankrupt and would have to exit the industry. Stated simply, pricing services at marginal cost in an industry with a cost structure like that of NASDAQ is a prescription for bankruptcy.[30]

49. For this reason, the services provided by a trading platform cannot be priced at marginal cost. Moreover, as we have discussed, execution services and market data are joint products. This does not mean that if one product is regarded as simply a by-product of another activity, it should be priced at a zero. Far from it: insofar as there is demand for that product at a positive price, the price for that product should be positive. Thus, even if information could be produced at zero marginal cost, economic principles mandate that it nevertheless be priced to the willing buyers at a price higher than the associated marginal cost.[31] That is, it is economically appropriate for such information to carry a positive price.

50. It is economically appropriate for information to carry a positive price in this context because if the platform incurs joint and common costs, "giving away" one product means that the other product(s) must cover all the joint and common costs.[32] This is potentially inefficient because it requires that the price of these services be raised above their respective marginal costs by more than would be necessary if the "free" product or service made some contribution to the recovery of the joint and common costs. Of course, as we have discussed, different platforms may choose different cost recovery strategies and may price one joint product at marginal cost (e.g., a platform may provide market data at "no cost") but will have to price another joint product (e.g., execution services) significantly above the appropriate marginal cost in order to remain viable.

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30. The marginal cost that we are focusing on is the additional cost incurred by the exchange in providing the information to an additional customer.
31. *See, e.g.,* W.J. Baumol and J.A. Ordover, "On the Optimality of Public Goods Pricing with Exclusion Devices," *Kyklos,* Fasc. 1, 5-21 (1977).
32. It is uncontroverted that in the absence of a platform for trading, there would be no information regarding the depth-of-book or information about prices at which trades occur. Thus, a trading platform is a "cost center" for both trade execution services and market data.

C. "Price Differentiation" in Markets with High Fixed Costs and Low Incremental Costs is Common, Efficient, and not Anticompetitive.

51. Given that marginal cost pricing is generally not feasible in high fixed cost industries, some deviations from marginal cost pricing are unavoidable. One alternative might be to charge all customers a price equal to average total cost (including a return to capital). It is, however, well known that uniform average cost pricing – that is, charging the same price equal to average cost to all customers – is not socially efficient. In general, economic efficiency in these circumstances requires that customers whose demand is more responsive to price changes pay prices closer to marginal cost as opposed to customers who are less responsive to price changes. By offering a lower price to customers whose demand is more responsive to price, the seller stimulates demand, increases overall revenue, and in fact can offer a discount off the starting price (set at an average cost) even to the less responsive customers. Economists call this type of pricing structure "differential pricing" or "price discrimination." Incidentally, this type of pricing reflects the underlying values that different consumers place on the product. To illustrate, a buyer whose demand is very responsive to price changes likely does not value the product very much above the available alternatives. Hence, this type of differentiated pricing is really a "value-driven" pricing. There is nothing problematic with such pricing once it is realized that neither marginal cost pricing nor uniform pricing are desirable from efficiency principles; and there is a great deal to recommend it.

52. Another form of differential pricing entails quantity (volume) discounts. In this pricing scenario, the incremental price (that is, the price for incremental units) falls with volume. This makes business and efficiency sense as long as the incremental price exceeds the incremental cost of the additional sales. In this case, the total volume of sales expands, which

is socially efficient, and consumers and the firm benefit.[33] In fact, volume discounts are ubiquitous in industries characterized by high fixed costs and low marginal costs.

53. Differential pricing (price discrimination) can benefit all groups of customers, provided it is implemented within some limits.[34] In particular, when competition constrains the overall profits earned by a supplier, such as is the case with trading platforms, differential pricing will, on balance, tend to benefit all customers as compared to, for example, uniform pricing. As we have discussed, competition in the provision of trading platform services is fierce. Hence, in the industry discussed here, differential pricing involving volume discounts should be encouraged rather than discouraged.

54. Differential pricing allows a provider to recover more of its fixed costs from some customers than from others and more on some units of sale than on others. For example, as we have discussed, professional investors' fees for market data generally are many times larger than fees paid by non-professional investors for the same product. That is, with this type of pricing structure both types of investors contribute to fixed costs but, all else equal, professional investors contribute more than non-professional investors on each unit purchased.

55. As we have discussed, NASDAQ's "Platform Pricing" differentiation strategy is based on two distinct criteria: (1) trading volume and (2) purchases of market information. The current proposal envisages that the marginal price (which is the increment that the customer has to pay for additional data and access to liquidity) falls with the volume of the activity and with the total volume of the trader's dealings with NASDAQ. That is, the proposed schedule exhibits effective volume discounts and also certain "bundling" of discounts. As we have discussed, volume discounts are generally procompetitive and efficiency enhancing, especially in situations like here where the marginal cost of the activity (e.g., providing market information

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33. It is also possible to combine price differentiation across customer groups with volume discounts. That is, it is possible to have different discount schedules for different customer categories.
34. This has been shown by R. D. Willig, "Pareto-Superior Non-linear Price Schedules," *Bell Journal of Economics* (1978).

to an additional consumer) is likely to be low or zero while the fixed costs are substantial. The reason is that with marginal costs low (or even zero), any price above this low marginal cost (say, equal to the average cost), suppresses output and thus lowers economic welfare. Hence, it is desirable to stimulate demand by offering volume discounts.

56. Volume discounts can improve a firm's profits *and* consumers' welfare. The firm's profit increases because additional purchases at any price above marginal cost help the firm recoup high fixed costs. Consumers' welfare increases where the policy causes consumers to purchase incremental units, which reveals that consumers obtain a net benefit from incremental purchases. This is true because the purchase of incremental units is voluntary, as is the case for depth-of-book data.

D. "Bundling" is Common and Generally Procompetitive.

57. The proposed NASDAQ price schedule provides for discounts that depend not only on volume but also on the combined spend on providing liquidity as well as the use of data. This type of pricing structure is sometimes referred to as "bundled" discounts.

58. It is not unusual for firms to offer discounts that are linked to total spend across a number of products. These types of pricing plans often reflect the fact that customers are differentiated on more than one dimension in terms of their willingness to spend on any given product. Here such differences might be differences in the willingness to pay for data and for accessing liquidity. In such a case, combining different products into one package makes it easier to design a plan that will appeal to a broader group of potential customers and stimulate overall sales than would a plan that offered discounts based only on the volume of one kind of activity or another. For example, some customers purchase substantial amounts of data but are not active in the market (e.g., market data vendors, independent software vendors, service bureaus, internet portals). Other customers may be active in the market but purchase little or no proprietary data (e.g., a small firm whose primary focus is trading at high frequencies). By

conditioning the discount on both activities, the “Platform Pricing” plan can achieve improved participation from both categories of users as compared to disaggregated plans.

59. Competitive concerns from a practice of bundling discounts across a range of products may potentially arise when such bundling-cum-discounting is used to foreclose entry (expansion) of rival firms which may not be able to offer an array of products as broad as that offered by the incumbent. In the instant case it is not likely that the combined offer will induce rival exchanges to exit (or become less competitively potent due to a reduction in volume). It is also not likely that the combined offer will have the effect of creating significant barriers to entry or expansion for new exchanges.

E. Price Differentiation is Consistent with “Fairness.”

60. “Fairness” is a concept that is often referenced in regulatory settings; however, it does not have a clear meaning in economics. Various definitions of what “fair” means have been provided in the economics literature but they are, in the end, arbitrary. The underlying idea is to propose a definition of “fairness” and then test its implications for public policy. In the current context, because we are dealing with pricing of services to different customers, the concept of fairness could be related to the permissible price differences for the same products charged to different customers (or customer groups).

61. From this perspective, one highly restrictive interpretation of the concept of fairness would be a requirement that all customers pay the same price for the same service, unless there are differences in the costs of serving them (i.e., fairness would be equated to the absence of price discrimination). In this interpretation of the fairness concept, the only permissible source of different treatment is the difference in the marginal (or incremental) cost of providing the product (service) to a customer. This view is consistent with the purely theoretical benchmark of perfect competition where all buyers pay the “marginal cost” of the good.

62. However, as we have discussed, marginal cost pricing is not feasible in a variety of realistic market settings and thus this pricing rule is not appropriate in situations like those considered in this submission. In the alternative, if all consumers have to pay the same price, non-discriminatory might mean pricing all services at an average cost.[35] There are two problems with this prescription. First, when there are joint and common costs, all calculations of average cost are arbitrary because the allocation of joint costs to different products is arbitrary. Second, such pricing is inefficient in the sense that it represses output and economic welfare relative to what could be realized with more complex pricing rules. From this brief discussion it follows that some differential treatment of different customers or customer classes should be allowed in order to promote overall economic efficiency which conduces to overall economic well-being and also serves to improve the profitability of firms.

63. So the question arises as to how far such differentiation should be allowed to go without violating some principle of fairness. Professor Gerald Faulhaber proposed that fair prices are those that are free of "cross-subsidy" of one customer group by another.[36] Cross-subsidy can be defined as a situation in which a customer (or customer group) pays more for what it purchases from a firm than what it would pay if it were not part of a broader customer group buying from that firm. In theory, the simplest benchmark for the absence of cross-subsidy is whether the price the buyer pays is below the marginal cost. If one customer pays less than the marginal cost of being served, another customer has to make up the difference by paying more than would be required if every customer covered (at least) the relevant marginal cost. In the current context, the marginal cost of serving an additional customer – be it accessing liquidity (transaction), posting offers, or obtaining information – are likely to be low, or perhaps even zero. Consequently, the rates proposed by NASDAQ in the "Platform Pricing" plan do not

35. Since average cost depends on the volume of sales, which in turn depends on prices, the average cost is calculated at the volume at which the market clears, when the price is set at average cost. There is always such an equilibrium price.
36. Gerald Faulhaber, "Cross-Subsidization: Pricing in Public Enterprises," *American Economic Review* (1975).

violate a fairness standard defined as systematically pricing below marginal cost to some customers on some purchases.

64. Professor Faulhaber also advanced a somewhat stricter definition of cross-subsidy which has been elaborated by William Baumol and Greg Sidak.[37] These authors propose that fairness requires that no group of customers should pay more for the service obtained than the incremental cost of serving them. This standard has been successfully applied for years in railroad regulation (following the passage of the Staggers Act) under the rubric of the "stand-alone cost test." Under such a test, prices to some customer groups could be conceivably quite high but even these high-paying customers obtain some benefits from sharing the facilities (such as the platform and the services it provides) with other customers.[38] Consequently, a plausible standard of fair pricing is that all customers of the vendor (such as NASDAQ) share in the benefits from participating on the platform, even if the sharing in the benefits may not be necessarily equal.[39]

65. In sum, fairness is not a core concept of microeconomics or of industrial organization. It can perhaps be best interpreted as forbidding cross subsidies among customers groups. After all is said and done, the metric of what is fair or unfair has to be imported from elsewhere from outside of the model.

66. More importantly, perhaps, differential pricing and bundled discounts should not be assessed against some abstract concept of fairness as long as these pricing practices arise

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37. William J. Baumol and J. Gregory Sidak, *Toward Competition in Local Telephony*, MIT Press, 1994.
38. In the railroad setting, shippers who are the least responsive to price – those that buy coal, for example – pay the most. Here the large buyers pay the least which is reasonable since they are likely to be relatively price-responsive demanders.
39. Some potential purchasers of depth-of-book data are distributors (e.g., Google). These customers "consume" (i.e., purchase) data without trading. However, such distributors purchase data on behalf of retail investors who can be expected to trade (i.e., a distributor would have no incentive to purchase data unless it were valued by at least some of its customers).

in a market in which there is effective competition and the practices at issue are unlikely to lead to the diminution of competition and exclusion of more or equally efficient rivals. Because there is no plausible worry that the "Platform Pricing" plan will so disadvantage some customers of NASDAQ as to distort the workings of competition in the downstream market, the proposed pricing plan raises no competition concerns.

IV. CONCLUSIONS.

67. Significant competitive forces constrain the prices charged for non-core products by NASDAQ and other platforms. At least two types of competitive forces constrain the prices that platforms can charge for non-core market information. First, a trading platform cannot generate market information unless it receives trade orders. For this reason, a platform can be expected to use its market data product as a tool for attracting liquidity and trading to its exchange. Second, even though market information from one platform may not be a perfect substitute for market information from one or more other platforms, the existence of alternative sources of information can be expected to constrain the prices platforms charge for market data.

68. There are high fixed costs of supplying the products at issue in this regulatory proceeding. Moreover, these fixed costs are also joint and common to a range of products provided by the exchanges (such as NASDAQ). Finally, the marginal or incremental costs of serving an additional customer are low or close to zero. In industries with these cost characteristics, charging all customers the same price is not economically efficient. Instead, differential pricing which includes volume discounts and "bundling" can lead to improved economic welfare and market performance.

69. NASDAQ's "Platform Pricing" is an example of this type of "differential pricing" and "bundling." Differential pricing in markets with high fixed costs and low incremental costs is common, efficient, and not anticompetitive. "Bundling" also is common and generally procompetitive. Finally, differential pricing is consistent with "fairness".

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December 29, 2010

Appendix A

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	Visiting Research Scholar Center for Law and Economics, University of Miami, Miami, Florida
Sept. 1973 - Aug. 1977	Assistant Professor of Economics New York University
Summer 1976	Fellow, Legal Institute for Economists, Center for Law and Economics, University of Miami
Summer 1976	Visiting Researcher Bell Laboratories, Holmdel, New Jersey

OTHER PROFESSIONAL ACTIVITIES

2010 – present	Member, ABA Section of Antitrust Law, Economics Task Force
2006 - present	Special Consultant, Compass Lexecon (formerly Compass)/FTI Company, Washington, D.C.
2003 - 2006	Director, Competition Policy Associates, Inc. ("Compass"), Washington, D.C.
1997 – 1999	Consultant, Inter-American Development Bank, Washington, D.C.
1997 – present	Board of Editors, *Antitrust Report*
1995 – 2001	Consultant, The World Bank, Washington, D.C.
1998 – 2004	Senior Consultant Applied Economic Solutions, Inc., San Francisco, California
1995 - 2000	Senior Affiliate Cornerstone Research, Inc., Palo Alto, California
various	Testimony at Hearings of the Federal Trade Commission
1994 - 1996	Senior Affiliate Law and Economics Consulting Group, Emoryville, California
1994 - 2000	Senior Affiliate Consultants in Industry Economics, LLC, Princeton, New Jersey
1993 - 1994	Director Consultants in Industry Economics, Inc., Princeton, New Jersey
1992 - 1993	Vice-Chair (*pro tempore*) Economics Committee, American Bar Association, Chicago, Illinois
1990 - 1991 1992 - 1995	Senior Consultant Organization for Economic Cooperation and Development, Paris, France
1991	Member *Ad hoc* Working Group on Bulgaria's Draft Antitrust Law The Central and East European Law Initiative American Bar Association
1990 - 1991	Advisor Polish Ministry of Finance and Anti-Monopoly Office Warsaw, Poland
1990 - 1991	Member Special Committee on Antitrust Section of Antitrust Law, American Bar Association
1990 - 1991	Director and Senior Advisor Putnam, Hayes & Bartlett, Inc., Washington, D.C.

1990 - 1996	Member Predatory Pricing Monograph Task Force Section of Antitrust Law, American Bar Association
1989	Hearings on Competitive Issues in the Cable TV Industry Subcommittee on Monopolies and Business Rights of the Senate Judiciary Committee Washington, D.C.
1989	Member EEC Merger Control Task Force, American Bar Association
1988 - present	Associate Member American Bar Association
1987 - 1989	Adjunct Member Antitrust and Trade Regulation Committee, The Association of the Bar of the City of New York
1984	Speaker, "Industrial and Intellectual Property: The Antitrust Interface" National Institutes, American Bar Association, Philadelphia, Pennsylvania
1983 - 1990	Director Consultants in Industry Economics, Inc
1982	Member Organizing Committee Tenth Annual Telecommunications Policy Research Conference, Annapolis, Maryland
1981	Member Section 7 Clayton Act Committee, Project on Revising Merger Guidelines American Bar Association
1980	Organizer Invited Session on Law and Economics American Economic Association Meetings, Denver, Colorado
1978 - 1979	Member Department of Commerce Technical Advisory Board Scientific and Technical Information Economics and Pricing Subgroup
1978 – present	Referee for numerous scholarly journals, publishers, and the National Science Foundation

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Economic Association
American Bar Association

PUBLICATIONS

A. Journal Articles

"Coordinated Effects in Merger Analysis: An Introduction," *Columbia Bus. Law Review*, No. 2, 2007, 411-36.

"Wholesale access in multi-firm markets: When is it profitable to supply a competitor?" with Greg Shaffer, *International Journal of Industrial Organization*, vol. 25 (5), October 2007, 1026-45.

"Merchant Benefits and Public Policy towards Interchange: An Economic Assessment," with M. Guerin-Calvert, *Review of Network Economics: Special Issue*, vol. 4 (4), December 2005, 381-414.

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"Archimedean Leveraging and the GE/Honeywell Transaction," with R. J. Reynolds, *Antitrust Law Journal*, vol. 70, no. 1, 2002, 171-98.

"Entrepreneurship, Access Policy and Economic Development: Lessons from Industrial Organizations," with M. A. Dutz and R. D. Willig, *European Economic Review*, vol. 4, no. 4-6, May 2000.

"Parity Pricing and its Critics: Necessary Condition for Efficiency in Provision of Bottleneck Services to Competitors," with W. J. Baumol and R .D. Willig, *Yale Journal on Regulation*, vol. 14, Winter 1997, 146-63.

"Competition and Trade Law and the Case for a Modest Linkage," with E. Fox, *World Competition, Law and Economics Review*, vol. 19, December 1995, 5-34.

"On the Perils of Vertical Control by a Partial Owner of Downstream Enterprise," with W.J. Baumol, *Revue D'économie industrielle*, No. 69, 3e trimestre 1994, 7-20.

"Competition Policy for Natural Monopolies in Developing Market Economy," with R.W. Pittman and P. Clyde, *Economics of Transition*, vol. 2, no. 3, September 1994, 317-343. Reprinted in B. Clay (ed), *De-monopolization and Competition Policy in Post-Communist Economies*, Westview Press 1996, 159-193.

"The 1992 Agency Horizontal Merger Guidelines and the Department of Justice's Approach to Bank Merger Analysis," with M. Guerin-Calvert, *Antitrust Bulletin*, vol. 37, no. 3, 667-688. Reprinted in *Proceedings of the 1992 Conference on Bank Structure and Competition: Credit Markets in Transition*, Federal Reserve Bank of Chicago, 1992, 541-560.

"Entry Analysis Under the 1992 Horizontal Merger Guidelines," with Jonathan B. Baker, *Antitrust Law Journal*, vol. 61, no. 1, Summer 1992, 139-146.

"Economics and the 1992 Merger Guidelines: A Brief Survey," with Robert D. Willig, *Review of Industrial Organization*, vol. 8, 139-150, 1993. Reprinted in E. Fox and J. Halverson (eds.), *Collaborations Among Competitors: Antitrust Policy and Economics*, American Bar Association, 1992, 639-652.

"Equilibrium Vertical Foreclosure: A Reply," with G. Saloner and S.C. Salop, *American Economic Review*, vol. 82, no. 3, 1992, 698-703.

"A Patent System for Both Diffusion and Exclusion," *Journal of Economic Perspectives*, vol. 5, Winter 1991, 43-60.

"R&D Cooperation and Competition," with M. Katz, *Brookings Papers on Economic Activity: Microeconomics*, 1990, 137-203.

"Equilibrium Vertical Foreclosure," with G. Saloner and S. Salop, *American Economic Review*, vol. 80, March 1990, 127-142.

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"Conflicts of Jurisdiction: Antitrust and Industrial Policy," *Law and Contemporary Problems*, vol. 50, Summer 1987, 165-178.

"Market Structure and Optimal Management Organization," with C. Bull, *Rand Journal of Economics*, vol. 18, no. 4, Winter 1987, 480-491.

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"On the Political Sustainability of Taxes," with A. Schotter, *American Economic Review Papers and Proceedings*, May 1981, 278-282.

"Information and the Law: Evaluating Legal Restrictions on Competitive Contracts," with A. Weiss, *American Economic Review Papers and Proceedings*, May 1981, 399-404.

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"On the Nonexistence of *Pareto Superior* Outlay Schedules," with J. Panzar, *The Bell Journal of Economics*, Spring 1980, 351-354.

"The Role of Information in the Design of Public Policy Towards Externalities," with R. D. Willig, *Journal of Public Economics*, December 1979, 271-299.

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B. Books and Monographs

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Obstacles to Trade and Competition, with L. Goldberg, OECD, Paris, 1993.

Predatory Pricing, with William Green, *et al.*, American Bar Association, Section of Antitrust Law, Monograph 22, 1996.

C. Book Chapters

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"Sustainable Privatization of Latin American Infrastructure: The Role of Law and Regulatory Institutions," with Evamaria Uribe, Chap. 1 in F. Basanes, E. Uribe, R. D. Willig (eds.), *Can Privatization Deliver? Infrastructure for Latin America*, The Johns Hopkins U. P. for Inter-American Development Bank, 1999, 9-32.

"Access and Bundling in High-Technology Markets," with R. D. Willig, Chap. 6, in J. A. Eisenach and T. M. Leonard, (eds.), *Competition, Innovation, and the Microsoft Monopoly: The Role of Antitrust in the Digital Marketplace*, Kluver Academic Press, 1999, 103-29.

"The Harmonization of Competition and Trade Law," with E. Fox, Chap. 15 in L. Waverman, *et al*. (eds.), *Competition Policy in the Global Economy*, Routledge, 1997, 407-439.

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"Antitrust: Source of Dynamic and Static Inefficiencies?" with W.J. Baumol, in T. Jorde and D. Teece (eds.), *Antitrust, Innovation, and Competitiveness*, Oxford University Press, 1992, 82-97. Reprinted in "The Journal of Reprints for Antitrust Law and Economics," vol. 26, no. 1, 1996.

"Economic Foundations of Competition Policy: A Review of Recent Contributions," in W. Comanor, et al., *Competition Policy in Europe and North America: Economic Issues and Institutions, Fundamentals of Pure and Applied Economics* (Vol. 43), Harwood Academic Publishers, 1990, 7-42.

"The Department of Justice 1988 Guidelines for International Operations: An Economic Assessment," with A.O. Sykes, in B. Hawk (ed.), *European/American Antitrust and Trade Laws*, Matthew Bender, 1989, 4.1-4.18.

"Predation, Monopolization, and Antitrust," with G. Saloner, in R. Schmalensee and R.D. Willig (eds.), *Handbook of Industrial Organization*, vol. 1, North Holland, 1989, 538-596.

"Supervision Technology, Firm Structure, and Employees' Welfare," in *Prices, Competition and Equilibrium*, M. Peston and R.E. Quandt (eds.), Philip Allan Publishers, Ltd., 1986, 142-163.

"Perspectives on Mergers and World Competition," with R.D. Willig, in *Antitrust and Regulation*, R. Grieson (ed.), Lexington Books, 1986, 201-218.

"Transnational Antitrust and Economics," in *Antitrust and Trade Policies in International Trade*, B. Hawk (ed.), Matthew Bender, 1985, 233-248.

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"Non-Price Anticompetitive Behavior by Dominant Firms Toward the Producers of Complementary Products," with A.O. Sykes and R.D. Willig, in *Antitrust and Regulation: Essays in Memory of John McGowan*, F. Fisher (ed.), MIT Press, 1985, 315-330.

"Local Telephone Pricing in a Competitive Environment," with R.D. Willig, in *Regulating New Telecommunication Networks*, E. Noam (ed.), Harcourt Brace Jovanovich, 1983, 267-289.

"An Economic Definition of Predatory Product Innovation," with R.D. Willig, in *Strategy, Predation and Antitrust Analysis*, S. Salop (ed.), Federal Trade Commission, 1981, 301-396.

"Marginal Cost," in *Encyclopedia of Economics*, D. Greenwald (ed.), McGraw-Hill, 2nd ed. 1994, 627-630.

"Understanding Economic Justice: Some Recent Development in Pure and Applied Welfare Economics," in *Economic Perspectives*, M. Ballabon (ed.) Harwood Academic Publishers, vol. 1, 1979, 51-72.

"Problems of Political Equilibrium in the Soviet Proposals for a European Security Conference," in *Columbia Essays in International Affairs*, Andrew W. Cordier (ed.) Columbia University Press, New York, 1971, 1951-197

D. Other Publications

"The 2010 Horizontal Merger Guidelines: A Static Compass in a Dynamic World," with Jay Ezrielev, *Antitrust Source*, October 2010, available at www.antitrustsource.com

"The Economics of Price Discrimination," with Doug Fontaine and Greg Shaffer, in *The Economics of the Internet, The Vodafone Policy Paper Series*, No. 11, April 11, 2010, 27-51.

"How Loyalty Discounts Can Perversely Discourage Discounting: Comment," with Assaf Eilat, et al, *The CPI Antitrust Journal*, April 2010 (1).

"Economic Analysis in Antitrust Class Certification: *Hydrogen Peroxide*," with Paul Godek, *Antitrust Magazine*, vol. 24, No. 1, Fall 2009, pp. 62-65.

"Comments on Evans & Schmalensee's 'The Industrial Organization of Markets with Two-Sided Platforms', *Competition Policy International*, vol. 3(1), Spring 2007, 181-90.

"Safer Than A Known Way? A Critique of the FTC's Report on Competition and Patent Law and Policy," with I. Simmons and D. A. Applebaum, *Antitrust Magazine*, Spring 2004, 39-43.

"Predatory Pricing," in Peter Newman (ed.), *The New Palgrave Dictionary of Economics and the Law*, Grove Dictionaries, New York, 1999. Revised in *The New Palgrave Dictionary of Economics, 2nd edition,* S. Durlauf and L. Blume (editors) (forthcoming 2007).

Book review of L. Phlips, *Competition Policy: A Game Theoretic Perspective*, reviewed in *Journal of Economic Literature*, vol. 35, No.3, September 1997, 1408-9.

“The Role of Efficiencies in Merger Assessment: The 1997 Guidelines,” *Antitrust Report*, September 1997, 10-17.

“Bingaman’s Antitrust Era,” *Regulation*, vol. 20, No. 2, Spring 1997, 21-26.

"Competition Policy for High-Technology Industries," *International Business Lawyer*, vol. 24, No. 10, November 1996, 479-82.

"Internationalizing Competition Law to Limit Parochial State and Private Action: Moving Towards the Vision of World Welfare," with E.M. Fox, *International Business Lawyer*, vol. 24, No. 10, November 1996, 458-62.

"Economists' View: The Department of Justice Draft for the Licensing and Acquisition of Intellectual Property," *Antitrust*, vol. 9, No. 2, Spring 1995, 29-36.

"Competition Policy During Transformation to a Centrally Planned Economy: A Comment," with R.W. Pittman, in B. Hawk (ed.), *1992 Fordham Corporate Law Institute*, 533-38.

"Poland: The First 1,000 Days and Beyond," E*conomic Times*, vol. 3, no. 9, October 1992, 6-7.

"Interview: Janusz A. Ordover: A Merger of Standards? The 1992 Merger Guidelines,” *Antitrust*, vol. 6, no. 3, Summer 1992, 12-16.

"Interview: U.S. Justice Department's New Chief Economist: Janusz A. Ordover," *International Merger Law*, no. 14, October 1991.

"Poland: Economy in Transition," *Business Economics*, vol. 26, no. 1, January 1991, 25-30.

"Economic Analysis of Section 337: Protectionism versus Protection of Intellectual Property," with R.D. Willig, in *Technology, Trade and World Competition*, JEIDA Conference Proceedings, Washington, D.C., 1990, 199-232.

"Eastern Europe Needs Antitrust Now," with E. Fox, *New York Law Journal*, November 23, 1990, 1-4.

"Understanding Econometric Methods of Market Definition," with D. Wall, *Antitrust*, vol. 3, no. 3, Summer 1989, 20-25.

"Proving Entry Barriers: A Practical Guide to Economics of Entry," with D. Wall, *Antitrust*, vol. 2, no. 2, Winter 1988, 12-17.

"Proving Predation After Monfort and Matsushita: What the New 'New Learning' has to Offer," with D. Wall, *Antitrust*, vol. 1, no. 3, Summer 1987, 5-11.

"The Costs of the Tort System," with A. Schotter, Economic Policy Paper No. PP-42, New York University, March 1986. Reprinted in *Congressional Record*, U.S. Government Printing Office, Washington, D.C., 1987.

"An Economic Definition of Predation: Pricing and Product Innovation," with R.D. Willig, Report for the Federal Trade Commission, October 1982, 131 pp.

"Market Power and Market Definition," with R.D. Willig, Memorandum for ABA Section 7 Clayton Act Committee, Project on Revising the Merger Guidelines, May 1981.

"Herfindahl Concentration Index," with R.D. Willig, Memorandum for ABA Section 7 Clayton Act Committee, Project on Revising the Merger Guidelines, March 1981.

"Public Interest Pricing of Scientific and Technical Information," Report for the Department of Commerce Technical Advisory Board, September 1979.

"Economics of Property Rights as Applied to Computer Software and Databases," with Y.M. Braunstein, D.M. Fischer, W.J. Baumol, prepared for the National Commission on New Technological Uses of Copyrighted Works, June 1977, 140 pp. Reprinted in part in *Technology and Copyright*, R.H. Dreyfuss (ed.), Lemond Publications, 1978.

Book review of O. Morgenstern and G.L. Thompson, *Economic Theory of Expanding and Contracting Economies*, reviewed in *Southern Economic Journal*, September 1978.

"Manual of Pricing and Cost Determination for Organizations Engaged in Dissemination of Knowledge," with W.J. Baumol, Y.M. Braunstein, D.M. Fischer, prepared for the Division of Science Information, NSF April 1977, 150 pp.

UNPUBLISHED PAPERS

“Exclusionary Discounts,” with Greg Shaffer, August 2006.

“Regulation of Credit Card Interchange Fees and Incentives for Network Investments,” with Y. Wang, Competition Policy Associates WP, Washington D.C. September 2005.

"Economics, Antitrust and the Motion Picture Industry," C.V. Starr Center Policy Paper, July 1983.

"On Bargaining, Settling, and Litigating: A Problem in Multiperiod Games With Imperfect Information," with A. Rubinstein, C.V. Starr Working Paper, December 1982.

"Supervision and Social Welfare: An Expository Example," C.V. Starr Center Working Paper, January 1982.

"Should We Take Rights Seriously: Economic Analysis of the Family Education Rights Act," with M. Manove, November 1977.

"An Echo or a Choice: Product Variety Under Monopolistic Competition," with A. Weiss; presented at the Bell Laboratories Conference on Market Structures, February 1977.

GRANTS RECEIVED

Regulation and Policy Analysis Program, National Science Foundation, Collaborative Research on Antitrust Policy, Principal Investigator, July 15, 1985 - December 31, 1986.

Regulation of Economic Activity Program, National Science Foundation, Microeconomic Analysis of Antitrust Policy, Principal Investigator, April 1, 1983 - March 31, 1984.

Economics Division of the National Science Foundation, "Political Economy of Taxation," Principal Investigator, Summer 1982.

Sloan Workshop in Applied Microeconomics (coordinator), with W.J. Baumol (Principal Coordinator), September 1977 - August 1982.

Economics Division of the National Science Foundation, "Collaborative Research on the Theory of Optimal Taxation and Tax Reform," July 1979 to September 1980, with E.S. Phelps.

Division of Science Information of the National Science Foundation for Research on "Scale Economies and Public Goods Properties of Information," W.J. Baumol, Y.M. Braunstein, M.I. Nadiri, Fall 1974 to Fall 1977.

National Science Foundation Institutional Grant to New York University for Research on Taxation and Distribution of Income, Summer 1974.

Appendix B

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EDUCATION

Ph.D., UNIVERSITY OF CHICAGO, 1987, GRADUATE SCHOOL OF BUSINESS

M.B.A., UNIVERSITY OF CHICAGO, 1984, GRADUATE SCHOOL OF BUSINESS

B.A., SOUTHWESTERN AT MEMPHIS, 1981

EMPLOYMENT

COMPASS LEXECON (formerly Lexecon), Chicago, Illinois (3/87-Present): Senior Vice President

UNIVERSITY OF CHICAGO, (1984, 1986): Lecturer

GOVERNORS STATE UNIVERSITY, (1986): Community Professor

UNIVERSITY OF CHICAGO, (1982-1986): Teaching Assistant

UNIVERSITY OF CHICAGO, (1982-1986): Research Assistant

ACADEMIC HONORS AND FELLOWSHIPS

University of Chicago Fellowship, 1981-1984

H.B. Earhart Fellowship, 1985-1986

RESEARCH PAPERS

"Antitrust and Higher Education: Was There a Conspiracy to Restrict Financial Aid?" co-authored with D. Carlton and R. Epstein, RAND Journal of Economics, (Vol. 26, No. 1, Spring 1995, pp. 131-147).

"Antitrust and Higher Education: MIT Financial Aid (1993)," co-authored with D. Carlton, in The Antitrust Revolution: Economics, Competition, and Policy, John Kwoka and Lawrence White, eds., 1998.

"Airline Networks and Fares", co-authored with D. Carlton, in Handbook of Airline Economics, 2nd ed., Darryl Jenkins, ed., 2003.

"Revisiting Maximum Resale Price Maintenance: State Oil v. Khan (1997), in The Antitrust Revolution: Economics, Competition, and Policy, John Kwoka and Lawrence White, eds., 2004.

"An Empirical Investigation of the Competitive Effects of Domestic Airline Alliances," co-authored with D. Carlton and L. Neumann, Journal of Law and Economics, (Vol. 47, No. 1, April 2004, pp. 195-222).

"Predation and the Entry and Exit of Low-Fare Carriers," co-authored with D. Carlton, in Advances in Airline Economics: Competition Policy and Antitrust, Darin Lee, ed., 2006.

TESTIMONIAL EXPERIENCE

Direct, Rebuttal and Cross-Examination Testimony of Gustavo E. Bamberger on behalf of Producer - Marketers Transportation Group, before the Illinois Commerce Commission in Docket No. 90-0007, April 24, 1990 (Direct); July 6, 1990 (Rebuttal); and May 30, 1990 and August 3, 1990 (Cross-Examination).

Testimony of Gustavo E. Bamberger in Re: United States of America v. Irving A. Rubin: In the U.S. District Court for the Northern District of Illinois, Eastern Division, No. 91 CR 44-2, December 3, 1993.

Testimony of Gustavo E. Bamberger in Re: Center for Public Resources Arbitration, E. Merck and EM Industries, Incorporated, against Abbott Laboratories, February 8, 1994.

Deposition and Testimony of Gustavo E. Bamberger in the Matter of: Michael R. Sparks, Debtor: In the United States Bankruptcy Court for the Northern District of Illinois, Eastern Division, No. 92 B 21692, May 9, 1994 (Deposition and Testimony).

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Statement of John P. Gould and Gustavo E. Bamberger on Implementing Legislation for the Uruguay Round of GATT (S. 2467) (Pioneer Preference Provisions) Before the Senate Commerce Commission, November 14, 1994.

Report and Deposition of Gustavo E. Bamberger in Re: Khan, et al. v. State Oil Company; In the U.S. District Court for the Northern District of Illinois, Eastern Division, No. 94 C 00035, May 30, 1995 (Report); and July 27, 1995 (Deposition).

Statement and Supplemental Statement of Alan O. Sykes and Gustavo E. Bamberger in Re: Fresh Tomatoes and Bell Peppers, Investigation No. TA-201-66, United States International Trade Commission, June 3, 1996 (Statement); and June 10, 1996 (Supplemental Statement).

Testimony of Gustavo E. Bamberger in Re: Wisconsin Public Service Corporation; WPS Energy Services, Inc.; and WPS Power Development, Inc.: Before the Federal Energy Regulatory Commission, Docket No. ER96-1088-000, July 22, 1996.

Pre-Filed Direct, Rebuttal and Re-Direct Testimony of Gustavo E. Bamberger in Re: Disapproval of Rate Filings for American Casualty Company of Reading, Pennsylvania, and Continental Casualty Company, Before the State Office of Administrative Hearings (Texas), SOAH Docket No. 454-96-0800, September 10, 1996 (Direct); September 16, 1996 (Rebuttal); and September 27, 1996 (Re-Direct).

Affidavit of Gustavo E. Bamberger in Re: Summit Family Restaurants Inc., a Delaware Corporation; HTB Restaurants Inc., a Delaware Corporation; and CKE Restaurants Inc., a Delaware Corporation vs. HomeTown Buffet, Inc., a Delaware Corporation; and Buffets, Inc., a Minnesota Corporation: In the U.S. District Court for the District of Utah, Central Division, No. 96 CV 0688B, September 17, 1996.

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Statement, Report and Deposition of Gustavo Bamberger in Re: American Optical Corporation, Warner-Lambert Company, LLC, and W-L LLC v. Admiral Insurance Company, et al.: In the Superior Court of New Jersey Law Division: Union County, Docket No. UNN-L-2505-01, December 13, 2007 (Statement); December 26, 2007 (Report); and February 12, 2008 (Deposition).

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Declaration, Deposition, Reply Declaration and Deposition of Gustavo Bamberger in Re: Payment Card Interchange Fee and Merchant-Discount Antitrust Litigation: In the United States District Court, Eastern District of New York, Master File No. 1:05-md-1720-JG-JO, May 8, 2008 (Declaration); July 30-31, 2008 (Deposition); January 29, 2009 (Reply Declaration); and May 27, 2009 (Deposition).

Statement of Janusz Ordover and Gustavo Bamberger, filed with the Securities and Exchange Commission, Release No. 34-57917, on behalf of NASDAQ Stock Market, August 1, 2008.

Expert Report, Deposition, Expert Rebuttal Report, Testimony, Rebuttal Testimony, Supplemental Expert Report, Supplemental Expert Rebuttal Report and Deposition of Gustavo Bamberger in Re: Valassis Communications, Inc. v. News America Incorporated, a/k/a News America Marketing Group, News America Marketing FSI, Inc. a/k/a News America Marketing FSI, LLC and News America Marketing In-Store Services, Inc. a/k/a News America Marketing In-Store Services, LLC: In the United States District Court, Eastern District of Michigan, Southern Division, Case No. 2:06-cv-10240 and State Court of Michigan, in the Circuit Court for the County of Wayne, Case No. 07-706645-CZ, November 21, 2008 (Expert Report); December 23, 2008 (Deposition); February 6, 2009 (Expert Rebuttal Report); Testimony (June 11, 2009); Rebuttal Testimony (July 16, 2009); Supplemental Expert Report (December 21, 2009); Supplemental Expert Rebuttal Report (January 14, 2010); and Deposition (January 19, 2010) (Case No. 2:06-cv-10240 only for Supplemental Reports and second deposition).

Brief of Evidence of Dennis William Carlton and Gustavo Ernesto Bamberger, Affidavit of Gustavo Ernesto Bamberger in support of amended notice of opposition by the Commerce Commission to the amended notice of application by the bank defendants and the notice of application by MasterCard for orders as to admissibility of evidence, and Reply Brief of Evidence of Dennis William Carlton and Gustavo Ernesto Bamberger in the Matter of: The Commerce Commission, Plaintiff and Cards NZ Limited, First Defendant and others and DSE (NZ) Limited, First Plaintiff and others and Card NZ Limited, First Defendants and others: In the High Court of New Zealand Auckland Registry, CIV 2006-485-2535 and CIV-2006-485-2693, May 4, 2009 (Brief of Evidence); May 20, 2009 (Affidavit); September 4, 2009 (Reply Brief).

Expert Report of Gustavo Bamberger in Re: Valassis Communications, Inc. v. News America Incorporated, a/k/a News America Marketing Group, News America Marketing FSI, Inc. a/k/a News America Marketing FSI, LLC and News America Marketing In-Store Services, Inc. a/k/a News America Marketing In-Store Services, LLC: In the Superior Court of the State of California for the County of Los Angeles, May 11, 2009.

Affidavit of Gustavo Ernesto Bamberger in opposition to application by plaintiff for stay of execution, Brief of Evidence of Gustavo Ernesto Bamberger, Summary Statement of Gustavo Bamberger and Testimony in the Matter of: Todd Pohokura Limited, Plaintiff and Shell Exploration NZ Limited, First Defendant and OMV New Zealand Limited, Second Defendant: In the High Court of New Zealand Wellington Registry, CIV 2006-485-1600, November 4, 2009 (Affidavit); November 25, 2009 (Brief of Evidence); March 25, 2010 (Summary Statement); and March 25-26, 29-30 (Testimony).

Report of Gustavo Bamberger, Report of Gustavo Bamberger on the Revised January 6, 2010 Plan and Deposition in Re: Pittsburgh Corning Corporation: In the United States Bankruptcy Court for the Western District of Pennsylvania, Case No. 00-22876 JKF, November 13, 2009 (Report); January 28, 2010 (Report on Revised Plan); and February 22, 2010 (Deposition).

Report and Reply Report of Dennis W. Carlton and Gustavo E. Bamberger and Cross-Examination of Gustavo E. Bamberger in Re: Air Canada and Toronto Port Authority and Porter Airlines Inc.: Federal Court, File No. 10-T-6, February 5, 2010 (Report); May 18, 2010 (Reply Report); and June 15, 2010 (Cross-Examination).

Expert Report of Daniel R. Fischel and Gustavo E. Bamberger in Re: Genetically Modified Rice Litigation: In the United States District Court, Eastern District of Missouri, Eastern Division, Texana Rice Mill, Ltd., et al. v. Bayer CropScience, LP, et al., Case No. 4:07-cv-00416 CDP; Gulf Pacific Rice Co., Inc., et al. v. Bayer CropScience, LP, et al., Case No. 4:08-cv-1545-CDP; Phoenix Advisors Limited v. Bayer CropScience, LP, et al., Case No. 4:08-cv-1794-CDP; Farmers Rice Milling Co., Inc. v. Bayer CropScience, LP, et al., Case No. 4:07-cv-01780-CDP; Kennedy Rice Dryers, L.L.C. v. Bayer CropScience, LP, et al., Case No. 4:07-cv-01773-CDP; Planters Rice Mull, L.L.C. v. Bayer CropScience, LP, et al., Case No. 4:07-cv-01795-CDP; Beaumont Rice Mills, Inc. v. Bayer CropScience, LP, et al., Case No. 4:07-cv-00524-CDP; Master Case No. 4:06 MD 1811 CDP, April 23, 2010.

Expert Report of Daniel R. Fischel and Gustavo E. Bamberger and Deposition of Gustavo E. Bamberger in Re: Genetically Modified Rice Litigation: In the United States District Court, Eastern District of Missouri, Eastern Division, Tilda Ltd v. Riceland Foods, Inc., Producers Rice Mill, Inc., Bayer Cropscience Inc., and Bayer Cropscience LP; Producers Rice Mill, Inc. v. Bayer Cropscience LP and Bayer Cropscience Holding Inc., Bayer Corporation, Bayer Cropscience AG, Bayer AG, and Bayer Bioscience nv, Case No. 4:07-Cv-00457, Master Case No. 4:06 MD 1811 CDP, July 14, 2010 (Expert Report); and September 15, 2010 (Deposition).

Declaration of Gustavo Bamberger in Re: Credit/Debit Card Tying Cases: In the Superior Court for the State of California, City and County of San Francisco, J.C.C.P. No.: 4335, July 29, 2010.

Expert Report of Daniel R. Fischel, Gustavo E. Bamberger and David K.A. Mordecai in Response to the Reports of Professors Carter and Babcock in Re: Genetically Modified Rice Litigation: In the United States District Court, Eastern District of Missouri, Eastern Division, Master Case No. 4:06 MD 1811 CDP, July 30, 2010.

Expert Report of Daniel R. Fischel, Gustavo E. Bamberger and David K.A. Mordecai in Response to the Report of Dr. Ford in Re: Genetically Modified Rice Litigation: In the United States District Court, Eastern District of Missouri, Eastern Division, Master Case No. 4:06 MD 1811 CDP, July 30, 2010.

Report of Dennis W. Carlton and Gustavo E. Bamberger for Vector Limited to the New Zealand Commerce Commission, August 23, 2010.

Expert Report of Gustavo Bamberger in Re: JOC Inc. T/A Summit Exxon and Sung Eel Chang Auto, Inc. T/A Ashwood Exxon vs. ExxonMobil Oil Corporation: In the United States District Court for the District of New Jersey, Civil Action No.: 08-05344 (FSH) (PS), September 27, 2010.

EXHIBIT B

Letter from Joan Conley, Senior Vice President, NASDAQ OMX Group, Inc.
(Apr. 4, 2011) (with exhibits)

JOAN CONLEY
SENIOR VICE PRESIDENT
9600 BLACKWELL ROAD
ROCKVILLE, MD 20850
P: (301) 978-8735
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April 4, 2011

Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F. Street, N.E.
Washington, D.C. 20549-1090

Re: Suspension of Proposed "Platform Pricing" Proposal
Release No. 34-63796, File No. SR-NASDAQ-2011-10

Dear Ms. Murphy:

The NASDAQ Stock Market LLC ("NASDAQ") submits this letter in support of its proposal to lower prices for depth-of-book market data and for execution services ("the Proposed Rule").[1] The Securities and Exchange Commission ("Commission") temporarily suspended the Proposed Rule, thereby delaying the effectiveness of the price reductions. As explained in detail in the initial proposal,[2] the Proposed Rule "is an attempt by NASDAQ to compete to attract retail investors' orders" in an environment in which alternative trading systems with lower regulatory costs have attracted retail order flow to dark platforms and away from traditional "lit" exchanges.[3] The proposed discount is itself *prima facie* evidence of intense market competition. It is highly irregular for regulators to block price reductions, particularly those targeted to benefit retail investors.

The underlying fees for NASDAQ depth-of-book market data and execution services are not in dispute; those fees will survive whether NASDAQ's Proposed Rule is approved or

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1 *See* Exchange Act Release No. 34-63796 (Jan. 28, 2011); 76 Fed. Reg. 6,165 (Feb. 3, 2011) (order temporarily suspending SR-NASDAQ-2011-010) ("Suspension Order").

2 *See* Exchange Act Release No. 34-63745 (Jan. 20, 2011); 76 F.R. 4970 (Jan. 27, 2011) (Notice of Filing and Immediate Effectiveness of SR-NASDAQ-2011-010) ("Proposed Rule") at 1-2.

3 *See* Findings Regarding The Market Events Of May 6, 2010, Report Of The Staffs Of The CFTC And SEC To The Joint Advisory Committee On Emerging Regulatory Issues, September 30, 2010, at 56.

disapproved. The sole question posed by the Commission's suspension is whether two separate differential discounts—each approved by the Commission previously—can be structured as a single discount with two elements: in other words, can NASDAQ offer a discount to members that consume high volumes of non-professional market data and simultaneously provide high volumes of liquidity?

Specifically, NASDAQ's proposal contains two price reductions, both of which differentiate between user groups and both of which the Commission has previously approved. ***First***, NASDAQ proposes to lower fees for depth-of-book market data that NASDAQ members provide to non-professional users; there is no discount offered for market data provided to professional users. The data discount is also volume-based; the more data provided to non-professional users, the greater the discount offered. The Commission has for many years approved pricing that differentiates between professional and non-professional market data users as well as pricing that differentiates between low volume and high volume users. ***Second***, NASDAQ proposes to lower execution prices by increasing liquidity provider rebates for members that provide a high level of liquidity. Again, the Commission has long approved pricing that differentiates between low volume and high volume liquidity providers.

The Securities Industry and Financial Markets Association ("SIFMA") and NetCoalition submitted a comment letter opposing the price reductions ("SIFMA Comment"). That comment misunderstands both the nature of the Proposed Rule and why the Commission temporarily suspended it. SIFMA devotes nearly its entire comment letter to challenging NASDAQ's underlying fees for depth-of-book data and execution services rather than addressing the price discount that NASDAQ proposes here. As explained in detail below, SIFMA's comment is based entirely on the mistaken assertion that NASDAQ exercises "monopoly" power in the sale of market data and on a misreading of the D.C. Circuit's recent decision in *NetCoalition v. Securities and Exchange Commission*, 615 F.3d 525 (D.C. Cir. 2010). SIFMA is notably silent on the particular concerns that motivated the Commission to temporarily suspend the Proposed Rule—namely, whether the proposed discount is a "tying arrangement" that might render it not equitable or fair, or unreasonably discriminatory.[4]

This is not surprising because the proposed discount is not a tying arrangement at all. Rather, it is an attempt by NASDAQ to provide incentives to its best customers—who are courted aggressively by NASDAQ's competitors—to purchase two NASDAQ products in high volumes and to use market data discounts as a "carrot" to attract additional retail order flow to the exchange. The empirical evidence, described below, demonstrates that even if it were fairly characterized as a tying arrangement, the intensely competitive nature of the marketplace would remove any concern about the proposal.[5] The proposed reduction in market data costs is but one of many competitive tools—including an attractive trading platform, liquidity rebates, and customer service—that exchanges employ in their competitive efforts to attract order flow. These competitive forces ensure that NASDAQ's pricing proposal is equitable, fair, and not

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4 Proposed Rule Change at 4.

5 Statement of Randall Hopkins of NASDAQ Stock Market LLC ("Hopkins Statement") at ¶¶ 3-5 (Apr. 4, 2011).

unreasonably discriminatory, because NASDAQ would be punished quickly in the competitive marketplace by the loss of trading volume if it deviated from such an approach.

I. NASDAQ's "Platform Pricing" Proposal Is Procompetitive And Consistent With The Purposes Of The Exchange Act.

This proposal is for a discount—specifically, a discount on fees that NASDAQ currently charges for its depth-of-book data products to member firms that service non-professional investors and direct a certain volume of order flow each month to the exchange.[6] Moreover, this proposal is for a discount on prices that the Commission has already concluded is "fair and reasonable."[7]

This proposed discount is driven by the intense competition for order flow among traditional exchanges and ATS's, and is one of many strategies that exchanges can use to secure order flow through competitive pricing, discounts, and rebates on linked products. The proposed discount has the additional benefit of promoting the broad distribution of market data by providing a lower price to customers that distribute the data to their users. Discounts driven by competition, such as in the Proposed Rule, are good for consumers and good for the marketplace as a whole. Because these discounts are procompetitive and promote the broad distribution of market data, the Commission ought to encourage exchanges to offer them.

SIFMA and NetCoalition have provided no reason to conclude otherwise. Despite their conclusory assertions regarding NASDAQ's supposed "regulatory monopoly" over market data and "[s]upracompetitive pricing,"[8] they nowhere explain how NASDAQ's discounts could possibly constitute an exercise of monopoly power or harm competition in any segment of the marketplace.[9] Although the Commission's regulatory mandate does not overlap perfectly with the antitrust laws, where the issue before the Commission is the extent to which an exchange's pricing practices are subject to competitive forces, the tools developed by the courts interpreting the antitrust laws provide a useful framework upon which the Commission can draw. For example, the courts have developed an extensive body of law for determining the extent to which a firm has the power to set prices free from the constraints of competition. And the courts have provided extensive guidance regarding the extent to which various pricing practices are likely to be beneficial to competition and consumers or, on the other hand, destructive of competition and harmful to overall consumer welfare. As discussed below, an assessment of the evidence

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6 *See* Proposed Rule Change at 8-9.

7 *See, e.g.*, Order Approving Proposed Rule Change, Release No. 34-46843, 67 Fed. Reg. 70,471, 70,472 (Nov. 18, 2002).

8 SIFMA Comment at 2-3.

9 The Commission has repeatedly rejected SIFMA's "regulatory monopoly" canard. SIFMA members can route orders to 13 national securities exchanges, to FINRA, and to 40 other ATS venues that are exchanges in everything but name. It is abundantly clear that no SIFMA member is compelled to send orders to NASDAQ or to any exchange.

relating to NASDAQ and the current pricing proposal in light of the doctrines developed under the antitrust laws demonstrates clearly that (a) NASDAQ faces intense competition, which constrains NASDAQ's pricing, and (b) NASDAQ's proposed discount will benefit consumers and has no realistic probability of harming competition or reducing consumer welfare.

Courts have been justifiably wary of claims that offering discounts is somehow evidence of monopolistic or anticompetitive behavior.[10] Indeed, "the Supreme Court has urged great caution and a skeptical eye" when dealing with a claim that a firm has unfairly discounted its products.[11] That is because "[l]ow prices benefit consumers regardless of how those prices are set, and so long as they are above predatory levels, they do not threaten competition."[12] The Commission should likewise take a skeptical eye toward the commenters' objection to NASDAQ's proposal to provide a discount to customers in a competitive marketplace.

The Commission should likewise be skeptical about the commenters' objection to NASDAQ's proposal to provide a discount to customers in a competitive marketplace.

A. NASDAQ is not a monopolist in the sale of market data.

While the commenters argue that NASDAQ's fee proposals should be subject to a heightened standard of review because NASDAQ supposedly has a "monopoly" in the sale of market data, the commenters offer nothing but a bare assertion that NASDAQ is a monopolist.[13] That assertion flies in the face of the marketplace evidence.

SIFMA does not even attempt to analyze the markets in which NASDAQ competes, which is an essential step in determining whether a firm has monopoly power.[14] For this reason alone, the commenters' contentions about monopoly power should be rejected out-of-hand. The

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10 *See, e.g., Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993) ("discouraging a price cut and forcing firms to maintain supracompetitive prices . . . does not constitute sound antitrust policy"); *Cargill, Inc. v. Monfort of Col., Inc.*, 479 U.S. 104, 116 (1986) ("The kind of competition that Monfort alleges here, competition for increased market share, is not activity forbidden by the antitrust laws. It is simply, as petitioners claim, vigorous competition. To hold that the antitrust laws protect competitors from the loss of profits due to such price competition would, in effect, render illegal any decision by a firm to cut prices in order to increase market share. The antitrust laws require no such perverse result, for it is in the interest of competition to permit dominant firms to engage in vigorous competition, including price competition." (internal quotations and citations omitted)).

11 *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1060 (8th Cir. 2000).

12 *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 340 (1990).

13 SIFMA Comment at 2.

14 *See, e.g., Heerwagen v. Clear Channel Commc'ns*, 435 F.3d 219, 229 (2d Cir. 2006) ("a plaintiff claiming *monopolization* is obligated to establish the relevant market because the power to control prices or exclude competition only makes sense with reference to a particular market").

commenters simply assert that NASDAQ is a monopolist, apparently because NASDAQ's market data products are not identical to other exchanges' data products. [15] The courts, however, have overwhelmingly rejected the argument that a firm is a monopolist in its own product simply because that product is differentiated from other firms' products. As the Supreme Court has explained, "where there are market alternatives that buyers may readily use for their purposes, illegal monopoly does not exist merely because the product said to be monopolized differs from others."[16] A firm that offers a differentiated product is not a monopolist if its product is "reasonably interchangeable by consumers for the same purposes."[17] In *NetCoalition*, the D.C. Circuit adopted this approach, explaining that the test for market competitiveness is whether there "exists a 'reasonably interchangeable' substitute in the same market."[18]

Here, the evidence shows overwhelmingly that a broad set of customers of NASDAQ's data products view them to be reasonably interchangeable with other exchanges' data products, and that NASDAQ competes intensely with other exchanges for the sale of its data products.[19] As set forth by Drs. Ordover and Bamberger, in June 2008 NASDAQ launched two proprietary "Last Sale" data products. In each case, the terms included subscription rates and an "enterprise cap" rate designed for Web portals. The enterprise cap rate for customers who purchased both products was $150,000. The majority of NASDAQ's sales were at the cap level. In early 2009, BATS offered an alternative product (BATS PITCH data) as a "free" alternative to the NASDAQ Last Sale products. Also early in 2009, NYSE Arca announced the launch of a competitive product with an enterprise price of $30,000 per month. In response, in April 2009, NASDAQ combined the two Last Sale products into one and reduced the enterprise cap to $50,000—a reduction of $100,000 per month in response to these competitive offerings.

Similarly, Drs. Ordover and Bamberger explained that in late 2009, a member notified NASDAQ that in the absence of a fee reduction for "non-displayed use" of depth data, the member would move order flow from NASDAQ to a competing platform. After meeting with the member and analyzing the potential loss of trading volume, NASDAQ sought and obtained SEC approval for an Enterprise License for non-displayed use of certain depth data.[20]

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[15] SIFMA Comment at 2.

[16] *See, e.g., United States v. E.I. duPont de Nemours & Co.*, 351 U.S. 377, 394 (1956).

[17] *Id.* at 395; *see also, e.g., Town Sound & Custom Tops, Inc. v. Chrysler Motors Corp.*, 959 F.2d 468, 479 (3d Cir. 1992) (rejecting argument that Chrysler cars constitute a single-brand market). Moreover, evidence that some customers may have a preference for one supplier's differentiated product does not support defining a market limited to one firm's products. *See, e.g., Tanaka v. Univ. of S. Cal.*, 252 F.3d 1059, 1065 (9th Cir. 2001).

[18] *NetCoalition*, 615 F.3d at 542.

[19] Statement of Janusz Ordover and Gustavo Bamberger, File No. SR-NASDAQ-2011-010 (Dec. 29, 2010) ("Ordover/Bamberger Report"), at ¶¶ 24, 26-27, 29.

[20] *See* Release No. 61,700 (March 12, 2010); 75 Fed. Reg. 13,172 (March 18, 2010) (approving SR-NASDAQ-2010-034). Of course, the Enterprise License is available to all data users that qualify for it by its terms.

The dynamic and intense nature of competition for the sale of data products is amply illustrated by the high rate of customer losses and gains experienced by NASDAQ. For example, in 2010 NASDAQ lost 68 customers for depth-of-book data—nearly half of the customers to which it sold depth-of-book data in 2009—and added more than twice that number of new customers in the same period. *See infra* at 19. Similarly, the evidence shows that individual customers have reduced their users of NASDAQ depth-of-book data by as much as 86 percent in a year. *See id.* This evidence plainly shows that customers can and do readily switch from one provider of data products to another. And it eviscerates any conclusory assertion that NASDAQ is a monopolist merely because the data in its products may be differentiated from other exchanges' data products.[21]

In addition, the courts have recognized that where two products are linked, competition in a primary market can prevent the exercise of market power over the linked product. For example, in *SMS Systems Maintenance Services v. Digital Equipment Corp.*, the court rejected an argument that a seller of computer equipment was a monopolist in the sale of aftermarket servicing of its equipment, because the manufacturer constantly competed for new equipment customers and its behavior in the aftermarket could influence customer purchases in the competitive equipment market.[22] The court explained that "[u]nless the evidence shows that the manufacturer can exert raw power in the aftermarket without regard for commercial consequences in the foremarket, the aftermarket is not [a] relevant market" that can be subject to monopoly power.[23]

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21 *See, e.g.*, *Town Sound*, 959 F.2d at 480 (a properly defined antitrust market "includes actual or potential competitors who may take business away from each other"; rejecting claim that Chrysler had monopoly power where "Chrysler cars compete vigorously with many other companies' automobiles").

22 188 F.3d 11, 16-17 (1st Cir. 1999) ("[T]he naked fact that a manufacturer has a high percentage of the market for servicing its own products does not mean that it can raise the price of services or parts with impunity in that market. Reputation is important to a firm that constantly competes for new customers, and a manufacturer's behavior in the aftermarket probably will be scrutinized by customers shopping for the firm's products in the primary market. If the firm has a bad reputation, that will prompt potential customers to go elsewhere. Moreover, such a firm eventually will suffer defections from its installed base as well, for firms concerned with the long term cannot afford to bite the hands that feed them. Under such circumstances, it ordinarily captures the reality of the marketplace to envision a firm's behavior in the aftermarket as having a direct effect on the 'cross-elasticity of demand' with respect to its products in the primary market." (internal quotations and citations omitted)).

23 *Id.* at 17; *see also, e.g.*, *Queen City Pizza v. Domino's Pizza*, 124 F.3d 430, 437, 440 (3d Cir. 1997) (rejecting an argument that Domino's was a monopolist in an alleged market "for ingredients, supplies, materials and distribution services used in the operation of Domino's stores," because, *inter alia*, the "franchisees could assess the potential costs and economic risks" of the franchise relationship at the time they entered into the relationship and "the franchise transaction . . . was subjected to competition at the pre-contract stage").

SIFMA argues that "platform" competition should not be considered in evaluating the competitive forces that constrain NASDAQ's pricing of its data products because "market data is a fixed cost of trading," which supposedly would prevent a trader from switching from platform to platform for particular trades if it had already paid a monthly fee for data from a particular platform.[24] This argument simply ignores the nature of competition among trading platforms. The evidence shows that customers can, and frequently do, switch their trading volume from platform to platform, including in response to the total costs of trading on a particular platform.[25] The evidence also demonstrates that NASDAQ does, in fact, compete for order flow by enhancing the quality of its data products and/or lowering the price of its data products.[26] Indeed, the purpose of the proposed price discount is to enable NASDAQ to engage in precisely this type of competition.

SIFMA's claim that market data is a "fixed cost" is flawed in several respects. First, it vastly overstates the level of monthly fees paid by particular users, which are hardly of a level that could meaningfully lock investors into an undesirable trading platform. NASDAQ depth-of-book data is inexpensive by any measure. For a fee of $15 per month, data distributors can provide non-professional users access to full depth of book data for all securities traded on NASDAQ. This equates to seventy five cents per trading day, two-tenths of a penny per minute, $0.002 per month per stock quoted or traded on NASDAQ, or $0.00000006 per trading message contained in NASDAQ's depth-of-book feeds.[27] Moreover, many non-professional users benefit from a much lower rate than $15, due to usage fee caps for distributors. For the six biggest distributors of non-professional NASDAQ depth-of-book, the average rate in January was $10.38, which covers distribution to 109,015 users.[28]

Second, even if these modest fees could be viewed as locking customers into the NASDAQ platform for a month, nothing would prevent customers from switching to another platform—and, importantly, redirecting trading volume—at the end of any given month.[29] SIFMA's own expert concedes this point, as he asserts that once a month is over, customers may

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24 SIFMA Comment at 5.

25 *See* Ordover/Bamberger Report at ¶¶ 12, 14, 24, 28-29. For example, BATS Trading began trading on January 27, 2006. By June 2008, it accounted for 7.5 percent of trading in NYSE-listed stocks and 10.3 percent of trading in NASDAQ-listed stocks. *Id.* ¶ 14. The evidence collected by Drs. Ordover and Bamberger also shows that exchanges and other trading platforms compete with each other on pricing, such as when NYSE Euronext changed its prices in 2007 to compete more effectively with rival trading platforms. *Id.* ¶ 24. *See also supra* at 5.

26 *See id.* at ¶¶ 26, 29. *See also supra* at 5.

27 Hopkins Statement at ¶ 11.

28 *Id.* at ¶ 12.

29 Reply Statement of Janusz Ordover and Gustavo Bamberger, File No. SR-NASDAQ-2011-010 (Apr. 4, 2011) ("Ordover/Bamberger Rebuttal Report"), at ¶¶ 5, 18-19.

stop making trades on an exchange if market data is too expensive.[30] Plainly, no rational exchange would risk losing order flow for the ephemeral benefit of exploiting traders who might not switch until the end of a month because of a small monthly fee.

B. There is no basis for SIFMA's demand that NASDAQ justify its price for data in relation to its costs.

Based on the fiction that NASDAQ is a monopolist, SIFMA would require NASDAQ to prove that it is subject to competitive forces by comparing its prices for data products to "the cost of 'collecting and distributing' market data."[31] There is no basis in economics, competition law, or the Commission's precedents for this proposed requirement.

Contrary to the commenters' proposed approach, the courts have recognized that "it is always treacherous" to try to infer the existence of monopoly power based on a comparison of a firm's prices and costs.[32] As an initial matter, a comparison of price to "the cost of 'collecting and distributing' market data," as the commenters propose, would have no meaning whatsoever to a determination of whether NASDAQ possesses monopoly power if that test were understood only to include marginal costs, rather than also take account of NASDAQ's substantial *fixed costs*.[33] And while evidence of a supracompetitive price in relation to *total* costs may satisfy a theoretical definition of monopoly power, it is rarely possible to determine what an "excessive" or "supracompetitive" rate of return might be. As Judge Posner has explained, "there is not even a good economic theory that associates monopoly power with a high rate of return."[34] These difficulties are particularly pronounced with respect to products (such as NASDAQ's data products) that are characterized by a high ratio of fixed to variable costs and where the fixed costs are spread between multiple linked products.[35]

For this reason, the courts generally assess whether a firm has monopoly power not through the price-cost analysis proposed by SIFMA, but rather by evaluating the set of reasonably interchangeable products (market definition), the suppliers' shares of the market, the existence of barriers to entry, and other factors that permit an assessment of whether the alleged

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30 David S. Evans, Response to Ordover and Bamberger's Statement Regarding NASDAQ's Proposed Rule Change Concerning the Pricing of Depth-of-Book Data, File No. SR-NASDAQ-2011-010 (Mar. 21, 2001) ("Evans Response"), at 12 n.24; 16 n.30.

31 SIFMA Letter at 3.

32 *See, e.g., Blue Cross & Blue Shield v. Marshfield Clinic*, 65 F.3d 1406, 1411-12 (7th Cir. 1995) ("a reasonable finder of fact cannot infer monopoly power just from higher prices . . . and it is always treacherous to try to infer monopoly power from a high rate of return"); *In re Remeron Direct Purchaser Antitrust Litig.*, 367 F. Supp. 2d 675, 683 (D.N.J. 2005).

33 *See, e.g.*, William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 Harv. L. Rev. 937, 939 (1981) ("When the deviation of price from marginal cost . . . simply reflects certain fixed costs, there is no occasion for antitrust concern.").

34 *Marshfield Clinic*, 65 F.3d at 1412.

35 *See* Ordover/Bamberger Report at ¶¶ 19-21, 45-50.

monopolist has the ability to control prices and exclude competition.[36] As discussed above, the evidence of this nature shows that NASDAQ is subject to intense competitive pressures from other exchanges, which precludes a conclusion that NASDAQ is a monopolist in the sale of any of the products at issue here.

C. The proposed discount is not a "tying arrangement" and presents no threat of harm to competition or consumers.

NASDAQ's pricing proposal is not a tying arrangement. Moreover, even if the proposal could fairly be deemed a tying arrangement, the proposal does not give rise to any meaningful risk of harm to competition, consumers, or the efficient function of the markets at issue here. The courts have extensively analyzed tying arrangements in the context of the antitrust laws, and in doing so they have recognized that tying arrangements can often have procompetitive benefits and enhance consumer welfare. As the Supreme Court has explained, "[i]t is clear . . . that every refusal to sell two products separately cannot be said to restrain competition. . . . Buyers often find package sales attractive; a seller's decision to offer such packages can merely be an attempt to compete effectively."[37] Therefore the courts have circumscribed the situations in which tying arrangements should be prohibited as being anticompetitive.[38] This analysis demonstrates that the concerns expressed under antitrust law in relation to certain types of tying arrangements do not apply to NASDAQ's proposal.

The Supreme Court has explained that a tying arrangement is "an agreement by a party to sell one product [the tying product] but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier."[39] The potential competitive harm from a tying arrangement arises from "the seller's

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[36] "Where evidence indicates that a firm has in fact profitably [raised prices substantially above the competitive level,] the existence of monopoly power is clear. Because such direct proof is only rarely available, courts more typically examine market structure in search of circumstantial evidence of monopoly power. Under this structural approach, monopoly power may be inferred from a firm's possession of a dominant share of a relevant market that is protected by entry barriers." *United States v. Microsoft Corp.*, 253 F.3d 34, 51 (D.C. Cir. 2001) (citations omitted); *see also Heerwagen*, 435 F.3d at 227 (courts generally rely on indirect evidence because direct evidence of monopoly power is "often difficult or impossible to prove"); *In re Remeron*, 367 F. Supp. 2d at 680 n.7 ("although not explicitly forbidding a direct evidence approach, the Third Circuit has emphasized the importance of establishing monopoly power by the traditional market definition approach, i.e. first defining a relevant market by product interchangeability or crossprice elasticity of demand and then determining monopoly power therein by evaluating market share").

[37] *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 11-12 (1984).

[38] *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 35 (2006) (explaining that "[o]ver the years, . . . this Court's strong disapproval of tying arrangements has substantially diminished," and noting that the Court has therefore "reject[ed] the application of a *per se* rule that all tying arrangements constitute antitrust violations").

[39] *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 5-6 (1958).

exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms."[40]

These concerns do not arise from NASDAQ's pricing proposal. As an initial matter, there is no tie. Customers are not required to purchase a tied product from NASDAQ. Nor are they required to forgo purchases of any product from any competitor. NASDAQ is continuing to offer all of its products separately, at prices approved by the Commission as fair and reasonable. In these circumstances, there is no tying arrangement and the concerns sometimes associated with such arrangements do not arise. As the Supreme Court recognized more than half a century ago, "where the buyer is free to take either product by itself, there is no tying problem even though the seller may also offer the two items as a unit at a single price."[41]

Moreover, even if NASDAQ's proposal were presumed (contrary to the evidence) to require purchasers who trade on NASDAQ's platform to purchase NASDAQ's data (or vice versa), there is no evidence to support a conclusion that competition in any market would be harmed by such a requirement. Under antitrust law, it is well established that tying arrangements should not be universally condemned, because they may have substantial procompetitive effects that benefit consumers.[42] Accordingly, absent proof that a tying arrangement creates foreclosure in the tied product market, the courts do not condemn tying arrangements under the antitrust laws.[43] There is no evidence of any such effects here.

To the contrary, the evidence discussed above shows robust competition between NASDAQ and other platforms with respect to all of its products. And if NASDAQ's competitors saw that they were losing customers by virtue of NASDAQ's discount, those competitors could seek to offer discounts of their own or otherwise enhance their product offerings. This is the essence of competition, and the benefits to consumers from such competition are obvious. Indeed, the only parties that might conceivably be harmed by NASDAQ's proposed pricing are NASDAQ's competitors if customers find NASDAQ's proposed discount attractive. That is not the sort of harm that the Commission should be acting to prevent.[44]

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40 *Jefferson Parish*, 466 U.S. at 12.

41 *N. Pac. Ry.*, 356 U.S. at 6 n.4; *accord Jefferson Parish*, 466 U.S. at 12.

42 *Ill. Tool*, 547 U.S. at 35-36, 46.

43 *See id.*; *Jefferson Parish*, 466 U.S. at 13-14, 16.

44 *See, e.g., Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977) (where the defendant's conduct allegedly harmed competitors, but the harm was caused by more vigorous competition, it would be "inimical to the purposes of [the antitrust] laws" to permit the allegedly harmed competitors to have standing to sue under a theory that was "designed to provide them with the profits they [only] would have realized had competition been reduced").

D. The commenters' expert acknowledges that there is nothing anticompetitive about the proposed discount.

Tellingly, SIFMA's expert implicitly acknowledges that there is nothing anticompetitive about the Proposed Rule itself, because it is "on its face" a discount.[45] Dr. Evans nonetheless speculates that there could possibly be anticompetitive effects in the future if NASDAQ were to raise the "non-discounted" price of its depth-of-book products to supracompetitive levels. *Id.* But any such fee proposal would itself be subject to review by the Commission and should be considered only if and when it is proposed. The mere possibility that NASDAQ may raise its fees at a later time is hardly reason to disapprove a rule that will benefit investors by lowering prices.

II. Differential Pricing In Response To Competitive Market Conditions Does Not Unreasonably Discriminate Between Market Participants.

The Commission has for many years accepted multiple pricing structures that result in differential pricing that permits exchanges to charge less to customers that contribute more:

- ***Volume tiers:*** Equity and options pricing has long included volume tiers that provide discounts to the heaviest liquidity providers, highly capitalized broker/dealers or takers;

- ***Fee caps:*** Many exchanges have fee caps and enterprise licenses that favor heavy users of a system over other users;

- ***Professional vs. Non-professional data recipients:*** Different recipients pay different fees for the same market data based upon their status;

- ***Equity Investors:*** The Commission has accepted the sale and purchase of equity ownership in exchanges predicated upon incentives for continued order flow provision;

- ***Directed Participants:*** Several exchanges have programs differentiating between participants that accepted directed orders and those that do not;

- ***Order Capacity Differentiation:*** The options exchanges have differentiated between retail customers and professional customers, broker/dealers clearing in the "Firm" range at the Options Clearing Corp, broker/dealers registered as market makers, away market makers, early-adopting market makers, and many others; and

- ***Order Handling Methods:*** The Commission has permitted price differentiation based on whether an order is processed manually versus electronically.

Before reversing this history of prudent price differentiation, the Commission is obligated to perform an in-depth analysis of the justifications for and impacts of existing price differentiation, and to distinguish through principle why existing differentiation is permitted but NASDAQ's

[45] Evans Report at 20 n.35.

proposed differentiation is not.

The Suspension Order states that the Commission has expressed concern about exchanges favoring participants in its own exchange over participants in other exchanges.[46] The Suspension Order, drafted by the Staff pursuant to delegated authority, cites only one Commission order ostensibly expressing such concern. That order is unavailing for several reasons. First, the proposal under review there did not even attempt to favor participants in its own exchange over participants in other exchanges; any statement on that issue was dicta. Second, that proposal did not involve a differential price discount of any sort. Third, that case did not involve the attempted linking of discounts for purchasers of market data and execution services.

SIFMA also contends that the proposed discount unfairly favors retail over professional investors.[47] Their comment concludes, without meaningful analysis, that this differential price is "unreasonably discriminatory" and thus in violation of the Exchange Act.[48] However, contrary to SIFMA's proposed approach, under which differential pricing should apparently be condemned automatically without any analysis of its purpose or effects, the Commission, courts, and commentators have long recognized that differentiation in the prices, terms, and conditions of sale can enhance competition and ultimately result in lower prices for consumers, and therefore should only be precluded where there is evidence of harm to competition. Such evidence is entirely missing here.

Contrary to SIFMA's proposed approach, it is broadly recognized by courts and commentators that over-deterrence of differential pricing is likely to be harmful to competition and consumers. For example, in *Brooke Group*, the Supreme Court explained that the Robinson-Patman Act "condemns price discrimination only to the extent that it threatens to injure competition," that "Congress did not intend to outlaw price differences that result from or further the forces of competition," and that the statute should be "construed consistently with broader policies of the antitrust laws."[49] Similarly, Professor Herbert Hovenkamp, the co-author of the leading treatise on antitrust law, has stated that overbroad enforcement of the prohibition against price discrimination in the Robinson-Patman Act may discourage procompetitive price differences. In particular, he explained that differential pricing "resulting from an upstream firm's unilateral pricing decisions must enjoy a very strong presumption that [it is] socially beneficial and not 'anticompetitive' in any economically acceptable sense of that term."[50] Thus, a supplier should be able to reward more aggressive dealers by giving them price discounts and

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46 Suspension Order at 5.

47 SIFMA Comment at 8-9.

48 *See* 15 U.S.C. § 78k-1(c)(1)(D).

49 509 U.S. at 220.

50 H. Hovenkamp, Antitrust Law ¶ 2342b (2d ed. 2006); H. Hovenkamp, *The Robinson-Patman Act and Competition: Unfinished Business*, 68 Antitrust L.J. 125, 127 (2000).

rebates to increase the competitiveness of its distribution system and volume of sales.[51] Prof. Hovenkamp cautioned that all buyers would suffer from a broad prohibition against selective price cuts, because sellers would likely respond to such a prohibition by not making any price cuts at all to avoid the cost of extending them to all buyers.[52] Such conduct would contribute to price rigidity and effectively establish a price floor,[53] and it would also facilitate or help maintain price coordination.[54]

These concerns were echoed by the Antitrust Modernization Commission ("AMC"), a bipartisan blue-ribbon panel created by Congress in 2004 to study and report to the President and Congress on the state of antitrust enforcement in the United States. The AMC's Report and Recommendations, which were issued in 2007, cautioned strongly against aggressive enforcement against differential pricing, explaining that there were "many legitimate, pro-competitive reasons" for differential pricing.[55] For example, the AMC found that volume discounts can allow sellers to achieve certain scale economies in production[56] and facilitate new entry when the seller can selectively offer its products to large buyers at prices that are lower than those charged by incumbent competitors.[57] In addition, sellers can use volume discounts to introduce their products to new customers or to reward distributors for high sales and aggressive promotion of their products.[58] Overall, the AMC's Report concluded that a broad prohibition against differential pricing would be detrimental to consumers because it would discourage price discounts that midstream buyers can pass on to consumers.[59]

For many of these reasons, the Commission historically has permitted differential pricing in the sale of market data products, except in those limited instances in which such pricing would interfere with the operation of the national market system—for example, by providing quicker access to some market participants of the "top of book" data that broker dealers are required to access pursuant to their duty of best execution.[60] With respect to the "depth of book" data at

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51 *Id.*; H. Hovenkamp, Testimony on Robinson-Patman Act, Antitrust Modernization Commission, at 8 (June 2, 2005), *at* http://govinfo.library.unt.edu/amc/commission_hearings/pdf/Hovenkamp.pdf (last visited on Apr. 2, 2011).

52 H. Hovenkamp, Antitrust Law ¶ 2340b.

53 American Bar Association, Comments of the Section of Antitrust Law of the American Bar Association in Response to the Antitrust Modernization Commission's Request for Public Comment Regarding Robinson-Patman Act Study Issues 7-8 (Apr. 2006).

54 H. Hovenkamp, Antitrust Law ¶ 2340b.

55 Antitrust Modernization Commission, Report and Recommendations ("AMC Report"), at 318-320, *at* http://govinfo.library.unt.edu/amc/report_recommendation/chapter4.pdf (last visited on Apr. 2, 2011).

56 *Id.* at 319.

57 *Id.* at 320.

58 *Id.*

59 AMC Report at 318-319.

60 *See* Regulation NMS, 70 Fed. Reg. 37,496, 37,569 (June 29, 2005).

issue in the Proposed Rule, however, the Commission has determined that "market forces, rather than regulatory requirements," should dictate the quantity and type of data purchased by investors.[61]

In the same spirit, the Commission has acknowledged that exchanges can offer different prices to "particular classes of subscribers" based on market conditions such as "their economic circumstances and their need for and use of . . . information."[62] Indeed, the Commission has previously approved or cited favorably to differential pricing between retail and non-retail investors, including with respect to the very depth-of-book products at issue here.[63] Far from undermining the purposes of the Exchange Act, the Commission found that such differential pricing "provide[s] an opportunity for many investors to have access to the enhanced data provided by these services, which should help to increase transparency."[64]

In short, the circumstances in which the Commission or courts might seek to prohibit differential pricing are not present here. There is no evidence that the proposed discount would impair the functioning of the national market system[65] or otherwise result in predatory prices or threaten to injure competition among exchanges or customers.[66] Indeed, any of the exchanges that compete with NASDAQ could choose to respond to the proposed pricing by NASDAQ by offering its own discounts on its data products (whether bundled or unbundled), which would enhance competition and benefit consumers. This competition is precisely why the Proposed Rule differentiates based on type of investor and amount of order flow: it is a response to competition for retail order flow from trading platforms such as BATS Exchange and Direct Edge.[67] Consistent with the Commission's past precedent, it is not "unreasonably discriminatory" to provide a discount in response to the price sensitivities of a particular segment of the market; rather, it is the essence of competition.

Simply put, investor protection is furthered by the lowering of prices as a result of robust competition, not by a regulatory paradigm that enforces price rigidity and uniformity while looking askance at attempts to reduce prices. As Congress and the Commission both recognize, nothing is more important to fostering a national market system than competition—and few things are more important to competition than the ability to quickly alter prices or other terms to respond to competition or win a significant new customer. Price rigidity and uniformity are

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61 *Id.* at 37,567; *see also id.* at 37,597 ("efficiency is promoted when broker-dealers may choose to receive (and pay for) additional market data based on their own internal analysis of the need for such data").

62 *See* Concept Release, Regulation of Market Information Fees and Revenues, 64 Fed. Reg. 70,613, 70,630 (Dec. 17, 1999).

63 *See* Order, 67 Fed. Reg. at 70,472; *see also* Concept Release, 64 Fed. Reg. at 70,630-31.

64 Order, 67 Fed. Reg. at 70,472.

65 70 Fed. Reg. at 37,569.

66 *Brooke Group*, 509 U.S. at 220, 224.

67 *See* Proposed Rule Change at 3-4.

signs of a stagnant market, not a vibrant one; regulation of differential pricing should be reserved to anticompetitive conduct that impedes the objectives of the securities laws.

III. The D.C. Circuit's Decision In *NetCoalition* Provides Broad Discretion To The Commission To Rely On Competitive Forces To Determine Whether Fees Are "Fair And Reasonable."

In their submission, SIFMA and NetCoalition rely on a misreading of the D.C. Circuit's *NetCoalition* decision—arguing that NASDAQ must submit evidence on the marginal costs of collecting and distributing market data to prove that the Proposed Rule is "fair and reasonable." That is incorrect.

It was the intent of Congress in creating the national market system to rely on competitive forces, where possible, to set the price of market information.[68] Indeed, the Commission has already considered and rejected a cost-of-service ratemaking approach to setting market data fees, adopting an approach that relies on "market forces, rather than regulatory requirements," to determine the prices of depth-of-book products.[69] As an Advisory Committee appointed by the Commission to review market data issues explained, "the 'public utility' cost-based ratemaking approach is resource-intensive, involves arbitrary judgments on appropriate costs, and creates distortive economic incentives."[70]

The Commission's rejection of cost-based ratemaking in favor of reliance on market forces mirrors the experience of other federal agencies that have come to reject cost-of-service ratemaking as a cumbersome and impractical process that stifled, rather than fostered, competition and innovation.[71] It also mirrors the approach generally followed for assessing market power under the antitrust laws—that is, using a structural or "market definition" approach, rather than becoming entangled with elusive proof of supracompetitive pricing through cost-based analysis.[72]

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68 *See* Conference Report, H.R. Rep. No. 94-229, 94th Cong., 1st Sess. 92 (1975), at 92 ("It is the intent of the conferees that the national market system evolve through the interplay of competitive forces as unnecessary regulatory restrictions are removed.").

69 Regulation NMS, 70 Fed. Reg. 37,496, 37,566-37,568 (Jun. 29, 2005).

70 Report of the Advisory Committee on Market Information: A Blueprint for Responsible Change, at § VII.D.3 (SEC Sept. 14, 2001). *See also* Stephen G. Breyer, *Analyzing Regulatory Failure: Mismatches, Less Restrictive Alternatives, and Reforms*, 92 Harv. L. Rev. 547, 565 (1979) ("insofar as one advocates price regulation . . . as a 'cure' for market failure, one must believe the market is working very badly before advocating regulation as a cure. Given the inability of regulation to reproduce the competitive market's price signals, only severe market failure would make the regulatory game worth the candle.").

71 *See, e.g., Elizabethtown Gas Co. v. FERC*, 10 F.3d 866, 870 (D.C. Cir. 1993).

72 *See supra* at 8 n.33.

In *NetCoalition*, the D.C. Circuit rejected SIFMA and NetCoalition's argument that the Exchange Act requires the Commission to employ cost-based ratemaking to determine whether proposed fees are "fair and reasonable."[73] To the contrary, the D.C. Circuit blessed the Commission's decision to rely on "competitive forces" in approving a proposed rule—as long as it has a "reasoned basis" for doing so.[74] SIFMA and NetCoalition simply ignore the D.C. Circuit's stamp of approval on market-based methods for determining the reasonableness of fees.

Although *NetCoalition* also acknowledged that cost data could be relevant in determining reasonableness, it did not require the submission of such data in every case; for example, it acknowledged submission of cost data may be inappropriate where there are "difficulties in calculating the direct costs . . . of market data."[75] That is the case here, as shown in NASDAQ's expert reports, due to the fact that the fixed costs of market data production are inseparable from the fixed costs of providing NASDAQ's trading platform, and the marginal costs of market data production are minimal or even zero.[76]

Moreover, the D.C. Circuit allowed that the Commission could substantiate rules based on "alternative indicator[s] of competitiveness,"[77] as long as the evidence in the record supported it. For example, *NetCoalition* specifically contemplated that an exchange could rely, as NASDAQ does here, on the "'total platform' theory whereby market data and trade executions are 'joint products' with 'joint costs' at each trading 'platform,' or exchange."[78] The D.C. Circuit merely rejected the fee schedule submitted by NYSE Arca in support of its ArcaBook depth-of-book product because, on the record in that case, there was insufficient evidence that competitive forces constrained the price.[79]

In short, SIFMA and NetCoalition mistake the D.C. Circuit's flexible, market-based analysis in which cost data may be relevant for a rigid requirement that exchanges submit the "costs of collecting and distributing market data" in support of every proposal.[80] And they mistakenly assume that the reference in *NetCoalition* to "costs of collecting . . . market data" can only refer to *marginal cost*, rather than the *fixed costs* associated with maintaining a platform for order execution—which is essential to creating and collecting the raw data that NASDAQ incorporates into its depth-of-book products. Thus, fixed platform costs *are* costs of "collecting"

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73 *NetCoalition*, 615 F.3d at 534.

74 *Id.* at 544.

75 *Id.* at 539 (internal citation omitted).

76 *See* Ordover/Bamberger Report at ¶ 19 & n.8; Ordover/Bamberger Rebuttal Report at ¶¶ 21-22.

77 *NetCoalition*, 615 F.3d at 539.

78 *Id.* at 542 n.16.

79 *See id.* at 544.

80 *Id.* at 537.

market data.[81] SIFMA and NetCoalition's mandatory "marginal cost" analysis is not what *NetCoalition* requires, does not make sense as a matter of economics, and is not supported by the purposes underlying the Exchange Act or the Commission's past practice.

IV. Because There Is A Reasoned Basis For Concluding That The Proposed Rule Is Procompetitive, It Satisfies The D.C. Circuit's Decision In *NetCoalition*.

Under a proper reading of *NetCoalition*, there can be no doubt that NASDAQ's proposed discount is fair and reasonable. As an initial matter, in holding that the Commission could rely on market forces to determine whether data fees are reasonable, the D.C. Circuit cited favorably to the Commission's prior approval of NASDAQ's depth-of-book products.[82] The reasonableness of NASDAQ's fees, in other words, has already been determined by the Commission and is not at issue. All that is at issue is the reasonableness of NASDAQ's proposed *discount* on its previously-filed, currently effective fees. For the reasons stated in Parts I and II, *supra*, because the discount itself does not raise any anticompetitive concerns, the Proposed Rule should be approved under *NetCoalition* without further analysis.

But even assuming that NASDAQ needs to show in this filing that market forces constrain the previously-approved, non-discounted prices of its data fees, the evidence in the record here more than satisfies the *NetCoalition* standard. None of the concerns that led the D.C. Circuit to find the evidentiary record lacking in *NetCoalition* apply here.

First, whereas in *NetCoalition* the Court said the Commission had provided no explanation as to why it did not consider the marginal cost of data products in determining whether competition adequately constrained the price of fees, the D.C. Circuit suggested that the "joint products" theory set forth by NASDAQ's experts could provide the needed answer.[83] Indeed, that explanation applies here. An exchange's execution services and market data products are "joint products" that share common costs, because "every execution of a trade automatically produces another potential product, namely information about that trade (such as the price and quantity traded)."[84] Because the costs of providing execution services and market data are not unique to either of the provided services, there is no meaningful way to allocate those costs among the "joint products"—and any attempt to do so would result in inherently arbitrary cost allocations.[85]

Critically, Dr. Evans agrees in his report that "[m]arket data are a byproduct of the trading process"—thus implying that joint costs underlie both the operation of a trading platform and the production of market data.[86] Moreover, Dr. Evans does not dispute that, because of the

81 Ordover/Bamberger Rebuttal Report at ¶¶ 6-7.

82 *NetCoalition*, 615 F.3d at 537.

83 *Id.* at 542 n.16.

84 Ordover/Bamberger Report at ¶ 19.

85 *See id.* at ¶ 19 n.8.

86 *See* Evans Response at 4; Ordover/Bamberger Rebuttal Report at ¶ 4.

high fixed costs associated with the joint production of market data and trading, market data products cannot be priced at marginal cost.[87] Rather, Dr. Evans merely speculates that it is possible that the price of one joint product, market data, could "cross-subsidize" the costs of the other, execution services.[88]

But Dr. Evans has admitted in other academic writings that there are examples of competitive "two-sided markets" where joint products are sold at asymmetrical prices to recover the joint costs of providing a product or service—such as a newspaper that serves both advertisers and readers.[89] In such markets, "profits may be maximized by highly asymmetric pricing in which one group is served at a price close to or even below marginal cost, and most or all gross margin is earned by serving the other group."[90] Dr. Evans's suggestion that, even in competitive industries, some products may be sold at *below marginal cost* to recover joint costs of production stand in stark contrast to his conclusion here that asymmetric pricing in execution services and market data is evidence of "cross-subsidization" and anticompetitive behavior.[91]

Moreover, Dr. Evans's speculation about "cross-subsidization" is not evidence, and any attempt by the Commission to prove that theory would require undertaking the impossible task of allocating joint costs of production between NASDAQ's market data and execution services.[92] The Commission should decline the invitation to do so.[93]

Second, unlike in *NetCoalition*, there is substantial evidence in the current record that the market for depth-of-book data products is fluid and robust, and specifically that consumers of

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87 Ordover/Bamberger Rebuttal Report at ¶¶ 6-7.

88 Evans Response at ¶ 21.

89 *See* Ordover/Bamberger Rebuttal Report at ¶ 24.

90 *Id.*

91 The Commission itself has tolerated pricing below marginal cost, as is the case when an exchange offers a liquidity rebate (negative price) that exceeds the execution fee charged (positive price). Several exchanges have operated in this "inverted" pricing model in an attempt to attract order flow.

92 Ordover/Bamberger Rebuttal Report at ¶¶ 22-23.

93 While Dr. Evans asserts that his theory of "cross-subsidies" is empirically verified by his belief that "trading venues use revenue from consolidated tape data to compete for order flow," that is incorrect. Evans Response at 17. To the contrary, the practice of "market data revenue sharing," in which exchanges shared revenue from core data with their members, has all but vanished from the marketplace. NASDAQ, for example, diminished its market data revenue sharing program when it became an exchange in 2006 and eliminated it altogether in 2008. *See* Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Modifying Pricing for Nasdaq Members Using the Nasdaq Market Center, Release No. 34-57924, 73 Fed. Reg. 33,477 (June 12, 2008). This is a reflection of a competitive environment in which fees for both core and non-core data have consistently declined in real, and often in absolute, terms.

NASDAQ's depth-of-book product have different data needs, subscribe at different levels, and are sensitive to changes in price. Dr. Evans's claim that NASDAQ exercises monopoly power over the price of market data based on his "understanding" that depth-of-book data is "essential information" for certain traders is nothing more than mere speculation.[94] Rather, the evidence plainly shows that competitive forces exercise significant constraints on the price that exchanges can charge for market data.

For example, there is substantial turnover in customers for NASDAQ's depth-of-book products. At the end of 2009, NASDAQ had 145 clients that purchased depth-of-book data for internal purposes.[95] In 2010, NASDAQ lost 68 of those clients (*i.e.*, 47 percent of its year-end customer count) and added another 179.[96] During 2009, NASDAQ lost 38 clients and added another 60.[97] If it were "essential" for traders to have access to NASDAQ's data, one would not expect this degree of turnover.

In addition, NASDAQ charges distributors of its depth-of-book products a monthly $1,000 "distributor fee" and a monthly "usage fee" of $70 per month per professional or corporate subscriber.[98] NASDAQ internal distribution clients can reduce the amount of information they purchase by reducing the number of subscribers who receive the data feed. *See id.* For example, over the last year, a "Bulge Bracket" firm that purchased NASDAQ depth-of-book data reduced its number of subscribers by 86 percent (from 341 to 56).[99] Similarly, a major "Buy Side" firm that purchased NASDAQ depth-of-book data reduced its number of subscribers by 60 percent (from 327 to 132).[100] Again, if it were "essential" for traders to purchase depth-of-book data, one would not expect this year-to-year variation.

There is also variation in subscription levels among users of NASDAQ's data. For example, NASDAQ offers separate subscriptions for depth-of-book information for stocks listed on NASDAQ ("Tape C" information) and for stocks listed on the NYSE and American Stock Exchange ("Tape A/B" information). If certain traders needed to see the entire market before deciding where to execute an order, it would stand to reason that all depth-of-book subscribers would purchase both Tape A/B and C data.[101] But that is not the case: Rather, NASDAQ has about 20 percent more subscribers for its Tape C than for its Tape A/B depth-of-book product, even though the tape A/B product is less expensive, and even though as of February 2011 NASDAQ accounted for 11.9 percent of trading in NYSE-listed stocks.[102]

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[94] Evans Response at 12, 13.

[95] Ordover/Bamberger Rebuttal Report at ¶ 12; Hopkins Statement at ¶ 7.

[96] *Id.*

[97] *See id.*

[98] *See* Ordover/Bamberger Rebuttal Report at ¶ 13.

[99] *See id.*; Hopkins Statement at ¶ 8.

[100] *See* Ordover/Bamberger Rebuttal Report at ¶ 13; Hopkins Statement at ¶ 8.

[101] *See* Ordover/Bamberger Rebuttal Report at ¶ 15; Hopkins Statement at ¶ 10.

[102] *See id.*

Finally, there is clear evidence that users of NASDAQ's depth-of-book data products are sensitive to changes in price. For example, in October 2003, NASDAQ reduced the price for its "TotalView" depth-of-book product from $150 to $70 per month per subscriber (for professional investors).[103] The result was a marked increase in subscriptions to TotalView: From 1,345 professional subscribers in August 2003 to 6,767 in January 2004, an increase of a factor of more than five.[104] This demonstrates that there were a large number of potential buyers who were unwilling to purchase TotalView at $150 per month but were willing at the price of $70 per month.[105] This is precisely the type of evidence that the D.C. Circuit found lacking in *NetCoalition*—"the number of potential users of the data [and] how they might react to a change in price."[106]

Third, the D.C. Circuit expressed concern as to whether competition for order flow could exercise a significant competitive constraint on depth-of-book data fees, because a relatively small percentage of total investors purchase depth-of-book data.[107] Even Dr. Evans, however, ultimately concedes that this competitive constraint exists: "If an exchange sets the monthly price so high that few traders purchase it, then the number of traders placing orders on that exchange for any stock would likely be reduced. *One of the costs of setting the subscription price too high is then the loss of order flow revenue.*"[108]

Indeed, the D.C. Circuit suggested that competition for order flow *could* exercise a competitive constraint if it were shown that the small number of depth-of-book data users directed a substantial volume of orders to the exchange.[109] That is the case here. The heaviest users of NASDAQ trade execution services typically purchase data on a "direct access" basis, and also "co-locate" a server in the NASDAQ data center. NASDAQ currently has 104 such customers (including for example, major investment banks and hedge funds). Those customers direct a substantial amount of order flow to the exchange.[110] For example, there are 27 customers who purchase NASDAQ's depth-of-book data at the NASDAQ data center and direct all of their order flow to NASDAQ through that "co-location" center (that is, they do not contribute order flow to NASDAQ through some other location that may or may not purchase depth data).[111] Using this conservative estimate, those 27 customers alone contribute

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[103] *See* Ordover/Bamberger Rebuttal Report at ¶ 14; Hopkins Statement at ¶ 9.

[104] *See id.*

[105] *See id.*

[106] *NetCoalition*, 615 F.3d at 542-43.

[107] *See id.* at 541 n.14.

[108] Evans Response at 16 n.30 (emphasis added); Ordover/Bamberger Rebuttal Report at ¶ 5.

[109] *See* 15 F.3d at 541 n.14.

[110] *See* Hopkins Statement at ¶ 6.

[111] *See id.*

approximately 22% of NASDAQ's total volume of order flow—plainly enough to constrain the price that NASDAQ can charge for its market data.[112]

Indeed, NASDAQ has also provided the Commission with evidence of this very competitive constraint in practice: In late 2009, NASDAQ reduced the price for "non-displayed use" of depth data after being notified by a member that without a reduction in price, it would take its order book to another exchange.[113] Given the price sensitivities shown by market data customers and described above, there can be no doubt that the loss of depth-of-book consumers would lead to a substantial loss of order flow.

Conclusion

In sum, the Commission should approve NASDAQ's Proposed Rule, because offering a discount on market data products to members who service non-professional investors is eminently "fair and reasonable." By using market data discounts to attract order flow to NASDAQ, the Proposed Rule is a procompetitive response to the recent rise of non-traditional trading platforms, whose share of market volume has increased dramatically in recent years. It is the antithesis of the "monopolistic" pricing strategy that SIFMA and NetCoalition fear. In addition, the evidence in the record plainly shows that the fierce competition for order flow among exchanges and the ready availability of market substitutes exercise significant constraints on the price of market data. Thus, the Commission's suspension should be lifted, and the Proposed Rule should be approved.

Respectfully submitted,

J. C. Conley

Joan Conley

cc: The Hon. Mary L. Schapiro, Chairman
The Hon. Kathleen L. Casey, Commissioner
The Hon. Elisse B. Walter, Commissioner
The Hon. Luis A. Aguilar, Commissioner
The Hon. Troy A. Paredes, Commissioner
Robert W. Cook, Director, Division of Trading and Markets
James A. Brigagliano, Deputy Director, Division of Trading and Markets

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[112] *See id.*

[113] *See* Ordover/Bamberger Report at ¶ 29.

EXHIBIT A

Reply Statement of Janusz Ordover and Gustavo Bamberger

I. INTRODUCTION.

1. We previously filed a statement on behalf of the NASDAQ Stock Market ("NASDAQ") that evaluated the extent to which competitive forces constrain NASDAQ's ability to set prices and terms for "proprietary" data products. We also previously submitted comments in connection with a Notice of Proposed Order Approving Proposal by NYSE Arca, Inc. To Establish Fees for Certain Market Data and Request for Comment, Release No. 34-57917, June 4, 2008 released by the Securities and Exchange Commission ("the Commission").[1] Our experience and qualifications are summarized in our prior statement.

2. Dr. David S. Evans, on behalf of the Securities Industry and Financial Markets Association and NetCoalition, recently filed a response to our prior statement.[2] Dr. Evans criticizes our prior statement and claims that our conclusions are "not supported by the economics or evidence."[3] We have been asked by counsel for NASDAQ to review and evaluate Dr. Evans's response. As we explain in this reply statement, nothing in Dr. Evans's response causes us to change our prior conclusions.

3. The rest of this reply statement is organized as follows. In Section II, we show that Dr. Evans agrees with us on several key issues. In Section III, we show that Dr. Evans does not dispute several of our conclusions. In Section IV, we show that Dr. Evans's criticisms of our analysis are flawed.

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1. See Statement of Janusz Ordover and Gustavo Bamberger, filed with the Securities and Exchange Commission, Release No. 34-57917, on behalf of NASDAQ Stock Market, August 1, 2008.
2. Dr. David S. Evans, "Response to Ordover and Bamberger's Statement Regarding NASDAQ's Proposed Rule Change Concerning the Pricing of Depth-of-Book Data," March 21, 2001 ("Evans Response").
3. Evans Response, at 2.

II. DR. EVANS AGREES WITH US ON KEY ISSUES.

4. Despite his criticism of our conclusions, Dr. Evans agrees with us on key issues. First, in our prior statement we explained that trade execution services and market data are "joint products" that necessarily involve incurring "joint costs":

> Execution services and market data are an example of "joint products." This is because every execution of a trade automatically produces another potential product, namely information about that trade (such as the price and quantity traded). Similarly, depth-of-book information is automatically produced when traders post limit orders on a platform. The production of joint products necessarily involves incurring "joint costs," i.e., costs that are not uniquely incurred on behalf of any one of the services provided by the exchange.[4]

Dr. Evans agrees that "[m]arket data are a byproduct of the trading process."[5] Although Dr. Evans does not comment on the issue of joint costs, his view that market data are a "byproduct" of trading implies that joint costs underlie the production of trade execution services and market data.

5. Second, in our prior statement we explained that increases "in the price of proprietary data by a platform can be expected to reduce the volume of trading on that platform, which reduces the profitability of such a price increase and thus constrains the pricing of proprietary information."[6] Dr. Evans criticizes this conclusion in the text of his statement (and we address these criticisms later in this reply statement), but in footnotes to his statement Dr. Evans agrees with our position:

- "If an exchange sets the monthly price so high that few traders purchase it, then the number of traders placing orders on that exchange for any stock would likely be reduced. One of the costs of setting the subscription price too high is then the loss of order flow revenue."[7]

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4. Statement of Janusz Ordover and Gustavo Bamberger, filed with the Securities and Exchange Commission, File No. SR-NASDAQ-2010-174, on behalf of NASDAQ Stock Market, December 30, 2010 ("Ordover and Bamberger"), ¶19.
5. Evans Response, at 4.
6. Ordover and Bamberger, ¶29.
7. Evans Response, at 16, footnote 30.

- "My position here and in my prior Reports does not assume that there is no relationship whatsoever between the pricing of depth-of-book data and the volume of order flow. Some traders may decide not to use a trading venue that declines to make depth-of-book data available at all or charges an extremely high price for that data."[8]

III. DR. EVANS DOES NOT DISPUTE SEVERAL OF OUR KEY CONCLUSIONS.

6. Dr. Evans does not dispute several of the key conclusions in our prior statement. First, we concluded that:

> the services provided by a trading platform cannot be priced at marginal cost. Moreover, as we have discussed, execution services and market data are joint products. This does not mean that if one product is regarded as simply a by-product of another activity, it should be priced at a zero. Far from it: insofar as there is demand for that product at a positive price, the price for that product should be positive. Thus, even if information could be produced at zero marginal cost, economic principles mandate that it nevertheless be priced to the willing buyers at a price higher than the associated marginal cost. That is, it is economically appropriate for such information to carry a positive price.[9]

Dr. Evans does not dispute that the services provided by a trading platform cannot be priced at marginal cost.

7. Second, we concluded that:

> Given that marginal cost pricing is generally not feasible in high fixed cost industries, some deviations from marginal cost pricing are unavoidable. One alternative might be to charge all customers a price equal to average total cost (including a return to capital). It is, however, well known that uniform average cost pricing – that is, charging the same price equal to average cost to all customers – is not socially efficient. In general, economic efficiency in these circumstances requires that customers whose demand is more responsive to price changes pay prices closer to marginal cost as opposed to customers who are less responsive to price changes.[10]

Dr. Evans does not dispute that, in high fixed cost industries, charging different prices to different groups of customers based on their responsiveness to price changes is economically efficient.

8. Third, we concluded that:

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8. Evans Response, at 12, footnote 24.
9. Ordover and Bamberger, ¶49 (footnote omitted).
10. Ordover and Bamberger, ¶51.

> Competitive concerns from a practice of bundling discounts across a range of products may potentially arise when such bundling-cum-discounting is used to foreclose entry (expansion) of rival firms which may not be able to offer an array of products as broad as that offered by the incumbent. In the instant case it is not likely that the combined offer will induce rival exchanges to exit (or become less competitively potent due to a reduction in volume). It is also not likely that the combined offer will have the effect of creating significant barriers to entry or expansion for new exchanges.[11]

Dr. Evans does not dispute that "bundling" of market data and execution services is not likely to raise competitive concerns.

III. DR. EVANS'S CRITICISMS OF OUR ANALYSIS ARE FLAWED.

A. Dr. Evans's Analysis is Based on Flawed Assumptions.

9. Dr. Evans's analysis is based on a flawed assumption about the role of depth-of-book data. Dr. Evans claims that "depth-of-book data from exchanges with substantial liquidity – which obviously includes Nasdaq – are <u>essential</u> information for those traders who buy them."[12] Dr. Evans also claims that "for traders to identify the exchange that is the optimal exchange on which to place a large trade, they <u>must</u> purchase and review the depth-of-book data of each center of significant liquidity. . . . In short, a broker-dealer cannot ignore the depth-of-book data available from a major trading venue, such as Nasdaq."[13]

10. Dr. Evans also reports that "he understands" that traders "must" purchase depth-of-book data from multiple trading venues: "[F]or traders to identify the exchange on which the optimal price and volume are offered for a given security, and for an assessment of the likely price of a significant order, <u>my understanding</u> is that they <u>must</u> purchase and review the depth-of-book data from each trading venue with significant liquidity for that security."[14] Dr. Evans

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11. Ordover and Bamberger, ¶59.
12. Evans Response, at 12, emphasis added.
13. Evans Response, at 13, emphasis added.
14. Evans Response, at 8, emphasis added.

presents no support for his claim (other than a citation to a comment letter from the Security Traders Association).[15]

11. The empirical evidence is inconsistent with Dr. Evans's position.[16] For example, as of January 1, 2011, only 7.9 percent of data customers that purchased NASDAQ "real-time" data for internal distribution (such as "Level 2" top-price level data) also purchased depth-of-book data from NASDAQ. As of January 1, 2009, this percentage was almost the same (7.8 percent). Thus, over ninety percent of data customers that purchase real-time market data from NASDAQ do not consider depth-of-book data to be "essential information."

12. At the end of 2009, NASDAQ had 145 clients that purchased depth-of-book data for internal purposes.[17] During 2010, NASDAQ lost 68 of those clients (i.e., 47 percent of its customer count at the end of 2009) and added 179 clients. In 2009, NASDAQ lost 38 clients and added 60. Thus, the year-to-year "churn" in depth-of-book clients is substantial. If depth-of-book data were "essential information" – as Dr. Evans claims – NASDAQ likely would not lose large numbers of clients. Indeed, the mere fact that some clients stop purchasing the depth-of-book data clearly indicates that such information is not "essential" even to those clients who have purchased such data in the past.

13. Each purchaser of depth-of-book information pays a monthly "distributor fee" (e.g., $1,000 per month for internal distribution) and a monthly "usage fee" per subscriber (e.g., $70 per month per professional/corporate subscriber).[18] Thus, a client can vary its purchase of depth-of-book data by varying the number of "users" of that information. That is, NASDAQ internal distribution clients that purchase depth-of-book data can, and do, reduce the amount of information they purchase by reducing the number of subscribers who receive the data feed.

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15. See Evans Response, at 8-9.
16. Our discussion of NASDAQ data clients is based on information provided by NASDAQ. See Statement of Randall Hopkins of NASDAQ Stock Market LLC.
17. NASDAQ also sells depth-of-book data for clients that distribute it "externally" to, for example, retail customers. Such clients include Bloomberg and Ameritrade.
18. See http://www.nasdaqtrader.com/Trader.aspx?id=totalview.

For example, over the last year, a "Bulge Bracket" firm that purchased NASDAQ depth-of-book data reduced its number of subscribers by 86 percent (from 341 to 56). Similarly, a major "Buy Side" firm that purchased NASDAQ depth-of-book data reduced its number of subscribers by 60 percent (from 327 to 132). If depth-of-book data were "essential," it is unlikely that major traders would substantially reduce the number of users with access to that data.

14. On August 12, 2003, NASDAQ announced a reduction of the TotalView usage fee for professional investors from $150 per month to $70 per month per subscriber, to take effect in October 2003. In August 2003, NASDAQ had 1,345 professional subscribers for TotalView data. By January 2004, the total number of TotalView professional subscribers had increased to 6,767, an increase of a factor of more than five. That is, the depth-of-book data was not purchased by a large number of potential subscribers at a price of $150 per month but was purchased at a price of $70 per month. The empirical evidence shows that, for those subscribers, the depth-of-book product was not "essential information" when its price was $150 per month.

15. There is additional empirical evidence that contradicts Dr. Evans's claims of "essentiality." In particular, traders can purchase depth-of-book information for stocks traded on NASDAQ, sometimes referred to as "Tape C" information, i.e., the TotalView product; stocks traded on the New York Stock Exchange and American Stock Exchange, sometimes referred to as "Tape A/B" information, i.e., the "OpenView" product; or both. The price of the Tape A/B product is only $6 per professional subscriber per month, while the price of the Tape C product is $70 per professional subscriber per month.[19] NASDAQ accounts for a substantial share of trading in NYSE stocks.[20] If traders "must" have depth-of-book data from each trading venue "with significant liquidity," NASDAQ should have a similar number of Tape C and Tape A/B

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19. The fact that NASDAQ charges such different prices for these two depth-of-book products strongly suggests that both products are not "essential" information.
20. In February 2011, for example, NASDAQ accounted for 11.9 percent of trading in NYSE stocks. See http://www.nasdaqtrader.com/trader.aspx?id=marketshare.

subscribers. But NASDAQ has about 20 percent more subscribers for its Tape C than for its Tape A/B depth-of-book product (despite the much lower price for the Tape A/B product).[21]

B. Dr. Evans's Claim that Competition for Order Flow does not Constrain Depth-of-Book Market Data Pricing is Wrong.

16. As we have noted earlier, Dr. Evans agrees that "[i]f an exchange sets the monthly price so high that few traders purchase it, then the number of traders placing orders on that exchange for any stock would likely be reduced."[22] Nonetheless, Dr. Evans also claims that "one would not expect pricing for market data to be constrained by competition for order flow."[23]

17. Dr. Evans's claim appears to be based on his assertion that "[a]n increase or decrease in the monthly subscription fee for depth-of-book data would not change a trader's marginal cost of buying or selling a particular security on a particular exchange."[24] Dr. Evans concludes that "[w]hether the monthly subscription price is high or low does not affect, in any way, the decision on where to place an order."[25]

18. Dr. Evans's claim that a change in the price of depth-of-book data does not affect a "trader's marginal cost" is correct only in the narrow sense that after a trader has made the decision to purchase depth-of-book data from a particular exchange, the cost of that data purchase cannot be avoided and is therefore "sunk." But Dr. Evans ignores that traders can, and do, discontinue purchasing depth-of-book data from NASDAQ (and can choose to discontinue purchasing market data on a monthly basis). Indeed, the evidence provided earlier indicates that the demand for subscriptions is highly elastic, i.e., responsive to price.

19. When a trader is deciding whether or not to buy depth-of-book data (or discontinue buying it), the data cost is no longer sunk and becomes a "marginal" decision. At

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21. This comparison is based on internal and external distribution clients.
22. Evans Response, at 16, footnote 30.
23. Evans Response, at 18.
24. Evans Response, at 16.
25. Evans Response, at 16 (emphasis added).

the point at which a trader makes a decision to purchase (or not) depth-of-book data from an exchange, that decision will be based, at least in part, on the effect that the purchase has on the total cost of trading on one exchange vs. another. Thus, when an exchange is considering what price to charge for its depth-of-book data, it must take into account that an increase in price may lead some traders to forego purchasing the depth-of-book data and reduce trading on the exchange. As we have discussed, Dr. Evans recognizes this constraint on the pricing of market data: "If an exchange sets the monthly price so high that few traders purchase it, then the number of traders placing orders on that exchange for any stock would likely be reduced. One of the costs of setting the subscription price too high is then the loss of order flow revenue."[26] Importantly, Dr. Evans fails to acknowledge that a loss in order flow revenues also reduces the value of the depth-of-book data which, in turn, reduces the value of the information from the exchange and thus reduces current and potential clients' willingness to pay for that information. Thus, the increase in the price of information has a magnified effect on the activity on the exchange.

C. Dr. Evans's Claim that Platform Competition Could Result in the Cross-Subsidization of Trade Execution Fees Ignores that the Provision of Trade Execution Services and Market Data Necessarily Involves Incurring Joint Costs.

20. Dr. Evans claims "that inter-platform competition could result in high depth-of-book data fees cross-subsidizing low trade execution fees."[27] Dr. Evans does not define what he means by "high" prices; "low" fees; or "cross-subsidizing." Presumably, Dr. Evans is

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26. Evans Response, at 16, footnote 30.
27. Evans Response, at 24. As we discussed in our prior filing, different platforms have chosen different pricing strategies for market data and execution services: "BATS Trading, for example, has chosen an initial strategy of setting low (or zero) prices for market data, mid-range prices for executions, and relatively high liquidity rebates." (Ordover and Bamberger, ¶23). Dr. Evans's line of argument implies that BATS is "subsidizing" the "low" price of market data from its trade execution revenues.

suggesting that: (1) depth-of-book fees are high relative to costs; (2) trade execution fees are low relative to costs; and thus (3) trade execution fees are "subsidized."

21. This line of argument assumes, however, that "costs" for market data and trade execution fees can be unambiguously measured separately. But as we explained in our prior filing – and Dr. Evans agrees with us – market data and execution services are joint products, and joint products are produced with joint costs. We also explained that "[i]t is widely accepted that there is no meaningful way to allocate 'common' or 'joint' costs across different joint products. For this reason, 'cost-based' regulation of pricing of market data requires inherently arbitrary cost allocations."[28]

22. Because the production of market data and execution services involves joint costs, Dr. Evans presents no basis for concluding that the price of market data is "high" relative to costs while the price of execution services is "low" relative to costs and "subsidized" by market data revenue. Although Dr. Evans does not explain what he means by "high" depth-of-book fees, perhaps he is taking the position that depth-of-book fees are "high" relative to the marginal cost of the data. But as we have explained (and Dr. Evans did not dispute), the services provided by a trading platform – including execution services and market data – cannot be priced at marginal cost (or even on the basis of directly attributable costs).

23. In general, the prices set by a trading platform are not related in any direct way to "marginal costs." Instead, as we explained in our prior statement,

> platforms make simultaneous pricing decisions regarding liquidity rebates, execution fees, and market data fees. Liquidity rebates attract orders that create available liquidity by paying the order submitter a fee when the order executes; execution fees are incurred when an investor's order interacts with available liquidity resulting in a trade; and market data fees pay for access to information about, for example, currently available liquidity and past trades. All of these decisions are made with the goal of

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28. Ordover and Bamberger, ¶19, footnote 8. We are, of course, not claiming that there are no costs that can be clearly allocated to one activity or another. Our point is that some costs cannot be allocated and also that these common costs (e.g., the costs of maintaining and operating the trading platform) are substantial.

> maximizing profits, or fostering other legitimate business objectives, subject to competitive and regulatory constraints.[29]

24. Indeed, in prior writings on "two-sided platform" markets, Dr. Evans has taken the position that, even in competitive industries, prices to some consumers often are below marginal cost while prices to other consumers often are above marginal costs. Two-sided platforms, such as newspapers or internet platforms, are analogous to trading exchanges in that they: (1) involve joint costs (e.g., a cost of producing a newspaper that serves both readers and advertisers or maintaining a search platform that serves searchers and advertisers); and (2) selling two or more products at different prices (e.g., a search platform charges nothing for searches and charges a positive price to advertisers).[30] Dr. Evans has written that:

> all general models of two-sided-platform markets imply that profits may be maximized by highly asymmetric pricing in which one group is served at a price close to or even below marginal cost, and most or all gross margin is earned by serving the other group.
>
> It is important to note that many, if not most, two-sided markets exhibit this sort of asymmetry in pricing and gross margin generation.[31]

Thus, even if the price of market data were above an appropriate measure of cost, evidence of such pricing, by itself, is not evidence that the seller of market data is necessarily exercising market power.

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29. Ordover and Bamberger, ¶20.
30. Two-sided platforms typically differ from a trading platform that sells exchange services and market data in that a two-sided platform sells its services to two distinct sets of customers (e.g., newspaper readers and advertisers) while trade exchange services and market data often are sold to the same customers (i.e., traders). However, the two-sided platform model applies to a trading platform's trade execution services. In the case of trade execution services, trading platforms often charge a "negative price" to liquidity providers and a "positive price" to traders that remove liquidity.
31. David S. Evans and Richard Schmalensee, "The Economics of Interchange Fees and Their Regulation: An Overview," Proceedings – Payments System Research Conferences, Federal Reserve Bank of Kansas City, May 2005, 73-120.

Janusz Ordover

Gustavo Bamberger

April 4, 2011

EXHIBIT B

Statement of Randall Hopkins of NASDAQ Stock Market LLC

1. I, Randall Hopkins, am Senior Vice President at NASDAQ OMX and have managed the market data business at NASDAQ since 2006.

2. I am submitting this Statement in support of NASDAQ's Proposed "Platform Pricing" Proposal, Release No. 34-63796.

3. NASDAQ competes vigorously with other stock exchanges and alternative trading systems ("ATS's") on a "platform" basis to attract order flow to the exchange and to package and sell the market data (*i.e.*, price and volume information) that results from that order flow. The fierceness of competition for order flow is reflected in the fact that a majority of the shares of NASDAQ-listed stocks are traded on other platforms: By October 2010, for example, only 29.5 percent of NASDAQ-listed securities were traded on NASDAQ.

4. Through its current rule proposal, NASDAQ proposes to lower the fees for depth-of-book market data that NASDAQ members provide to non-professional users. The data discount is based on the amount of market data that a member provides to non-professional users as well as the amount of liquidity that the member brings to the exchange.

5. The rule proposal is designed to provide an additional benefit in the form of further reduced prices to members that both (a) provide a high level of liquidity to the exchange, and (b) distribute NASDAQ's depth-of-book data to their retail customers. The rule proposal also provides an incentive to members to continue to provide liquidity to NASDAQ, despite competitive incentives to switch their trading activity. These members provide benefits to NASDAQ that go beyond the benefits provided by either (i) customers who distribute NASDAQ's depth-of-book data to retail customers without providing liquidity, or (ii) members who provide liquidity to NASDAQ without distributing its depth-of-book data to retail

customers. Accordingly, it makes sense from a competitive business perspective for NASDAQ to provide a discount aimed specifically at those customers who provide both high levels of liquidity and widely distribute NASDAQ's data products. In essence, NASDAQ is providing especially attractive terms to some of its most important customers and an incentive to continue to remain NASDAQ's most important customers, in response to competitive offers from rival exchanges and trading platforms. Indeed, some of NASDAQ's most valuable clients have threatened to move data subscriptions and/or liquidity to NASDAQ's competitors based on the price of NASDAQ's depth-of-book products. The proposed rule is in part a competitive response to these market signals.

6. Not all investors are willing to pay for NASDAQ's depth-of-book data products. For example, as of January 1, 2011, only 7.9 percent of data customers that purchased NASDAQ "real-time" data for internal distribution (such as "Level 1" top-price level data) also purchased depth-of-book data from NASDAQ. As of January 1, 2009, this percentage was 7.8 percent. But those customers who do purchase depth-of-book data contribute a substantial volume of order flow to the exchange. For example, there are 27 TotalView customers that have chosen to "co-locate" a server at the NASDAQ trading center and who direct all of their order flow to NASDAQ via the co-located servers. Those 27 customers alone contribute approximately 22% of NASDAQ's total volume of order flow.

7. There is also substantial turnover in the client base for NASDAQ's depth-of-book products. At the end of 2009, NASDAQ had 145 clients that purchased depth-of-book data for internal purposes (as opposed to clients that distribute the data "externally" to, for example, retail customers). During 2010, NASDAQ lost 68 of those clients and added 179 clients. In 2009, NASDAQ lost 38 clients and added 60.

8. NASDAQ's internal distribution clients also frequently reduce the number of subscribers who receive their data feed. For example, over the last year, a "Bulge Bracket" firm that purchased NASDAQ depth-of-book data reduced its number of reported subscribers from 341 to 56. Likewise, a major "Buy Side" firm that purchased NASDAQ depth-of-book data reduced its number of reported subscribers from 327 to 132.

9. The number of subscribers to NASDAQ's depth-of-book products is highly responsive to changes in price charged for those products. For example, on August 12, 2003, NASDAQ announced a reduction of the TotalView usage fee for professional investors from $150 per month to $70 per month per subscriber, effective October 2003. In August 2003, NASDAQ had 1,345 professional subscribers for TotalView data. That number increased to 6,767 by January 2004.

10. Consumers of NASDAQ's market data also purchase different levels of subscription from NASDAQ. For example, NASDAQ sells "Tape C" information, *i.e.*, the TotalView product that displays NASDAQ depth-of-book data, for $70 per professional subscriber per month. NASDAQ sells "Tape A/B" information, *i.e.*, the "OpenView" product that displays depth-of-book data for New York Stock Exchange and American Stock Exchange securities traded on NASDAQ, for only $6 per professional subscriber per month. NASDAQ has about 20 percent more end-user subscribers for its Tape C than for its Tape A/B depth-of-book product—despite the much lower cost for the Tape A/B product.

11. NASDAQ's depth-of-book data products are relatively inexpensive. For example, for a fee of $15 per month, data distributors can provide non-professional users access to full depth-of-book data for all securities traded on NASDAQ. This equates to seventy five cents per trading day, two-tenths of a penny per minute, $0.002 per month per stock quoted or

traded on NASDAQ, or $0.00000006 per trading message contained in NASDAQ's depth-of-book feeds.

12. In addition, many non-professional users benefit from a much lower rate than $15 for the relevant data, due to usage fee caps for distributors. For example, for the six biggest distributors of non-professional NASDAQ full depth-of-book data, the average rate in January 2011 was $10.38, which covers distribution to 109,015 users.

Randall M. Hopkins

EXHIBIT C

Letter from Eugene Scalia, Gibson, Dunn & Crutcher LLP,
on behalf of the NASDAQ Stock Market LLC (Aug. 1, 2011)

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OFFICE OF THE SECRETARY

August 1, 2011

Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-1090

Re: Suspension of Proposed "Platform Pricing" Proposal
Release No. 34-63796, File No. SR-NASDAQ-2011-10

Dear Ms. Murphy:

I am counsel for The NASDAQ Stock Market LLC ("NASDAQ") in the above-titled matter. I submit this brief letter to clarify the record in light of a statement by the Division of Trading and Markets in its July 19 notice extending by 60 days the period to approve or disapprove NASDAQ's proposal to lower prices for depth-of-book market data and for execution services ("the Proposed Rule"). Specifically, in a passing statement the Division characterized the Proposed Rule as a "tying arrangement."

If the Division's intention is to employ "tying arrangement" as a term of art borrowed from antitrust law, the term simply does not apply to NASDAQ's proposal. As NASDAQ explained in its submission of April 4, 2011, under NASDAQ's proposal there is no requirement that any customer purchase a product that is tied to another product. *See* April 4, 2011 Letter from Joan Conley to Elizabeth M. Murphy ("NASDAQ Comment") at 9-10. To the contrary, NASDAQ is continuing to offer its products separately, at prices approved by the Commission as fair and reasonable. Accordingly, the Proposed Rule is not a tying arrangement, as a matter of well-established Supreme Court precedent. *See, e.g., N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 6 n.4 (1958) ("where the buyer is free to take either product by itself, there is no tying problem even though the seller may also offer the two items as a unit at a single price").

Moreover, even if the Proposed Rule could fairly be characterized as a tying arrangement (it cannot), the competitive concerns that are associated with certain tying arrangements do not apply here. *See* NASDAQ Comment at 10. As the Supreme Court has explained, even conduct that can be characterized as a "tying arrangement" can have procompetitive effects that can enhance competition and benefit consumers. *Id.* Accordingly, the Supreme Court has held that tying arrangements should not be condemned in the absence of a foreclosure of competition in the "tied" product market. *Id.* There is no evidence of any such foreclosure here.

The Proposed Rule is designed to lower prices as a result of competition. This will enhance competition in the marketplace and benefit consumers. This is conduct that should be encouraged by the Commission, not blocked. And it would turn the principles of antitrust law on their head to use the terminology of antitrust to prevent NASDAQ from engaging in this strongly pro-competitive and pro-consumer conduct.

Respectfully submitted,

Eugene Scalia

ES/bmr

cc: The Hon. Mary L. Schapiro, Chairman
The Hon. Kathleen L. Casey, Commissioner
The Hon. Elisse B. Walter, Commissioner
The Hon. Luis A. Aguilar, Commissioner
The Hon. Troy A. Paredes, Commissioner
Robert W. Cook, Director, Division of Trading and Markets
James A. Brigagliano, Deputy Director, Division of Trading and Markets

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EXHIBIT D

Letter from Joan Conley, Senior Vice President, NASDAQ OMX Group, Inc.
(Feb. 24, 2012)

JOAN CONLEY
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February 24, 2012

Elizabeth M. Murphy
Secretary
U.S. Securities and Exchange Commission
100 F Street NE
Washington, DC 20549

File No: ***SR-NASDAQ-2011-010 and SR-CBOE-2012-008***

Dear Ms. Murphy,

The NASDAQ OMX Group, Inc. ("NASDAQ") is the largest global operator of free markets, including two U.S. options markets that compete directly with the Chicago Board Options Exchange ("CBOE").[1] As such, NASDAQ adheres to the free market principle that prices are better set by market forces than by the government. Consistent with that principle, NASDAQ is commenting on SR-CBOE-2012-008 ("CBOE Pricing Proposal")[2] not to oppose or disrupt CBOE's pricing but to highlight the potential inconsistency with the government's disapproval of SR-NASDAQ-2011-010 a proposal of The NASDAQ Stock Market LLC, NASDAQ's largest U.S. equity market.[3]

NASDAQ Platform Pricing offers a member discounts from previously filed fees for purchasing a substantial volume of market data for non-professional (retail) users, and also directing substantial liquidity to the exchange. The Division of Trading and Markets issued an order suspending Platform Pricing[4] and a second order disapproving it.[5] The

1 NASDAQ operates The NASDAQ Options Market LLC ("NOM") and NASDAQ OMX PHLX, Inc. ("PHLX").

2 *See* Securities Exchange Act Release No.. 34-66277 (Jan. 30, 2012) ("CBOE Pricing Proposal").

3 *See* Securities Exchange Act Release No.. 34-63745, 76 Fed. Reg. 4970 (Jan. 27, 2011); ("NASDAQ Platform Pricing).

4 *See* Securities Exchange Act Release No. 34–63796, 76 Fed. Reg. 6,165 (Feb. 3, 2011) (SR–NASDAQ–2011–010) (Suspension of and Order Instituting Proceedings to Determine Whether to

continued

Disapproval Order concluded that the "linking of market data fees to execution volume, and the linking of transaction credits to market data purchases, will...negatively impact the competition that exists today in these two markets." NASDAQ timely filed a Petition for Review of the Disapproval Order, which remains pending.[6]

NASDAQ is struggling to reconcile the anti-linking statements contained in the Disapproval Order with a similar pricing link contained in the CBOE Pricing Proposal. Specifically, the CBOE Proprietary Product Sliding Scale allows certain CBOE members to pay reduced execution fees for trading single-listed CBOE proprietary products if they reach set volume thresholds in trading multiple-listed options. Like NASDAQ Platform Pricing, CBOE's Proprietary Products Sliding Scale offers members discounts from previously filed prices if they purchase substantial quantities of two linked products. Unlike, NASDAQ Platform Pricing, CBOE filed no empirical evidence showing that the markets for the linked products are competitive.

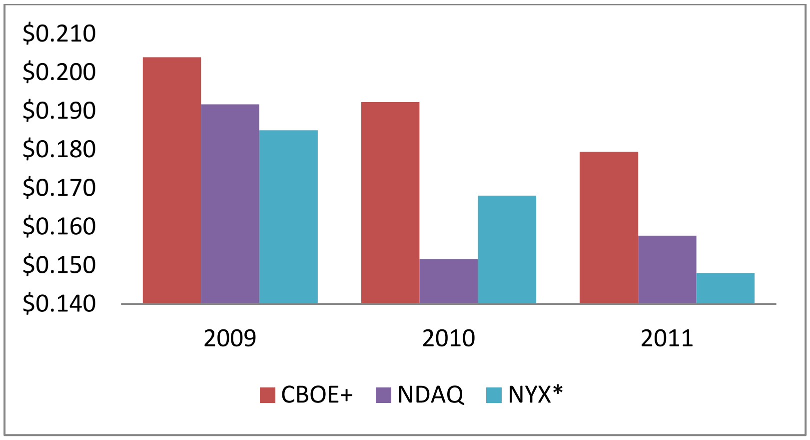
Without empirical evidence, it is difficult or impossible for the Commission or market participants meaningfully to analyze the CBOE Pricing Proposal. The Disapproval Order was devoid of empirical support for its conclusions, and it ignored NASDAQ's empirical evidence showing that the markets for data and execution services are robust, and that a voluntary incentive to purchase both services in large quantities therefore cannot be an anti-competitive "tying" arrangement. This is precisely the type of "reasoned" evidence of "competitive forces" that the D.C. Circuit has invited exchanges to submit in support of proposed market data fees. *NetCoalition v. SEC*, 615 F.3d 525, 544 (D.C. Cir. 2010); *see also Business Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011); *Am. Equity Inv. Life Ins. Co. v. SEC*, 613 F.3d 166, 167-68 (D.C. Cir. 2010); *Chamber of Commerce v. SEC*, 412 F.3d 133, 136 (D.C. Cir. 2005).

Background. Options markets operate in an intensely competitive environment. NASDAQ's and CBOE's ability to attract order flow is driven largely by price competition. NASDAQ OMX's two options exchanges, PHLX and NOM, modify options trading fees monthly or even bi-monthly to attract new order flow, retain existing order flow, and regain order flow lost to competitors' price cuts. In 2011, PHLX and, NOM filed 71 execution fee changes and options exchanges together filed 173 fee changes (excluding market data, connectivity, colocation, and other fees). Fierce competition has lowered options trading costs, benefitting investors and promoting the goals of the Securities Exchange Act of 1934. For example, based on publicly-available data, average revenue per contract has declined for three major options market operators:

Approve or Disapprove a Proposed Rule Change to Link Market Data Fees and Transaction Execution Fees) ("Suspension Order").

5 *See* Securities Exchange Act Release No. 34-63796, 76 Fed. Reg. 59,466 (Sept. 26, 2011) (SR-NASDAQ 2011-010) (Order Disapproving a Proposed Rule Change to Link Market Data Fees and Transaction Execution Fees) ("Disapproval Order").

6 *See* http://www.sec.gov/rules/sro/nasdaq/2011/34-65362-petition.pdf (October 4, 2011,).

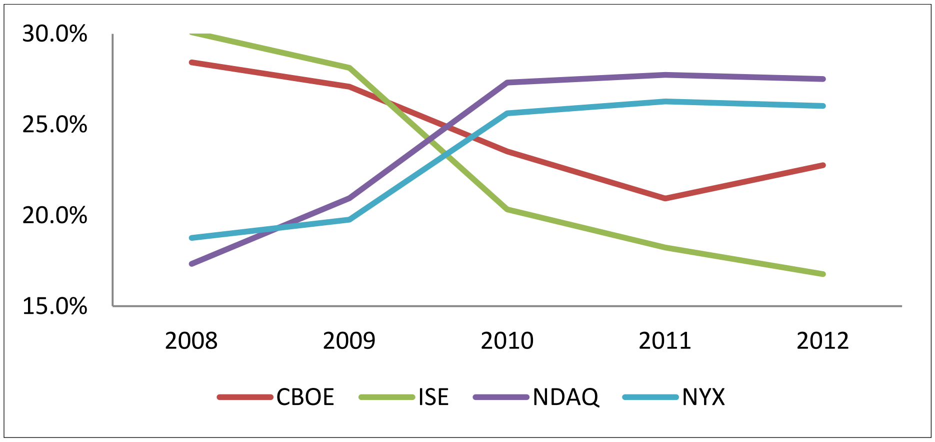


NASDAQ believes the Commission deserves credit for this competition and the resulting price declines; longstanding Commission policies towards trading and market regulation are largely responsible for the strength of current competition.

Given this highly competitive environment for options trading and the attendant benefits to investors, NASDAQ suggests the Commission should curtail its review of pricing-related rule changes that result from and increase competition. Empirical evidence demonstrates that no exchange has market power sufficient to raise prices for competitively-traded options in an unreasonable or unfairly discriminatory manner in violation of the Exchange Act. In actuality, it is *member firms* that control the order flow that options markets compete to attract.[7] Only by attracting members' orders can options exchanges display bids and offers that are the *sine qua non* of trade executions. This "second-order" competition –where competition is driven by customers rather than sellers of a product – is reflected both in the large number of pricing-related rule changes and also in rapid shifts of market share among multiple effective competitors seen on the chart of equity options market share below.

[7] Michael Porter, *How Competitive Forces Shape Strategy* (Harvard Business Review, 2009).

Market Share Changes for Competitively Traded Equity Options



CBOE's Pricing Proposal. Although the CBOE Pricing Proposal is 88 pages and changes the CBOE fee schedule in several dozen places, NASDAQ's comment is focused solely on the CBOE Proprietary Product Sliding Scale.[8] The CBOE Proprietary Product

8 *See* SR-CBOE-2-012-008 at page 82. The relevant provision (as marked in SR-CBOE-2012-008) states:

CBOE PROPRIETARY PRODUCTS SLIDING SCALE: Clearing Trading Permit Holder Proprietary transaction fees and transaction fees for Non-Trading Permit Holder Affiliates (as defined in footnote 11) in OEX, XEO, SPX and volatility indexes ("CBOE Proprietary Products") in a month will be reduced provided a Clearing Trading Permit Holder reaches certain volume thresholds in multiply-listed options on the Exchange in a month as described below.

The standard Clearing Trading Permit Holder Proprietary transaction fee and transaction fees for Non-Trading Permit Holder Affiliates (as defined in footnote 11) in CBOE Proprietary Products will be reduced to the fees shown in the following table for Clearing Trading Permit Holders that execute at least 375,000 contracts but less than 1,500,000 contracts in multiply-listed options on the Exchange in a month[, excluding contracts executed in AIM that incurred the AIM Execution Fee]:

CBOE Proprietary Contracts

Tiers	Per Month	Rate
First	First 750,000	18 cents
Second	Next 250,000	5 cents
Third	Above 1,000,000	2 cents

The standard Clearing Trading Permit Holder Proprietary transaction fee and transaction fees for Non-Trading Permit Holder Affiliates (as defined in footnote 11) in CBOE Proprietary Products will be further reduced to the fees shown in the following table for Clearing Trading Permit Holders that execute 1,500,000 or more contracts in multiply-listed options on the Exchange in a month[, excluding contracts executed in AIM that incurred the AIM Execution Fee]:

continued

Sliding Scale allows CBOE Clearing Trading Permit Holders and their non-trading affiliates to pay reduced execution fees for trading single-listed CBOE proprietary products as they reach certain volume thresholds in trading multiply-listed options. The CBOE proprietary products – OEX, XEO, SPX and Volatility Indexes – are single-listed on CBOE, meaning they are not traded on any competing options exchange.

NASDAQ supports the development of single-listed proprietary products and the ability of exchanges to charge higher fees for trading proprietary products than they charge for trading multiple-listed products. In fact PHLX has single-listed proprietary products (including PHLX Sector Index Options and PHLX World Currency Options) for which it charges increased execution fees. As CBOE persuasively explains in support of its proposed rule change, exchanges invest heavily in developing, promoting, and protecting proprietary products. The right of intellectual property holders to recover the costs of developing unique products is well established and applies with equal force to securities products as to commercial products generally.

Unlike PHLX, CBOE has extended this principle by linking execution fees for single-listed proprietary products to trading volume in multiple-listed products, in effect leveraging its investment in proprietary products to gain market share in trading of multiple-listed options.

Along with ceasing excluding AIM Contra Execution Fees from counting towards the Cap, the Exchange also proposes ceasing excluding contracts executed in AIM that incur the AIM Contra Execution Fee from counting towards the CBOE Proprietary Products Sliding Scale. **Going forward, contracts executed in AIM that incur the AIM Contra Execution Fee will count towards helping a CTPH reach a higher tier in the CBOE Proprietary Products Sliding** Scale**, and thereby pay lower fees for executions in CBOE proprietary products. The purpose of this change is to improve the Exchange's competitive position. (emphasis added).**[9]

CBOE also notes that the proposed fee change potentially encourages the use of CBOE's price improvement mechanism and brings more liquidity and order interaction to CBOE, two goals that PHLX supports.

CBOE Proprietary Contracts

Tiers	Per Month	Rate
First	First 750,000	15 cents
Second	Above 750,000	1 cent

9 *See* Securities Exchange Act Release No. 34-66277 (Jan. 30, 2012) at p. 6 (AIM is CBOE's Automated Improvement Mechanism).

NASDAQ has not previously questioned CBOE's authority to link execution fees in single-listed proprietary products to trading volume in multiple-listed products; the CBOE Proprietary Products Sliding Scale has been in effect since March of 2011 without comment from NASDAQ.

NASDAQ Platform Pricing. After CBOE established the Proprietary Products Sliding Scale and before CBOE filed the current Pricing Proposal, the Staff of the Division of Trading and Markets, invoking authority delegated to it by the Commission, issued an order disapproving NASDAQ's proposal to offer members discounts on existing prices for market data and execution services. Under Platform Pricing, members earn discounts by purchasing a substantial volume of market data for non-professional (retail) users, and also directing a substantial amount of liquidity to the exchange. These are discounts off prices for market data and execution services that the Commission *already accepted* as fair and reasonable. The proposal would enable NASDAQ to compete more effectively against exchange competitors and alternative trading systems, which have lower regulatory costs and often attract order flow by providing market data free of charge.

On, January 28, 2011, the Division of Trading and Markets suspending and instituting proceedings regarding NASDAQ's rule proposal.[10] Although the Commission previously accepted the non-discounted prices for NASDAQ's market data products, and although courts and commentators widely agree that discounts are pro-competitive, the Division nevertheless suspended Platform Pricing and instituted proceedings to determine whether NASDAQ's bundled discount was somehow a "tying arrangement [that] may not be consistent with the statutory requirements applicable to a national securities exchange under the [Exchange] Act."

On September 20, 2011, the Division disapproved NASDAQ Platform Pricing.[11] The Disapproval Order contains just six pages of analysis and is devoid of economic data or other empirical support for its sweeping conclusion that the "linking of market data fees to execution volume, and the linking o f transaction credits to market data purchases, will . . . negatively impact the competition that exists today in these two markets." Order at 13. Moreover, the Division ignored expert reports and other evidence NASDAQ submitted that showed that the markets for data and execution services are fluid and robust, and that a voluntary incentive to purchase both services in large quantities therefore cannot be an anti-competitive "tying" arrangement. In fact, NASDAQ's evidence showed that the Platform Pricing proposal is but one of many pricing strategies that exchanges use to compete with one another on a "platform" basis to attract order flow and encourage different types of investors to purchase market data. Consistent with the existence of competitive markets, the Platform Pricing Proposal will cut prices, not raised them.

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10 *See* Securities Exchange Act Release No. 34-63796, 76 Fed. Reg. 6,165 (Feb. 3,2011) .

11 *See* Securities Exchange Act Release No. 34-63796, 76 Fed. Reg. 59,466 (Sept. 26,2011).

On October 4, 2011, NASDAQ filed a Petition for Review challenging the disapproval of Platform Pricing.[12] NASDAQ specifically challenged the conclusory statements that the linking of market data fees to execution volume could be an anti-competitive tying arrangement and that such arrangement could negatively impact competition that exists in those markets.[13]

Reconciling NASDAQ Platform Pricing with CBOE's Pricing Proposal. In the absence of empirical data and clear Commission guidance, it is difficult to reconcile the Division's disapproval of the supposed "tying arrangement" presented by Platform Pricing with CBOE's proposed link between execution fees for single-listed products with execution volume in multiple-listed products. The fundamental prerequisites for an anti-competitive tying arrangement are market power in a tying product and a foreclosure of competition in the tied product. Neither prerequisite was satisfied in the case of NASDAQ Platform Pricing because the two markets involved – market data and execution services – are both intensely competitive, as demonstrated by un-refuted empirical evidence that NASDAQ placed in the record. Under well-established competition theory, a link involving a single-listed proprietary product (CBOE Pricing Proposal) is more anti-competitive than a link between two competitive products (NASDAQ) Platform Pricing.

On their surface, CBOE's and NASDAQ's pricing proposals may appear distinguishable. On one hand, the CBOE Pricing Proposal involves two options trading products, whereas the NASDAQ Platform Pricing Proposal involves two equities trading products. Alternatively, the CBOE Pricing Proposal involves two execution services products, whereas the NASDAQ Platform Pricing Proposal involves one execution services product and one market data product.

Closer examination reveals, however, that such distinctions are superficial and arbitrary. Neither the statutory language nor the legislative intent of the Exchange Act support this distinction between options and equities trading, or a distinction between execution services and market data, or a distinction between existing and new fees. There is no statutory language addressing the reasonableness or fairness of linking the pricing of two products of any kind, regardless of the degree of similarity or difference between the linked products. Options and equities are listed and traded under the same exchange license. Similarly, execution services and market data are offered under the same exchange license.

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12 *See* http://www.sec.gov/rules/sro/nasdaq/2011/34-65362-petition.pdf.

13 The Petition for Review also argued that the Platform Pricing Proposal is deemed approved because the Commission did not issue an order disapproving the rule change within the period prescribed by the Section 19(b)(2)(D) of the Exchange Act. 15 U.S.C. § 78s(b)(2)(D). As stated in the Petition for Review, NASDAQ could offer the proposed discounts without waiting for the Commission to address the Petition for Review.

The distinction, if any, could rest on differences between the products or markets involved in the two proposals. If so, it is difficult to analyze such differences without empirical data about the products or markets. This is precisely the type of "reasoned" evidence of "competitive forces" that the D.C. Circuit has invited exchanges to submit in support of proposed market data fees. *NetCoalition v. SEC*, 615 F.3d 525, 544 (D.C. Cir. 2010). By declining to demand or address empirical evidence, the Division risks failing " once again . . . [to] adequately . . . assess the economic effects of a new rule." *Business Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011); *see also Am. Equity Inv. Life Ins. Co. v. SEC*, 613 F.3d 166, 167-68 (D.C. Cir. 2010); *Chamber of Commerce v. SEC*, 412 F.3d 133, 136 (D.C. Cir. 2005).

Accordingly, NASDAQ respectfully urges the Commission to address this apparent gap in empirical evidence and analysis either in the context of CBOE's Pricing Proposal or in response to NASDAQ's Petition for Review of the order disapproving NASDAQ Platform Pricing.

Respectfully submitted,

J. C. Conley