In the Matter of SR-Phlx-2013-113	**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

STATEMENT OF DR. PARKER M. NORMANN

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I. Introduction

1. My name is Parker M. Normann. I am a partner at Edgeworth Economics, L.L.C. ("Edgeworth"). Edgeworth is a consulting firm that provides clients with objective, high-quality expert economic and financial analysis for complex litigation and public policy debates. Edgeworth's experts work in the areas of antitrust, data management, class certification, intellectual property, and labor and employment. Edgeworth has offices in Washington, D.C., San Francisco, CA, and Pasadena, CA.

2. I hold a PhD in economics from George Mason University. I have more than fifteen years of experience in applying economic techniques to litigation, mergers, and regulatory matters. I have served as the lead economic consultant in numerous mergers in a variety of industries and have testified and presented economic reports to U.S. courts and federal agencies. My curriculum vitae is attached as Exhibit 1.

II. Assignment

3. I have been asked by counsel for the Chicago Board Options Exchange, Inc., International Securities Exchange, LLC, and Miami International Securities Exchange, LLC to provide an economic analysis of the incentives and potential effects from proposed rule SR-Phlx-2013-113, submitted to the Securities and Exchange Commission by NASDAQ OMX PHLX LLC ("Phlx").

III. Background

4. On October 31, 2013, Phlx filed a proposed rule change with the Securities and Exchange Commission ("SEC") to amend section B of its Pricing Schedule.[1] The rule change would offer Phlx customers additional volume-based rebates as part of the amended "Customer Rebate Program."

5. A thorough description of the proposed rule and its operation is set forth in the Phlx's rule proposal itself and in various comment letters submitted to the SEC. I do not repeat them here. The salient details of the rule change, for purposes of my analysis, are as follows.

- Customers would qualify for an additional $0.02 per contract transacted on Phlx provided the customer's aggregate volume of transactions on Phlx, the NASDAQ Options Market

[1] NASDAQ OMX PHLX LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change to Offer a Customer Rebate. SEC Release No. 34-70866, File No. SR-Phlx-2013-113, Nov. 13, 2013, ("Notice of Filing") p. 1.

LLC ("NOM"), or NASDAQ OMX BX, Inc. ("BX") exceeded a "target level" of 2.5% or more of the monthly national customer volume in multiply-listed options.[2]

- The \$0.02 rebate would be provided in addition to Phlx's existing rebate program. While eligibility for the rebate would consider customer volume across all NASDAQ OMX Exchanges, the rebate would only be paid on contracts executed on Phlx.

6. Phlx states that different customers prefer different exchange pricing structures and service models. As an example, Phlx states that "NOM appeals to customers who prefer 'maker-taker' pricing structures, while Phlx allows market participants to execute Complex Orders and benefit from price improvement."[3] Phlx claims that its proposed rule change provides customers with flexibility and diversity to choose between these different models without having to forego credit for rebates.

7. Numerous exchanges and market participants submitted letters to the SEC commenting on the Phlx proposal. *See* November 11, 2013 Letter from International Securities Exchange, LLC; November 12, 2013 Letter from Direct Edge Holdings LLC; November 27, 2013 Letter from Miami International Securities Exchange, LLC; December 18, 2013 Letter from Citadel Securities; December 20, 2013 Letter from International Securities Exchange, LLC; December 20, 2013 Letter from Chicago Board Options Exchange, Inc. On January 24, 2014, Phlx responded to various comment letters, and included a declaration by economists Drs. Robert Willig and Gustavo Bamberger. Phlx submitted another letter with additional comments on April 18, 2014.

IV. The Proposal Has the Characteristics of a Discriminatory Pricing Policy That Would Result in Relative Price Differences

A. The economics of price discrimination

8. Price discrimination is the ability to charge different prices to different customers for identical goods. These price differences are based on differences in customers' willingness to pay and require an inability to engage in arbitrage. Price discrimination can take several forms, but a common type is where the seller has some ability to identify which potential buyers have a higher willingness to pay than others. In such cases, the seller has the ability to explicitly charge different prices to different groups of people based on the average willingness to pay of the group. For example, senior citizens tend to have a lower willingness to pay for some items, so discounts are available to those who can demonstrate that they are over a certain age. On the other hand, if the seller cannot distinguish between groups, the seller may

[2] *Id*, pp. 2-3.

[3] January 24, 2014 Letter from NASDAQ OMX. Release No. 34-70940; File No. SR-Phlx-2013-113, p. 2.

bundle its products in such a way as to allow individuals to make choices based on their willingness to pay.

B. Exchanges capture volume based on price as well as other factors

9. Trading volume is directed to exchanges for several reasons. While a major factor is pricing (including rebates), non-price factors play a role as well.[4] Differences in preferences for trading on exchanges therefore presents the opportunity for exchanges to use these differences, to the extent that they are able, to target pricing at particular groups.

10. The proposed Phlx rebate program expressly differentiates between those who buy on NOM/BX and Phlx versus those who only buy on Phlx or only on NOM/BX. As a result, the rebate program could result in relatively higher prices for the same type of customer, even if those customers have the same purchasing profile at Phlx. For example, assume customers A and B conduct equal amounts of trading volume at Phlx, use the exchange in the same manner, but A conducted additional trading volume at either NOM or BX. Customer A may qualify for a higher rebate on the same Phlx volume because of the trading that customer did at NOM (or BX). As a result, Customer B would pay a relatively higher price for Phlx volume compared to A, despite the same use of Phlx's facilities. Phlx's economists, Drs. Willig and Bamberger recognized the discriminatory aspect of the policy in their declaration.[5]

11. In its October 31, 2013 rule filing with the Securities Exchange Commission, Phlx noted that there are various pricing strategies employed by the exchanges to cater to different market segments.[6] Phlx cited to differences in fees and rebates by exchanges for services such as open outcry versus electronic trading, and many others.[7] The current proposal differs from those mentioned by Phlx,

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[4] For example, the Department of Justice has explained that it "is wary of mandating a system that provides for the same routing rules for all orders, regardless of size, specific contingencies, or the informed preferences of particular customers. Forcing a large order to go to a specific exchange based solely on price denies that order the opportunity to seek a market that has greater depth of capital. For a large order, depth of capital may be the most important competitive consideration. There may also be issues of trust or order-handling sophistication that might cause certain customers to use a particular broker on the floor of a specific exchange. These are legitimate competitive considerations, and the Department believes that customers who place a high value on these factors should not lose control of their orders based on a rigid rule of thumb that takes into account only the factor of price." Comments of the United States Department of Justice before the Securities and Exchange Commission in the matter of Release No. 34-42456, File No. 4-429, Proposed Option Market Linkage Plans by the American Stock Exchange, Chicago Board Options Exchange, Pacific Exchange, and Philadelphia Stock Exchange, April 5, 2000, p. 2.

[5] Comments on NASDAQ OMX PHLX LLC (Phlx) Rulemaking, Statement of Robert Willig and Gustavo Bamberger, January 24, 2014, p. 16 (explaining in paragraph 27 that discriminatory pricing increases prices to some customers while decreasing it to others).

[6] Notice of Filing, pp. 18-19.

[7] *Id*, pp. 19-20.

however, in that the services and/or products cited by Phlx refer to product types or offerings on a single exchange. The type of segmentation mentioned by Phlx, currently employed by various exchanges, provides for non-standardized pricing for different services or products, but this fact is not surprising. In fact, it would be surprising if different offerings, such as electronic execution versus open outcry, had identical pricing structures given the different costs associated with providing those different services. What is unique in the Phlx proposal, however, and what is an indication of a form of price discrimination, is differences in pricing for the *same* product based only on the volume the customer purchased on other exchanges. As shown in the example discussed above, that is a likely result of the Phlx proposal: two otherwise identical customers with identical volume on Phlx, using identical services, will pay different net fees due to differences in purchasing patterns at exchanges other than Phlx.

V. The Proposal is Economically Different From a Volume-Based Rebate Policy and Would Likely Result In Rebates on Phlx For Purchases Made on NOM or BX Exchanges

A. The economics of volume rebates

12. Volume discounts (including rebates) can be a form of price discrimination.[8] However, it is widely recognized that volume discounts may arise simply due to cost efficiencies resulting from higher volume, such as a reduction in shipping costs or from being able to better plan production.[9] In a survey regarding reasons for quantity discounts, "[f]ifty-six percent of the sample participants replied that the quantity discounts that they deal with exist due to economies of scale in purchasing or manufacturing."[10] Critically, this type of volume discounting is based on costs and efficiencies related to the customer or transaction.

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[8] Differential pricing based on volume can be a reflection of buyer power on the part of a large customer. "We show that if suppliers are capacity constrained or have strictly convex costs, there are two different channels through which large buyers can obtain more favorable terms from their suppliers. In particular, we show how the presence of large buyers can then erode the value of suppliers' outside option. Somewhat surprisingly, we show how this can induce suppliers to undertake strategies that lead to higher output and potentially higher welfare." Inderst, Roman and Christian Wey. 2007. "Buyer Power and Supplier Incentives." *European Economic Review*, Volume 51, Issue 3: 647-667.

[9] "Quantity discounts are ubiquitous in practice. They can reflect efficiency savings arising from a variety of sources such as savings in shipping costs or from being able to plan production." Carlton, Dennis W. and Michael Waldman, "Safe Harbors for Quantity Discounts and Bundling". Economic Analysis Group Discussion Paper. January 2008, p. 3.

[10] Munson, Charles L. and Meir J. Rosenblatt. 1998. "Theories and Realities of Quantity Discounts: An Exploratory Study." Production and Operations Management, Volume 7, Issue 4: 358.

13. As a result, quantity discounts are common and well-known in many industries. These efficiency-based quantity discounts arise even in competitive markets.[11] Indeed, "it is competition, rather than its absence, that in many cases serves to impose discriminatory pricing."[12] In particular, high fixed costs and relatively low marginal costs (as is found with trading on options exchanges) may give rise to efficiency-based quantity discounts.[13] As noted above, however, such efficiency-based volume discounting is based on efficiencies related to the customer or transaction.

B. The proposed rule does not meet the characteristics of an efficiency-based volume rebate

14. The structure for the proposed rule change does not appear to meet the characteristics of an efficiency-based quantity discounting program. While the Phlx rule proposal provides the opportunity for reaching higher rebate tiers, and as a result greater total rebates, the tiers are based on volume from Phlx and *other non-Phlx* exchanges. In my review of the material submitted by Phlx in this matter (including the Willig and Bamberger declaration), I have seen no discussion that additional volume transacted at either NOM or BX generates efficiencies at Phlx that would justify, on efficiency grounds, the new proposal.

15. As discussed above, an economic justification for quantity discounting can be based on factors such as high fixed costs, scale economies or better scheduling of order flow. Missing from Phlx's discussion of its rule change proposal, however, is any noticeable or substantive analysis of efficiencies generated for Phlx that would warrant passing these efficiencies down to Phlx customers. That is, I would expect a fulsome efficiency discussion to include reasons why the transactions for a particular customer on NOM or BX somehow directly result in greater efficiencies for that same customer's purchases on Phlx. Further, since the proposed rule does not include additional rebates for that customer's NOM or BX transactions, the efficiency argument would need to further reconcile why the NOM and BX volume created efficiencies for that customer's Phlx volume, but somehow created no such efficiencies for the NOM and BX exchange where the transaction took place.

[11] Munson, Charles L. and Meir J. Rosenblatt. 1998. "Theories and Realities of Quantity Discounts: An Exploratory Study." Production and Operations Management, Volume 7, Issue 4: 353, 361.

[12] Baumöl, William J. and Daniel G. Swanson. 2003. "The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power." *Antitrust Law Journal*, Volume 70, Issue 3: 662.

[13] *Id.*, p. 665. "[O]ne crucial attribute ... is of critical relevance: the presence of substantial common costs that are either fixed or sunk."

16. To my knowledge, this type of analysis has not been presented.[14] The absence of such an analysis suggests that the proposal is motivated by a form of price discrimination based on preferences for purchasing volume on a particular exchange, and not on efficiency grounds.

C. The proposed rule would effectively pay rebates to Phlx customers for purchases made on other exchanges

17. The language used to describe the proposed rule attempts to make clear that the increased rebates would only be paid on qualifying orders on Phlx: "the more volume they transact on Phlx, the greater the reward, as only qualifying Customer orders executed on Phlx are entitled to the rebate."[15] Despite such language, however, from an economic perspective there would be situations where customers earn rebates on Phlx due to purchases on other exchanges. This is directly related to the fact that the proposal "aggregates" all of the volume from NOM/BX and Phlx for the purpose of determining the volume criteria. To understand why this likely will create situations where rebates are paid on Phlx for volume from NOM/BX a simple example helps to illustrate:

- Assume a simplified rebate structure in which Phlx rebates 1% for volume up to 10,000 contracts, and 2% for volume above 10,000 contracts. Customer Y purchases 10,000 contracts on Phlx and 10,000 on NOM/BX.
- Customer Y would therefore earn 1% on the 10,000 contracts executed on Phlx.
- The rule is changed, allowing NOM/BX volume to count in the Phlx rebate tiers. Customer Y continues to purchase 10,000 on Phlx, and 10,000 on NOM/BX.
- Customer Y would therefore get credit for 20,000 contracts at Phlx, allowing Customer Y to earn rebates of 2% on the 10,000 contracts actually sent to Phlx.
- Note that Customer Y has not changed its purchases on Phlx (or on NOM or BX, for that matter), but its marginal rebate and total rebate on Phlx has increased as a result of incremental purchases on NOM/BX.

[14] In fact, Phlx's April 18, 2014 letter specifically pointed to a lack of cost savings related to the proposal: "In the future, however, if one of the exchanges nears the point at which additional volume increases would require significant capacity increases, cross-exchange pricing could be used to encourage members to shift volume from that exchange to one of the affiliated exchanges that has excess capacity. *Phlx has not attempted to quantify these potential cost savings, however, because they are not expected to materialize in the near future.*" April 18, 2014 Letter from NASDAQ OMX. File No. SR-Phlx-2013-113-Request for Information, p. 6 (emphasis added).

Notice of Filing, p. 22 (emphasis in original).

18. This simplified scenario shows a disconnect between transactions on Phlx and the net pricing of those transactions. That is, the volume on Phlx no longer solely determines the total rebate; rather, rebates are determined by combined volume from multiple exchanges. As a result, a customer may see its net pricing change, but not from incremental purchases on Phlx, but from incremental purchases on NOM/BX. This implies that it is the volume on those other exchanges that, on the margin, dictated the net pricing of the Phlx transactions.

VI. CONCLUSION

Based on the information and economic analysis above, I reach the following conclusions. First, the proposed Phlx rule change is likely a form of price discrimination which would result in otherwise identical Phlx customers paying different relative prices for substantially the same use of Phlx's facilities but different uses of other exchanges. Second, the proposed Phlx rule change does not appear to be an efficiency-based volume discount. Third, the effect of the proposed Phlx rule change likely would be to pay rebates to Phlx customers based on purchases made at other exchanges.

Parker M. Normann

May 8, 2014

EXHIBIT 1

CURRICULUM VITAE

OF DR. PARKER M. NORMANN

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Parker M. Normann, Ph.D.
Partner

Parker M. Normann has more than fifteen years experience applying economic techniques to litigation, mergers, and regulatory matters for some of the world's largest and best known companies. Dr. Normann has extensive experience in presenting complex economic concepts to technical and non-technical audiences alike. He has been the lead economist in numerous high-profile merger and litigation cases, in which he provided expert consulting, analysis, expert testimony, and written reports.

Dr. Normann has worked on complex litigation and mergers in a variety of U.S. and Canadian industries, including electronic data storage, drug manufacturing and distribution, paper product manufacturing, transportation, and agriculture. He has also worked on matters and prepared position papers for the banking and financial markets, real estate sector, major auditing firms, and the election and political markets.

Dr. Normann has presented analysis, testified, and submitted reports to U.S. courts, the U.S. Department of Justice, and Federal Trade Commission and has assisted with the preparation of analysis used in reports or evidence before the United States Congress, Federal and State courts, the Federal Trade Commission, the Department of Justice, and the Supreme Court of the United States.

Prior to joining Edgeworth Economics, Dr. Normann was a Vice-President with CapAnalysis. Early in his career, he assisted Dr. James C. Miller III (Former Director United States Office of Management and Budget, Chairman Federal Trade Commission) with his book, Monopoly Politics, and served as a research assistant at the Center for the Study of Public Choice at George Mason University.

EDUCATION

George Mason University
Ph.D., Economics

Murray State University
MS, Economics

Lehigh University
BS, Economics, Marketing

CURRENT EMPLOYMENT

Edgeworth Economics, Washington, D.C.
March 2011-present, Partner

EMPLOYMENT HISTORY

CapAnalysis, Inc., Washington, D.C.
1998-2011, Vice- President, Senior Economist, Economist

Citizens for a Sound Economy Foundation, Washington, DC
1997–1998, Head of Research for *Monopoly Politics*

PROFESSIONAL ACTIVITIES AND AWARDS

Global Competition Review Economist of the Year, Finalist 2012

Global Competition Review Matter of the Year Award, Winner 2011

American Bar Association, Associate Member
- Antitrust Section

American Economic Association, Member

TESTIMONY AND EXPERT REPORTS

Apotex Inc. et al v. Acorda Therapeutics, Inc.
Expert Report, April 30, 2014.

Confidential settlement analysis for antitrust litigation. 2013

In the Matter of McWane, Inc., Before the Federal Trade Commission Office of Administrative Law Judges
Expert Report, June 29, 2012.
Deposition, July 23, 2012.
Testimony at ALJ Trial, October-November 2012

E.I. du Pont de Nemours and Company v. Kolon Industries, Inc. 2011
Expert declaration in support of motion to compel.

Federal Trade Commission Non-Public Investigation
Presented economic analysis before the Office of Commissioner Rosch, June 29, 2011
Presented economic analysis before the Office of Commissioner Ramirez, June 30, 2011
Presented economic analysis before the Office of Commissioner Leibowitz July 7, 2011
Presented economic analysis before the Office of Commissioner Kovacic July 8, 2011

Wheeler et al. v. Pilgrim's Price Corp., Eastern District of Texas. 2007
Expert declaration on data management.

D. Lamar Deloach v. Philip Morris Companies. 2003.
Expert declaration for valuation of Tobacco Growers settlement.

D. Lamar Deloach v. Philip Morris Companies. 2003.
Reply declaration for valuation of Tobacco Growers settlement.

Cenveo Acquisition of MeadWestvaco Envelope Product Group.
Presented economic analysis before U.S. Department of Justice.

Saskatchewan Wheat Pool/ Agricore United.
Presented economic analysis before U.S. Department of Justice.

Retained for expert declaration on antitrust product and geographic market.

Retained for expert declaration on economic impact regarding local immigration issues.

Publications and Presentations

"Reflections on Bazaarvoice" (with Gregory K. Leonard), CPI Antitrust Chronicle. March 2014.

"The Use and Misuse of Regression Analysis in Antitrust Litigation" (with Laila Haider), Seminar at White & Case, LLP (for CLE credit). 2013.

"The Working Relationship on Class Certification," Baker Botts. 2013.

"Working with Economic Experts – Econometrics," White and Case (for CLE credit). 2013.

"Market Definition Does Not Yield Evidence of Class-Wide Impact," The Antitrust Practitioner. Volume 9, June 2012 (with Michael Noel).

"ABA Rule of Reason Handbook", contributing author (forthcoming).

"Economics of Antitrust," Howrey Antitrust Fundamentals Seminar (for CLE credit). 2011.

"Managing Testifying Experts Presentation," Howrey U. 2010 (with Chuck Loughlin).

"More of the Same: Continued Growth In Private Antitrust Litigation And Continued Cut-Backs By The US Supreme Court." *Global Competition Review: Antitrust Review of the Americas 2009*, September 2008 (with Joseph Ostoyich and David T. Emanuelson).

SELECTED CONSULTING EXPERIENCE

Apotex Inc. et al v. Acorda Therapeutics, Inc. Testifying expert.

In re Nexium Antitrust Litigation. Lead consulting economist for Nexium in the class and damages phases of the litigation.

NYC Bus Tour Antitrust Litigation. Lead consulting economist in a class action case regarding claims of anticompetitive conduct.

In the Matter of McWane Inc. Testifying expert in Section V case regarding allegations of horizontal agreement and monopolization.

Seagate/Samsung HDD business. *Global Competition Review Matter of the Year.* Lead economist representing Samsung in sale of global hard disk drive business.

In Re Wellbutrin XL Antitrust Litigation. Served as lead internal economist for direct and indirect damage calculations.

In re: Wholesale Grocery Products Antitrust Litigation. Prepared analysis on market definition and market power on class wide impact.

Cenveo/ MeadWestvaco Envelope group. Served as lead economist for analysis and presentation before U.S. Department of Justice.

Arminak & Associates, Inc. v. MeadWestvaco Calmar, Inc. Served as lead internal economist for manufacturer of trigger sprayers accused of violating federal and state antitrust laws, through alleged exclusive dealing contracts and below-cost pricing.

Nestle/ Kraft Foods' frozen pizza. Prepared empirical "Staples" and entry event studies to determine extent of price competition for relevant products.

Advanced Micro Devices (AMD) v. Intel. Served as lead internal economist for antitrust evaluation of Intel/IBM contracts.

Dow Corning acquisition of Globe Specialty Metals assets in U.S. and Brazil. Served as lead internal economist for analysis of competitive effects of $175 million dollar transaction.

K-Dur Civil Antitrust Litigation. Served as lead internal economist for class and liability analysis on behalf of Schering-Plough.

Saskatchewan Wheat Pool/ Agricore United. Served as lead economist for analysis and presentation before U.S. Department of Justice.

In the matter of the FTC v Schering Plough Corporation. Constructed and analyzed financial models for projected drug sales.

In the matter of the FTC v Boston Scientific Corporation. Served as lead internal economist for attempted monopolization claims relating to medical devices.

Mead/Westvaco. Served as lead economist for multibillion dollar merger of two of the world's largest paper producers.

Mead/ Day Runner. Served as lead economist for acquisition of Day Planner.

Mead/At-A-Glance—Paper and office products. Served as lead economist for acquisition of At-A-Glance.

Publication Paper Antitrust Litigation. Provided consulting for outside experts regarding class certification.

Confidential paper/paperboard industry project. Provided consulting for numerous potential acquisitions.

Ingram Barge/ Midland. Served as lead economist for Ingram Barge acquisition of Midland Enterprises LLC.

Ingram Barge/ Riverway Company. Served as lead economist for Ingram Barge acquisition of Riverway assets.

US Airways/Delta. Provided expert consulting for investors studying antitrust implications.

Ford Motor Company Litigation. Researched economic implications for international pricing.

DeLoach v. R.J. Reynolds . Served as lead internal economist for class certification and liability in litigation involving collusion in auction system.

Cargill/Continental. Analyzed likely impact on pricing and distribution resulting from the proposed merger.

Guadalupe Garcia v United States Department of Agriculture. Provided expert advice regarding class merits.

Master Settlement Agreement. Provided consulting for confidential client regarding pricing implications from government's master settlement agreement.

Financial markets, accounting. Provided expert advice regarding merger environment.

FHLMC Freddie MAC—Financial markets, mortgage backed securities. Prepared economic impact analysis of proposed rulemaking regarding mortgage-backed securities.

New York ISO—Financial markets, energy trading. Assisted with analysis and market monitoring of New York wholesale energy market.

National Association of Realtors. Prepared economic impact analysis of proposed rulemaking regarding bank cross-over into real estate markets.

Regulatory rule proposal. Prepared economic impact analysis of proposed rulemaking regarding Treasury bond repurchase market.

Intergraph v. Intel. Prepared economic analysis of Intergraph claim of exclusive conduct and attempted monopolization regarding microprocessor patent.

Electronics for Imaging. Prepared analysis of photo-editing software market.