CITADEL

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Nancy Morris
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549

Re: Boston Stock Exchange, Inc. Proposed Amendments to the Boston Options Exchange Rules to Adopt a Universal Price Improvement Period (SR-BSE-2006-16).[1]

Dear Ms. Morris:

Citadel Investment Group, L.L.C. ("Citadel") appreciates the opportunity to comment on the Boston Options Exchange (the "BOX") proposal to adopt a Universal Price Improvement Period ("UPIP").[2] Citadel urges the Commission to reject this proposal (the "UPIP proposal").

The UPIP mini-auction will decimate the continuous auction process that has become the cornerstone of the options markets. A continuous auction leads to tight, deep, and transparent markets if there are appropriate incentives to quote aggressively. In the options markets today, those willing to add liquidity to the book or commit the capital and resources needed to post continuous two-sided quotes at or near the best price and in size are rewarded when a desirable order arrives because the best quotes on the book have priority to interact with incoming orders.

With the UPIP in operation, however, dealers and other market participants will be encouraged to post wide and shallow quotes (if any), and only compete aggressively when a UPIP auction starts. Market participants will do so because the most desirable orders (that is, customer orders) will be re-directed to the UPIP auction. Those who quote aggressively in the continuous auction will be scorched by adverse selection. Quotes on the BOX will interact only with the most undesirable orders—that is, orders from other broker-dealers (which are not eligible to initiate a UPIP auction) and customer orders that fail to generate any interest in a UPIP auction. The customer orders that remain unexecuted after a UPIP auction will be further adversely selected because customers will have a free option to cancel their orders during the

[1] *See* Exchange Act Release No. 34-55230 (February 2, 2007), 72 FR 6302.

[2] Citadel Investment Group, L.L.C. ("Citadel") and its affiliates operate one of the world's largest alternative investment firms. On an average day, Citadel accounts for nearly one fifth of U.S. listed options market volume. Citadel Derivatives Group LLC is the second most active market maker on the BOX and an equity investor in the BOX.

UPIP auction based on intervening market movements, while a quote at the top of the BOX Book is effectively frozen until the UPIP auction ends.

These incentives will inevitably lead to less market depth, liquidity, and transparency on the BOX and in the entire options market. As other exchanges adopt similar mini-auctions, the options markets will mutate from a collection of open, transparent, and linked markets, to a series of dark pools, where true market trading interest is never fully known and only evidenced indirectly and partially at the end of each mini-auction.

At the very least, the Commission should not approve the UPIP Proposal in any form during the "Penny Pilot" program.[3] The UPIP Proposal is a paradigm shift in market structure that is more fundamental than penny quoting and will undoubtedly distort any data being collected during the Pilot.

I. The UPIP Proposal

The BOX introduced its first mini-auction facility, known as the Price Improvement Program (the "PIP"), when the exchange launched in 2004.[4] The PIP is a price improvement auction in penny increments that begins when an Order Flow Provider sends an order to the BOX with a guarantee to trade with the order at a penny better than the NBBO.[5] After the BOX launched, other exchanges quickly followed by implementing their own look-alike mini-auctions.[6]

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[3] *See* Exchange Act Release No. 54789, SR-BSE-2006-49 (November 20, 2006) (the "Penny Pilot Proposal").

[4] *See* Exchange Act Release No. 49068 (January 13, 2004), 69 FR 2775 (January 20, 2004). *See also* Chapter V., Section 18 of the BOX Rules.

[5] Chapter V, Section 18 of the BOX Rules. An Order Flow Provider ("OFP") is defined as an "Options Participant" who (a) represents a customer order as agent or (b) is a non-market maker conducting proprietary trading. BOX Rules Chapter I, Section 1(a)(46). An Options Participant is defined as a firm or an organization that is registered with the BOX in accordance with Chapter II of BOX Rules for purposes of participating in options trading on the BOX as an OFP or Market Maker. BOX Rules Chapter I, Section 1(a)(40).

[6] *See, e.g.,* Exchange Act Release No. 50819, SR-ISE-2003-06 (regarding the International Securities Exchange, Inc.'s Price Improvement Mechanism proposal), Exchange Act Release No. 52577, SR-CBOE-2005-60 (regarding the Chicago Board Options Exchange, Inc.'s ("CBOE") Automated Improvement Mechanism proposal), Exchange Act Release No. 34-54229, SR-CBOE-2005-90 (regarding the CBOE's Simple Auction Liaison ("SAL") proposal).

Under the UPIP Proposal, all marketable Customer orders (*i.e.*, non-broker-dealer orders) submitted to the BOX will trigger a UPIP mini-auction (subject to a few broad eligibility requirements and conditions).[7] There is no requirement, as there is with PIP auctions, that an OFP or Market Maker responsible for a customer order submit an "Initial Improvement Order" to initiate the mini-auction.

Any Options Participant or Customer of an Options Participant may compete in a UPIP auction by submitting an Improvement Order.[8] Improvement Orders will be visible to all Options Participants, but will not be disseminated to OPRA or affect the NBBO.

A UPIP Improvement Order or the original UPIP Order that triggered the UPIP auction may be cancelled or modified at any time prior to the termination of the UPIP auction.[9] In contrast, during a UPIP auction, the initial quantity of the UPIP order will be "stopped" against any order on the BOX Book that is marketable against the UPIP order at the time the UPIP order is received.[10] At the conclusion of a UPIP auction, orders are matched using time/price priority, with a few exceptions.[11]

II. The UPIP Will Devastate Pricing, Depth, and Transparency

The UPIP will discourage quoting in the continuous auction, and in particular will discourage quoting in size and with tight spreads. In a traditional auction market, market participants are compelled to compete for orders by announcing (in the case of a totally manual floor-based market), or sending electronically, a quote or order at their best prices to a single, centralized auction on an exchange. Exchanges then disseminate the best-priced quotations to the marketplace. Orders at the top of the limit order book are also displayed as quotations (or are aggregated with Market Maker quotations) if they are at the best price in the market. Incoming orders are executed against such quotations based on the exchange's priority and trade allocation

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[7] For example, an eligible order must (among other things) be a Limit, Market or BOX-Top Order that is marketable against the NBBO. *See* UPIP Proposal at page 31.

[8] A UPIP Improvement Order is an order submitted to a UPIP auction in response to a broadcast message by Options Participants that are on the opposite side of the market as the UPIP order. *See* UPIP Proposal at footnote 10.

[9] *See* UPIP Proposal at page 35.

[10] *See* UPIP Proposal at page 10.

[11] *See* UPIP Proposal at page 6.

rules. This traditional structure encourages liquidity and tight spreads by rewarding aggressive quotes with executions, while providing transparency into market supply and demand.

The UPIP turns these healthy incentives upside-down by gutting the centralized auction. With UPIP in place, quotes in the centralized order book will face several layers of adverse selection. First, the most desirable incoming orders (*i.e.*, non-broker-dealer orders) will bypass the centralized auction leaving quotes in the centralized auction exposed only to the most dangerous professional orders. Second, after a UPIP auction is completed, centralized auction orders will be exposed to the UPIP "rejects"—that is, orders that generated no UPIP Improvement Orders. These orders are much more likely to be the less desirable orders of sophisticated market participants or orders that have become undesirable because of intervening market movements. Third, the UPIP "rejects" will be particularly dangerous because UPIP orders have unfettered cancellation ability. This will give sophisticated customers a free option to cancel their UPIP orders before the end of the UPIP auction based on intervening market movements, while orders at the top of the book are frozen. Although the UPIP Proposal provides a marginal incentive to leave orders resting on the BOX Book by breaking UPIP auction ties in favor of the first-in-time order at the top of the Book ("NBBO Prime"), this incentive pales in comparison to the risks of leaving an order or quote resting on the Book with UPIP in operation.[12]

Because of these perverse incentives, the UPIP will almost certainly decrease quote competition in the continuous auction and turn the continuous auction from the market's main source of liquidity, to the market's liquidity source of last resort. Market Makers and other market participants will be reluctant leave orders or quotes resting on the Book to be filled only after others have picked over incoming orders, and at risk of being be frozen at the worst possible times. As Market Makers and other market participants quote less aggressively, there will inevitably be less market depth and wider quoted spreads.

Transparency will also suffer. First, more market participants will hide their true trading interest and saving it for UPIP auctions. Second, the broadcast message commencing a UPIP auction and UPIP auction quotes will only be accessible to BOX participants and will not be publicly disseminated. As a result, only BOX participants will know the "true" BOX market. In addition, because UPIP orders can only be accessed by BOX Options Participants, other markets

[12] In any case, we doubt the technological feasibility of the proposed NBBO Prime UPIP priority. The proposal would require firms seeking NBBO Prime status to specify the order number of their order that was first in time at the top of the Book. We doubt that many firms will successfully overcome the technological hurdles needed to claim this marginal benefit, given the speed of quote updates and the difficulty of determining whether one's quote was the first in time.

will not have an opportunity to send intermarket orders to the BOX when a UPIP auction improves the NBBO. Conversely, an improvement to the NBBO on an away market will not trigger an early termination of the UPIP and the "shipment" of the UPIP order to the better away market.

Transparency and intermarket interaction are central to the policies underlying the national market system established by Section 11A of the Exchange Act, which specifically says that "[t]he linking of all markets for qualified securities through communication and data processing facilities will foster efficiency, enhance competition, increase the information available to brokers, dealers, and investors, facilitate the offsetting of investors' orders, and contribute to best execution of such orders." The UPIP will take the options markets in the opposite direction.

When considering adopting Regulation ATS,[13] and later when examining the fragmentation of order flow in the equities markets,[14] and ultimately when adopting the market access requirements of Regulation NMS,[15] the Commission was concerned that these national market system principles were being compromised by changing technology and market conditions that were making possible the existence of disconnected pools of liquidity that were invisible to, and inaccessible by, many investors and market participants. As a result, Regulation ATS and Regulation NMS consist of rules that are specifically deigned to promote visibility and accessibility of "top of the book" orders and cross-market limit order protection.[16] The Commission must ensure that the ground gained in equity market structure is not lost in the options markets.

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[13] *See* Exchange Act Release No. 40760 (December 8, 1998) (the "Regulation ATS Adopting Release").

[14] *See* Exchange Act Release No. 42450 (February 23, 2000) (the "Market Fragmentation Concept Release").

[15] *See* Exchange Act Release No. 51808 (June 9, 2005) (the "Regulation NMS Adopting Release").

[16] For example, regulation ATS established threshold volume levels at which an ATS must (a) display quotations to the world, and (b) provide nondiscriminatory access to those quotations. Regulation NMS later modified (lowered) the threshold that triggers the Regulation ATS fair access requirements, and also greatly reduced the level of access fees that could be charged.

III. The UPIP May Cause Orders to Miss Better Prices on Away Markets

Although the UPIP Proposal does not fully explain how the UPIP will interact with the intermaket linkage and better prices on away markets, it appears that the UPIP will consistently cause UPIP Orders and orders resting on the BOX Book to miss better prices on away markets. This conflicts with the letter and spirit of the Linkage Plan.[17]

First, when the NBBO on the opposite side of the market from a UPIP Order changes because a better price is posted on an away market, the UPIP Order will presumably be locked in the mini-auction for three seconds. This will cause the UPIP Order to miss the better price on the away market, unless the UPIP is otherwise terminated. Although the UPIP Proposal will allow customers to cancel or modify their orders during a UPIP auction, only those customers and OFPs with the best technology will have a fighting chance to cancel or modify a UPIP Order in time.[18]

Second, if an order on the BOX Book that is reflected in the "Initial BOX Book Quote"[19] is modified to pursue a better price on an away market, the cancellation request would not be effected until the UPIP order is filled.[20] This three second freeze on orders on the top of the BOX Book that are "stopping" UPIP orders will effectively prevent these resting orders from pursuing better prices available in an away market.

Third, it is unclear whether orders on the BOX Book that constitute the Initial BOX Book Quote will be eligible for linkage orders, and, if so, whether linkage orders will also have the ability to halt a UPIP auction. If not, orders on the BOX Book will consistently miss better away prices.

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[17] See Section 10 of the Linkage Plan.

[18] Section 29(i) of the UPIP Proposal provides that "…a UPIP order may be cancelled or modified at any time prior to the termination of the UPIP auction," and "at the conclusion of the UPIP auction, including premature termination, the UPIP order shall be matched against the best prevailing orders. . . including . . . orders submitted on BOX."

[19] The Initial BOX Book Quote is defined as the quote(s) and/or order(s) on the BOX Book at the best price, on the opposite side, and in the same series as the Eligible Order at the time the Trading Host receives it. *See* UPIP Proposal at page 10.

[20] *See* UPIP Proposal at page 10.

IV. The UPIP Will Distort The Commission's Analysis of the Penny Quoting

In addition to all of these problems with the UPIP's design that counsel against ever approving the UPIP proposal, the Commission should not approve the UPIP proposal at the present time because the options exchanges, including the BOX, have just embarked on the Penny Pilot program.[21] Under the Penny Pilot, quotes for specified options will be in pennies instead of the standard nickel and dime increments. The Pilot results will enable the Commission and others to examine the impacts of penny quoting on options markets and determine the best way to move the options markets to more appropriate quoting increments. Establishing the UPIP during the Penny Pilot Program will distort Penny Pilot data because the UPIP is a seismic shift in market structure. The Commission should fully study the results of the Penny Pilot and fully resolve the issue of quoting increments before deciding whether mini-penny-auctions like UPIP should become the dominant feature of the options markets.

Although the Commission recently approved the CBOE's "SAL", which has many similarities to the UPIP Proposal, there are important differences between the UPIP and SAL.[22] Moreover, the CBOE has not yet implemented SAL and has announced no intention of doing so.

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For all of these reasons, we urge the Commission to reject the UPIP Proposal. If you have any questions about these comments or would like to discuss these matters further, please feel free to contact me at 312-395-3167.

Sincerely,

Matthew B. Hinerfeld
Managing Director and
Deputy General Counsel

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[21] *See* Exchange Act Release No. 54789, SR-BSE-2006-49 (November 20, 2006) (the "Penny Pilot Proposal").

[22] The most obvious difference is that SAL is a two second auction, where the UPIP is three seconds. In addition, auction responses on SAL are not available to Public Customer orders and are instead limited to Market Makers with an appointment in the relevant option class and CBOE members acting as agent for orders resting at the top of the exchange's book opposite such agency orders. This is not the case on the UPIP. Some other differences exist with respect to how likely the SAL and UPIP auctions will be available in practice. For instance, the SAL will automatically initiate an auction process only for orders eligible for automatic execution by the CBOE's Hybrid System, and only when there is sufficient Market Maker quotes to fill an agency order. UPIP, on the other hand, will be available to all Customer orders not already subject to the PIP or executed as part of the BOX directed order process.

cc: Chairman Christopher Cox
Commissioner Paul S. Atkins
Commissioner Roel C. Campos
Commissioner Annette L. Nazareth
Commissioner Kathleen L. Casey
Eric Sirri, Director, Division of Market Regulation
Elizabeth King, Associate Director, Division of Market Regulation