

Nasdaq Opening Cross Enhancements

Increasing Transparency and Flexibility at the Open

What Are We Introducing?

- Improved transparency: Nasdaq will disseminate auction imbalance information beginning at 9:25 a.m. ET
- Improved flexibility: Nasdaq will allow for MOO & LOO Orders to be entered after the initial auction imbalance dissemination has been published
- Maintain integrity: Cancellation of On-Open Orders will not be permitted after the imbalance information has been published (9:25 a.m. ET) ensuring the auction preserves its integrity

Why Are We Making These Changes?

- Improve the transparency and flexibility for participating in the price discovery process for the opening auction
- Increase participation for a wider variety of liquidity providers earlier in the trading day
- Disseminating early Order Imbalance information is an accepted practice in market center auctions

New Opening Cross Functionality Timeline:

- 9:25-9:28 a.m. ET: Early Auction Imbalance Information is published; new MOO & LOO orders accepted; modifications and cancellations are not permitted.
- 9:28-9:29:30 a.m. ET: Full Auction Imbalance Information is published; new MOO orders are rejected; Late LOO* orders are accepted; modifications and cancellations are not permitted.
- 9:29:30-9:30 a.m. ET: New non-IOC LOO orders are treated as Imbalance Only Orders; new IOC LOO orders are rejected; Imbalance Only Orders may be entered until 9:30 a.m. ET

*Late LOO orders entered after 9:28 a.m. ET will be accepted at their limit price, unless its limit price is more aggressive than both the 9:28 a.m. ET Reference Price or the security's previous day's official Closing Price, in which case the Late LOO order will be re-priced to the more aggressive of the two prices (depending on the customer's instructions). Utilizing both the 9:28 a.m. ET Reference Price and the previous day's official Closing Price will promote price stability as well as add flexibility to offset auction imbalances and enhance the opening auction price discovery process.

Late LOO Pricing Example:

PREVIOUS DAY'S OFFICIAL CLOSING PRICE = 10.00

9:25 A.M. ET -- EARLY NOII BEGINS NASDAQ BBO 9.99 X 10.01

100K BUY IMBALANCE REFERENCE PRICE = 10.01

- 9:26 a.m. ET
Ord#1 B 50K MOO received NOII = 150k Buy Imbalance BBO 10.15 x 10.20 Reference Price = 10.20
- 9:27 a.m. ET
Ord#2 B 50k MOO received NOII 200k Buy Imbalance BBO 10.25 x 10.30 Reference Price = 10.30

- 9:27:30 a.m. ET
Ord#3 S 200k LOO 10.40 received NOII 200k Buy Imbalance BBO 10.25 x 10.30 Reference Price = 10.30
- 9:28 a.m. ET
NOII 200k Buy Imbalance BBO 10.25 x 10.30 Ref = 10.30 Near Price = 10.40 Far Price = 10.40
- Late Sell LOO Orders will be accepted at prices as aggressive as 10.00 and Late LOO Buy orders will be accepted at prices no more aggressive than 10.30.

PREVIOUS DAY'S OFFICIAL CLOSING PRICE = 10.00

9:25 A.M. ET -- EARLY NOII BEGINS NASDAQ BBO 9.99 X 10.01

100K BUY IMBALANCE REFERENCE PRICE = 10.01

- 9:26 a.m. ET
Ord#1 B 50K MOO received NOII 150k Buy Imbalance BBO 10.15 x 10.20 Reference Price = 10.20
- 9:27 a.m. ET
Ord#2 S 250k MOO received NOII 150k paired 100k Sell Imbalance BBO 10.20 x 10.25 Reference Price = 10.20
- 9:27:30 a.m. ET
Ord#3 B 100k LOO received 9.70 NOII 150k paired 100k Sell Imbalance BBO 9.80 x 9.85 Reference Price = 9.80
- 9:28 a.m. ET
NOII 150k paired 100k Sell Imbalance BBO 9.75 x 9.80 Reference Price = 9.75 Near Price = 9.70 Far Price = 9.70
- Late Buy LOO Orders will be accepted at prices as aggressive as 10.00 and Late LOO Sell orders will be accepted at prices no more aggressive than 9.75.

Late LOO pricing rules will allow orders that offset imbalances to be more aggressively priced and restrict those orders that are on the same side of the imbalance from creating a larger imbalance. These rules will promote price stability and enhance price discovery in the opening auction.