

Enhanced RPI: Complementary Order Type to Retail Price Improvement Program on BYX

Overview

The Enhanced Retail Price Improvement (ERPI) order type, offered through the Retail Price Improvement (RPI) Program on the Cboe BYX Equities Exchange (BYX), enables RPI liquidity providers to post a limit order with a Step-Up Range that will only be used when necessary to gain a higher queue priority relative to better priced orders on the BYX book. ERPI orders can earn higher price priority than resting limit orders when executing against an incoming Retail Order at a price within the designated Step-Up Range. The ERPI order increases fill rates for liquidity providers and provides increased price improvement to retail investors.

Behavior

An ERPI order includes a user-defined Step-Up Range, which is activated when an incoming Retail Order would trade with a better-priced limit order resting on the BYX book. The ERPI order utilizes its Step-Up Range to price improve beyond the highest-ranked resting order, earn price priority, and execute against the incoming Retail Order.

For securities priced at or above \$1.00, the ERPI order must step up to the next half-cent midpoint or next full cent. For securities priced below \$1.00, the order must step up to the next minimum price increment. If there are no resting orders with a higher priority ahead of a resting ERPI order, the ERPI order will execute at its limit price.

The existing RPI indicator on Securities Information Processors (SIPs) and proprietary feeds will be activated based on the ranked price (limit price) of the ERPI order; the Step-Up Range will not trigger the indicator. Additionally, ERPI orders will not step up in priority ahead of other resting ERPI orders.

Key Execution Logic:

- **Priority:** The Step-Up Range allows the order to trade ahead of better or equal-priced resting orders on the same side of the BYX book with a higher execution priority.
- **Price Improvement:** To trade ahead of a resting order, the Enhanced RPI order must improve the price of higher ranked orders on the same side of the BYX book.
 - For symbols trading at \$1.00 and above, the ERPI order must be able to step up to the nearest whole cent tick or half cent midpoint.
- **Discretionary Behavior:** The Step-Up Range is only utilized when needed to interact with an incoming Retail order. If no higher-priority orders exist, the ERPI order executes at its ranked price.

Examples

Example 1: Enhanced RPI Steps Up ½ Cent

- **NBBO:** \$10.00 x \$10.05 (Midpoint=\$10.025)
- **Order 1:** Buy 100 @ \$10.02 - Hidden
- **Order 2:** Buy 100 @ \$10.01 - ERPI, Step-Up=\$0.02 (\$10.03)
- **Order 3:** Sell 100 @ \$10.00 - Retail Remover
- **Result:** Order 2 (ERPI Order) executes against Order 3 (Retail Remover) at \$10.025 (1/2 cent better than Order 1). Order 2 (ERPI Order) has price priority over Order 1 (Hidden Order). Order 3 (Retail Remove Order) receives an additional \$0.005 of price improvement by executing with Order 2.

Example 2: Enhanced RPI Steps Up 1 Cent

- **NBBO:** \$10.00 x \$10.06 (Midpoint=\$10.03)
- **Order 1:** Buy 100 @ \$10.02 - Hidden
- **Order 2:** Buy 100 @ \$10.01 - ERPI, Step-Up=\$0.02 (\$10.03)
- **Order 3:** Sell 100 @ \$10.00 - Retail Remover
- **Result:** Order 2 (ERPI Order) executes against Order 3 (Retail Remover) at \$10.03 (1 cent better than Order 1). Order 2 (ERPI Order) has price priority over Order 1 (Hidden Order). Order 3 (Retail Remove Order) receives an additional \$0.01 of price improvement by executing with Order 2.

Technical Information

FIX and BOE Order Entry

The order entry instructions listed below can be used in the New Order Single (FIX) message or the NewOrderUSEquitiesV1 (BOE) message to send ERPI orders. The StepUpAmount field will be added to FIX and BOE. The table below summarizes these technical specification changes.

Table 1. FIX and BOE Order Entry

FIX TAG	FIELD NAME	REC'Q	DESCRIPTION
9416	ExtendedExecInst	Y	T = Retail Price Improvement Order
25025	StepUpAmount	N	<ul style="list-style-type: none"> • StepUpAmount is implicitly added to bid prices and subtracted from offer prices for Enhanced RPI (Retail Price Improvement) orders. • The StepUpAmount value is specified in 0.001 minimum increments. • The minimum value is 0.000 (default). • The maximum value is 99.999.

More Information

WEB

[Retail Price Improvement](#)

INSIGHTS

[Retail Price Improvement Provides Unique Opportunities for Retail Investors and Liquidity Providers](#) (cboe.com)

TECHNICAL RESOURCES

- [Cboe U.S. Equities Trade Desk Notice](#)
- [Cboe Titanium U.S. Equities FIX Specification](#)
- [Cboe Titanium U.S. Equities BOE Specification](#)
- [Cboe Titanium U.S. Equities BOEv3 Specification](#)

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