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## CIRCUIT BREAKERS AND PRICE BANDS FOR OSLO STOCK EXCHANGE EQUITIES AND BONDS, OSLO AXESS AND MERKUR MARKET

Circuit Breaker (CB) functionality was implemented in Millennium Exchange in order to reduce uncertainty during volatile periods. In addition, price bands contributes to avoid erroneous order entries (“fat finger control”). These features have been active since the launch of Millennium on 12. November 2012.

**Definition of Circuit Breakers (CB):** A CB interrupts continuous trading by turning off automatic matching temporarily for a period from 3 and up to 6 ½ minutes , when the price movements in a security become relatively large. After a CB the automatic matching will resume with a Re-Opening Auction Call. The purpose is usually to give the market participants a few minutes to evaluate any new information, reconsider their interests or remove any erroneous orders. A CB has two types of reference prices, a static price and a dynamic price. CBs are only active during continuous trading.

**Definition of Price Bands (PB):** PB are a feature to prevent orders with a clearly erroneous price from being entered (fat fingers control). Price Bands rejects orders that deviate significantly from the static reference price. Compared to CB the price range for the PB will be wider and the purpose is primarily to avoid erroneous order entries.

### Dynamic CB

| Groups  | Limits   |
|---|----------|
| OBX - Stocks that are members of the OBX index (25 most traded securities in the OSEBX Index)   | +/-5%    |
| OB Match – Shares with a minimum of 10 trades per day on average or shares with less than 10 trades but with a liquidity provider scheme. | +/-12 %  |
| OB Standard – Shares with fewer than 10 trades per day on average   | +/-12 %  |
| OB New – newly listed shares  | +/-12 %  |
| Exchange Traded Funds   | +/- 12 % |
| OB Equity certificates  | +/- 12 % |
| Oslo Axess  | +/- 12 % |
| Merkur Market   | +/- 20 % |
| Penny stocks with value less than NOK 1 and ETNs with Micro Auctions <sup>2</sup> not enabled   | +/- 50%  |
| Government bonds  | +/- 2 %  |
| Treasury bills  | +/- 1 %  |

<sup>1</sup> The automatic matching resumes after 3 minutes + up to 30 seconds random time, subject to Price Monitoring Extension (PME) and/ or Market Order Extension (MOE) for which each will lasts for 1 minute and is followed by up to 30 seconds random time if triggered (cf. Oslo Børs Market Model Equities section 5)

Please note that:

The reference price used in dynamic CB is:

- The price of the last automatic execution (from an auction or from continuous trading), or previous day's closing price
- For Government bonds the combined Last (manual reported trades with specific conditions) can be used in addition to the last automatic execution.
- There is no dynamic CB functionality for ETNs without Micro Auctions enabled

## Static CB

| Groups  | Limits   |
|---|----------|
| OBX - Stocks that are members of the OBX index (25 most traded securities in the OSEBX Index)                                     | +/-15 %  |
| OB Match – Shares with a minimum of 10 trades per day on average or shares with less than 10 trades but with a liquidity provider | +/- 25 % |
| OB Standard – Shares with fewer than 10 trades per day on average.  | +/- 25 % |
| OB New – newly listed shares.   | +/- 25 % |
| OB Equity certificates  | +/- 25 % |
| Oslo Axess  | +/- 25 % |
| Merkur Market   | +/- 30 % |
| Penny stocks with value less than NOK 1 and ETNs with Micro Auctions <sup>2</sup> not enabled                                     | +/- 50%  |
| Government bonds  | +/- 2 %  |
| Treasury bills  | +/- 1 %  |

Please note:

- The reference price that is used in static CB is:  
The most recent of
  - previous day's closing price
  - uncrossing price from an auction, or – if there is no uncrossing price – the price of the first automatic execution after the auction
- There is no static CB functionality for ETFs and ETNs
- For Government bonds the combined Last (manual reported trades with specific conditions) can be used in addition to the last automatic execution.

Neither static nor dynamic CB is applied to subscription rights and warrants. However, Oslo Børs may consider applying CB to subscription rights in certain cases if deemed necessary, e.g. if high liquidity is expected.

<sup>2</sup> Micro Auctions are described in Oslo Børs Market Model Equities section 5.2.3

CB limits will be updated semi-annually when the liquidity segments are updated. The limits (percentages) are published on a daily basis (Reference Data) and re-published via the Market Data feeds if they are changed for single instruments, throughout the trading day.

### Price Bands

|                       |   |
|-----------------------|---|
| <b>Functionality</b>  |   |
| Order Tolerance Limit | +/-50%  |
| Ordre Tolerance Limit | +/- 3% for Government bonds and +/- 2% for treasury bills   |
| Reference price       | The price from the previous call auction (opening or intraday auction) or if no auction, the first trade of the day or if no trade that day, previous day's closing price           |
| Overnight orders      | Will be deleted if outside order tolerance limit  |
| Instrument types      | <ul style="list-style-type: none"> <li>• Shares and Equity Certificates for Oslo Børs and shares for Oslo Axess</li> <li>• Merkur Market</li> <li>• Investment funds/ETF</li> </ul> |

Please note:

- Price Bands do not applied to warrants, subscription rights and ETN's.

### Changes to Circuit Breakers and Price Bands

Oslo Børs Surveillance and Operations reserves all rights to change the thresholds at any time. Situations where this will be considered are for example corporate actions, major company events that significantly could influence the price of the instrument, and trading days with significant market volatility.

<sup>1</sup>The automatic matching resumes after 3 minutes + up to 30 seconds random time, subject to Price Monitoring Extension (PME) and/ or Market Order Extension (MOE) for which each will lasts for 1 minute and is followed by up to 30 seconds random time if triggered (cf. Oslo Børs Market Model Equities section 5)

