



Energy Initial Margin Performance During 2020

DISCLAIMER

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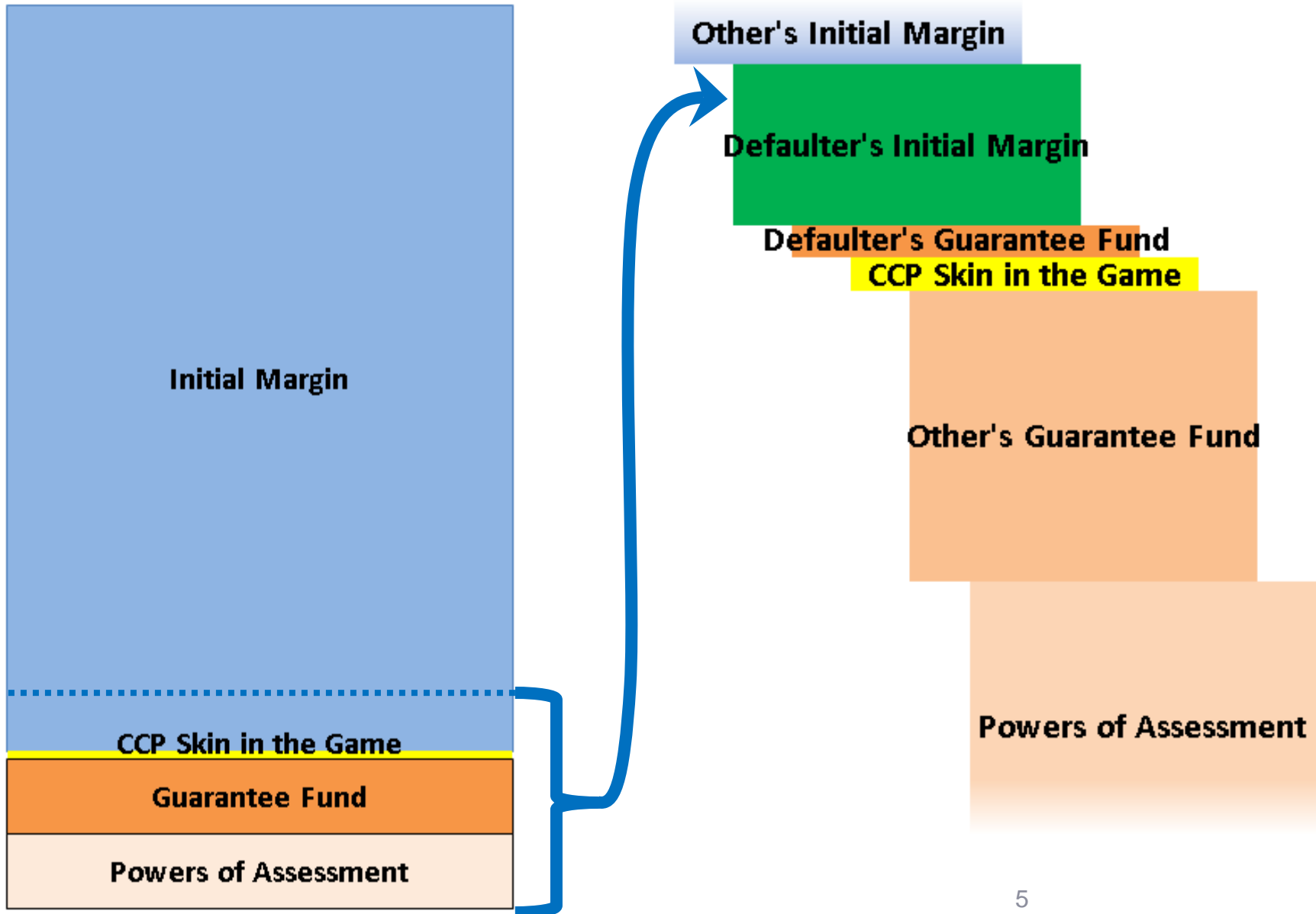
DCR Risk Surveillance Branch

- Margin model
 - Quantitative oversight of DCOs' margin models
- Daily risk surveillance
 - Hands-on quantitative surveillance of exposures for futures and swaps
- Risk analytics
 - Data, analytics, supervisory stress testing

Overview

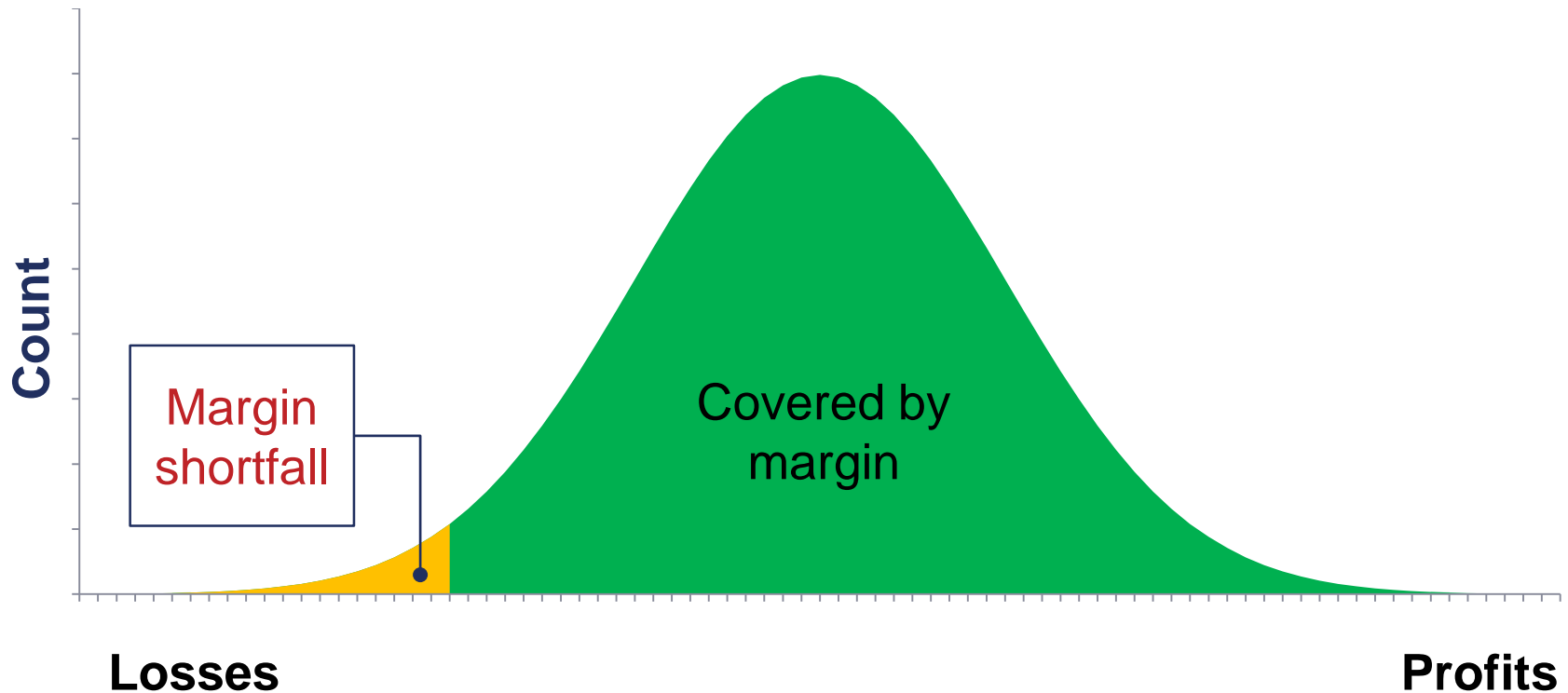
- What is Initial Margin?
- Energy market:
 - Cleared futures and options
 - Margin requirement evolution in 2020
- Observations

CCP Risk Management Waterfall

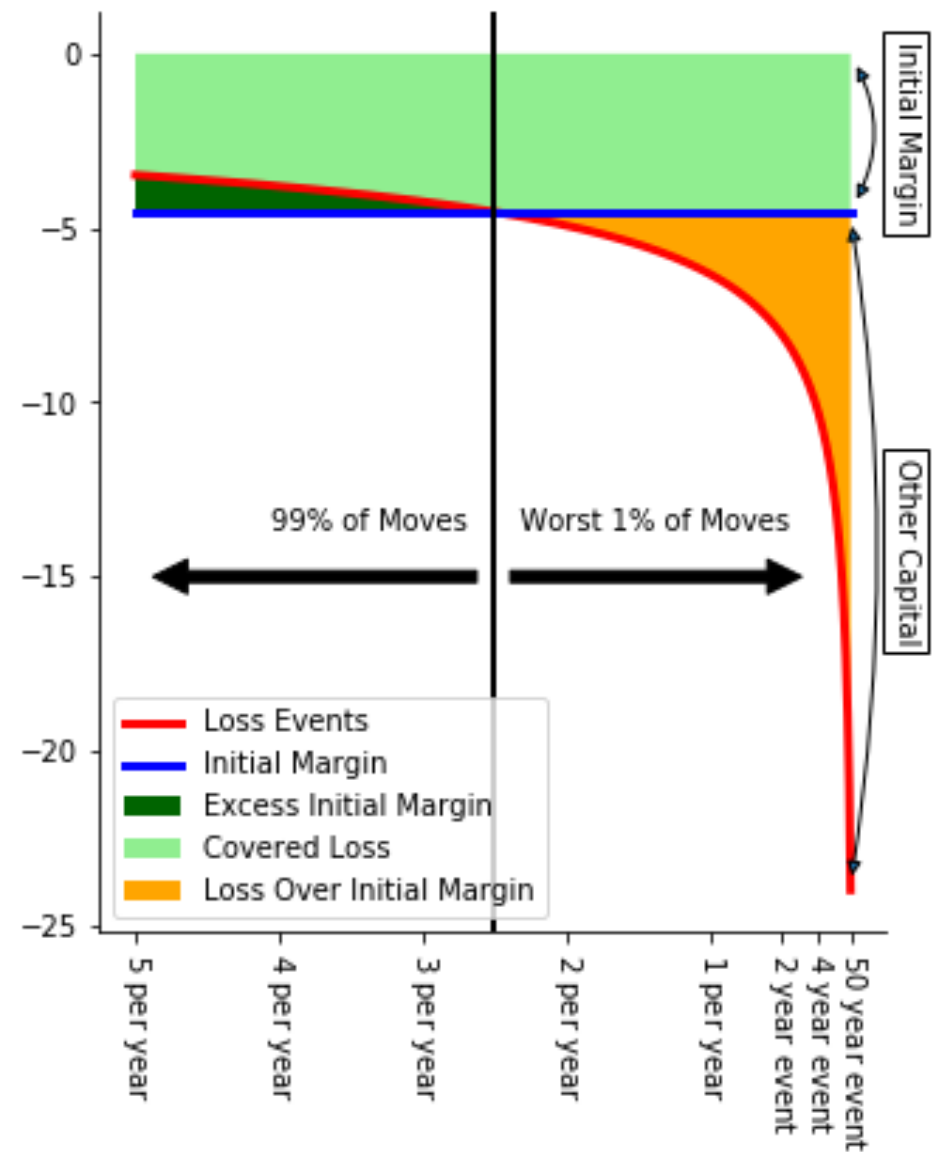


Margin Coverage

Designed to cover a pre-specified portion of the profit & loss distribution

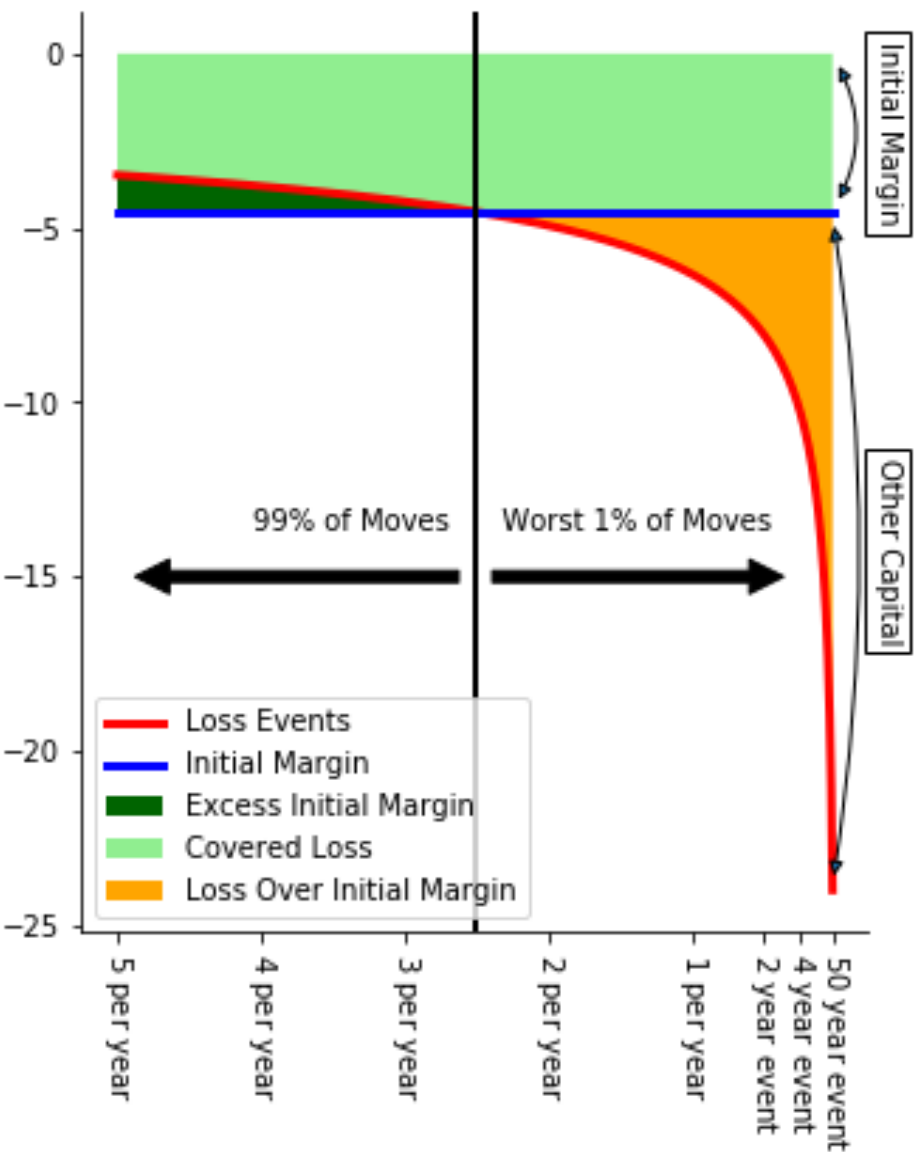


Initial Margin



- Helps protect CCP in case of a clearing member default
- Calculated at a portfolio/account level
- Designed to cover the cost of unwind most of the time
 - Market Moves
 - Transaction Costs
 - Market Impact

Initial Margin Continued



Other's Initial Margin

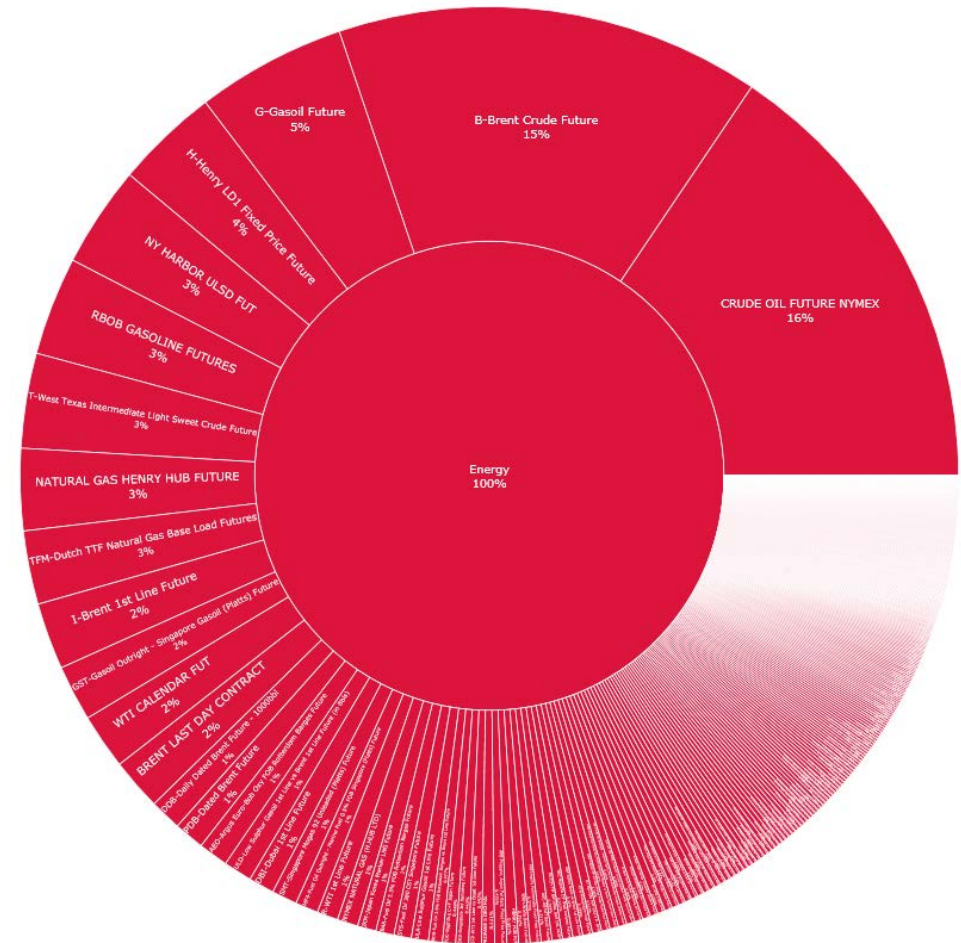
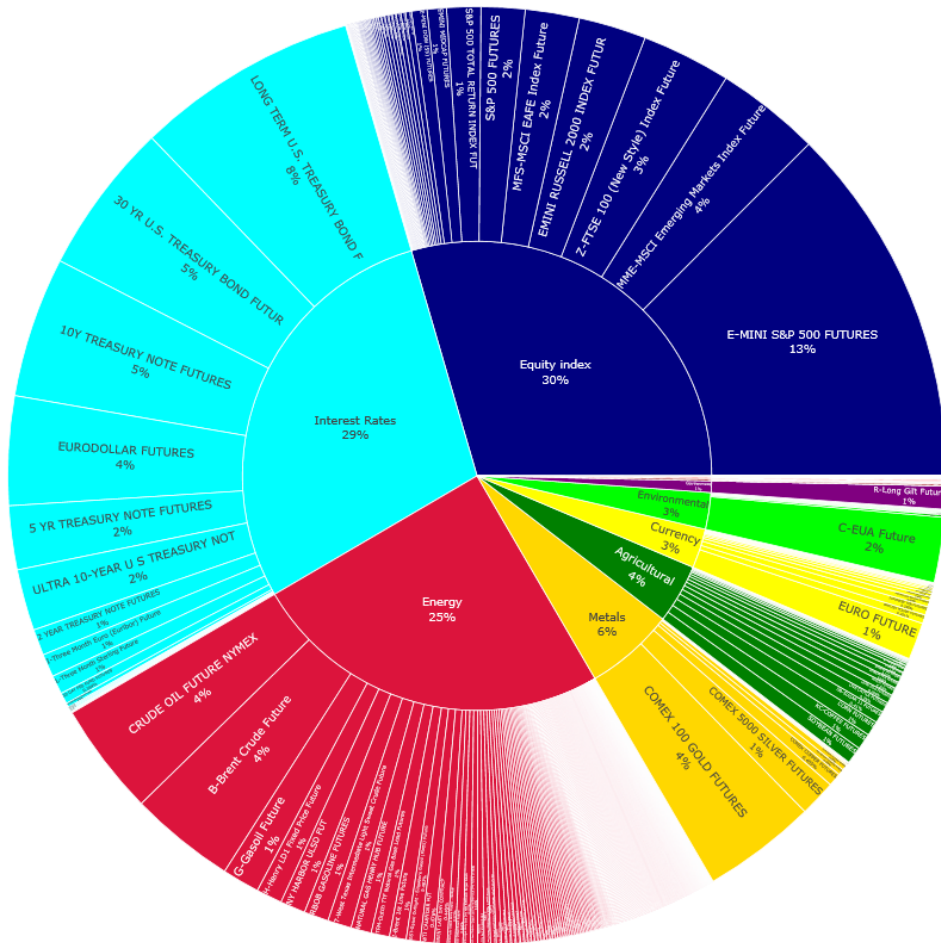
Defaulter's Initial Margin

Defaulter's Guarantee Fund
CCP Skin in the Game

Other's Guarantee Fund

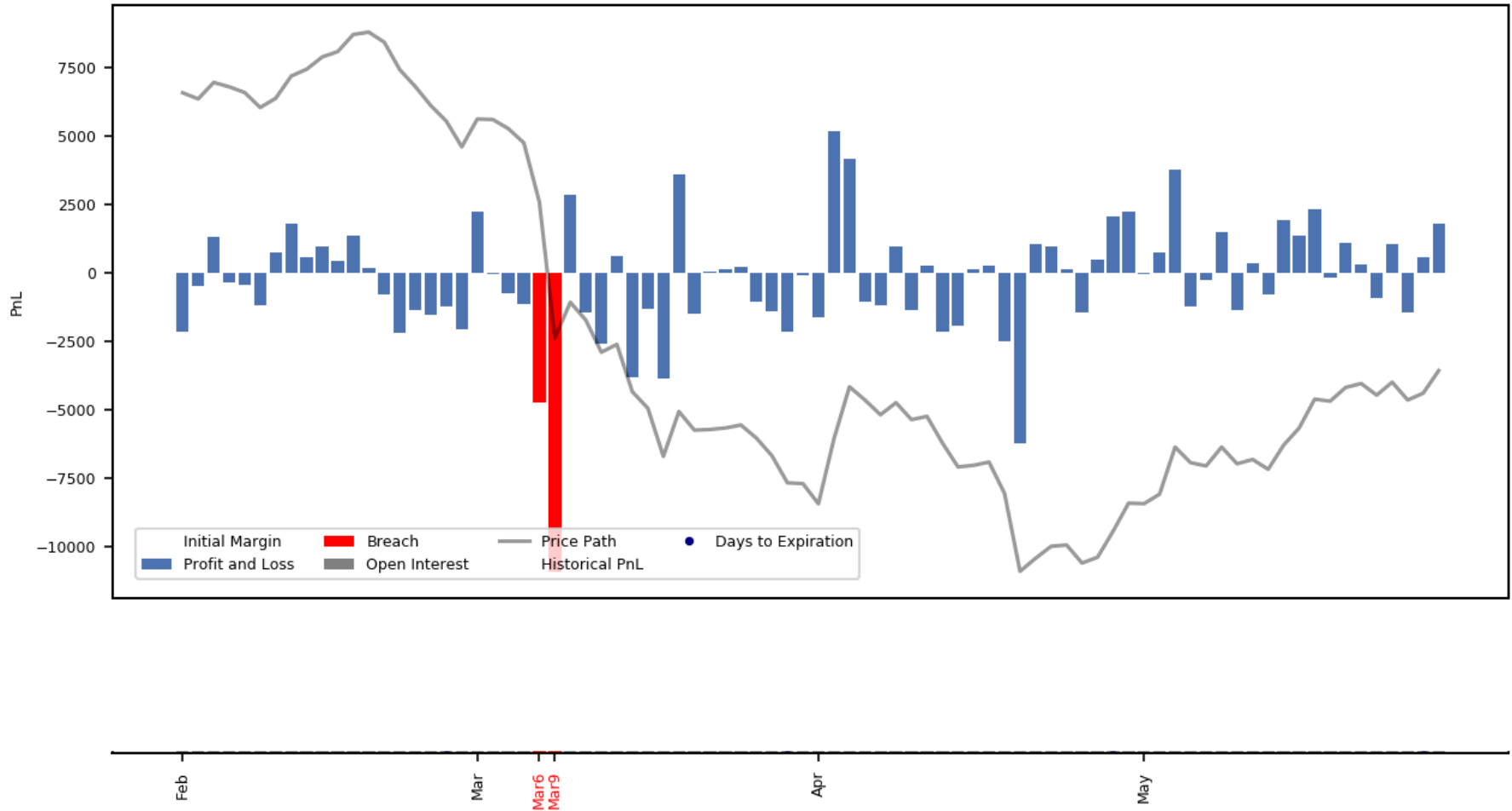
Powers of Assessment

Risk Weighted Open Interest



* (Spread & Delta Adj Open Interest x Dollar Volatility). See Appendix for details.

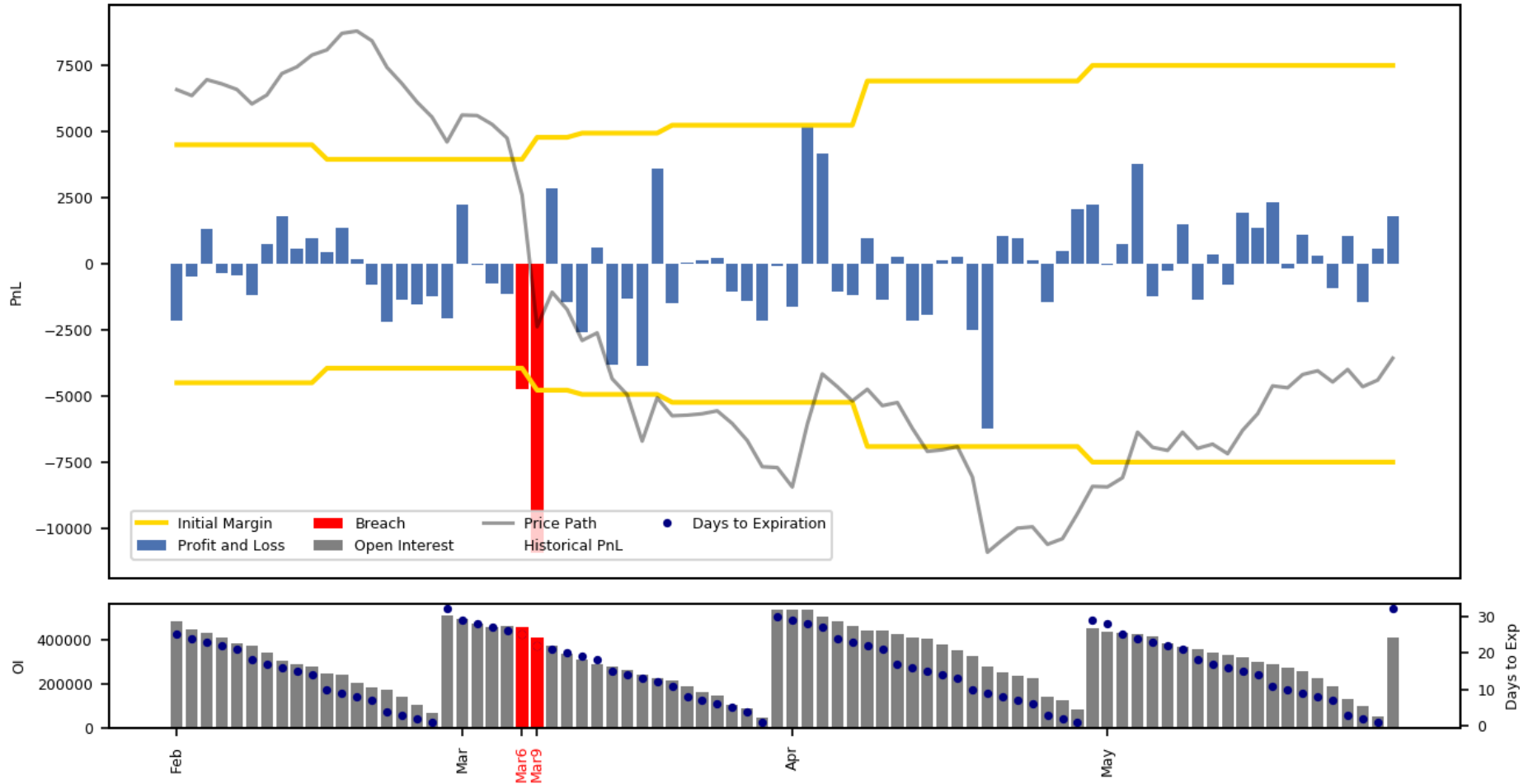
Oil – ICEU Brent



*Price Path follows the rolling strategy as opposed to the contract price level. See Appendix for details.

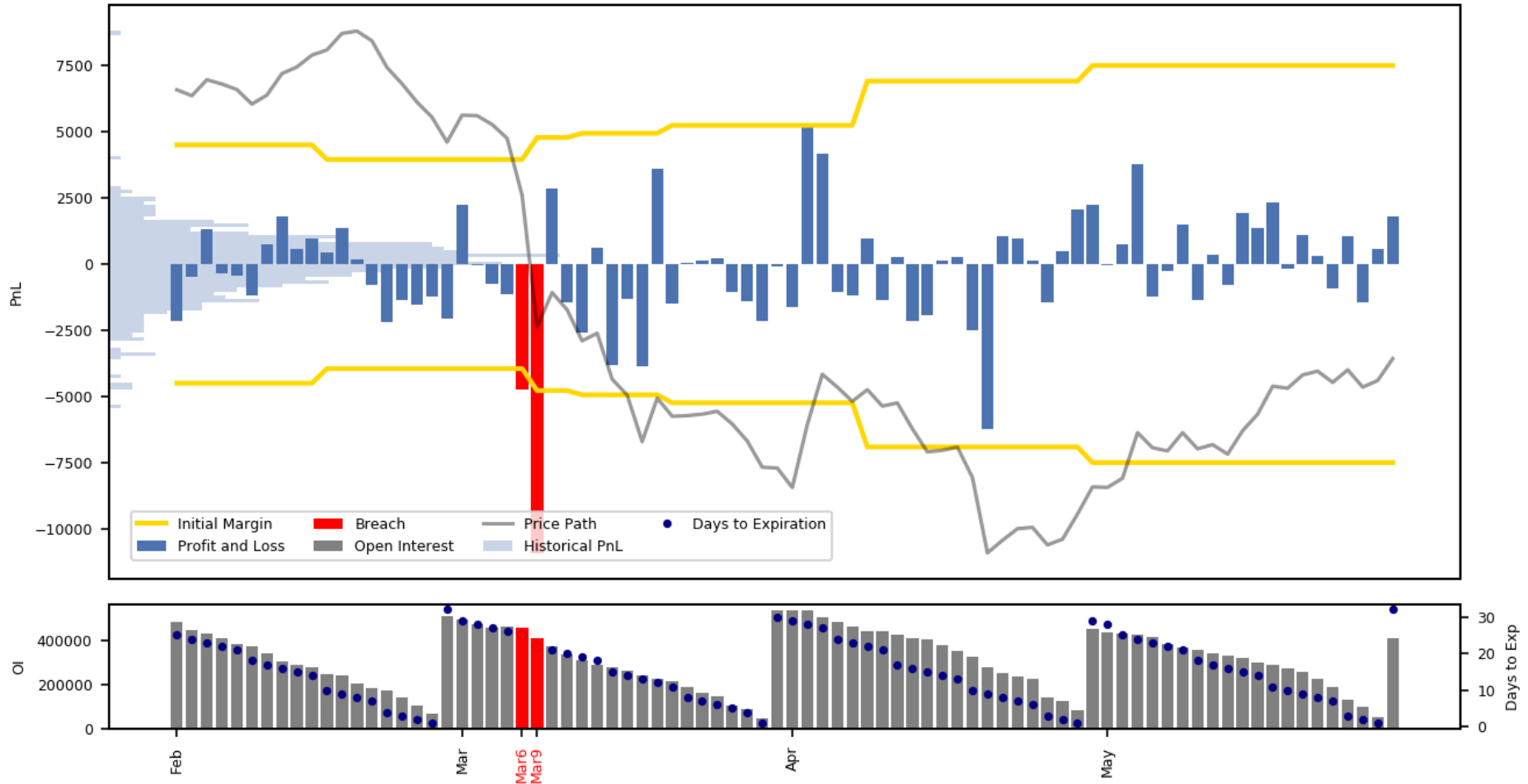
*ICEU stands for ICE Clear Europe

Oil – ICEU Brent



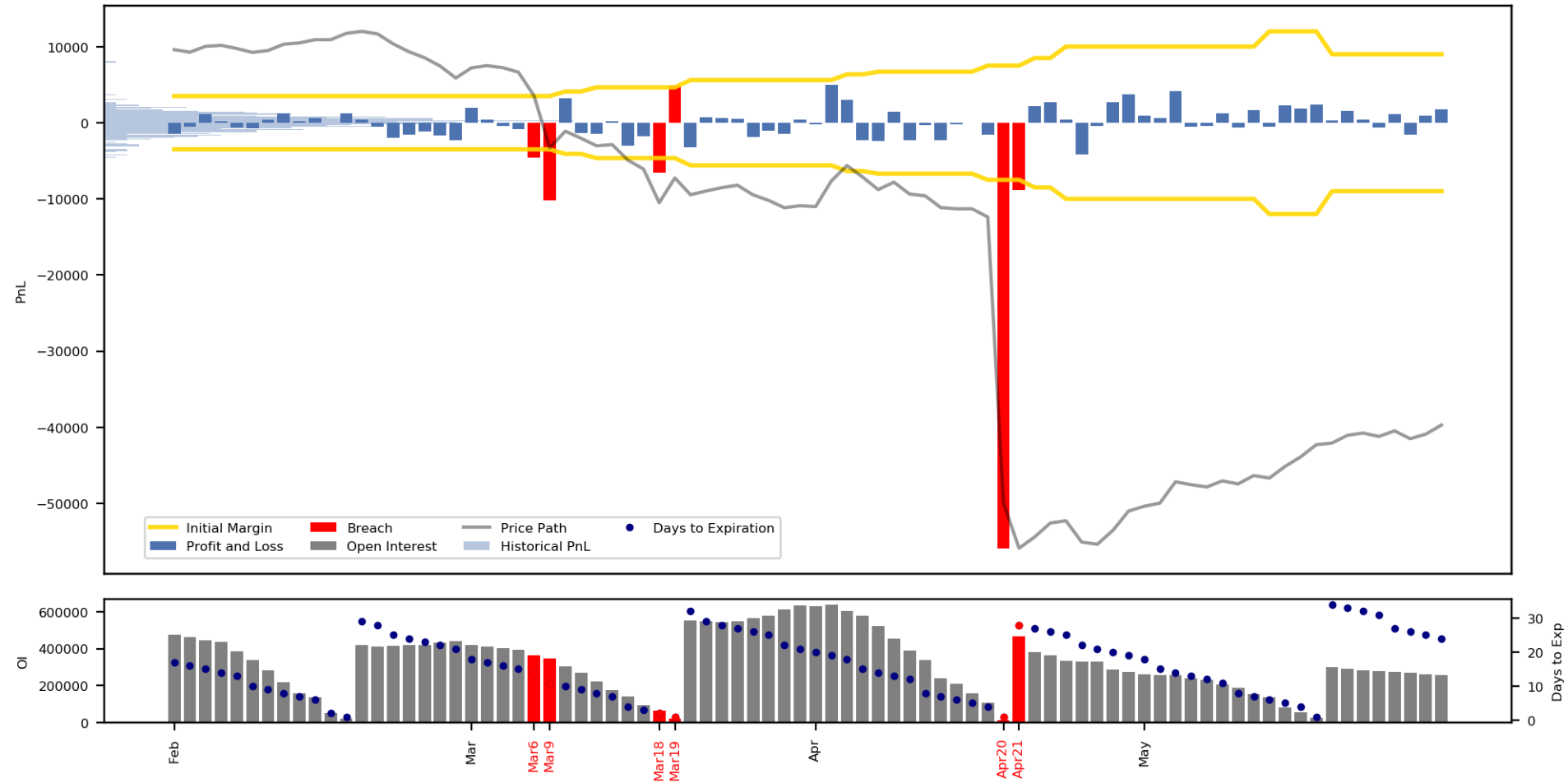
*See Appendix for details.

Oil – ICEU Brent



*See Appendix for details.

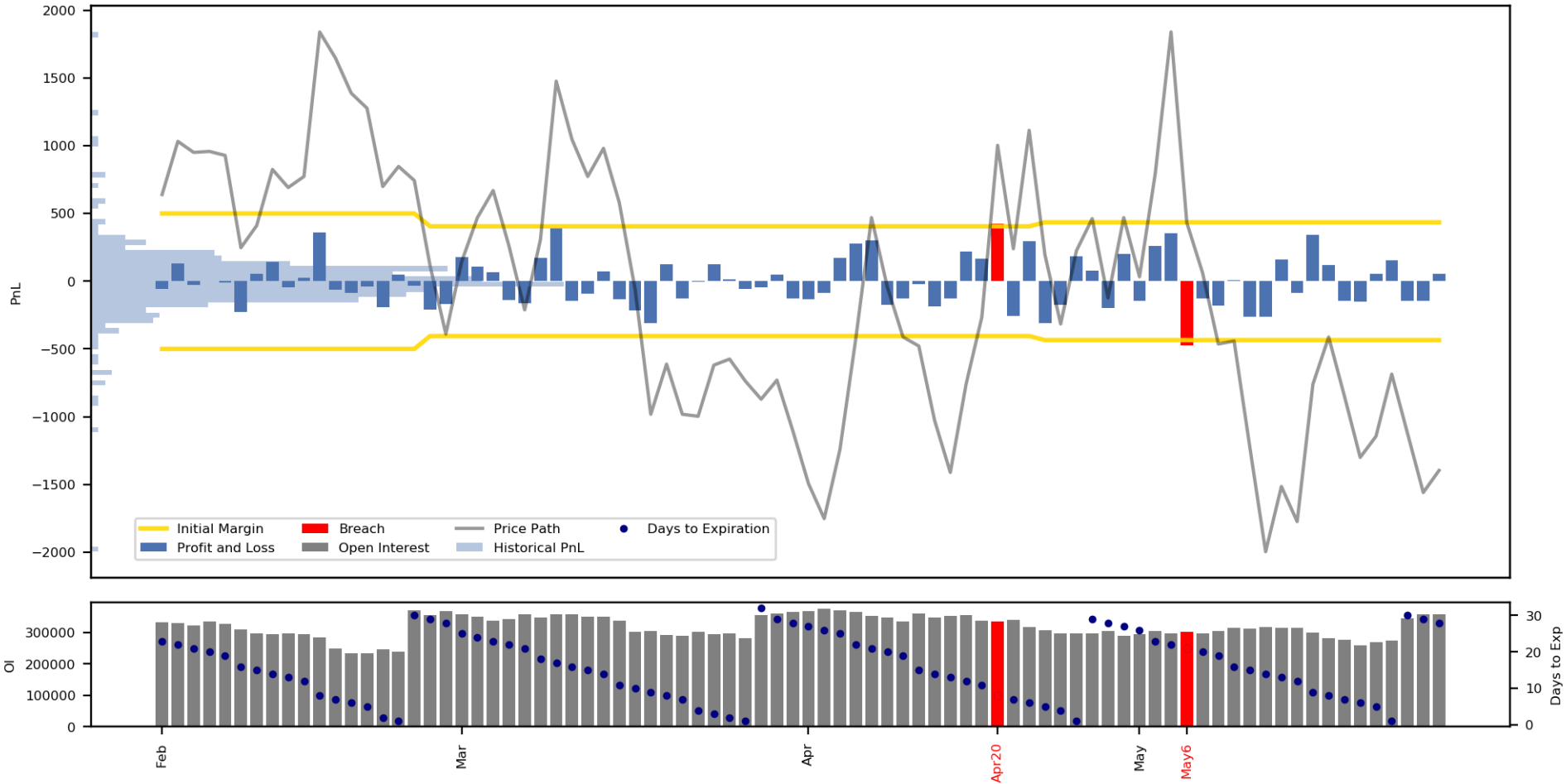
Oil – CME WTI



*See Appendix for details

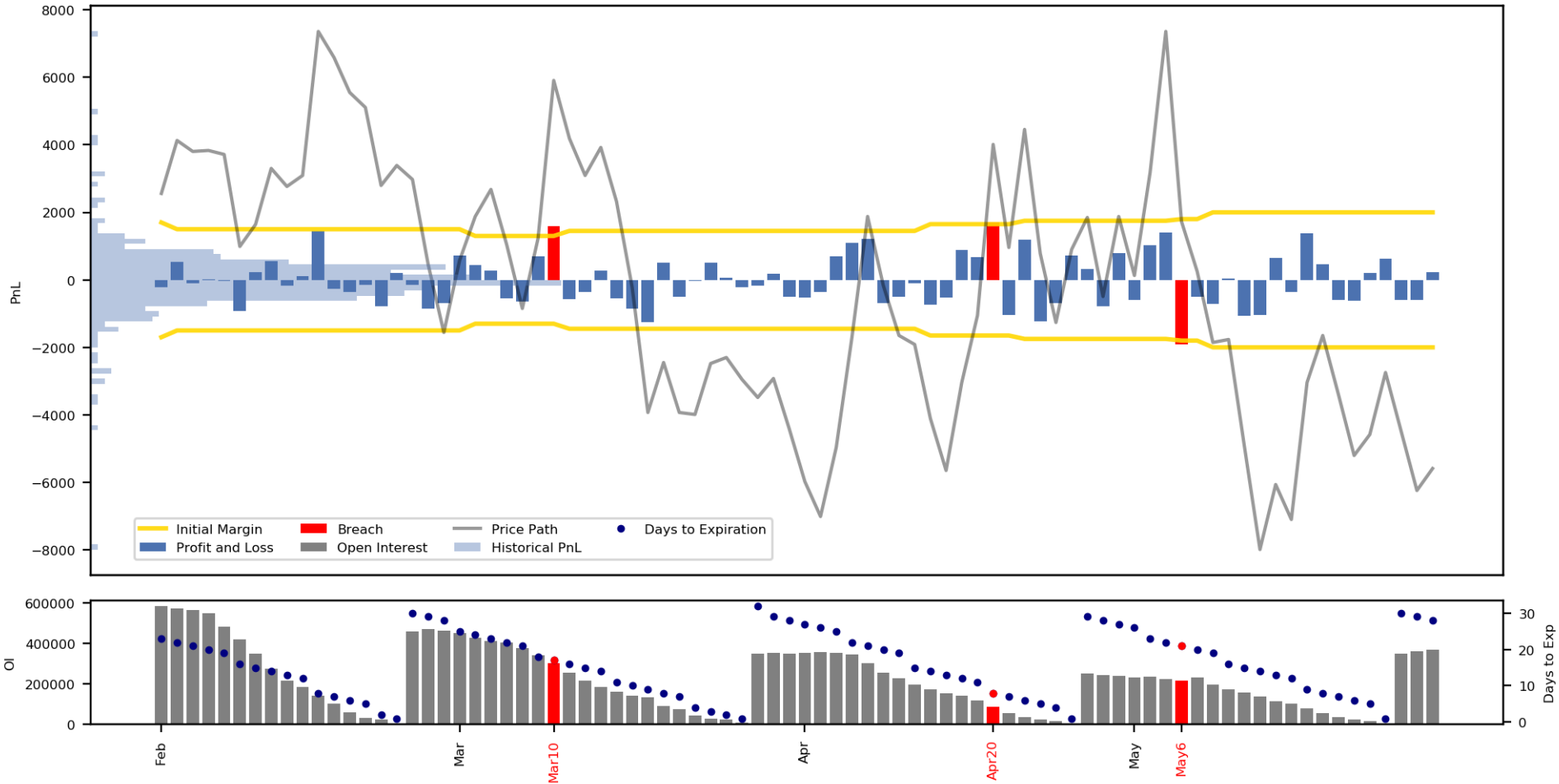
*CME stands for Chicago Mercantile Exchange

Natural Gas – ICEU Henry Hub



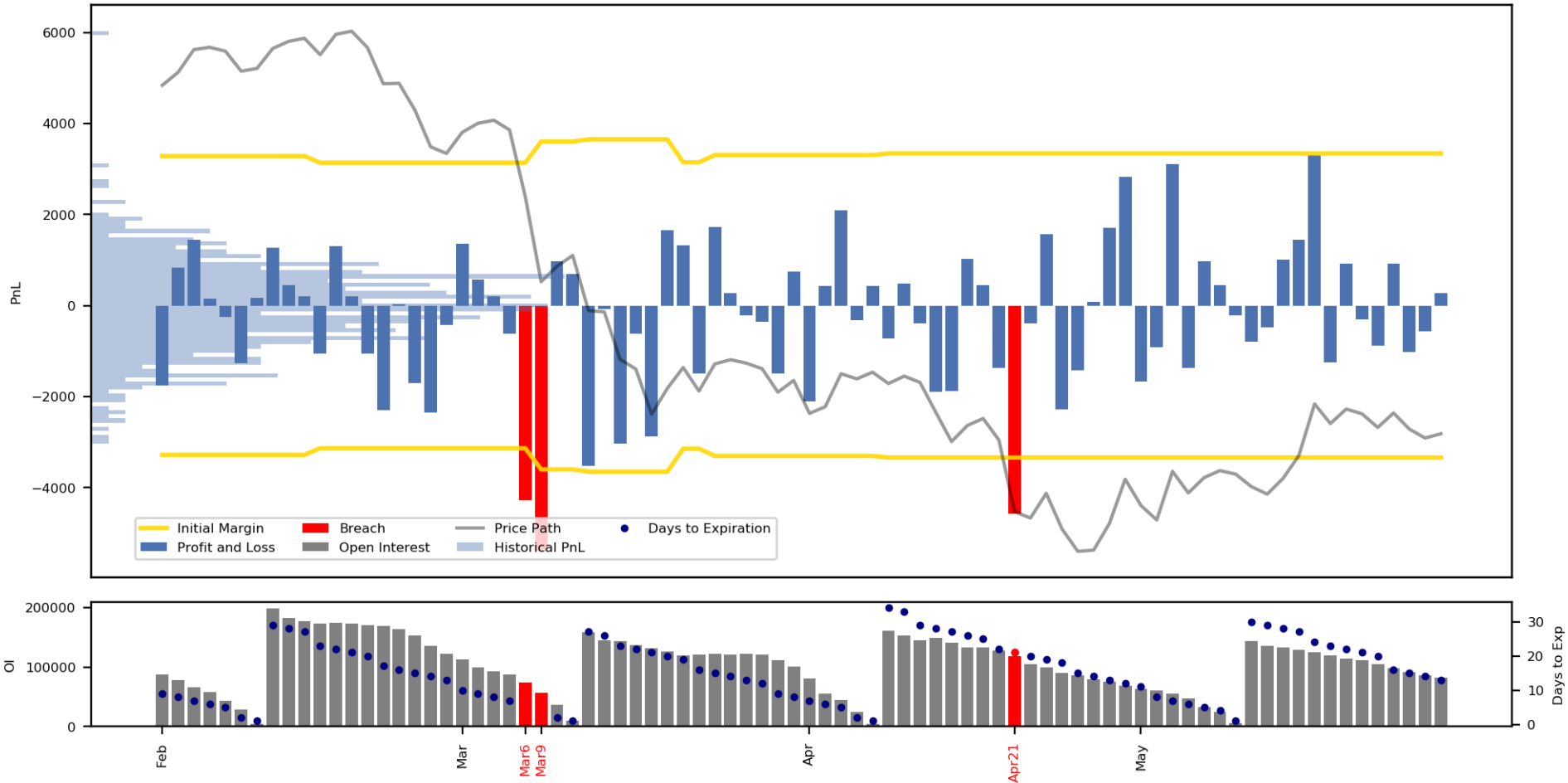
*See Appendix for details.

Natural Gas – CME Henry Hub



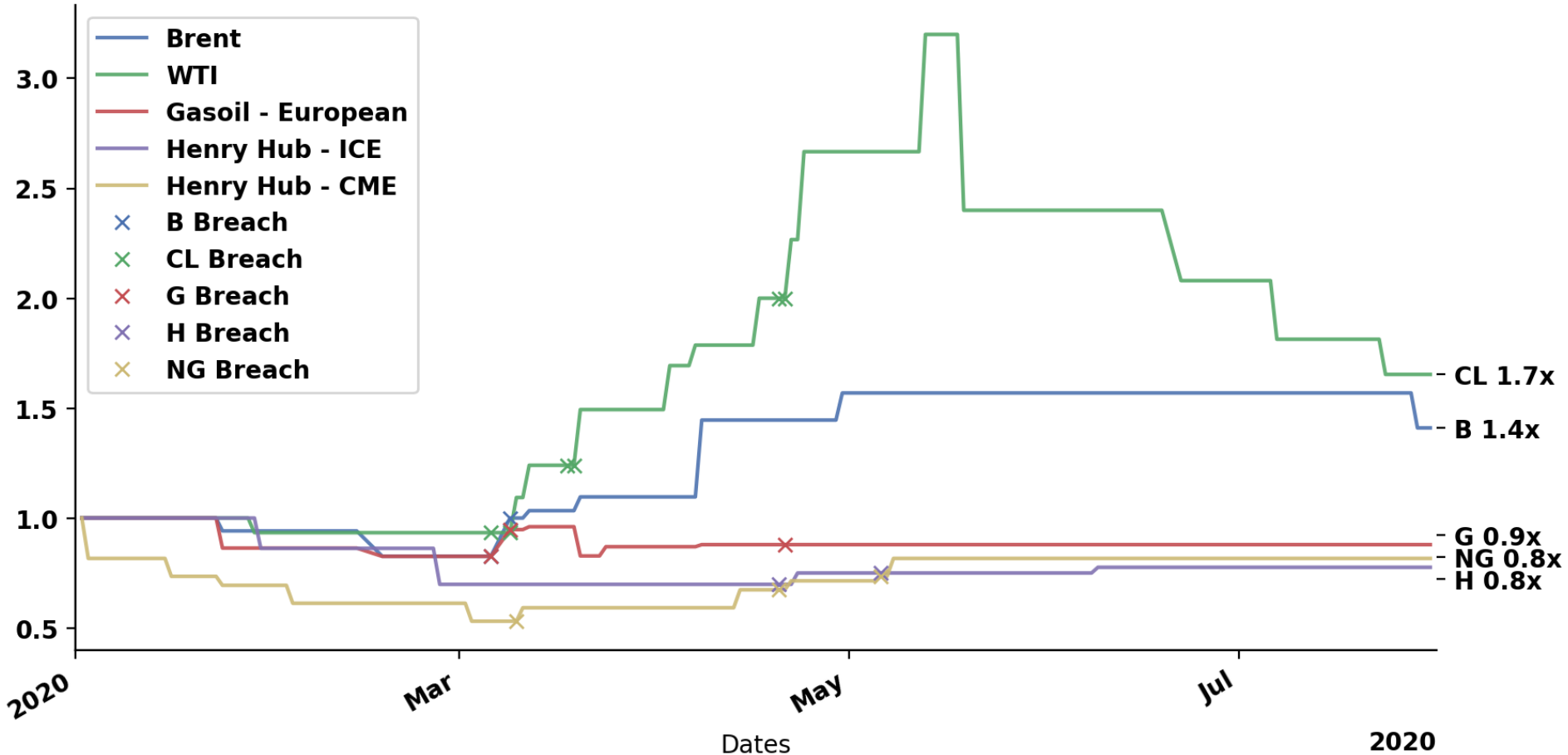
*See Appendix for details.

Gasoil – ICEU

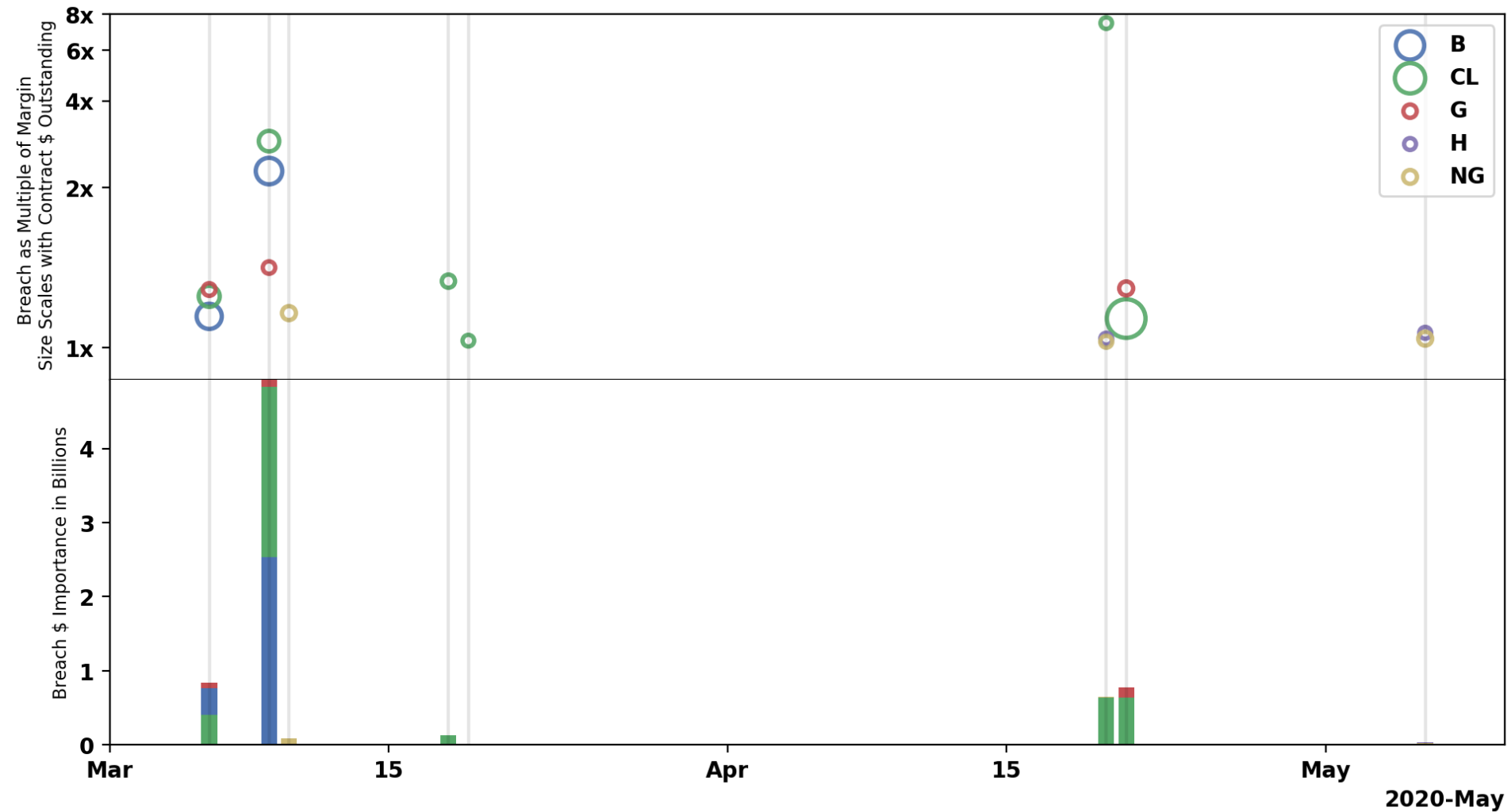


*See Appendix for details.

Breaches on Margin



Relative Size of Breaches



*See Appendix for details.

Observations

- Margin did not start the crisis at cyclical lows
- Margins rose commensurate with risk
- IM for major products performed adequately

Questions

Appendix

- Risk Weighted Open Interest
 - Sample Period is 2020-01-01 to 2020-06-01
 - Spread & Delta Adj Open Interest – An estimate of aggregate market position that combines futures contracts and related options. Contracts along a term structure are combined. Option positions are combined with the underlying contracts via a net delta adjustment. Calendar spreads along a term structure are weighted at 10%.
 - Dollar Volatility – An estimate of volatility for the contract using the standard deviation of dollar profit and loss for the contract over the sample period.
- Rolling Front Month Charts (Slides 10-16)
 - Contract Rolling – The price change shown for the day is for the closest to expiry contract. The series rolls on the day after the formerly closest contract expires.
 - Initial Margin – Initial margin is for one contract in dollar terms. Initial margin is shown for both a long and short positions as the lower and higher initial margin lines respectively.
 - Price Path – The price path shown on the charts gives the cumulative dollar profit or loss experienced by holding and rolling one contract over the period. It does not show the price level of the index which will be different due to rolling.
 - Histogram – The histogram shows the dollar profit and loss distribution for a single rolling contract series from 2018-01-01 to 2019-12-31.
- Breaches on Margin
 - Margins are indexed to 1 on 2020-01-01. A reading of 1 indicates no change in initial margin from 2020-01-01 while a reading of 2 indicates a doubling of initial margin relative to 2020-01-01.
- Relative Size of Breaches
 - Breach as multiple of margin – The y-axis in the top chart is the size of the breach as a multiple of margin. A reading of 1.5 indicates the loss for the day was 1.5 times the initial margin for a contract. The size of the circle represents a relative estimate of the initial margin allocated to them by multiplying the contracts open interest by the initial margin required for a single contract. It is not the actual margin allocated to the contract.
 - Breach \$ Importance in Billions – The size of a contract's bar is the loss over initial margin for that day's breach multiplied by the open interest for the contract. It does not represent any actual loss suffered by a customer, clearing member, or clearing house. The bars are stacked for the day to indicate to aggregate impact of the breaches.