CME Group

INTEREST RATES

A Practitioner's Guide to STIR Contract Amendments

THREE-MONTH EURODOLLAR FUTURES, ONE-MONTH EURODOLLAR FUTURES, AND 30-DAY FEDERAL FUNDS FUTURES

NOVEMBER 2018

Effective November 17, 2018, the exchange will implement, subject to all regulatory review periods, amendments to terms and conditions of CME Three-Month Eurodollar (GE) futures, CME One-Month Eurodollar (GLB) futures, and CBOT 30-Day Federal Funds (ZQ) futures.[1] These product rule amendments are administrative: They do not change in any way the trading characteristics or the economic values of the contracts.

The amendments accomplish two things: (1) They align the statement of terms and conditions for each of these futures products with the terms and conditions for the recently-introduced CME futures products that reference the Secured Overnight Financing Rate (SOFR) benchmark [2], and CME's general approach to the index-based futures products that it offers including the CME E-mini Standard and Poor's 500 Stock Price Index Futures (ES)[3], and (2) they clarify contract size.

This note describes the amendments in context. Given the structural similarities among the GE, GLB, and ZQ contracts, and the similarities among the amendments to their respective product rules, the discussion proceeds by example, using GE futures to illustrate.

Historical context

When the GE futures contract debuted nearly 37 years ago, two of its design features were innovative and unfamiliar:

- **Cash settlement:** As described above, an expiring contract is fulfilled not by physical delivery of a bank funding instrument, but by cash settlement, through a final mark-to-market to the contract final settlement price. In 1981, when futures contracts invariably were fulfilled by physical delivery, this was a novelty that required explanation.
- **Futures based on index numbers:** The price basis for the GE futures contract is an index number, 100 minus the contract-grade market rate of interest per annum. In 1981, this too was new to market practitioners.[4]

To make the contract mechanism understandable to prospective users, both the exchange and the brokerage community relied upon a heuristic description of it that links the contract trading unit to a hypothetical deliverable-grade bank funding deposit, rather than defining the contract trading unit in terms of a contract index multiplier (for instance, $2,500 per index point).

Although it has served as a useful rule of thumb for decades, this hypothetical deliverable-grade bank funding deposit is not a contractual obligation. Worse, taken too literally, it obscures the workings of the GE contract instead of illuminating them.

1 See CME Group, Administrative Amendments to CME Three-Month Eurodollar Futures, CME One-Month Eurodollar Futures, and CBOT 30-Day Federal Funds Futures Contracts, Special Executive Report S-8251, October 9, 2018, available at: https://www.cmegroup.com/content/dam/cmegroup/notices/ser/2018/10/SER-8251.pdf Drafts of the rule amendments may be viewed in blackline format and in clean form at: https://www.cmegroup.com/content/dam/cmegroup/market-regulation/rule-filings/2017/11/17-418_APPA.pdf

2 CME Submission No. 18-069, CFTC Regulation 40.2(a) Notification Regarding the Initial Listing of the Three Month SOFR Futures and One-Month SOFR Futures Contracts, April 19, 2018, available at: https://www.cmegroup.com/content/dam/cmegroup/market-regulation/rule-filings/2018/04/18-069_1.pdf and https://www.cmegroup.com/content/dam/cmegroup/market-regulation/rule-filings/2018/04/18-069_2.pdf

3 Additional Examples of Index-Based Futures are E-Mini Nasdaq 100 Futures (NQ), Nikkei/Yen Futures (NIY), and Brent Financial Futures (BZ). All of these contracts use a consistent approach to defining the contract trading unit via a contract index multiplier.

4 Consider that the first equity price index futures product, the Kansas City Board of Trade Value Line Index futures, was not introduced until March 1982, three months after the launch of GE futures.

The contract mechanism

The GE futures contract mechanism contains two financially consequential elements. The first element is that contract price is quoted in "IMM Index" terms, as 100 index points minus the contract interest rate per annum.[5] Each index point represents one percent (ie, 100 basis points (bps)) per annum of contract interest rate exposure.

Each GE contract expires on the second London bank business day preceding the third Wednesday of the contract's delivery month. The contract delivers by cash settlement, by reference to its final settlement price, set by the exchange as 100 minus that day's published value of three-month US dollar ICE LIBOR®.[6]

> **Example:** At final settlement of an expiring GE contract, a published three-month US dollar ICE LIBOR® value of 3.14149 percent would be rounded by the exchange to 3.1415 percent, then applied to the futures final settlement price: 96.8585 index points, equal to 100 minus 3.1415 percent.

The second element is the contract's index multiplier; the product rules specify it to be $25 per 0.01 IMM index points per contract or, equivalently, $2,500 per IMM index point.

The amendments will ensure that the statement of terms and conditions makes these elements of the contract mechanism as clear as possible to contract users.

Index futures and contract equity

Because each IMM index point of the contract price is effectively worth $2,500, the contract equity in a GE futures position would be reckoned in the same way as for an equity index futures product, such as ES futures, or a government securities futures contract, such as the CME Three-Month SOFR Futures ("SR3"): ($ per price point per contract) x (contract price, in points) x (number of contracts).

> **ES Example:** For one ES contract priced at 2,750, the contract equity would be $137,500 per contract, equal to ($50 per price point per contract) x (2,750 price points).

> **GE and GLB Example:** For one GE contract priced at 93.670 points (implying a contract interest rate of 6.33 percent per annum), the contract equity would be $234,175 per contract, equal to ($2,500 per price point per contract) x (93.670 price points).

> **ZQ Example:** For one ZQ contract priced at 97.81 points (implying a contract interest rate of 2.19 percent per annum), the contract equity would be $407,574 per contract, equal to ($4,167 per price point per contract) x (97.81 price points).

> **SR3 Example:** For one SR3 contract priced at 97.58 points (implying a contract interest rate of 2.42 percent per annum), the contract equity would be $243,950 per contract, equal to ($2,500 per price point per contract) x (97.58 price points).

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5 When introduced in 1981, Three-Month Eurodollar futures were listed for trading under the auspices of what was then the International Money Market ("IMM") division of Chicago Mercantile Exchange. The "100 minus rate" contract pricing engine, now widely used by futures exchanges around globe, came thus to be known as the "IMM Index."

6 The administrator of the ICE LIBOR® benchmark, ICE Benchmark Administration Ltd, publishes ICE LIBOR to five decimal places of accuracy. The exchange rounds the published value to four decimal places before calculating the final settlement price of the expiring GE futures contract. This ensures that the final settlement price will produce a final mark-to-market for which the minimum increment is 25 cents per contract. (Without rounding, the final mark-to-market would be measured in unmanageably small increments of 2½ pennies per contract.) In case of a tie, ie, a published value ending in 0.00005, the exchange rounds the published value up to four decimal places.

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