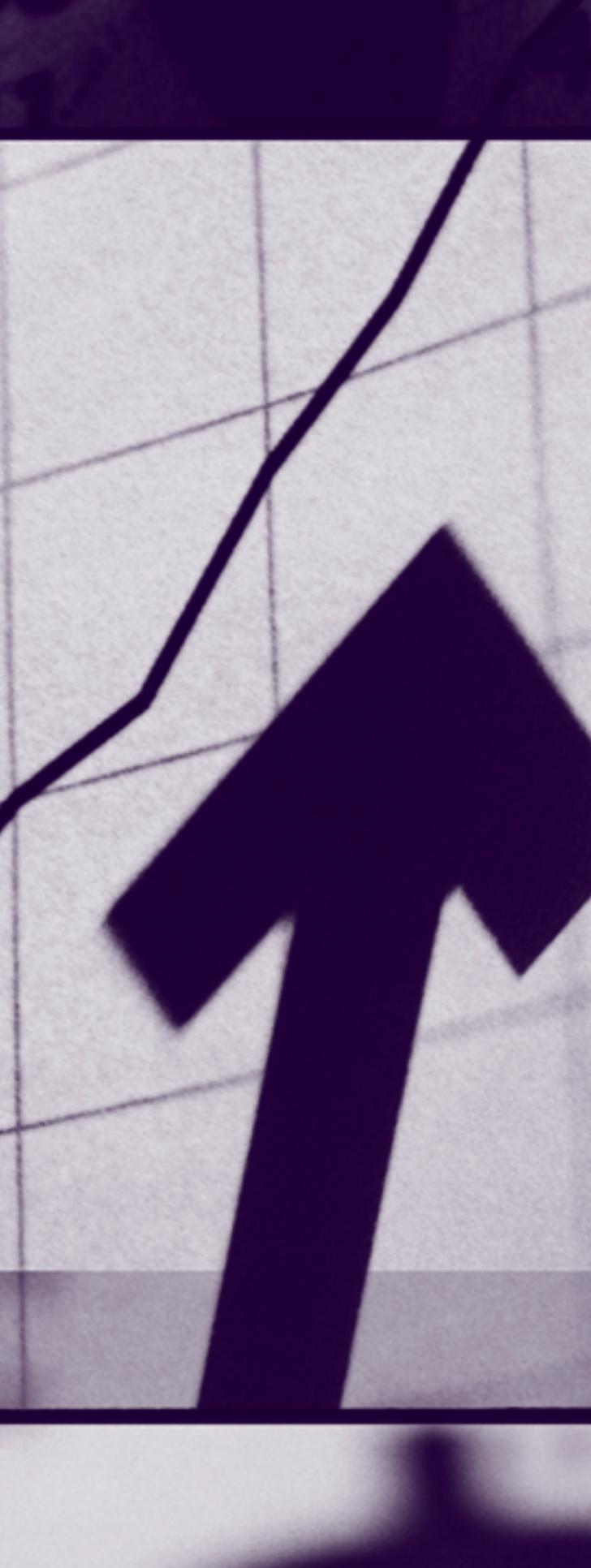




Chicago Mercantile Exchange

# Eurodollar Futures & Options Q&A





Financial futures have grown explosively since being introduced at Chicago Mercantile Exchange (CME) in 1972. What is the single largest segment of that growth? CME interest rate products, particularly Eurodollar futures and options.

Launched on December 9, 1981, Eurodollar futures have evolved into one of the world's most popular contracts, and one of the most innovative. Their flexibility and adaptability is unsurpassed. The contracts' exceptional growth has come hand-in-hand with nonstop enhancements. As a result, today's Eurodollar complex bears little resemblance to that of only several years ago.

To keep you up to date on the latest contract features, and to answer the questions users most frequently ask about Eurodollar futures and options contracts, we have compiled the following list.

# Eurodollar Futures

## When is the last trading day for Eurodollar futures?

Eurodollar futures cease trading at 5:00 a.m. Chicago time (11:00 a.m. London time) on the second London bank business day immediately preceding the third Wednesday of the contract month; final settlement price is based on the British Bankers' Association Interest Settlement Rate.

## When are new contracts listed?

Following the expiration of a quarterly Eurodollar futures contract, a fortieth quarterly contract is available to trade the following business day. Since the vast majority of Eurodollar futures contracts expire on a Monday, the new contract is generally available on the Tuesday following a Monday expiration day.

The lag between expiration of the near month future and the listing of the fortieth Eurodollar contract results in a one-day delay in listing a new "Copper" (Year 10) pack after the expiration of the front quarterly future.

## How is the implied forward rate calculated?

The prices of Eurodollar futures reflect market expectations of forward 3-month rates. An implied forward rate indicates approximately where short-term rates may be expected to be sometime in the future.

The following formula provides a guideline for calculating a 3-month rate, three months forward:

$$1 + 6 \text{ mo. spot rate} \times 182/360 = (1 + 3 \text{ mo. spot rate} \times 91/360) (1 + 3 \text{ mo. fwd rate} \times 91/360)$$

For example: 3-month LIBOR spot rate = 5.4400%  
6-month LIBOR spot rate = 5.8763%  
3-month forward rate = R

$$1 + .058763 \times 182/360 = (1 + .0544 \times 91/360)(1 + R \times 91/360)$$
$$1.029708 = (1.013751)(1 + R \times 91/360)$$
$$1.015740 = (1 + R \times 91/360)$$
$$0.062270 \text{ or } 6.227\% = R = \text{the implied forward rate}$$

## What is the difference between "add-on interest" and "discount yield"?

This concept describes the difference in the yields quoted for T-bill and Eurodollar contracts. T-bills are sold at a discount to face value and redeemed at par.

The difference between par value and the T-bill's price is the interest paid. Interest on ED deposits is "added on" to the principal loan amount.

*An example of add-on interest with Eurodollars: You borrow \$1 million for 3 months at 5.50%. The 5.50% of interest is "added on" to the \$1 million principal amount. The interest due (assuming a 91-day loan) is equal to \$1 million  $\times$  .055  $\times$  91/360 = \$13,903.*

*An example of discount yield with T-bills: You sell \$1 million face value of 91-day T-bills at an annual discount yield of 5.50%.*

$$\text{Discount} = \$1 \text{ million} \times 0.055 \times 91/360 = \$13,903$$
$$\text{T-bill Price} = \$1 \text{ million} - \$13,903 = \$986,097$$
$$\text{Money Market Yield} = \$13,903/\$986,097 \times 360/91 = 5.578\%$$

(comparable to ED "add-on" rate)

## Where does the Eurodollar \$25 "whole" tick come from?

The Eurodollar tick reflects the dollar value of a 1/100 of one percent change in a \$1 million, 90-day deposit. It is determined by this equation:

$$\$1,000,000 \text{ notional} \times .0001 \times 90/360 = \$25$$

## What is the minimum price fluctuation (tick)?

Trading can occur in .0025 increments (\$6.25/contract) or "1/4 tick" in the expiring front-month contract; in .005 increments (\$12.50/contract) or "1/2 tick" in the four serial, and all forty quarterly expirations.

## When does the "new" expiring front-month contract begin trading in "1/4 ticks"?

After the "old" expiring front-month Eurodollar contract ceases trading at 5:00 a.m. Chicago time (11:00 a.m. London time) on GLOBEX® platform on its last trading day, the "new" front-month Eurodollar contract will begin trading in "1/4 ticks" at the beginning of open outcry trading at 7:20 a.m. Chicago time.

### **How are price assignments determined for packs and bundles?**

The price of a bundle or pack is quoted in terms of the average net change from the previous day's settlement prices for the entire group of contracts in the pack or bundle.

Bundles and packs are quoted in minimum  $\frac{1}{4}$  tick increments; however, whole-basis-point prices are assigned to the individual legs of the trade. Prices are assigned to reflect fractional combination prices beginning with the most deferred contracts, and working forward.

For example:

*\* If the 2-year bundle trades at + 2.25, the first six contracts are priced at a net change of +2, and the last two contracts at +3.*

*\* If the 10-year bundle trades at - 5.75, the first ten contracts are priced at a net change of -5, and the last 30 contracts at -6.*

*\* If the Purple Pack trades at +.5, the first two contracts are priced at steady (unchanged), and the second two contracts are priced at +1.*

### **How is the "lead" month in Eurodollars determined?**

The "lead" month is considered to be the contract with the highest daily volume, currently based on a 12-day moving average, calculated on every business day, beginning five weeks after the previous contract expiration.

## **Eurodollar Options**

### **By what time must you notify the Clearing House that you wish to exercise an option?**

You must notify your clearing firm, and your clearing firm must notify the Clearing House, by 7:00 p.m. The Clearing House can be contacted at 312-207-2525.

### **By how much does an option have to be in-the-money for automatic exercise to take place at expiration?**

Automatic expiration takes place only at expiration and not before. To be automatically exercised at expiration, an option needs only to be in-the-money by the smallest price increment possible (e.g.,  $\frac{1}{4}$  tick).

**At expiration, ALL in-the-money Eurodollar options are exercised automatically, in the absence of contrary instructions delivered to the Clearing House.**

### **If you're short an in-the-money option, when will you know you have been assigned? When will you be assigned a futures position?**

You will be informed before the markets open on the following business day that you have been assigned, and you'll be assigned a futures position as of the day the assignment was made. Assignments are made through a process of random selection of clearing firms with open short positions in the specific option.

### **What is the dollar value of "cabinet" in the Eurodollar options?**

Cabinet in Eurodollar options is the minimum premium value of \$6.25 or  $\frac{1}{4}$  tick."

### **What are the rules regarding the listing of 12.5 point strike prices?**

Quarterly and Serial options: On the expiration day of options in the March quarterly cycle, strike prices in 12.5-point increments will be listed on the two serial, and next March quarterly option expirations.

For example, on Monday, September 15, 2003 (expiration day for Sep 03 futures and options), 12.5-point strike prices would be listed on October and November serial options, and December quarterly options.

One-year Mid-Curve options ("shorts"): The first quarterly and two serial expirations are eligible to trade in 12.5-point strike price increments at any given time.

### **Where can I find performance bond updates and information on the SPAN® system?**

You can find both on the CME's Web site at [www.cme.com](http://www.cme.com). You can also subscribe to the CME e-mail service that will automatically send you any changes to the margins via e-mail.



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