What's New in CME Interest Rates? Part II

The Chicago Mercantile Exchange is recognized as the world's leading provider of short-term interest rate futures and options. The Exchange is now expanding its yield curve coverage to include serial Eurodollar futures and One-Month Federal Funds futures. Both are designed to enhance the efficiency and liquidity of our interest rate product line. We also have had numerous questions regarding 12-point strike prices on quarterly Eurodollar options. In this article, we discuss what these products are, and how they work.

SERIAL EURODOLLAR FUTURES

Serial Eurodollar futures are identical to traditional CME Eurodollar futures with the exception of the expiration dates. The new contracts will expire in months other than those in the March, June, September, and December quarterly cycle. Serial Eurodollars will share the following characteristics of existing Eurodollar contracts:

- cash settle to 3-month LIBOR
- a notional value of $1 million, and a $25 tick size
- expire two London business days prior to the third Wednesday of the contract month

Two serial Eurodollar contracts are listed at any one time. For example, on September 1, serial Eurodollars would be those that expire in October and November. When the September quarterly futures expire mid-month, the October and November contracts would still be the serial months. With the expiration of the October contract mid-month, a January serial would be added, and so forth. Note that the listing of serial Eurodollar futures in no way affects the listing of traditional quarterly contracts.

These two additional contracts will provide a more precise hedging vehicle for managers who have three-month interest rate exposure. For example, assume today is October 2 and you have a three-month interest rate exposure fixing on October 16. Hedging that risk with a December Eurodollar futures contract leaves you with the basis risk between a three-month rate fixing in 14 days, and a hedge based on a three-month rate fixing in 76 days. With October serial Eurodollar futures, you can now more closely match the fixing date of the hedge to that of the exposure, thereby greatly reducing the basis risk.

Serial Eurodollar futures will not affect existing conventions concerning serial

option expirations. Non-quarterly Eurodollar option expirations will continue to use the next quarterly futures contract as the underlying instrument. For example, serial Eurodollar options expiring in October and November will continue to use the December contract as the underlying future. There will be no options on serial futures, (e.g., October options on October futures).

ONE-MONTH FEDERAL FUND FUTURES AT THE CME

Introduction

Three-month Eurodollar, One-month LIBOR and 13-week Treasury bill futures prices serve as benchmarks for pricing a wide range of financial products. In order to complete the coverage of the short end of the yield curve, the CME has introduced Federal Funds Rate futures.

Pricing of the Fed Funds futures is based on a one-month average of the daily Fed Funds effective rate. The contract shares expiration dates and contract size with the One-month LIBOR contract. In addition, the CME One-month Fed Funds contract can trade in one-half basis point ($12.50) increments, thus allowing for greater pricing precision. This combination of features allows for maximum contract liquidity and substantially increases the efficiency, and reduces the cost, of spreading the Fed Funds contract against Eurodollar and/or LIBOR contracts. The Fed Funds contract also is eligible for a performance bond spread credit when traded as a spread involving other CME interest rate products.

The addition of Fed Funds contracts to existing CME interest rate products enables professionals to manage interest rate risks ranging from one day to 10 years on the trading floor of the Exchange.

Contract Specifications

- ***Contract Size:*** $3 million
- ***Last Trading Day:*** Two business days prior to the third Wednesday of the contract month
- ***Final Settlement Price:*** 100 minus the arithmetic mean of the fed funds effective overnight rates calculated by the Federal Reserve Bank of New York for the period covered by the contract. The days included in each contract period begin with the expiration day of the preceding contract, and include all succeeding days prior to the expiration date for the current contract month. For days for which the Federal Reserve Bank of New York does not compute a rate (e.g. weekends and holidays), the rate will be the rate determined on the last preceding business day for which a rate was determined.
- ***Minimum Tick Size***: $12.50, equalling one-half basis point, or 1/200 of one percent of $3 million over a 30-day period
- ***Contract Months:*** Twelve consecutive contract months are listed at any time
- ***Regular Trading Hours:*** 7:20 AM to 2:00 PM (Chicago time); GLOBEX® hours: 2:45 PM to 6:50 AM; on Sunday, trading begins at

5:30 PM

The Fed Effective Rate

At expiration, the Fed Funds futures contract traded at Chicago Mercantile Exchange settles to the arithmetic mean of the daily fed effective rates that occurred over the period covered by the contract. The fed effective rate is a **weighted average** of the rates at which fed funds traded during a day, where the weights are the dollar amounts exchanged at each rate. For example, fed funds may trade at 6-1/2% for the majority of a day. However, if large dollar amounts trade late in the day at rates that differ significantly from 6-1/2%, the fed effective rate released the following day may differ from the 6-1/2% that prevailed during most of the day.

PRICING THE CONTRACT

The method used for pricing the CME's Fed Funds contract depends on whether the expiring month or a deferred month is being valued.

Spot, or Current Month Pricing

- The current price of the contract will reflect both the average overnight fed effective rate up to that point in the month, as well as the market's expectations for the fed funds rate for the remainder of the month.
- The CME's Fed Funds contract assumes a 30-day month in order to guarantee a uniform $12.50 tick value.
- The length of the period covered by the contract will vary from month to month, and the averaging process used to determine the final settlement price will be calculated based on these actual day counts.

Deferred Month Pricing

- Contracts that expire in deferred months will simply reflect implied one-month forward rates for the periods covered by the contracts.
- The Fed Funds contract price reflects an uncompounded average of overnight rates, while LIBOR and Eurodollar rates are term rates, equivalent to compounded averages.
- "Strip" rates can be constructed by combining consecutive Fed Funds contracts, based on each individual month's compounded yield.
- Day Counts - for example, days in the November contract are counted from 2 business days prior to the third Wednesday of October (a Monday), through and including the day prior to the expiration of the November contract (a Sunday).

A Note for Spreaders

One-month LIBOR and One Month Fed Funds contracts that cover similar time periods DO NOT share identical expiration dates. For example, a futures position designed to exploit the difference between 30-day term fed funds and One-month LIBOR over the turn of the year necessitates a position in the

December LIBOR contract and an opposite position in the **January Fed Funds** contract. In this case, the December LIBOR contract expires in mid December to a one-month LIBOR rate that covers a period from mid-December to mid-January. The January Fed Funds contract also covers the mid-December to mid-January time period, but expires in mid-January. When the December LIBOR contract expires two London business days prior to the third Wednesday of December, the January Fed Funds contract should be priced to reflect the one-month term fed funds rate on that day. As a result, the December LIBOR/January Fed Funds spread should reflect the targeted difference between one-month LIBOR and one-month term fed funds when the December LIBOR contract expires.

Fed Funds Futures and the CME

Fed Funds futures provide a price discovery and trading vehicle not only for this market, but also for the other money market rates that are closely linked to the federal funds rate, such as overnight and term repurchase (RP) rates. The CME Fed Funds futures contract is designed for traders to act on their expectations for overnight rates, as well as for term rates. In addition, the Fed Funds contract can be spread against the CME's One-month LIBOR, Three-month Eurodollar and 13-week Treasury bill contracts, enabling traders to take positions on relative changes in term RP, fed funds and LIBOR. By trading all of these contracts on the CME, the user benefits from substantial execution and clearing efficiencies, and ultimately reduced costs.

12-POINT STRIKE PRICES ON QUARTERLY EURODOLLAR OPTIONS

WHAT: Twelve-point strikes are strike prices whose last two digits end in 12, 37, 62, and 87. Examples of 12-point strikes might be 9312, 9337, 9362, and 9387. Serial and Mid-curve options are not eligible for 12-point strikes. The familiar 25-point strikes are not affected by the listing of 12-point strike prices.

WHEN: Twelve-point strikes are listed on the first business day following the expiration of the last serial option that shares the same underlying future as the quarterly option. Twelve-point strikes were first listed on the June quarterly options on Monday, May 15, 1995 (the first business day following the expiration of the May serial options).

HOW MANY: Initially, three 12-point strikes will be listed: a 12-point at-the-money strike, a 12-point strike above, and a 12-point strike below the at-the-money strike. Thereafter, additional 12-point strikes will be listed in accordance with CME rule 5001.E. (Exercise prices).

EXAMPLE: The following example illustrates the 12-point strikes that would be listed for both calls and puts on Monday, November 13, if the December futures contract was to settle at the following prices on Friday, November 10:

	EDZ	EDZ	EDZ	EDZ

	SETTLE =93.49	SETTLE =93.50	SETTLE =93.74	SETTLE =93.75
12-point strike above the ATM	**93.62**	**93.87**	**93.87**	**94.12**
	93.50	93.75	93.75	94.00
ATM 12-point Strike	**93.37**	**93.62**	**93.62**	**93.87**
	93.25	93.50	93.50	93.75
12-point strike below the ATM	**93.12**	**93.37**	**93.37**	**93.62**

GLOBEX® : 12-point strikes are also listed on GLOBEX. Consult your GLOBEX representative for further information.

For more information about CME interest rate products, contact the Chicago Mercantile Exchange Currency and Interest Rate Marketing Department at (312) 930-8199.

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