First Quarter 2013

Quarterly Interest Rate Review

A Global Trading Summary of Interest Rate Markets
» Highlights
» Volume
» Credit Spreads
» Deliveries
» Cash Market
» Penetration
» Foreign Holdings of Treasury Securities
» Historical Volatility

Also including Interest Rate Futures Liquidity Report

How the world advances
CME Group

Delivering Innovations

• Portfolio Margining of Cleared IRS vs. Futures Savings up to 90%

• Real-Time OTC Clearing

• NEW Deliverable Interest Rate Swap Futures

cmegroup.com/cleardotc
Update on Interest Rate Products

Deliverable Interest Rate Swap Futures
Month-End O.I. and Volume Trends

- Open interest has increased every month since the December 2012 launch (35,900+ as of April month-end)
- More than 290,000 contracts have traded since launch (through May 3, 2013)

Key Benefits
- Standardized futures contracts offer capital-efficient access to swap rate exposure
- Significant savings through risk offsets with Eurodollar, Treasury futures and options
- Automatic netting of positions
- Flexibility to roll positions or take delivery of a CME Cleared Interest Rate Swap
- No surcharges for ex-pit trades, blocks and EFPs

![Graph showing Deliverable Swap Futures Monthly ADV and Open Interest]

The 5 Yr and 10 Yr DSFs are now available on the CFTC Commitments of Traders Report.

Implied Pricing of Treasury Futures vs. DSF Spreads Added to CME Globex on May 6.

Liquidity in Long-dated Eurodollar, Mid-Curve Options Draws Increased Trading

A growing number of participants are capitalizing on the increased liquidity in deferred months to hedge risk further out on the yield curve and conduct curve-steepening plays, as these products represent capital-efficient, standardized alternatives to swaptions for managing rate exposure.

- Record 221,000+ long-dated Green quarterly Eurodollar options (April 19); 1 million+ in OI
- 5-Year "Purple" Mid-Curve options have traded over 53,000 contracts since March 11 launch (46,000+ in OI)
- Q1 2013 Eurodollar Mid-Curve options ADV at 327,000 contracts; 6.2 million+ in quarter-end OI

Weekly Treasury Options Surpass 10,000,000th Contract Traded April 29

- Over 10,000,000 ($1 Trillion notional) WTO contracts have traded since 2011 launch
- Offer valuable tools to manage short-term risk related to high-impact economic events

Growing Liquidity in Back Months, Calendar Spreads for Treasuries

A match algorithm change to 10-Year Treasury futures (implemented in January) has resulted in greater liquidity for calendar spreads and deferred quarterly months, with futures spreads as narrow as a ¼ of 32nd, and deferred-month options trading at 2-3 64ths wide.

This creates more trading opportunities and provides greater flexibility to portfolio managers and swaption dealers for managing risk over longer time periods.

Learn more at cmegroup.com/interestrates
HIGHLIGHTS
First Quarter 2013 Volume and Open Interest

- Average Daily Volume (ADV) for U.S. Treasury futures was 2,878,423 contracts per day for the first quarter of 2013, an increase of 22% from the first quarter of 2012.

- Open interest for U.S. Treasury futures was 5,959,426 contracts at the end of the first quarter of 2013, an increase of 25% from the first quarter of 2012.

- Average Daily Volume (ADV) for Eurodollar futures was 1,841,318 contracts per day for the first quarter of 2013, a decrease of 10% from the first quarter of 2012.

- Open interest for Eurodollar futures was 9,086,935 contracts per day for the first quarter of 2013, an increase of 9% from the first quarter of 2012.

- Average Daily Volume (ADV) for U.S. Treasury options was 511,732 contracts per day for the first quarter of 2013, an increase of 42% from the first quarter of 2012.

- Average Daily Volume (ADV) for Eurodollar options was 400,038 contracts per day for the first quarter of 2013.

- Weekly U.S. Treasury options have produced average daily volume of 27,397 contracts per day for the first quarter of 2013, an increase of 48% from the first quarter of 2012.

- 53.6% of all Treasury Options traded were traded on Globex in the first quarter of 2013.

- Average Daily Volume (ADV) for 5-Yr T-Note options was 95,218 contracts per day for the first quarter of 2013, an increase of 110% from the first quarter of 2012.

- Average Daily Volume (ADV) for the Mid-Curve options was 327,000 per day for the first quarter of 2013 with open interest over 6.2 Million.

- In their first month of trading, 5 Year “Purple” Mid-Curves have traded over 53,000 and have open interest of over 46,000.

- Ultra T- Bond futures posted first quarter 2013 ADV of 84,830 contracts and open interest of 371,801 at the end of the first quarter of 2013.

- Deliverable Interest Rate Swap futures, launched on 3 Dec 2012, produced cumulative volume of more than 1 million contracts ($105 billion in notional terms) and open interest of 34,085 during the first quarter of 2013.
30-Year Swap Spread
Treasury Bond Yield minus 30-Year Interest Rate Swap Yield

Source: Bloomberg

Trading The NOB

The daily futures chart represents: 5*(TY Futures Price) - 3*(US Futures Price)
The daily cash chart shows the yield spread of on-the-run 30-Year and 10-Year

Source: Bloomberg
Quarterly Interest Rate Review

U.S. Treasury Options CME Globex and Pit ADV by Time Zone

Percent of total average daily volume (ADV) executed in extended trading hours (CME Globex). ADV includes open outcry.

Eurodollar Options CME Globex and Pit ADV by Time Zone

Percent of total average daily volume (ADV) executed in extended trading hours (CME Globex). ADV includes open outcry.
U.S. Treasury Options - Monthly Average Daily Volume

Treasury Futures: Hourly Distribution of Electronic Volume
(Hourly Volume as % Share of Volume, January 1 - March 31, 2013)
Treasury Options: Hourly Distribution of Electronic Volume
(Hourly Volume as % Share of Volume, January 1 - March 31, 2013)

% of Volume per Time Zone
- Asian Hours - 2%
- European Hours - 20%
- US Hours - 78%

Asian Hours (5pm-12am)
European Hours (12am-7am)
US Hours (7am-4pm)

Local (Chicago) Time

2-Year and 5-Year U.S. Treasury Note Futures
Monthly Historical Volatility
(3-Month Moving Average)

Source: CME Group
10-Year Note and Classic T-Bond U.S. Treasury Futures
Monthly Historical Volatility
(3-Month Moving Average)

Source: CME Group

Ultra Bond U.S. Treasury Futures
Monthly Historical Volatility
(3-Month Moving Average)

Source: CME Group
Quarterly Interest Rate Review

5-Year and 10-Year U.S. Interest Rate Swap Futures
Monthly Historical Volatility
(3-Month Moving Average)

Source: CME Group

7-Year and 30-Year U.S. Interest Rate Swap Futures
Monthly Historical Volatility
(3-Month Moving Average)

Source: CME Group
Quarterly Interest Rate Review

10-Year U.S. Treasury Note Futures Cash Market Penetration
Notional Futures ADV as % of Notional Cash ADV

Sources: CME Group and Federal Reserve Bank of New York

U.S. Treasury and Ultra U.S. Treasury Bond Futures Cash Market Penetration
Notional Futures ADV as % of Notional Cash ADV

Sources: CME Group and Federal Reserve Bank of New York
2-Year U.S. Treasury Note Futures

Delivered Contracts and as Percent of Open Interest of Expiring Contract on First Position Day

Delivered (Left)  Percent (Right)

Source: CME Group

5-Year U.S. Treasury Note Futures

Delivered Contracts and as Percent of Open Interest of Expiring Contract on First Position Day

Delivered (Left)  Percent (Right)

Source: CME Group
10-Year U.S. Treasury Note Futures
Delivered Contracts and as Percent of Open Interest
of Expiring Contract on First Position Day

Source: CME Group

Classic U.S. Treasury Bond Futures
Delivered Contracts and as Percent of Open Interest
of Expiring Contract on First Position Day

Source: CME Group
Ultra U.S. Treasury Bond Futures

Delivered Contracts and as Percent of Open Interest of Expiring Contract on First Position Day

Delivered (Left)  Percent (Right)

Source: CME Group
Largest Quarter-over-Quarter Increases (Percent) in Foreign Holdings of U.S. Treasury Securities
February 2013

Source: U.S. Treasury Department

Largest Quarter-over-Quarter Decreases (Percent) in Foreign Holdings of U.S. Treasury Securities
February 2013

Source: U.S. Treasury Department
Regional Holdings of
U.S. Treasury Securities (Percent)
February 2013

Source: U.S. Treasury Department

Americas ex-U.S. Holdings of
U.S. Treasury Securities (Percent)
February 2013

Source: U.S. Treasury Department
Asia Holdings of
U.S. Treasury Securities (Percent)
February 2013

Europe Holdings of
U.S. Treasury Securities (Percent)
February 2013

Source: U.S. Treasury Department
Fed Funds and Eurodollar Futures

Number of Large Open Interest Holders*

*The CFTC defines large open interest holders as having at least 600 open contracts in Fed Funds and 3,000 in Eurodollars.

Source: Commodity Futures Trading Commission

Treasury Note Futures

Number of Large Open Interest Holders*

*The CFTC defines large open interest holders as having at least 1,000 open contracts in 2-Year Notes; 2,000 in 5-Year Notes; and 2,000 in 10-Year Notes.

Source: Commodity Futures Trading Commission
The CFTC defines large open interest holders as having at least 1,500 open contracts in Classic Bonds and 1,500 in Ultra Bonds.
INTEREST RATE LIQUIDITY MONITOR
Q1 2013 Highlights

How Liquidity is Calculated

- Globex order book liquidity data are calculated utilizing time-weighted-average (TWA) Globex order book sizes at each generic price level (i.e. best bid/offer, 2\textsuperscript{nd} best, 3\textsuperscript{rd} best, 4\textsuperscript{th} best, and 5\textsuperscript{th} best).

- \textit{Bid/Ask Qty 1} = the average Best Bid and Offer book sizes and are also referred to as the “Top of the Book”. Bid/Ask Qty 2 = the average order book sizes at the 2\textsuperscript{nd}-best bid and 2\textsuperscript{nd}-best offer, and so on.

- The bid and offer sizes are averaged together, such that if the TWA Best bid size = 36 and the TWA Best offer size = 34, then the \textit{Avg Bid/Ask Qty 1} would equal 35.

- The time-weighted-averages are derived from 7:00 am – 4:00 pm, Chicago time, unless otherwise noted.
Quarterly Interest Rate Review

Treasury Futures Quarterly Roll Liquidity
Treasury Bond Futures (US) Calendar Roll Nine-Day Period Averages, Globex RTH

- Avg Bid/Ask Qty 3
- Avg Bid/Ask Qty 2
- Avg Bid/Ask Qty 1 (Best)

<table>
<thead>
<tr>
<th>Roll Period</th>
<th>Avg Bid/Ask Qty 3</th>
<th>Avg Bid/Ask Qty 2</th>
<th>Avg Bid/Ask Qty 1 (Best)</th>
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<td>ZBU1 - ZB1</td>
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<td>22 Aug - 01 Sep, 2011</td>
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<td>ZB2 - ZBM2</td>
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<td>ZBM2 - ZBU2</td>
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<td>18 May - 31 May, 2012</td>
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<td>ZBU2 - ZB2</td>
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<td>20 Nov - 03 Dec, 2012</td>
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<td>ZBH1 - ZBM1</td>
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Treasury Futures Quarterly Roll Liquidity
Ultra Treasury Bond Futures (UB) Calendar Roll Nine-Day Period Averages, Globex RTH

- Avg Bid/Ask Qty 3 Level
- Avg Bid/Ask Qty 2 Level
- Avg Bid/Ask Qty 1 (Best)

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<tr>
<th>Roll Period</th>
<th>Avg Bid/Ask Qty 3 Level</th>
<th>Avg Bid/Ask Qty 2 Level</th>
<th>Avg Bid/Ask Qty 1 (Best)</th>
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<td>UBM2 - UBU2</td>
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<td>23 Nov - 01 Dec, 2012</td>
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<td>UBM3 - UBM3*</td>
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<td>19 Nov - 03 Nov, 2012</td>
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*Bloomberg Ticker: WUBX - WUX*
CME Group Interest Rate Products

CME Group is the world’s leading marketplace for trading short-, medium- and long-term interest rate derivative products. Spanning the entire U.S. dollar-denominated yield curve, our products include futures and options on the most widely followed U.S. interest rate benchmarks: Eurodollars, U.S. Treasury securities, 30-Day Fed Funds, and Interest Rate Swaps. In addition, we offer central counterparty clearing for OTC Interest Rate Swaps. The liquidity, transparency and security of CME Group interest rate markets provide customers around the world with safe, efficient means for managing interest rate risk. Backed by our central counterparty clearing model, we offer powerful solutions to address a wide variety of risk management needs.

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All references to options refer to options on futures.

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