

CME Group Interest Rate Products

Jeff Kilinski, Director

Summary

CME Group Overview

Eurodollar Futures

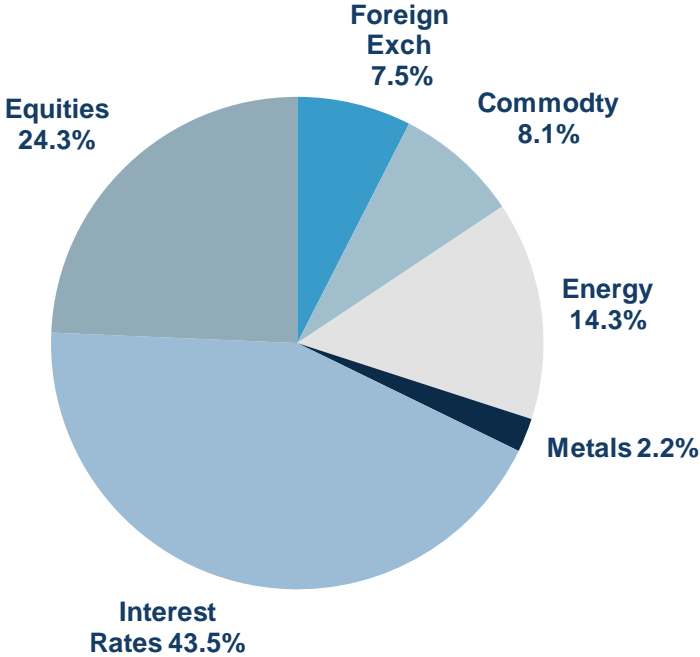
Treasury Futures and the Ultra Bond Contract

Just Listed, On-The-Run Treasury Yield Contracts

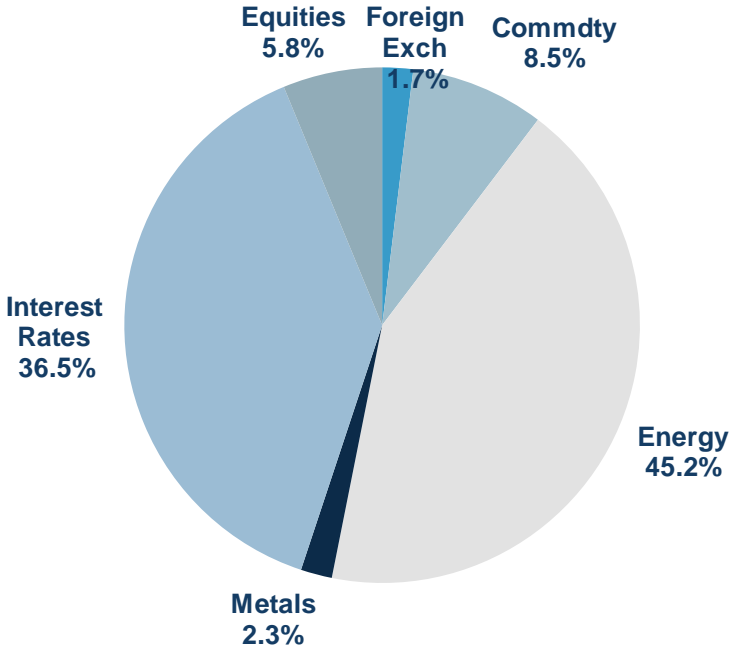
Central Counter Party Clearing and OTC Interest Rate Swaps

Diverse Product Portfolio

Q3 2010 ADV



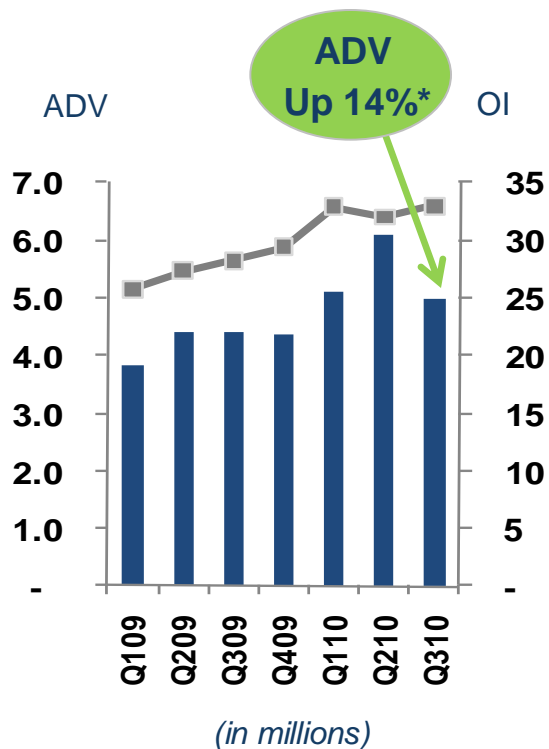
Open Interest Dec 1, 2010



1. Commodities / Alt Investments includes agricultural commodities (grains, dairy, livestock, forest, NYMEX softs, indexes), weather and real estate

Financial Products Snapshot

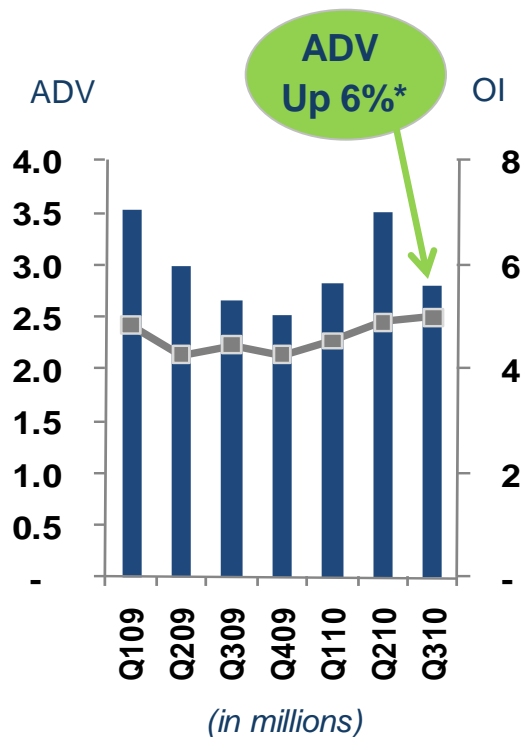
Interest Rates



■ ADV — OI

- Ultra T-Bond
- 30K ADV in Sep10, up from 5K in Jan10
- On-the-Run Treasury futures

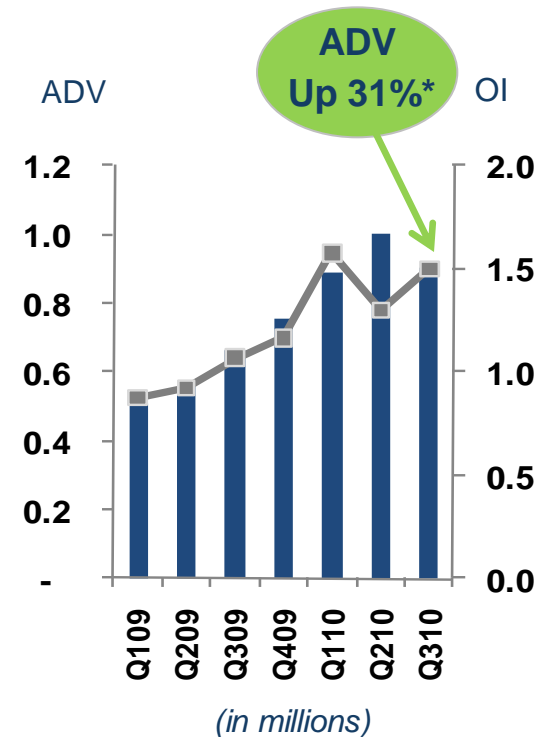
Equities



■ ADV — OI

- S&P CNX Nifty Index (Nifty 50)
- Expanded yen-denominated Nikkei 225 futures trading hours
- Kospi futures

FX



■ ADV — OI

- Q3 FX ADV = 866K, up 31%
- From April '07 – April '10
- Global FX market up 20%*
- CME FX ADV up 94%

*Source: Bank for International Settlements

CME Interest Rate Futures

Multiple Uses, Multiple Users

Commercial/Investment Banks

Hedge Funds/CTAs

Proprietary Trading Funds

Asset Managers

Mortgage Servicers

Regional Banks

Swaps

Swaptions

Money Markets

Repo/Financing

Govt/Treasury

Mortgages

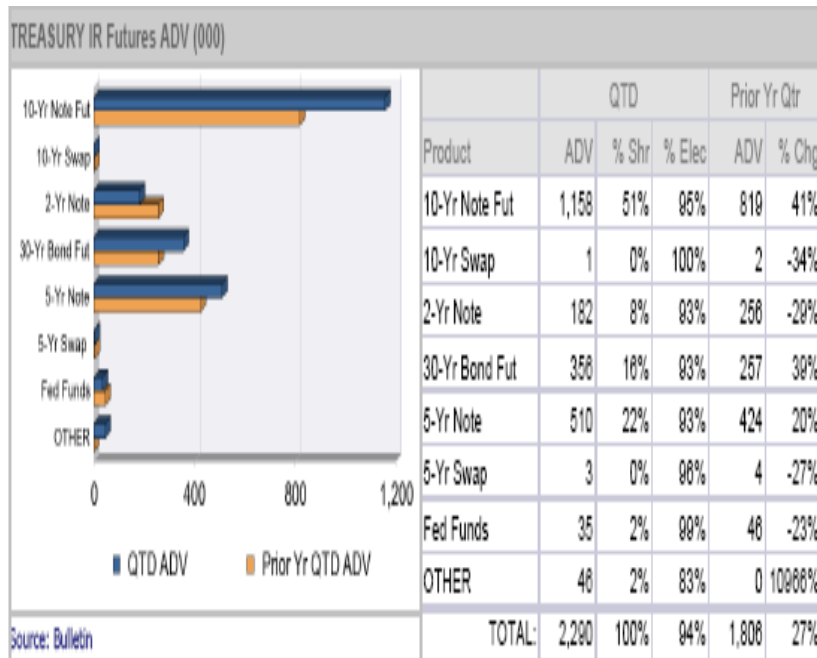
Credit/Corporate/CDS

Asset/Liability Managers

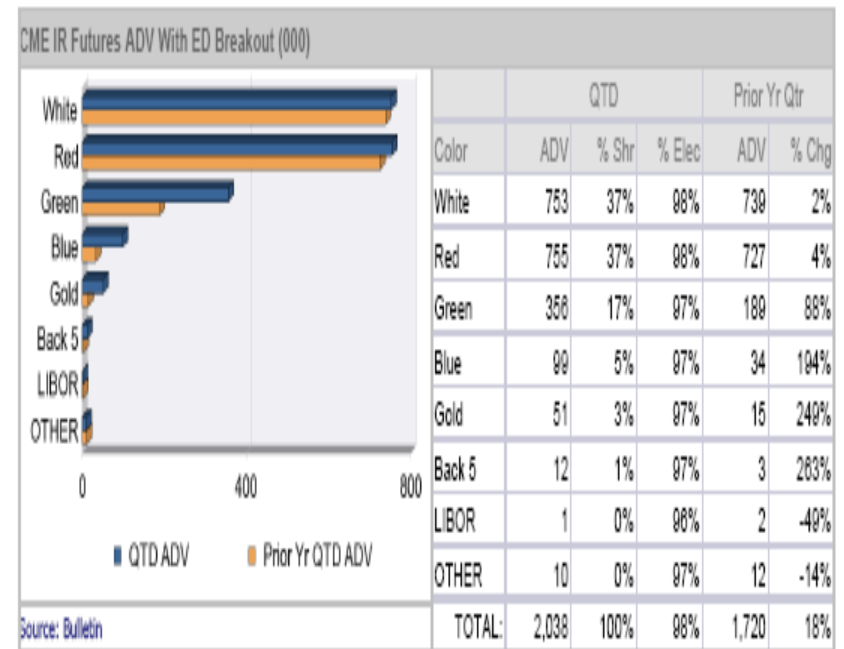
Prop Trading

Interest Rate Volumes

CBOT



CME



CME Group Eurodollar Futures

CME Eurodollar Futures Fundamentals

Most active short-term interest rate futures contract in the world

- **Launched December 1981, market growth facilitated by interplay vs. interest rate swap (IRS) markets**
- **YTD Eurodollar future ADV = 2M contracts, up 17% YOY**
- **Notional value of ADV = \$2 trillion per day**
- **98% of Eurodollar futures volume is traded electronically**
- **Open Interest (Dec 1, 2010) = 8.1M, Options 23M**

CME Eurodollar Futures Fundamentals

USD denominated time deposits held in commercial banks outside U.S.

- Markets developed in London in 1950's and 60's
- Also known as London Interbank Offered Rate (LIBOR)
- It succeeded the prime rate and the domestic CD rate in the early 1980's as the U.S. short-term interest rate benchmark
- Has achieved benchmark status for corporate funding ... corporations borrow at “floating” rate (LIBOR) plus credit spread

Contract Specs

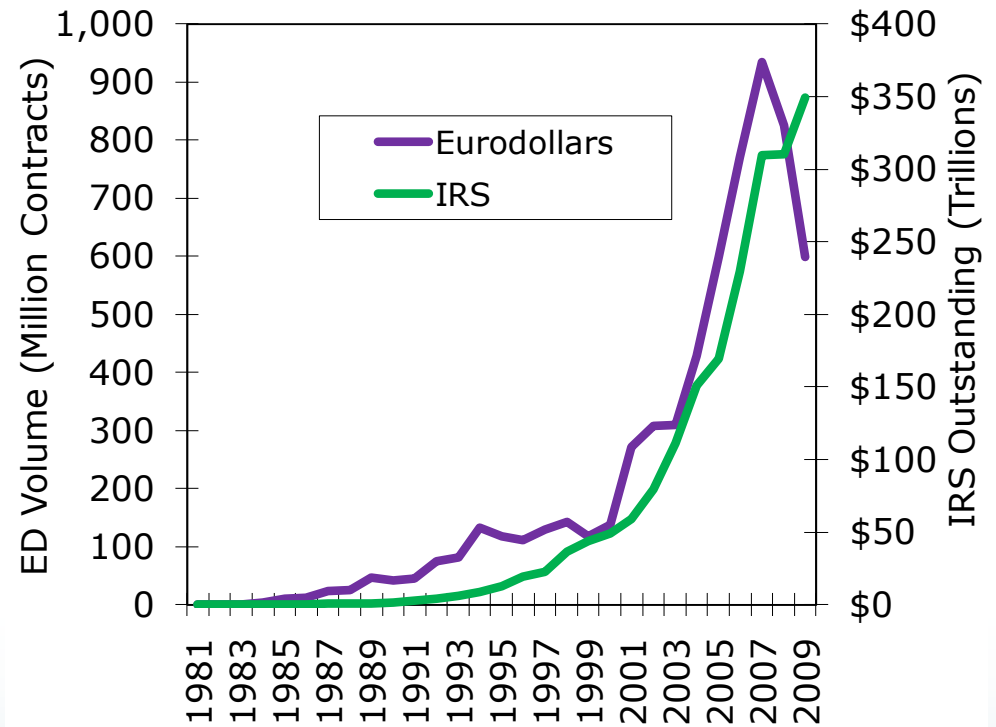
CME Eurodollar Futures Fundamentals

Underlying Instrument	Eurodollar Time Deposit having a principal value of USD \$1,000,000 with a three-month maturity.
Final Settlement	Cash settled to 100 minus the British Bankers' Association survey of 3-month U.S. Dollar LIBOR on the last trading day. Final settlement price will be rounded to four decimal places, equal to 1/10,000 of a percent, or \$0.25 per contract.
Quote	Quoted in "IMM index points" or 100 minus rate. A rate of 5.055% is quoted as 94.945. 1 basis point = .01 percent = \$25.
Minimum Price Fluctuation	One-quarter of one basis point (0.0025 = \$6.25 per contract) in the nearest expiring contract month; One-half of one basis point (0.005 = \$12.50 per contract) in all other contract months.
Months	March quarterly cycle of March, June, September and December; plus the first four "serial" months not in the March quarterly cycle
Hours of Trade	CME Globex®: 5:00 pm to 4:00 pm, Sunday - Friday Open Outcry: 7:20 am to 2:00 pm
Last Trading Day	The 2nd London bank business day immediately preceding the 3 rd Wednesday of the contract month. Trading in the expiring contract closes at 11:00 a.m. London Time on the LTD.
Ticker Symbols	Open Outcry: ED Globex: GE Bloomberg: ED

CME Eurodollars and the Interest Rate Swap Market

- CME Eurodollar futures and IRS date from 1981 and 1982, respectively
- Swaps frequently priced vs. and hedged with ED futures
- “The interest-rate swap curve – a series of rates across the maturity spectrum, which are pegged to ... Eurodollar futures – has established itself as an emerging alternative to Treasuries as a benchmark for measuring the relative value of other debt classes ... The swap curve is becoming ‘more influential, and we’re certainly interested in swap movement as it relates to the corporates, asset-backed and mortgage-backed securities that we own,’ said Tom Marthaler, a portfolio manager with Chicago Trust Co.” - WSJ

Growth of ED Futures & IRS Markets



CME Eurodollar Futures Fundamentals

IMM Index Quotation System for Short-term Interest Rate Futures ...

$$\begin{aligned}\text{Price Quote} &= 100.00 - \text{Rate} \\ &= 100.00 - 1.635 \\ &= 98.365\end{aligned}$$

Eurodollar (ED) futures prices mimic fixed income asset prices, that is, as rates decline, futures prices rise and vice versa.

ED Basis point value (BPV) is fixed and lacks convexity ...

$$\begin{aligned}\text{BPV} &= \$1,000,000 \times (\text{days}/360) \times 0.01\% \\ &= \$1,000,000 \times (90/360) \times 0.01\% \\ &= \$25.00\end{aligned}$$

Eurodollar Mechanics – Outrights, Spreads, Strips

Outrights

- **Years 1 – 10, quarterly plus 4 serial contracts**

Spreads

- **Simultaneous purchase and sale of contracts in different months**
- **Spread traders provide a substantial portion of the liquidity in Eurodollar futures**

Strips

- **The purchase or sale of two or more consecutive quarterly futures expirations**

Eurodollar Mechanics - Packs & Bundles

Packs & Bundles are “pre-packaged” Strips

- Facilitate rapid execution of specific Strips with a single transaction
- Packs
 - 10 specific packages of 4 consecutive futures contracts
 - Quoted in $\frac{1}{4}$ basis point (0.0025) price increments
 - Priced on the basis of average net change of each individual contract from previous day’s settlement price
 - Designated by color codes that correspond to their position on the yield curve: White, Red, Green, Blue, Gold, Purple, Orange, Pink, Silver and Copper

• Years



• Bundles

- 2-year through 10-year packages of consecutive futures contracts
- Always begin with the front quarterly contract
- Quoted in $\frac{1}{4}$ basis point (0.0025) price increments
- Priced similarly to Packs (net change from previous day’s settlement price)

The Convexity Bias

Because Eurodollar contract has fixed BPV of \$25, there is no convexity in its price response to interest rate changes.

If contract price rises one tick (1 bp), long collects \$25 variation margin, and short pays \$25 variation margin, *regardless of whether contract expires in 10 days or 10 years.*

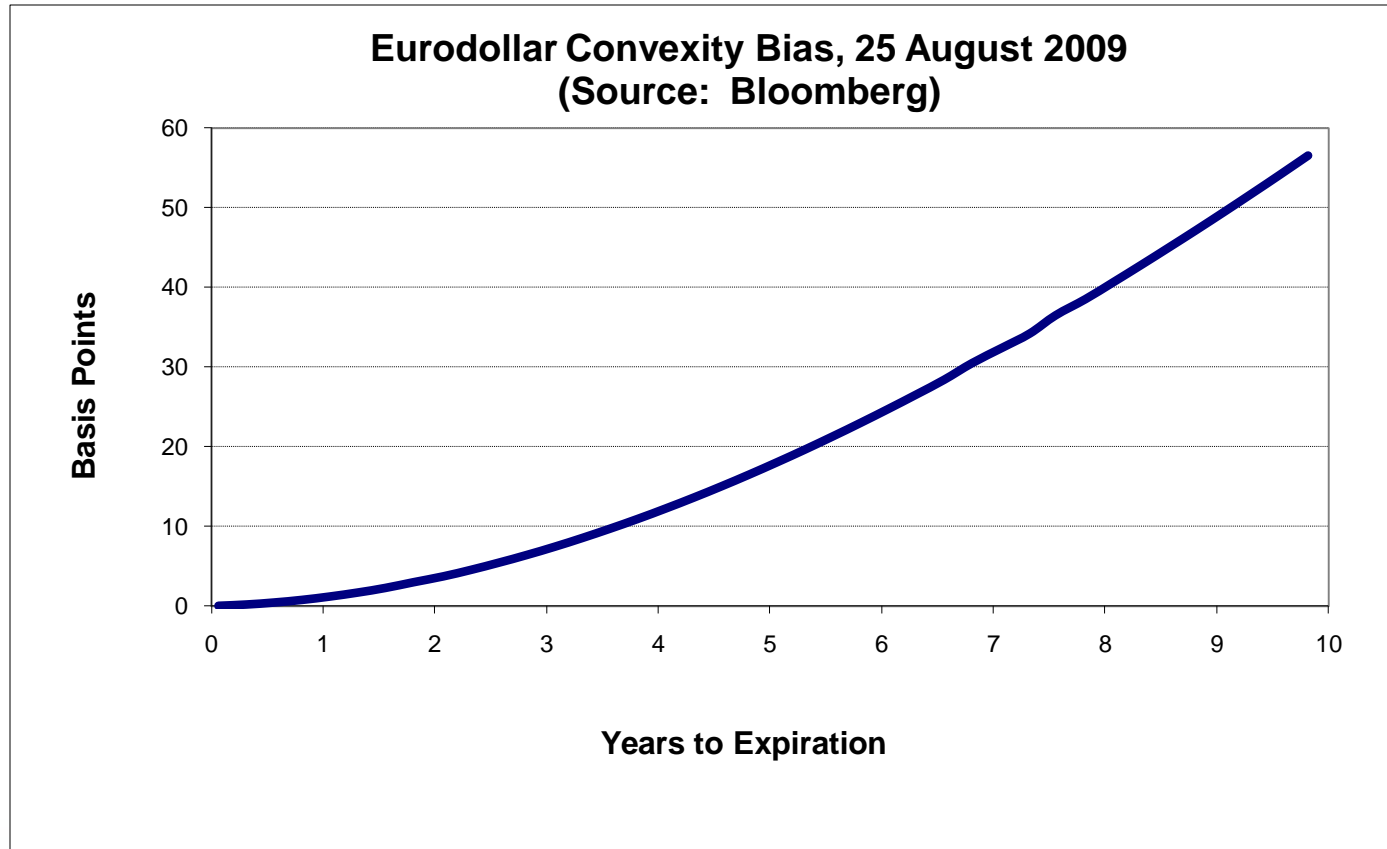
In asset price terms, this makes Eurodollar contract worth less to its owner than a comparable fixed-income asset (eg, a forward rate agreement) that has a convex rate-to-price relationship.

Investors know this ➔ Eurodollar futures contract rates are biased upwards (relative to rates on comparable FRAs) to compensate owners for lack of convexity.

Convexity bias increases as

- (1) time until futures contract expiration increases
- (2) volatility increases in futures contract's underlying forward-starting 3-month interest rate
- (3) volatility increases in spot rate for term to maturity to futures expiry
- (4) correlation increases between (2) and (3)

The Convexity Bias (continued)



The Convexity Bias (continued)

Swap dealers can take advantage of this by entering into a receive fixed/pay floating swap and establish a short position in Eurodollar futures

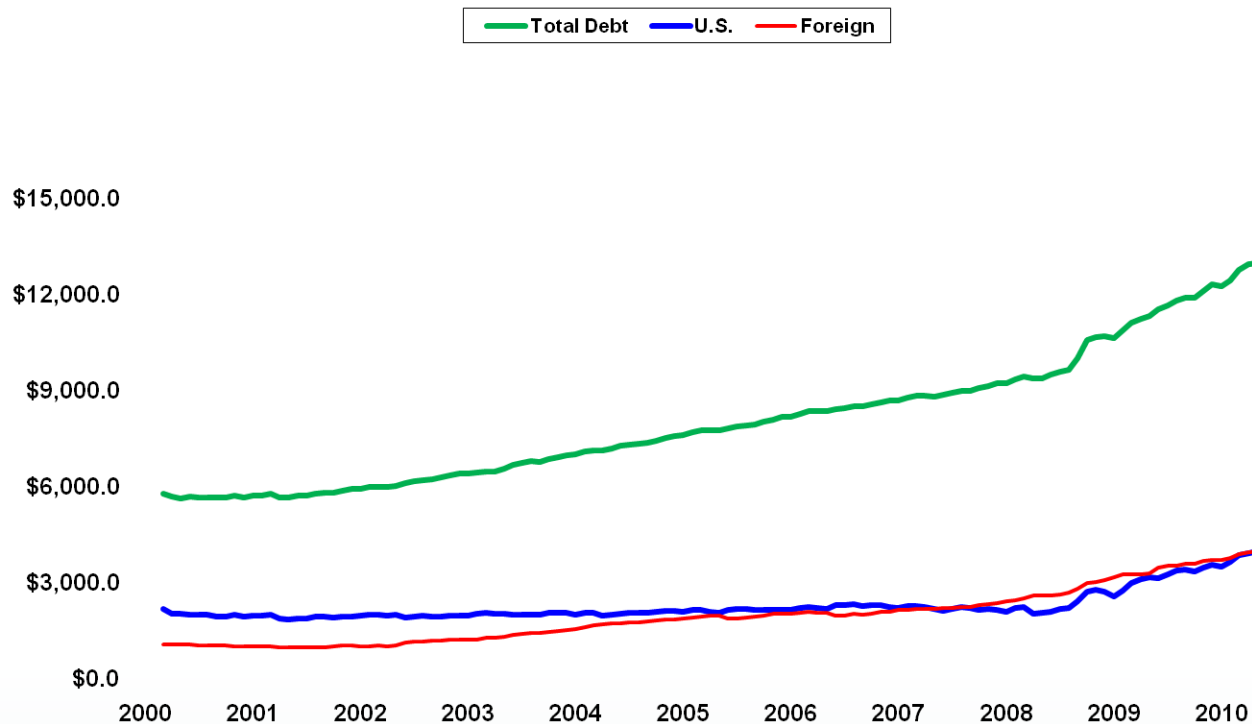
- **As interest rates fall, the basis point value of the swap rises; losses on short Eurodollar position remain at \$25 per basis point**
- **As interest rates rise, the basis point value of the swap falls; gains on short Eurodollar position remain at \$25 per basis point**

CBOT Treasury Futures

Foreign investors continue to buy Treasuries...

Dollar Holdings of U.S. Treasury Securities (Billions)

Source: U.S. Treasury Department

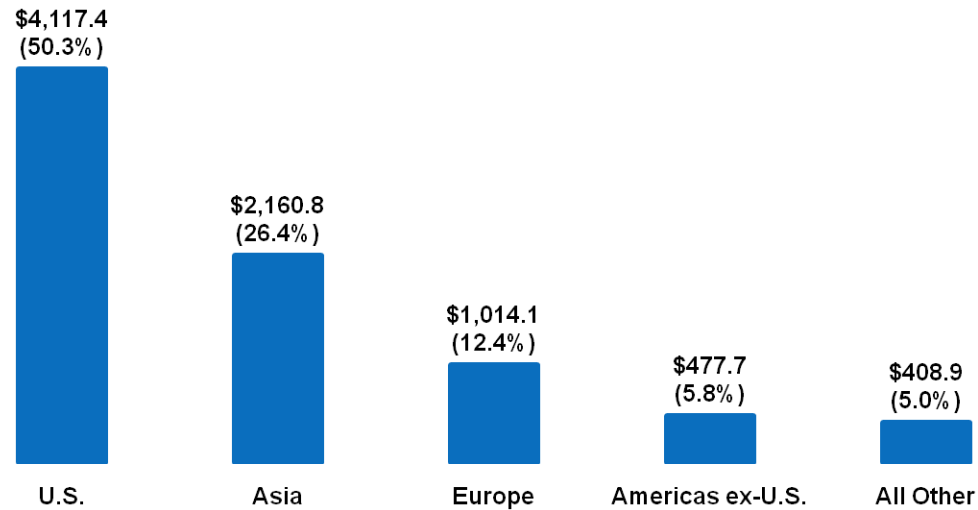


Asia continues to dominate regionally...

Regional

Dollar Holdings of U.S. Treasury Securities (Billions) - July 2010

Source: U.S. Treasury Department

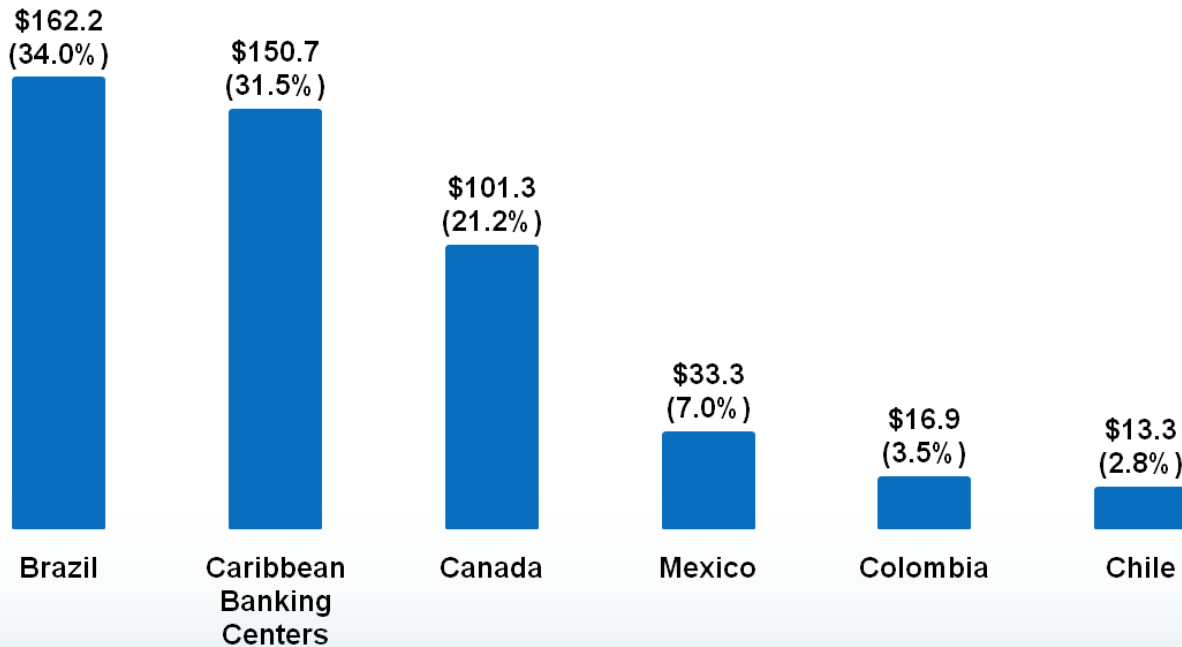


Brazil and CBCs dominate the Americas ex-U.S...

Americas ex-U.S.

Dollar Holdings of U.S. Treasury Securities (Billions) - July 2010

Source: U.S. Treasury Department

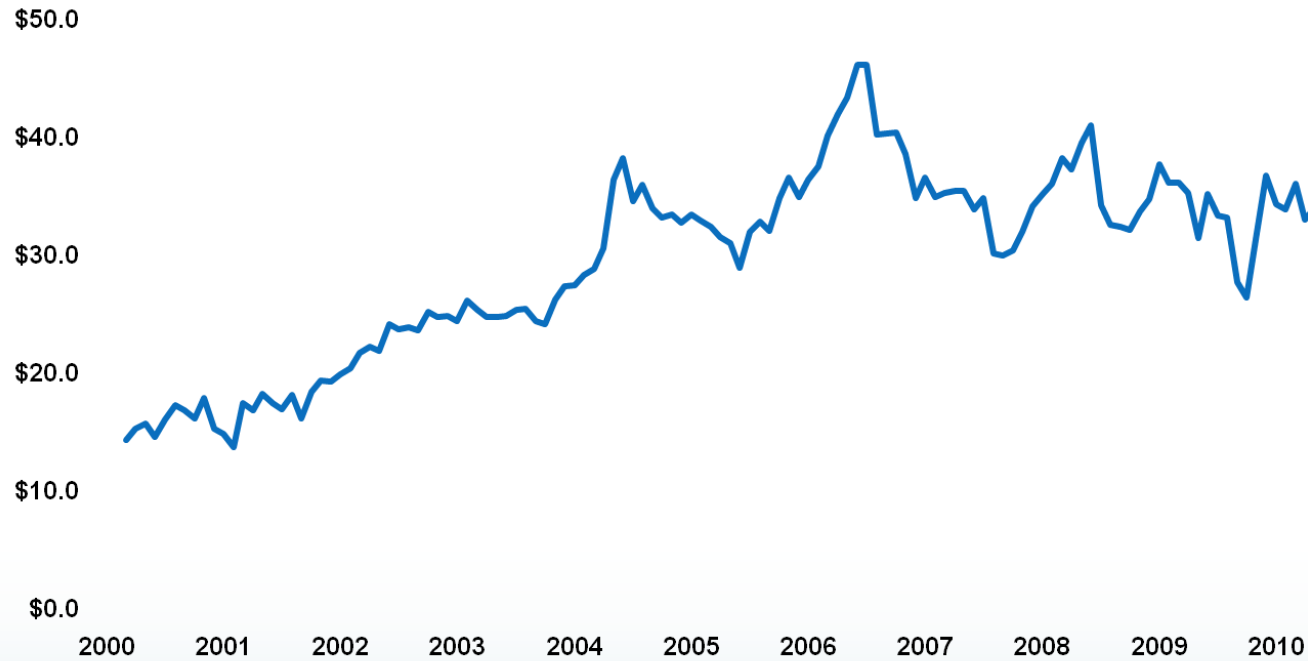


Mexico is the 20th largest foreign investor...

Mexico

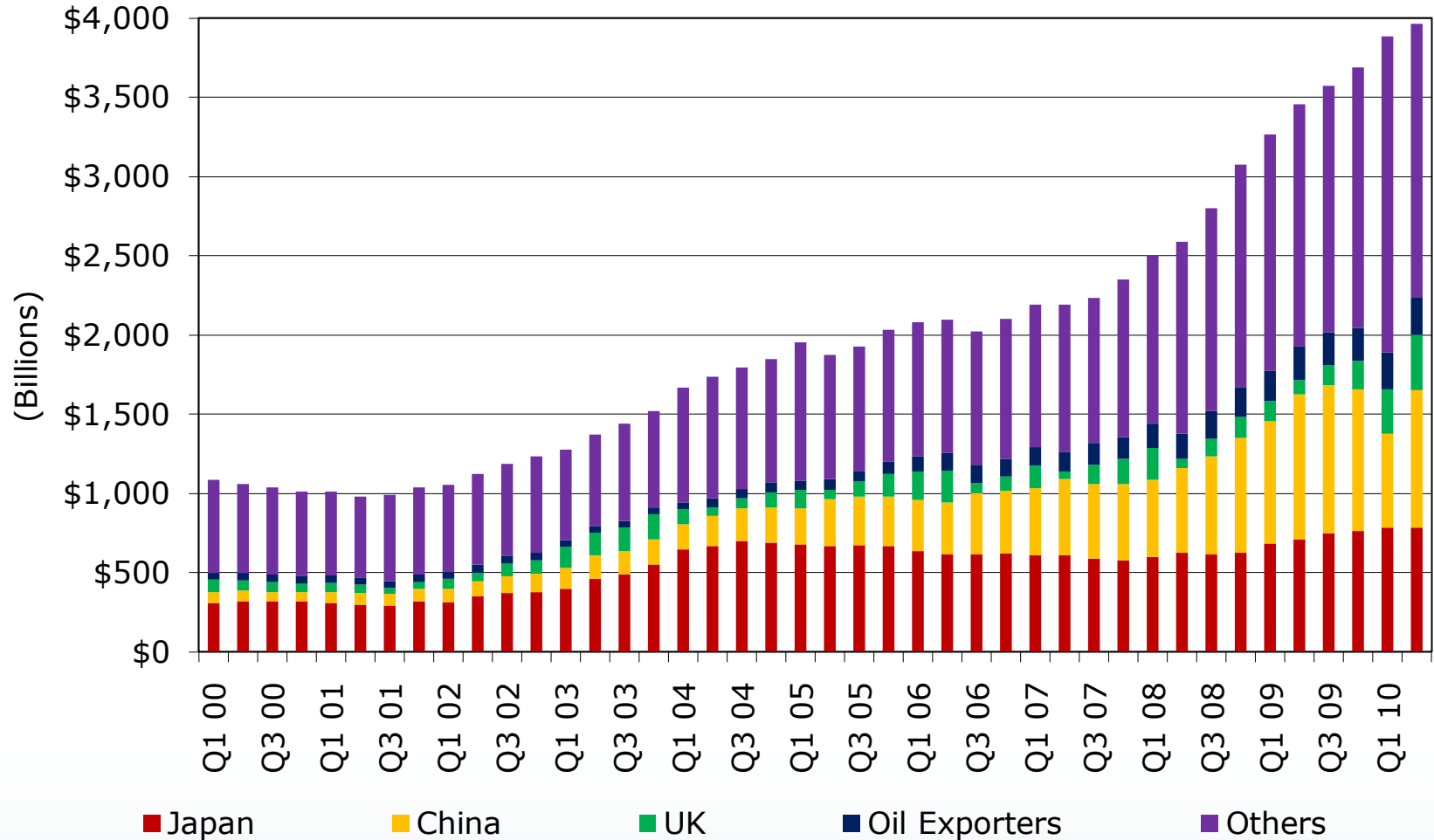
Dollar Holdings of U.S. Treasury Securities (Billions)

Source: U.S. Treasury Department



Growth of Treasury Futures

Overseas Holdings of US Treasuries

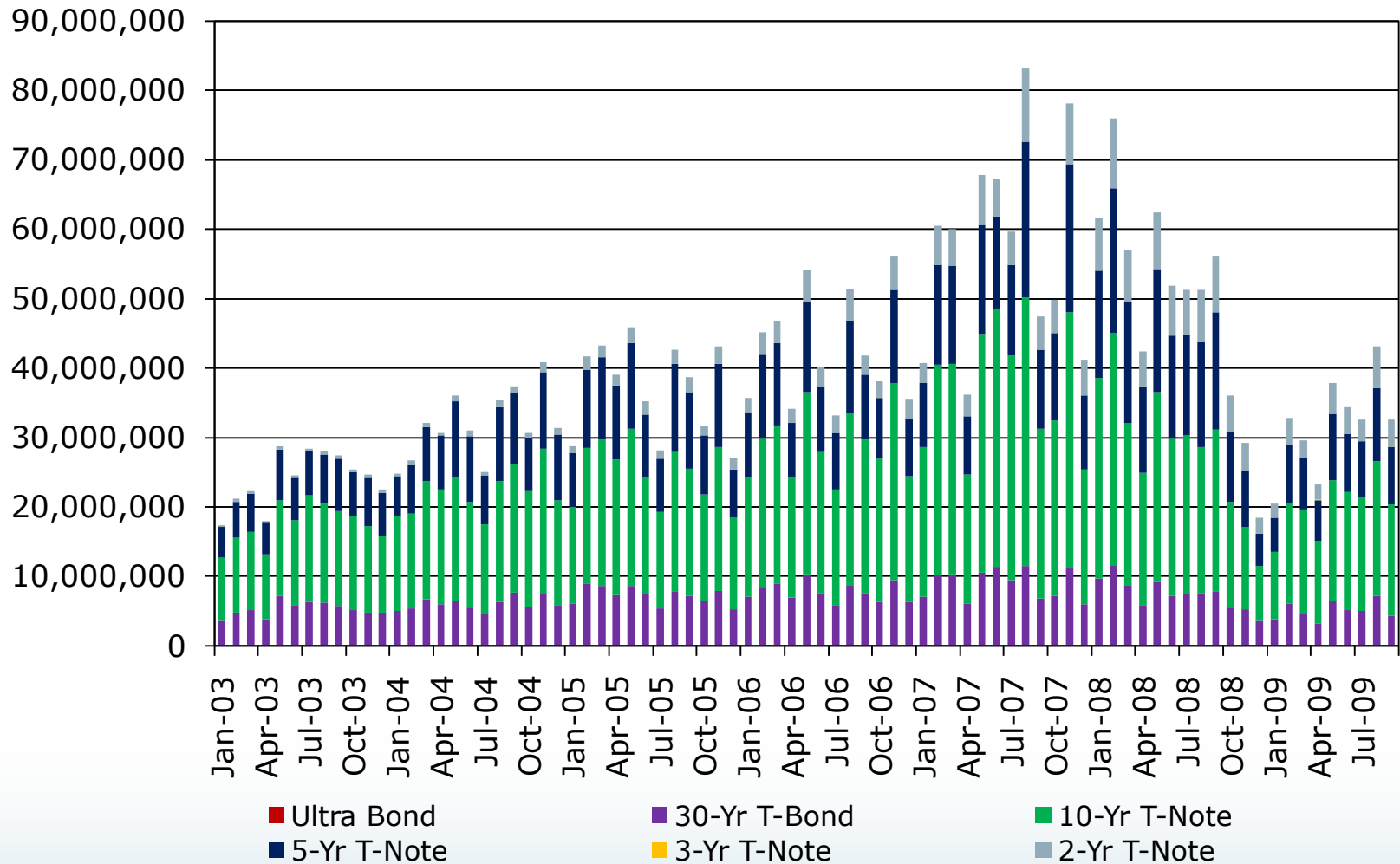


Source: US Treasury Department



Growth of Treasury Futures

Treasury Futures Monthly Volume



Growth of Treasury Futures

Algorithmic Trading

- Growing proportion of activity in Treasury futures from “algo” traders
- Some 44% of volume contributed by algo traders
- Some 65% of message traffic entered by algo traders

10-Year T-note Futures “Algo” Activity (3rd Quarter 2010)

	Total	Algo	%
Electronic Volume	141,782,127	62,696,278	44%
Message Traffic	603,864,784	393,292,722	65%

Treasury Futures Contracts

	2-Year T-Note Futures	3-Year T-Note Futures	5-Year T-Note Futures	10-Year T-Note Futures	30-Year T-Bond Futures	Ultra T-Bond Futures
Contract Size	\$200,000 face-value			\$100,000 face-value		
Delivery Grade	Notes with original maturity no greater than 5-1/4 years and remaining maturity no greater than 2 years but not less than 1 year, 9 months	Notes with original maturity no greater than 5-1/4 years and remaining maturity no greater than 3 years but not less than 2 years, 9 months	Notes with original maturity no greater than 5-1/4 years and remaining maturity of at least 4 years, 2 months	Notes with remaining maturity of at least 6-1/2 years but no more than 10 years	Bonds with remaining maturity of at least 15 years	Bonds with remaining maturity of at least 25 years
Invoice Price	Invoice price = settlement price x conversion factor (CF) + accrued interest Where CF = hypothetical price to yield 6%					
Price Quote	1/4 th of 1/32 nd (\$15.625)			1/2 of 1/32 nd (\$15.625)	1/32 nd (\$31.25)	



Treasury Futures Contracts

- Conversion Factors (CF) reflect value of security as if it were to yield 6% (futures contract standard) as of the 1st day of futures contract month
- Principal Invoice Amount paid from long to short upon delivery

$$\text{Principal Invoice Price} = \text{Futures Settlement} \times \text{Conversion Factor (CF)} \times \$1,000$$

- Accrued interest added to Principal Invoice Amount to calculate Total Invoice Amount

$$\text{Total Invoice Amount} = \text{Principal Invoice Amount} + \text{Accrued Interest}$$

Hedging with Treasury Futures

- **Basis point value (BPV) ...**
 - Dollar change in value given a one basis point (0.01%) change in yield
 - Often quoted in \$'s per \$1 mil FV ... also known as “dollar value (DV) of an 01”
- **Duration ...**
 - Macauley's duration = average weighted maturity of cash flows (coupon payments, repayment of corpus) discounted to PV
 - Modified duration = expected % change in price per 1% change in yield

	Coupon	Maturity	Bid	Ask	BPV	Duration
1-Week Bill	Na	8/23/07	4.93%	4.92%	\$8.06	0.08
3-Mth Bill	Na	10/25/07	4.84%	4.83%	\$25.56	0.26
6-Mth Bill	Na	01/24/08	4.85%	4.84%	\$50.83	0.51
2-Yr Note	4-7/8%	Jun-09	100-07+	100-08	\$182.70	1.86
5-Yr Note	4-7/8%	Jun-12	100-13	100-13+	\$435.70	4.32
10-Yr Note	4-1/2%	May-17	96-27	96-28	\$756.60	7.74
30-Yr Bond	4-3/4%	Feb-37	95-22+	99-23+	\$1,481.80	15.15

Hedging with Treasury Futures

- **ACTUALLY ... one may use either BPV weighted HR or duration weighted HR with similar results**

$$\text{BPV HR} = \text{CF}_{\text{ctd}} \times (\text{BPV}_h \div \text{BPV}_{\text{ctd}})$$

- **Note mathematical link between BPV and modified duration (MD)**

$$\text{BPV} \approx (\text{Price} \times \text{MD})$$

- **Substituting ...**

$$\text{Duration HR} = \text{CF}_{\text{ctd}} \times (\text{Price}_h \times \text{MD}_h) \div (\text{Price}_{\text{ctd}} \times \text{MD}_{\text{ctd}})$$

Hedging with Treasury Futures

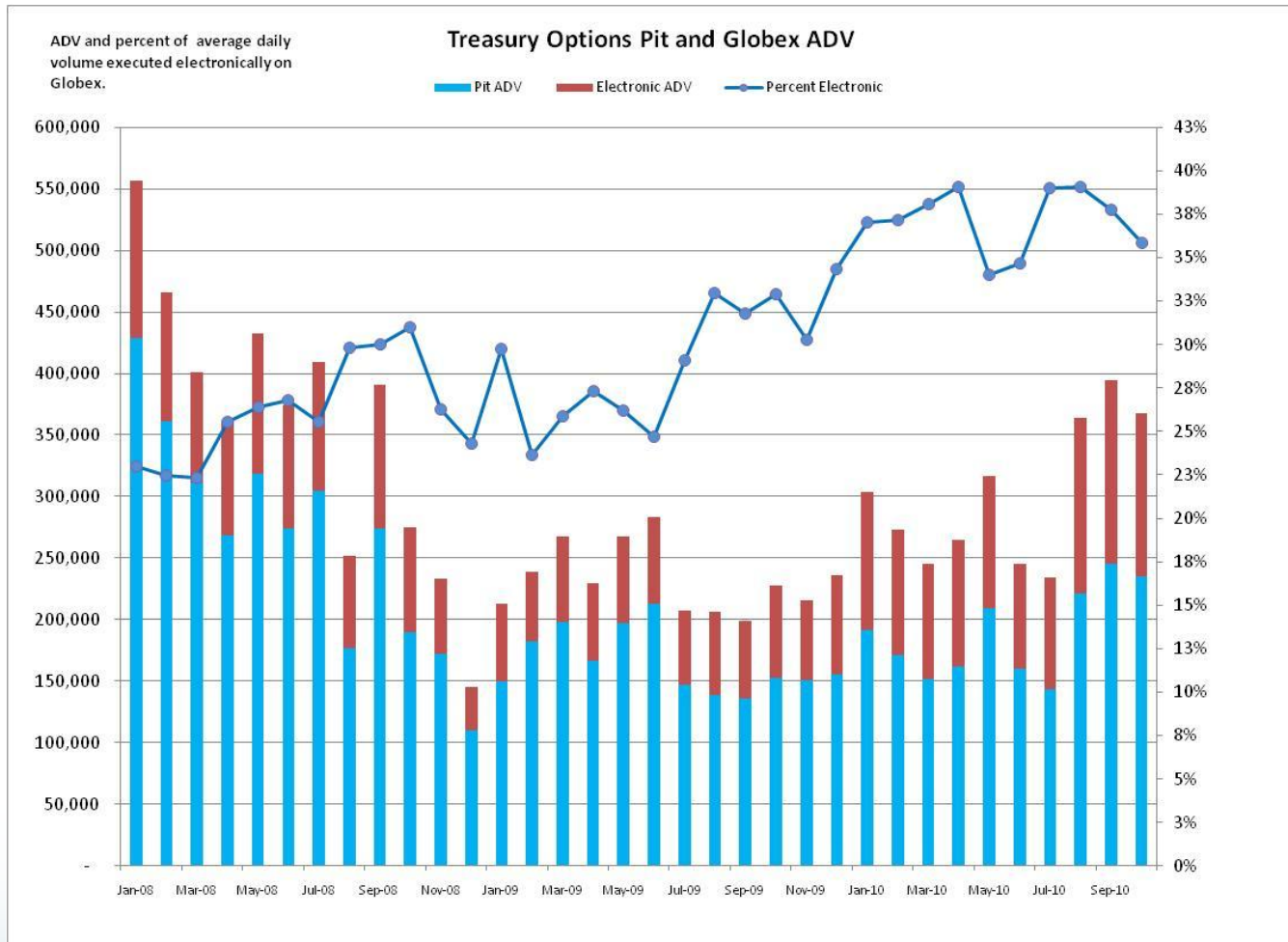
- **EXAMPLE: Find BPV HR for 5-1/8%-16 ... BPV = \$713.50 per mil**
 - CTD was 4-3/4%-14 ... BPV = \$572.30 per mil ... CF = 0.9335 ...
modified duration = 5.697 years
 - HR = 116 contracts per \$10 mil FV

$$\text{HR} = 0.9335 \times (\$713.50 \div \$572.30) = 1.1638$$

- **Find HR if CTD was (on-the-run) 4-1/2%-16 ... BPV = \$680.10 ...**
 - CF = 0.9034 ... modified duration = 6.856 years
 - HR = 95 contracts per \$10 mil FV

$$\text{HR} = 0.9034 \times (\$713.50 \div \$680.10) = 0.9478$$

Growth in Treasury Options on Globex



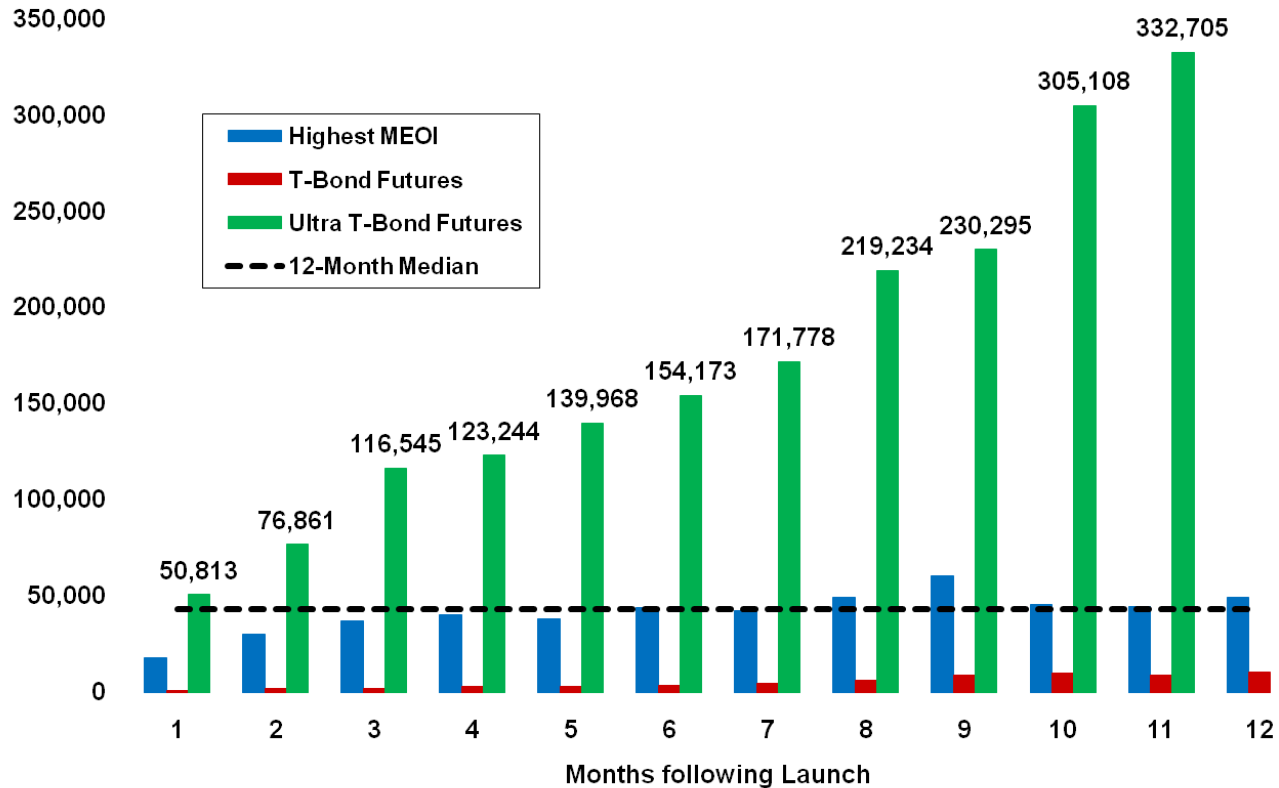
Ultra Treasury Bond Contracts

Long-Term U.S. Treasury Bond Futures Record Shattering November

- **As the Ultra T-Bond futures contract continues to solidify its status as a liquid, efficient new tool for risk management and trading at the long end of the yield curve.**
- **A daily volume record of 348,547, paced by electronic volume of 297,177, and smashing the previous record of 186,501 posted on August 27, 2010**
- **Record open interest of 381,439, established on November 24th**
- **Record monthly average daily volume of more than 80,000 contracts, which resulted in cumulative November volume of more than 1.5 million contracts**
- **Cumulative volume since launch exceeding 6.6 million contracts**

Highest Month-End Open Interest for Successful CME Group U.S. Dollar-Denominated Interest Rate Futures Contracts on Monthly Basis during First 12 Months following Launch

Source: CME Group



Long-Term U.S. Treasury Bond Futures: The “Ultra” T-Bond

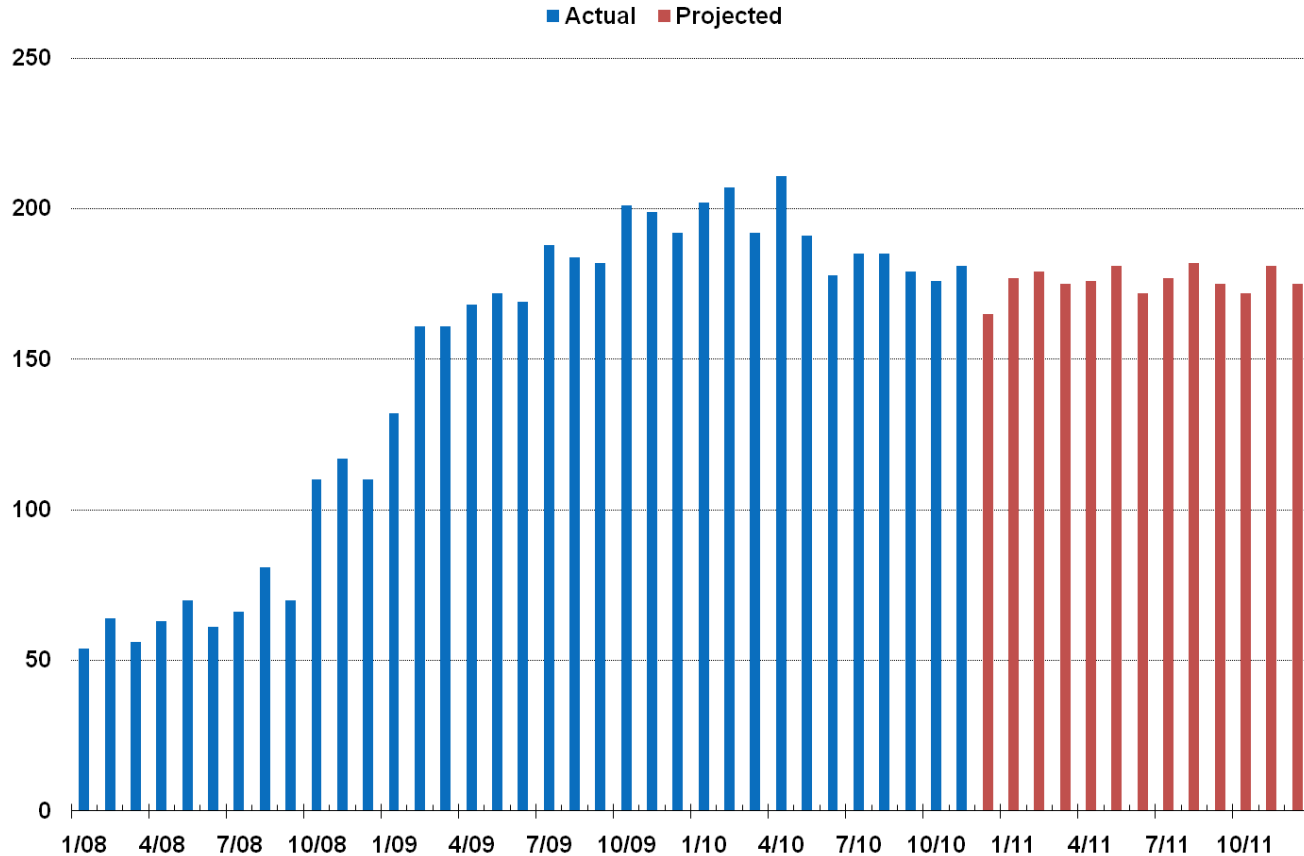
- Pricing benchmark for the thirty-year sector of the yield curve
- Filling the void of long duration, off-balance sheet, Treasury yield exposure
- Additional tool for hedging, duration management, as well as yield curve, swap, and basis spread trading
- Treasury yield curve and Swap spreads are available as pre-defined, implied, Intercommodity Spreads (ICS) on Globex
- Comparable to the existing 30-Year T-Bond futures with similar contract specifications, but delivery basket includes bonds with terms to maturity of 25 years or longer
- Standard and flex options on Ultra T-Bond futures to be launched June 7
- CME Group has developed a variety of resources to help use this new product. Visit www.cmegroup.com/ultra to access these tools

Ultra T-Bond Futures

Benefits of Bond Issuance

Aggregate U.S. Treasury Bond and Note Issuance (Billions)

Source: U.S. Treasury Department (Actual) and Wrightson ICAP (Projected)



Ultra T-Bond Options

Expanding the Ultra T-Bond Complex

- **Driven by customer demand for more long duration off-balance sheet alternatives**
- **Adding volatility traders to the complex will increase the number of participants in the Ultra T-Bond complex**
- **Opportunities to spread volatility against T-Bond options and 30-year swaptions**
- **Opportunities to develop yield curve and swap spread option strategies**
- **Expected to trade in manner similar to T-Bond options**
- **Market participants expect them to trade at higher implied volatilities than T-Bond options**
- **Options available**

On-The-Run (OTR) U.S. Treasury Note Futures

OTR Treasury Note Futures

Product Highlights

- **Launch Date October 25th**
- **Efficient and cost-effective exposure to benchmark Treasury yields**
- **Cash settled to the pertinent on-the-run Treasury yield**
 - Alternative to physical delivery
- **Direct price exposure to on-the-run Treasury yields**
 - For index managers, curve traders, and customers without direct access to the Treasury securities and/or repo markets
- **Listing and expiration calendars match the U.S. Treasury auction schedule**
- **Cross margining with other CME Group interest rate products**

OTR Treasury Note Futures

Product Highlights

- **Trade in points and fractions of 32^{nds} based upon 2-year, 5-year or 10-year T-Note with \$100,000 face value and semiannual coupon of 4% per annum**
 - Price is based on the corresponding on-the-run Treasury note yield of the specific tenor
 - Cash-settled to the on-the-run Treasury note yield represented by the ISDA[®] Benchmark Swap Rate minus the ISDA Swap Spread
- **Minimum Tick Sizes:** $\frac{1}{4}$ of $1/32^{\text{nd}}$ (\$7.8125) for 2-Year and 5-Year T-Note outright and for all calendar spreads (10Y). $\frac{1}{2}$ of $1/32^{\text{nd}}$ (\$15.625) for 10-Year T-Note outright.
- **Contract Months:** 2-Year and 5-Year T-Notes will have monthly expirations. 10-Year T-Notes will have February, May, August and November maturities. Initially, one maturity will be listed. Deferred contract months will be listed on or 1 day after Announcement Dates, approximately 3-5 business days prior to expiration of the nearby contract month.
- **Listing/Expiration Dates:** Listed on the auction announcement date (2-Year & 5-Year) or on the day following the auction announcement date (10-Year). Trading in the nearby expiration terminates on the morning of the *next* new auction.
- **Block Minimums (Outrights):** 2,000 (RTH), 1,000 (ETH), 500 (ATH)
- **CME Globex Symbols:** 2-Year = **T2**; 5-Year = **T5**; 10-Year = **TN**

Final Settlement

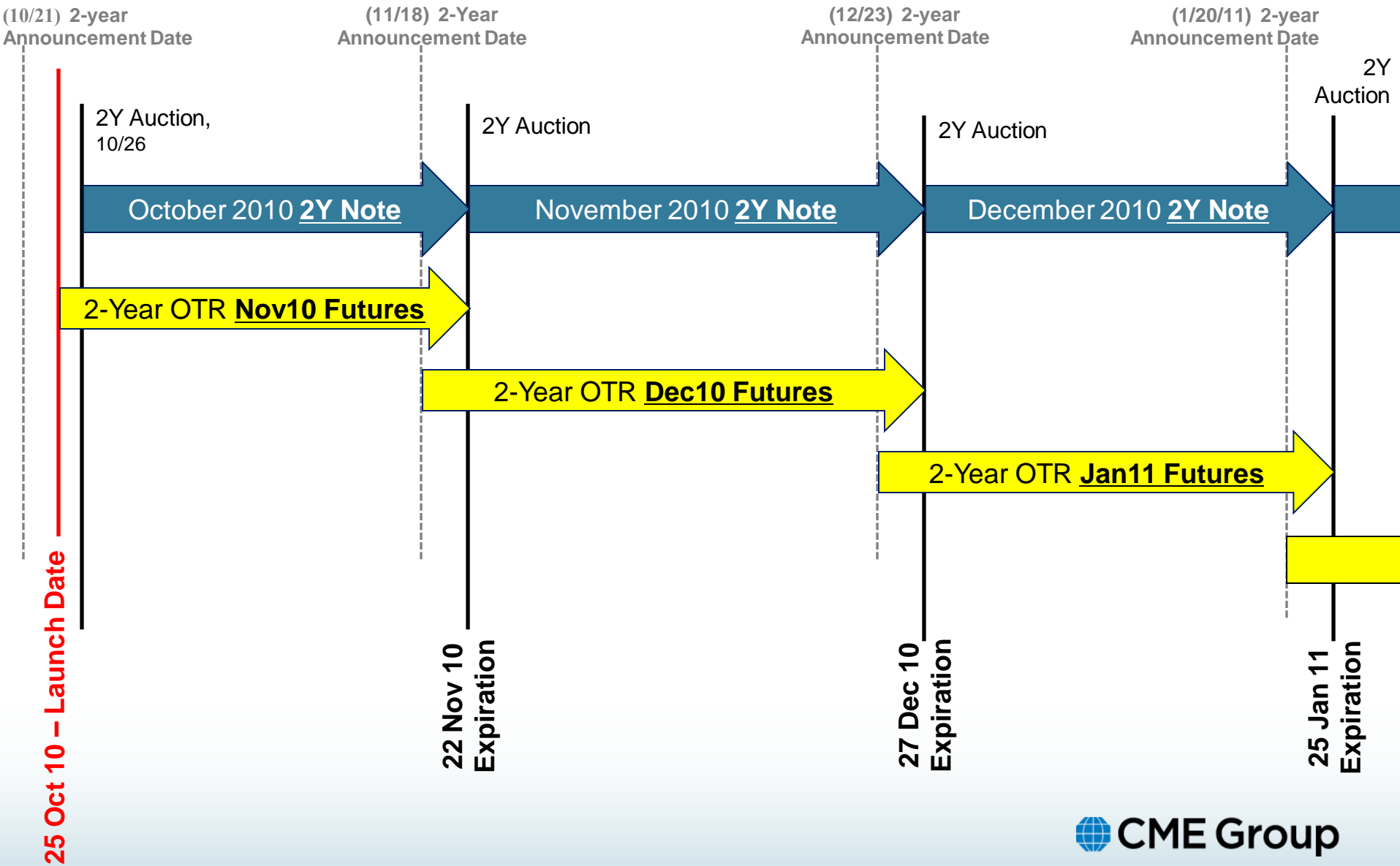
- OTR futures will trade in price and will be final-settled to on-the-run Treasury note yields.
- On the Final Settlement Day, on-the-run Treasury note yields are determined by subtracting the ISDA Swap Spread from the ISDA Swap Rate.
- The resulting implied, on-the-run yield will be transformed into a price whose dynamics resemble those of a hypothetical \$100,000 face-value Treasury note with a 4% coupon.
- The formula for final settlement value is:

$$100 * [4/r + (1 - 4/r)*(1 + r/200)^{-2m}]$$

m = term to maturity (e.g., 2, 5, or 10 years) of the ISDAFIX Benchmark Swap Rate and ISDAFIX Swap Spread.

r = ISDAFIX Benchmark Swap Rate for the m -year term to maturity minus the ISDAFIX Swap Spread for the m -year term to maturity, as published at approximately 10:30 a.m., Chicago time, on last trading day.

OTR Treasury Futures – 2-Year Listing Cycle



OTR Treasury Note Futures

Outright Trading Applications

- **Precise, capital efficient means to gain long/short exposure to benchmark points of the yield curve**
- **Use futures as an alternative to the cash market or arbitrage vs. the cash market**
- **A synthetic means of *establishing and holding* an on-the-run Treasury position without being directly involved in the repo market**
- **A means of short-selling for fiduciary money managers that are prohibited from short-selling securities**
- **An alternative, *cash-settled* futures product for ('40 Act Funds) mutual funds that are prohibited from using *physical-delivery* futures products**

OTR Treasury Note Futures

Spread Trading Applications

Pre-defined, implied versions of these spreads available on Globex

- **OTR Treasury Futures vs. Traditional Treasury Futures (OTR Basis Spreads)**
- **OTR Treasury Yield Curve Spreads (easy to interpret)**
- **OTR Treasury Futures vs. Swap Futures (futures Swap Spreads)**

Additional Spread Combinations (Legged Manually)

- **OTR Treasury Cash vs. OTR Treasury Futures Spreads**
- **OTR Treasury Futures vs. Eurodollar Futures Spreads (Synthetic TED spreads)**

CME Group has developed a variety of resources to help use this new product. Visit

www.cmegroup.com/otr to access these tools

Synthetic Basis Trades with OTR Contracts

By combining OTR Treasury futures with standard Treasury futures, traders can express market views or exploit relative value opportunities in the price differentials between on-the-run and cheapest-to-deliver cash Treasury securities.

Spread Conventions

- Long Basis = Long the OTR-CTD Treasury futures
 - Buy OTR Treasury futures – Sell standard Treasury futures
- Short Basis = Short the OTR- CTD Treasury Futures
 - Sell OTR Treasury futures – Buy standard Treasury futures

Think of the OTR contract as the “Cash” leg of a normal basis trade

Structuring the Trade...

Expiry Selection

- 10-Year OTR Treasury futures expire on 10-year Treasury note auction days in February, May, August, and November
 - Standard Treasury futures expire March, June, September, or December.
 - 10-Year OTR-CTD spreads pair a OTR Treasury futures for a given month with 10-Year Treasury futures in the following March-quarterly month.

May 10-Year OTR-CTD basis trade => May OTR vs. June Treasury

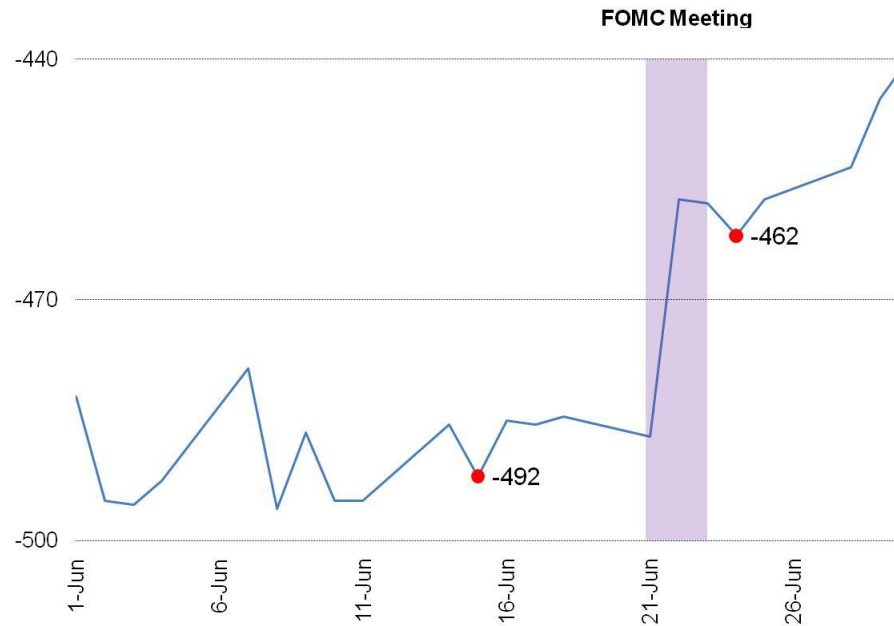
- 2-year and 5-year Treasury notes are auctioned monthly

Dec, Jan Feb 2y 5y OTR-CTD basis trade => Dec, Jan Feb OTR vs. Mar Tsy

DV01 Weighted Legs with OTR leg as lead leg

Daily Closing Levels of August 2010 10-Year OTR-CTD Treasury Spread

(Hypothetical Nearby OTR Treasury Futures Daily Settlement Price minus
Nearby Standard Treasury Futures Daily Settlement Price, 32nds of Price Points)



Data Source: CME Group

August 2010 10-Year OTR-CTD Treasury Spread Profit/Loss

	June 15 Price	June 24 Price	Price Change (32nds)	Price Change (\$ per contract)	Number of Contracts Long (+) or Short (-)	Profit / Loss = Price Change x Quantity (\$)
Aug2010 10-Year OTR (DV01= \$86.93)	105-110	106-290	50	1,562.50	1,000	\$1,562,500
Sep2010 10-Year T-Note (DV01= \$77.20)	120-230	121-110	20	625.00	-1,126	-\$703,750
Spread (32nds)	-492	-462				
Net Profit/Loss						\$858,750

Curve Trades using On The Run contracts

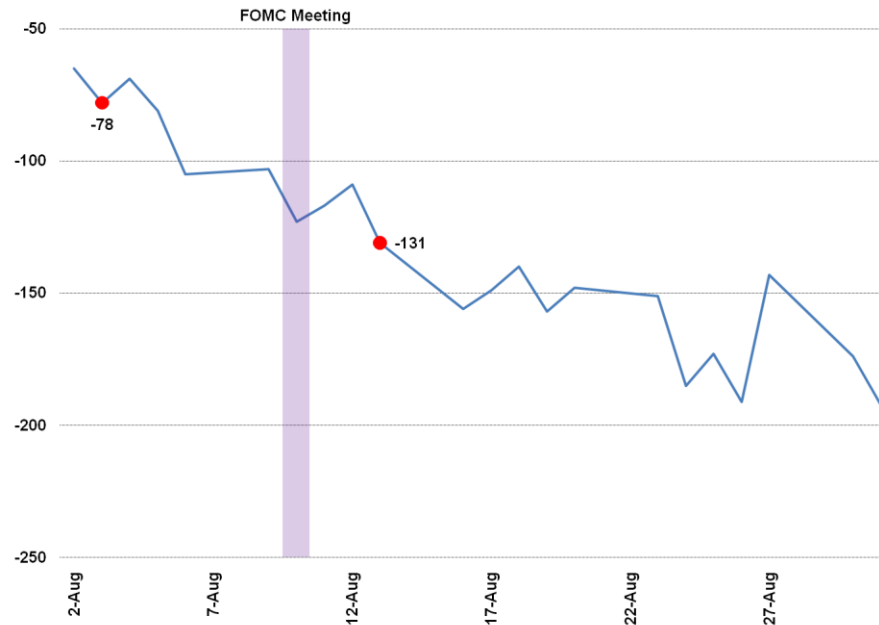
These spreads most closely resemble benchmark On The Run curve spreads

Spread Convention are the same as in cash treasury curve trades

- If you expect the Treasury yield curve to steepen
 - Long the OTR-Treasury futures spread
 - Buying shorter-termed OTR Treasury
 - Sell DV01 weighted a longer-termed OTR
- If you expect the Treasury yield curve to flatten
 - Short the OTR Treasury futures spread
 - Selling shorter-termed OTR
 - Buy longer-termed OTR

Daily Closing Levels of August 2010 2-Year/10-Year OTR Treasury Spread

(Hypothetical Nearby 2-Year OTR Treasury Futures Daily Settlement Price minus Hypothetical Nearby 10-Year OTR Treasury Futures Daily Settlement Price, 32nds of Price Points)



Data Source: CME Group

August 2010 2-Year/10-Year OTR Treasury Spread Profit/Loss Using DV01 Weighted Quantities

	Aug. 3 Price	Aug. 13 Price	Price Change (32nds)	Price Change (\$ per contract)	Number of Contracts Long (+) or Short (-)	Profit / Loss = Price Change x Quantity (\$)
Aug2010 2-Year OTR Treasury (DV01=\$20.72)	106-280	106-280	0	0.00	-1,000	\$0.00
Aug2010 10-Year OTR Treasury (DV01=\$90.78)	109-100	110-310	53	1,656.25	228	\$377,625
Spread (32nds)	-78	-131				
Net Profit/Loss						\$377,625

CME Group Yield Center

Converts Futures Prices to Live Yield Levels

www.cmegroup.com/yield

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CME Group Yield Center

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The CME Group Yield Center provides the prices, yields, and DV01s for the new On-The-Run U.S. Treasury futures contracts and the Interest Rate Swap futures contracts, as well as spread levels and hedge ratios for the following trading strategies:

- OTR Treasury Curve Spreads
- Swap Curve Spreads
- Swap Spreads (Swap vs. OTR Treasury)

Notes:

- Yields are calculated out to three decimal places, per the ISDAFIX* standard
- Yields, spreads, and dollar values of one basis point (DV01s) are implied based on most recent price
- Hedge ratios are neutral, and are expressed in the number of front contracts needed to equal the back contract
- Prices are 10-minute delayed; page is refreshed every minute

OTR Treasury Futures	Price	Implied Yield	DV01
2-Year	107-000	0.479%	\$21
5-Year	111-142	1.609%	\$51
10-Year	108-105	3.029%	\$90

Swap Futures	Price	Implied Yield	DV01
5-Year	110-040	1.869%	\$50
7-Year	108-210	2.638%	\$67
10-Year	107-110	3.139%	\$89
30-Year	100-045	3.992%	\$174

OTR Treasury Curve Spreads	Implied Spread (bp)	Hedge Ratio
2-Year / 5-Year	113	2.45
2-Year / 10-Year	255	4.33
5-Year / 10-Year	142	1.76

Swap Spreads	Implied Spread (bp)	Hedge Ratio
5-Year	186.9	1
10-Year	313.9	1



Cleared OTC IRS

CME Group Moving Aggressively to Capture Cleared OTC Interest Rate Swaps

Offering includes:

CME Group

- Liquid benchmark futures across the yield curve
- Wide ranging and deep customer relationships
- Multi-asset class OTC cleared solution
- Established clearinghouse with industry leading risk management

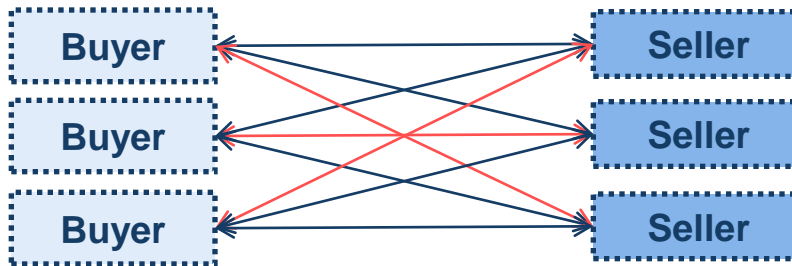
- Proven legal safeguards of U.S. bankruptcy law and segregation of customer funds
- Capital efficiencies via cross margining of OTC products with benchmark futures
- Operational flexibility of an open access platform that integrates into existing OTC infrastructure and extends across asset classes

Working in close collaboration with:

- Key swap dealers
- Multiple clearing member firms
- Buy side participants
- Vendors, industry associations and regulators

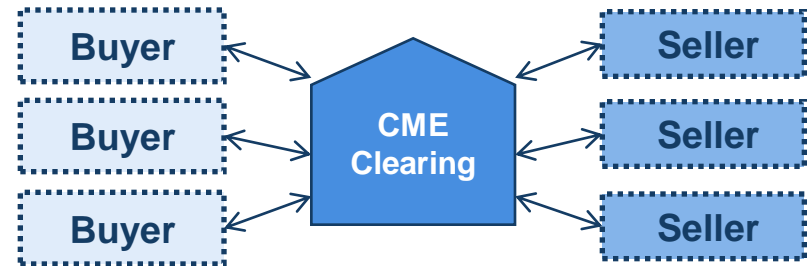
Bilateral Market vs. Central Counterparty Clearing

Bilateral Market without Central Clearing Counterparty



- Multiple bilateral relationships where **buyers and sellers face each other as counterparties**
 - Sellers must accept each buyer's credit
 - Buyers send payment directly to each seller
 - Buyers must accept each seller's ability to perform on the contract
- **Pricing is differentiated by quality** of counterparty
- If either party wants to close out a deal prior to expiry, they **must negotiate terms**

Market with a Central Clearing Counterparty



- **CME Clearing faces each counterparty directly**, becoming the seller to the buyer and buyer to the seller through novation
- Buyer and seller are **guaranteed performance by CME Clearing**
- Buyer and seller **no longer have credit exposure** to one another
- Parties **closeout transactions with** whomever provides **the best price**

CME Group Risk Management

- Information available to CME Clearing that allows a comprehensive view of customer portfolios across all Clearing Members (i.e., improves transparency)
- The CME monitors both Clearing Members and Customers for risk concerns (e.g., unusual trading, P&L swings, concentration risk, etc.) across all asset classes cleared at CME
- Real-time, 24 hour a day by 6 days a week monitoring of both clearing firm and account level position and exposure levels for CDS and all other asset classes at CME
- CME auditing financials of all clearing firms to ensure capital compliance levels
- CME audits of customer segregation and related requirements to ensure all customer account performance bond requirements are appropriately accounted
- Credit controls that allow clearing firms to limit the OTC positions taken on by any specific account
- Stress testing of all CME clearing firm and account level positions over largest market moves and multiple defaults to ensure clearing firm capital wherewithal



CME Group Clearing Model

In more than a century of operations, there has never been a failure by a clearing member to pay settlement variation or meet a performance bond call, nor has there ever been a clearing member failure resulting in a loss of customer funds.



Cleared OTC IRS: Introduction

CME Group is working in close collaboration with premier swap dealers, clearing firms, and buy-side market participants to create a best in class clearing platform for OTC interest rate swaps

Benefits of the CME Cleared OTC IRS Offering

- Builds on the strength of CME Group's market leading interest rate products business
- Maintains current execution processes, affirmation platforms, and product economics of bilateral OTC contracts
- Protects customers through legal safeguards of U.S. bankruptcy law and CFTC Part 190 Bankruptcy Regulations
- Seeking CFTC permission to allow customer capital efficiencies via cross margining of OTC products with benchmark Treasury and Eurodollar futures
- Provides operational flexibility of a multi asset class solution via one integrated platform

Cleared OTC IRS Product Scope

	Now Available	Q1 2011 Enhancements
Currency	USD	EUR
Notional	Non-amortizing	Non-amortizing
Effective Dates	Spot, seasoned, or forward starting	Spot, seasoned, or forward starting
Maturity Dates	Out to 31 years from cleared date	Out to 31 years from cleared date
Business Day Adjustment	Modified following	Modified following
Fixed Leg	<ul style="list-style-type: none"> • Flexible coupons • Semi-annual payments • 30/360 day count • Adjusted and unadjusted accruals • NY and LON business days 	<ul style="list-style-type: none"> • Flexible coupons • Annual payments • 30/360 day count • Adjusted or unadjusted accruals • TARGET business days
Floating Leg	<ul style="list-style-type: none"> • 3M LIBOR index • Quarterly payments or semi-annual payments with quarterly compounding • Act/360 day count • Adjusted accruals • NY and LON business days 	<ul style="list-style-type: none"> • 6M EURIBOR index • Semi-annual payments or annual payments with semi-annual compounding • Act/360 day count • Adjusted accruals • TARGET business days

Q4 2010 Enhancements

- Stub periods
- NY business days
- Following business day adjustment
- Act/360 day count on the Fixed Leg
- Spreads over/under LIBOR

Other Future Enhancements

- Additional currencies
- Caps, floors, and swaptions

Information Sources

ONLINE RESOURCES:

CME Group Interest Rate Resource Center: www.cmegroup.com/ircenter

Sample of white papers and reference guides in IR Resource Center

Eurodollar Futures

[Eurodollar Futures: Interest Rate Market Building Blocks Reference Guide](#)

[Eurodollar Packs and Bundles](#)

[Creating Inexpensive Swaps](#)

Treasury Futures

[Synthetic Basis Trades with OTR Treasury Futures](#)

[Yield Curve Shifts Create Trading Opportunities Strategy Paper](#)

[A Simple Treasury Duration Adjustment](#)

BOOKS:

Burghardt, Galen, **The Eurodollar Futures and Options Handbook**, McGraw Hill, 2003

Boberski, David **Valuing Fixed Income Futures** McGraw Hill, 2007

Futures trading is not suitable for all investors, and involves the risk of loss. Futures are a leveraged investment, and because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for a futures position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles. And only a portion of those funds should be devoted to any one trade because they cannot expect to profit on every trade.

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