

CME Group Customer Forum

- Product Updates

Spring 2016

Singapore April 12

Hong Kong April 14

London April 28

U.S. Webinar May 5

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CME Group Customer Forum APAC Product Overview

Spring 2016

Singapore	April 12
Hong Kong	April 14
London	April 28
U.S. Webinar	May 5

Agenda

- Trading CME in Asia – More Exciting than Ever
- CME Expanding Base Metals Offerings
- CME Copper Correlations vs. SHFE & LME
- CME Metals Liquidity Superior During Asian Hours
- Market Updates
 - CME Group's CBOT Agricultural Suite of Products
 - CME Group's Equity Product Suite and Advantages
- Continued Volatility in IR & FX continue to drive Volumes and Open Interest at CME Group

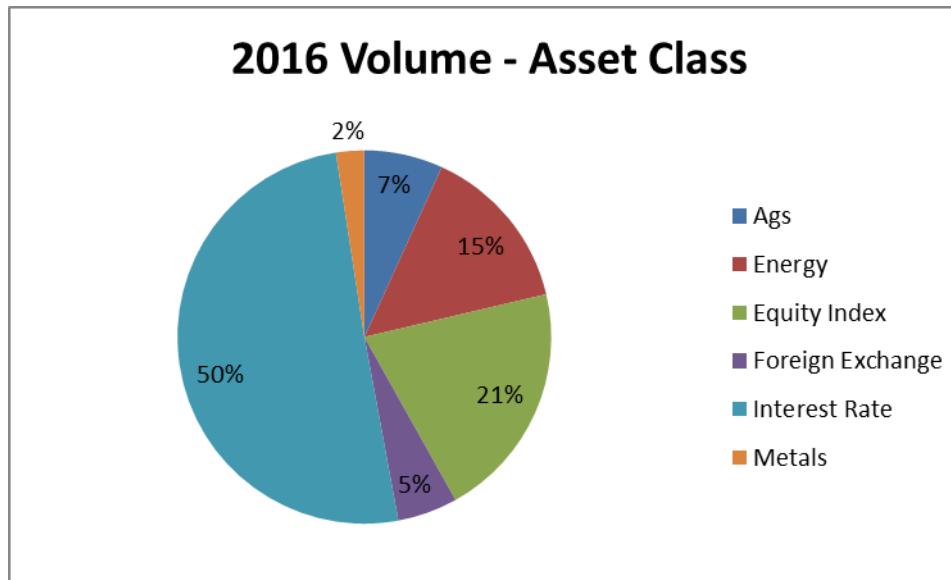
Trading CME in Asia - More Exciting Than Ever

Max Fages
Director, Strategy Execution
Planning and Execution, Asia

Trends and Volume Statistics

The start of the year has seen great growth within CME markets:

- *January's average daily volume achieved a monthly record of 18.2 million contracts, surpassing the previous record of 17.6 million average daily volume set in October 2014*
- *Total average daily volume rose 16% year-over-year, led by a 30% increase in Equities and an 18% increase in Energy*
- *Open Interest climbed to 107.9 million contracts, the highest level recorded for a month ending Open Interest*
- *Ag's and Metal products each had the fourth highest month average daily volumes recorded*

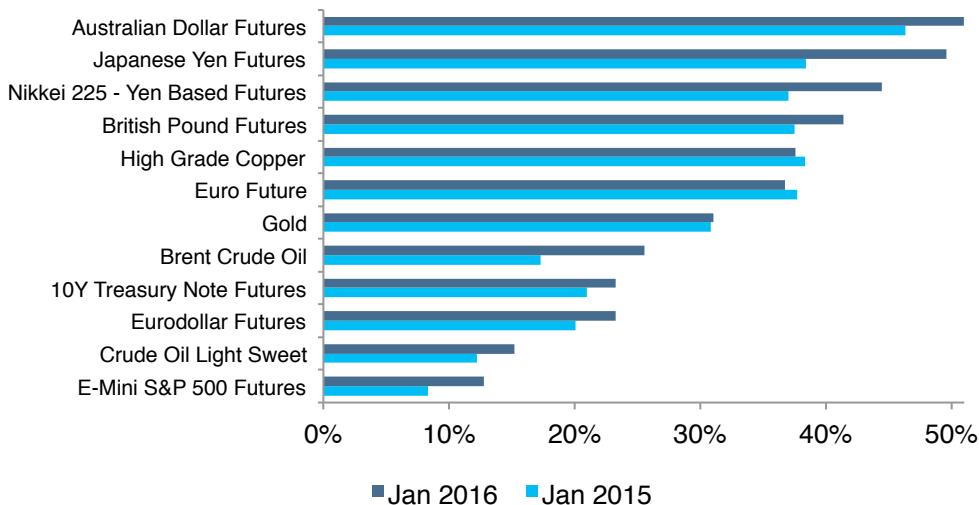


Trading CME in Asia More Exciting Than Ever

Asian Hour ADV (8a – 8p) Jan '16 Jan '15

	Jan '16	Jan '15
Eurodollar Futures	686,673	596,433
10Y Treasury Note Futures	306,524	278,163
E-Mini S&P 500 Futures	306,457	159,333
Crude Oil Light Sweet	159,434	96,428
Japanese Yen Futures	89,747	77,118
Euro Future	74,540	104,188
Gold	60,050	65,381
Australian Dollar Futures	57,842	43,757
British Pound Futures	39,652	37,755
Nikkei 225 - Yen Based Futures	37,735	21,316
Brent Crude Oil	34,471	23,499
High Grade Copper	24,524	25,825

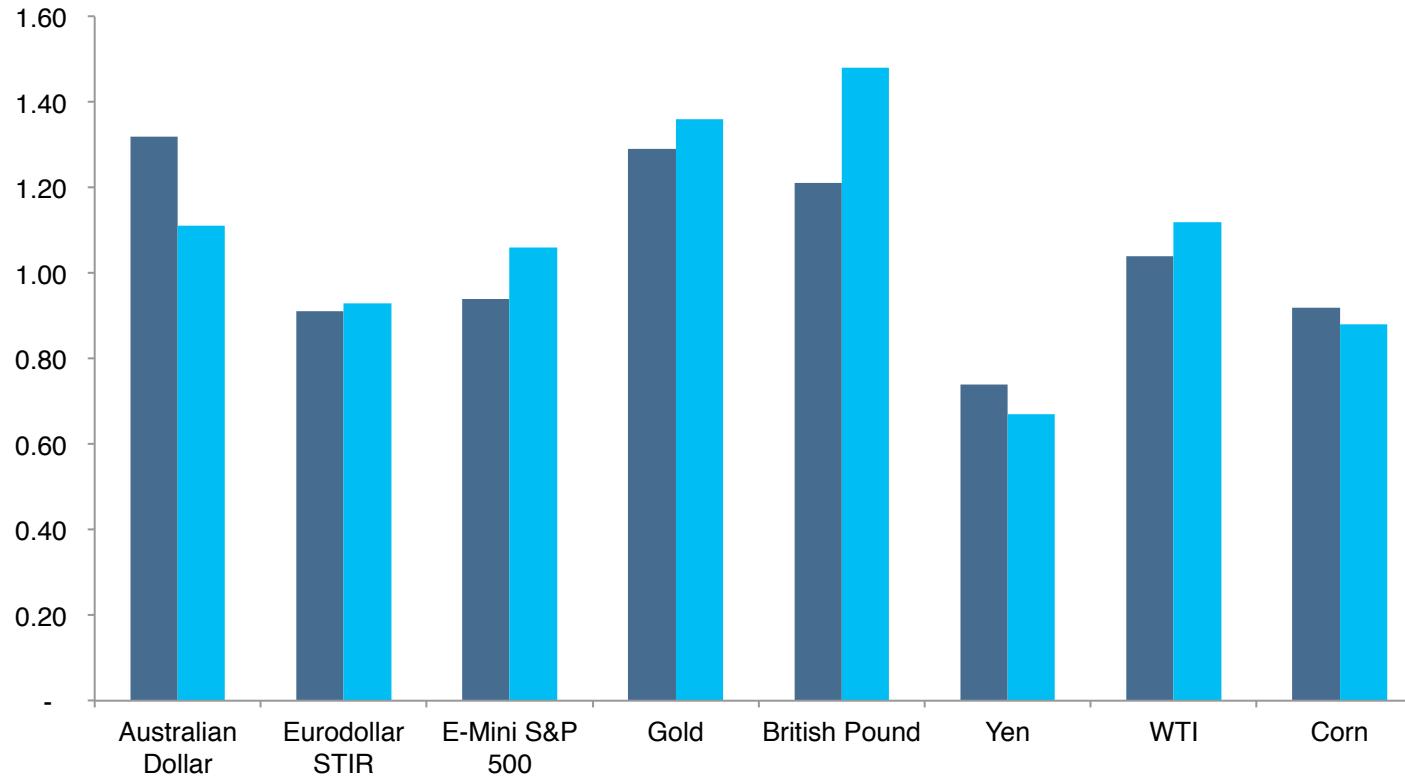
Asian Hour volume as a % of global volume



- Key CME benchmarks are truly trading 23h a day, offering our clients outstanding opportunities
- Consistently tight and deep order books increasingly attract the attention of clients beyond US hours
- The proportion of volume executed during Asian Business Hours is steadily increasing as clients are taking advantage of the opportunities

Trading CME in Asia More Exciting Than Ever

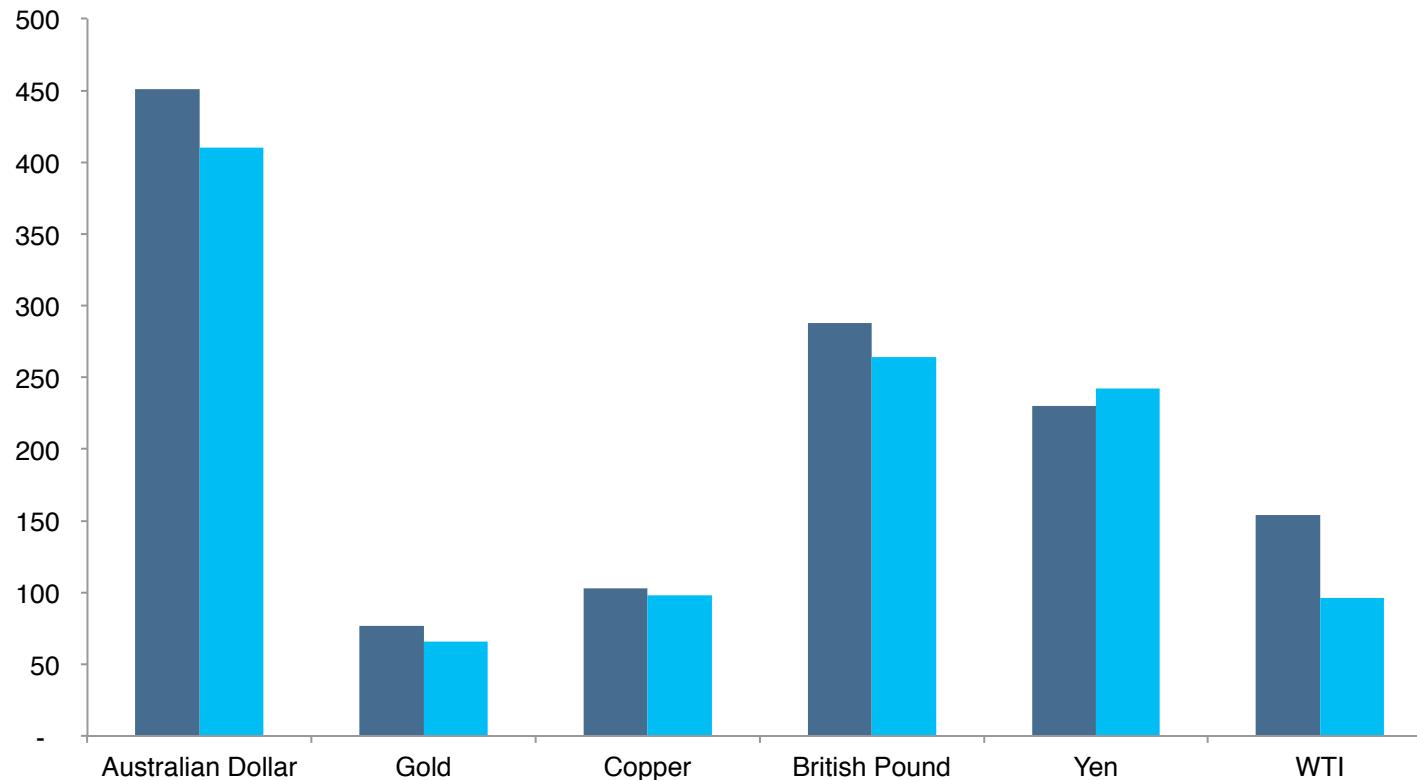
Bid/Ask spread in ticks (US Hours vs Asian Hours)



Most spreads are within 2/10th of a tick, with some being tighter during Asian hours

Trading CME in Asia More Exciting Than Ever

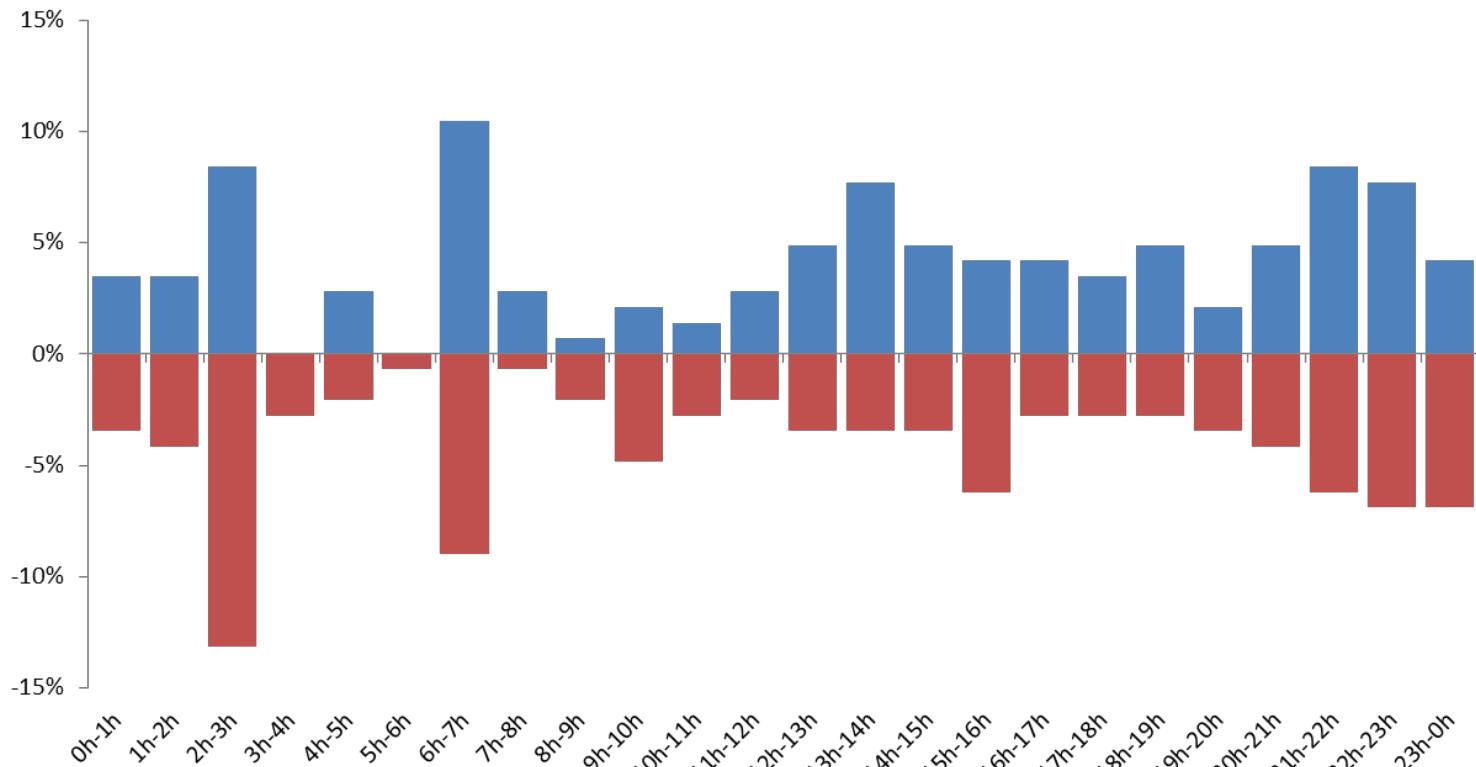
5 level deep volume (US Hours vs Asian Hours)



Along with tight bid/ask spreads, the depth of the book is also consistently similar to US hours

WTI: Price Action during Asian Hours

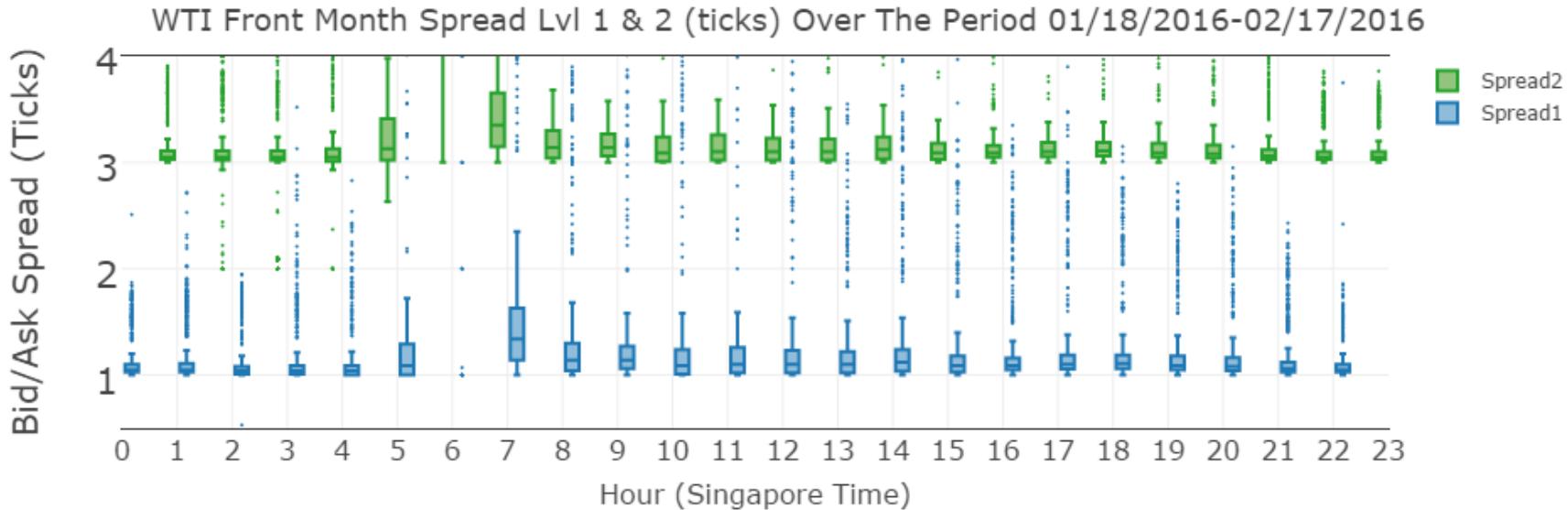
WTI - Frequency of High/Lows during the trading day -
Sep '15 - Jan '16



Significant price movements are not limited to the US hours

For WTI, 40% of highs and lows for a given trading day occur during 8a-8p SG time

WTI: An Order Book Consistently Tight, 23h a Day



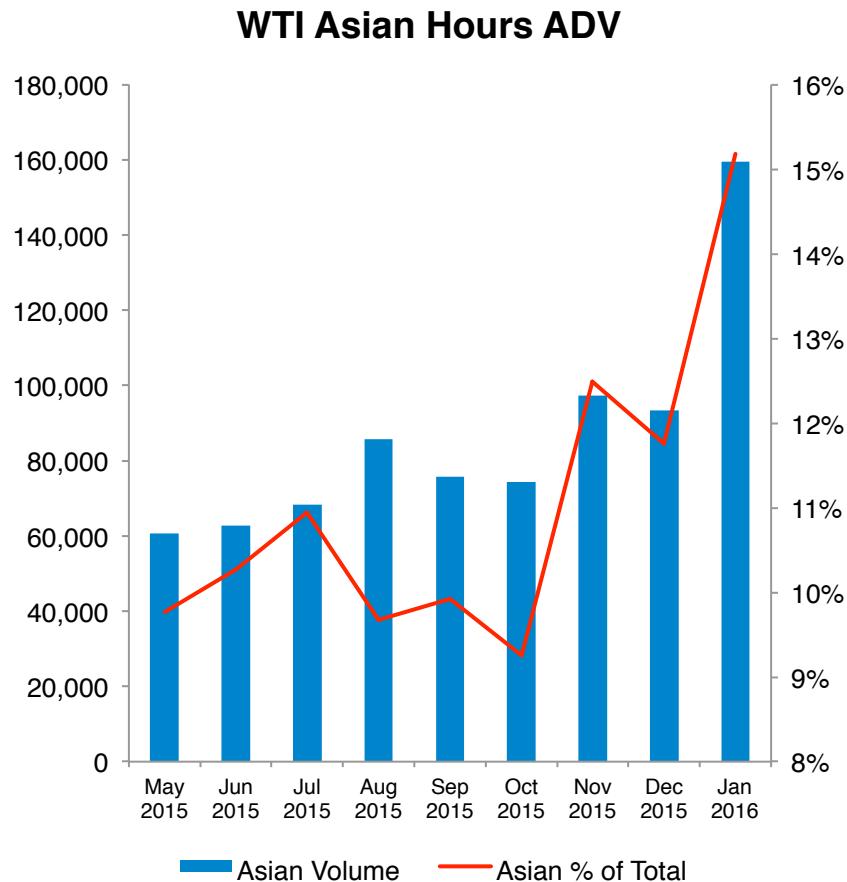
- The difference in tightness between US hours and Asian hours is increasingly small:
 - Average difference between Best Bid/Ask during Asian hours is **1.18** vs. **1.07** in US hours
 - Average difference between 2nd Best Bid/Ask during Asian hours is **3.21** vs. **3.19** in US hours

-0.63 H:46.85 O:46.57 V:2238

Work	Bids	Price	Asks	LTQ
		45.77	44	
		45.76	52	
		45.75	40	
		45.74	52	
		45.73	54	
		45.72	45	
		45.71	49	
		45.70	28	
	26	45.69	37	3
	37	45.68		
	52	45.67		
	39	45.66		
	59	45.65		
	88	45.64		
	78	45.63		
	104	45.62		
	70	45.61		
	126	45.60		
		45.59		
		45.58		
		45.57		

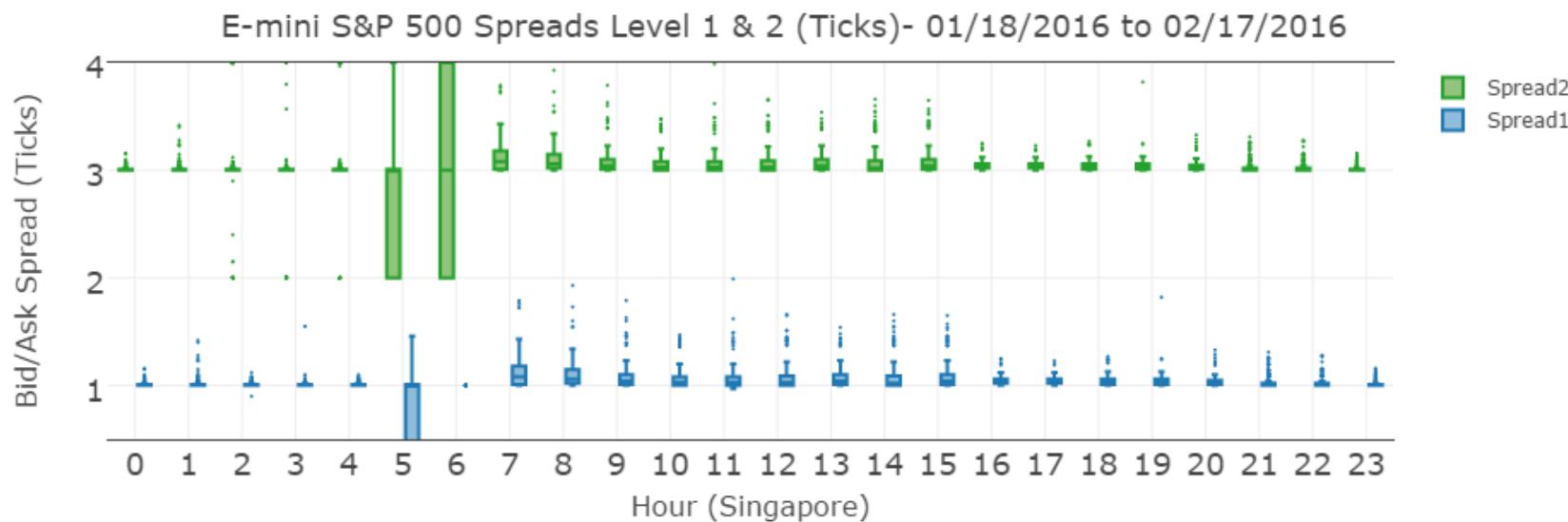
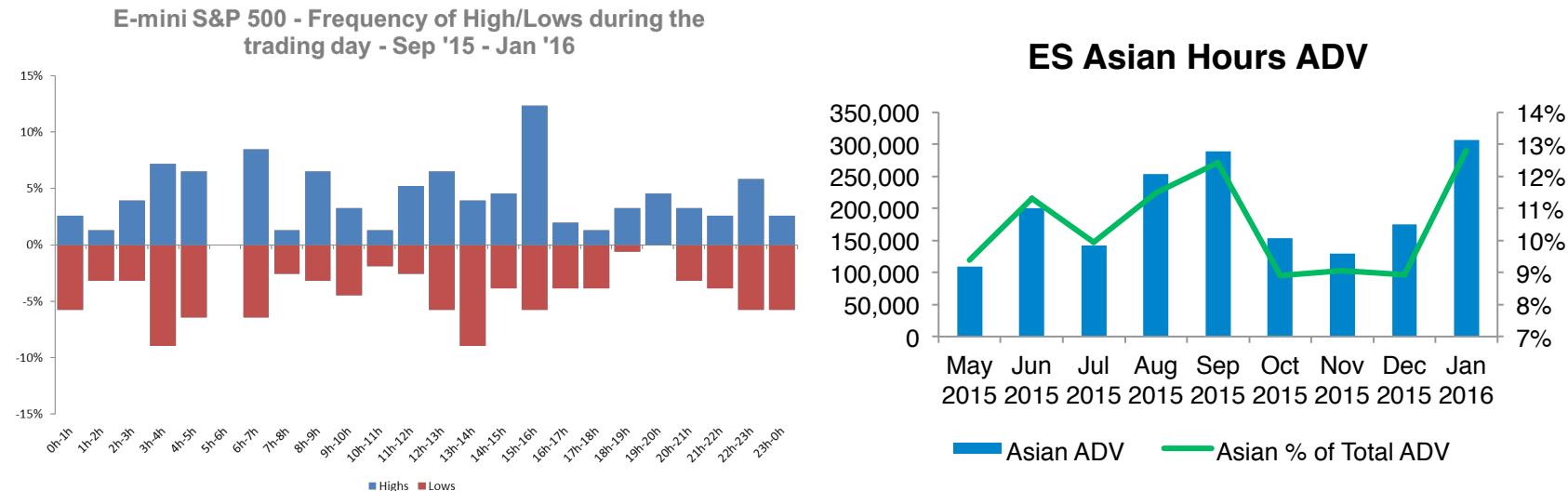
B:0 W:11

WTI: People Are Taking Note of the Opportunities over Asian Business Hours



- Liquidity and order book tightness has resulted in the Asian Hour WTI ADV double over the last 6 Month
- This is not simply a result of the current market volatility: over the same period, the proportion of WTI volume traded between 8a-8p has gone from **10% to 15%**

E-mini S&P 500: Opportunities, Liquidity and Volumes

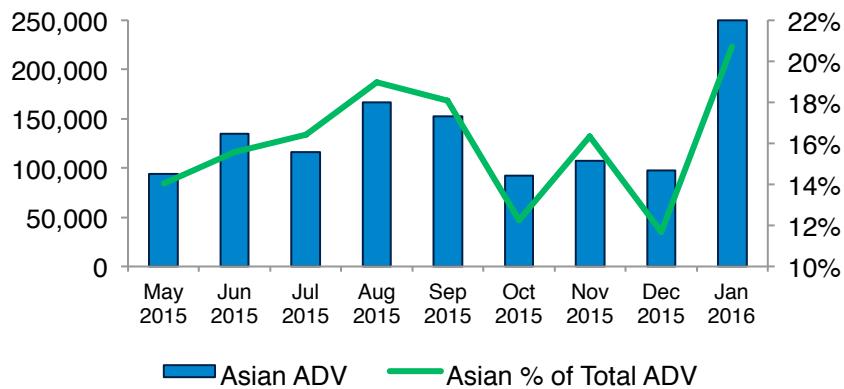


Eurodollars: Futures and Options co-growth story

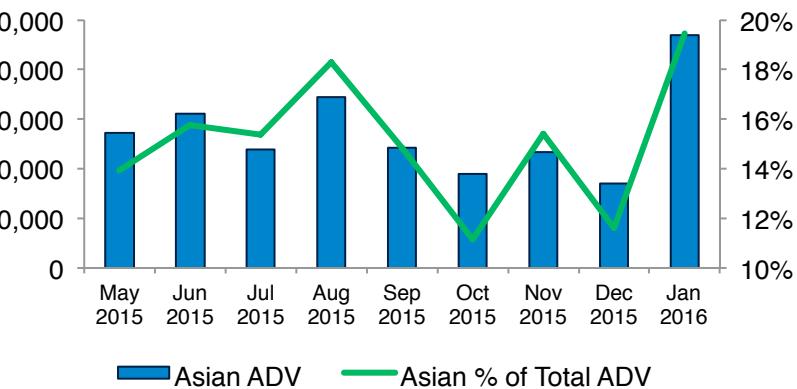
Options ADV (8am-8pm)	Jan '16 (% of global volume)	Jan '15
Butterfly (options based)	48,158 (57%)	5,801
Conversion/Reversal	27,984 (27%)	4,686
General Spread	19,364 (30%)	10,076
Vertical	13,063 (44%)	8,255

In the Eurodollar space, our growth story is built around various strategies – spreads/butterfly's/double butterfly's/bundles/packs/condors etc.

ED Whites Asian Hours ADV



ED Reds Asian Hours ADV



CME's Expanding Base Metals Offerings

Yvonne Zhang, Director, Metals Products, Asia

Speaker : Nelson Low

Executive Director

Agricultural Products, Asia

CME's Expansion in Base Metals

- Copper Futures, Options & E-mini
- Copper Average Monthly Futures
- Al MW US Transaction Premium Platts (25MT) Futures
- **Physical Aluminum Futures (May 2014) *NEW**
- **Physical Zinc Futures (June, 2015) *NEW**
- **Al European Premium D/U MB (25 MT) Futures (September, 2015) *NEW**
- **Al Japanese Premium Platts (25MT) Futures (Dec, 2015)*NEW**
- **Global Physical Lead Contract (November, 2015) *NEW**
- **Al European Premium D/P MB (25MT) Futures (March, 2016) *NEW**

CME Copper Correlations vs. SHFE & LME

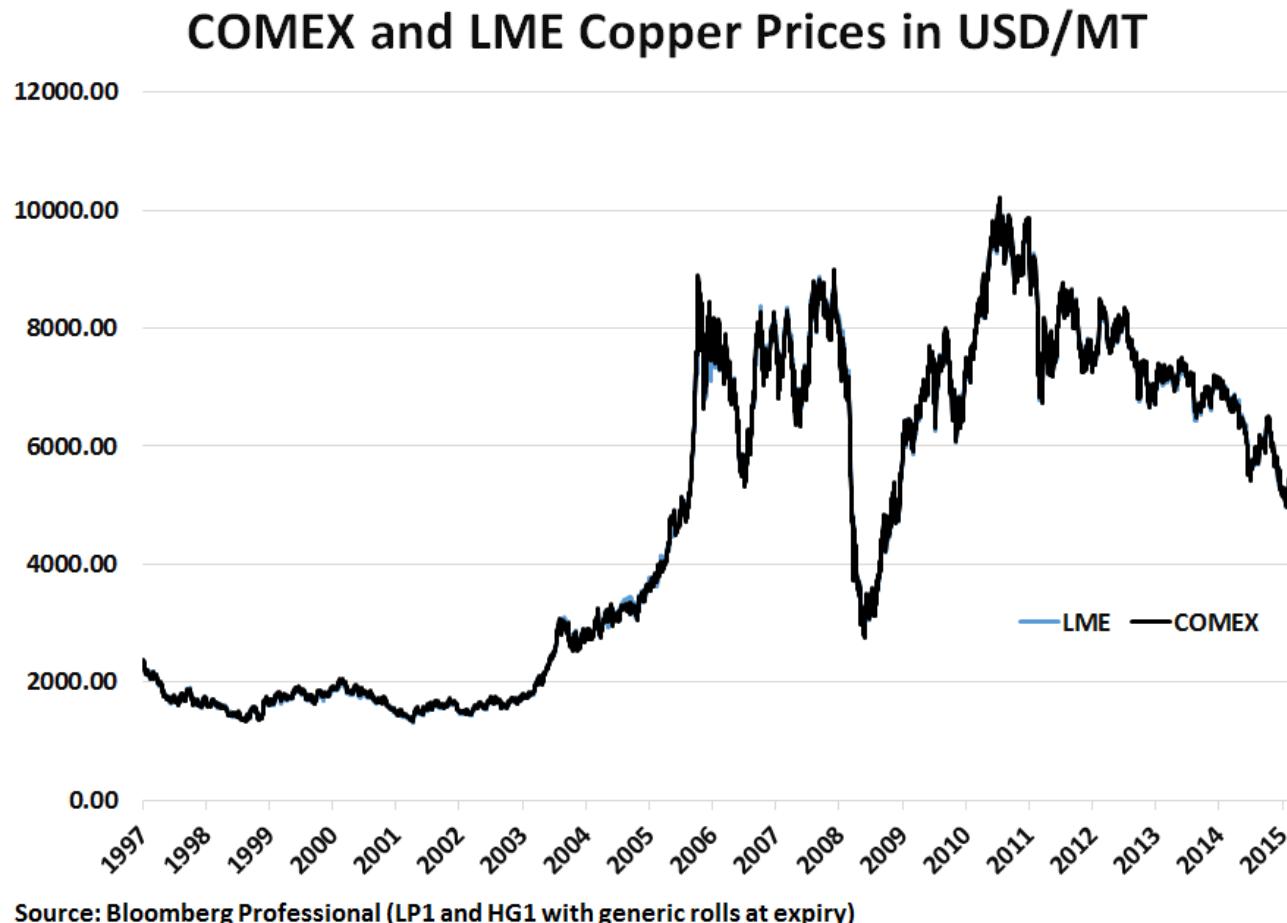
Copper Correlations: COMEX, LME and SHFE

Different trading hours explain lower SHFE correlations

	COMEX LME (Same Day)	COMEX Shanghai (Same Day)	LME Shanghai (Same Day)	COMEX Shanghai (One Day Lag)	LME Shanghai (One Day Lag)
1Y	0.95	0.07	0.05	0.80	0.80
3Y	0.94	0.18	0.17	0.72	0.72
5Y	0.95	0.27	0.27	0.67	0.66
10Y	0.92	0.20	0.21	0.64	0.63

COMEX and LME market influence each other and SHFE market follows what happens at COMEX and LME

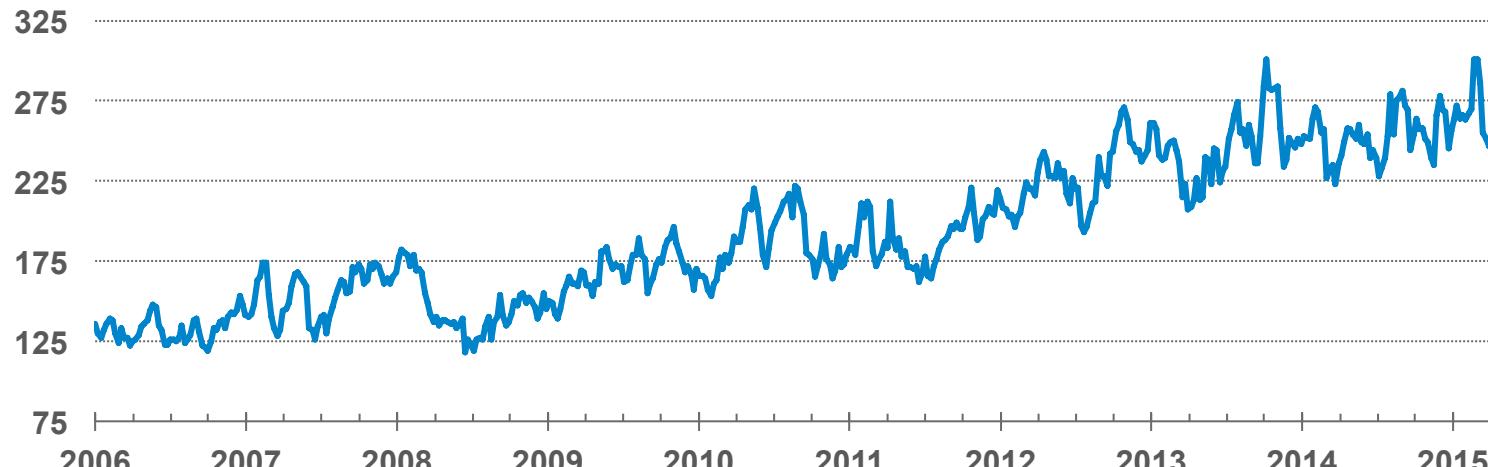
When converted to the same units, there is almost no daylight between COMEX and LME pricing.



Growing Open Interest & Increasing Hedging Volume

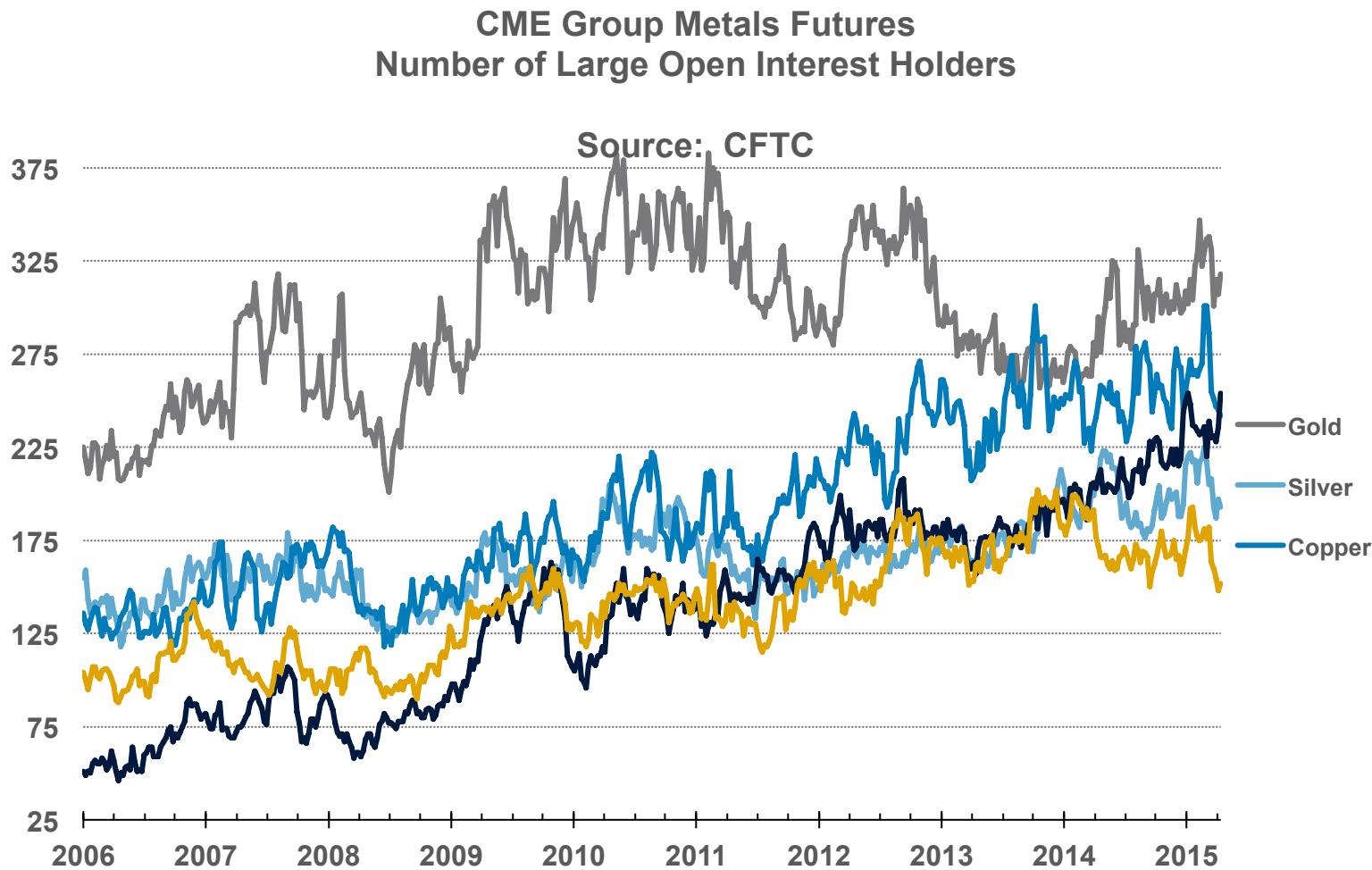
CME Copper Futures
Number of Large Open Interest Holders*

Source: CFTC



*The CFTC defines large open interest holders as having
at least **100** open contracts in Copper futures.

Fastest growing OI in metals suite: Copper

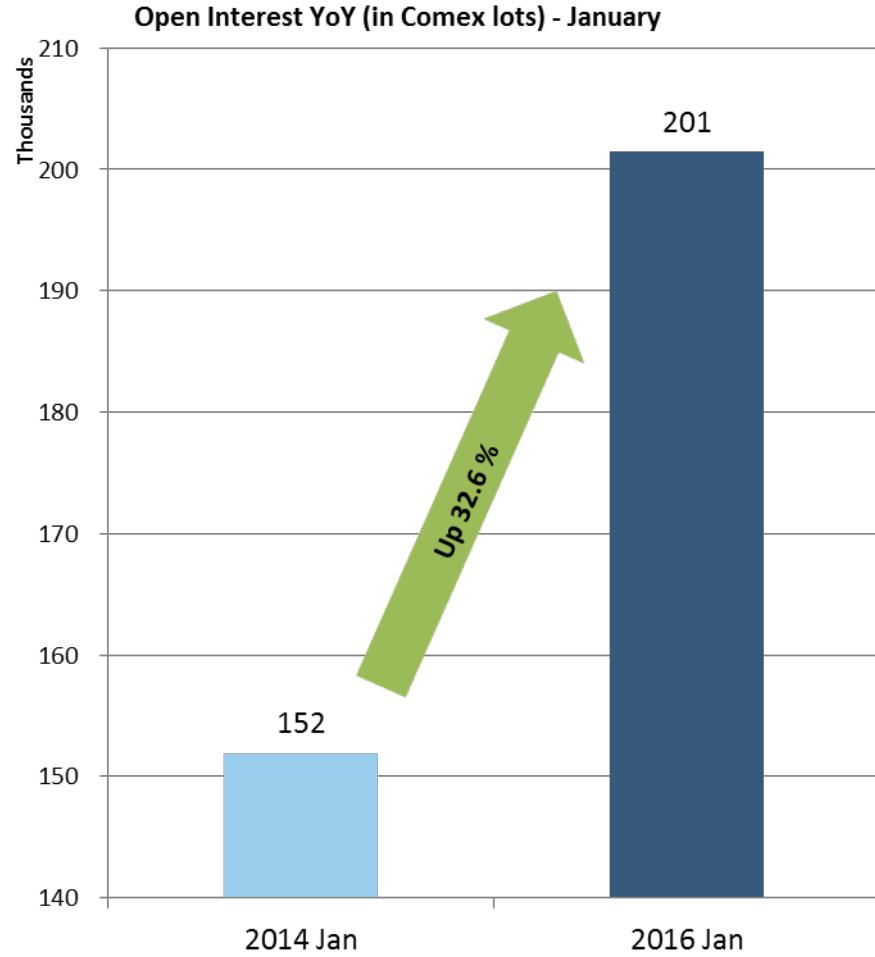
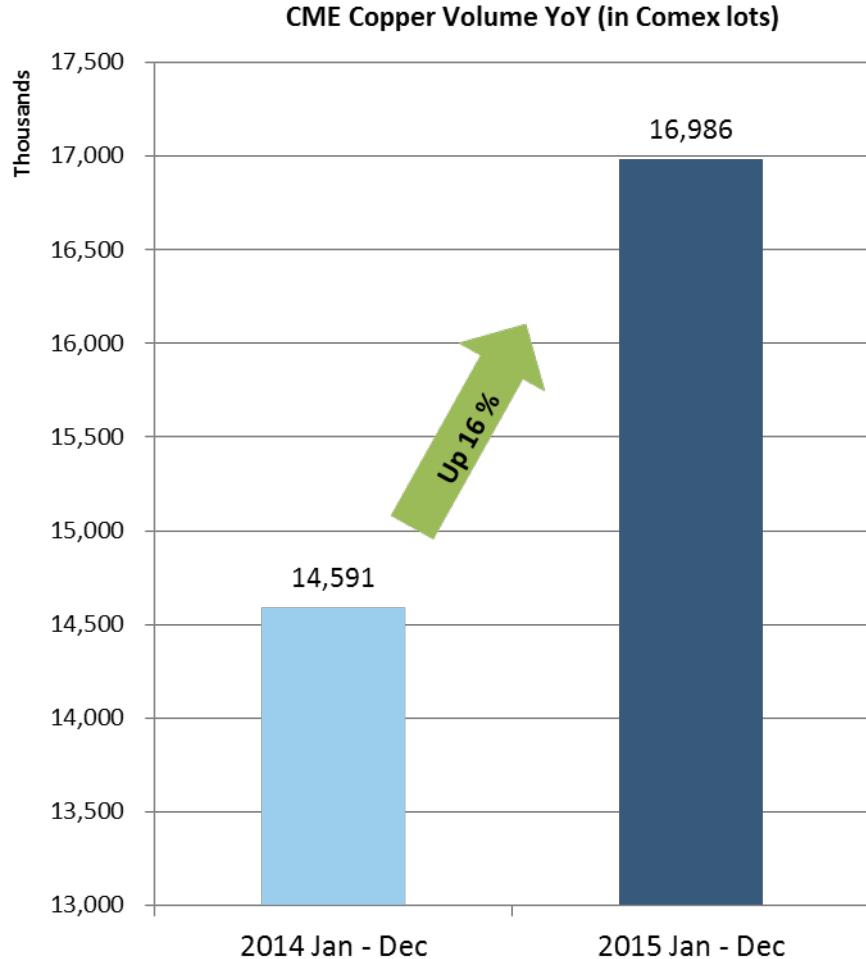


CME Metals Liquidity Superior During Asian Hours

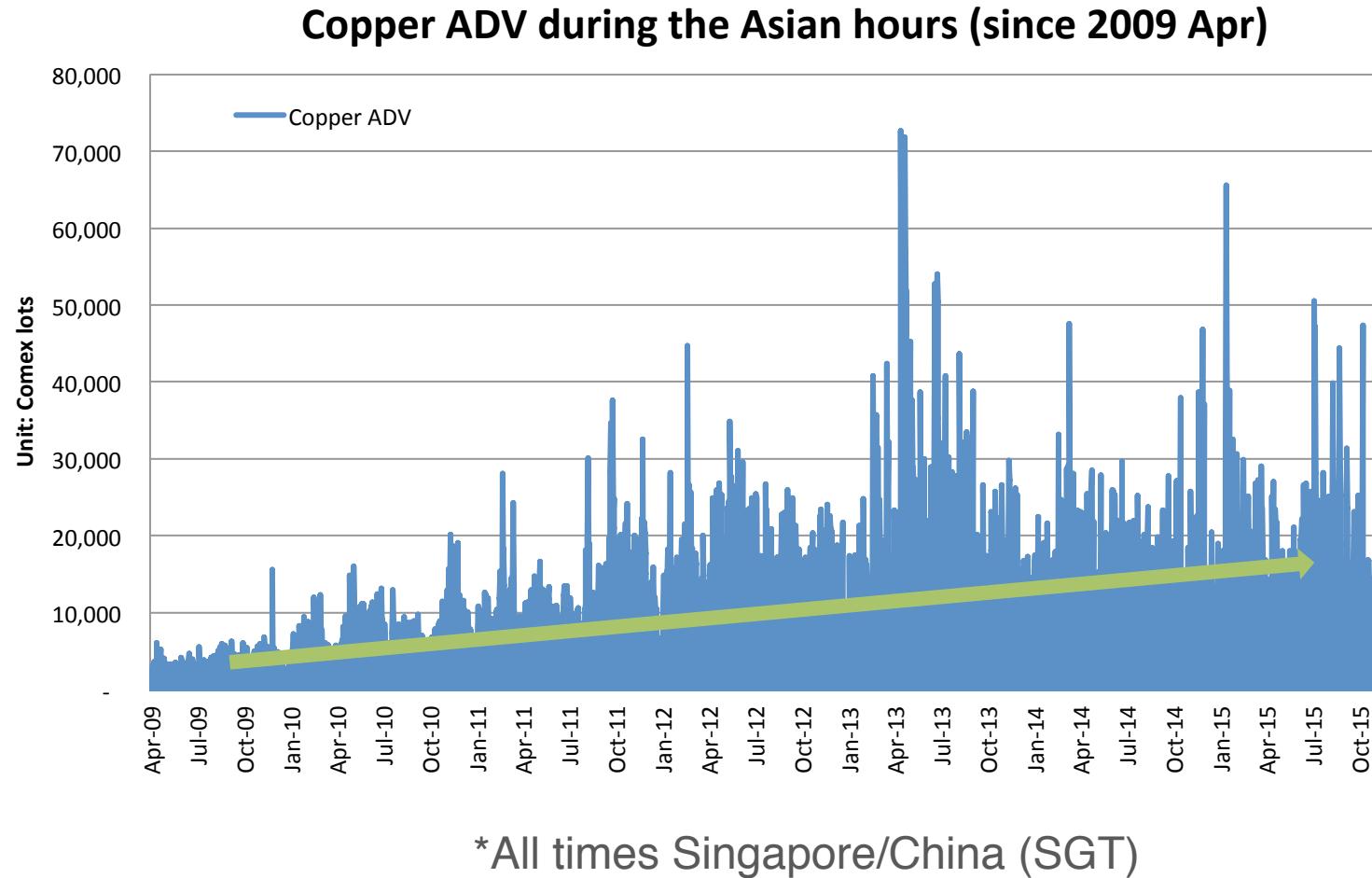
CME's Outperformance in Copper

YTD COMEX copper +17%, compared to LME copper YTD -22%

Record market share in Nov, 2015 at 22%, Record OI in Jan 14, 2016 201,417!

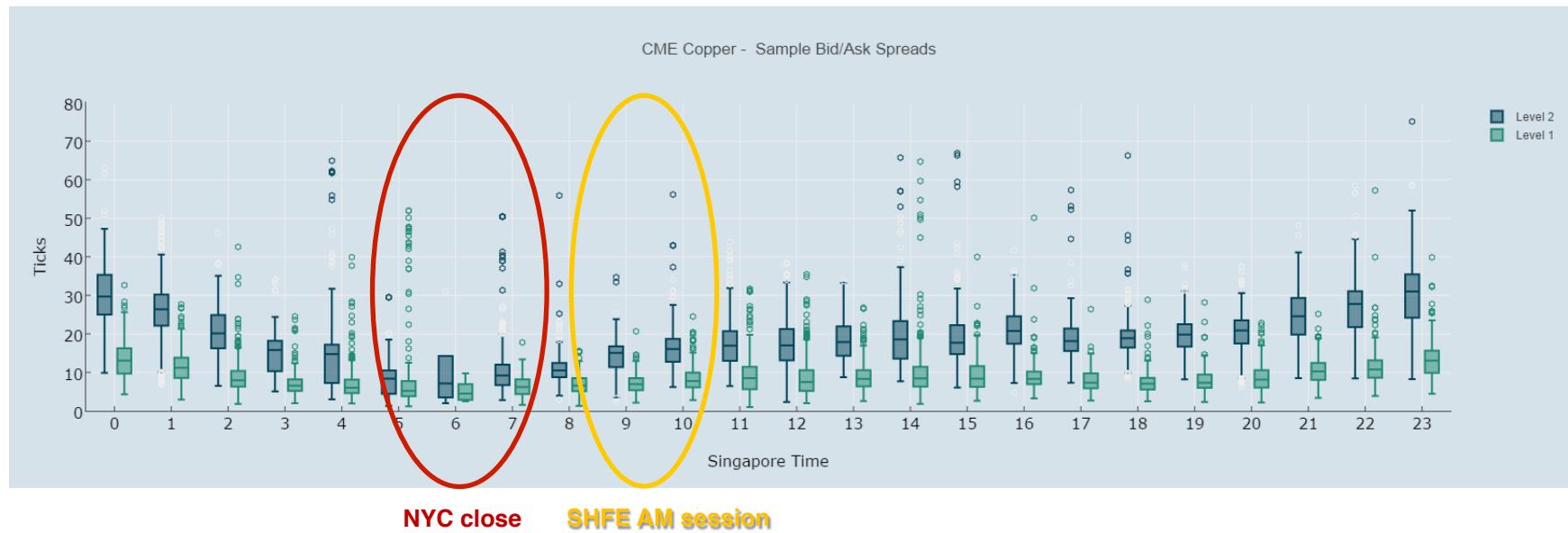


ADV trend of copper during Asian hours (8am – 7pm SGT) for past five years



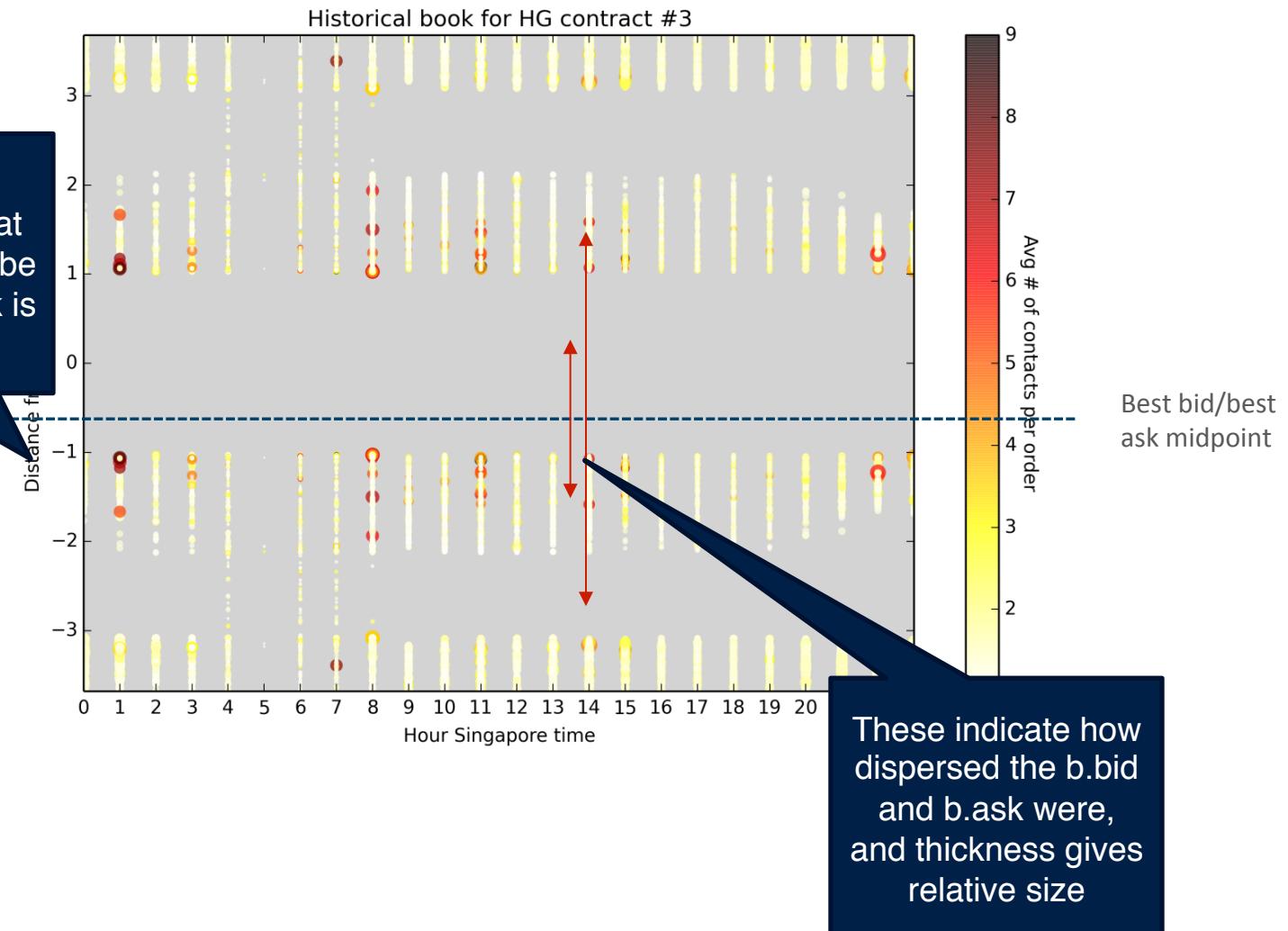
Bid/offer spread analysis across 24 hours

Spreads in Asia AM as tight as NYC close, true executable liquidity on screen

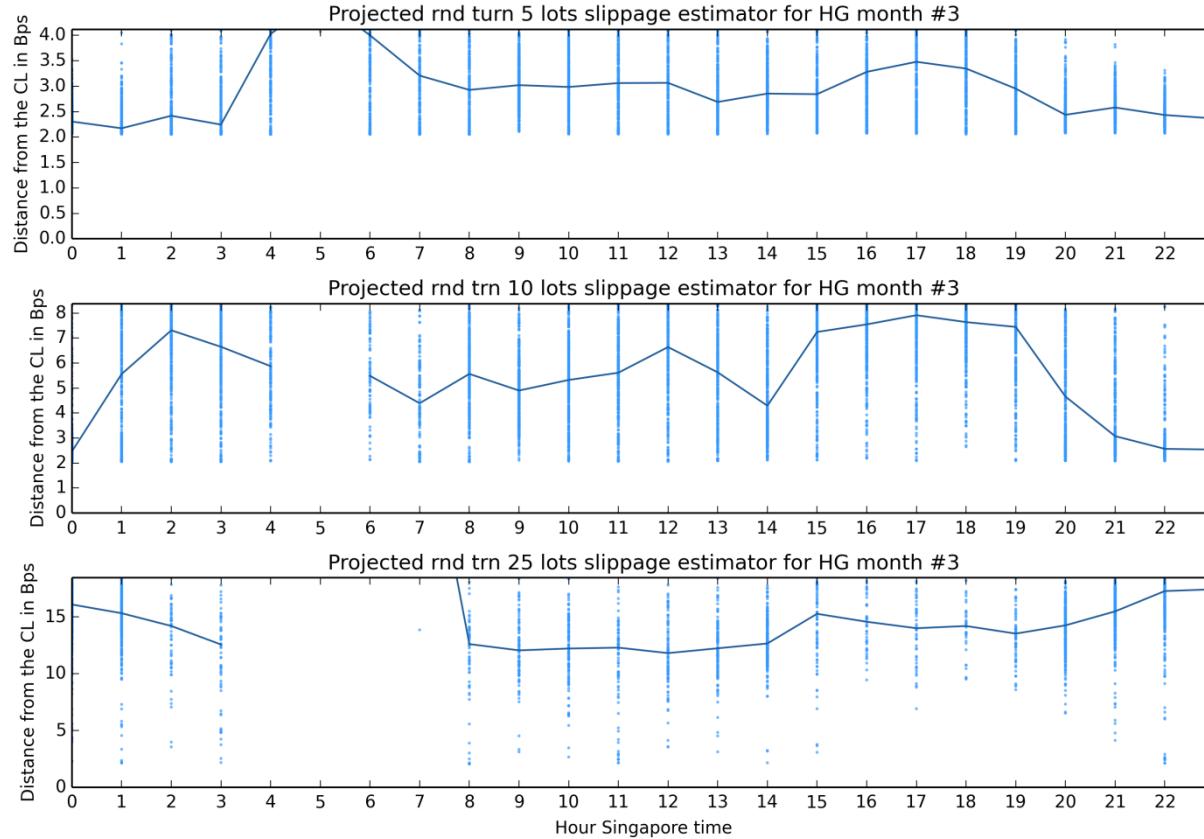


When to trade on CME to reduce price slippage?

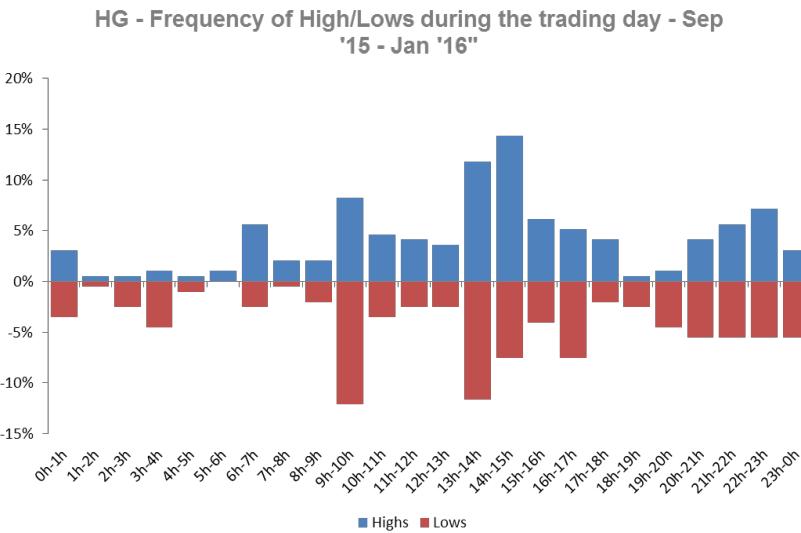
In basis points.
Which means that
since HG tend to be
1 tick wide the tick is
worth 2 Bps



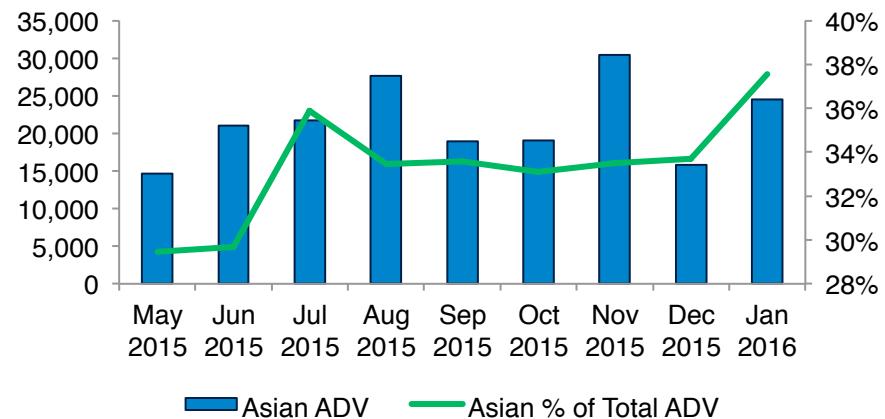
How much to put on screen to reduce slippage?



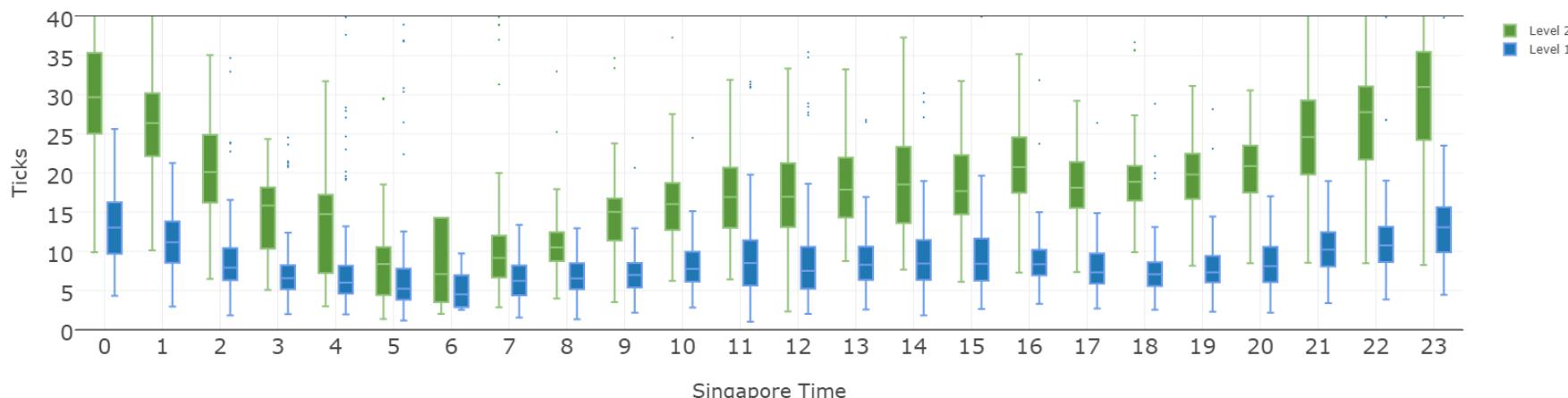
Copper



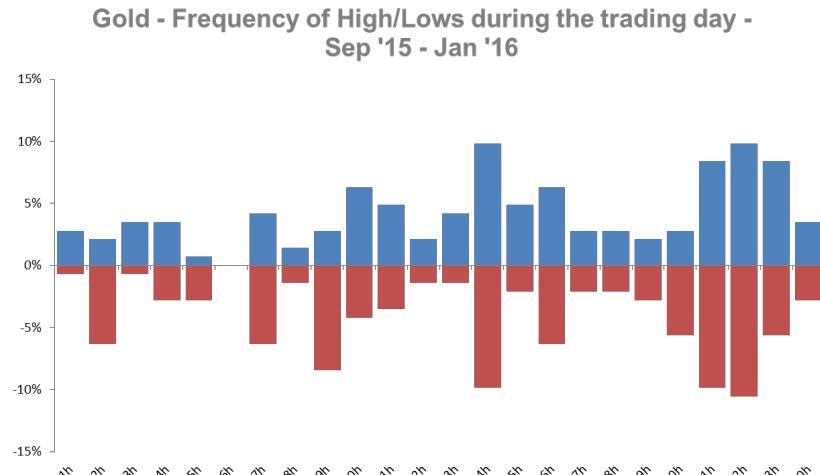
Copper Asian Hours ADV



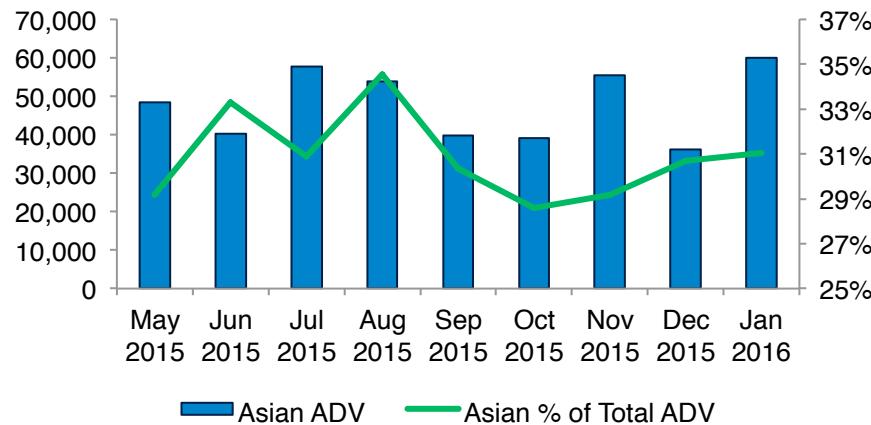
CME Copper - Sample Bid/Ask Spreads



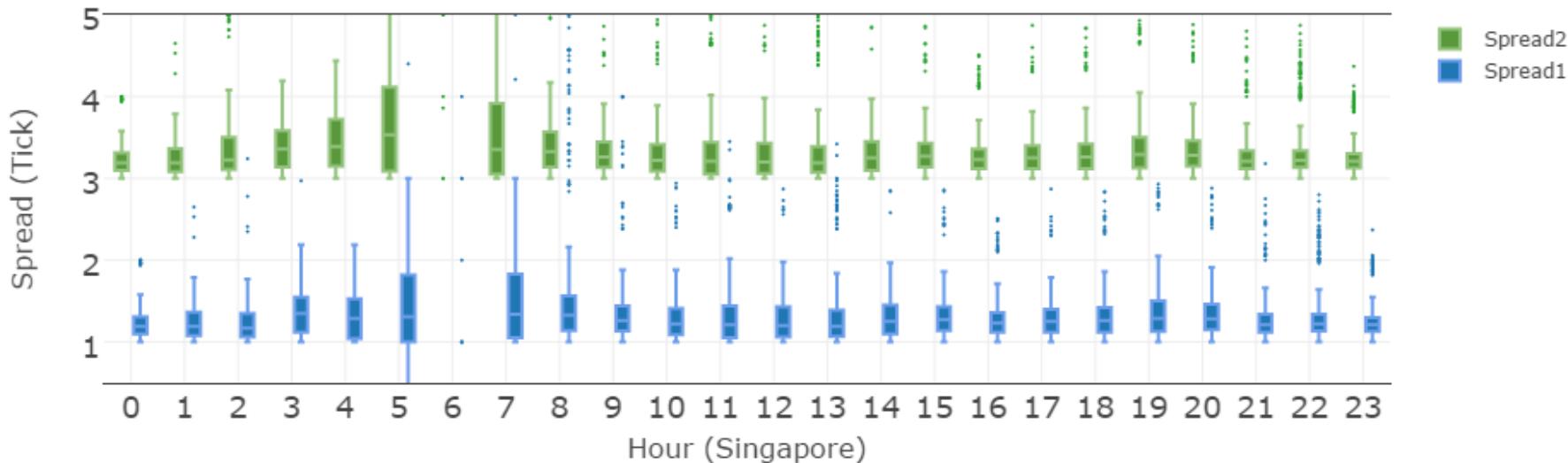
Gold: Consistent Asian Trade



Gold Asian Hours ADV



Gold Futures Spread lvl 1 & 2 - 18/01/2016 to 17/02/2016



Market Updates on CME Group's CBOT Agricultural Suite of Products

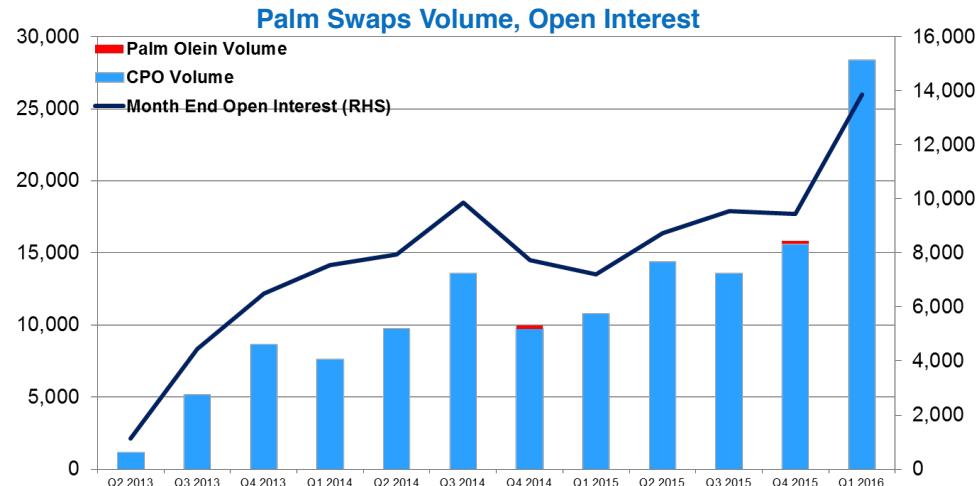
Nelson Low
Executive Director
Agricultural Products, Asia

Cocoa Update

- Working with a broad cross section of industry participants, CME Group in 2015 developed a deliverable cocoa futures contract that we believe more accurately reflects the characteristics and practices of the physical cocoa market.
- This product is the first physically delivered, euro-denominated Cocoa futures to provide ease of access for receivers and improved conditions for cash-market price convergence.
- CME Cocoa futures are coming up to their first anniversary of trading
- The contract has traded every day since launch and has seen a steady rise in ADV
- March 2016 ADV (up to 18th) was 415 lots, over double the ADV for the first month of trading (March 2015)
- The contract has been through 4 expiry cycles with each one resulting in physical delivery
- Over 4,000 tonnes of cocoa have been delivered against the contract to date
- The trading, grading and delivery process has been fully tested over the last year and continue our efforts to increase commercial participation in the contract

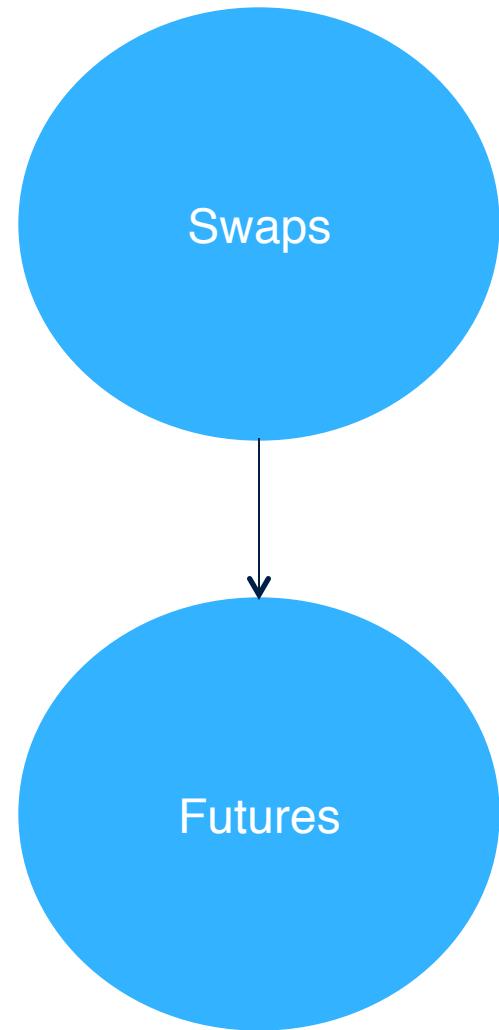
Q1 Palm Swaps Performance Highlights

- Crude Palm Oil swap launched June 2013
- References the Global Benchmark Bursa Malaysia Derivatives FCPO Futures Contract, in US Dollars
- Last quarter is a new record for CPO swap volume with a total of **28,364 contracts** cleared, surpassing the previous record of 15,674 contracts in Q4 2015, representing a growth rate of **+81%**
- Open Interest (O.I.) jumped by **+47%** from last quarter to another new record of **13,872 contracts**
- The quarter also saw 2 record months in Feb and March, with March eclipsing Feb and setting a new volume record of **14,920 contracts**, surpassing the previous record month of Feb 16 by **+73%**
- Since launch, over **3.47 million metric tons** have cleared, with **1.35 million metric tons cleared in 2015 alone** (representing close to 7% of total annual Malaysian CPO production)
- O.I. is spread out till June 2017, with Q4 2016 O.I. standing at 3,540. This represents 25% of the total O.I. indicating strong interest in forward hedging/positions
- Contracts are now available out till calendar 2018
- **This is the most successful US dollar denominated palm product that has ever been launched**



Palm Swaps Futurization

- Due to the success of the palm swaps, we will be listing futures equivalents of the 2 palm swaps in the coming months
- The swaps will remain listed
- Through futurization, these products will now become available through almost all our CME Clearing Member Firms for customers to clear
- Block futures are reported on the CME Group website at <http://www.cmegroup.com/clearing/operations-and-deliveries/accepted-trade-types/block-data.html#contractTypes=FUT,OPT,SPD&exchanges=XCFT,XCME,XCEC,DUMX,XNYM&assetClassId=0>
- More resources on blocks are available at <http://www.cmegroup.com/clearing/trading-practices/block-trades.html>



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Market Updates on CME Group's Equity Product Suite and Advantages

Tim McCourt, Managing Director, Equity Products

Speaker : Nelson Low

Executive Director

Agricultural Products, Asia

The Core Equity Index Product Suite

Futures on the most widely followed and globally recognized equity index benchmarks

Equity Futures

36

- E-minis
- Standards

Equity Options

27

- Quarterlies
- Serials
- End-of-month
- Weeklies

Recently Launched Products

E-mini Russell Futures	E-mini FTSE Futures	Dividend Futures	BTIC on Equity Futures
<ul style="list-style-type: none">• Russell 1000• Russell 1000 Growth• Russell 1000 Value	<ul style="list-style-type: none">• FTSE 100 (GBP)• FTSE 100 (USD)• FTSE China 50• FTSE Developed Europe• FTSE Emerging Markets	<ul style="list-style-type: none">• S&P 500 Quarterly Dividend Index Futures• S&P 500 Annual Dividend Index Futures	<ul style="list-style-type: none">• BTIC E-mini S&P 500• BTIC E-mini NASDAQ-100• BTIC E-mini Dow (\$5)• BTIC for all FTSE Russell Index futures

Advantages of Equity Index Futures

Low Cost. Low Tracking Error.

- **Leverage:** only 5% of notional value of a trade is posted as collateral, resulting in 20:1 leverage on a futures position
- **Capital Efficiencies:** margining benefits with other equity futures provide risk offsets up to 90%
- **Efficient Beta:** futures converge to spot at expiry, resulting in low tracking error.
- **Liquidity:** CME's E-mini S&P 500 futures trade seven times more per day than all S&P 500 ETFs combined
- **Portable Alpha:** because positions require only a small outlay of cash, the investor is able to capture both the market return and actively manage the bulk of the portfolio's cash in a liquid strategy that may provide additional return
- **Transparency & Ease of Trading:** trading standardized contracts on a centralized exchange allows for fungibility and effective price discovery

CME Equity Index Futures

Contract Specifications for CME's Flagship Equity Index Futures

	E-mini S&P500 *	E-mini Nasdaq-100	E-mini Dow Jones
Ticker Symbol	ES	NQ	YM
Multiplier	\$50 * SPX Index	\$20 NASDAQ-100 Index	\$5 DJIA Index
Tick Size	0.25 index points (= \$12.50)	0.25 index points (= \$5.00)	1.00 index points (= \$5.00)
Trading Venue	Globex electronic platform, available 23 hours a day, Sun - Fri. (Trading starts 5pm Sunday)		
Expiry	Quarterly: Third Friday of March, June, September and December		
Daily Settlement Price	The volume-weighted average price ("VWAP") of all trades in the E-mini contract on Globex between 15:14:30 and 15:15:00 Central Time. (For ES, the VWAP also includes any transactions in the Standard SPX contract during the same period with a multiplier of 5 applied to reflect the relative contract size.)		
Final Settlement Price	"Special Opening Quotation" (SOQ) on the expiry date. SOQ is determined by the index provider and is the index level calculated based on the opening prices for each of the underlying constituent stocks.		
Margin Amount (as of 16 Feb, 2016)	\$4,750	\$4,800	\$3,900
Circuit Breakers	In extended trading hours (ETH), circuit breakers at 5% up and down. Regular trading hours (when the underlying stock markets are open), circuit breakers at 7%, 13% and 20% down only.		

Contract Specifications for additional products can be found on the CME website: <http://www.cmegroup.com/trading/equity-index/>

CME Equity Index Futures (cont.)

Contract Specifications for CME's Flagship Equity Index Futures

	Nikkei (¥) Futures	Nikkei (\$) Futures	E-mini Nikkei (¥) Futures
Ticker Symbol	N1	NK	ENY
Multiplier	¥500 * Nikkei Stock Average	\$5 * Nikkei Stock Average	¥100 * Nikkei Stock Average
Tick Size	5 index points (= ¥2,500)	5 index points (= \$25.00)	10 index points (= ¥1,000)
Trading Venue	Globex electronic platform, available 23 hours a day, Sun - Fri. (Trading starts 5pm Chicago Time/CT Sunday)		
Expiry	Quarterly: Second Friday of March, June, September and December		
Daily Settlement Price	The volume-weighted average price ("VWAP") of all trades in the contract between 15:14:30 and 15:15:00 Chicago Time (CT).		
Final Settlement Price	"Special Opening Quotation" (SOQ) on the expiry date. SOQ is determined by the index provider and is the index level calculated based on the opening prices for each of the underlying constituent stocks.		
Margin Amount (as of 16 Feb, 2016)	¥500,000	\$5,000	¥100,000
Circuit Breakers	Daily price limits calculated based upon the previous day's Reference Price (VWAP on plus or minus 3 Offset Levels (8%, 12%, 16%).		

Contract Specifications for additional products can be found on the CME website: <http://www.cmegroup.com/trading/equity-index/>

Around-the-Clock Liquidity

Tight Bid-Ask Spreads throughout the trading day

Product	8:00am to 3:00pm CT 11:00pm to 6:00am OT		6:00pm to 12:00am CT 9:00am to 3:00pm OT		1:00am to 12:00pm CT 4:00pm to 3:00am OT	
	Width (Ticks)	Size (contracts)	Width (Ticks)	Size (contracts)	Width (Ticks)	Size (contracts)
E-mini S&P 500	1.7	180	1	20	1	35
E-mini Nasdaq-100	2.1	15	6	5	2	4
E-mini Dow	1.8	12	2	5	3	4
Nikkei 225 (Yen)	1.2	13	1	10	1	17

- CT – Chicago Time
- OT – Osaka Time

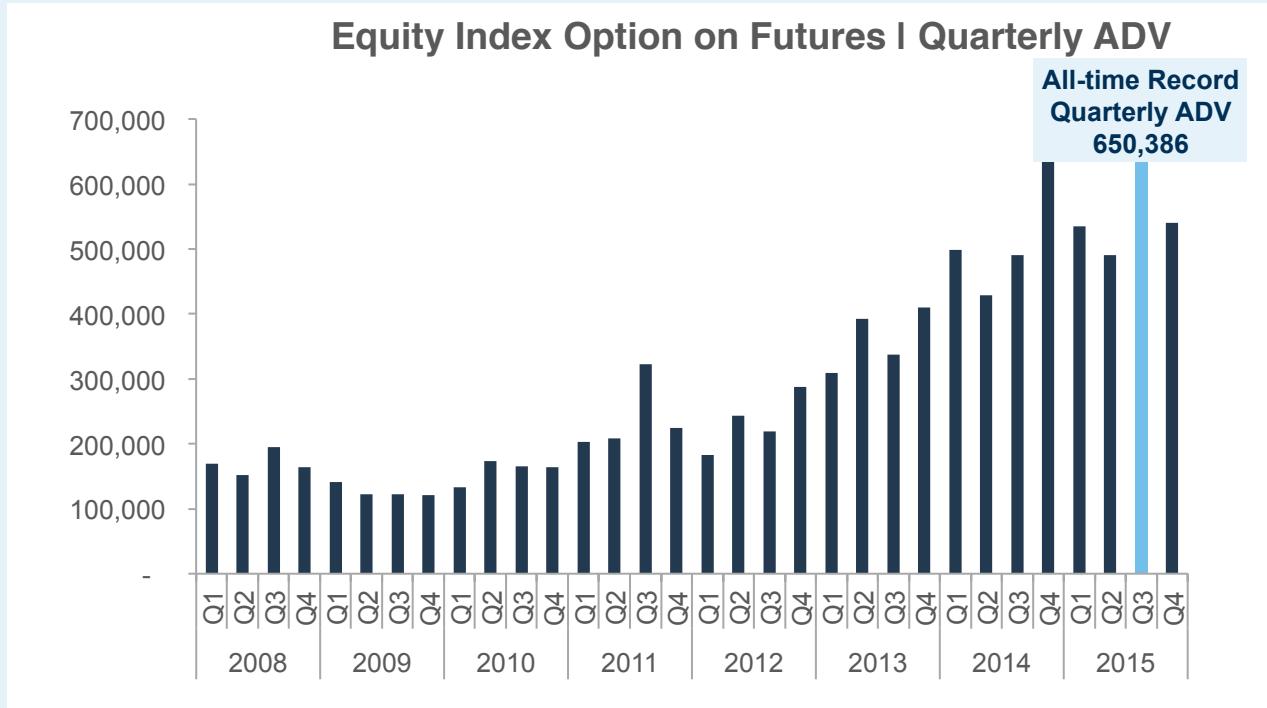
Growing ADV during Non-US Trading Hours

	E-mini S&P 500	E-mini Nasdaq-100	E-mini Dow	Nikkei 225 (Yen)
2014	37,984	5,737	4,491	6,306
2015	41,296	6,404	5,635	7,464
Growth	9%	12%	25%	18%

Equity Index Options on Futures

Capitalize on Deep, Actionable Liquidity

- Equity Index options have grown substantially as investors continue to express views on market-moving economic reports via Weekly and End-of-month options.
- On Employment report days, which generally coincide with a Week 1 option expiration, trading in the expiring weekly and the next weekly option often exceeds ADV by **200-300%**



Futures vs. ETFs Cost Comparison

Futures are more cost efficient than ETFs to replicate the S&P 500 total return

Big Picture Report Summary

- The report examines the all-in trading cost of replicating the S&P 500 total return¹ via equity index futures and exchange-traded funds (ETFs) across a variety of different use cases and time horizons.
- The products used for the analysis are the E-mini S&P 500 future and the three US-listed S&P 500 ETFs: the SPDR SPY, iShares IVV, and Vanguard VOO.
- The cost of index replication was calculated for a range of time horizons across four common investment scenarios: a fully-funded long position, a leveraged long, a short position and a non-US investor.

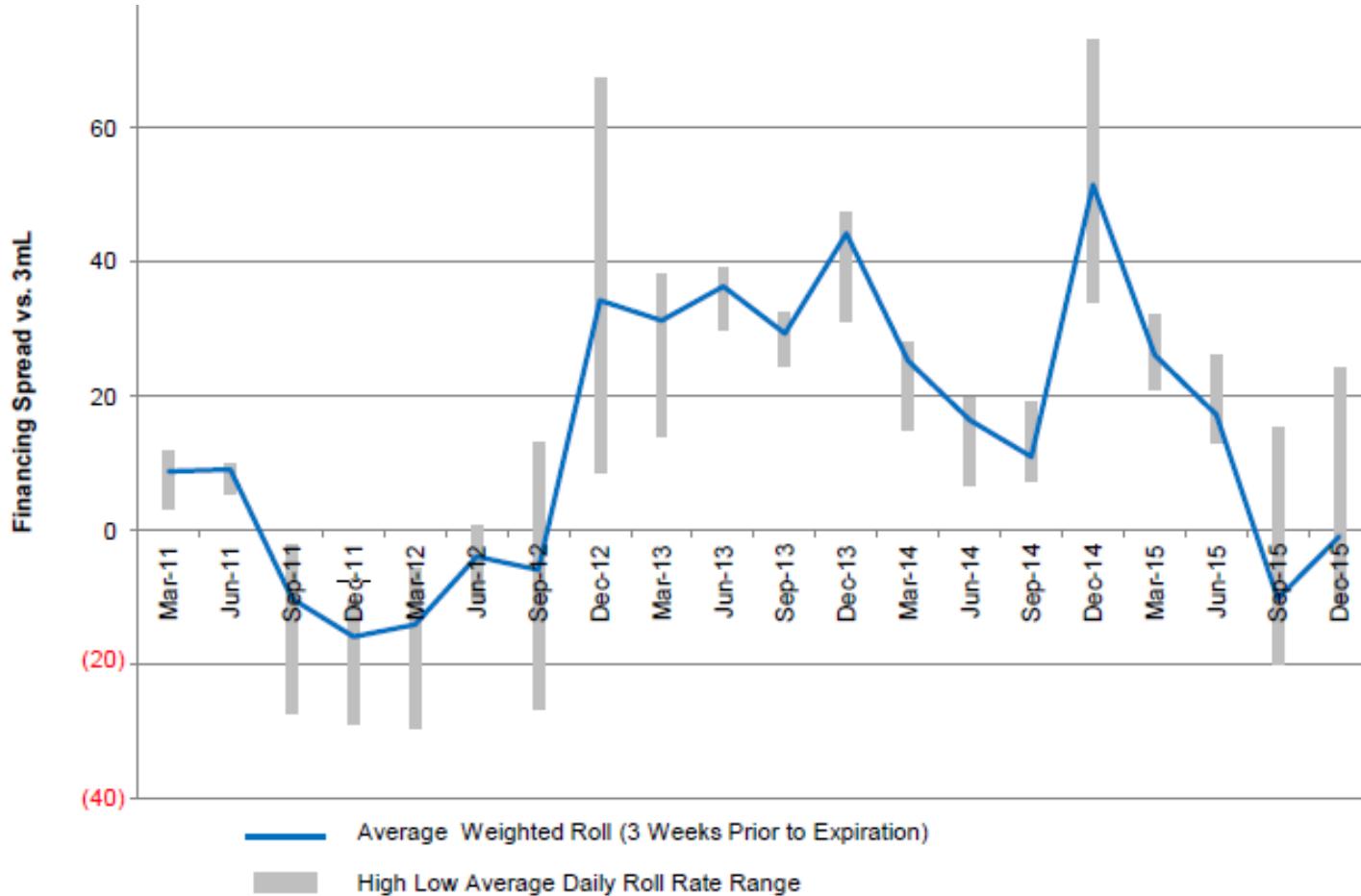
Futures or ETFs Conclusions

- The choice between futures and ETFs is not an either-or decision. E-mini S&P 500 futures are shown to be more cost-effective than S&P 500 ETFs for leveraged, short and non-US Investors across all time horizons.
- For fully-funded investors, the optimal choice is a function of futures implied financing and investment time horizon. **At the recent average roll level of 3mL – 5.7 bps, futures are cheaper than the ETF by between 12.0 and 15.5bps.**
- Absent extreme richness of the futures roll, the cost advantage of futures over ETFs for foreign investors will hold true in periods of roll richness and cheapness mainly because this is an additional holding cost that only the ETF incurs.

¹ Total Return as defined by the price return of the index plus dividends

S&P 500 Futures Roll Analysis

Roll Richness with High/Low Range



Source: CME Group

Nikkei 225 Complex

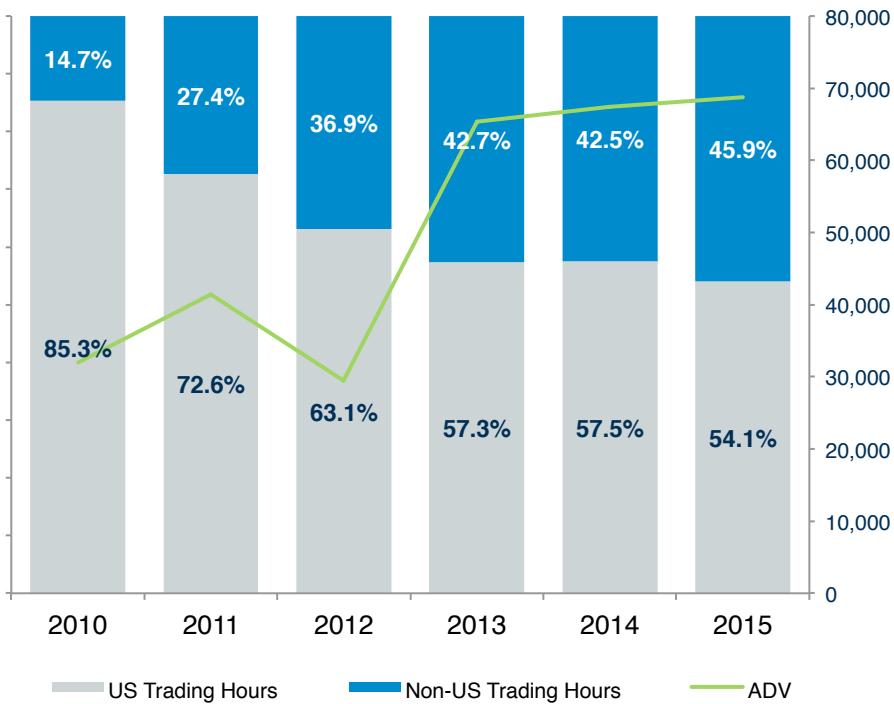
Complex Performance

- Volume during non-US Trading Hours continues to comprise a larger percentage of overall Nikkei 225 ADV
 - Over 50% of Nikkei 225 volume for 2016 has been during Non-US Trading Hours¹
- ADVT has grown +9% since 2014 (~\$6 billion)

VIP Program

- Minimum ADV requirements lowered from 400 to 200
- Program open to all participants
- VIP program provides 2 ways to save as a participant:
 - (1) 10% Fee Discount
 - (2) Overnight Hours (ONH) Discount

CME Nikkei 225 Volume by Trading Session



1) Data as of February 16, 2016.

E-mini Nifty 50 Index Futures

Overview

- CNX Nifty Index is designed to reflect India's equity market, and consists of the 50 largest and most liquid blue-chip Indian companies on the NSE

Benefits

- Easier access to India's markets through simplified handling of regulatory, currency and time zone differences
- Operational flexibility by leveraging existing front end systems and clearing relationships
- Dedicated market makers continuously posting two-sided markets around-the-clock
 - August ADV over 350 contracts
- Competitive fees relative to competitor (~7% cheaper for members; ~22% cheaper for non-members)
- Capital efficiencies margins are the same vs. competitor, but participants may achieve significant savings via margin offsets with other CME Group products

Margin Offsets¹

E-mini CNX Nifty Futures vs.	Ratio (Nifty: Other)	Margin Credit
Indian Rupee Futures	5:1	55%
E-mini S&P Futures	7:1	50%
Nikkei 225 Yen Futures	10:1	40%
Nikkei 225 USD Futures	6:1	40%
E-mini Nasdaq 100 Futures	5:1	35%

1) Margin requirements and margin offsets for products eligible for cross-margining are subject to change and maybe revised without advanced notice.

E-mini FTSE China 50 – Trading Opportunities

Overview

- FTSE China 50 is an H-Shares/Red/P-Chips index that addresses the Hong Kong listed Chinese stock market. CME to pursue FTSE China A-50, subject to Chinese Regulators' Consent.
- Close trading relationship with HKEx-listed products as well as U.S.-listed ETF (ticker: FXI, \$7 billion AUM, \$1.8 billion ADVT); possibility of a true 24-hour market
- Opening for new products given current environment

Comparing Chinese Stock Market Benchmarks

- Correlations amongst the FTSE China 50, HSCEI and Hang Seng are at least ~94%
 - 34 common constituents between HSCEI and FTSE China 50, accounting for approximately 95% and 62% of the respective indices¹
- Conversely, the correlation between FTSE China 50 and FTSE China A-50 is only ~62%
 - While complementary to the Hong Kong market, A-share markets have much higher tail risks, resulting in different trajectories

Correlation Matrices – Hong Kong market			
	HSCEI	Hang Seng	FTSE China 50
HSCEI			
Hang Seng	93.7%		
FTSE China 50	98.5%	95.9%	

Correlation Matrices – A-shares market			
	CSI 300	FTSE China 50	FTSE China A50
CSI 300			
FTSE China 50	61.3%		
FTSE China A50	94.4%	62.2%	

Cross-Margining and Capital Efficiencies

- Indicative margin estimates show a potential 35% margin reduction when holding E-mini FTSE China 50 vs. Nikkei Futures²

1) Data as of September 1, 2015

2) Margin requirements and margin offsets for products eligible for cross-margining are subject to change and maybe revised without advanced notice.

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Continued Volatility in IR & FX continue to drive Volumes and Open Interest at CME Group

Ravi Pandit
Executive Director
FX & Interest Rate Products, Asia

Highlights

- **CNH New liquidity program launched March 15**

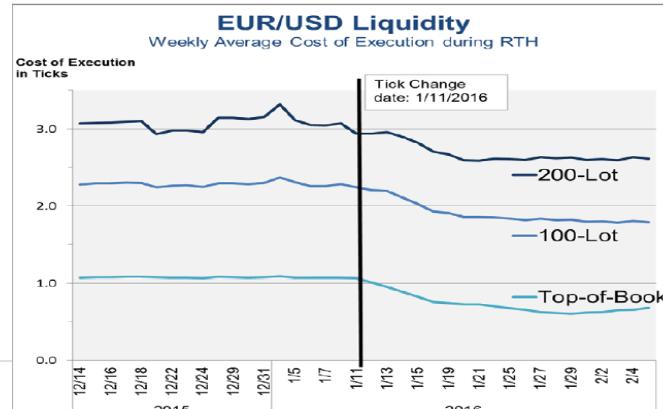
- Improved market making program with new market makers
- Block price makers added
- Aggressive customer outreach will commence early April

- **New Bloomberg USD Index futures to commence trading on April 4**

- Cash settled futures referencing the Bloomberg Dollar Spot Index (BBDXY)
- Index composed of 10 currency pairs (EUR, JPY, CAD, MXN, GBP, AUD, CHF, KRW, CNH & BRL)
- Component currency weightings are rebalanced annually in December

- **EUR Tick Size Reduction to ½ ticks**

- Minimum tick increment in the standard size EUR/USD contract changed from \$12.50 per tick to \$6.25 per tick on **January 11, 2016**
- Cost reduction of 36% for orders executed at the Top-of-Book ♣ **Save \$89.45** on average execution size of 18 contracts (~\$2.5m notional)
- 100-lot execution (~\$13.7m notional) is now 19% cheaper - **saves \$512** ♣ Average bid/ask spread of 1.799 ticks post cut
- 200-lot execution (~\$27.4m notional) is now 11% cheaper - **saves \$844** ♣ Average bid/ask spread of 2.609 ticks post cut



Interest Rates

Highlights

- **Ultra 10 Contract the most successful “new-launch” in CME’s history**
 - 1 million contracts traded in just seven weeks; a record for CME
 - Successful first roll from March to June expiry
 - Open interest on a strong uptrend
 - Broad client participation across trade types
 - Focus in April will be on TN options push
- **Record setting start to 2016 for Rates products**
 - Treasury futures open interest hit all time high of 8.39MM contracts
- **Change to strike increments for Treasury options effective March 7**
 - 10yr Note & Ultra 10 yr Note: $\frac{1}{4}$ point increments (previously $\frac{1}{2}$ point)
 - Bond & Ultra Bond: $\frac{1}{2}$ point increments (previously 1 point)

CME Group Swaptions Clearing

Launching April 11, 2016 Based on Strong Client Demand

Clearing Swaptions Amplifies our Unparalleled Capital Efficiencies

- ✓ Voluntary clearing allows market participants the flexibility to reduce the risk of their cleared IRS portfolios
- ✓ Margin offsets of up to 91% possible by adding swaptions to CME cleared IRS portfolios
- ✓ Portfolio margining with our cleared IRS and Eurodollar, Treasury, and Deliverable Swap Futures
- ✓ Reduces bilateral counterparty credit risk and frees up credit lines
- ✓ Improves Capital Ratios, lowering capital charges that could ultimately be passed onto end users

"With uncleared margin rules coming into greater focus for our clients, Credit Suisse is excited to facilitate voluntary swaptions clearing at CME Group. Clearing swaptions enables our clients to obtain the greatest operational and capital efficiencies from clearing, while reducing the risks in their portfolios."

John Dabbs, Global Head of Prime Derivatives Services at Credit Suisse

"RBS plc is pleased to take a leadership role as one of the first banks that will provide cleared swaption liquidity to our global client base. We are very supportive of the early adopters that use the CME swaption clearing solution to reduce bilateral counterparty exposure, particularly with the added cost of margin for non-cleared derivatives coming later this year."

Alan Mittleman, Head of Rates Trading, Americas at RBS plc.

Cleared OTC IRS Swaptions Product Scope

Initial Product Offering:

Swaptions		Max Expiry			Final Settlement		Underlying Tenor			Index		
Currency	Type	Years			Method	Years (up to)			Months			
		≤ 2	≤ 5	≥ 10				30	50	1	3	6
USD	European											LIBOR

- USD vanilla swaptions
- Includes Straddles, cleared as a single trade or separate payer/receiver
- All enumerations for USD-denominated 3 month LIBOR vanilla interest rate swaps supported, with the exception of:
 - Compounding, forward starting swaps, spreads and stubs

Future EUR Product Offering*:

Swaptions		Max Expiry			Final Settlement		Underlying Tenor			Index		
Currency	Type	Years			Method	Years (up to)			Months			
		≤ 2	≤ 10	≤ 30				30	50	1	3	6
EUR	European											EURIBOR

- Includes Straddles, cleared as a single trade or separate payer/receiver
- Standard strikes include 0-10y, 12y, 15y, 20y, 25y, 30y

*Pending regulatory approval

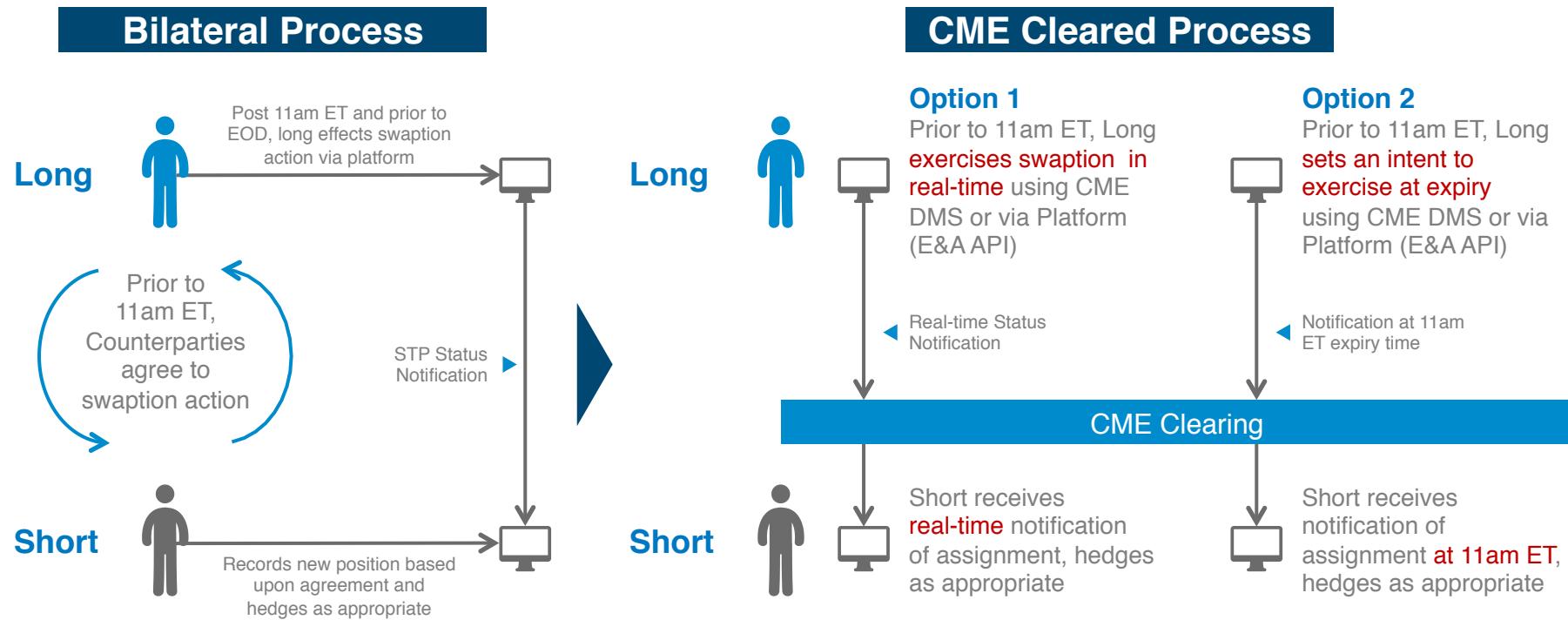
USD Swaptions Product Characteristics

- Straddles, the simultaneous right to pay and receive at the same strike & maturity, are supported & can be cleared as a single trade
- Both upfront and forward premiums are supported
 - Premiums may be settled on spot (T+1) through the expiration date +1 of the swaption and are denominated in USD
- Physical delivery into a cleared CME OTC interest rate swap transaction
 - Effective date equals exercise date +2
 - Trade date & cleared date of the underlying swap equals swaption exercise date
- CME performs three validations at the time a trade is submitted to clearing, same as current workflows
 - Account ID must be valid
 - Trade must pass credit limits and CME risk filters
 - Must meet supported product attributes
- At exercise, the underlying swap transaction bypasses validations (account, credit and product) & is automatically cleared



Swaptions Exercise Process

With CME as the swaptions counterparty to every trade, both the long and short benefit from a streamlined exercise and assignment process



Long has the opportunity to take the desired action on the swaptions up until 11am ET, & may use the CME Deal Management System or send instructions via API rather than calling each counterparty.

- If the Long exercises in real-time, prior to 11 am ET cutoff, the Short will be notified in real-time.
- If the Long sets an intent to exercise at expiry, the Short will not be notified until the 11 am ET cutoff.

CME Bloomberg Dollar Spot Index Futures (BDI)

Launching April 4, 2016*



**TRACKING THE
PERFORMANCE
OF A BASKET OF
LEADING GLOBAL
CURRENCIES
VERSUS THE U.S.
DOLLAR**

CME Bloomberg Dollar Spot Index Product Overview

- Consisting of 10 developed and emerging market currencies providing a better measure of the U.S. Dollar vs. the global market
- Margin efficiencies by offering offsets with CME's leading FX Futures
- Cash-settled to offer operational ease and preferred means of clients
- Rebalanced annually to capture the changes in global currency trading
- Larger contract size and lower block requirements offers flexibility in trading

Why The CME Bloomberg Dollar Spot Index Contract



Margin Benefits

- Offsets between CME Bloomberg Dollar Spot Index futures with CME FX futures upwards of 85%
- Highly liquid FX futures offering with over \$100 billion ADV across all FX markets



Exposure To Developed And Emerging Market Currencies

- The CME Bloomberg Dollar Spot Index includes six developed (EUR, JPY, CAD, GBP, AUD & CHF) and four emerging market currencies (MXN, KRW, CNH & BRL)
- The ICE index only includes six currencies with a 77% exposure to Europe and less relevant currencies such as the Swedish Krona



Dynamically Weighted Index

- Unlike the ICE Index that hasn't been rebalanced since 1973, the CME Bloomberg Dollar Spot Index is rebalanced on an annual basis every December to reflect trading volumes with the U.S.
- The weighting is readjusted to reflect the annual trade flows versus the U.S. dollar as reported by the Federal Reserve and Bank for International Settlements
- Currencies pegged to the U.S. dollar are excluded and currencies which are heavily managed have their exposure capped



Cash Settlement In U.S. Dollar

- The CME Bloomberg Dollar Spot Index offers operational ease for clearing members and clients with a U.S. Dollar cash settlement
- Removes the risk of receiving a basket of physical currencies at settlement like the ICE Dollar Index

Dollar Index Comparison

CME Bloomberg Dollar Spot Index vs. ICE Dollar Index

CME Bloomberg Dollar Spot Index

Margin offsets with liquid FX
futures

Cash settled into USD for
operational ease

Dynamically weighted and
annually adjusted (EUR 32%)

10 currencies including
developed and emerging
markets

ICE Dollar Index

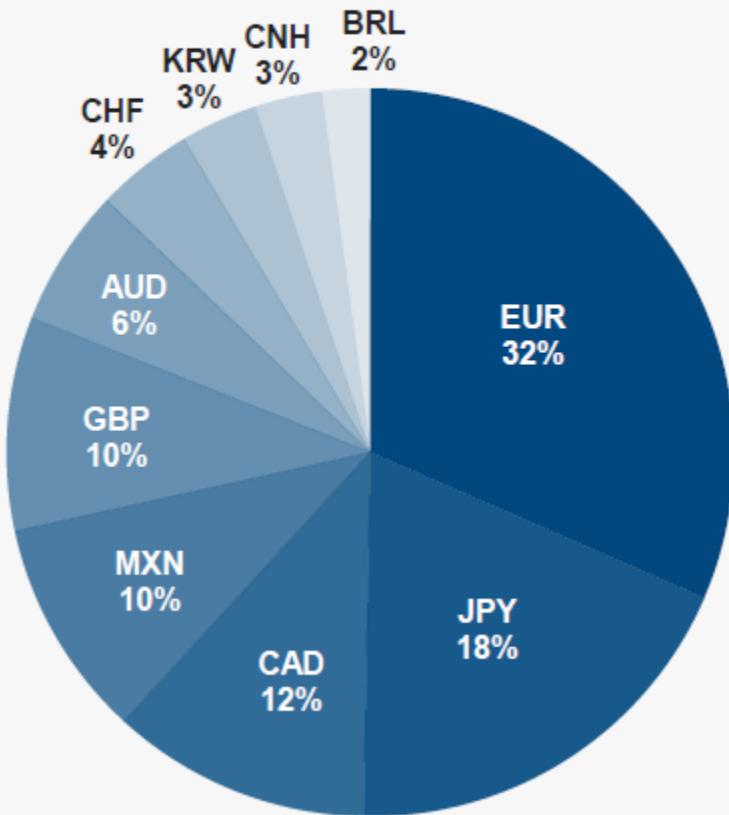
Physically settled with potential
conversion charges

Fixed weighting heavily skewed
to EUR (57.6%)

Only has 6 currencies in basket
focused on Europe (77%)

CME Bloomberg Dollar Spot Index Weightings

The Additional Currencies In The CME Bloomberg Index Provide A Better Representation Of The U.S. Dollar Against Leading Global Currencies



	Index Weights		Global Rankings	
	BBDXY	DXY	Liquidity	Trading
EUR	31.75%	57.60%	1	2
JPY	18.45%	13.60%	2	5
CAD	11.48%	9.10%	6	3
MXN	9.87%	0.00%	7	4
GBP	9.47%	11.90%	3	7
AUD	6.10%	0.00%	4	17
CHF	4.37%	3.60%	5	12
KRW	3.43%	0.00%	16	6
CNH	3.00%	0.00%	8	1
BRL	2.08%	0.00%	18	9

Efficient Margin Offsets

Against Liquid FX Futures

The below savings analysis assumes a 100 position in the CME Bloomberg Dollar Spot Index future with the outright currencies in the same direction

Outright Currency	Top 7 Index CCYS	Top 5 Index CCYS	G10 Index CCYS	Top 3 Index CCYS
EUR	34	38	39	51
JPY	20	23	23	30
CAD	13	14	14	19
MXN	11	13		
GBP	10	12	12	
AUD	7		7	
CHF	5		5	
Savings	85%	80%	70%	50%



Why CME Group FX Futures

Most attractive, valuable, diverse franchise in the exchange sector



Liquid Markets With Flexible Execution

- Over \$100 billion average daily volume across all our FX markets
- Choice of execution through CME Globex, bilateral block trading, EFPs, or OTC FX Clearing
- Access to CME Globex, which is accessible in 150+ countries through a diverse range of connectivity points



Customer Focus With Full Transparency

- Transparency for customers with all participants trading on the same price, with no “last look”
- Quick execution with STP and all trades facing-off against CME Group’s clearinghouse
- 23 hours a day access to electronic markets – 99% of all CME FX volume is electronic choice of jurisdiction between US and Europe



Capital Efficiency

- Futures attract a 2-Day Margin Period of Risk (MPOR) vs. 5-Day for OTC bilateral FX (with no initial Margin)
- No CVA charges for Futures trades
- Effective auto-offsets (Buy 6 month future vs Sell 3 month)
- Minimize line items on book, buy 1 contract, sell 1 contract, means no open position
- Cost of execution is known before you hit the price



Broadest Product Depth

- Offering FX Futures and Options as well as OTC FX Non-Deliverable and Cash-Settled Forwards
- With centrally cleared products having credit agnostic pricing and provides access to a wider range of participants than bilateral models

Strong Growth in Exposure to FX Futures

The number of Large Open Interest Holders reached an all-time high in early-August with 1,007 Large Open Interest Holders

CME Group Foreign Exchange Futures Aggregate Number of Large Open Interest Holders*



Source: CFTC

*The CFTC defines large open interest holders as having at least 400 open contracts in Major Foreign Currency futures and at least 100 open contracts in Other Foreign Currency futures.

Futures Contract Specifications

CME BLOOMBERG DOLLAR SPOT INDEX FUTURES

CME Group Ticker	<ul style="list-style-type: none">• BDI
Bloomberg Code	<ul style="list-style-type: none">• BBDXY
Expiry Dates	<ul style="list-style-type: none">• 4 contract expirations in the March, June, September, and December quarterly cycle
Settlement	<ul style="list-style-type: none">• Financially settled
Price Banding	<ul style="list-style-type: none">• Outrights: 60 ticks• Calendar Spreads: 10 ticks
Contract Size	<ul style="list-style-type: none">• \$100 x Bloomberg US Dollar Index (BBDXY), e.g., if BBDXY = 1,212.62, then futures contract value = \$121,262.00 (= \$100 x 1,212.62)
Minimum Price Increment	<ul style="list-style-type: none">• 0.10 index points (\$10.00) for outright; 0.05 index points (\$5.00) for calendar spreads
Last Trading Day	<ul style="list-style-type: none">• 4:00 p.m. London time on the third business day immediately preceding the third Wednesday of the contract month - i.e., usually a Friday
Trading Hours	<ul style="list-style-type: none">• CME Globex: 5:00 PM to 4:00PM CT, Sun-Fri• Trading in expiring future terminates at 9:16 AM CT
Matching Algorithms	<ul style="list-style-type: none">• Outrights: FIFO• Calendar Spreads: FIFO
Block Thresholds	<ul style="list-style-type: none">• RTH: 10• ETH: 10• ATH: 10

Contacts

The latest information can always be found at cme-group.com/bdi



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CME Group Customer Forum

Thank you