

CME Group Customer Forum

Spring 2016

Singapore	April 12
Hong Kong	April 14
London	April 28
U.S. Webinar	May 9

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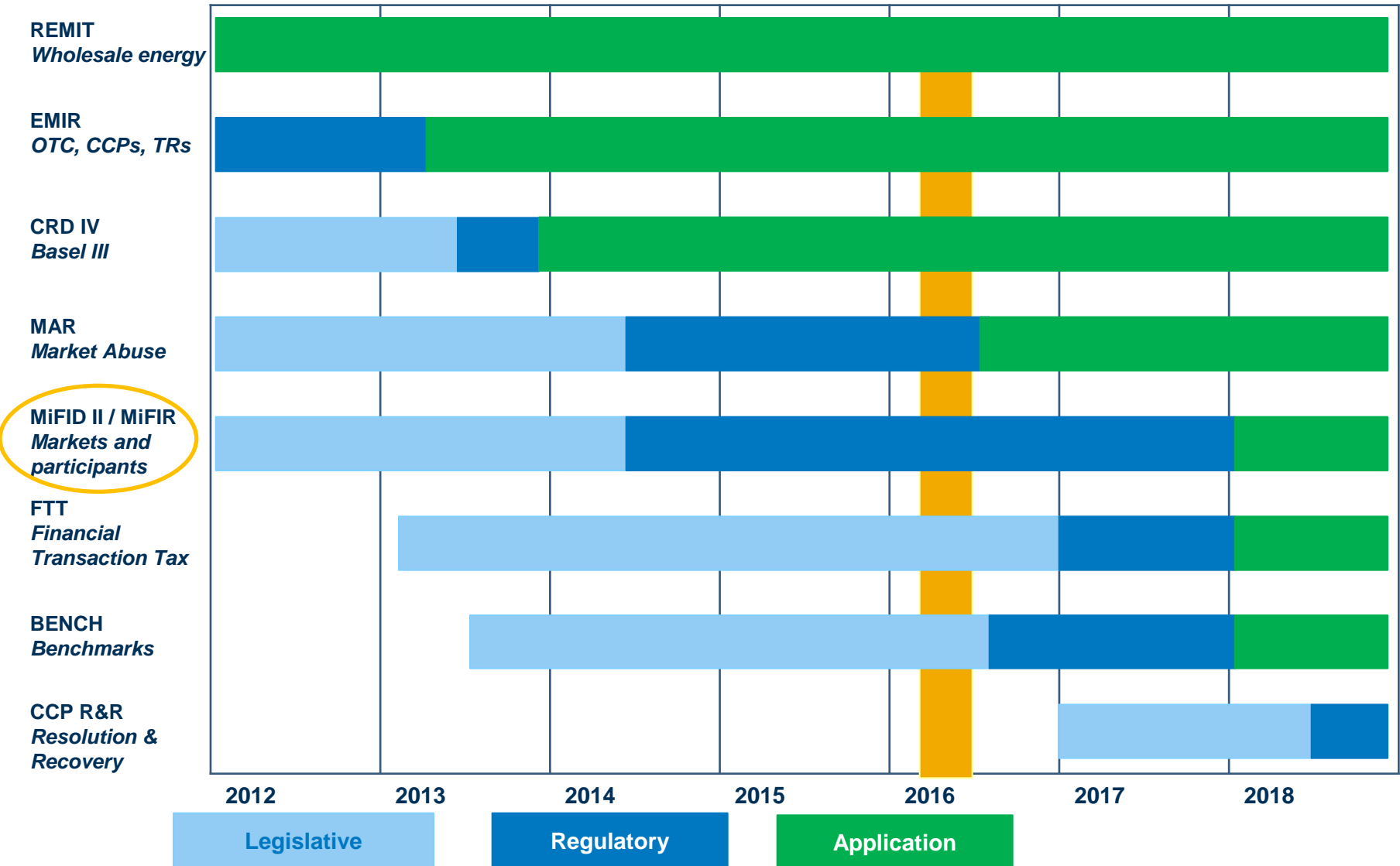
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Agenda

- Regulatory Updates
- E-Trading Update
- CME DataMine & Customer Center
- CME Europe Updates
- CME Product Updates
- Global Repository Service

EU Regulatory Update – Current Legislative Status



EU Regulatory Update – MiFID II / MiFIR

MiFID II / MiFIR is a broad regulatory reform package, the key provisions being:

- **Algo/HFT:** Regulatory controls on algorithmic trading/HFT and Market making
- **Commodities regulation:** Position limits and scope of regulation
- **Transparency:** Pre- and post- trade transparency requirements
- **Trading requirements:** TV obligations, and trading obligation (OTFs)
- **Clearing:** Indirect clearing, portfolio compression, STP
- **Reporting:** Transaction reporting for monitoring against market abuse
- **Data publication:** Data availability, disaggregation, reporting mechanisms, fees

EU Regulatory Update – Algorithmic trading/HFT

2016 EU Legislative and Policy Priorities – MiFID II / MiFIR

Algorithmic trading/HFT regulation

- **Legislative outcome** → MiFID II is the first EU initiative to introduce regulatory controls for HFT / algorithmic trading. It includes a series of measures addressed to both trading venues and market participants that use algorithmic and HFT trading strategies. ESMA has prescribed in its RTS detailed organisational requirements, trading system controls and obligations for market-makers.
- **Implementation** → In its final RTS, ESMA has reduced the requirements on trading venues for algorithm testing and amended upwards the threshold defining market making activity. In addition, the obligations on trading venues regarding market making schemes are limited to equities, ETFs, and equity derivatives.

EU Regulatory Update – EMIR / Clearing Obligation

2016 EU Legislative and Policy Priorities

Scope

- **IRS** - 14 products:
 - Basis swaps (EUR, GBP, JPY, USD)
 - Fixed-to-float / plain vanilla (EUR, GBP, JPY, USD)
 - Forward rate agreements (EUR, GBP, USD)
 - Overnight index (EUR, GBP, USD)

Note: Exemption for OTC IRS derivative contracts associated with covered bond programmes, subject to conditions as set out in RTS; also exemption for certain pension schemes.

- **6 additional IRS products** proposed by ESMA in RTS submitted to the Commission on 10 November 2015 (non-G4 IRS):
 - Fixed-to-float (NOK, PLN, SEK)
 - Forward rate agreements (NOK, PLN, SEK)
- **CDS – 2 products** adopted by the European Commission on 1 March 2015:
 - European untranched index (EUR)
- **Other asset classes / additional products** – pending review by ESMA

EU Regulatory Update – EMIR / Clearing Obligation

	Q1	Q2	Q3	Q4
2014	18 March – first IRS-clearing CCP authorised, start of clearing obligation procedure			01 October – Final draft IRS RTS submitted by ESMA to the EC 19 December – Commission proposed amendments
2015			06 August – Formal endorsement of the IRS RTS by the Commission	01 October – ESMA submitted draft CDS RTS to the EC 1 Dec – publication of the final IRS RTS in the Official Journal, entry into force on 21 December
2016	21 February - IRS Cat 1 frontloading starts 1 March – publication of the final CDS RTS by the European Commission	21 June - IRS CO for <u>Cat 1</u> 21 May - IRS Cat 2 frontloading starts May – CDS RTS entry into force expected	1 September - Phase-in of the non-cleared OTC margin requirements starts	CDS Cat 1 and Cat 2 frontloading starts (= 5 months after entry into force of CDS RTS) 21 December - IRS CO for <u>Cat 2</u>
2017	Non-G4 IRS CO for Cat 1 expected CDS CO for <u>Cat 1</u> expected (= entry into force + 9 months phase-in)	21 June - IRS CO for <u>Cat 3</u>	Non-G4 IRS CO for Cat 2 expected CDS CO for <u>Cat 2</u> expected (= entry into force + 15 months phase-in)	
2018	Non-G4 IRS CO for Cat 3 expected CDS CO for <u>Cat 3</u> expected (= entry into force + 21 months phase-in)		Non-G4 IRS CO for Cat 4 expected	21 December - IRS CO for <u>Cat 4</u>
2019		CDS CO for <u>Cat 4</u> expected (= entry into force + 3 years phase-in)		

Agenda

- Regulatory Updates
- E-Trading Update
 - New iLink Architecture – MSGW & Drop Copy 4.0
 - Implied Volatility-Quoted Options
 - Streamlined Fix Binary
 - New! Market by Order
 - Cyber-Security Plans
 - Consolidated Fills
 - New! CME Group Referential Services
- CME DataMine & Customer Center
- CME Europe Updates
- CME Product Updates
- Global Repository Service

New iLink Architecture Updates

New Market Segment Gateways (MSGW)

- 1:1 with match engines; moves point of message prioritization from engine to MSGW
- Provides a consistent and predictable performance profile across sessions for all products on a Market Segment
- Reduces variability associated with multiple sessions across multiple gateways
- Busy periods for a group of products will not impact performance on other Market Segments

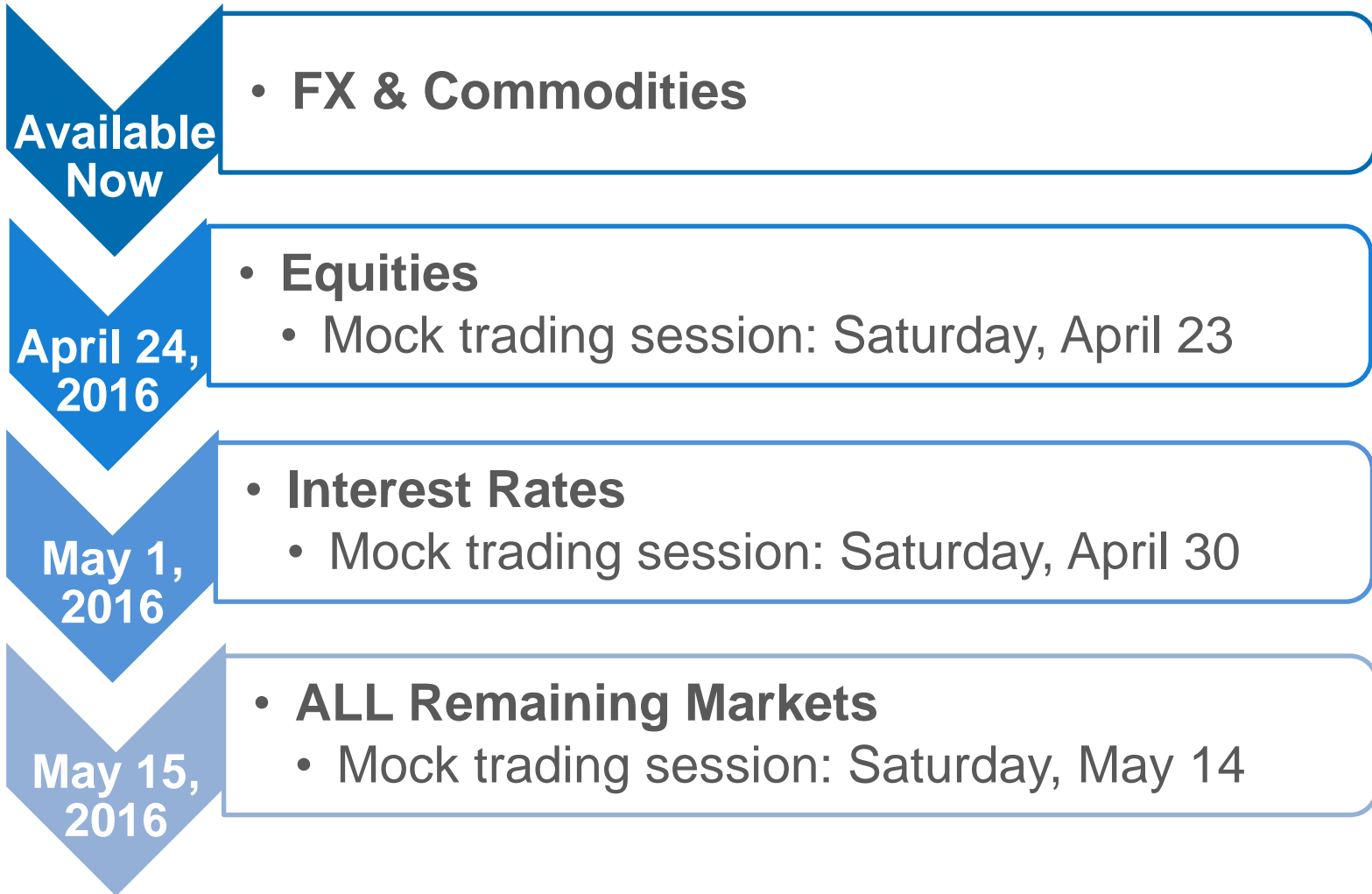
MSGW Pre-Launch: Completed in March 2016

- New iLink Failover Process in effect for all markets
- Performance consistent with announced forecasts
 - Options improvement 30-60%
 - Futures improvement 20-40%

Completed Optional Direct Access to MSGWs for

- FX futures and options
- Commodity futures and options
- Equity futures and options

Final Rollout Schedule for Direct Access to MSGW



New iLink Architecture

Post Launch:

- New FIX tag 5979-RequestTime:
 - will be added to iLink outbound messages following the completion of all Phase 2 launches
 - The timestamp of a FIX message is taken when the MSGW received the last byte of the TCP packet containing the last byte of a FIX message.
- Retain traded-in CGW sessions until further notice in case of technical issues

Observations from FX and Commodity market segments:

- Current market dynamic for market data and order entry remains consistent.
- CME Group closely monitors market microstructure; all results have been positive.

Drop Copy 4.0

In August 2015, CME Group introduced Drop Copy 4.0

- Key Features:
 - Enhanced solution to support MSGW architecture
 - Harmonized session model and functionality to iLink and MSGW norms
 - More robust fault tolerance following the MSGW iLink model
 - XML encapsulated message to preserve an exact copy of the original iLink message
- Not backward-compatible. Fees remain unchanged. Parallel, duplicated Drop Copy groups are free of charge
- Implementation:
 - Certification required
 - Cutover or run CGW groups in parallel with the legacy Drop Copy implementation
 - All Drop Copy groups must be migrated in Production **by Friday, May 29, 2016.**
 - A \$5000 fee will be charged for any group still in use in starting May 30.
 - Drop Copy 2.0 will be decommissioned on **Friday, July 1 2016.**
- Over 90% of the existing Drop Copy applications and Drop Copy groups have already certified and migrated to Drop Copy 4.0 in Production

Messaging Efficiency Program (MEP)

Options Product Group Additions

Effective **July 5, 2016** the following options products will be added to the Globex MEP:

Product Group Code	Product Group Description	Tier #3 Ratio >20k Messages	Tier #2 Ratio >40k Messages	Tier #1 Ratio >60k Messages
EZ	E-Mini S&P 500 Outright Options	300:1	200:1	100:1
EW	E-Mini S&P 500 Weekly & Monthly Options	300:1	200:1	100:1
QZ	E-Mini NASDAQ 100 Outright Options	300:1	200:1	100:1
NW	Mini NASDAQ 100 Weekly & Monthly Options	300:1	200:1	100:1
C9	E-Mini Dow (\$5) Outright Options	300:1	200:1	100:1
OL	E-Mini Dow (\$5) Weekly & Monthly Options	300:1	200:1	100:1

- These additions include orders, modifies and cancellation messages
- CME Group expects other options related product groups to be added to the MEP in the future.
- A separate initiative involving mass quoting is being reviewed

Volatility-Quoted Options with Implieds

New CME U.S. volatility-quoted options product with implied functionality

- **Volatility-Quoted options** are a new option product type on Globex that allows the submission of orders in terms of volatility percentages instead of premium
 - A volatility-quoted option match will cause the creation of a hedged position in terms of a premium-quoted option and an offsetting future
 - A Globex option pricing model will utilize inputs from the related CLOB's
- **Triangulation implieds** provide complementary liquidity linkages between volatility-quoted options, premium-quoted options and the underlying futures market
- A direct vol-vs-vol real order match will create a market data update for the volatility option match price and quantity
- A Triangulation implied order vol match will create a market data update for the volatility option, the premium option and the underlying future

●	Bid	10 6EH6 VC13500 @ 10.05
+		
●	Ask	10 6EH6 VC13500 @ 10.05
=		
●	Fill	10 6EH6 C13500 @ 0.0140
●	Fill	5 6EH6 @ 1.3502

Implied Volatility-Quoted Options Example

6EU6	
Bid	Ask
(i) 15 @ 1.3500	100 @ 1.3502

6EU6 P13500	
Bid	Ask
(i) 30 @ 0.0138	40 @ 0.0140

GEU6 VP13500	
Bid	Ask
30 @ 10.02%	50 @ 10.45%

- Volatility-quoted orders allowed to be submitted to a maximum of two decimal places
- Globex will utilize the Bjerksund-Stensland (1993a) option pricing model

Implied Volatility-Quoted Options

- **Model inputs:**
 - **Interest Rate** is daily rate and is based on the settlement price of the previous day's Eurodollar future front month quarterly
 - **Time decay** is in daily terms or "calendar days to expiration". The calendar days to expiration will only be an integer value - there will be no fractional calendar days to expiration (e.g. decay not based on hours/minutes).
 - **Underlying futures price** is based off the futures order book
- Increased efficiency to quote option products and consume corresponding market data since re-quoting is only required when volatility changes instead of each futures price change.
- Implied order calculation will update in lock step with real order book changes in the futures, volatility-quoted options, and premium-quoted options.

Implied Volatility-Quoted Options

- Customer impacts
 - Options and Futures will move onto the same Market Segment; as a result, Market Segment ID and MDP 3.0 channel configurations will change.
 - New FIX tags on Premium Option iLink Execution Report used to determine the conversion from volatility value to premium price: future price, option delta, time to expiry, risk free rate.
 - MDP 3.x new schema and use of template extension for new Security Definition repeating group:
 - “Related Instrument” tag to link VQO and PQO products
- No Certification Requirements
- NR: target May/June
- PROD: target Oct/Nov
- Products
 - Phase 1 - Start with CME U.S. AUD/USD vol options, premium quoted option products and related futures
 - Phase 2 - Extend to other FX products

Implied Volatility-Quoted Options

Client Systems Wiki

Type “Triangulation” for more info

The screenshot shows the CME Group Client Systems Wiki page in a web browser. The browser's address bar shows the URL: <http://www.cmegroup.com/confluence/display/EPICSANE>. The page title is "Enterprise Platform Information Console". The left sidebar contains a navigation menu with items like "Pending Client System Impacts", "Client Systems Support Services", "Trading Services", "CME Group Settlements", "CME Clearing Services", "Risk Management Services", "CME Globex", "CME Direct", "CME ClearPort", "CME STP", "CME Market Data", "How to Use this Site", and "Contact Information". The main content area has a welcome message and a "Wiki Updates" section. A "Client Systems Wiki Navigation" diagram is shown at the bottom, illustrating the topology of trading services and concepts. The diagram includes a legend for target audience (grey circle for business user, blue circle for client systems developer, orange circle for Risk Administrator or Risk systems developer) and a semi-circular map showing various specifications and resources like "MDP Message Specification", "iLink Message Specification", "GCC Product Resources", "Market Data", and "CME Globex". A search bar in the top right corner of the browser window is circled in blue, with a dashed blue arrow pointing to it from the text "Type 'Triangulation' for more info".

Enterprise Platform Information Console

Welcome to the CME Group **Client Systems Wiki**. This site contains technical and business information about current CME Group electronic trading platforms and trading services.

Watch this video to learn how to use and navigate this CME Group Client Systems Wiki.

Click to generate a PDF of all or selected topics.

Wiki Updates

- > [see recent updates](#)
- > [see related videos](#)

This navigation map provides an overview of the information available within the Client Systems Wiki. Target Audience indicates if the information is designed for:

- business user interested in an overview of trading services, concepts, and platforms
- client systems developer interested in technical specifications
- Risk Administrator or Risk systems developer interested in using or developing to the suite of platform risk management tools.

The map also shows the topology of trading services and concepts, related platforms and platform features, risk management tools and

Client Systems Wiki Navigation

Legend:

- = Target Audience
- = Overview
- = Technical Specifications
- = Risk Management Tools
- = Support Service

Navigation Map:

- MDP Message Specification
- MDP Functional Specification
- iLink Message Specification
- iLink Functional Specification
- Front-End Audit Trail Requirements
- Partner Exchanges
- Market Data
- CME Globex
- GCC Product Resources
- Network Connectivity
- Certification
- Disaster Recovery

Systems Developer

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Streamlined FIX/FAST Migration to Streamlined SBE

Simple Binary Encoding (SBE) - Market Data

- Streamlined FIX/FAST market data is a dedicated data feed for products not found on Globex which include:
 - Block Trades
 - Equity Indices (e.g., S&P, Dow Jones, Bloomberg)
 - Eris Exchange products
 - OTC Daily Market Data (i.e., Clearport end of day information)
- Streamlined FIX/FAST has a distinct message specification and message template from those available for CME Globex
- Will migrate to SBE encoding in 2016
 - Aligns with MDP 3.0 encoding format
 - Blocks release will include bundled spread and leg executions enhancement
 - All other feeds will be ported to SBE data with standard functionality to ease migration
 - Legacy solutions FAST and ITC for blocks will be retired

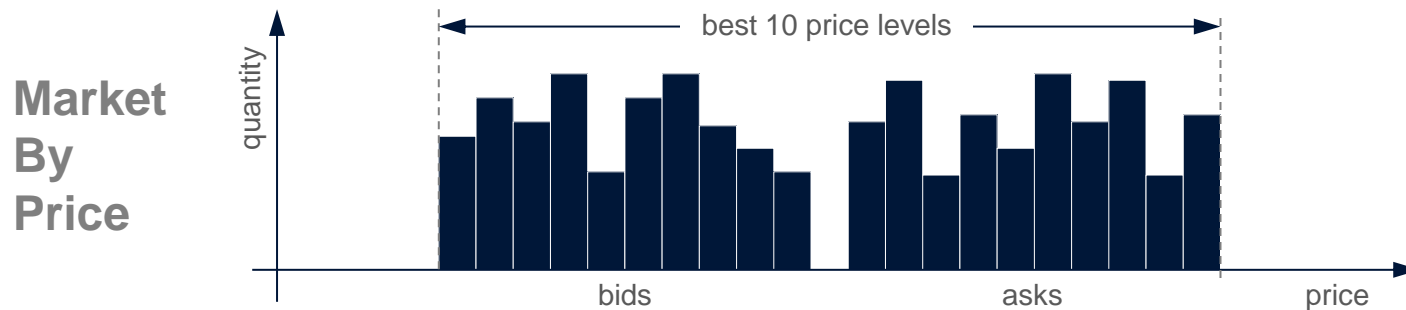
Streamlined FIX/FAST Migration to Streamlined SBE

Simple Binary Encoding (SBE) – Market Data

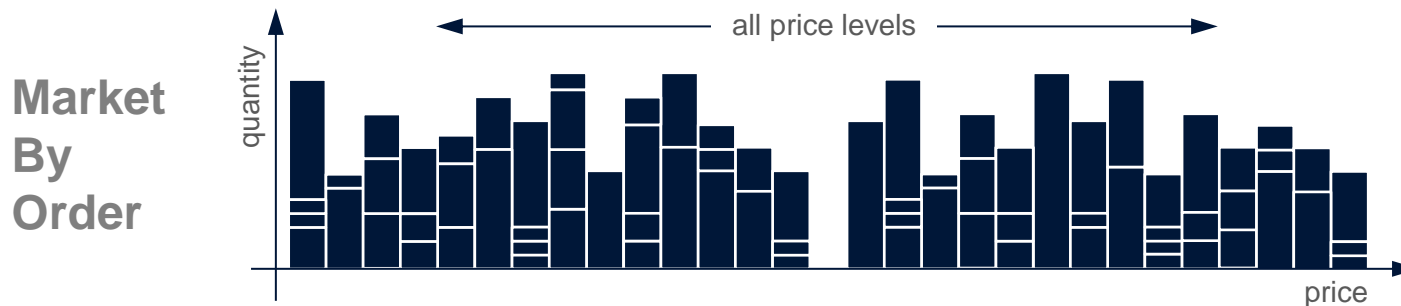
- **Customer impacts**
 - New schema and new SBE messaging
 - Mandatory certification per feed to consume streamlined SBE in production
 - Rolling migration, starting with Block Trade data feeds
 - Streamlined FIX/FAST, SBE and ITC feeds will be available in parallel in production
- **New Release Timeline**
 - Blocks – May 2
 - Equity Indices - June
 - Eris Exchange – June/July
 - OTC Daily Market Data - July
- **Production Timeline**
 - Blocks – June 12
 - Equity Indices – July/August
 - Eris Exchange – August
 - OTC Daily Market Data – August/Sept
- **Decommission streamlined FIX/FAST for blocks by end of 2016**

Market By Price vs. Market By Order

CME Globex's current Market by Price (MBP) solution offers price, quantity at the price, and the number of orders in the quantity



Market By Order (MBO) shows individual order sizes that make up the total quantity at a price, including their priority in the queue



New! Market By Order Market Data Coming Q4

CME Globex Market By Order (MBO) will provide:

- Individual queue position
- Full depth of book
- Size of individual orders at a price
- Increased confidence in execution by improved transparency into detailed book composition
- Maintained anonymity

MBO and Market By Price (MBP) Information on a Single Feed

- MBP remains unchanged
- Avoids the need to arbitrate between separate MBO and MBP feeds

Customer impacts

- No change to Presentation (SBE), Session, Transport, or Network layers
- New schema and use of template extension for new MBO fields
- Bandwidth increase
- Mandatory certification to use MBO data in production
- No certification required to continue to use MBP

Market By Order Market Data

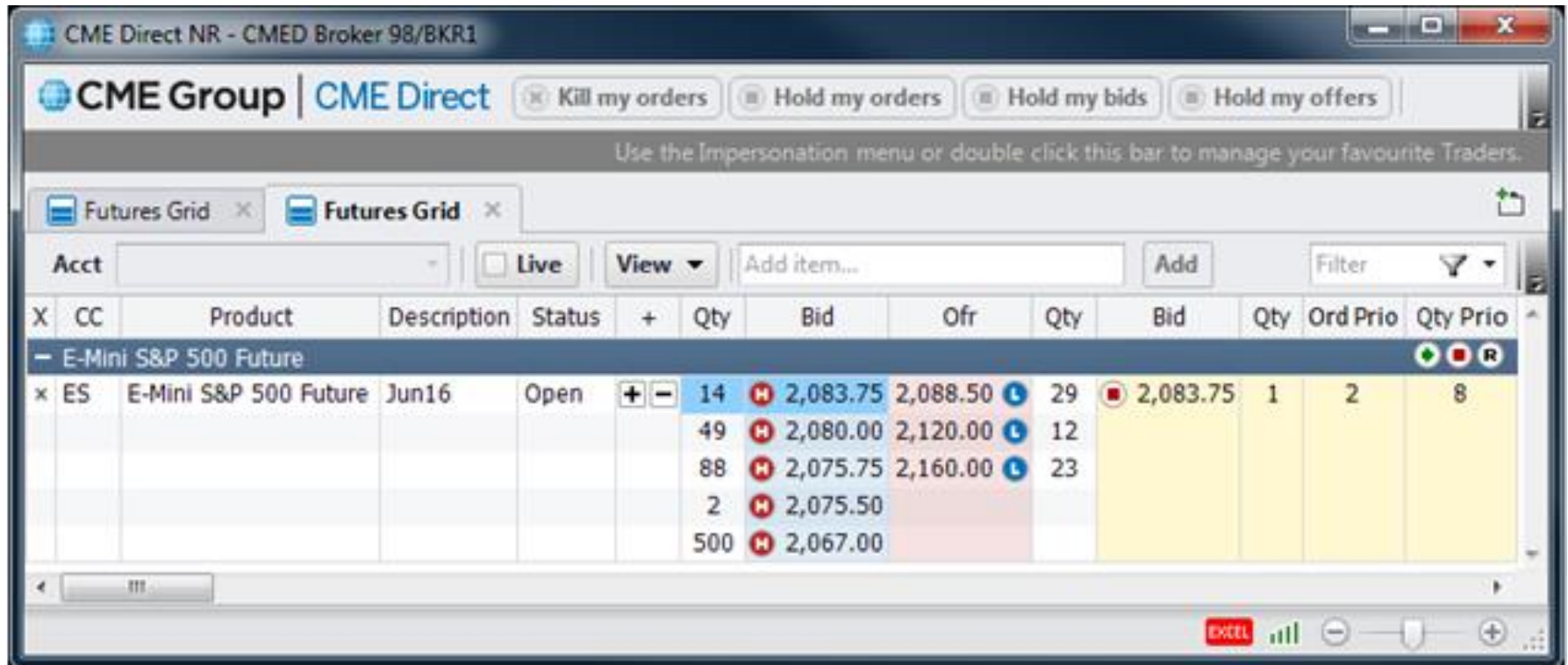
- No book management instructions in the market data feed
 - Book is built on receipt by sorting by price and then order priority
 - Sequencing by order priority
 - No change in market data based on matching algorithm, FIFO vs. Pro-rata

Action	Time priority	Quantity	Security ID	ID	Price	Side
Add bid 1 CLZ6 @46.70	400100	1	CLZ6	5436415	45.70	B
Add bid 1 CLZ6 @46.71	400101	1	CLZ6	5436416	45.71	B
Add bid 1 CLZ6 @46.70	400102	1	CLZ6	5436417	45.70	B
Cancel 5436416	400101	1	CLZ6	5436416	45.71	B
Modify 5436415	400103	2	CLZ6	5436415	45.70	B

- MBP order book updates continue to be the source of all implied prices which will be in line with MBO updates

CME Direct Will Reflect New MBO Information

In CME Direct, in addition to the usual Bid and Quantity columns, there would be Order Priority (number of orders ahead of you) and Quantity Priority (number of contracts ahead of you).



The screenshot displays the CME Direct NR - CMED Broker 98/BKR1 interface. The top bar includes the CME Group logo, CME Direct text, and buttons for 'Kill my orders', 'Hold my orders', 'Hold my bids', and 'Hold my offers'. Below this is a navigation bar with 'Futures Grid' tabs and a 'Live' checkbox. The main table shows market data for E-Mini S&P 500 Future contracts.

X	CC	Product	Description	Status	+	-	Qty	Bid	Ofr	Qty	Bid	Qty	Ord Prio	Qty Prio
- E-Mini S&P 500 Future														
x	ES	E-Mini S&P 500 Future	Jun16	Open	+	-	14	2,083.75	2,088.50	29	2,083.75	1	2	8
							49	2,080.00	2,120.00	12				
							88	2,075.75	2,160.00	23				
							2	2,075.50						
							500	2,067.00						

Market By Order Market Data

- New Release: Q3
- Phased Production Rollout in Q4 2016 – Q2 2017
 - Starting with NYMEX, COMEX, CME Europe and DME products in Q4
 - Targeting CBOT, MGEX in Q1 and CME, BMD, KRX in Q2 2017
 - Rollout on a channel by channel basis; Asset classes and DCM rollouts will be bundled over sequential weekends
 - Options and underlying futures will migrate together
- MBO historical data will be captured as products are enabled with MBO in production

Security Ecosystem

- As part of ongoing improvements, CME has significantly enhanced its security profile through external-facing enhancements and internal hardening.
 - New CME application portal has harmonized on SMART Click credentials and two-factor authentication.
 - Clearing applications have migrated from the legacy Clearing Portal to the CME Customer Center.
 - Ciphers have been enhanced and browser upgrades mandated.
- CME will implement further hardening of key services.
 - iLink and Drop Copy authentication will be enhanced along with expanded controls.
 - Clearing connectivity will be enhanced with encryption.
- To ensure the highest levels of security and compliance end-to-end, securing the trading and post-trade ecosystems needs to be a priority for all CME-connected systems.
 - CME has defined a set of security requirements and recommendations for all connecting systems.

Security Ecosystem

- Mandatory requirements for systems connecting to CME
 - 2 Factor authentication (human to machine)
 - Encryption of confidential or sensitive data over untrusted networks
- iLink and Drop Copy will transition to a self-service model using SMART Click
 - A secure login server will enable SMART Click authentication
 - Login server will be available over existing CME Globex connectivity
 - Authentication will still be at the session level (machine to machine)
 - A token system will be leveraged once SMART Click credentials are validated
- Additional optional iLink and Drop Copy controls will be added
 - Admins will be able to specify allowable IP addresses
 - Drop Copy will support filtering of specific accounts in addition to iLink sessions

Requirement	Date
CME Direct and CME Portal 2 Factor Authentication	Complete ✓
3 rd Party 2 Factor Authentication for CME-certified systems	End of 2016
New iLink and Drop Copy Logon Procedure	2017

iLink 3.0 Update

- iLink 3.0 is planned for 3 phases starting in 2017
 - Phase 1 adds the ability to cancel mass quotes by quote set ID
 - Phase 2 introduces the new logon procedure, presentation layer, and session layer
 - Phase 3 includes remaining application layer changes including Mass Order and Cancel on Behalf

Layer	Responsibility	Future State	Phase
Application	Business Semantics	Optimized FIX semantics	Phase 1 Phase 2 Phase 3
Presentation	Message encoding	Simple Binary Encoding	Phase 2
Session	Authentication, recovery, multiplexing	FIXP	Phase 2
Security	Authentication	New Logon Procedure	Phase 2

Consolidated Fills Approach

- Consolidation of Fill notices on all customer interfaces:
 - *MDP 3.0 – completed already with Trade Summary message*
 - iLink Order Entry
 - Clearing
- Consolidate to single fill:
 - Per aggressor order
 - Within an instrument
 - At a single price
- Benefits:
 - Reduce iLink, internal and clearing messaging
 - Improve performance and RTT; Improve the consistency of response time

Example: Fill Consolidation

Scenario: An aggressive order (A) of two contracts matches against two passive orders (B and C) of one contract each.

Current fill messages:

- Fill A for 1 contract
- Fill B for 1 contract
- Fill A for 1 contract
- Fill C for 1 contract

Future consolidated fill messages:

- Fill A for 2 contracts
- Fill B for 1 contract
- Fill C for 1 contract

Consolidated Fills

- 2017: Fill Consolidation
 - Fewer fill messages with quantity aggregated by price
 - Common ID will be used across iLink, MDP, and STP/Drop Copy to correlate all trade information together. More details forthcoming
 - Messages reflect match events at engine; order granularity still in Trade Summary
 - No major changes for customers; no certification anticipated.
- 2017 Clearing Instructions (i.e. Give-Ups, Average Pricing, and SLED)
 - Remove post-trade instructions from Tag1-Account (special characters)
 - New FIX tags will be added to facilitate post-trade instructions

CME Group Referential Data Services

First Offering: Product Referential API

- Request product and instrument information by exchange, MDP channel, or venue
 - Restful Services with query support and response formats including XML, CSV, and JSON
- Data can be used for a wide variety of use cases including
 - Simplified Cross-Exchange Risk Management
 - Comprehensive product and instrument information, consistently provided to better support like-for-like product risk, audit and reconciliation applications
- **Q4 2016:** Product and Instrument referential information for cleared and CME Globex-traded products
- **Coming in 2017:**
 - Product relationships
 - Within Exchange: WTI (CL) → WTI/Brent Spread (BK) ← Brent (BZ)
 - External Exchange (mirror or look-a-like): CME:GBP = CME Europe: GBP
 - Settlement and Statistical data
 - Human-readable specifications for UI presentation
 - E.g., Contract Termination: Trading in the current delivery month shall cease on the third business day prior to the twenty-fifth calendar day of the month preceding the delivery month.
 - 3rd-party product codes
 - Integration with Historical Data API

Contact your Global Account Manager for more information and to request future enhancements!

Agenda

- Regulatory Updates
- E-Trading Update
- CME DataMine & Customer Center
- CME Europe Updates
- CME Product Updates
- Global Repository Service

CME DataMine: Historical Data Service

CME DataMine is the official source of the most comprehensive historical price information available for CME Group markets.

- Provides a broad array of data types including:
 - Market Depth
 - End of Day
 - Block Trades
- Continuously growing product suite
- Provides the information the customers need to discover insights & capture market opportunity
- Dedicated sales staff

Common Use Cases of Historical Datasets

Strategy Backtesting	Data Quality Validation	Investment Consulting	New Strategy Generation
New Asset Class Research	Academic Research	Internal Performance Surveillance	Regulatory Monitoring
Risk Analytics	Charting	Market Surveillance	Margin Calculations

DataMine - 2016 New Developments

Migration
of
historical
data to
Amazon
Cloud

Web-
based
self
service
user
interface

REST
API for
data
access &
AWS
Cloud
delivery

New
financial
datasets

Improved
pricing
structure

Contact Us

We welcome client feedback and suggestions –
please contact us!

Business Team: dataminesales@cmegroup.com

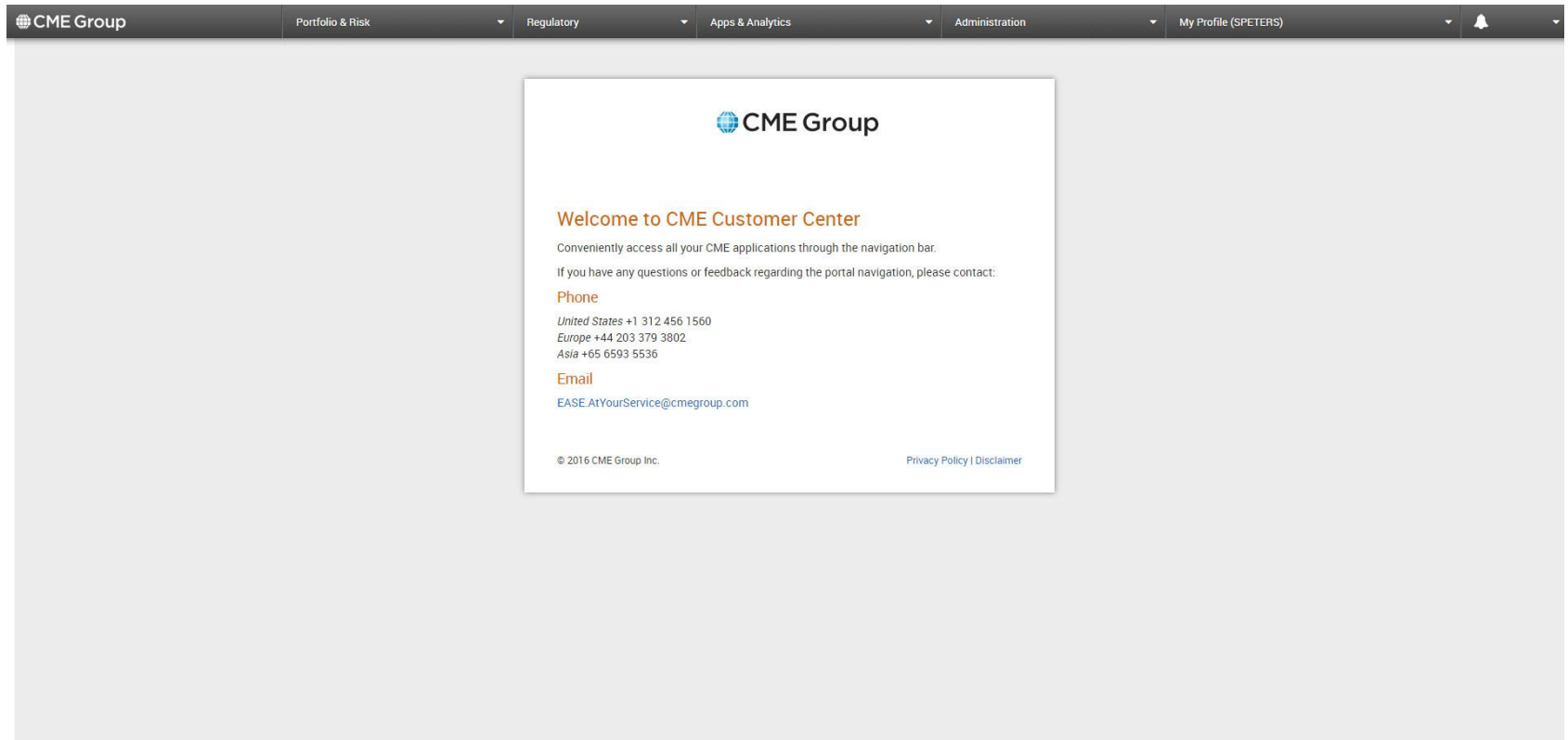
Product Management: matthew.williams@cmegroup.com

General Website

<http://www.cmegroup.com/market-data/datamine-historical-data.html>

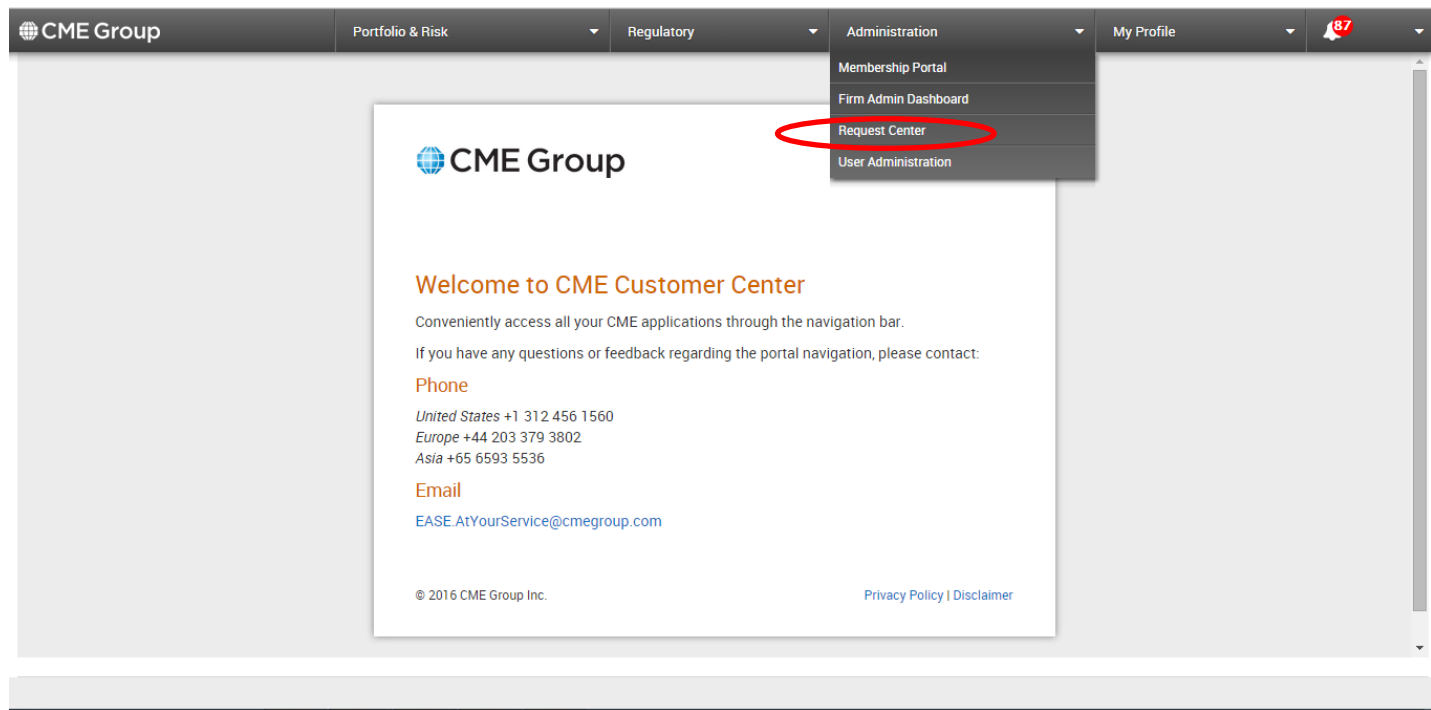
New! CME Customer Center

- Centralized access to all your tools and applications
- Access is single-sign on enabled using your SMART Click ID



New! CME Customer Center

- New self-service functionality is available via the Request Center
 - Drop Copy Management
 - Globex Firm IDs Requests



New! CME Customer Center

- View and manage your Drop Copy Groups. Add and remove sessions at your convenience.
- Eliminates the need for Schedule 12 paperwork for Drop Copy group management

CME Group

Request Center

Drop Copy Groups

Registered Entity
CID00040 - E-MINI

Delete Group(s) Export to Excel

Displaying 1 to 3 of 3 View 10

Internal Test Group (4.0)

Manage Source SenderComps

Target Sessions Source SenderComps Rules

Displaying 1 to 4 of 4 View 10

Session ID	Password	Primary IPs
OCGGCFN	*****	205.209.216.193
OKFKCCN	*****	205.209.218.199
OKGBBJN	*****	205.209.218.192
OKGCFFN	*****	View IPs

US 1 312.456 1560
Europe 011 44 203 379 3802
Asia 011 65 6593 5536

Refresh

Create New Group

Group	Version	Front End System
Audit log Test	2.X	Dejan Test 789123
Internal Test Group	2.X	CCME
Internal Test Group (4.0)	4.0	CCME

Delete Group(s) Export to Excel Create New Group

New! CME Customer Center

- Request new Globex Firm IDs or update existing ones
- Clearing Firm authorized users can approve clearing relationship mapping
- Eliminates the need for Schedule 6, Exhibit B paperwork

Portfolio & Settings

05 Mar 2016

My Profile 87

Request Center

Request Center

My Requests

Globex Firms

Registered Entity

CID00040 – E-MINI

Delete GFID(s) Edit GFID(s)

Displaying 1 to 5 of 5 | View 10

Create New Globex Firm

New Globex Firm

* Firm Name New GFID 123

Clearing Firm Mappings

CME 995 – E-MINI

CBOT 990 – E-MINI

COMEX

NYMEX

MGEX

DME

* denotes a required field

Create New GFID

US 1 312 456 1560

Europe 011 44 203 379 3802

Asia 011 65 6593 5536

Preferences

Refresh

ID	Name	CME	CBOT	COMEX	NYMEX	MGEX	DME
996	CHICAGO MERCANTILE EXCHANGE	E-MINI – 996					
997	CME HOLDING ACCOUNT	E-MINI – 996					
9XX	CX TEST1	E-MINI – 995					
995	E-MINI	E-MINI – 995	E-MINI – 990		E-MINI – 172		

New! CME Customer Center

- Track the progress of open requests you've submitted
- Get alerts via Notification Center to items pending in your To Do's

Request Center QA 002

Request Center

US 1 312 456 1560
Europe 011 44 203 379 3802
Asia 011 65 6593 5536

My Requests Globex Requests Preferences

Request Status To Do

Displaying 1 to 10 of 40 View 10

ID	Requester	Request Type	Details	Registered Entity	Status	Requested Date	Completed Date
						From To	From To
301238	dejan grujic	Create GFID	Test 2	TEST NONCLEARING ENTITY A	Not Submitted	20 Mar 2016, 19:01 CDT	—
301237	dejan grujic	Delete Drop Copy Group	CREW-77 4.0	TEST NONCLEARING ENTITY A	Not Submitted	20 Mar 2016, 19:00 CDT	—
301236	dejan grujic	Update Drop Copy Group	CREW-77 4.0	TEST NONCLEARING ENTITY A	Not Submitted	20 Mar 2016, 18:59 CDT	—
301235	dejan grujic	Create GFID	GFID Test 1	TEST NONCLEARING ENTITY A	Not Submitted	20 Mar 2016, 08:21 CDT	—

New! CME Customer Center

- New capabilities coming soon:
 - Request new iLink session IDs (Q2)
 - Manage access and entitlements for CME Group applications:
 - Firm Admin Dashboard (Q2)
 - FirmSoft (TBA)
- Available to Clearing Firms and authorized customers - contact your Global Account Manager for further details
 - Global Account Management (GAM)**
 - U.S.: +1 312 634 8700
 - Europe: +44 203 379 3754
 - Asia: +65 6593 5505
 - globalaccountmanagement@cmegroup.com

Agenda

- Regulatory Updates
- E-Trading Update
- CME DataMine & Customer Center
- **CME Europe Updates**
- CME Product Updates
- Global Repository Service

CME Europe Overview

Status Since Launch

3 Asset Classes

147 Products

FX, Energy & Agriculture

1,300,000+

Contracts traded

>12,000

Record Daily Volume

\$125Billion

FX notional value traded

>20,000

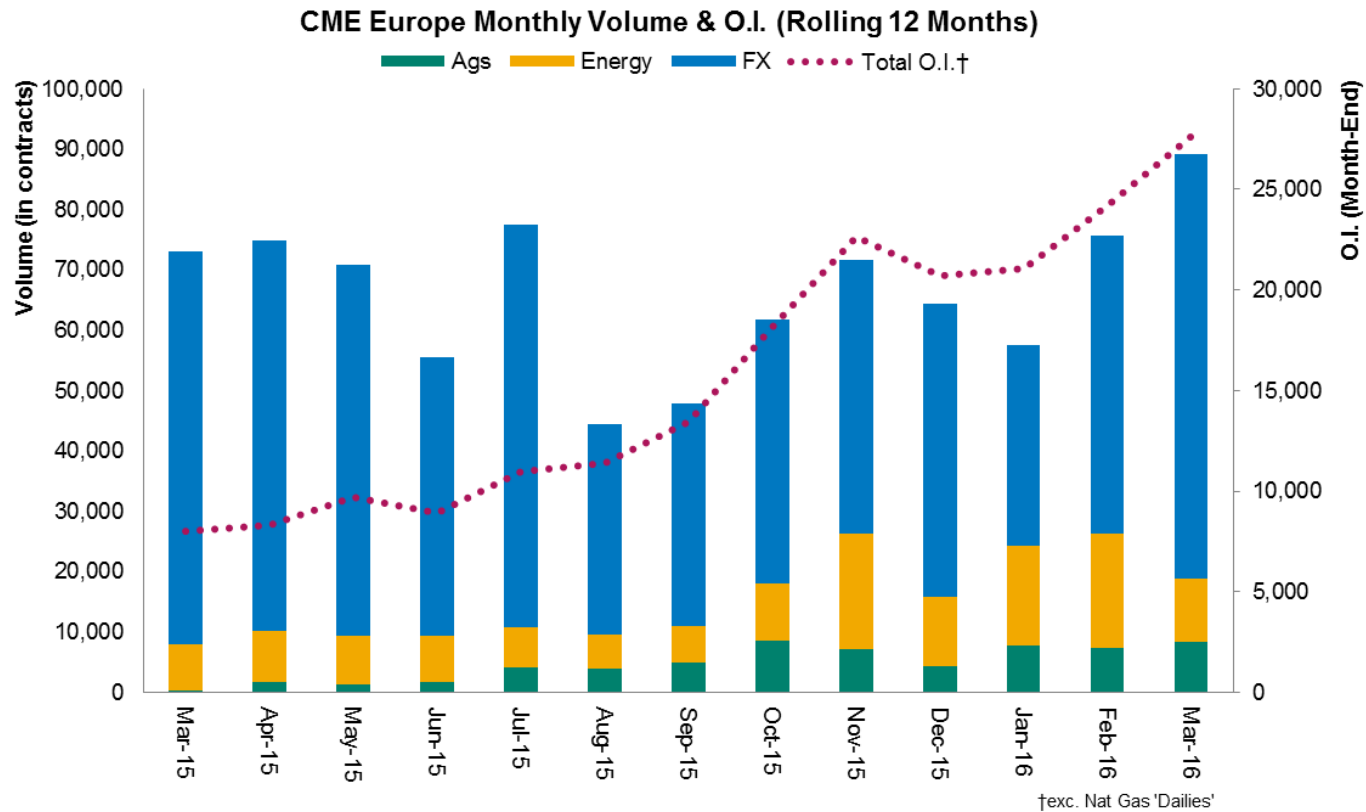
Record Nat Gas O.I.
(in TTF & NBP
monthly equivalents)

**Award winning
Cocoa futures
contract**

75K+ contracts traded

†Statistics 28 April 2014 – 15 April 2016

CME Europe Progress to Date



CME Europe – 2016 YTD Highlights

Record Exchange volumes; multiple milestones in FX, Gas & Cocoa

Foreign Exchange: *March Volume: 70,455 contracts. Open Interest (as of March 31st): 4,317 contracts*

- **Record CMEEL FX ADV of 3,203 lots** in March (↑8% Y-o-Y), in correlation with a six-month rising volume trend line
- Strong volume and open interest developments across our FX suite of products, specifically:
 - **Highest monthly ADV in GBP/USD** during March, exceeded 1.5K for the first time, including a daily record of 4,597;
 - **New monthly ADV high in USD/JPY** during February (193 lots, ↑4% on its previous high);
 - **New record O.I. in our FX products** (now above 5K lots in early April), with open positions through to March 2017
- Trading in our liquid calendar spread markets – **new record ADV of 2,512 lots** in March (↑ 63% on the previous monthly high), supported by trading in 19 distinct spread combinations along the curve in 5 currency pairs

Energy: *March Volume: 10,395 contracts. Open Interest (as of March 31st): 52,362 contracts*

- Strong recent developments in CME Europe's Dutch TTF Gas:
 - **Record volume day 3,090 lots** as of Jan 28th = 32% ↑ from previous record set Dec 4th 2015
 - **New O.I. record of >18,800 lots** of monthly equivalents – positions out to Dec 2020
 - 20-day Moving-Average (MA) Dutch Gas **volume moved above 1,000 lots p/d**, as of Feb 12th
- New products trading – Mini European Premium Unleaded Gasoline Futures contract traded for the first time (Jan 22nd)
- New product launches – 4 weekly European Power Futures to be launched (first trade date: April 25th); adding to the 8 existing monthly Power Futures products

CME Europe – 2016 YTD Highlights

Record Exchange volumes; multiple milestones in FX, Gas & Cocoa

Agricultural

Volume for March 2016: 8,408 contracts. Open Interest (as of March 31st): 2,150 contracts

- CME Europe's award winning Cocoa Futures contract marked its 1st year anniversary with **over 50,255 contracts traded since launch**, and including:
 - **Record Cocoa volume (7,008 lots)** in March as higher trading activity established a 3rd successive monthly record
 - **Triple record volume days in April to-date** with volumes rising from 2,427 and 3,254 lots to 4,476 lots on April 15th
- Fertiliser – first trades received in Urea (Prilled) FOB China Future (FCE) as of April 19th; becoming the 3rd Fertiliser contract traded on CMEEL alongside the Middle East (FME) and Egypt (FEY) Fertiliser futures

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Precious Metals Products

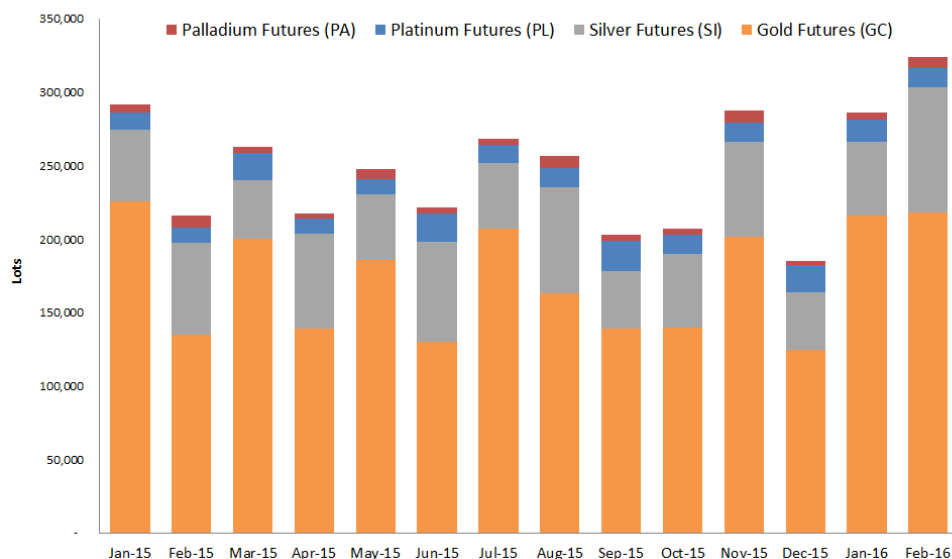
Leading Contracts with Deep Liquidity



	Product Code	2015 ADV	2016 ADV (Jan-Feb)	Open Interest *
Gold Futures (100oz)	GC	165,000 lots	217,000 lots	457,000 lots
Gold Options (100oz)	OG	30,000 lots	49,000 lots	1.1 million lots
Silver Futures (5000oz)	SI	53,000 lots	68,000 lots	164,000 lots
Platinum Futures (50oz)	PL	14,000 lots	14,000 lots	66,000 lots
Palladium Futures (100oz)	PA	5,000 lots	6,000 lots	26,000 lots

* Open interest data on Feb 29th, 2016

Leading Precious Futures Monthly ADV



- CME Group's flagship Gold, Silver, Platinum and Palladium futures contracts represent deep and liquid markets.
- Significant liquidity growth in the past five years.
- The futures contracts trade virtually 24 hours a day.
- The liquidity available for our precious metals contracts translates into tight bid-ask spreads and high-quality trade executions that help meet a variety of customers' business and risk management objectives.

Precious Metals Products

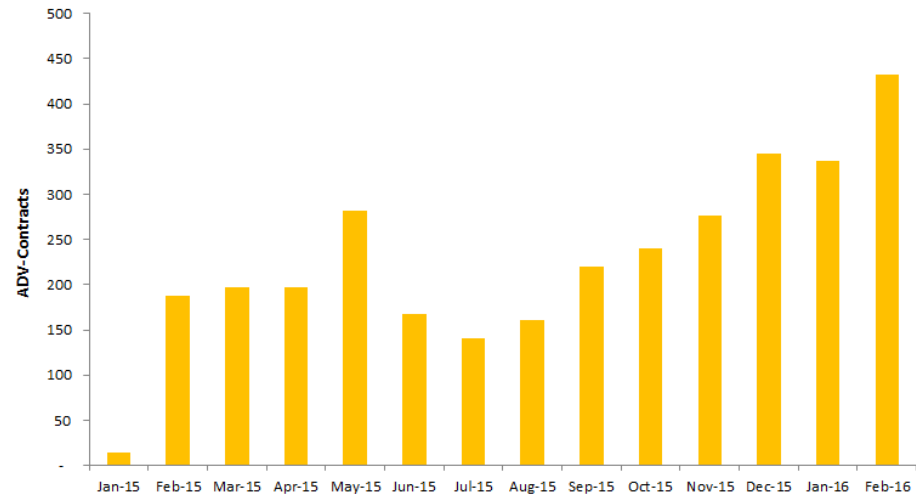
Product Update – Gold Kilo Futures (GCK)

CME Group launched Gold Kilo Futures (GCK) in January 2015. GCK is listed on COMEX and physically delivered in Hong Kong, offering access to trade the Far East gold market.

- **Continuously quoted and traded** with tight markets and liquidity accessible across the Asian, European and U.S. hours
- **Less-expensive vehicle for exposure to gold prices.** At one-third the size of GC (100oz gold) contract, the GCK requires a smaller initial capital outlay and lower margin requirements
- **Enables precision trading of gold in kilo units** for exposure to gold prices and risk management
- **True intraday price transparency across the futures curve** for unique arbitrage and spread trading opportunities
- **Simplified Delivery Process** enables delivery in **9999 fineness** kilo bars in HK (three Exchange approved vaults in HK)
- **Deep margin offsets** (90% against GC) and financial safeguards from CME Clearing



Increase in Liquidity since GCK Launch



CC	Product	Description	Status	+	Qty	Bid	Ofr	Qty	Last
Gold Kilo Future									
GCK	Gold Kilo Future	Apr16	Open	+	1	1,269.1	1,269.3	6	1,266.6
				-	6	1,269.0	1,269.4	3	
					6	1,268.9	1,269.5	3	
					6	1,268.8	1,293.8	1	
					1	1,212.0			
					1	1,202.0			
					1	1,192.0			
					1	1,178.0			
					1	1,168.0			
GCK	Gold Kilo Future	May16	Open						
GCK	Gold Kilo Future	Jun16	Open	+	6	1,269.9	1,270.5	6	
				-	3	1,269.8	1,270.7	6	

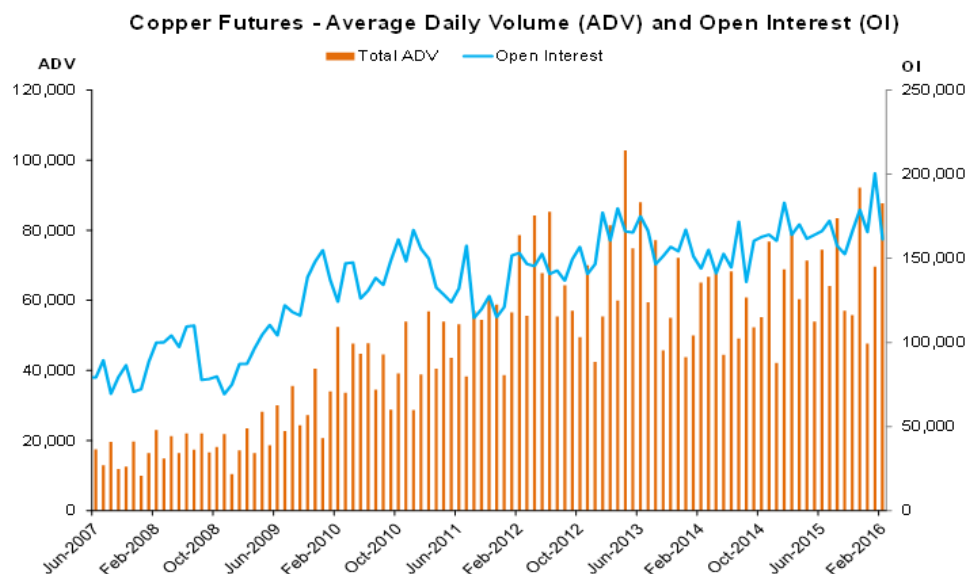
Base/Ferrous Metals Products

Leading Contracts with Deep Liquidity



	Product Code	2015 ADV	2016 ADV (Jan-Feb)	Open Interest *
Copper Futures (25,000lbs)	HG	74,335 lots	79,081 lots	205,143 lots
Iron Ore Futures (500MT)	TIO	87 lots	1159 lots	25,574 lots
Hot Rolled Steel (20ST)	HR	139 lots	361 lots	24,590 lots
US Aluminium Premium Futures (25MT)	AUP	148 lots	313 lots	25,574 lots
EU Aluminium Premium Futures (25MT)	AEP	54 lots	61 lots	5,889 lots

* Open interest data on April 7th, 2016



- CME Group's flagship Copper contract has just achieved an all time record in open interest (205,143)
- Significant liquidity growth in the past five years.
- Copper options (HX) is the world's only electronically traded options contract (fees are currently waived with a broker rebate program)
- CME is expanding further into base metals by offering physically settled aluminium (ALI), Zinc (ZNC), and Lead (LED).
- <http://www.cmegroup.com/basemetals>

Base Metals Product Update

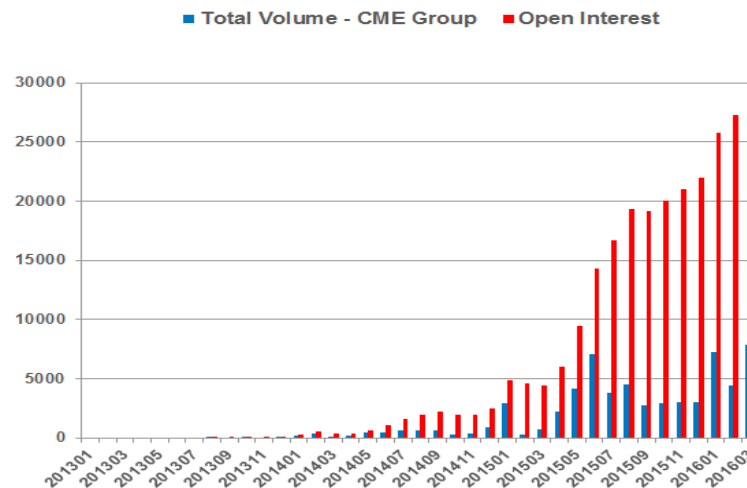
Aluminum Premiums AUP, AEP, MJP, EDP

CME's cash settled futures contracts offer the aluminium industry the ability to effectively mitigate premium exposure

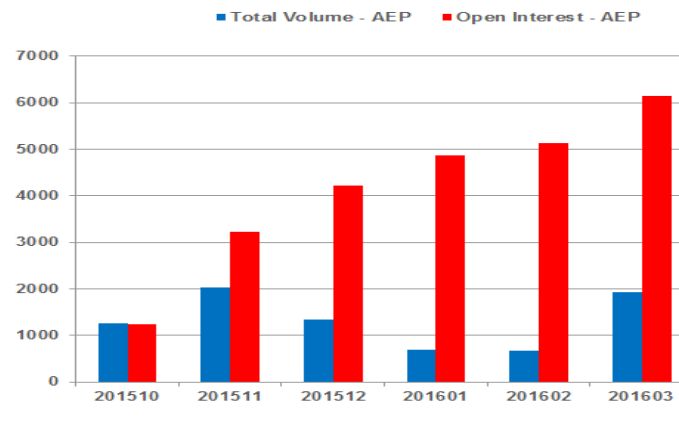
- All are Cash Settled.
- AUP & MJP vs Platts published indices. AEP & EDP vs Metal Bulletin published indices.
- Aluminum premiums have been very volatile recently
- AUP contract allows clients to manage the aluminium Mid West North America premium risk.
- AEP contract allows clients to manage regional European Aluminium Duty-Unpaid exposure. The sister contract - EDP - does the same for European Duty Paid exposure.
- MJP (Main Japan Ports) contract allows clients to manage regional Asian exposure
- Increasing ADV and OI have made CME's contracts the leaders in the space
- Deep margin offsets (25%-35%) versus other base and ferrous metals contracts



Increase in Liquidity since AUP Launch



Increase in Liquidity since AEP Launch



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New Crude Contracts: Brent Futures-Style Options and WTI Houston Futures

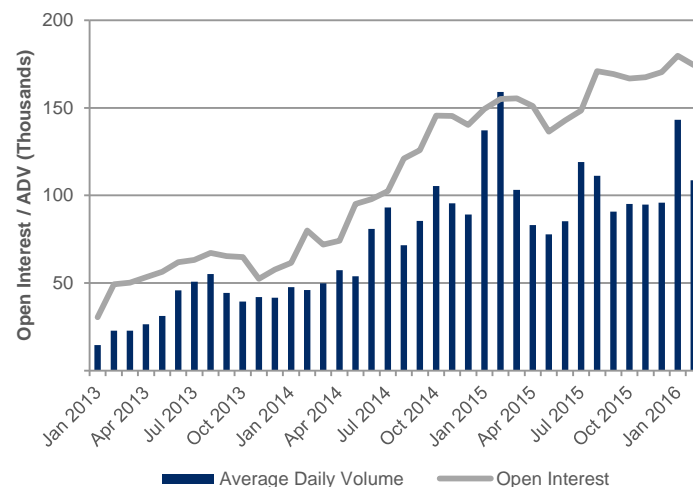
Brent Futures-Style Margin Options (BZO)

- CME's first option with Futures-Style Margining
- Look-a-like to ICE's Monthly Brent Option (B)
- Leverage WTI option (LO) screen liquidity to develop electronic markets for Brent options
- Underlying NYMEX Brent futures (BZ) trading 115,000+ contracts a day

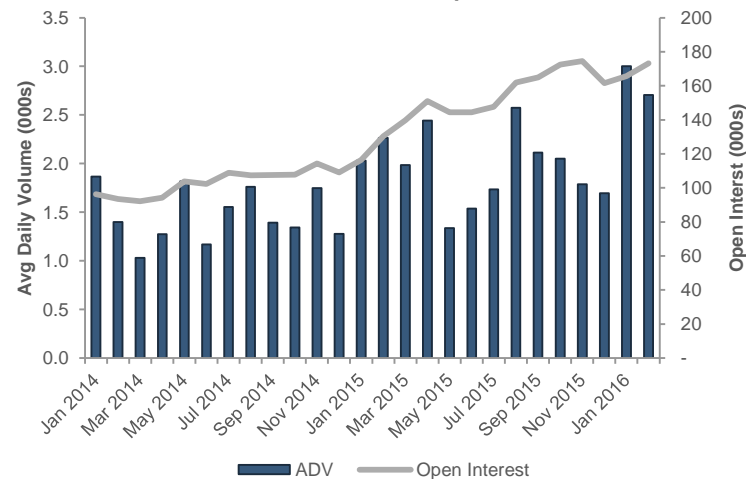
WTI Houston (Argus) Futures

- Six related contracts launched on February 8th, main interest in:
 - HTT – WTI Houston (Argus) vs WTI Trade Month
 - HIL – WTI Houston (Argus) vs WTI Calendar Month
- First exchange cleared WTI Houston contract (code HTT) traded: 690 contracts on March 8th
- North American crude grades open interest now at 180,000 contracts

NYMEX Brent Financial Futures (BZ)



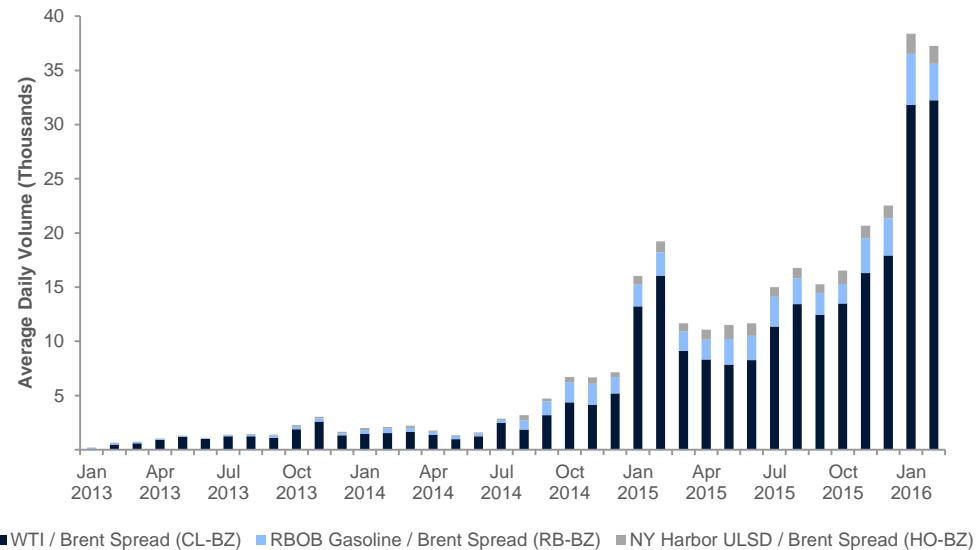
N.A. Crude Volume & Open Interest



NYMEX: The Emerging WTI-Brent Exchange

- NYMEX front month exchange listed WTI-Brent (code CLBZ) spread now consistently 50% market share or greater
- Bid/Ask spread on front two months CLBZ now consistently 1 tick wide, driven by robust liquidity in NYMEX WTI
- New diagonal exchange listed CLBZ spread that reflects revised Brent expiration is active and trading, early-April roll out for diagonal Brent crack spreads

NYMEX Brent Globex Exchange-Listed Spreads



CC	Product	Description	Status	+	Qty	Bid	Off	Qty	Pin	Last	Change	Volume X
WTI Future/Brent Future												
CL/BZ	WTI Future/Brent Last Day Financial Future	Apr16	Open	+	8	-2.29	-2.28	3		-2.29	-0.07	3,121
					18	-2.30	-2.27	9				
					20	-2.31	-2.26	14				
					8	-2.32	-2.25	8				
					9	-2.33	-2.24	9				
CL/BZ	WTI Future/Brent Last Day Financial Future	May16	Open	+	20	-0.85	-0.84	9		-0.84	+0.03	9,562
					41	-0.86	-0.83	33				
					27	-0.87	-0.82	20				
					32	-0.88	-0.81	26				
					17	-0.89	-0.80	16				
CL/BZ	WTI Future/Brent Last Day Financial Future	Jun16	Open	+	15	-0.20	-0.18	10		-0.18	+0.03	1,323
CL	WTI Future	+1 CL Apr16, -1 BZ May...	Open	+	6	-2.64	-2.61	3		-2.69	-0.06	1,066
					6	-2.65	-2.60	6				
					1	-2.89	-2.59	5				
					1	-3.09	-2.39	1				
CL	WTI Future	+1 CL May16, -1 BZ Jun...	Open	+	1	-1.44	-1.40	1		-1.56	-0.05	1

Screen Shot taken 2/26/16 12:45 PM EST

NYMEX: Natural Gas Enhancements

- Reduced ticks in our most common Natural Gas Spreads.
- Implieds for Natural Gas options are live and trading on Globex. Crude Options Implieds will be available to trade in April.
- Physical NG Butterfly spread products to be listed in April 2016.
- Average Priced user defined strips for energy options coming in May 2016.

<input checked="" type="checkbox"/> Live View Add item... Add											
Product	CC	Term	+	Qty	Bid	Ofr	Qty	Last	Change	Volume	
+ EFS/NGS (NG/HH)											
Henry Hub Future/Henry Hub Financial Future	NG/HH	Apr16	+	1,287	0.00050	0.00075	1,673	0.00050	+0.00050	4,893	
Henry Hub Future/Henry Hub Financial Future	NG/HH	May16	+	2,129	0.00050	0.00075	1,582	0.00050	+0.00050	456	
Henry Hub Future/Henry Hub Financial Future	NG/HH	Jun16	+	2,267	0.00050	0.00075	531	0.00075	+0.00075	368	
Henry Hub Future/Henry Hub Financial Future	NG/HH	Jul16	+	1,340	0.00050	0.00100	2,228	0.00100	+0.00100	13	
Henry Hub Future/Henry Hub Financial Future	NG/HH	Aug16	+	791	0.00050	0.00100	1,635	0.00100	+0.00100	11	
Henry Hub Future/Henry Hub Financial Future	NG/HH	Sep16	+	819	0.00050	0.00100	1,423	0.00050	+0.00050	14	
Henry Hub Future/Henry Hub Financial Future	NG/HH	Oct16	+	1,365	0.00050	0.00100	1,384	0.00075	+0.00075	55	
+ Pen/Futures (HP/NG)											
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	Apr16	+	309	-0.00075	-0.00050	4	-0.00075	-0.00075	337	
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	May16	+	25	-0.00075	-0.00050	5				
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	Jun16	+	500	-0.00100	0.00000	500				
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	Jul16	+	500	-0.00100	0.00000	500				
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	Aug16	+	500	-0.00100	0.00000	500				
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	Sep16	+	500	-0.00100	0.00000	500				
Henry Hub Look-Alike Pen Future/Henry Hub Future	HP/NG	Oct16	+	500	-0.00100	0.00000	500				
- Pen/Last (HP/HH)											
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	Apr16	+	300	-0.00050	0.00050	540	0.00025	+0.00025	21	
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	May16	+	732	0.00000	0.00100	510				
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	Jun16	+	510	-0.00100	0.00100	382				
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	Jul16	+	147	0.00000	0.00100	510				
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	Aug16	+	510	-0.00100	0.00100	510				
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	Sep16	+	510	-0.00100	0.00100	510				
Henry Hub Look-Alike Pen Future/Henry Hub Fin Future	HP/HH	Oct16	+	510	-0.00100	0.00100	510				

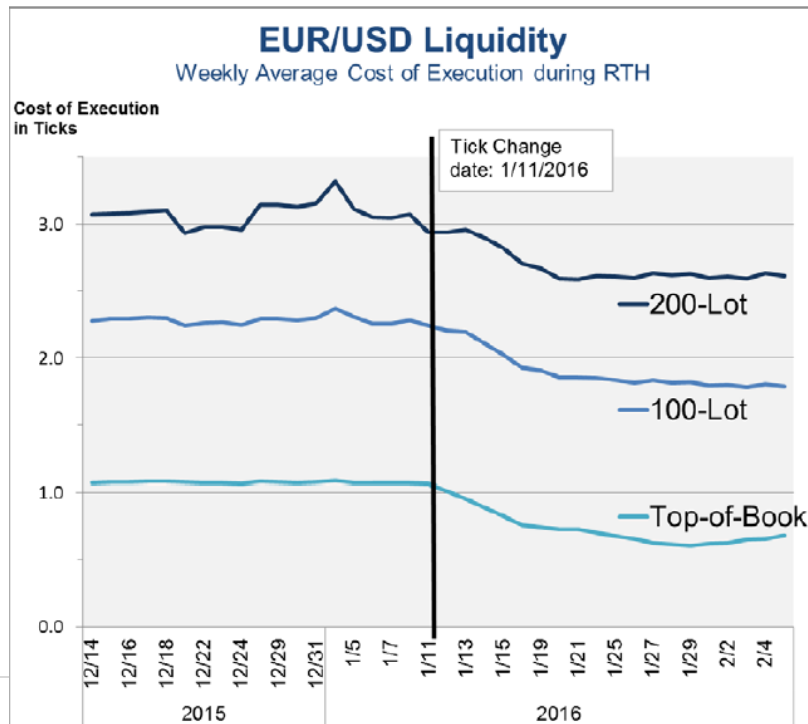
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FX tick size reduction

Effect on market quality

- 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



FX

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

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)

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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	Physical	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*:

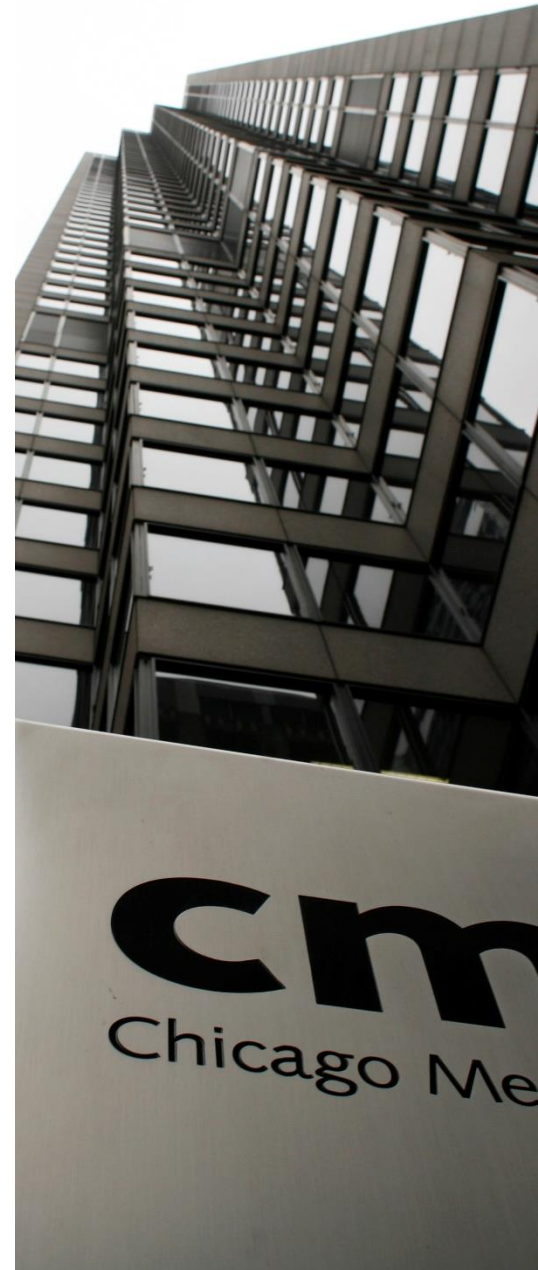
Swaptions		Max Expiry			Final Settlement	Underlying Tenor		Index		
Currency	Type	Years			Method	Years (up to)		Months		
		≤ 2	≤ 10	≤ 30	Physical	30	50	1	3	6
EUR	European									EURIBOR

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

*Pending regulatory approval

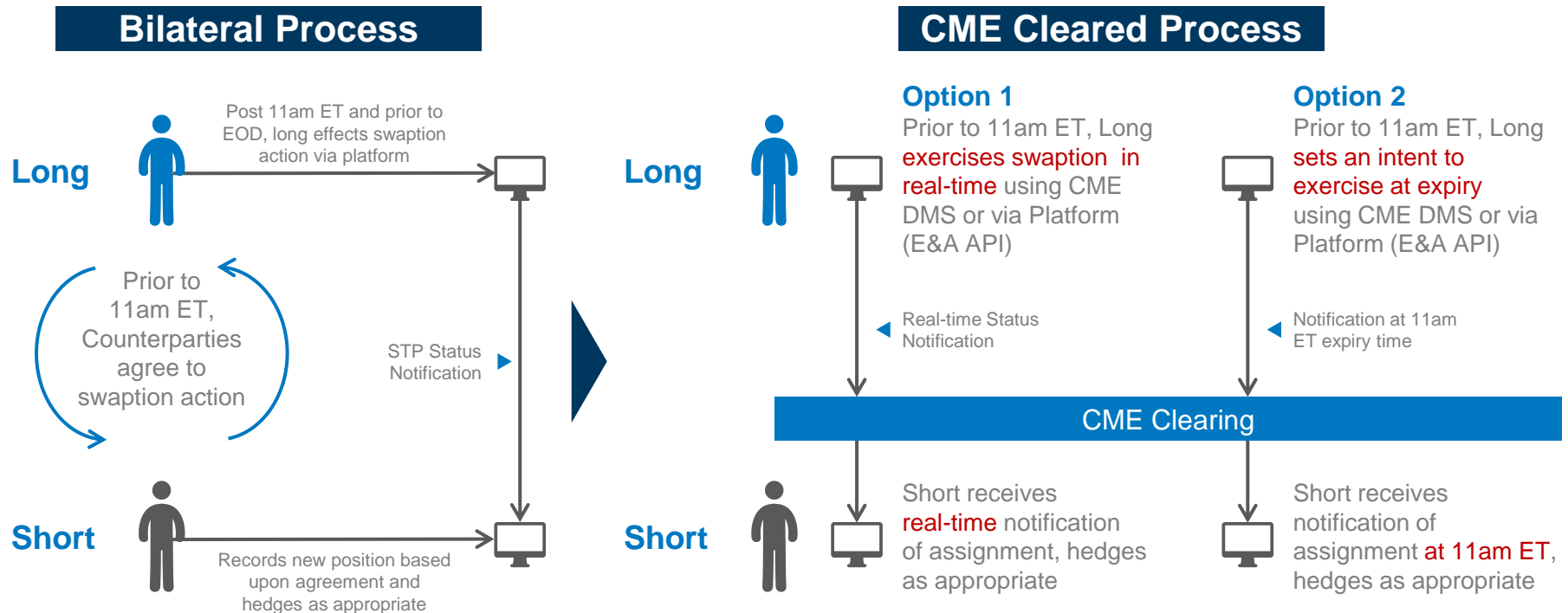
USD Swaptions Product Characteristics

- 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.

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CME Global Repository Service

World class trade repository solutions combining global breadth with highly efficient real-time technology and aggressive pricing. www.cmegroup.com/GRS



**1500+
Customers**

**Unique
Trades
reported
250+MM**

**Accept:
OTC-Bilateral
OTC-Cleared
ETD**



**US, EU,
Canada,
Australia**

**24hr
ACCESS &
SUPPORT**

**Simple.
Cost Effective.
Reliable.**

CME GRS Value Proposition

COVERAGE

In all major reporting jurisdictions; set up to be a true global offering.

- US, Canada, EU, Australia, Singapore ('16)
- All asset classes
- Bilateral & Cleared
- CME & non-CME markets

TECHNOLOGY

Best in class technology to ensure your compliance and low maintenance costs.

- Streamlined submission formats
- TRs on a single global platform
- Real-time processing for all messages and instant reports

COST

Simple and cost effective fee plans. Expense certainty.

- Annual fee caps per asset class
- Supporting Master Account aggregation across entities
- No charge for View Only access
- Delegated reporting on CME Markets free of charge

OPERATIONS

World class client service team. Intensive compliance discipline.

- Under 24 hour response times
- Multi-jurisdictional knowledge

GRS New Developments

- Pursuing a Singaporean trade reporting license from MAS; targeting end of 2016.
- Australian Trade Repository (ATR) is live and accepting trades in all asset classes, CME/non-CME, bilateral and cleared.
- CME Clearing now supporting delegated reporting of CME Cleared trades to CME ATR to aid clients with Australian reporting obligations.
- Reduced Dodd-Frank (US) and EMIR (EU) reporting fees.
- New vendor partner commercial programs.
- Authorized by ACER to operate a Registered Reporting Mechanism (RMM) to comply with REMIT reporting regulation on European Wholesale Natural Gas and Power markets.

“Reporting 2.0”

- CME is a true Global TR. . . an alternative exists!
- Expense savings on trade reporting are real. Moves to CME often result in 50%+ per annum.
- Compliance risk is real. Regulatory reporting fines have begun.
- Your TR operator should offer more than just trade reporting.

Contact Us



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CME Group Customer Forum

Q&A Quiz