AGENDA

- OTC CDS Clearing Overview

- CDS Client Clearing Model Overview
  - Client Clearing Overview
  - Risk Management
  - CDS Connectivity and ATF Trade Workflow
  - Client Clearing Tools

- Appendix
Intercontinental Exchange Group (ICE) is the leading network of regulated Exchanges and Clearing Houses for financial and commodity markets. ICE delivers transparent, reliable and accessible data, technology and risk management services to markets around the world through its portfolio of exchanges, including the New York Stock Exchange and ICE Futures.

- Global leader in OTC credit as well as listed derivatives in credit indices, interest rates, equity, energy, agriculture and foreign exchange
- March 2009 - ICE is the first to clear index credit default swaps (CDS)
- July 2009 – ICE Clearing Europe launches CDS clearing
- December 2009 – ICE is the first to clearing single name credit default swaps and client activity
ICE CDS EXPERTISE

- Global leader in CDS with expertise in execution, post-trade processing, clearing and other operational and risk management processes
- Open platform architecture – each process is available individually and can connect to multiple alternative service providers
- Integrated ICE CDS solution offers an easier, more efficient execution and processing experience

EXECUTION

- ICE’s SEF, ICE Swap Trade, offers all-all anonymous execution leveraging its highly successful existing technology platform. Coupled with ICE’s non-SEF execution, market participants are offered a singular view of the credit market
- Innovative CDS electronic services: credit event auctions, delta neutral auctions and portfolio compression

PROCESSING

- ICE Link; the leading post trade affirmation service for CDS
- Connected to over 1200 CDS buy-side firms in addition to all major dealers, clearing brokers, IDBs, ATFs and SDRs
- Helps clients meet new regulatory requirements for automation and standardization

CLEARING

- ICE Clear Credit (formerly ICE Trust) launched March 2009, the first clearing house to process CDS transactions
- ICE Clear Europe launched CDS Clearing July 2009
**GLOBAL CDS PRODUCT SCOPE**

### ICE CLEAR CREDIT PRODUCT COVERAGE:

<table>
<thead>
<tr>
<th>Category</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDX</td>
<td>IG – Series 12+</td>
</tr>
<tr>
<td></td>
<td>Main – Series 11+</td>
</tr>
</tbody>
</table>

### ICE CLEAR EUROPE PRODUCT COVERAGE:

<table>
<thead>
<tr>
<th>Category</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDX</td>
<td>IG – Series 12+</td>
</tr>
<tr>
<td></td>
<td>Main – Series 11+</td>
</tr>
<tr>
<td></td>
<td>Snr Fins – Series 21+</td>
</tr>
</tbody>
</table>

A full listing of clearing eligible products can be found at [theice.com/clear-credit](http://theice.com/clear-credit) (ICE Clear Credit) & [theice.com/clear-europe/cds](http://theice.com/clear-europe/cds) (ICE Clear Europe)
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CDS CLIENT CLEARING MODEL OVERVIEW

- **CDS Product**
  - Standard coupons, adherence to ISDA DC on credit and succession events
  - Upfront fees netted with margin movements
  - Ability to retain individual trades or benefit from operational netting

- **Customer Protections**
  - Multiple levels of segregation available across omnibus and individually segregated accounts
  - All customer accounts are gross margined

- **Risk Management**
  - Specifically designed for CDS
  - Guaranty Fund covers simultaneous default of 2 largest Clearing Members
  - EOD settlement process based on price submissions subject to execution ensuring fidelity of quotes

- **Margin Methodology**
  - Dynamic Stress-Based Regime
  - Margin Calculator provides transparency and detailed analysis of requirements
  - Portfolio margining methodology (Index Decomposition) to provide capital efficiencies

- **Infrastructure**
  - Open Access: supporting multiple ATF execution and middleware providers
  - Trades cleared intra-day, on a near real-time basis
  - Allows users to leverage existing infrastructure – no costly technology build
  - Supports all trade life cycle events: backloading, netting, portability, credit events

- **Customer Documentation**
  - Client relationship to Clearing Member governed by the CDS Standard Terms Annex in the ICE Clear Europe Clearing Rules
  - No additional ICE Clear Europe documentation for Client and Clearing Member to bilaterally execute
ICE CDS RISK MANAGEMENT FRAMEWORK

WATERFALL APPROACH FOR MANAGING SYSTEMIC RISK

**Layers of Protection**

- **Membership Criteria**
  - Ensure counterparty has operational capabilities, risk management experience and financial resources

- **Mark-To-Market Margin Requirement**
  - Daily MTM based on end of day (EOD) settlement prices

- **Initial Margin Requirement**
  - Daily margin call based on dynamic stress-based regime

- **Intra-day Risk Monitoring Special Margin Call Execution**
  - Additional margin can be called due to unusual market fluctuations

- **Guaranty Fund**
  - Additional collateral to mutualise losses under extreme market scenarios

- **Additional Assessment Rights**
  - Oblige CMs to contribute additional default funding
## ICEU RISK: INITIAL MARGIN REQUIREMENTS
### DYNAMIC STRESS-BASED REGIME

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Captured</th>
<th>Approach</th>
</tr>
</thead>
</table>
| Spread Response Requirement        | - Instrument spread level variability and changes in credit spread term structure ("curve") shape                                                                                                              | - Consider six scenarios  
  - Widening / contracting credit spread scenarios  
  - 3 curve shapes per credit spread scenario                                                                                      |
| Recovery Rate Sensitivity Requirement | - Fluctuations of Recovery Rate (RR) assumptions                                                                                                                                                    | - Consider min. and max. reference entity specific RR to determine additional losses                                                                                                                   |
| Jump-To-Default Requirement        | - Unexpected credit event losses not accounted for in the market valuation of Single Name (SN) instruments                                                                                                                                 | - Include Loss-Given-Default for sold protection  
- Consider liability associated with 1 credit event using an assumed SN-specific minimum RR                                                                                                                                                                                                                     |
| Basis Risk Requirement             | - Differences in trading behavior of index-derived and outright SN positions                                                                                                                                 | - Account for liquidity differences (market views are priced into more liquid index instruments sooner than SNs), and expected cash flow differences                                                                                             |
| Liquidity Requirement              | - Transaction (bid-offer) costs associated with unwinding CDS instruments in the event of a Clearing Participant default                                                                                      | - Capture the proper liquidation cost for directional as well as well-hedged portfolios                                                                                                           |
| Interest Rate Sensitivity Requirement | - Fluctuations in interest rates                                                                                                                                                                          | - Estimate costs based on bid-offer width, derived from the end of day price discovery process                                                                                                               |
| Concentration Requirement          | - Costs associated with large position liquidation                                                                                                                                                      | - Assess sensitivity of portfolio Net Asset Value to default-free discount interest rate changes                                                                                                                      |
| Initial Margin Requirement         |                                                                                                                                                                                                         | - Reflect market depth and liquidity  
- Apply to positions that exceed pre-specified thresholds  
- Increase requirements exponentially                                                                                                                                             |
PORTFOLIO MARGINING - QUANTIFYING THE BENEFITS

INDEX DECOMPOSITION MARGIN METHODOLOGY

Portfolio Margining Example

- ICE has formulated an *index decomposition margin methodology* which provides benefits to long/short index and single name positions
- Capital efficiencies are achieved by allowing market participants to clear index and single name CDS in a single segregated CFTC customer account while maintaining strong risk management protections
- Voluntarily clearing single names will allow you to achieve these margin benefits against mandatorily cleared indices

<table>
<thead>
<tr>
<th>125 SN Positions</th>
<th>Margin Requirement</th>
<th>Portfolio Size</th>
<th>Total Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Bought Protection on 125 names of $4MM each 5Y tenor)</td>
<td>1.25%</td>
<td>$500MM</td>
<td>$6.25MM</td>
</tr>
<tr>
<td>Index Position</td>
<td>2.00%</td>
<td>$500MM</td>
<td>$10.0MM</td>
</tr>
<tr>
<td>IG Series 26 5Y</td>
<td>(Sold Protection on $500mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index Arb</td>
<td>0.50%</td>
<td>$1,000MM</td>
<td>$5.0mm</td>
</tr>
<tr>
<td>(Bought SN/Sold Index)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Margin Requirements

<table>
<thead>
<tr>
<th>If margined on a separate basis</th>
<th>Margined on a portfolio basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>$16.25MM</td>
<td>$5.00MM</td>
</tr>
</tbody>
</table>

- Margin reduction of $11.25MM achieved through portfolio margining
ICE CREDIT EXPERTISE SUPPORTING AN EVOLVING MARKET

SIGNIFICANT ASSETS ACROSS ENTIRE CREDIT SPECTRUM: CDS, CASH BONDS, ABS, LOANS, CREDIT FUTURES

TRADING & AUCTIONS
- ice BondPoint™
- ice Credit Trade
- creditex
- ice TMC Bonds
- ETF Hub
- ice Swap Trade®
- NYSE Bonds
- ice Futures U.S.® Eris Credit Index Futures

VALUATIONS & PRICING
- ice Data Services™ CMA
- REF DATA & CORPORATE ACTIONS
- ice Data Services™
- SWAP RISK & RATE BENCHMARKS
- ice Benchmark Administration™
- BEST EXECUTION & LIQUIDITY SCORES
- ice Data Services™

TRADE PROCESSING
- ice Link™
- TRADE REGULATORY REPORTING
- ice Trade Vault®

DATA
- VALUATIONS
- CLEARING
- BEST EXECUTION
- TRADING & RISK REDUCTION
- REGULATORY REPORTING
- CREDIT EVENTS
- TRADE PROCESSING
- LIQUIDITY SCORE
- REF DATA

CORPORATE ACTIONS

CENTRAL CLEARING
- ice Clear Credit™
- ice Clear Europe®
OVERVIEW OF ICE CDS EOD SETTLEMENT PROCESS

ESTABLISHES RELIABLE END-OF-DAY VALUATIONS FOR MARGIN/RISK CALCULATIONS

- **Quote Submission**
  - ICE requires CMs to submit quotes for 9 benchmark tenors and all standard coupons cleared by ICE for which the CM has a cleared interest

- **End Of Day Valuation**
  - Using the submitted quotes, ICE performs an end-of-day valuation for every cleared instrument using a multi-stage crossing/matching algorithm
  - EOD prices for non-benchmark tenors interpolated from calculated Settlement Prices for benchmark tenors

- **Firm Trade Obligation**
  - To encourage the best possible submissions, ICE requires Clearing Members to enter into bilateral Firm Trades if submitted quotes are crossed/locked

- **Controls to Limit Impact on Risk**
  - Controls ensure that Firm Trades do not have adverse market impact
  - “Default” bid offer width (default spread width)
  - Fixed notional size
CDS ATF TRADE WORKFLOW
ICE SUPPORTS ALL MAJOR ATF PLATFORMS VIA THE ATF DIRECT WORKFLOW

ATF Trade Execution

ATF Trade

ATF* Submits Directly to CCM with FCM pre-consent

Clearing Broker approves client risk check

Buyer

Seller

Clearing by ICE

ICE CCP

ATF Trade STP’ed** to Buyer, Seller, Clearing Broker

ICE Runs Risk Checks & Accepts Trade

Trade Cleared

Trade Routed to TRs

TR

All Major ATF Platforms Supported

Trades Cleared Intra-day on a Real-Time Basis

* Authorised Trading Facilities ("ATF") including SEFs, MTFs and OTFs
** ICE Link optionally STP's ATF Trade submission and optionally Trade Repositories reports the RT/PET message for ATF
CLIENT CLEARING TOOLS

CDS MARGIN CALCULATOR

- Available to all clients through the ICE Link GUI
- Provides full transparency into our CDS initial margin methodology with results broken down by component
- Run what-if scenarios on existing positions or custom portfolios

Select existing positions in the ICE Link Positions Blotter and click on “Margin”

Ability to upload custom portfolios directly into Calculator

Review Margin Results / Export in CSV format

Training materials available on ICE Link Web GUI (Help Documents) or at www.theice.com/clearcredit
Contact ICE for a demonstration: icelinkhelp@theice.com or call +1 770 738 2101 / +44 (0)20 7488 5100
# CLIENT CLEARING TOOLS

## CDS REPORTS

<table>
<thead>
<tr>
<th>REPORT</th>
<th>DESCRIPTION</th>
<th>FORMAT</th>
<th>AVAILABILITY*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing Eligible Instruments</td>
<td>A full list of indices and single names eligible for clearing; includes ICE Clear Credit and ICE Clear Europe eligible instruments</td>
<td>CSV</td>
<td>Daily</td>
</tr>
<tr>
<td>Clearing Activity</td>
<td>Provided at allocated trade level; includes new trades cleared on a specific day</td>
<td>CSV and PDF</td>
<td>Daily</td>
</tr>
<tr>
<td>Cleared Positions</td>
<td>Provided at allocated trade level; includes all open cleared positions from current day in a per trade format</td>
<td>CSV and PDF</td>
<td>Daily</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>Provides the portfolio level margin requirements (initial margin and mark-to-market)</td>
<td>CSV and PDF</td>
<td>Daily</td>
</tr>
<tr>
<td>Early EOD Pricing file</td>
<td>Provides end-of-day closing clearing house prices. Available at 5 pm local time.</td>
<td>CSV</td>
<td>Daily</td>
</tr>
<tr>
<td>Mark-to-Market Margin Interest Report</td>
<td>Provides the daily interest earned on margin collateral using the MTM balances</td>
<td>CSV and PDF</td>
<td>Daily</td>
</tr>
<tr>
<td>Netting</td>
<td>Provides netting results for accounts set to net; includes terminations and new net trades</td>
<td>CSV</td>
<td>Daily / Ad hoc / Selective</td>
</tr>
</tbody>
</table>

- All reports available in production and test environments for ICE Clear Credit and ICE Clear Europe.
- Available at 9 pm local time (except for the EOD pricing file which is available at 5pm and 8 pm local); NY for ICE Clear Credit and LDN for ICE Clear Europe
- Access through the ICE Link web interface or electronically via secure MFT
CLIENT NEXT STEPS

- To begin clearing CDS, Clients need to:
  - Establish relationships with one or more ICE CDS Clearing Members and execute legal documentation
  - Establish connectivity

- For more information, please contact us:

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CDS ATF Bunched Trade Workflow

Allows Clients to Execute at the Bunched Level and Allocate Post Clearing

Step 1. Bunched trade ATF executed & cleared by ICE via the ATF Direct workflow

- ATF
- ICE runs risk checks & accepts trade
- TR

- Clearing Broker approves Client risk check at the bunched level
- Bunched trade executed
- Bunched trade cleared
- ICE submits cleared bunched trade to TRs

Step 2. Allocations provided by client & cleared by ICE

- ICE Link
- ICE CCP
- TR

- Client allocates bunched trade & selects Take-Up CB
- Give-Up CB affirms offsetting allocations
- Take-Up FCM affirms final allocations
- ICE runs risk checks & accepts allocations
- Allocations Cleared
- ICE submits allocations to TRs

1 Client may allocate via ICE Link (GUI, API or Auto Affirm) or via authorized Middleware Platform or ATF
CDS OFF-FACILITY TRADE WORKFLOW
ICE SUPPORTS THE EXISTING OTC MODEL AND MULTIPLE EXECUTION AND AFFIRMATION PLATFORMS

Trade Execution & Capture

Voice or non-ATF ➔ Trade Capture
 Executing Broker Alleges Block Trade

Affirmation & Clearing Consent

ICE Link
 Buy-side Affirms, Allocates and Routes to CB\(^1\)
 CB Affirms and Routes to ICE

Clearing by ICE

ICE CCP
 ICE Runs Risk Filter Checks & Accepts Trade
 Trade Cleared
 Trade Routed to TRs

Multiple Execution Platforms Supported

Multiple Affirmation Platforms Supported

Trades Cleared Intra-day on a Real-Time Basis

\(^1\) Client may allocate via ICE Link (GUI, API or Auto Affirm) or via authorized Middleware Platform or ATF