Impact of Central Clearing from a CCP perspective

ECB Bond Market Contact Group

12 October 2016
The macro-economic environment and fundamental regulatory reforms are driving changes in the markets, at Exchanges and CCPs

**Macroeconomic environment**

Quantitative Easing and *low interest rate environment* continue to drive search for yield in *new products and markets*

*Volatility will continue as a theme in equities due to high likelihood of further political and macroeconomic disruptions*

*Increasing regional divergence in Europe (e.g. Brexit) along with lack of yield and volatility in Fixed Income will create further demand for derivatives as risk management tools*

**Fundamental regulatory reform**

Capital requirements, regulatory costs and profitability challenges push *sell-side intermediaries into agency models*

Clearing and trading obligation and best execution requirements will pull *buy-side into central infrastructures*

Third-country equivalence and open non-discriminatory access regimes will create *level playing field and attract new entrants*

The financial markets, participants and infrastructures are going through significant structural change

1. Increased systemic importance of CCPs
2. Variation Margin (VM) and Initial Margin (IM) concept
3. New participants at CCPs including more direct buy-side members
4. Less perfect hedge structure but significantly higher hedge efficiency
CCP services improve soundness of market infrastructure and strengthen market integrity

Reduced systemic risk
- CCP takes over counterparty risk through trade novation
- CCP enforces strict risk control and adequate collateralisation of open positions
- Automatic multilateral netting reduces gross risk exposure
- CCP mutualizes risk across entire member space effectively reducing impact of extreme events
- CCPs facilitate recovery and resolution

Increased transparency
- Awareness of concentration risk
- Independent position valuation by neutral institution
- Early warning function by daily mark-to-market

Efficiency gains
- Full automation and straight-through processing reduces manual errors
- Efficient use and management of collateral
- Increased capital efficiency by reduced balance sheet exposure

Benefits of multilateral clearing with Central Counterparty
Lines of defense waterfall ensures loss coverage in normal and extreme market conditions - Incentives are rightly managed

Eurex Clearing Lines of Defense

Position Netting and Closing

- Close-out of all positions
- Margin collateral of member in default (EUR 2.3 bn average for Top 10 CMs)
- Default Fund contribution of member in default (EUR 202 m average for Top 10 CMs)
- Minimum EUR 1 m (DCM) or EUR 5 m (GCM)
- Eurex Clearing’s contribution to the Default Fund is EUR 100 m
- Default Fund contributions of non-defaulted members approximately EUR 4.2 bn
- Additional funds of non-defaulted members (capped at 2x of the Default Fund contribution) and further dedicated amount of Eurex Clearing (capped at EUR 300 m)
- Remaining funds available under the letter of comfort (max. EUR 300 m minus any already utilised funds)

Dedicated Amount of Eurex Clearing

- Remaining equity capital of Eurex Clearing (EUR 265 m)

Default Fund contributions of non-defaulted members

- Minimum EUR 1 m (DCM) or EUR 5 m (GCM)
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Assessments and further dedicated amount

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Remaining funds of letter of comfort provided by Deutsche Börse

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Remaining equity capital of Eurex Clearing

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* Largest Clearing Member by TMR.

Coverage in normal market conditions

Coverage in extreme market conditions: Financial resources before Eurex Clearing’s regulatory required equity capital sum up to more than EUR 12 bn

as of 30/06/2016
Variation Margin (VM) and Initial Margin (IM) concept

**Variation Margin (VM)**
- Collateralizes current exposure
- Real-time intra-day enforcement
- Accumulated VM is paid out daily, resetting position value to zero

**Initial Margin (IM)**
- Collateralizes potential exposure until replacements
- Daily enforcement base on expected future market movements

Functioning and liquid bond and repo markets are an important facilitator for buy and sell side participants to support VM and IM concept.

Source: Whitepaper How central counter-parties strengthen the safety and integrity of financial markets, Deutsche Börse Group and Eurex Clearing
Consolidation of GC Pooling volumes on high level due to excess liquidity created by ECB’s QE/PSPP

Average outstanding volume on Eurex Repo*

Key figures

- Daily outstanding volume record € 245.9 bn reached on June 12, 2014
- Outstanding volume decrease -21.4%: € 117.4 bn average outstanding volume in August 2016 (€ 149.3 bn in August 2014)
- Continuous growth – CAGR = 35.6% (2005-2015)
- As per previous monetary interventions, since start of ECB’s QE programme in March 2015 declining volumes in GC Pooling and Euro Repo Market
- In addition, uncertainty in financial markets (e.g. Greece, Italy and China) and regulatory changes may lead to further reduction in bank’s funding activities

- Although recent drop in volumes, GC Pooling continues to be a highly liquid market with quote vs. trade ratio of 2.6:1
  - Average active trading participants
    2015: 97 participants; 2016: 91 participants
    Q1/16: 93 participants; Q2/16: 92 participants;
  - Average trades per month
    2015: 3,713 trades; 2016: 2,459 trades
    Q1/16: 2,570 trades; Q2/16: 2,559 trades
  - Average quotes per month
    2015: 6,853 quotes; 2016: 6,389 quotes
    Q1/16: 6,346 quotes; Q2/16: 6,481 quotes

*20 day moving average/single counted

Continuous growth of quotes & trades on GC Pooling
Extreme accumulation of excess liquidity carries negative side effects for interbank lending activity

- Central bank liquidity key driver of GC Pooling repo rates
- ECB excess liquidity increase of around EUR 900 bn since the beginning of the APP
- ECB’s liquidity injections create imbalance between supply and demand
  - demand for liquidity in the interbank market decreases

* Given negative interest rates the impact of ECB excess liquidity during the PSPP even higher than during the 3Y LTRO’s in 2011/2012.
ECB’s QE/PSPP with significant impact on funding and financing activities and desk structures

Current market situation

- In March 2015 the Eurosystem started to buy public sector securities under the PSPP with cash supply in total of EUR 1,600 billion until 03/2017 (avg. 80 bn/months).
- By the end of September 2016, about EUR 1,000 billion excess liquidity have been provided to the market under the PSPP.
- Securities purchased under the PSPP are made available for securities lending to support market liquidity and collateral availability in the market.

ECB’s Public Sector Purchase Programme (PSPP)

- Cash taker’s need for short term funding has been reduced significantly; profit margin for cash providers in money market drops below zero risk investment at ECB deposit facility.
- In addition, markets shifting to non-CCP markets (bilateral and tri-party) with lower quality collateral whilst CCPs are required to rigorously implement regulatory changes (e.g. risk parameters).
- Central banks currently evaluating lending programmes in order to avoid collateral squeeze.
- QE enforces structural changes already happening within sell- and buy-side firms to centralised collateral funding desks.

Market impact
Eurex Clearing offers a variety of segregation models to address the needs of different client types

Segregation Decision Matrix

Type of client position account?

- Disclosed client (Non-Clearing Member or Registered Customer)
- Undisclosed client

Fellow customer risk acceptable?

- No
- Only to known clients
- Yes

Type of collateral protection?

- Asset
- Value

Type of segregation

- Individual Segregated Account (ISA)
- Multiple Omnibus Segregated Account (MOSA)
- Standard Omnibus Segregated Account (OSA)

Our clearing models

Individual Clearing Model

Elementary Clearing Model

Net Omnibus Clearing Model

1 Offers CASS protection
Overview of ISA Direct model

ISA Direct model combines elements of direct clearing membership and the traditional service relationship in client clearing, tailored specifically for the buy side.

Traditional client clearing

- Client
- Clearing Member

Optional transaction processing services between Client and Clearing Member resp. ISA Direct client and Clearing Agent

Transaction management
Cash management
Collateral management

ISA direct model

- ISA Direct client
- Clearing Agent

Direct contractual relationship

- Default fund contribution
- Default management obligation

Clearing agent and clearing member core tasks
Thank You

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Eurex Clearing’s Credit Risk Management Framework

Overview of major areas within CCP Risk Management

Counterparty Assessment
- Eurex Clearing has strict criteria for counterparties to guarantee that clearing members, payment banks, treasury counterparts have sufficient credit quality and financial strength
- Credit assessments are repeated on a regular basis

Collateral and Member Monitoring
- Eurex Clearing only accepts secure, liquid and accessible collateral with low credit risk
- A comprehensive risk management framework has been established in order to identify, manage and control credit, concentration and wrong way risks

Margining
- Margin requirements are aimed to cover potential losses arising during the default management process according to the “defaulter pays” scheme
- Margin requirements are monitored and enforced intraday

Stress Testing
- Additional post-default backings are available to cover risks beyond the margin confidence level
- The adequacy of the Clearing Fund size, Eurex Clearing’s total financial resources and liquid financial resources is verified by means of stress tests

Default Management Process
- When a Clearing Member goes into default, one of Eurex Clearing’s principle objectives is to protect customers and minimize harm to clients and their positions
- Losses to the CCP’s lines of defense and the disruption of the wider market are minimized
Two step liquidation needed for repo transactions

Overview of general liquidation process

- Due to the product characteristics of repo transactions, the DMP requires two steps:
  - the CCP needs to enter into a repo transaction replacing the one terminated with the defaulted clearing member, and
  - the CCP needs to buy or sell the underlying bond in the market.

- Cash taker default in a repo transaction:
  If a cash taker defaults, Eurex Clearing acts as cash provider/collateral taker in the frontleg of the replacement repo (performing a 'reverse repo'), and sells the underlying bond in the markets.

- Cash provider default in a repo transaction:
  If a cash provider defaults, Eurex Clearing acts as cash taker/collateral provider in the frontleg of the replacement repo (performing a 'repo'), and buys the underlying bond in the markets.

- At maturity of the term leg, the underlying bond and cash are exchanged via Eurex Clearing by the non-defaulted counterparty of the initial repo and the counterparty of the replacement repo.

- The liquidation process is aiming to be completed within 5 business days after termination of the clearing license.

- The process for the securities lending service is similar, considering the product specifics.
Breakdown of repo related bond exposure*

The bond exposure across all repo types (GC Pooling, GC Repo and Special Repo) to be sold in default cases is in general of high quality, while with some higher exposures exist towards government bonds of Spain and Italy.

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* as of 31 Aug 2016 in bn EUR market value, single counted