Achieving Financial Stability: Challenges to Prudential Regulation

Market Infrastructures, Central Clearing and Collateral Management

2016 International Banking Conference
Federal Reserve Bank of Chicago and European Central Bank

Robert S. Steigerwald
Federal Reserve Bank of Chicago

4 November 2016

The statements and opinions expressed herein are solely those of the author and not necessarily those of the Federal Reserve Bank of Chicago or the Board of Governors of the Federal Reserve System.
• Financial Market Infrastructures – Background

  o Payment systems
  o Trade execution systems
  o **Post-trade clearing and settlement systems**
    ▪ Securities depositories (CSDs and ICSDs) and other securities settlement systems
    ▪ **Central counterparty clearing (CCPs)**
    ▪ Multilateral trade compression systems (?)
  o Trade repositories (TRs)
• Financial Market Infrastructures – Central Counterparty (CCP) Clearing
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OTC Derivatives Counterparty Relationships

Bilateral clearing

Central clearing

Credit Default Swaps – Counterparty Relationships
Bilateral (Left) and Centrally Cleared (Right)

Key

Red – protection sellers
Blue – protection buyers

Size of node indicates magnitude of open positions

Source: Yellen (2013)
Federal Reserve – Fedwire Funds Transfer System
(66 banks representing 75% of value transfers, 25 banks “completely connected”)

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Bank of Korea – BoK-Wire+ Funds Transfer System

Key

Blue – domestic banks
Red – foreign banks
Green – non-bank financial intermediaries
Orange – other financial institutions

Size of node indicates importance of system participants, based on SinkRank methodology

Sources: Financial Network Analytics (FNA) and Baek, Soramäki & Yoon (2014)
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Chart 1: Global Financial Network: 1985

Chart 3: Global Financial Network: 2005

Source: Haldane (2009)
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OTC Derivatives Counterparty Relationships

Bilateral clearing

Central clearing

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Source: Ruffini, et al. (work in progress)
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- CCP
- LVPS
- DvP
- PvP
- (I)CSD

Central Bank

- Clearing Members
- Non-CM Brokers & FCMs
- RP and Interbank Credit
1. CCPs are “commitment mechanisms” that assure contract performance (CCPs are not banks)
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2. Counterparty substitution (novation) matters
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2. Counterparty substitution (novation) matters

3. Risk management and policy implications – CCP capital, other financial resources, stress testing, etc.
1. CCPs are “commitment mechanisms” that assure contract performance (CCPs are not banks)

“[T]rust [in counterparty performance] must be supported by formal, institutionalized safeguards.”

1. CCPs are “commitment mechanisms” that assure contract performance (CCPs are not banks)

“In the context of financial transactions, the convenience, safety and trust required for national and global markets to function are largely provided by clearing and settlement arrangements.”

1. CCPs are “commitment mechanisms” that assure contract performance (CCPs are not banks)

- Origins in 19th century bank (payments) clearinghouses
- Based on “club” structure governed by rules, rather than law, to collectively manage specific risks
- Evolution distinct from the rest of the financial system
- Key role of loss mutualization
2. Counterparty substitution (novation) matters

- Upon acceptance of a trade, a CCP becomes a substituted principal to each of the original counterparties.
- The legal rights and obligations between the original counterparties are terminated.
- CCPs are not mere “clearing agents,” “backstops,” or facilitation mechanisms.
- The challenge of the “persistence of the bilateral”
  - “The only parties left are those who are left”
2. Counterparty substitution (novation) matters
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3. Risk management and policy implications – CCP capital, other financial resources, stress testing, etc.
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“Is it not an absurd and terrible thing that what is true in one village is false in another? What kind of barbarism is it that citizens must live under different laws? When you travel in this kingdom you change legal systems as often as you change horses.”

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U.S. Regulatory Authority over Payment, Clearing and Settlement Systems

Current as of April 09, 2012
Source: Federal Reserve Bank of Chicago Financial Markets Group
* Derived from publicly available information
1. CCPs are “commitment mechanisms” that assure contract performance (CCPs are not banks)

2. Counterparty substitution (novation) matters

3. Risk management and policy implications – CCP financial resilience, stress testing, etc.
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2. Counterparty substitution (novation) matters

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<th>Dealer A</th>
<th>CCP</th>
<th>Dealer B</th>
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<tbody>
<tr>
<td>Trade</td>
<td>Buy 100 (Long)</td>
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<td>Sell 100 (Short)</td>
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<td>Combined Position</td>
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<tr>
<td>Trade</td>
<td>Buy 100 (from Dealer A)</td>
<td>CCP</td>
<td>Sell 100 (to Dealer B)</td>
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2. Counterparty substitution (novation) matters

- **Dealer A**: Buy 100 (Long)
- **Deals A**: Sell 100 (Short)
- **CCP**: No Continuing Rights or Obligations
- **Dealer B**: Sell 100 (Short)

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<td><strong>Replacement Trade (1)</strong></td>
<td><strong>Buy 100</strong> from CCP</td>
<td><strong>Sell 100</strong> to Dealer A</td>
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</tr>
<tr>
<td><strong>Replacement Trade (2)</strong></td>
<td><strong>Buy 100</strong> from Dealer B</td>
<td><strong>Sell 100</strong> to CCP</td>
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<tr>
<td><strong>Combined Position</strong></td>
<td><strong>Buy 100</strong> Long</td>
<td><strong>Offsetting (Neutral)</strong></td>
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- Dealer A: Buy 100 (Long)
- Dealer B: Sell 100 (Short)
- CCP: Sell 100 (Short)
- CCP: Buy 100 (Long)
Defaulter’s Resources
- Initial margin and concentration margin
- Defaulting clearing member’s default fund contribution

Fault Line 1

Mutualized Resources
- Tranche of CCP’s capital
- Default fund contributions of surviving clearing members
- Assessments or any unfunded default fund contributions

Fault Line 2

Terra Incognita
- Voluntary cash calls on surviving clearing members
- Variation margin gains haircutting
- Partial or complete “tear-ups” and forced allocation
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<th>Category</th>
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                                 • Defaulting clearing member’s default fund contribution                                                                                  |
| **Mutualized Resources**       | • Tranche of CCP’s capital  
                                 • Default fund contributions of surviving clearing members  
                                 • Assessments or any unfunded default fund contributions                                                                                  |
| **Terra Incognita**             | • Voluntary cash calls on surviving clearing members  
                                 • Variation margin gains haircutting  
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