

# Central Counterparty Clearing

## ... and Systemic Risk

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# What is Clearing?

## Definition:

Clearing of financial transactions considers the management of counterparty risk, the risk that a trading partner does not make good on his obligations.

Default? exposure to price or replacement cost risk

Two options:

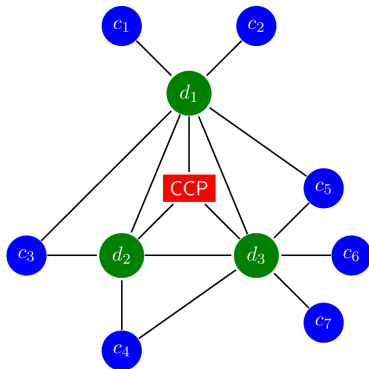
1) Counterparties retain risk and manage it themselves

### **Bilateral Clearing**

2) Transfer risk and delegate its management to a third-party

### **Central Counterparty (CCP) Clearing**

## What does a CCP add?



Source: Duffie (2015)

- CCP novates trades
- buyer (seller) to every seller (buyer)
- risk transfer
- risk pooling
- solve contagion (systemic risk)

## How did we get there?

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- ≈ 1900 ● First modern clearinghouses
  - ≈ 2000 ● Consolidation through mergers
  - 2007-2008 ● Financial Crisis
  - 2009 ● G20 summit in Pittsburgh – Mandatory Clearing of OTC Derivatives
  - 2010 ● ESRB established
  - 2011 ● ESMA begins its work as part of ESFS
  - 2012 ● EMIR comes into effect
  - now ● Recovery and Resolution Framework
-

## Great intentions ...

CCPs are sold as the new “Maginot-Line” of the financial system.

- Netting reduces exposures and solves contagion.
- Information warehouses can assess overall risk better.
- Novation pools, diversifies and mutualizes counterparty risk.

CCPs impose proper collateral requirements (“defaulor pays”) .

CCPs add additional default fund (“survivor pays”).

CCPs helps with unwinding losses.

### Basic trade-off:

Collateral costs vs. Risk management

## ... may just shift the problem?

CCPs become the most important risk node in the financial system.



- attract and concentrate (additional) risk
- give rise to (collective) moral hazard
- may have less information on cp quality

### Conclusion:

CCPs are ...

too-central-to-fail, ...

too-important-to-fail, ...

→ **systematic risk.**



# Challenge – Margin Policies

- Initial margins
- Membership Requirements

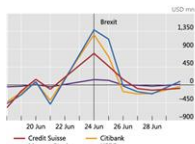


- Procyclical margins
- Liquidity outflows

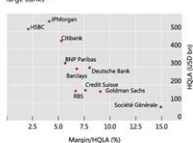
CCP initial margins and bank HQLA

Graph B

Margin calls for US FCMs<sup>1</sup>



Estimated relationship between margin and HQLA for large banks<sup>2,3</sup>

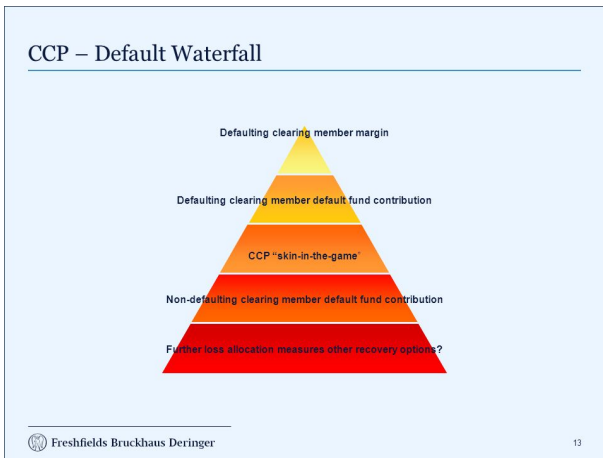


HQLA = high-quality liquid assets.

<sup>1</sup> Based on daily client segregation data for US futures commission merchants (FCMs). These data cover the net settlement to derivatives clearing organizations, which is essentially the sum of the margin calls received on a given day. HSBC refers to the US branches of HSBC Holdings plc. <sup>2</sup> Data for end-2017. <sup>3</sup> To estimate the total margin for individual banks based on the public data, we make the following assumptions. First, the required margin for a bank is proportional to its outstanding notional in derivatives. Second, a bank's derivatives portfolio consists mainly of credit derivatives (CD) and interest rate contracts (IRC). Third, the proportion of centrally cleared and bilaterally cleared is the same across banks. Fourth, the top 10 clearing members in CD CCPs are the same. The top 10 clearing members in IRC CCPs are the same. Based on these assumptions, we use individual banks' CD and IRC outstanding notional in SNL and CCPV top 10 clearing members' IM in Clarus to calculate individual banks' margins.

Sources: CFTC rule 1.55 segregation reports; Clarus Financial Technology; SNL authors' calculations.

# Challenge – Resolution



When to let recover, when to resolve, when to resurrect?



## Challenge – BREXIT

ESMA: LCH.Clearnet, LME Clear Limited and ICE Clear Europe will be recognised as third-country central counterparties (CCPs) to offer EU-wide services if the UK leaves the EU without a formal agreement

- 1) Who will be the supervisor of the CCPs?
  - cooperation and information sharing
- 2) What will happen in a (near) member default?
  - why should foreign members pay?
  - why should locally big members be saved?
- 3) What will happen in a worst-case scenario of a CCP default?
  - loss-sharing agreements not enforceable

## Challenge – Capital

Some recent data:

- notional amount outstanding  $\approx$  600 trn USD
- gross market value about 10 trn USD
- gross credit exposure about 2.6 trn USD
- bank capital top 30 banks about 4.5 trn USD
- IR swaps 76% CCP cleared, CDS 54% CCP cleared

Source: BIS

Systemic risk insurance fund for large (systematic) losses

Idea:

- build up reserves for CCP tail risk upfront
- recover losses ex-post

## Challenge – Financial Innovation



- new products
- more customization
- better collateral management

This will change the basic, private trade-off between collateral costs and risk management.

What is the scope of CCP clearing?