Crowded Trades, Systemic Risk, and Central Clearing

Albert J. Menkveld

Vrije Universiteit Amsterdam

November 4, 2016
Outline

Measure CCP exposure (macro-prudentially)

Track CCP exposure in realtime

CCP exposure and collateral

References
Measure CCP exposure

(Menkveld, 2016a)

\[ \text{ExpCCP} = \text{VaR} \left( \sum_j L_j \right) \]
Apr 22: Nokia publishes Q1 results
May 9: EU announces bailout program
Measure CCP exposure (macro-prudentially)

Track CCP exposure in realtime

CCP exposure and collateral

References

\[ \text{CrowdIx} = 0.72 \]

Margin posted by member \( j \), \( \text{Margin}_j \) (million euro)

Member \( j \) contribution to CCP exposure, \( \text{ExpCCP}_j \) (million euro)
Outline

Measure CCP exposure (macro-prudentially)

Track CCP exposure in realtime

CCP exposure and collateral
Track CCP exposure realtime

(Huang and Menkveld, 2016)

Compute $\Delta \text{ExpCCP}$
Track CCP exposure realtime

(Huang and Menkveld, 2016)

Compute $\Delta ExpCCP$
Decompose it into

- $RetVola$
- $RetCorr$
- $PrLevel$
Track CCP exposure realtime

(Huang and Menkveld, 2016)

Compute $\Delta \text{ExpCCP}$
Decompose it into

- $\text{RetVola}$
- $\text{RetCorr}$
- $\text{PrLevel}$
- $\text{TrPosition}$
Track CCP exposure realtime

(Huang and Menkveld, 2016)

Compute $\Delta \text{ExpCCP}$
Decompose it into

- $\text{RetVola}$
- $\text{RetCorr}$
- $\text{PrLevel}$
- $\text{TrPosition}$
  - $\text{ClCl}$
  - $\text{HoCl}$
  - $\text{HoHo}$
Track CCP exposure realtime

(Huang and Menkveld, 2016)

Compute $\Delta ExpCCP$
Decompose it into

- $RetVola$
- $RetCorr$
- $PrLevel$
- $TrPosition$
  - $ClCl$
  - $HoCl$
  - $HoHo$
- $TrCrowding$
  - $ClCl$
  - $HoCl$
  - $HoHo$
Outline

Measure CCP exposure (macro-prudentially)
Track CCP exposure in realtime
CCP exposure and collateral

Measure CCP exposure (macro-prudentially)
Track CCP exposure in realtime
CCP exposure and collateral
CCP exposure and collateral  (Menkveld, 2016b)

Analysis of fire sale prices in equilibrium shows
CCP exposure and collateral

(Menkveld, 2016b)

Analysis of fire sale prices in equilibrium shows

1. Crowded trades reduce fire sale premium, thus lowering default fund and freeing up capital for liquidity supply
CCP exposure and collateral  
(Menkveld, 2016b)

Analysis of fire sale prices in equilibrium shows

1. Crowded trades reduce fire sale premium, thus lowering default fund and freeing up capital for liquidity supply
CCP exposure and collateral  
(Menkveld, 2016b)

Analysis of fire sale prices in equilibrium shows

1. Crowded trades reduce fire sale premium, thus lowering default fund and freeing up capital for liquidity supply

2. Crowded trades concentrate capital (inadvertently), thus costly in terms of foregone opportunities
CCP exposure and collateral

CCP pays fire-sale premium when selling the assets it inherited from defaulted intermediaries

CCP

Insures intermediaries against counterparty default
1. Initial margin (scales with position)
2. Upfront payment to default fund

Intermediaries

Crowded arbitrage opportunity

Deserted arbitrage opportunity

Standby
Crowded Trades, Systemic Risk, and Central Clearing

Albert J. Menkveld

Vrije Universiteit Amsterdam

November 4, 2016
