Discussion: "Central Counterparty Exposure in Stressed Markets" by Wenqian Huang, Albert J. Menkveld and Shihao Yu

Tobias Dieler [1]

[1]University of Bristol

2020 ECB Macroprudential Stress-testing Conference

February 6th 2020

Content

Content

Overview of the paper

- Studies a risk management tool for CCPs by decomposing it into its fundamental drivers.
- The tool is a VaR measure.
- More precisely, exposure is the risk of the default of clearing members.
- Unique data set directly from the European CCP: European Multilateral Clearing Facility (EMCF)

Main Results

- CCPs' exposure changes are driven primarily by changes in trading positions.
- In cases of extreme exposure increases the following factors also contribute to the CCP's exposure change
  - higher correlation among members' portfolios and
  - changes in securities' volatility.
- The exposure level is driven by few members.
- At high exposure levels, house accounts do not contribute significantly more (relative to client accounts) to CCP exposure.

Contribution

- Identify main drivers of CCP's risk exposure: trading positions, correlated portfolios and securities' volatility.
- Risk management measure for CCPs:
  - largest exposure in Greek sovereign debt crisis (EUR 4 mln),
  - largest exposure change after Nokia's stock dropped by 11% (EUR 0.25 mln).

Content

Content

Margins

- "Margin Model User Manual" (version July 2018 web link)
- Back of the envelope calculation to compute variation margins using client account data.
- Compare to the CCP exposure at any given point in time.
- Alternatively, how would the example in Appendix (Table 9) change with the appropriate margining?

Waterfall Procedure

From "EuroCCP Service Overview" (version December 2019 web link)

5. Risk Management Framework

The Risk Management department is responsible for all types of risk related activities at EuroCCP (e.g. Operational Risk, Market Risk, Credit Risk, Liquidity Risk) and for Business Control and Continuity.

5.1. Lines of Defence and Default waterfall

EuroCCP has reviewed the plausible sources of market/credit risk, both internal and external, and mitigates their impact through its Risk Model which incorporates appropriate systems, policies, procedures and controls. EuroCCP's Risk Model consists of five layers:-

1. Participation requirements – only authorised firms may join EuroCCP as a Clearing Participant.
2. Collateral (including a Clearing Participant's Interoperability Fund deposit and Clearing Fund Contribution) – EuroCCP requires Clearing Participants to meet margin requirements on their portfolio by depositing collateral at EuroCCP.
3. Skin in the game – EuroCCP will use its dedicated own resources before using the Clearing Fund contributions of non-defaulting Clearing Participants.
4. Clearing Fund – in the unlikely event that a Clearing Participant is declared to be in default and layers 2 and 3 are insufficient to cover the liquidation of the portfolio of the Clearing Participant, the Clearing Fund provides an additional buffer.
5. If the losses incurred cannot be covered by the collateral provided by the defaulting participant, the skin in the game and the aggregate amount of all Clearing Participant's contributions to the Clearing Fund (layers 2, 3 and 4), the non-defaulting Clearing Participants shall, on demand, make up to two additional payments to EuroCCP on a pro-rata basis in proportion to the amount of their Contributions to cover any such remaining losses (limited to two times the amount of their Contribution).

Clearing Fund Deposit

From "EuroCCP Risk Management overview" (version December 2019 web link)

5 Clearing fund deposit criteria

The Clearing Fund is an important line of defence which can be used to protect CPs and CCPs in extreme stress scenarios such as a CP default. The Clearing Fund is a pool of funds made up of Clearing Participants contributions. All CPs are required to contribute to the Clearing Fund. The deposit of a clearing participant to the clearing fund is determined as follows.

5.1 Base Deposits

Pursuant to paragraph 8.2.2. (a) of the Clearing Rule Book, the applicable base deposits are as follows:

- for a Direct Clearing Participant : € 1.000.000,00
- for a General Clearing Participant : € 3.000.000,00

5.2 Required Clearing Fund Size

The Required Clearing Fund Size is defined as 105% of the two largest uncovered potential losses over the last 12 months.

The uncovered potential loss is the sum of the two largest assumed liquidation losses remaining after the deduction of the financial resources listed in the Clearing Rule Book under paragraph 8.4.2 (a), (b) and (d) under extreme but plausible scenarios. The two largest assumed liquidation losses are determined by calculating and ranking all assumed liquidation losses of all Open Positions per Clearing Participant.

Content

Content

Questions

- What is the reason for the 3 days settlement delay? There seems to be a hybrid structure between a futures and equity market. This potentially brings additional risk.
- You mention that house accounts are more leveraged traders. Who are the client accounts? Comparing client and house accounts who brings more risk to the CCP?

Thank you!

Tobias.Dieler@bristol.ac.uk