

Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market¹

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¹The views expressed are not necessarily the views of the ESRB, or the ESCB.

Overview of the presentation

Dataset

Results

Conclusions

What data do we use?

Dataset

All open centrally cleared interest rate derivative contracts in the EU:

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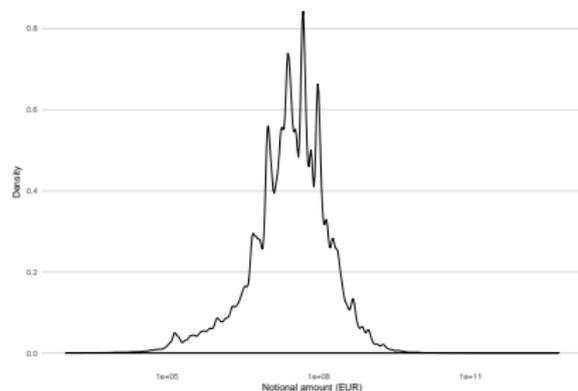
Trade Repository	# of contracts
UnaVista	
DTCC OTC	
DTCC ETD	
Regis-TR	
KDPW	
CME	
ICE	
Total	4,157,339

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What kind of companies are in the network?

Institutions

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Type of institution	Full	House	Client
CCP	17	17	0
G16	16	15	16
Bank	608	184	591
Other financial	5,438	492	5,246
Insurance & pension	420	7	419
Non-financial	86	12	82
Total	6,585	727	6,354

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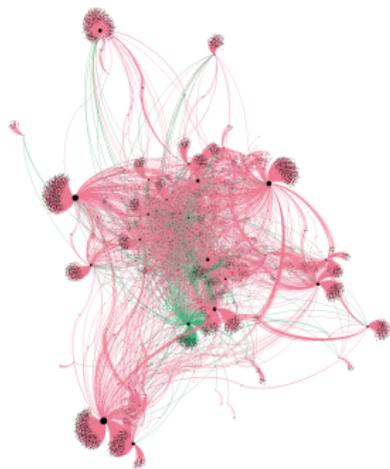
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What does the network look like?

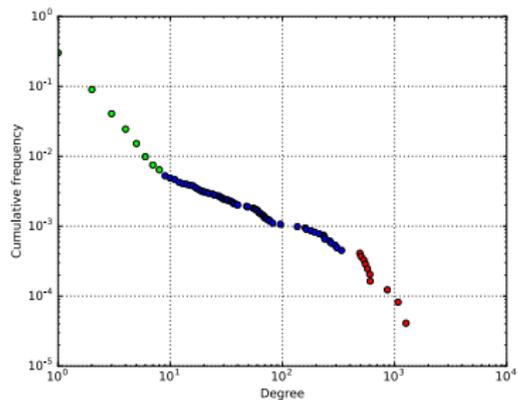
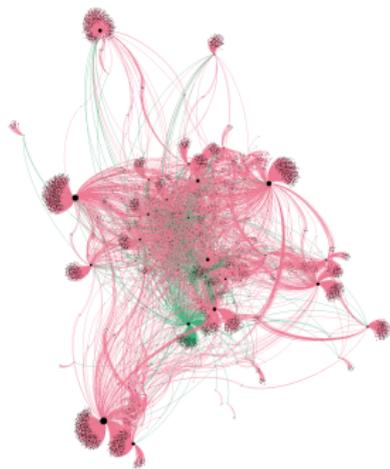
The network structure

Around 90% of the counterparty relations are on the client clearing side.



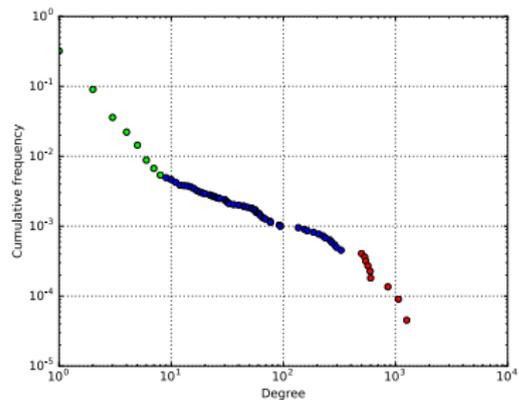
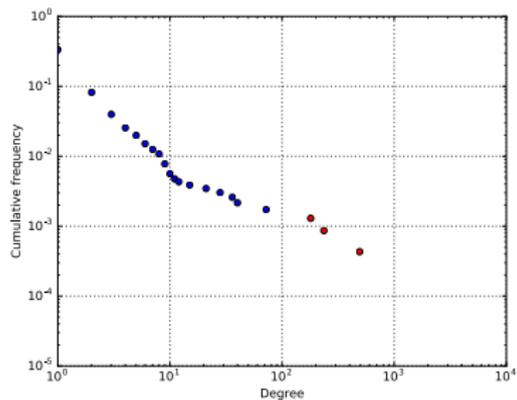
The network structure

The full network has three tiers: inner core, outer core, and periphery.



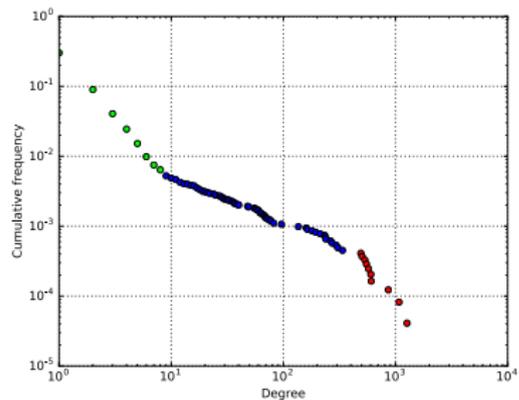
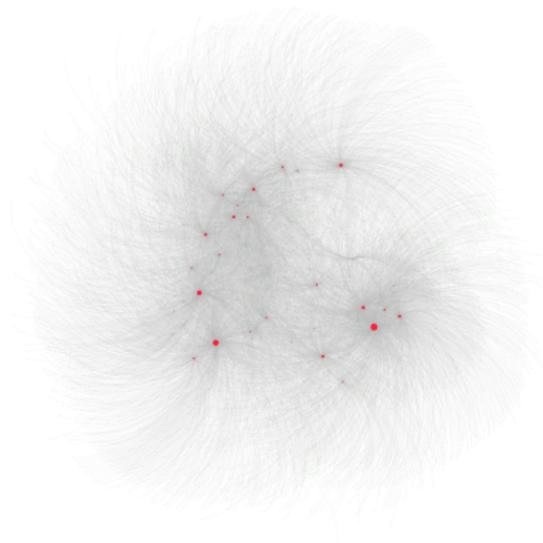
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House clearing network (on the left) has a different structure: only two tiers.



The network structure

The inner core, of mostly large dealers, creates the backbone of the network.



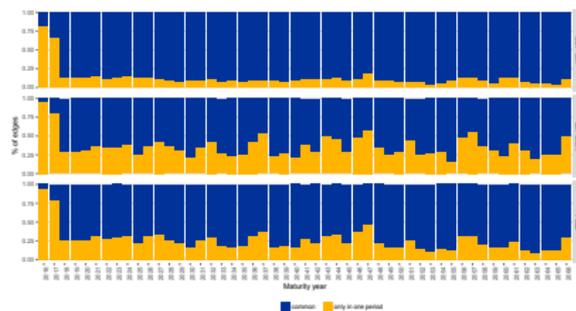
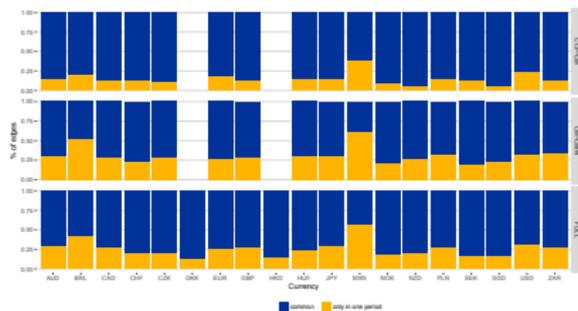
Is the network stable over time?

Persistence across time

The network is relatively stable between Q3 & Q4 of 2016, including the counterparty relations.

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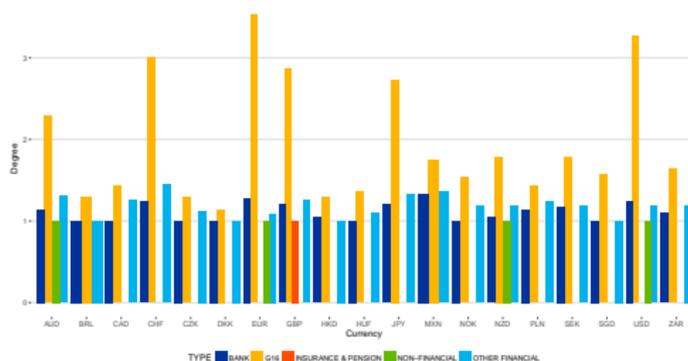
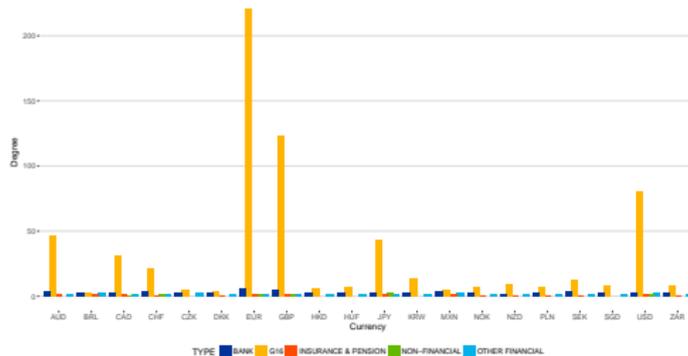
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What can we find in the networks?

Average number of counterparty relations by type

Difference between the full network and the house cleaning network by currency



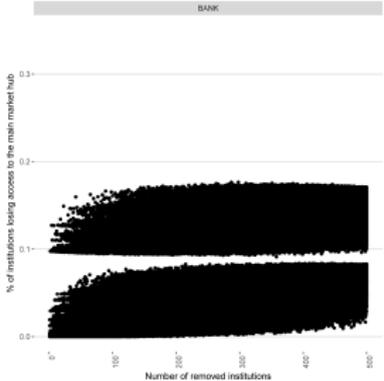
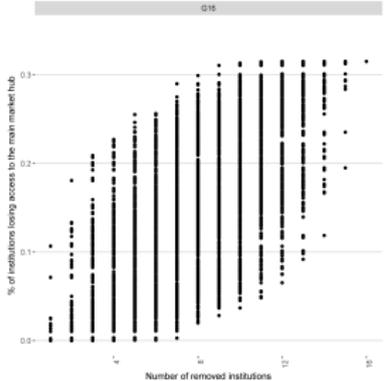
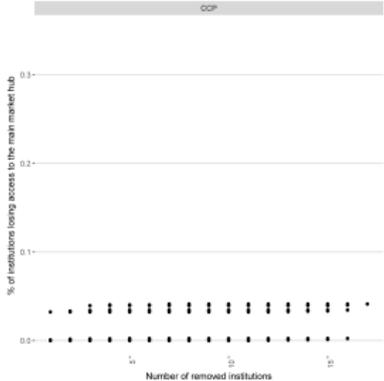
Are the networks stable if we remove counterparties?

Random removal of counterparties by type

We remove a number of institution at random and see how many additional ones are disconnected with the main component.

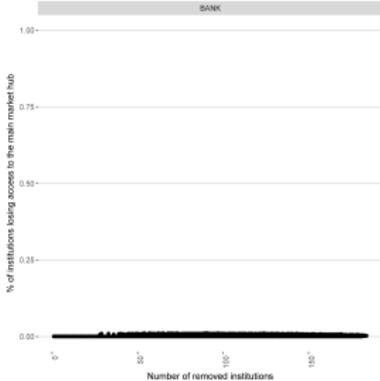
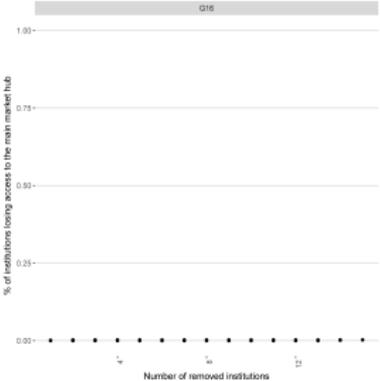
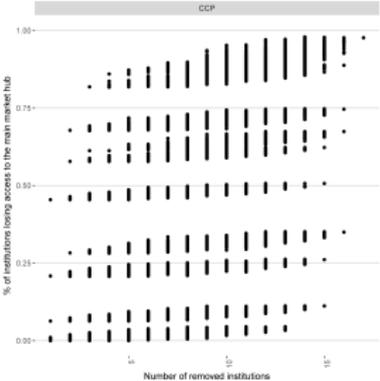
Random removal of counterparties by type

For the full network G16 dealers have the most effect, followed by banks, and only then CCPs.



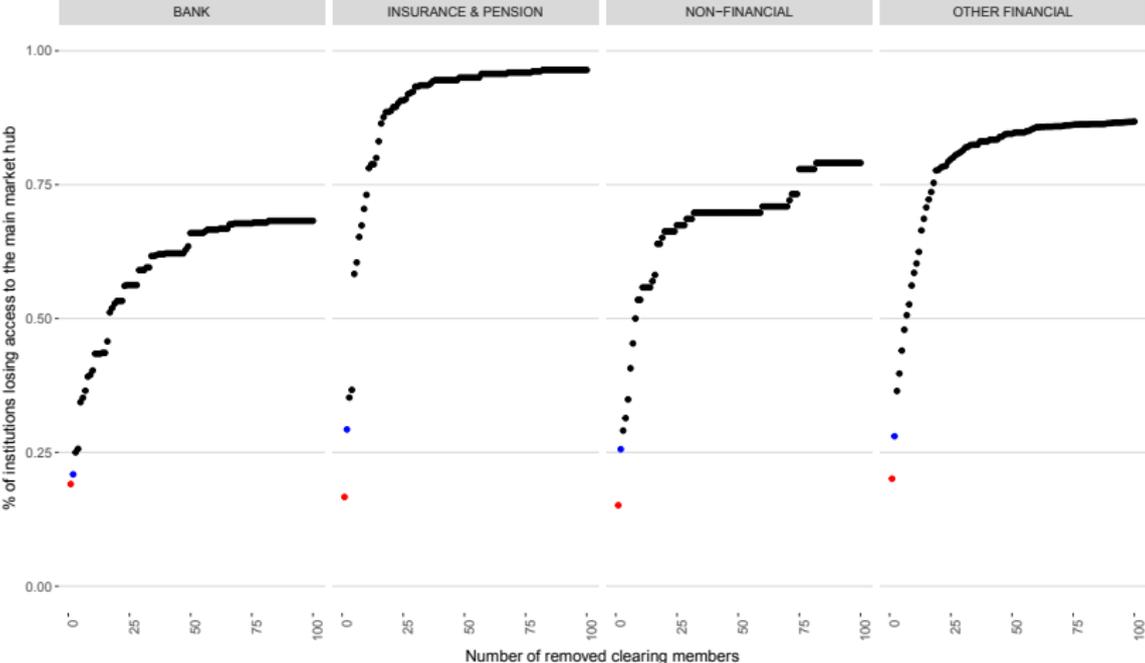
Random removal of counterparties by type

For the house clearing network this information is lost, while it's useful for financial stability, e.g. question of the suspension of clearing obligation.



Removal of the largest clearing members

We remove a number of the largest clearing members and see how many additional ones are disconnected with the main market hub.



Access to liquidity

We define access to liquidity of an institution as the total number of counterparty relations of its direct neighbours.

Type of institution	Total access to liquidity	Average access to liquidity
G16	16,899	1,056.19
Non-financial	9,580	111.40
Bank	15,046	24.75
Insurance & pension	9,839	23.43
Other financial	17,160	3.16

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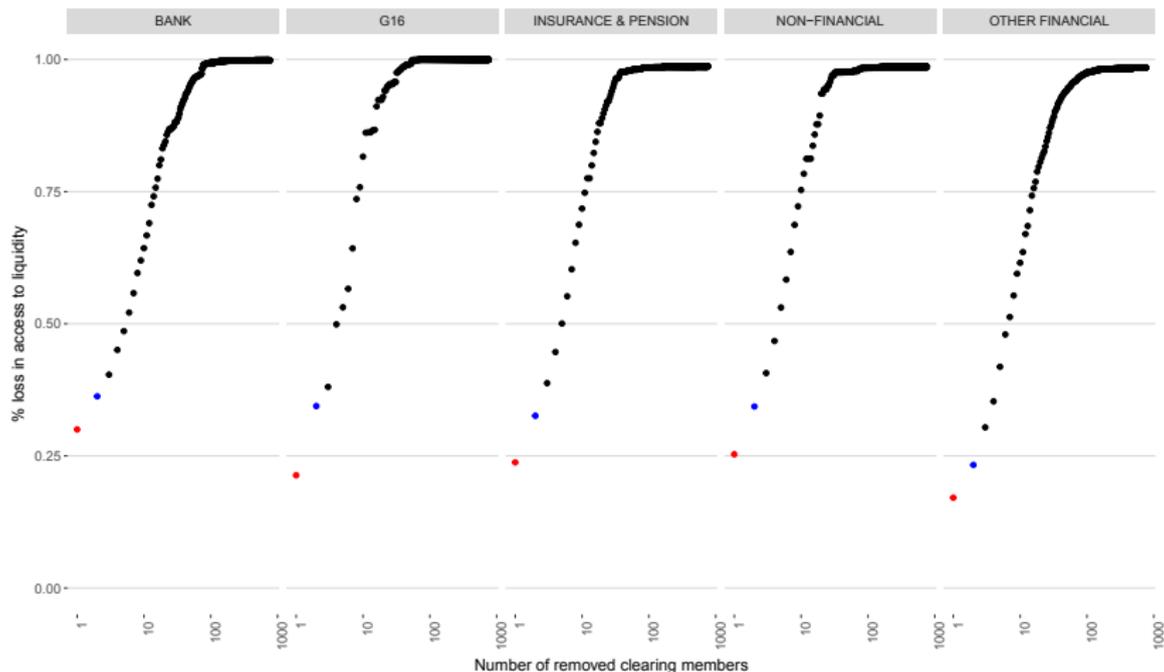
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When we remove clearing members at random the loss of access to liquidity is proportional to the starting access to liquidity, irrespective of the type of the institution.

Access to liquidity

However, it is still useful to see what the impact of the removal of the largest clearing members is on the access to liquidity of various types of institutions.



Conclusions

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Main findings:

- ▶ Client clearing is important and changes the perception of the centrally cleared interest rate derivatives market dramatically:
 - ▶ In particular, the insurance sector is only visible via client clearing;
 - ▶ Importance of various types of institutions changes dramatically;
- ▶ CCPs are not systemic in isolation, and should be analysed in conjunction with G16 dealers – also for policy issues (e.g. R&R).

Thank you