

Stress-testing of liquidity risk in TARGET2

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Disclaimer

The involved colleagues are members of one of the user groups with access to TARGET2 data in accordance with Article 1(2) of Decision ECB/2010/9 of 29 July 2010 on access to and use of certain TARGET2 data.

The Central Banks of the involved colleagues and the MIPC and MIB have checked the presentation against the rules for guaranteeing the confidentiality of transaction-level data pursuant to Article 1(4) of the above mentioned issue.

The views expressed in the paper and the presentation are solely those of the involved colleagues and the presenter and do not necessarily represent the views of the Eurosystem.

Overview

Stress-testing framework



Simulator setup and methodology



Results



Conclusion

The Group on TARGET2 Stress-Testing

The stress-testing was performed by the Group on TARGET2 Stress-Testing (GTST), a group of overseers and operators working for a range of central banks in the Eurosystem:

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STRESS-TESTING FRAMEWORK

Background

Risk in TARGET2

- TARGET2: RTGS system owned and operated by the Eurosystem
- Exposed to and addresses various risks including legal, operational or general business risks

Focus on liquidity risk

- Defined here as the possibility that one (or more) participants lack payment capacity in their TARGET2 account, and thus cannot execute payments in a timely manner (delayed payments) or cannot execute them at all (unsettled payments), giving rise to potential contagion
- The system operator as such does not incur any liquidity risk as payments are final and irrevocable

Legal basis

TARGET2 is an identified Eurosystem Systemically Important Payment System (SIPS)



Has to comply with the ECB Regulation on oversight requirements for systemically important payment systems (SIPS R)

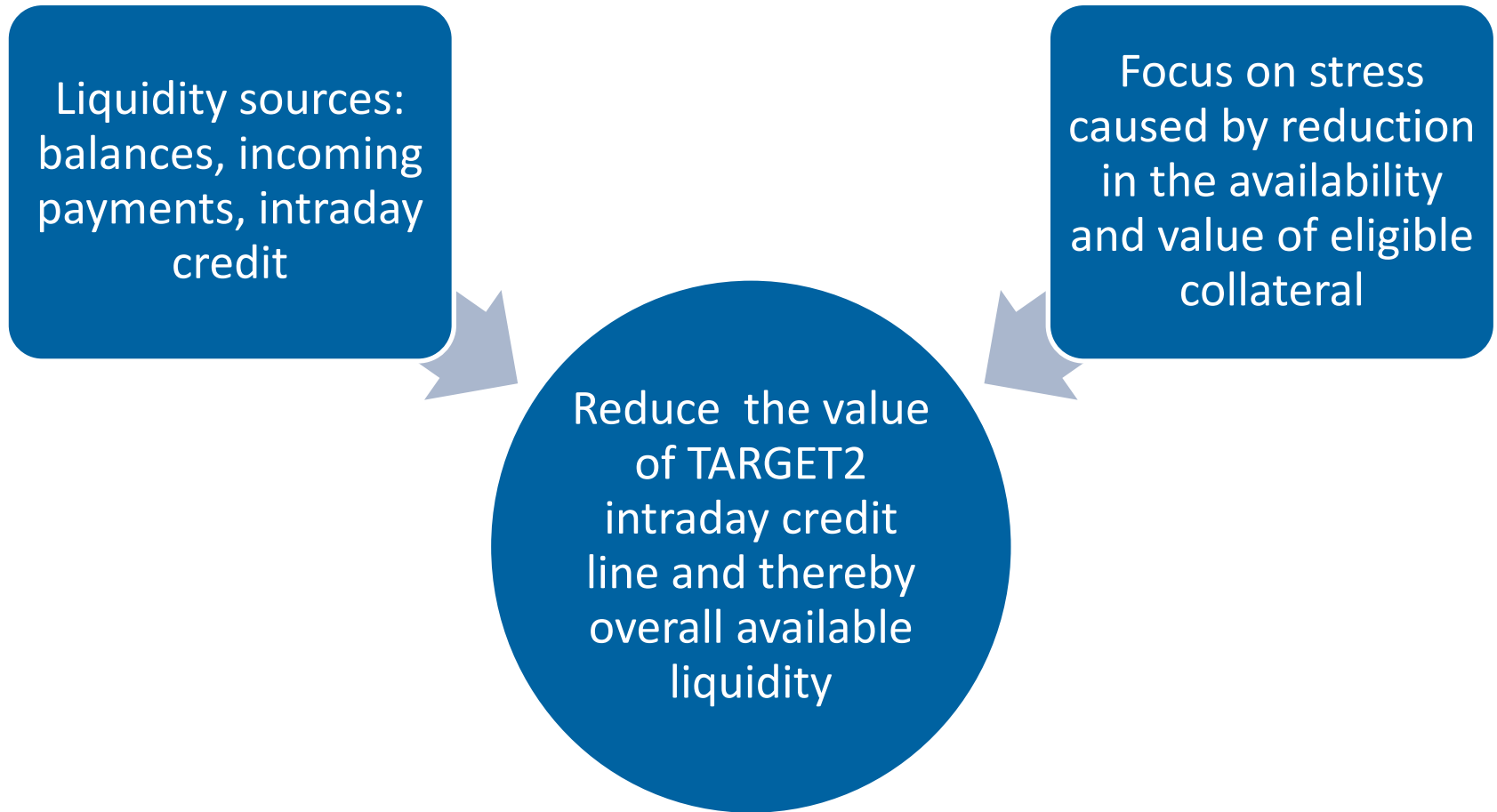


SIPS R defines the oversight requirements for SIPS by implementing the CPMI-IOSCO PFMI



Article 8 of the Regulation requires that an FMI has the ability to include stress tests in its risk management process in order to address liquidity risk

Sources of liquidity shortages



Stress-testing of liquidity risk in TARGET2

SIMULATOR SETUP AND METHODOLOGY

Scenario setup

Scenario definition

- System-wide shock, i.e. all euro-denominated securities are affected
- “Clean Cut” as main scenario, marketable and non-marketable assets affected
- Three degrees of severity: 30%, 50%, 70%

Scenario implementation

- Quantify impact for each bank and calculate adapted credit line
- Dataset with the new values is generated

Data range

- 2008-2013
- October/November reserve maintenance period

Assumptions

Collateral deterioration

- Focus on intraday credit line
- Additional effects of a drop in collateral value are not considered

Other FMI

- Interaction of TARGET2 with other financial market infrastructures and reactions of these to the stress scenario not considered
- T2 Simulator simulates only T2

Participants

- No behavioural reactions in TARGET2 and outside TARGET2
- Typical challenge in studies based on simulations using historic data

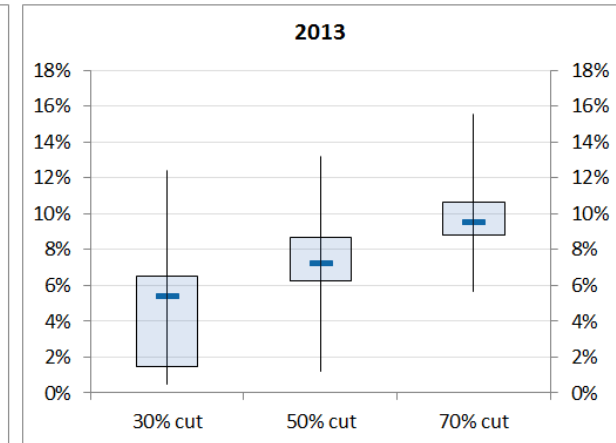
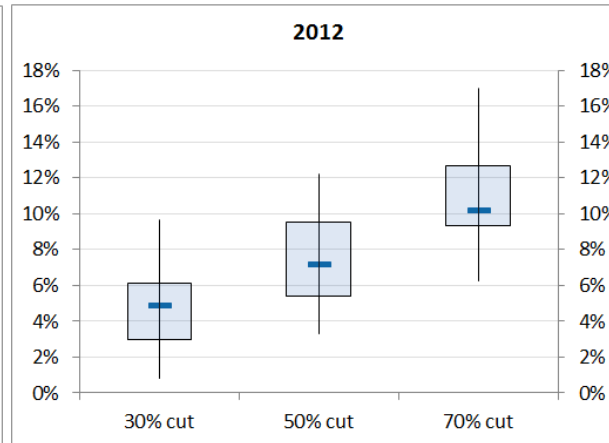
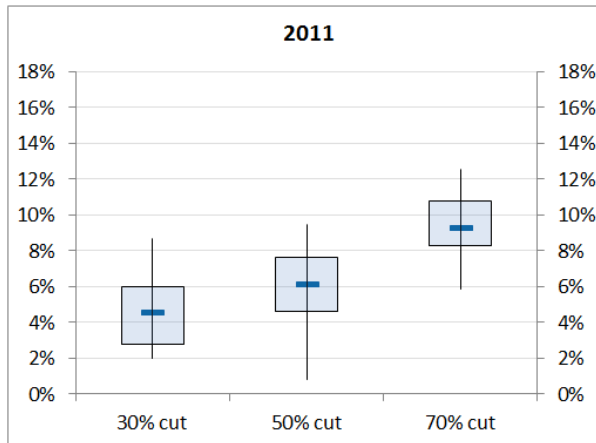
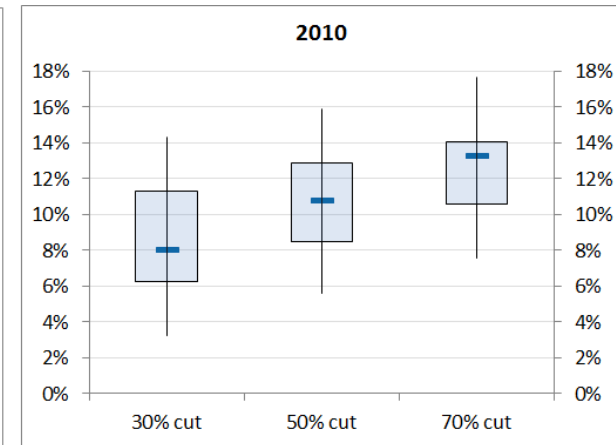
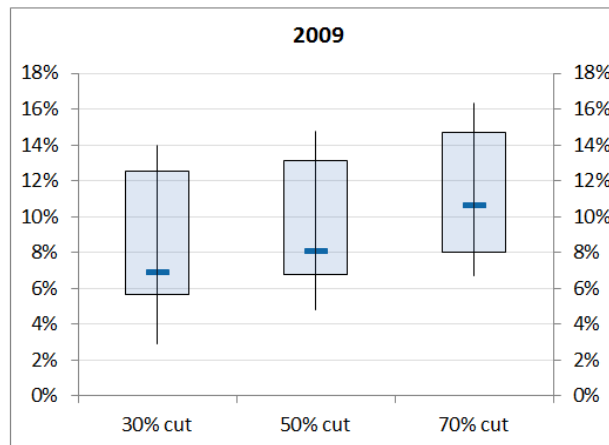
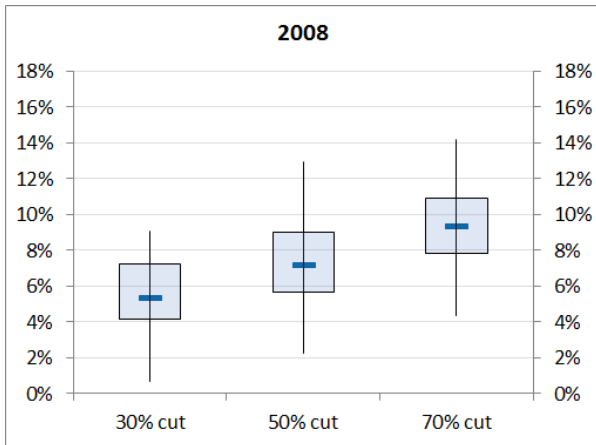
Credit Lines

- For some central banks providing intraday credit outside TARGET2, a proxy had to be used

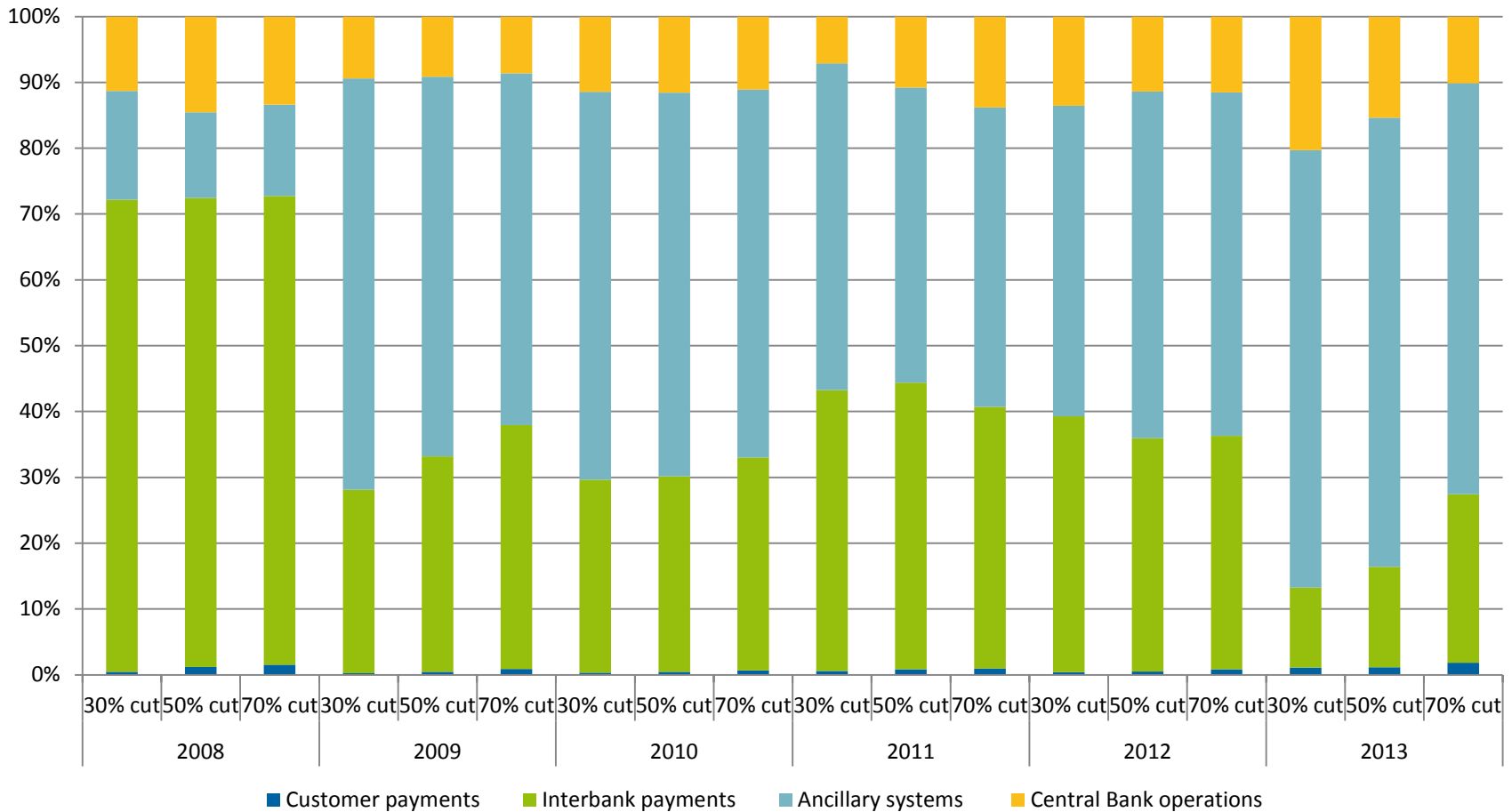
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RESULTS

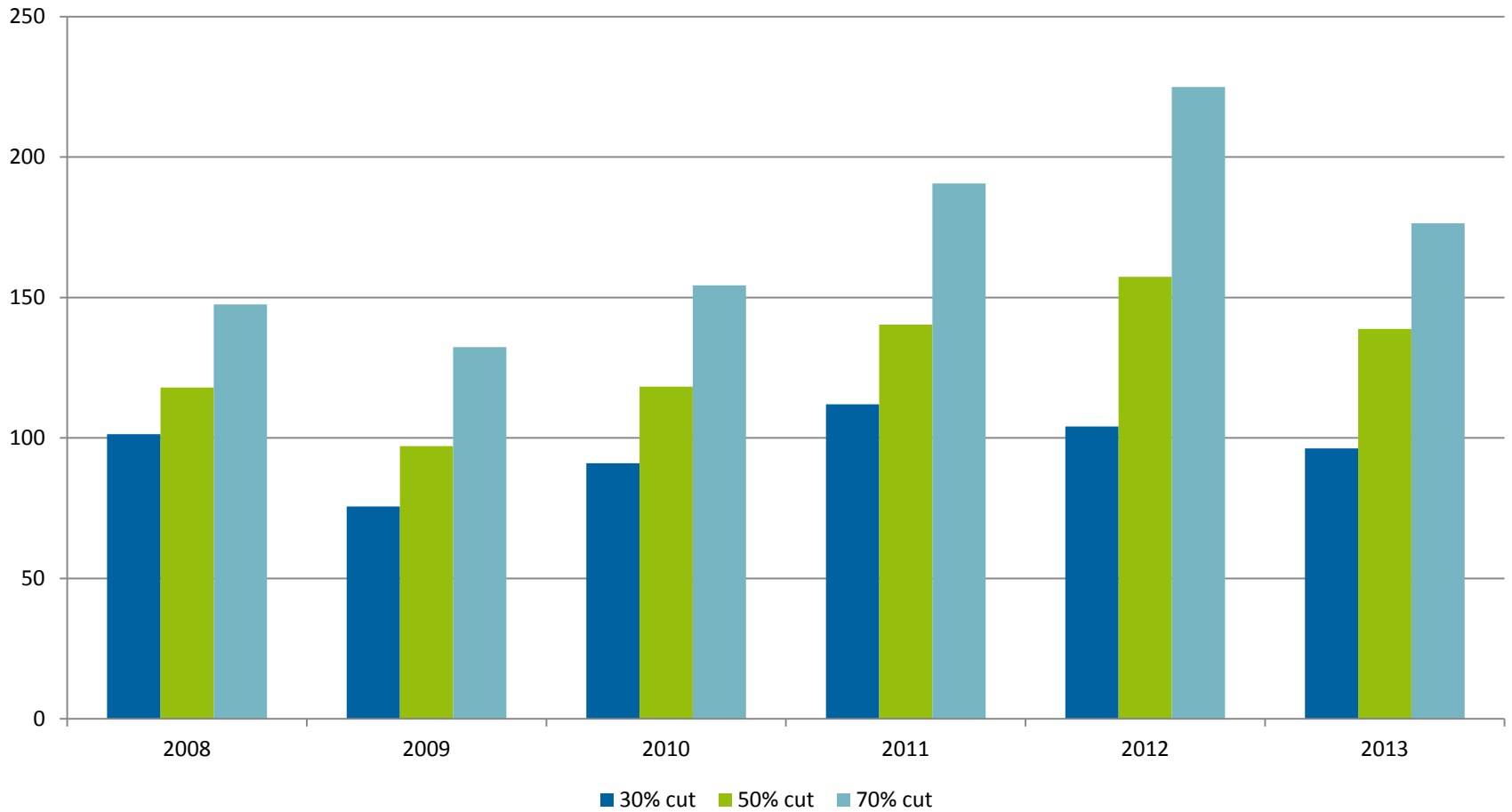
Unsettled payments in terms of value



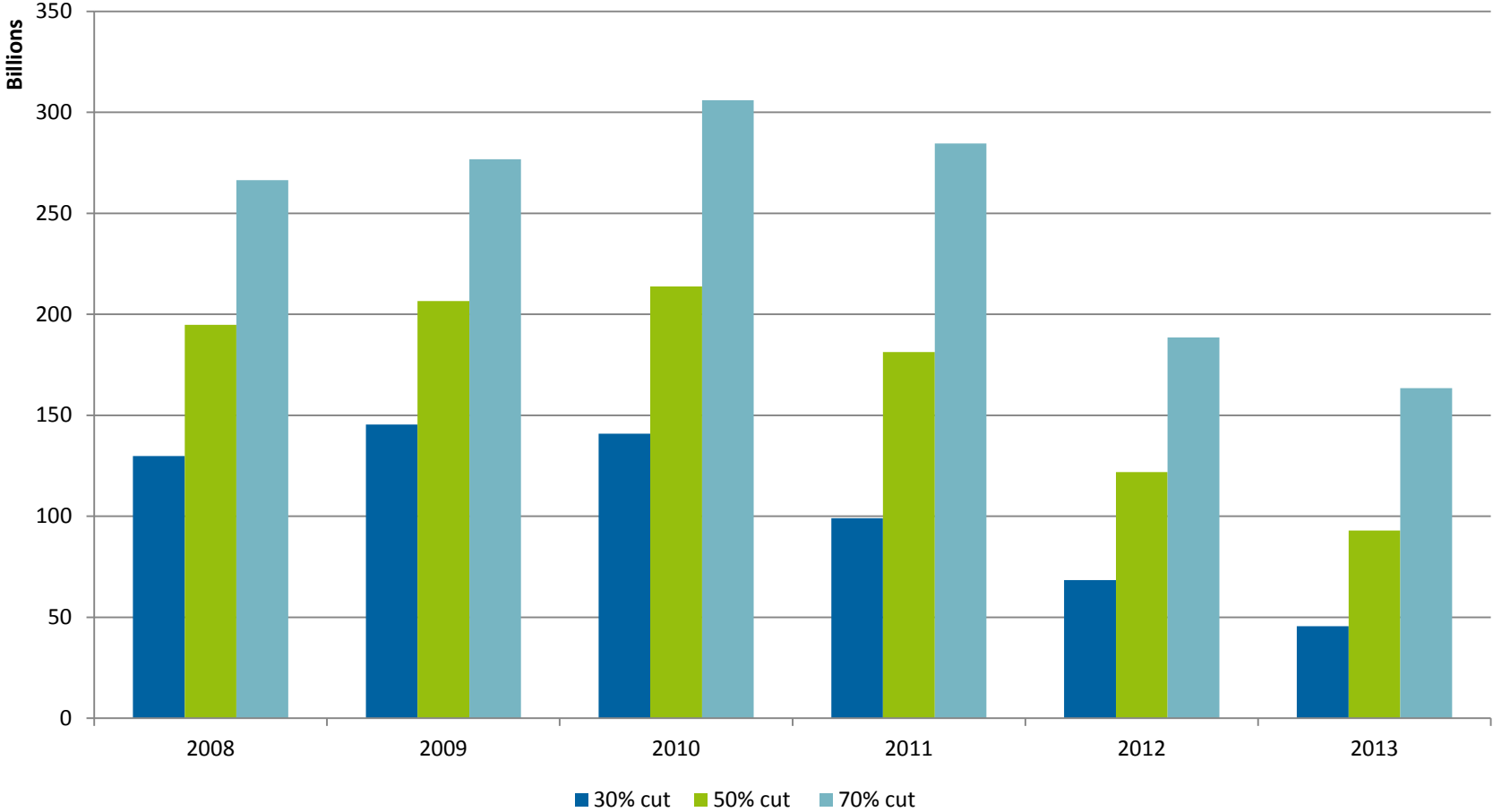
Categories of unsettled payments in terms of value



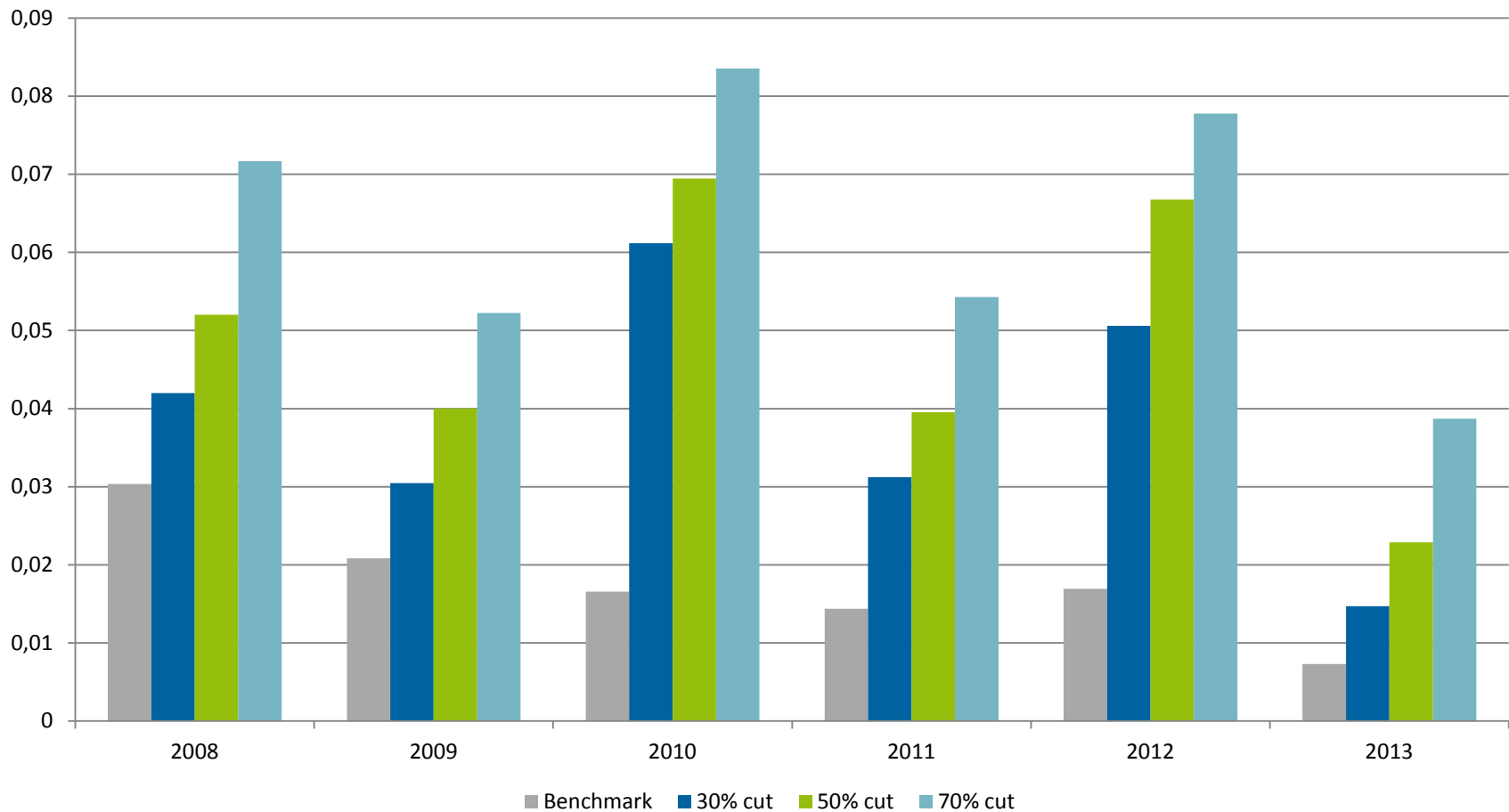
Participants with unsettled payments



Average daily queued payment value



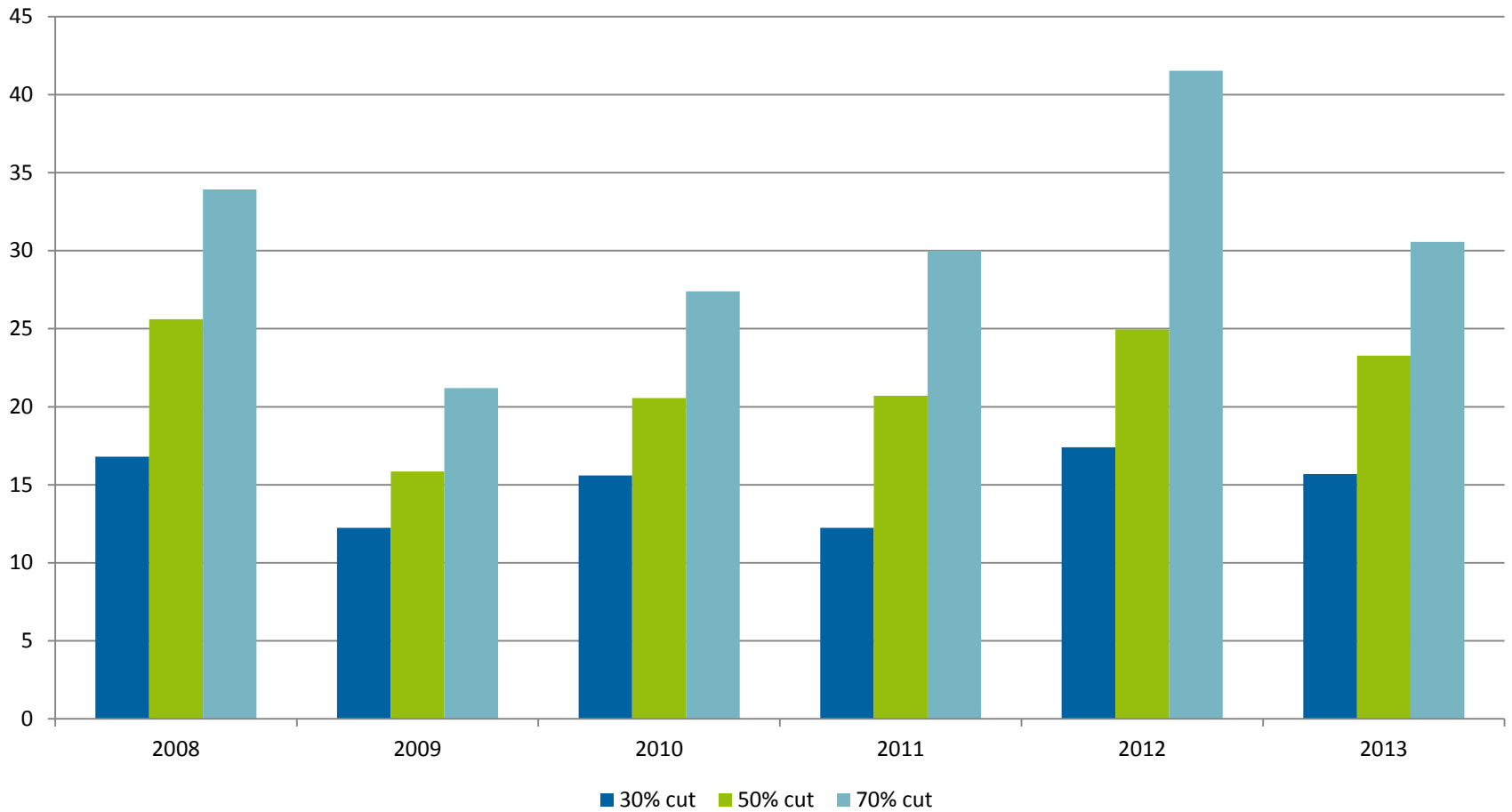
Delay indicator



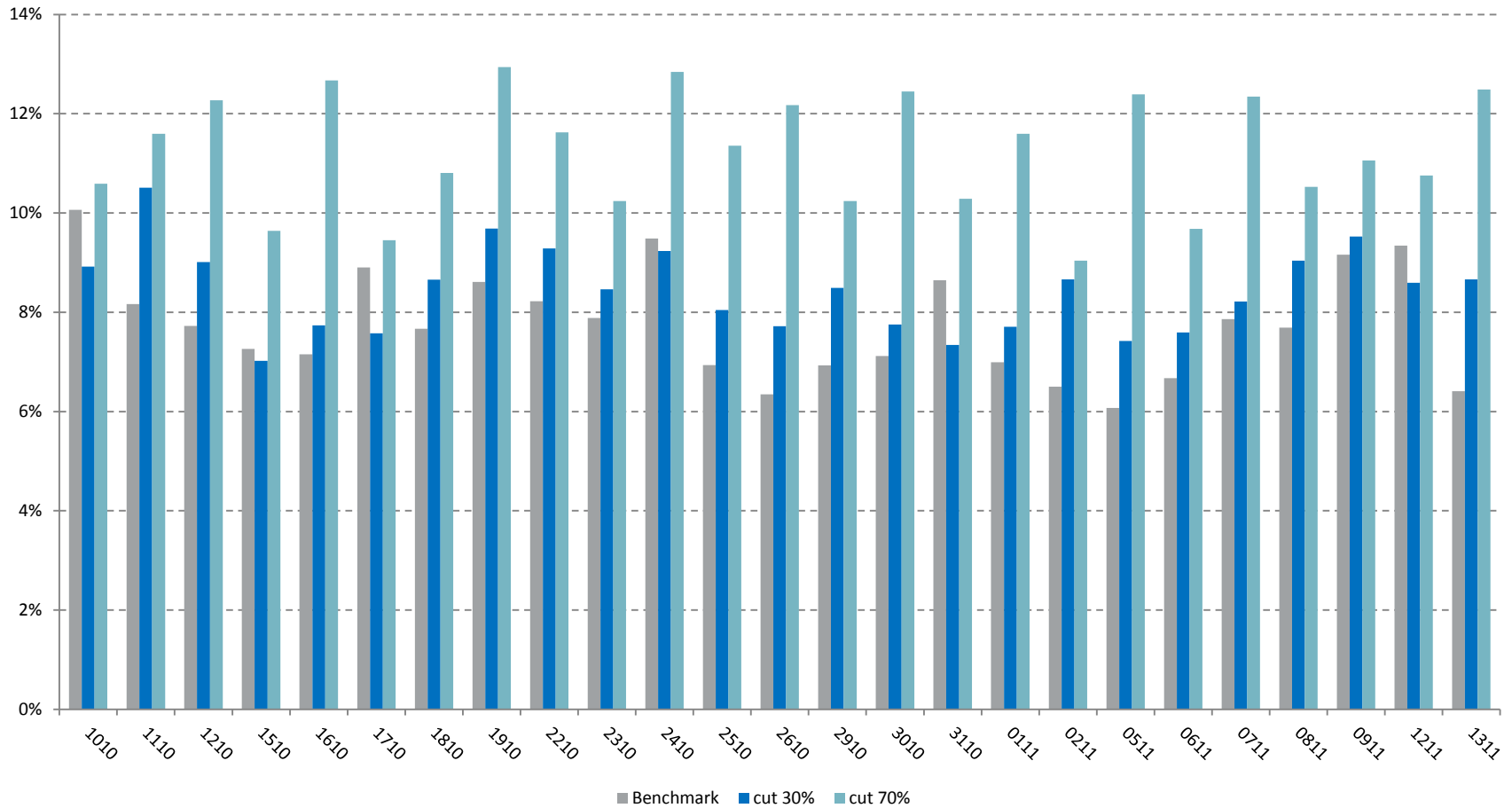
Details on methodology:

Kaliontzoglou, Alexandros and Alexander Mueller (2016): *Implementation Aspects of Indicators Related to Payments Timing*. In M. Diehl, B. Alexandrova-Kabadjova, R. Heuver, & S. Martínez-Jaramillo (Eds.) *Analyzing the Economics of Financial Market Infrastructures* (pp. 169-190). Hershey, PA: Business Science Reference.

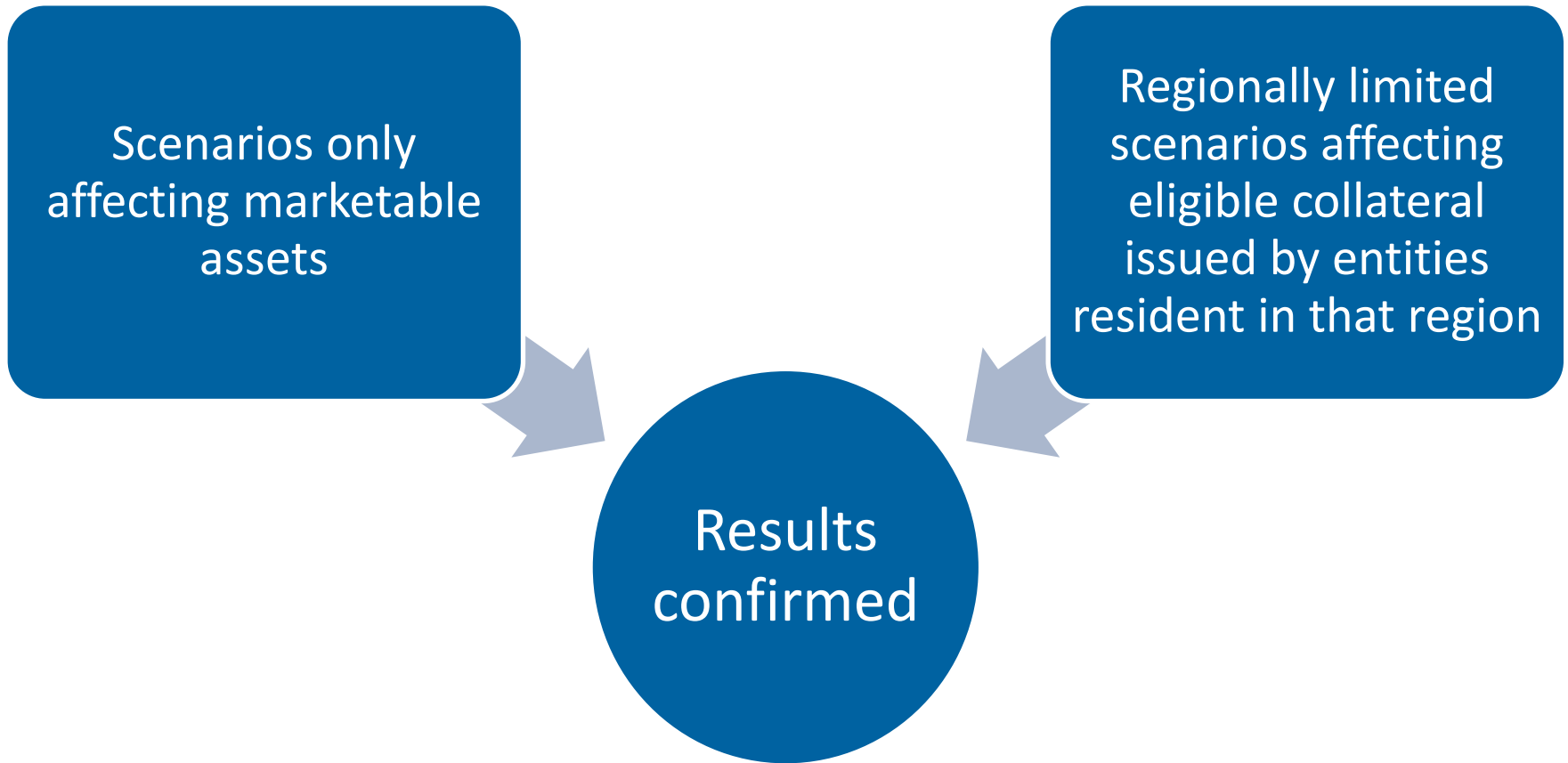
Participants with a negative EOD balance



Percentage value settled using collateral (2012)



Robustness checks



Stress-testing of liquidity risk in TARGET2

CONCLUSION

Main results

The TARGET2 stress-testing demonstrates that the system is resilient under stress and liquidity levels seem to be appropriate and supported by the efficient liquidity management features of TARGET2

Six different output indicators show expected and robust results

Severe effects can be observed for a few single days

Even in the worst scenarios 80-90% of TARGET2 turnover would have been settled

Impact of unconventional monetary policy

Thank you for your attention!

Now, stress-test the presenter by asking questions...