DEUTSCHE BUNDESBANK
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The audacity of settlement speed – settlement trade-off for ancillary systems in TARGET2

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Ancillary Systems Analysis
Disclaimer and Acknowledgment

*The results presented are **preliminary** and the views expressed do not necessarily reflect the views and opinions of the Deutsche Bundesbank and the Eurosystem.*

*The project is performed in close, fruitful and harmonious cooperation between **Richard Heuver** (De Nederlandsche Bank), **Alexander Mueller** (Deutsche Bundesbank) and the presenter.*

Critique address to the presenter (confidentially, please).

Objective of Analysis

- Development and documentation of
  - tools,
  - methods and
  - indicators

  to analyze the impacts of ancillary systems
- A database providing stylised facts of
  - the impacts of ancillary systems and
  - the respective settlement procedures on TARGET2
- Empirically based judgement on the impact of the current ancillary systems and resprective settlement procedures
  - on stability (risk-analysis) and
  - efficiency of TARGET2 (liquidity efficiency).
- A framework for analyzing the impacts of TARGET2-Securities (T2S)

Liquidity Costs of AS

- Basic trade-off: more settlement cycles
  - … enhance safety (finality)
  - … cause liquidity burden because of asymmetry

- Liquidity burden for whole system
  - liquidity sunk at AS
    - including technical accounts, sub-accounts, mirror accounts, guarantee funds accounts and dedicated liquidity
  - technical liquidity costs by different receiving and sending time of AS

- for single participant
  - liquidity costs due to asymmetry of incoming and outgoing payments
  - classical net/gross settlement trade-off

Identifying AS related payments

AS related payments are important in T2

- in terms of volume 18,6 %
- in terms of value 27,9 %

- AS related-payments
  - of which initiated by an AS 99,9 %
  - of which ASI procedure used 96,2 %
  - of which tranclass 3 related 93,4 %
  - AS BIC debited / credited 42,6 %

ASI Settlement Procedures

- SP 1: liquidity transfer to/from mirror account
- SP 2: real-time settlement: AS performs a real-time settlement either in the accounts of two participants or between a participant and the AS technical account
- SP 3: Bilateral settlement: AS sends simultaneously debits and credits
  - independently processed
- SP 4: Standard multilateral settlement: simultaneously sent debits and credits. Debits have to be settled before credits
- SP 5: Simultaneous multilateral settlement: simultaneously sent debits and credits. Simultaneously checked, processed or queued
- SP 6: Settlement on dedicated liquidity accounts:
  - night-time settlement / daylight settlement
  - integrated / interfaced model
- PM: Some AS use only PM

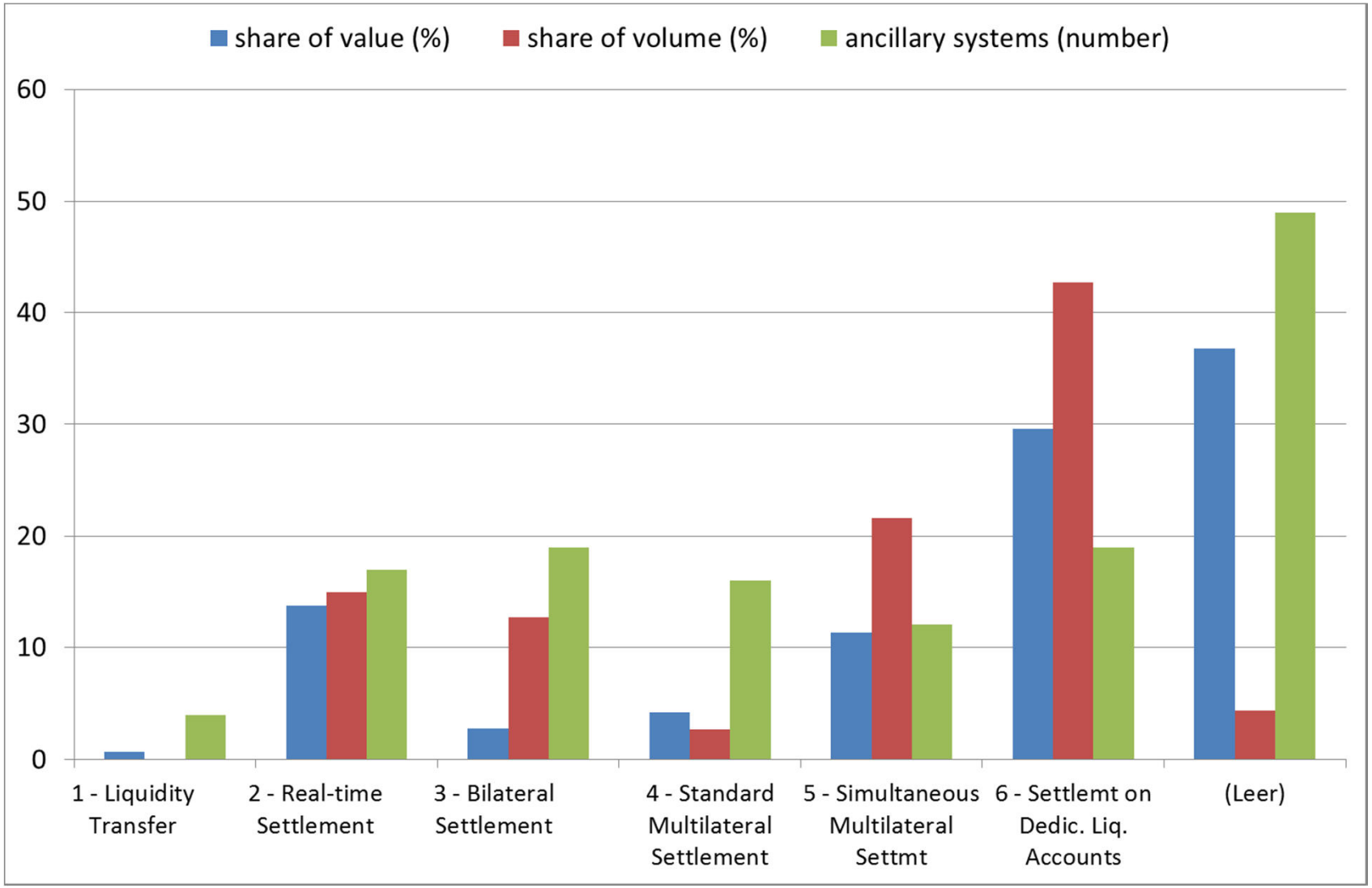
AS using Different Settlement Procedures

Type of AS\SP	1	2	3	4	5	6	PM	sum
CCP		2	4	1				**7**
CH/PEACH				4	3	2	3	**12**
LVPS				1			1	**2**
MMS		2					1	**3**
MMS/SSS							1	**1**
other		1	1	2		1	1	**6**
PRS/LVPS			1		1			**2**
RPS			3	6	5	4	8	**26**
SSS	2	14	10	6	3	11	6	**52**
sum	**2**	**19**	**19**	**20**	**12**	**18**	**21**	**111**

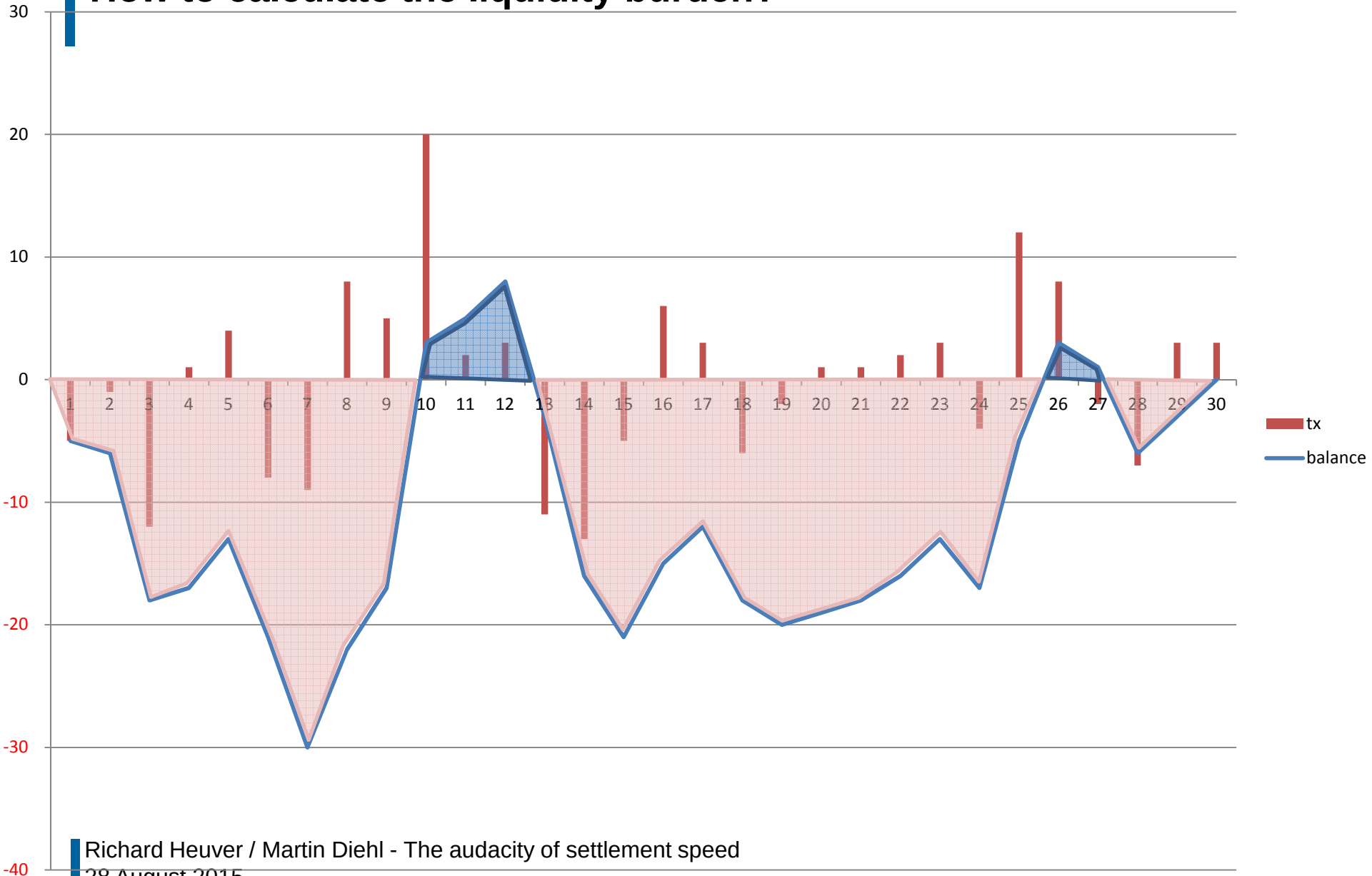
Basics

- use of different settlement procedures of AS was taylor-made by the designer of T2 to the demand of AS
- Each SP produces specific liquidity costs and efficiency gains
- SPs are differently used by AS

Ancillary systems using different settlement procedures in TARGET2



How to calculate the liquidity burden?



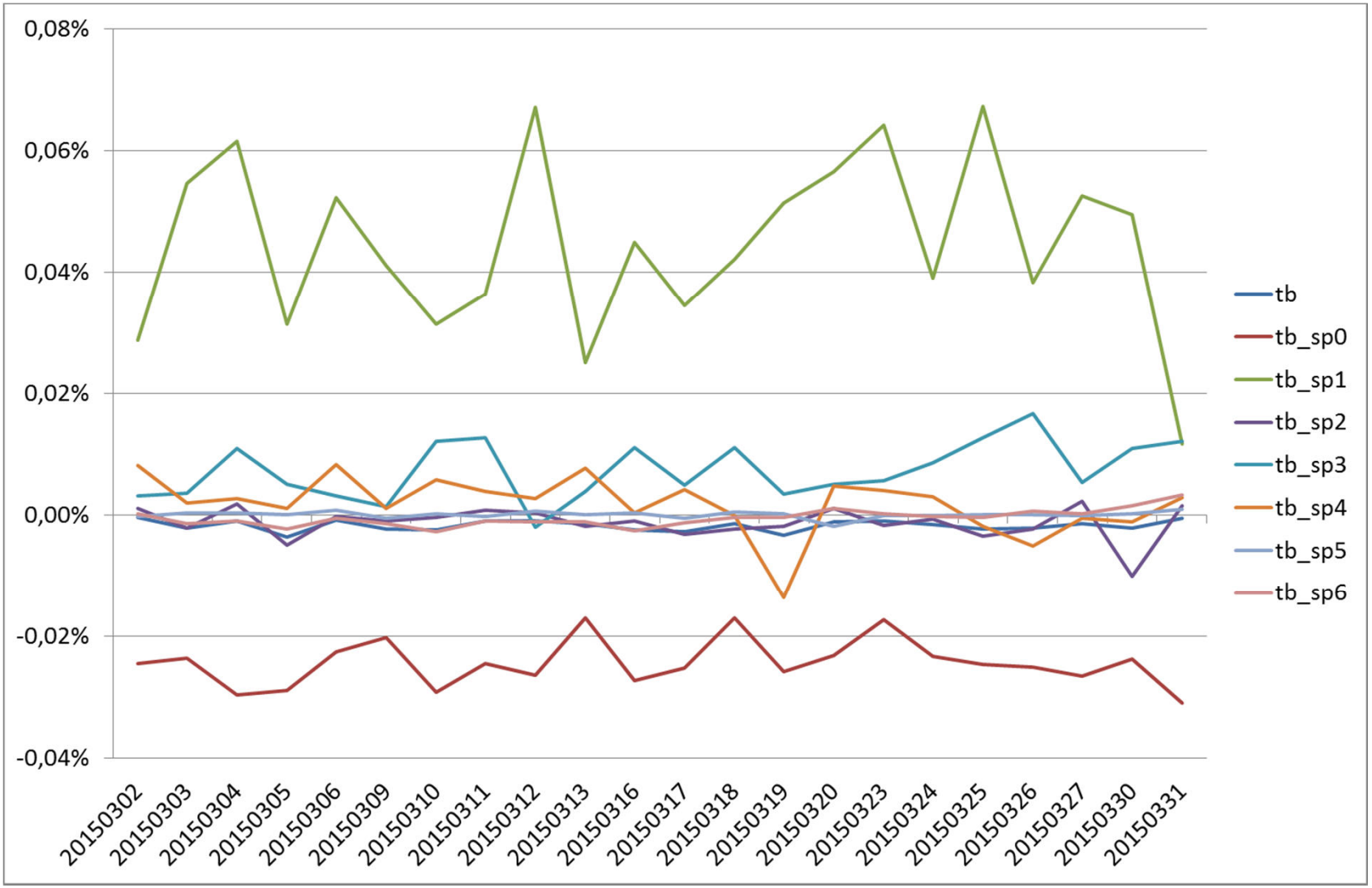
How to calculate the liquidity burden?

- technical liquidity burden (tb)
  - looking at all transactions
  - sum of blue shaded areas – sum of red shaded areas
  - weighted by time (earlier areas count more than later ones)

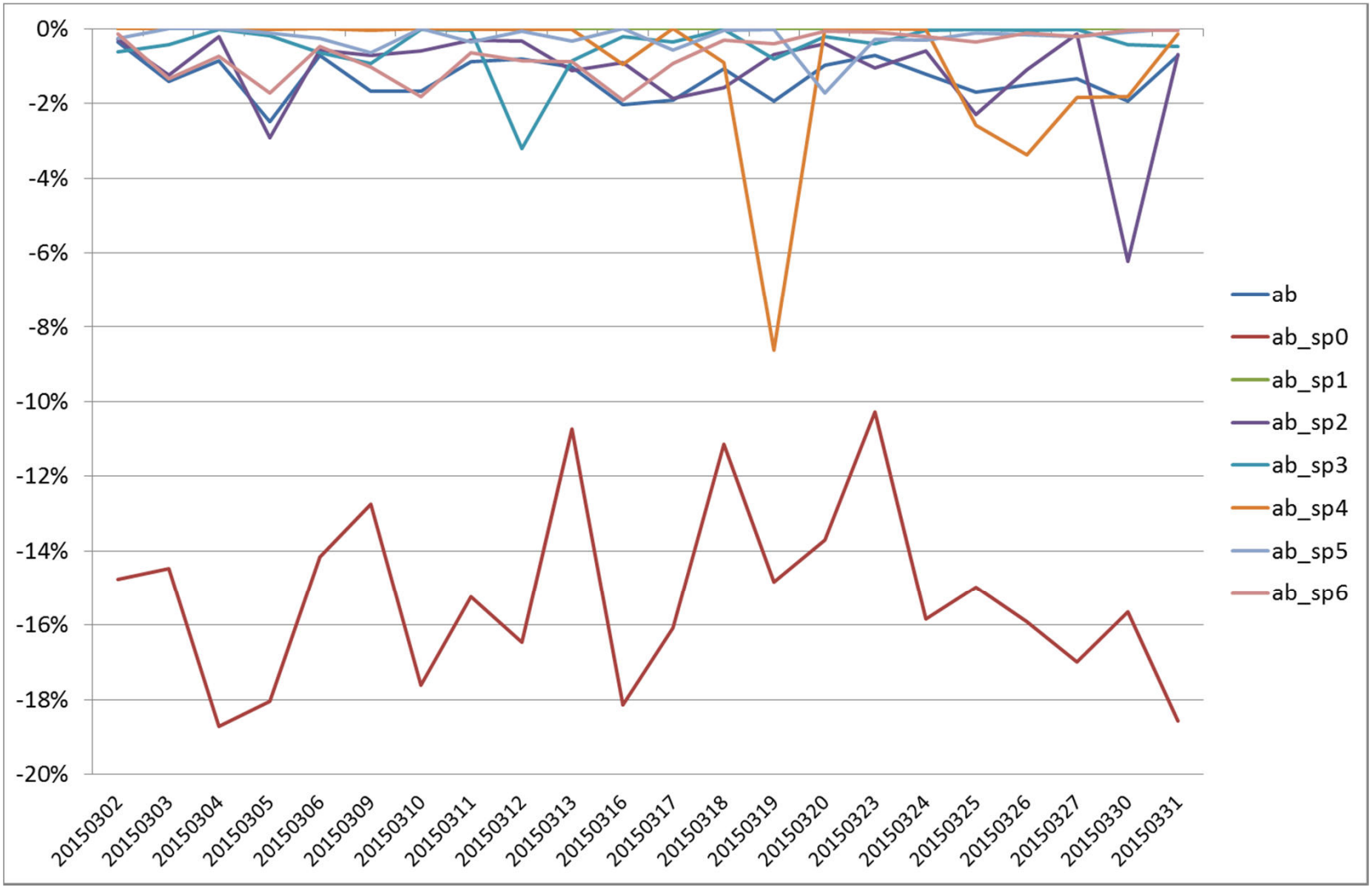
- asymmetry liquidity burden (ab)
  - looking at all transactions
  - sum of red shaded areas

- participant specific asymmetry liquidity burden (sb)
  - looking at single participant
  - sum of participant specific red shaded areas

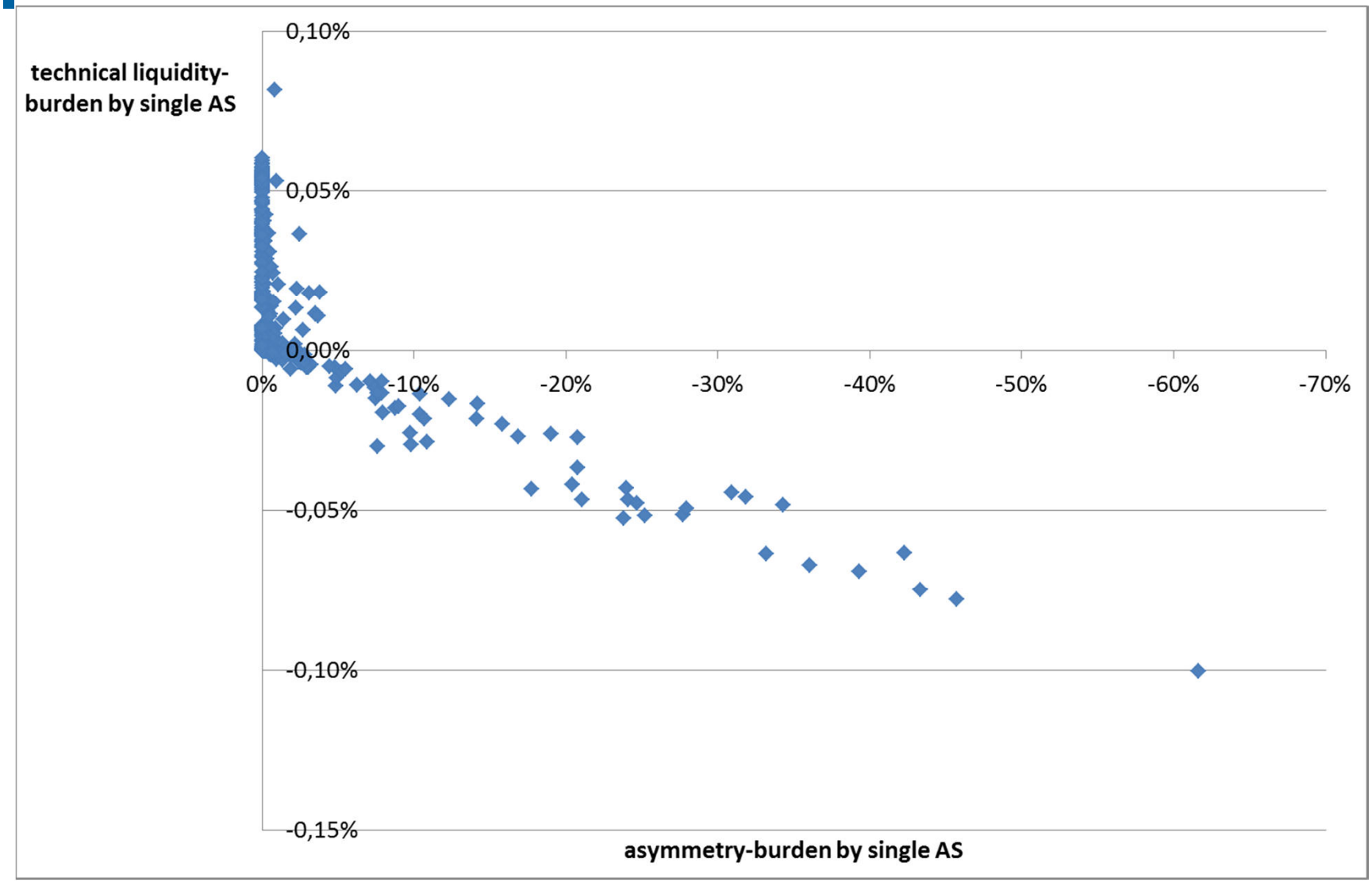
Technical liquidity-burden for different settlement procedures



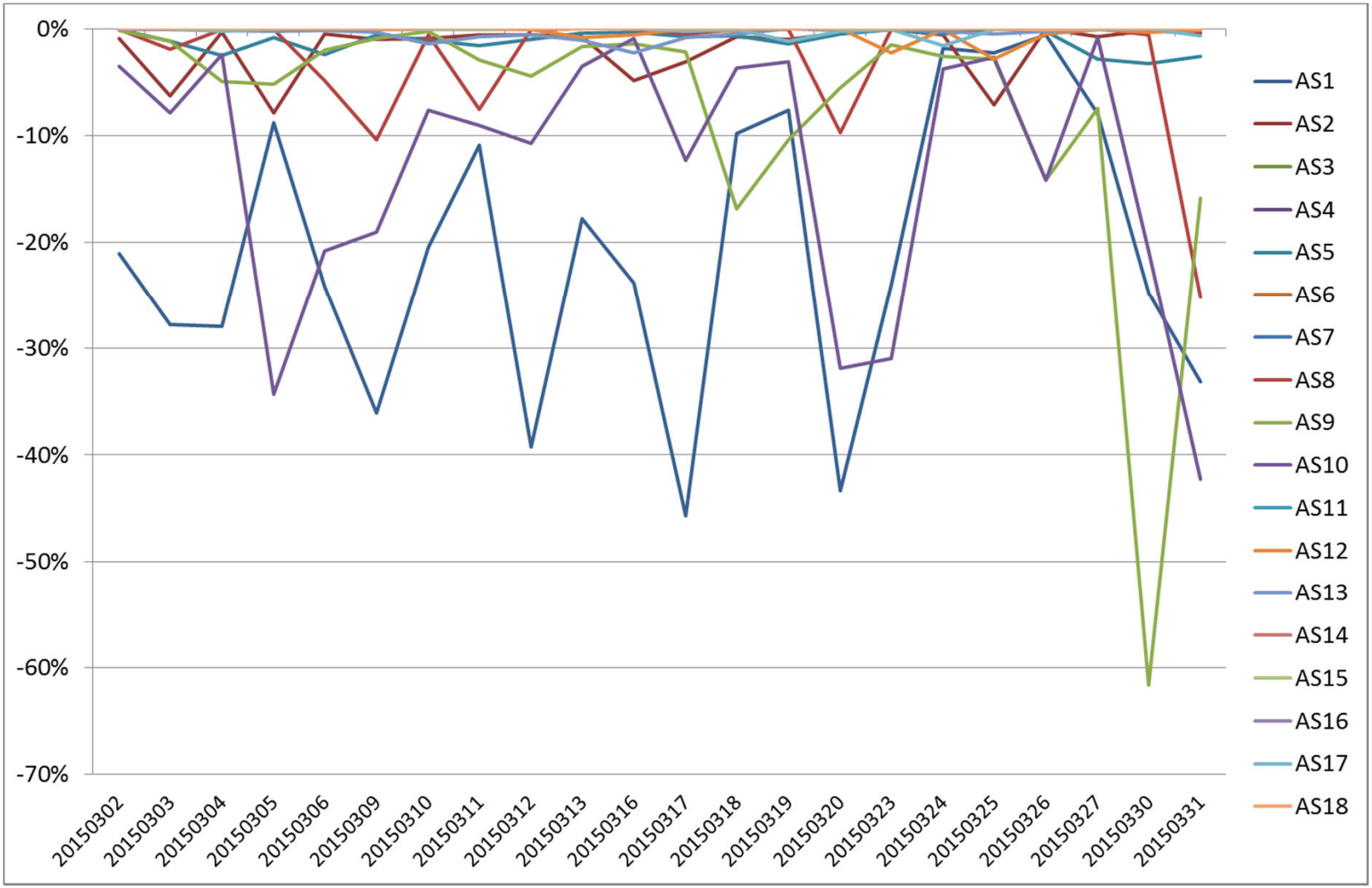
Asymmetry liquidity-burden for different settlement procedures



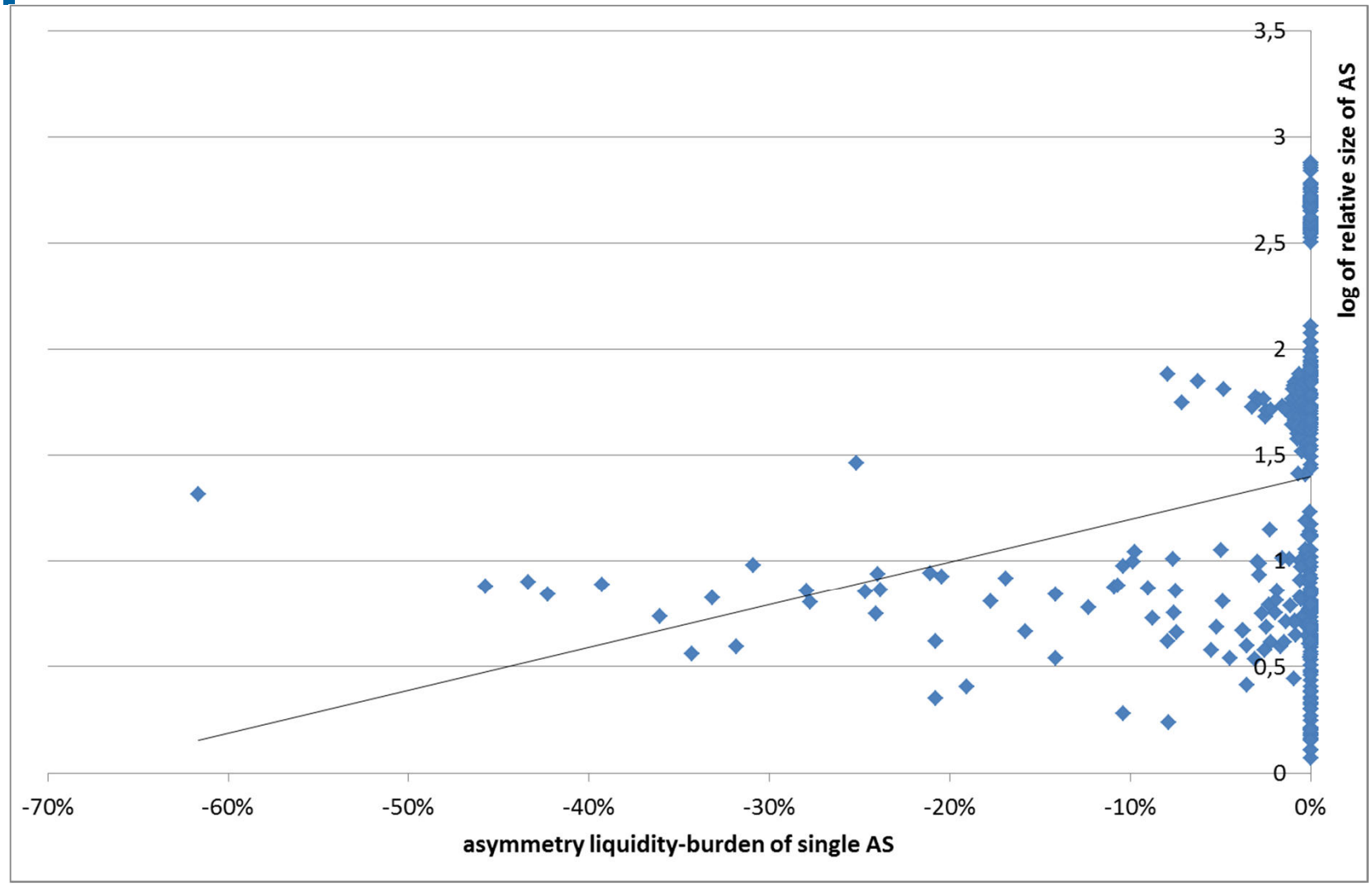
Results by single AS



Asymmetry liquidity-burden by AS



Asymmetry liquidity-burden by size of AS



Conclusion

- sizable variety of liquidity-burden
  - by AS
  - by settlement procedure
  - not so much by size

- importance of calculating participant-specific liquidity-burden!

- stable use of settlement procedures

- focus was and is on operational stability

- liquidity saving is an issue, but requires AS-specific action
  - in times of preparation for T2S no ressources available for that