The Impact of Payment Splitting on the Liquidity Requirements of CHAPS

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Overview (1)

- Introduction of payment splitting

- Simulations using BoF-PSS2

    - 9 days of data

    - splitting at 500m, 250m, 100m

    - test intervals every 3, 5, 7 minutes

    - liquidity varying from upper to lower bound

    - measurement of time value of queues

Overview (2) - Conclusions

- Hypothesis i) - Can splitting reduce payment queues ?

    - reduction is highest when using 100m split,
      at higher amounts of liquidity available
    - it is possible that in certain circumstances queues are growing

- Hypothesis ii) - Can splitting reduce liquidity needs ?

    - average of 5% saving of liquidity requirement
    - banks that rely most heavily on incoming payments,
      are most vulnerable to delays
    - trade off between settlement delay and liquidity saving
    - overall delay stays well within average spread

- Legal issues will have to be resolved

- Future work: combination with other liquidity saving methods

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Possible items for discussion

- Likelyhood of cascading in relation to size of threshold and postponing period

    As threshold 100m delivers most significant results, could it be interesting to also explore the use of threshold at 50m or maybe even 25m ?

    Longest postponing periode (7 mins) delivers most change of cascading, on the other hand liquidity is frozen for 7 mins.
    Could it be that immediately queueing could keep payments flowing ?

- Liquidity needs vary between banks

    Which type of bank benefits the most and the least from splitting ?

    Could one, for instance, think of an ideal splitting threshold for each type of bank ?

- Possible future implementation

    If splitting were to be successfully implemented, collateral requirements would then decrease, most probably resulting in reaction of banks to withdraw collateral.

    Do we then face the same situation again ?