Discussion of
”Balance sheet implications of the Czech National Bank’s exchange rate commitment”

CNB (2019-05-27)

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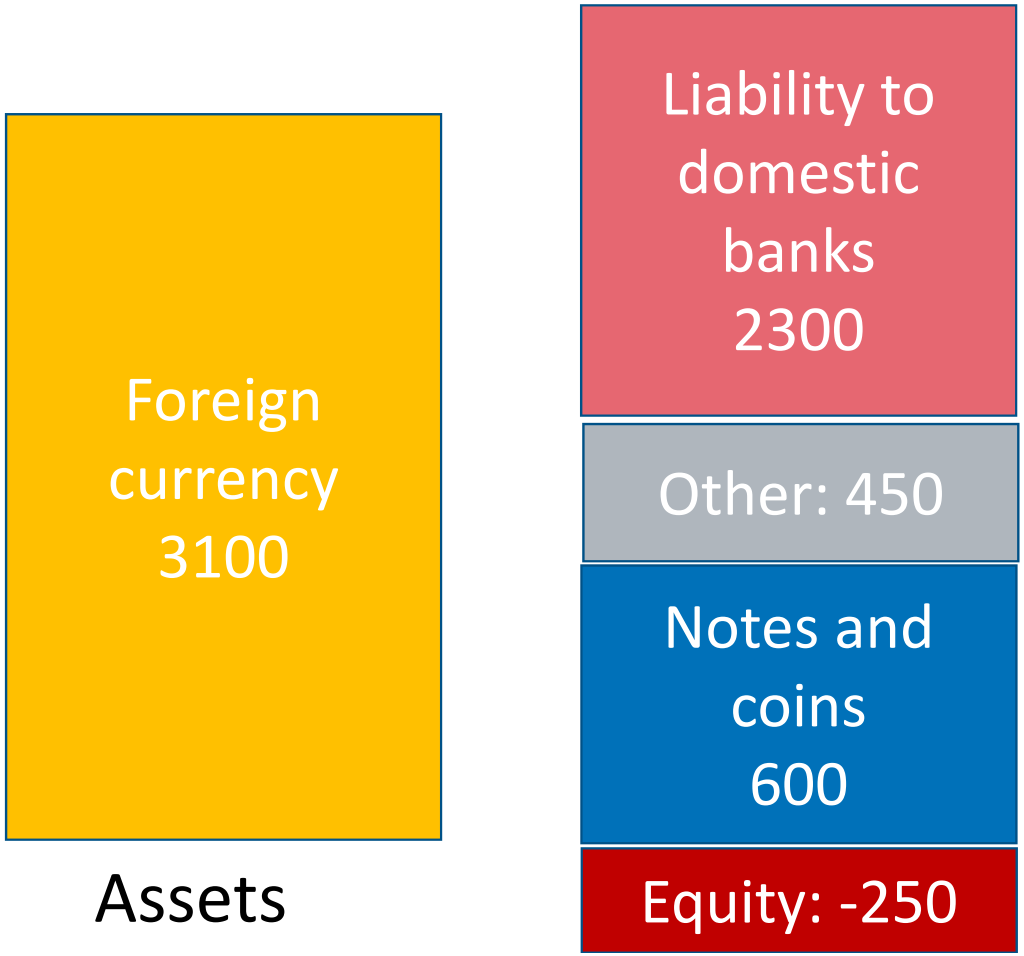
How much equity does a central bank need?

- Is the current negative CNB capital a problem?
- To protect it's policy independence, CB needs financial independence
  - In other words: to be able to cover it's costs with income
  - It also needs a buffer related to financial risks on the balance-sheet
- Thee sources of income (excluding fees):
  - Cash
  - Equity
  - Leverage

Present situation of the CNB



The CNB case

- Costs: 1,5-2 bn - historically, costs seem to have been quite flat in nominal terms
- Cash: currently around 600 bn
- Assuming a medium term r=2, pi =2, i = 4 gives 4%*600 = 24 bn seniorage/year
    - Additionally, money is expected to grow at 5%/year, so seniorage will increase in level

- Hence, the -250 billion could be eliminated with about 10 years seniorage income
- On top of this, the levered 2500 bn generates a spread if portfolio return>repo
    - Eg, a spread of 1% would genereate an additional 25 bn/year with the 2017 balance sheet

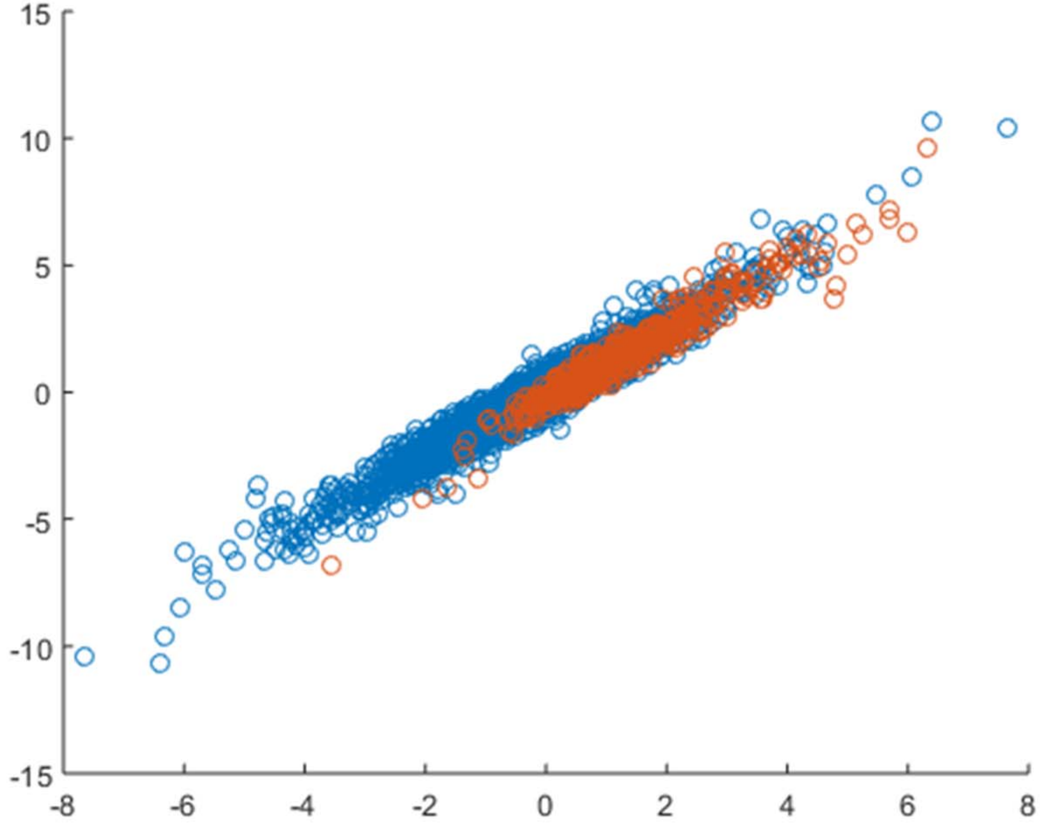
- Concusion: Outlook quite promising, no need for recapitalization

Comment 1: Seniorage risks in the longer-term

- The assumption is 5% growth in money demand with an adverse scenario
- Sweden offers a warning example: Cash has dropped from 100 bn to 58 bn SEK in 5 years
  - Arrival of small-scale electronic payments by smart-phone
  - Accelerated technology for quick card payments
  - Policy-measures to reduce the black economy (e.g. tax deductions for home improvements)
- Iceland and Norway on a similar path (though not as extreme)
- Given horizon of 30 years, reasonable probability that also CNB will be affected

Comment 2: Respect lower bound?

3-month euribor against 3-month CHK rate



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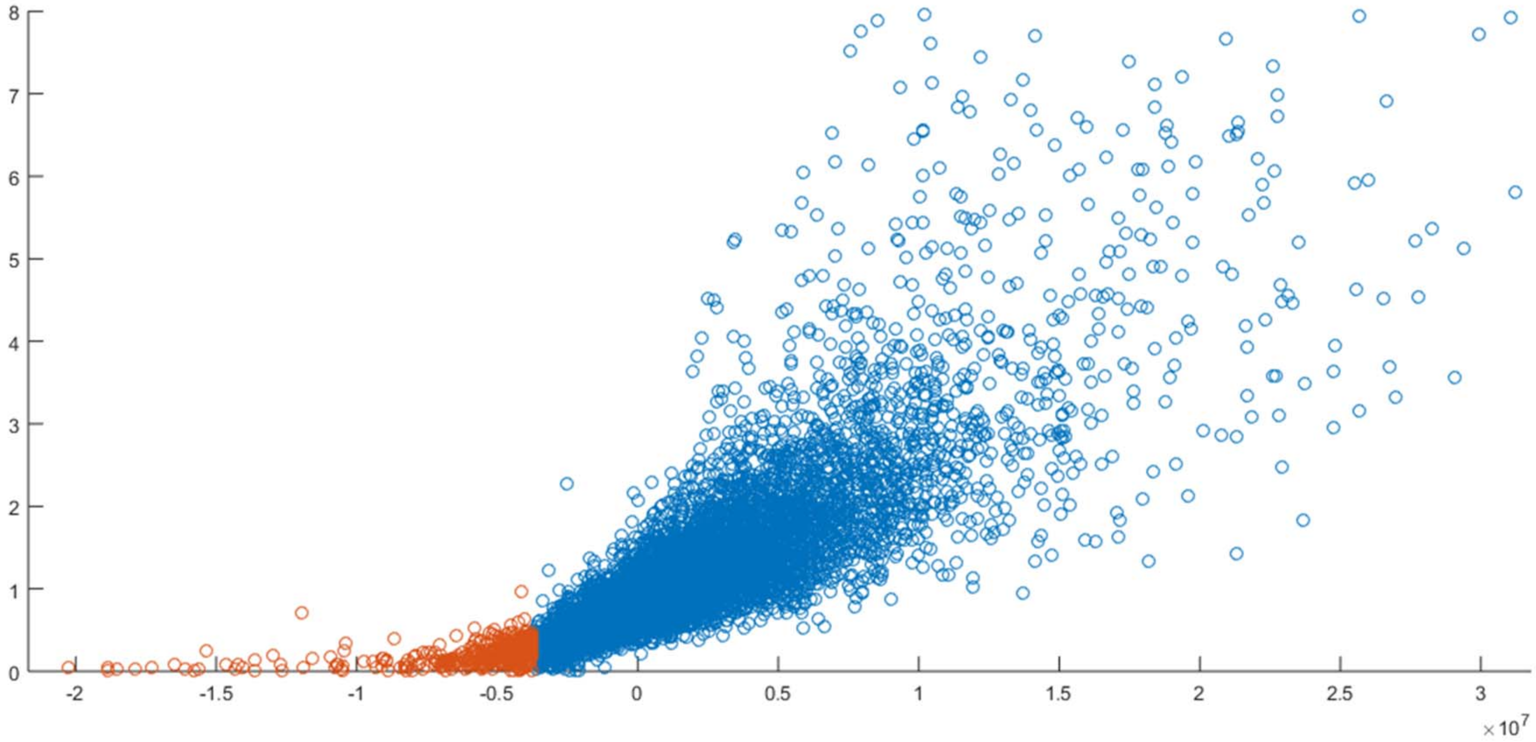
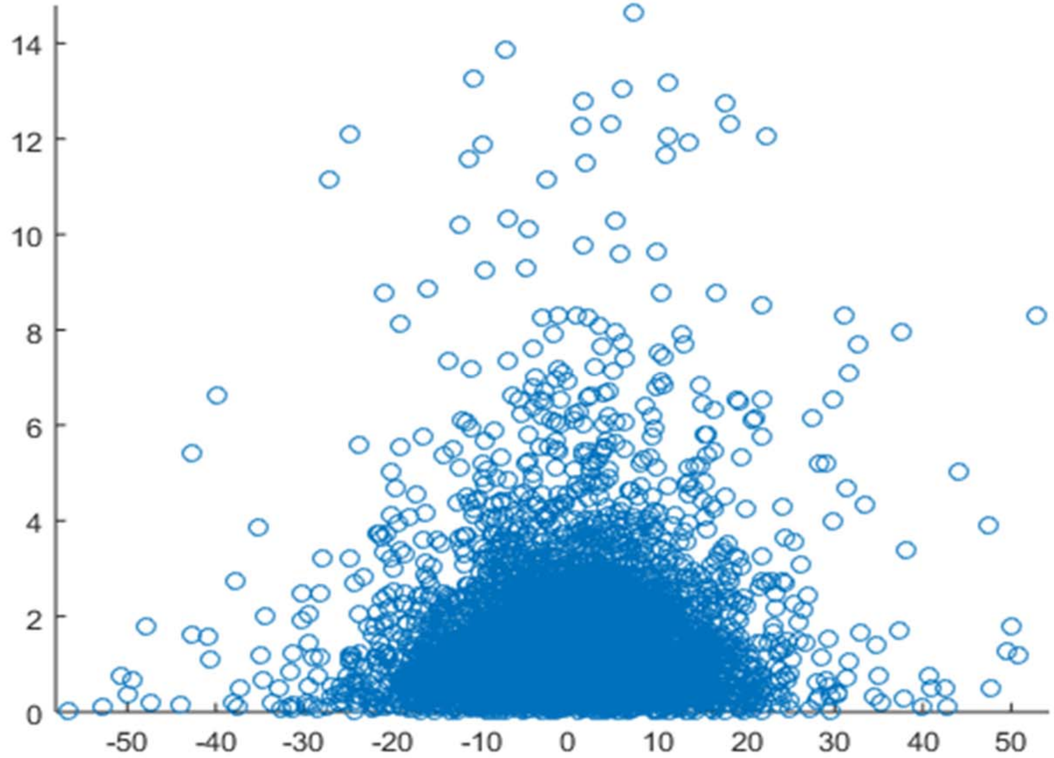
Comment 3: The exchangerate rate dominates



Comment 4: Add some long-term purchasing parity?

Exchange rate index (base = 1)



Cumulated inflation difference, home vs foreign

Comment 5: Tail risk?

- Given that we are thinking about really long-term balance-sheet risks, need to consider losses from financial crisis?
- Fat tails?

Towards a framework for understanding balance-sheet risks

- ”Risk-mandate” for central bank
  - ”The probability of a recap the next 10 years must not exceed 5%”
  - ”The probability that the cumulated losses of the CB exceeds 100 bn must not exceed 5%”

- Model such as the one outlined by the authors can then be used to evaluate various policy proposals that have balance-sheet effects. Tail analysis at the center…