Discussion of "Foreign Exchange Intervention with UIP and CIP Deviations: The Case of Small Safe Haven Economies" by Philippe Bacchetta, Kenza Benhima and Brendan Berthold

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Tell me your friction, I tell you the IP deviation for FX intervention

- Interest parity condition – UIP with expectations of future spot rate, CIP with forward rate.

$$(1+i_t)\frac{S_t}{S_{t+1}} = (1+i_t^*)$$

- Without a friction, FX interventions (accumulating reserves) are irrelevant.

- If financial friction is related to risk, UIP deviations matter:
  - Example: intermediaries have a Value-at-Risk constraint. No CIP deviation as it is covered.

- If relevant frictions are things other than risk (eg convenience yields), CIP deviations matter:
  - Example: Amador et al (2020). UIP deviations are irrelevant.
  - CIP matters – it is costly.

What to do when there are both UIP and CIP deviations AND they are of opposite sign?

- Benefits and costs of FX interventions (abstracting from why CBs accumulate reserves)

- Buy foreign assets, sell Swiss liabilities (interesting esp. at the ZLB):
  - Negative UIP deviation: profitable for Switzerland – liabilities cost less.
    - Amador et al (2020): UIP doesn't matter, it is fair risk compensation.
    - You profit in good times, lose when the CHF appreciates in bad times.
    - SNB losses so far this year: CHF 141 billion.
    - This paper qualifies that result to show it might matter. And can be beneficial for SNB under certain conditions.
  - Positive CIP deviation – costly for Switzerland - liabilities cost more.
    - Similar to other papers.

UIP nests CIP & risk premium: UIP matters if SDFs differ.

- A framework to have both UIP and CIP deviations and even can be of opposite signs.
- Intermediaries are the marginal investors.
- They face FX risk and are risk averse. Optimally choose how much to hedge.
- Operating costs increasing in foreign holdings (similar to a convenience yield).
- Participation constraint applies to their entire portfolio.

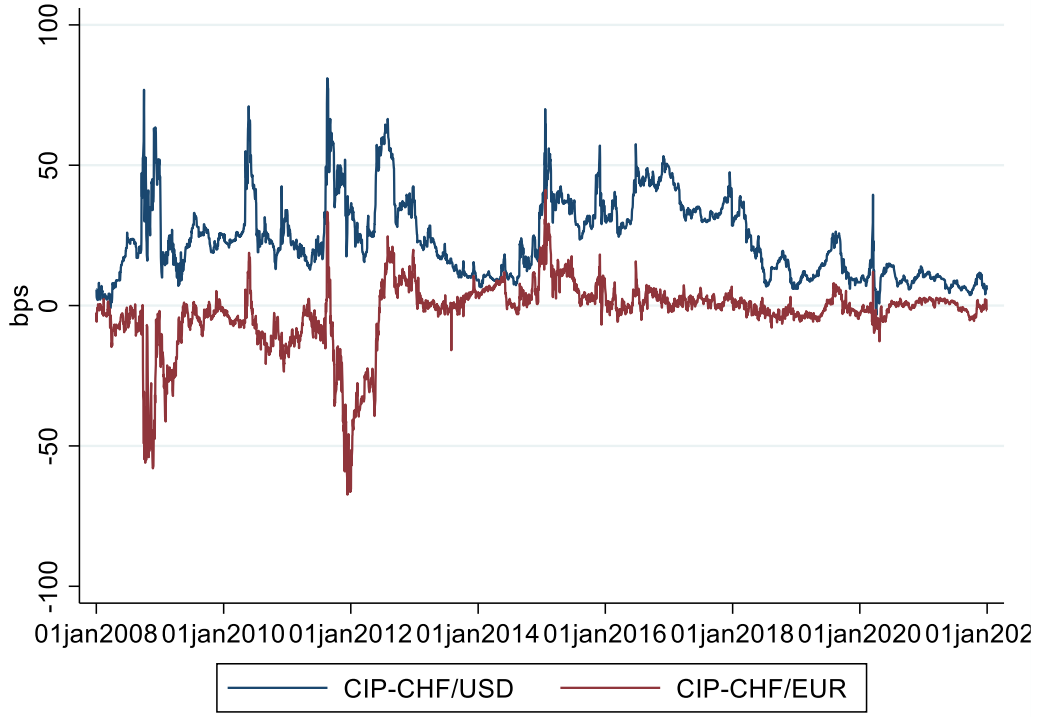
- Two key equations:
  - UIP deviation is CIP deviation and risk premium – CHF: $cov(M_t^*, X_{t+1}^*) > 0$

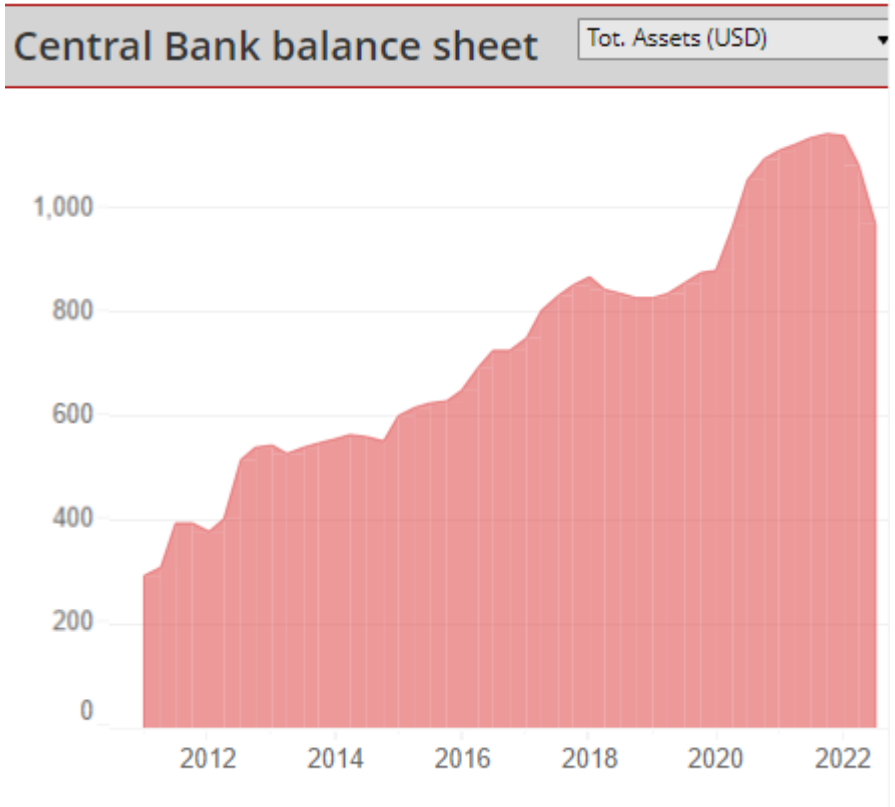
$$devUIP_t = devCIP_t - \frac{cov(M_t^*, X_{t+1}^*)}{E_t M_{t+1}^*}$$

  - Marginal benefit of FX interventions:

$$MBFX_t = \underbrace{-\overbrace{\frac{\Gamma gfl_t + \chi}{E_t m_{t+1}^*}}^{-devCIP} + \frac{cov(m_{t+1}^*, X_{t+1}^*)}{E_t m_{t+1}^*}}_{-devUIP} - \frac{cov(m_{t+1}, X_{t+1}^*)}{E_t m_{t+1}} + \frac{\alpha_0}{\eta_t E_t m_{t+1}}\Gamma$$

Comment 1: CIP always positive. What about the EUR?





- CIP deviations CHF/EUR are on average negative.
- Since 2015, SNB assets grew at a much faster pace (EUR share = USD share). Around the same time CHF/EUR deviations went to zero.
- Estimations suggest SNB targets UIP, but CIP seems have gone to zero as SNB accumulated FX reserves. What about UIP? A systematic empirical evaluation can help the paper a lot.

Comment 2: UIP nests CIP. What about EUR?

- Generally, this condition is something you can test for many currency pairs:

$$devUIP_t = devCIP_t - \frac{cov(M_t^*, X_{t+1}^*)}{E_t M_{t+1}^*}$$

- Doing it with the CHF/EUR with a sample copy of Consensus Economics suggests that the covariance term is different (with different signs) for CHF/EUR vs CHF/USD (just to illustrate).

SWISS FRANC

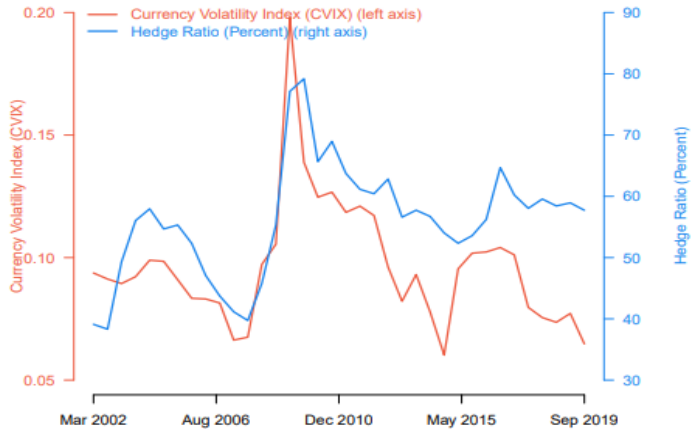
Francs (CHF) per Euro	Consensus of 36 F'csts	% Change from Spot	Forecast --- Range --- High	Low	Swfr per US$
Spot Rate (Dec. 6)	1.044				*0.926*
Forecasts (end-Jan. 2022)	**1.052**	*-0.8*	1.024	1.083	*0.924*
(end-Mar. 2022)	**1.058**	*-1.3*	1.020	1.107	*0.929*
(end-Dec. 2022)	**1.069**	*-2.3*	0.980	1.130	*0.928*
(end-Dec. 2023)	**1.090**	*-4.2*	1.000	1.180	*0.932*

- Test whether UIP indeed nests CIP. If the same intermediaries are the marginal buyers across currencies devUIP-devCIP should be quite similar.
- If not, maybe there is some additional market segmentation that is relevant. Does it predict other things? E.g. if EU intermediaries are marginal, does the Cov term include information about European intermediations? Can it explain other things EUR?

Comment 3: In the model, domestic HHs don't hedge. In CH and JP they are key.

- CH and JP carry funding currencies. In good times, domestic inv. Do carry abroad. In bad times, they scramble to hedge. Probably a good case to be made that they are the marginal investors. (see Liao and Zhang (2022), Braeuer and Hau (2022)). Also [The rise and rise of currency hedging raises a financial system risk | Financial Times (ft.com)]

Figure 1: Japanese Life Insurer Hedge Ratio



- How do they enter into the CB problem? If they are the marginal investors, are we back to Amador et al result that we should only care about CIP (due to the MBFX equation)?

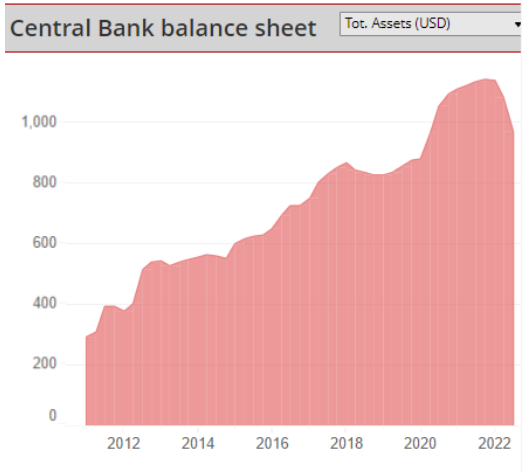
Comment 4: Model generates testable predictions, test them.

- Are FX interventions increasing in risk?
  - 2014-2019: quite tranquil – yet increasing BS size.
  - Covid-19: seems to be in line with the model.
- Are FX interventions decreasing in financial frictions?
  - 2014-2019: new regulations constraining intermediaries – but FX interventions are high.
  - Similar during Covid-19.
- It would be helpful to do some serious empirical tests to see if comparative statics actually work in the data.

Proposition 2 *Consider a safe haven economy as defined in 1. Suppose that* $\widehat{gfl}_t \geq 0$ *and* $\widehat{nfl}_t = b^G - 1$. *Then optimal foreign exchange interventions,* $\widehat{b}_t^{CBF}$:

(i) are increasing in risk measures σ_y *and* ρ;

(ii) are decreasing in intermediaries financial frictions Γ *and* χ;



Conclusion

- There are deviations from the interest parities everywhere – which one to use? What are the benefits and costs?
  - Nice framework to attempt to tie UIP and CIP deviations and generate new insights.

- If making empirical statements – it is important to consider the case of the EUR (for Switzerland). EUR and USD roughly equal share of SNB assets.
  - It might be that you are onto something much bigger?

- Some discussion of other benefits of FX interventions would make an important and timely leap for this literature (considering current Japanese dollar sales).