Comments on

The Dynamic Interaction of the EURCHF Exchange Rate and SNB Sight Deposits: Empirical Evidence From Weekly Data 2009-2017 / Peter Kugler

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Background

- The SNB is purchasing FX on an ongoing basis
- Motivation is to limit currency appreciation
- Economy is highly attached to EUR, ECB's policy
- Interest rate is at the -0.75 LB
- Purchases - additional monetary instrument, "QE"

- How does the SNB's policy affect the ER, and how it is affected by it?
- Is intervention effective?

The EURCHF and SDs

Figure 2: *Swiss Franc/Euro Exchange Rate, Weekly Data, January 2009 – June 2017*
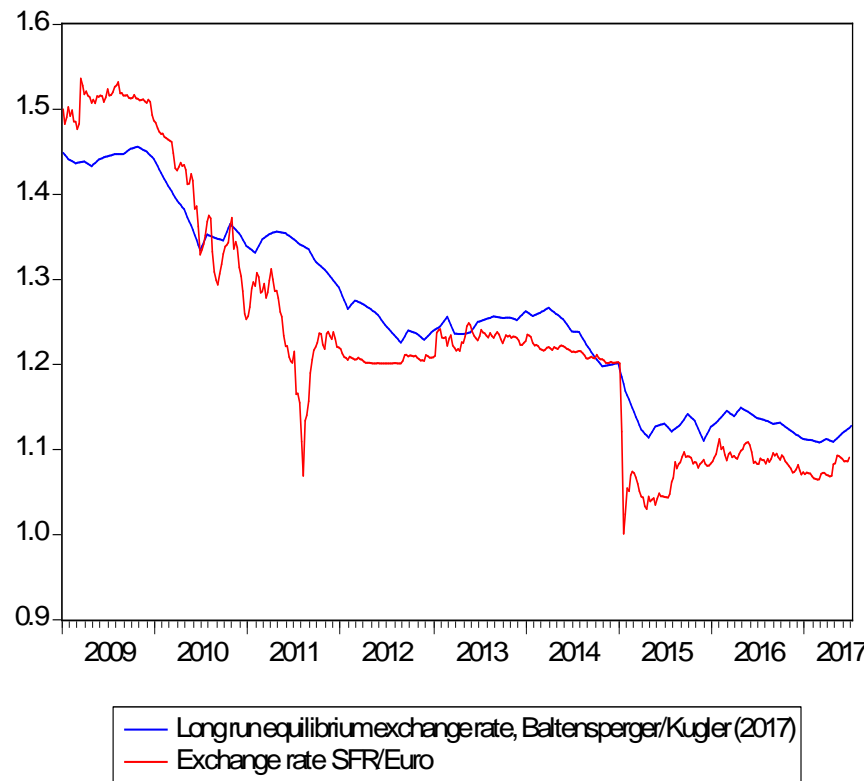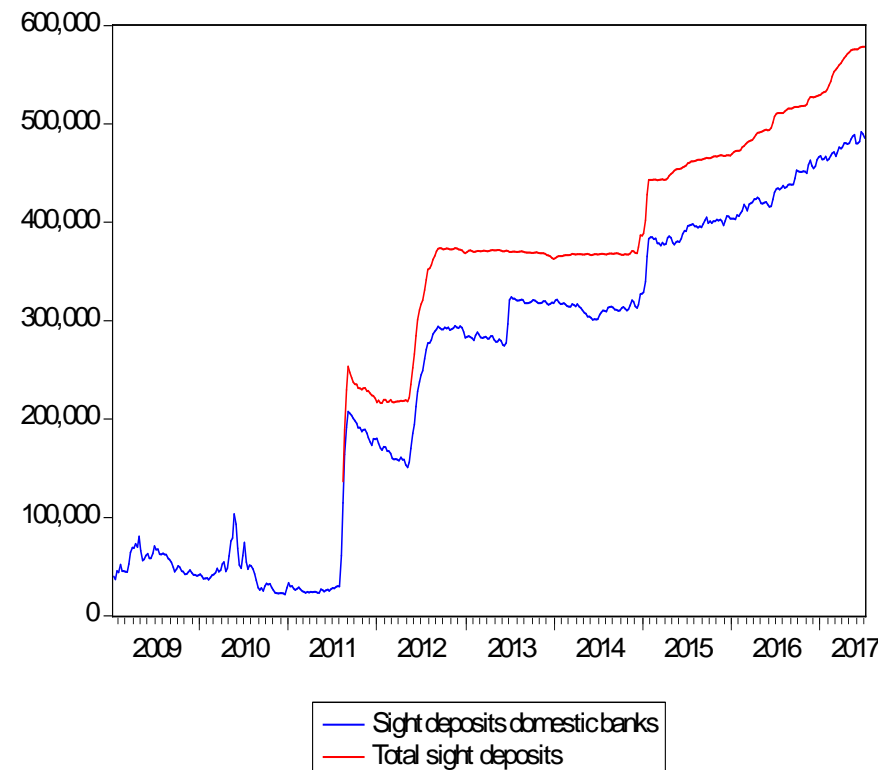

Figure 1: *Sight Deposits with SNB, Weekly Data, January 2009 – March 2017, billion Swiss Franc*
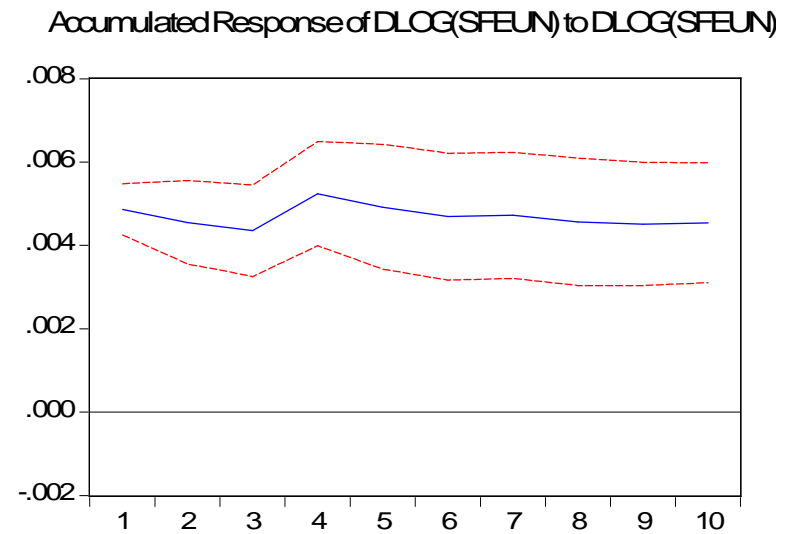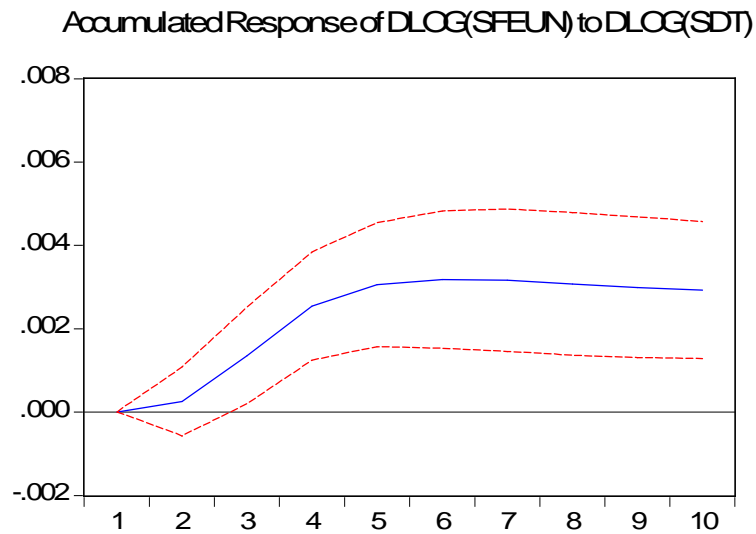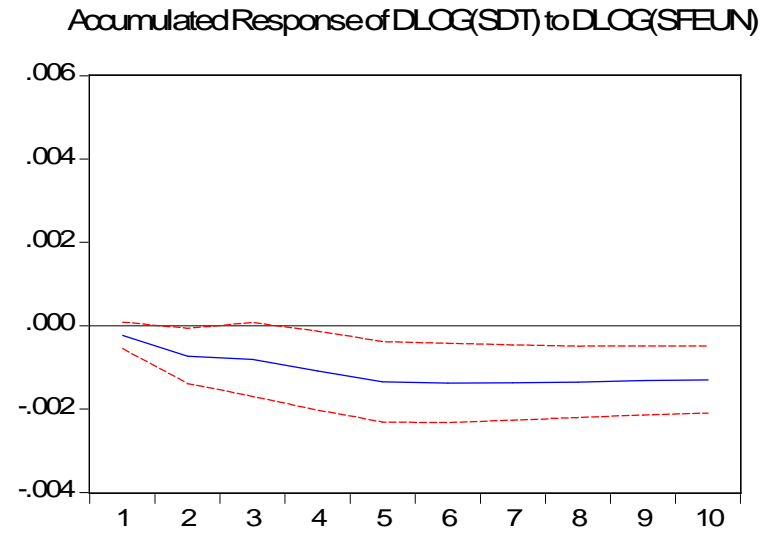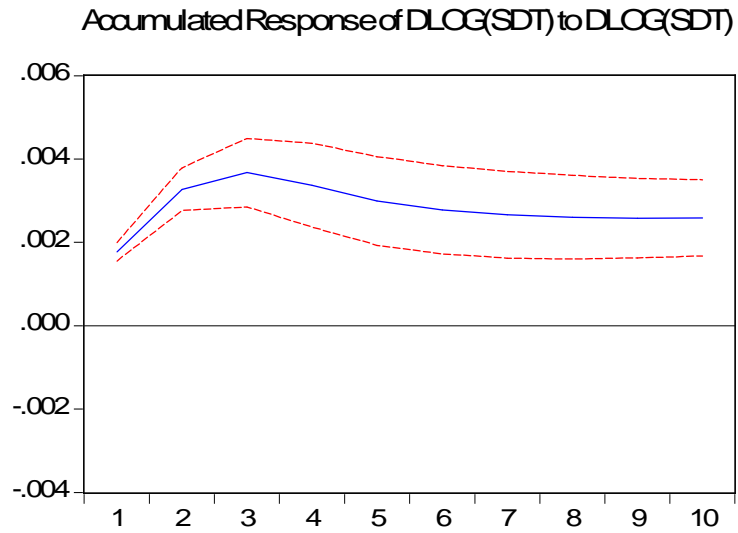
Methodology

- A bi-variate VAR, weekly RoC, average deposits / average EURCHF

- Estimated separately on sub-periods
- *Period 1*: Pre-floor (Jan 2009 – Aug 2011)
- *Period 2*: Floor (Nov 2011-Dec2014)
- *Period 3*: Post-floor (ongoing)

- No exogenous variables

Main results: CIRFs for Period 3
(page 10, lower panel)

Accumulated Response to Cholesky One S.D. Innovations ± 2 S.E.

Accumulated Response of DLOG(SDT) to DLOG(SDT)

Accumulated Response of DLOG(SDT) to DLOG(SFEUN)

Accumulated Response of DLOG(SFEUN) to DLOG(SDT)

Accumulated Response of DLOG(SFEUN) to DLOG(SFEUN)

Additional results
A non-linear ER response, sometimes

Significant threshold:

- *Period 1*: stronger reaction of the EURCHF when "overvaluation" > 5.4%

- *Period 2*: stronger impact when "undervaluation" >2.7% (?)

- *Period 3*: no threshold effects

Robustness:

- Cholesky-based results hold also when a more structural methodology (Rigobon 2003) is applied

The author's conclusions (with my underlines)

- For the ante 2011/9 period and post 2015/1 period <u>we find the expected feedback pattern for the sight deposit and exchange rate changes</u>, whereas there is no statistically significant relation for the intermediate period of the exchange rate floor.

- <u>Strong asymmetry</u> of the dynamic relationship between the first and third period: <u>Strong effect of exchange rate shock on sight deposits ante 2011/9, opposite pattern post 2015/2.</u> Probably caused by heavy sterilized interventions form spring 2010 to spring 2011.

- Threshold effects in the first and second sub-period.

- However, <u>the publicly available data</u> on sight deposits (weekly averages, no direct information on interventions) <u>are not optimal</u> for our purpose.

My summary

Methodology

A VAR with weekly changes in <u>average</u> deposits and <u>average</u> EURCHF rates

My Main Takeaways: All-in-all, intervention "works" but:

1. Intervention was less effective in pre-floor period
2. Intervention is more effective in post-floor period

My discussion

1. Measurement (simple)
2. Validity (complicated)

Issue No 1: Measurement

Measuring intervention: *% vs. Δ (FD)*

- Deposits have grown by approx. tenfold since 2009
- Answer depends on the dominant channel:
  - ➤ **Signaling / order flow**: use Δ
  - ➤ **Portfolio**: use %
- Paper uses % but Δ might better fit Switzerland.

Measuring the ER: *EURCHF vs. CHF NEER*

- Alternatively, use EURUSD as an exogenous variable

Issue No 2: Validity

Can a "low frequency" VAR based on <u>averages</u> detect the impact of FX intervention?

My first hunch

- At this frequency endogeneity might fully obscure the impact
- Results might be driven by averaging

After running the same specification on Israeli data

- Yes, at least partially

The problem with using averages

- Averages are sticky
- What is the extent of the phenomenon?

EURCHF	Correlation between returns weekly <u>averages</u> (t /t-1)	Correlation between "clean" weekly returns (t /t-1)
Period 1	**0.18****	-0.05
Period 2 (floor)	0.29***	0.13*
Period 3	**0.25***	-0.05
Period 1+2+3	0.22***	-0.04

Do sight deposits present the same pattern?

If the frequency of FX int. is high, maybe yes.

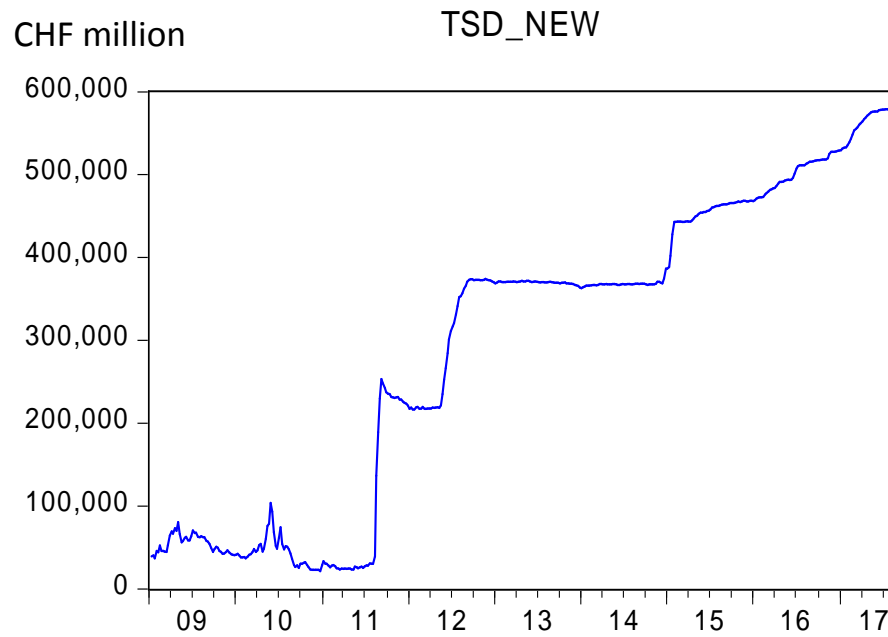If so, results might be biased. Which way? We don't know.

The desirable data frequency as a function of the CB's response function

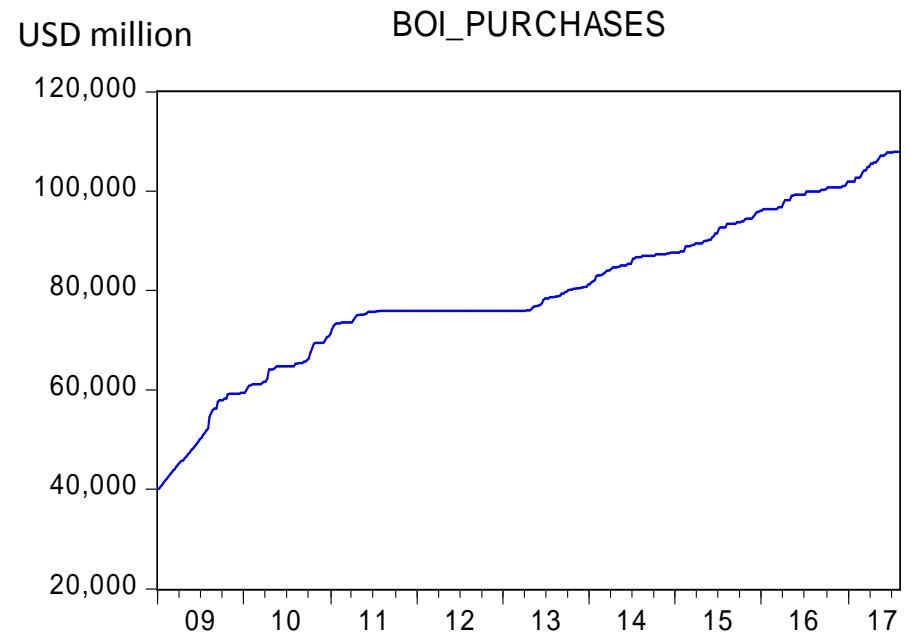| Data Frequency	The Reaction Function of the CB (the frequency of decision-making)	
	Level of ER (low)	Change in ER (high)
Low	+	Excess Smoothness
High	Excess Sensitivity	+

As a general rule: data frequency has to match the frequency of decision-making (Deaton)

We are also into this business...

**SNB's Total Sight Deposits**　　　　　　**BOI's Total FX purchases**

In order to deal with the validity question – I used Israeli data !

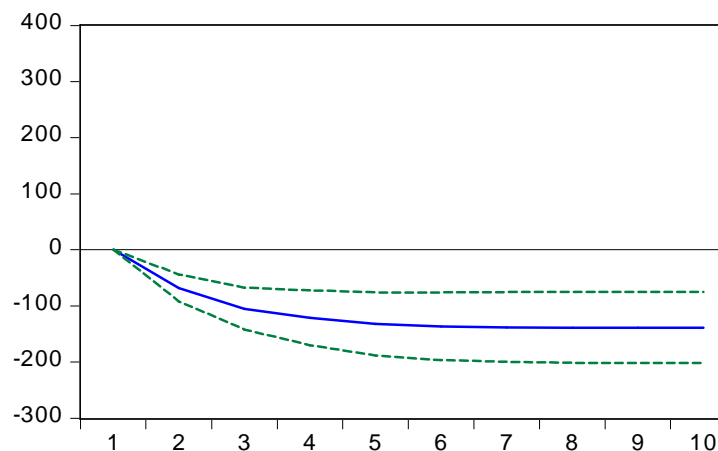# Applying Kugler's model + my modifications to Israeli "clean" weekly data (i.e. not averages)

Sample: September 2009 to August 2017 (comparable to pp. 10)

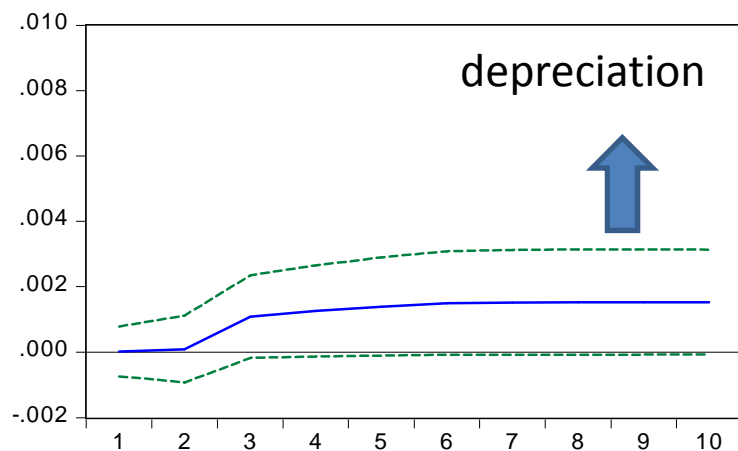Accumulated Response to Cholesky One S.D. Innovations ± 2 S.E.
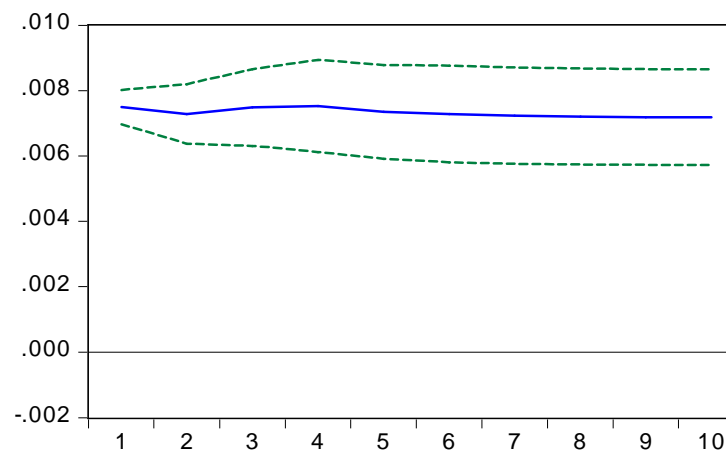

Accumulated Response of D(FX_INV_SUM) to D(FX_INV_SUM)
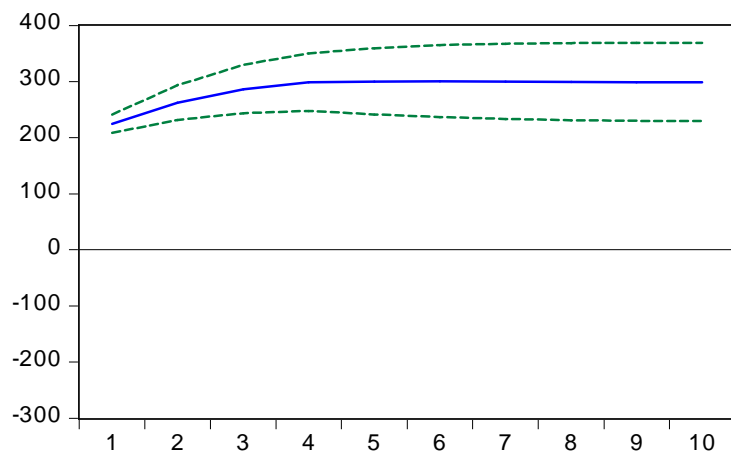
Accumulated Response of D(FX_INV_SUM) to DLOG(IL_NEER)

Accumulated Response of DLOG(IL_NEER) to D(FX_INV_SUM)

Accumulated Response of DLOG(IL_NEER) to DLOG(IL_NEER)

depreciation

Conclusions

- Evidence of substantial impact of FX intervention

- Efficiency in period 1 ~ period 3 is when Δ is used

- Results might be biased <u>towards</u> zero (endogeneity)

- But also <u>away</u> from zero (averages)

- Israeli data provide indirect support for the validity

- Delayed impact in CHE and ISR, is hard to understand

- Try to strengthen the case for a delayed impact

Supporting the delayed impact
A practical suggestion

- The SNB's intervention is done covertly (unlike the BOI's)
- Signal (press release) comes out with a 3-day lag

If signaling is an important channel –

intervention might work with a lag!

1. Estimate the unexpected part of intervention (tough)
2. Run the shock on the ER around a tight window on Mondays at 12:00.

Thanks!