Carry trade and negative interest rates in Switzerland

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CREg Centre de Recherche en Economie de Grenoble

FURB Universidade Regional de Blumenau

Definition of carry trade

> The carry trade is the name of the strategy of going short (betting the foreign exchange value will fall) in a low-interest rate currency like the Japanese yen, while simultaneously going long (betting the foreign exchange value will rise) in a high-interest rate currency like the New Zealand dollar.
>
> --- Frankel (2008)[1]

[1] Frankel, J. (2008), 'Carried away: everything you always wanted to know about the carry trade, and perhaps much more', *Milken Institute Review*, 10(1), 38.

Figure 1 - CT ratio, US policy rate, and Switzerland's policy rate

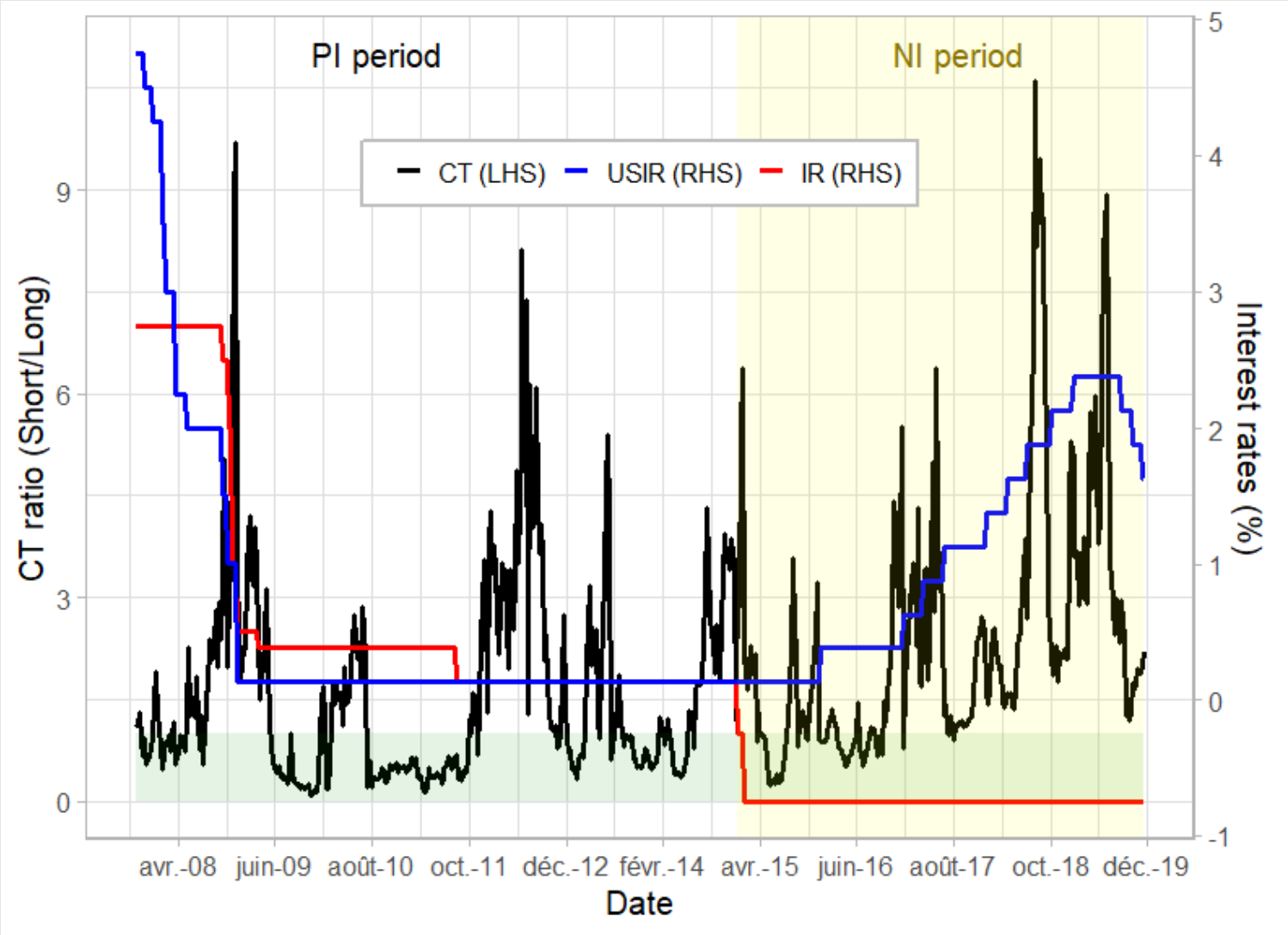

Table 1 - Description of variables

Variable	Definition	Source
CT	Ratio of short positions over long positions (Short/Long)	CFTC
ER	Nominal exchange rates, USDCHF	BIS
IRD	Difference between the policy interest rate in Switzerland and the policy interest rate in the United States	BIS
VIX	Market sentiment, CBOE DJIA Volatility Index	FRED
SM	Swiss Market Index, ^SSMI (Swiss stock market)	Yahoo Finance
SMUS	S&P 500, ^GSPC (US stock market)	Yahoo Finance

Caveats for using CFTC data

> First, while non-commercial traders are generally associated with speculative activity, it is possible that some commercial traders also take speculative positions.
>
> Second, the trades identified as speculative may not result from carry trades.
>
> Finally, a comparison with statistics from the BIS Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity shows that only a very small proportion of foreign exchange market activity is executed through exchanges.
>
> --- Galati et al. (2007)[2]

[2] Galati, G., A. Heath and P. McGuire (2007), 'Evidence of carry trade activity', *BIS Quarterly Review*.

Aim of the paper

We address two questions:

The first refers to the determination of the financial factors that hold important roles in explaining the Swiss franc carry trade.

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The first refers to the determination of the financial factors that hold important roles in explaining the Swiss franc carry trade.

Second, we reflect on the consequences of the unwind of Swiss franc carry trade activities. Specifically, we are interested in how carry trade shocks the related financial variables.

Methodology

Data specification

- CT ratio: weekly released (each Tuesday)
- Other variables: daily (Tuesday)

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PDF, slides, dataset, and code (do-file, Stata) are available at https://bttomio.github.io.

Results

Forecast-error variance decompositions (FEVDs)

- How much of the carry trade fluctuations are explained by the financial variables?

Graphics of impulse response functions (IRFs)

- How the carry trade responds to shocks in the financial variables?
- How the financial variables respond to shocks in the carry trade activity?

FEVDs - Responses of the carry trade to one std. dev. shocks

PI period

Step	IRD	VIX	CT	ER	SMUS	SM
4	2.55	3.42	90.54	1.23	2.12	0.14
8	2.08	8.45	77.54	4.98	6.29	0.66
12	2.07	11.93	67.85	8.6	8.36	1.19
16	2.35	13.61	62.38	11.28	8.87	1.51
20	2.75	14.3	59.36	13.13	8.82	1.64

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16	2.35	13.61	62.38	11.28	8.87	1.51
20	2.75	14.3	59.36	13.13	8.82	1.64

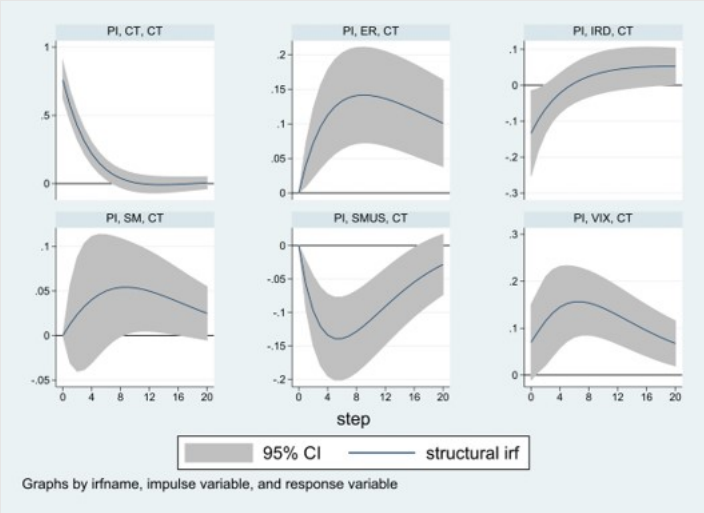
NI period

Step	IRD	VIX	CT	ER	SMUS	SM
4	4.35	0.12	87.44	6.5	1.02	0.56
8	5.51	0.28	76.28	14.6	1.48	1.86
12	8.66	0.37	66.25	15.56	5.44	3.71
16	10.01	0.6	57.14	13.91	12.28	6.07
20	9.7	1.13	48.96	11.79	19.71	8.71

Structural Impulse Responses of CT

The financial variables impact the carry trade...

Figure 2 - PI period



Impact	Shock/Impulse
+	ER
−	SMUS
+	VIX

Structural Impulse Responses of CT

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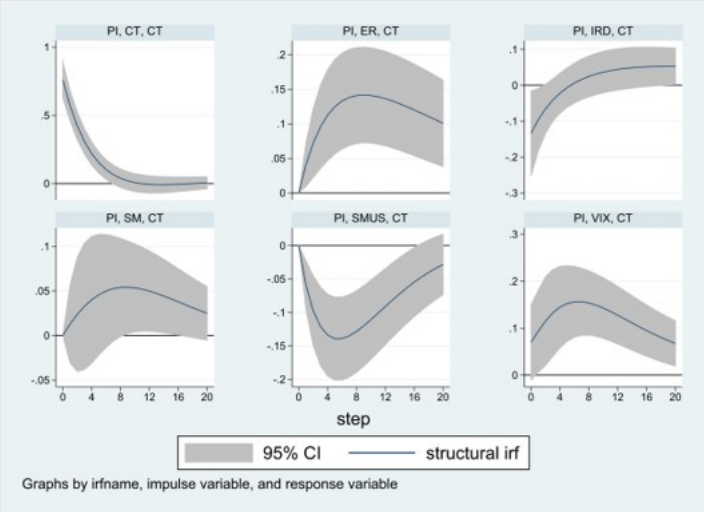
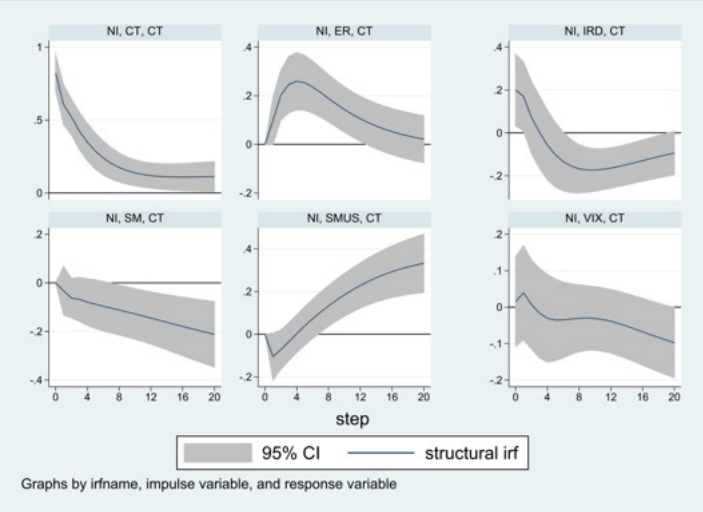


Impact	Shock/Impulse
+	ER
−	SMUS
+	VIX

Figure 3 - NI period



Impact	Shock/Impulse
+	ER (0-12 weeks)
+	IRD (1 week)
−	IRD (12-20 weeks)
+	SMUS (8-... weeks)
−	SM (8-... weeks)

FEVDs - Responses of the financial variables to one std. dev. shocks

PI period

Step	IRD	VIX	CT	ER	SMUS	SM
4	0.26	0.04	90.54	6.58	1.62	0.92
8	1.51	0.82	77.54	7.04	5.35	4.9
12	2.43	1.83	67.85	7.1	7.69	8.7
16	2.66	2.31	62.38	7.21	8.7	11.05
20	2.54	2.43	59.36	7.39	9.01	12.24

FEVDs - Responses of the financial variables to one std. dev. shocks

PI period

Step	IRD	VIX	CT	ER	SMUS	SM
4	0.26	0.04	90.54	6.58	1.62	0.92
8	1.51	0.82	77.54	7.04	5.35	4.9
12	2.43	1.83	67.85	7.1	7.69	8.7
16	2.66	2.31	62.38	7.21	8.7	11.05
20	2.54	2.43	59.36	7.39	9.01	12.24

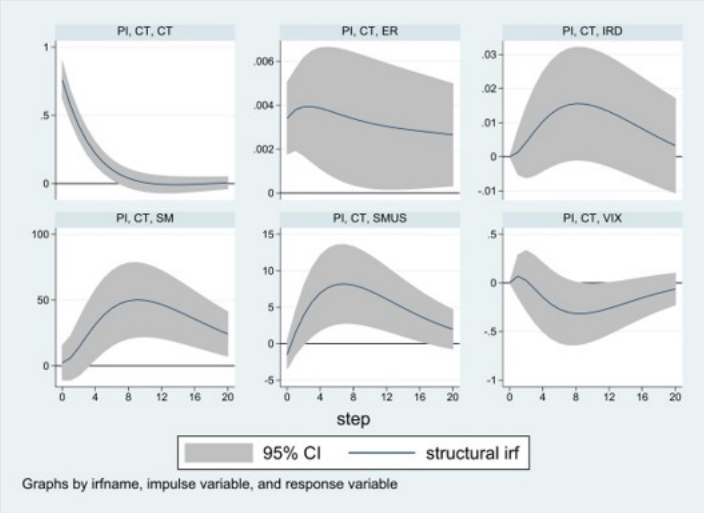
NI period

Step	IRD	VIX	CT	ER	SMUS	SM
4	0.34	0.16	87.44	0.41	0.7	3.1
8	1.76	0.31	76.28	0.49	3.19	5.41
12	3.15	0.62	66.25	0.48	4.28	5.37
16	4.3	1.5	57.14	0.6	4.5	4.93
20	5.13	2.35	48.96	0.84	4.51	4.66

Structural Impulse Responses to the CT shocks

The carry trade impacts the financial variables...

Figure 4 - PI period

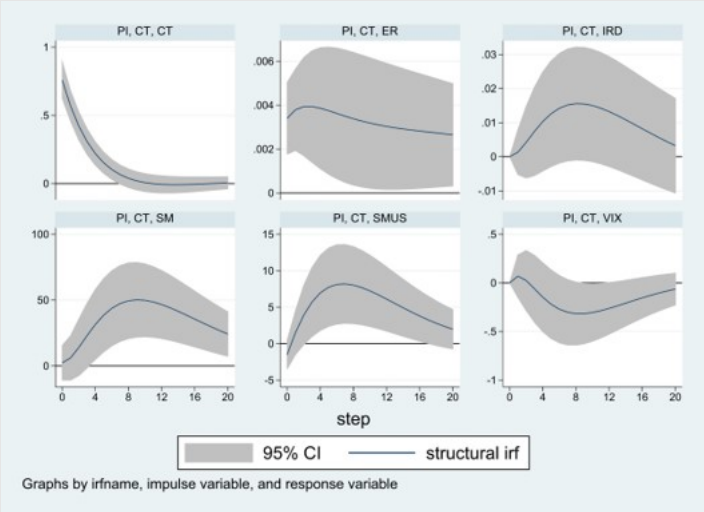


Impact	Response
+	ER
+	SMUS (2-16 weeks)
+	SM (4-... weeks)

Structural Impulse Responses to the CT shocks

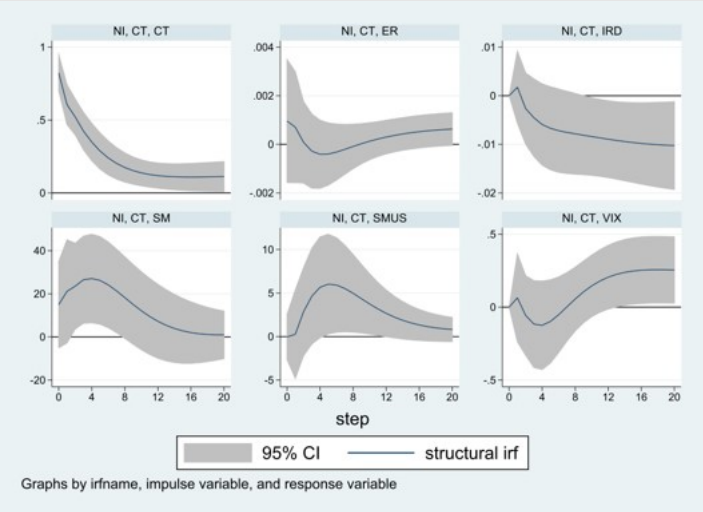
The carry trade impacts the financial variables...

Figure 4 - PI period



Impact	Response
+	ER
+	SMUS (2-16 weeks)
+	SM (4-... weeks)

Figure 5 - NI period



Impact	Response
−	IRD (10-... weeks)
+	SMUS (4-12 weeks)
+	SM (2-6 weeks)
+	VIX (14-... weeks)

Conclusions

- NIRP (Negative interest rate policy) seems to be strengthening the Swiss carry trade activity.
- The contribution of IRD is more substantial in the NI period.
- Weak evidence of the impact of carry trade in the financial variables. Nonetheless, in the NI period, the unwind of carry trade activity would impact negatively VIX and stock markets (US and Swiss).
- It seems to be a source of systemic risk (caution: small contribution - FEVDs).
- For the Swiss National Bank (SNB), increased macro-prudential supervision is needed (through new instruments that take into account the evolution of financial variables into its monetary reaction function).

Thank you!

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