18:00

Carry trade and negative policy rates in Switzerland

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YSI Virtual Plenary (2020)

Université Grenoble Alpes

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UNIVERSIDADE REGIONAL DE BLUMENAU

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Motivation

- International spillovers of negative interest rate policy (NIRP) is a **very recent** strand in the literature (e.g. Arteta, Kose, Stocker and Taskin 2016[1])
- Twofold interest in the Swiss franc:
    1. In times of turmoil, it is a major **safe haven currency** (overall, **funding currency** of carry trade activities)
    2. Due to the "interest rate bonus" (Kugler and Weder 2002[2]) and the NIRP, the impacts of the Swiss National Bank's actions resonate **far beyond** Switzerland
- Lack of **robust** empirical papers **criticizing** the carry trade activity

[1] Arteta, Carlos, Ayhan Kose, Marc Stocker, and Temel Taskin. 2016. “Negative Interest Rate Policies: Sources and Implications.” Policy Research Working Paper Series 7791. The World Bank.

[2] Kugler, Peter, and Beatrice Weder. 2002. “The Puzzle of the Swiss Interest Rate Island: Stylized Facts and a New Interpretation.” Aussenwirtschafhet 57 (01): 49–64.

What do we do?

In the context of the NIRP in Switzerland...

1. We analyse the **determinants** of the Swiss franc carry trade
    - Four major currencies: US dollar, euro, Japanese yen, and British pound
    - Financial variables: interest rate differential between Switzerland and major currency, global market sentiment, nominal exchange rates, Swiss stock market index, and major currency stock market index

    Hypothesis 1 The Swiss franc carry trade is impacted differently by the major currencies

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2. How the carry trade activity in Swiss francs **impacts** the financial variables in the model?

    Hypothesis 2 The exchange rate is depreciating with an increased Swiss franc carry trade activity

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3. Analysis setting
    - Weekly data; December 23, 2014 to September 15, 2020

What do we find?

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   Hypothesis 1 is **partially confirmed**

   - Only two mutual results:

   I. Negative impact of the market sentiment shock (US dollar, euro and Japanese yen models)

   II. Positive impact of the US and Japanese stock markets (US dollar and Japanese yen models)

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   Hypothesis 2 **cannot** be confirmed

   - Euro model produces the only statistically significant result with an appreciation of the Swiss franc after an increase in the Swiss franc carry trade activity

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Data and SVAR model

Table 1. Description of variables

Variable	Definition	Sou
CT	Ratio of short positions over long positions of non-commercial traders	CFTC
VIX	Market sentiment (CBOE DJIA Volatility Index)	FRED
SM	Domestic stock market: Swiss Market Index ^SSMI	Yahoo Finance
ER_i	Nominal exchange rates: USD/CHF, EUR/CHF, CHF/JPY, GBP/CHF	Yahoo Finance
IRD_i	Interest rate differential using the spot Next London interbank offered rate (LIBOR): CHF minus major currency (USD, EUR, JPY, and GBP)	FRED
FSM_i	Foreign stock markets: S&P 500 ^GSPC - USD, EURONEXT 100 ^N100 - EUR, Nikkei 225 ^N225 - JPY, FTSE 100 ^FTSE	Yahoo Finance

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- All variables are in natural logarithms, except the interest rate differentials
- Yahoo Finance data was obtained and checked/cleaned with R packages `quantmod` and `BatchGetSymbols`

CFTC data

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- Some caveats:

> I. Bias in the classification of the traders
>
> II. Trades identified as speculative may not result from carry trades
>
> III. Only a small proportion of foreign exchange market activity is executed through exchanges (mostly OTC)
>
> --- Galati, Heath and McGuire (2007)[3]

- Nevertheless, as mentioned by market participants, CFTC data tends to be indicative of the **trend** of carry trade activity (Bank for International Settlements 2015)[4].

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

[4] Bank for International Settlements (2015), *Currency Carry Trades in Latin America*, Bank for International Settlements.

Econometric model

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- Structural vector-autoregressive (SVAR) model with Cholesky identification
  - Ordering: $IRD_i \rightarrow VIX \rightarrow CT \rightarrow ER_i \rightarrow FSM_i \rightarrow SM$

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  - Ordering: $IRD_i \rightarrow VIX \rightarrow CT \rightarrow ER_i \rightarrow FSM_i \rightarrow SM$
- Toda-Yamamoto approach to capture long-term effects (non-stationary variables stay in levels)

Table 2. Exogenous variables for each model

Model	VAR lag length	Exogenous variables
USD	2	$USME, IRD^{USD}_{t-3}, CT_{t-3}, FSM^{USD}_{t-3}, SM_{t-3}$
EUR	2	$IRD^{EUR}_{t-3}, CT_{t-3}, ER^{EUR}_{t-3}, FSM^{EUR}_{t-3}, SM_{t-3}$
JPY	2	$NIJPY, IRD^{JPY}_{t-3}, CT_{t-3}, ER^{JPY}_{t-3}, FSM^{JPY}_{t-3}, SM_{t-3}$
GBP	1	$BREXIT, CT_{t-2}, FSM^{GBP}_{t-2}, SM_{t-2}$

PDF and slides (ASAP also dataset and Stata do-file): https://bttomio.github.io

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Results for the Impulse Response Functions (IRFs)

Swiss franc carry trade activity is impacted...

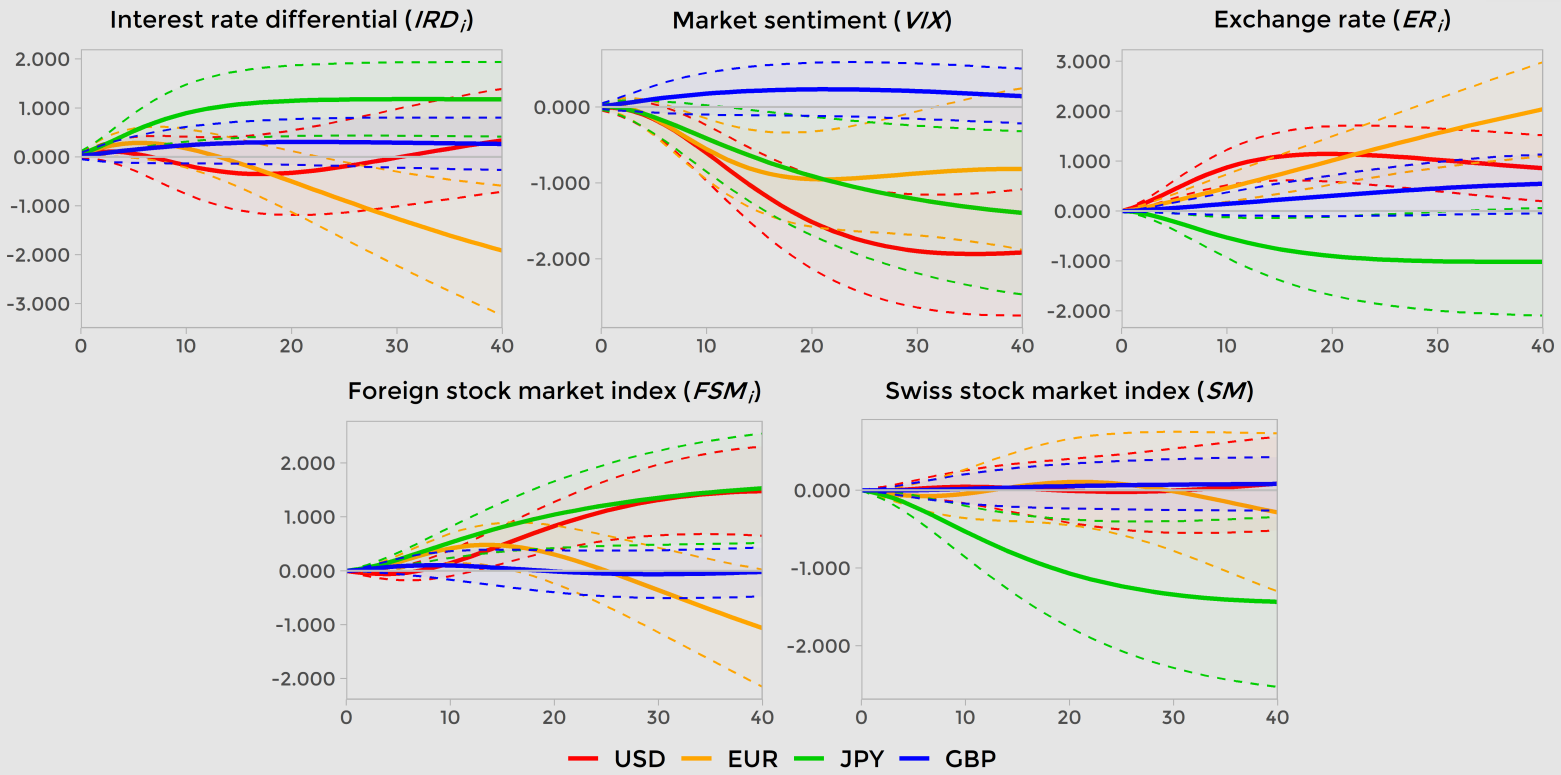

Figure 1. Cumulative structural carry trade (CT) responses to variables impulses in each model

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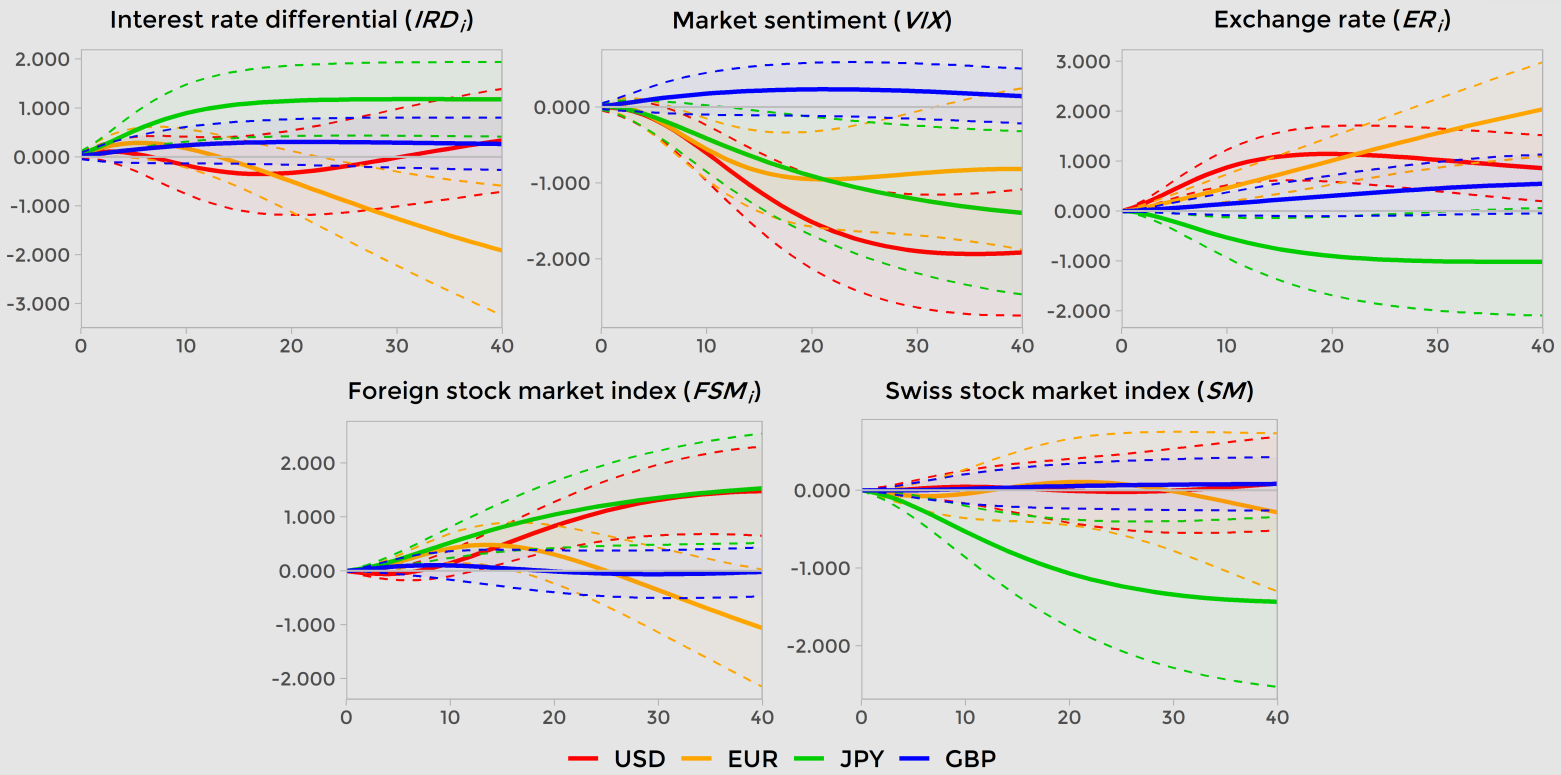

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EUR (-)	EUR (+)	EUR (+)	EUR (+, SR)	
JPY (+)	JPY (+)	JPY (-)	JPY (+)	JPY (-)
	USD (+)	USD (+)	USD (+)	

An increased Swiss franc carry trade activity...

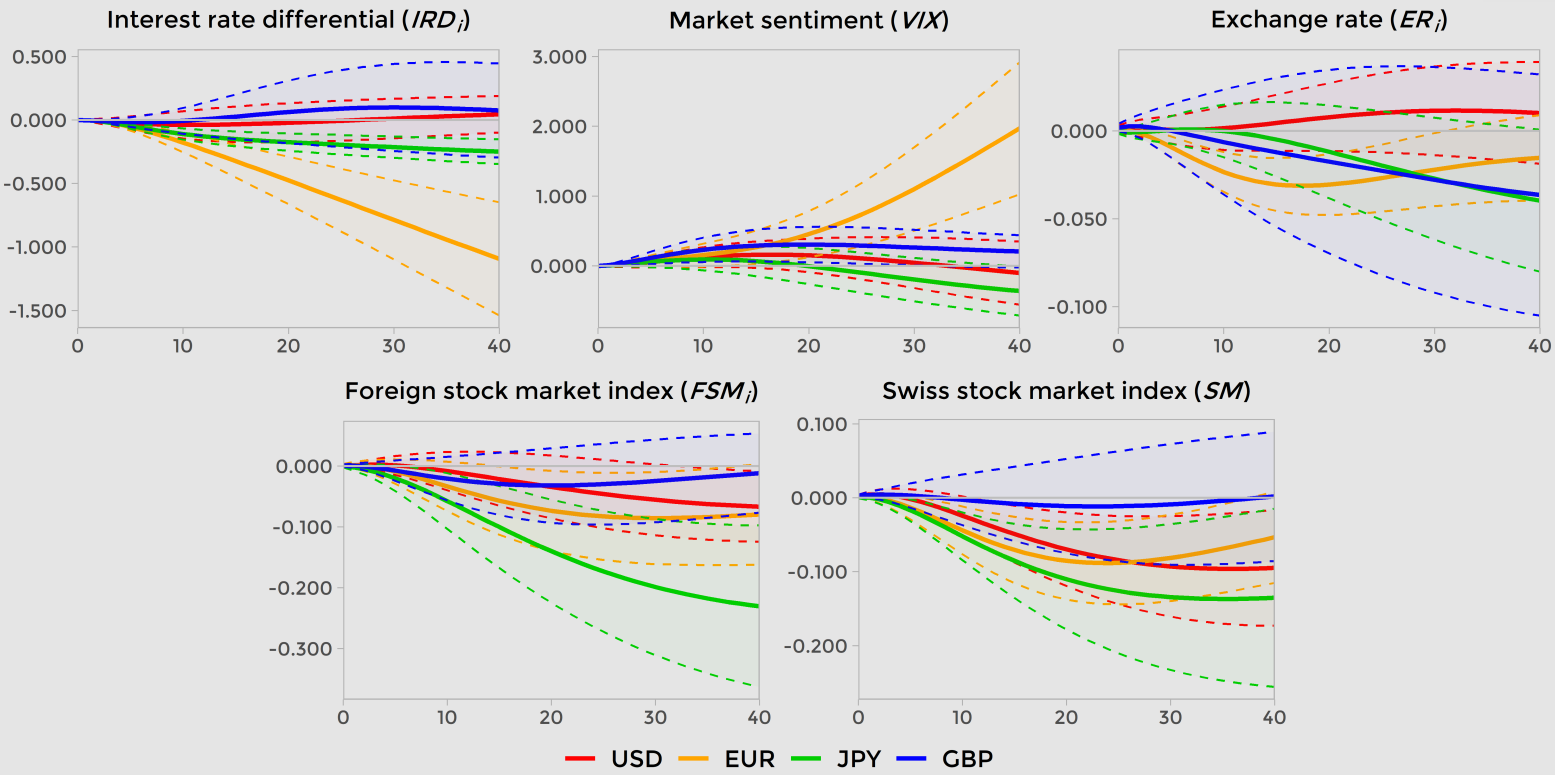

Figure 2. Cumulative structural variables responses to carry trade (CT) impulses in each model

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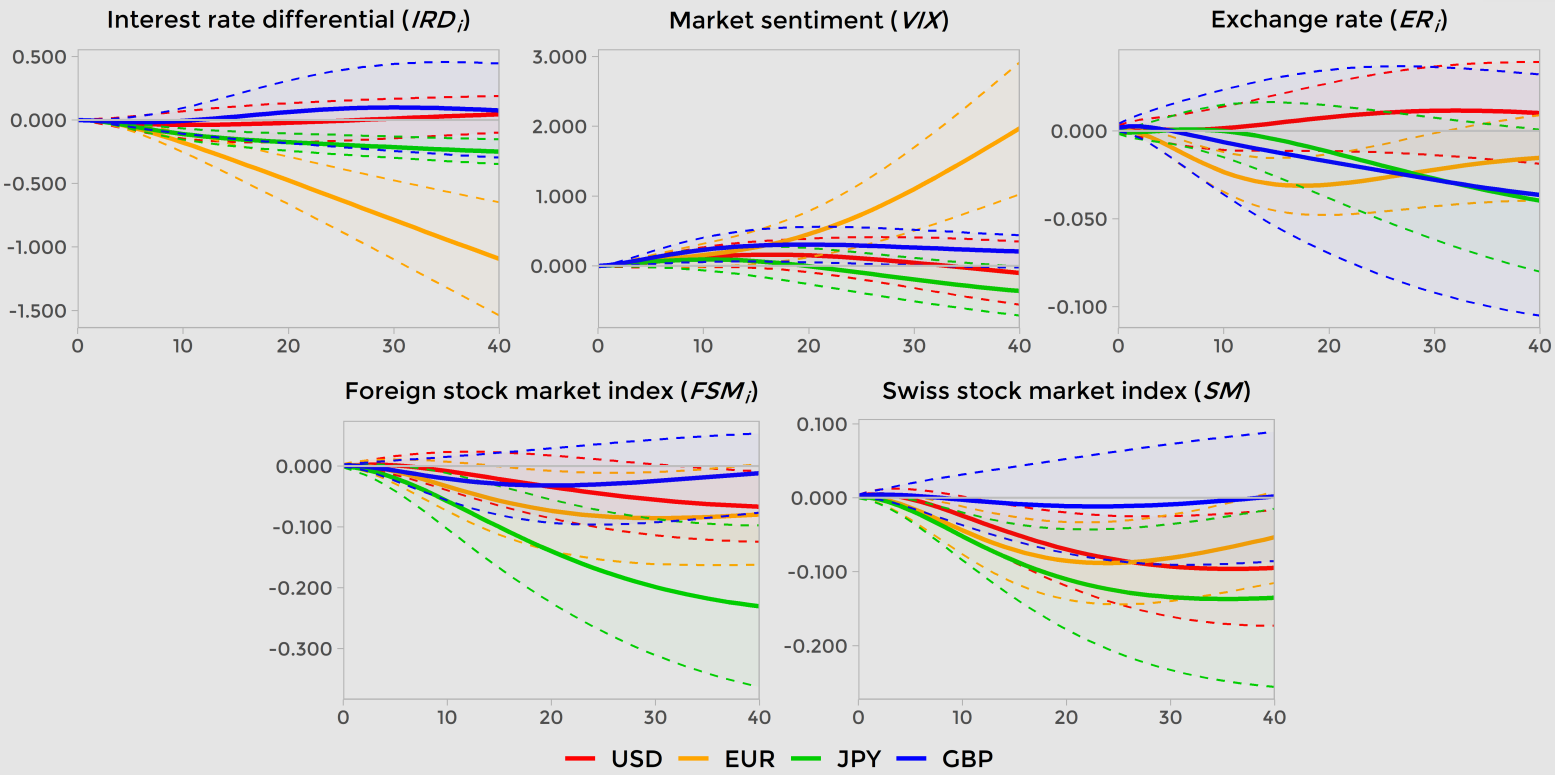

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JPY (-)			JPY (-)	JPY (-)
			USD (-)	USD (-)

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Concluding remarks

Contribution

- The paper extends the carry trade literature by investigating the effects of the Swiss NIRP
- Four Swiss-major currency models are explored ($, €, ¥, £)
- With an **increased** carry trade activity in Switzerland (due to the NIRP), the **CHF** is **appreciating** (€ model) and **financial markets activities** (domestic, abroad) are being **harmed**

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Policy implications

- We find evidence of an appreciation of the EURCHF (**drawback** of the NIRP) and an increased systemic risk (VIX and stock market indices)
- Massive asset-purchasing programs, targeting government bonds in particular, participate in the **reduction** of the “safe asset trap” between bond yields
- Central banks' non-coordinated/cooperative measures could make things **worse** (increased uncertainty generated by the COVID-crisis)

18:00

Thank you!

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@bttomio

Slides created with `xaringan` and `xaringanthemer`.