Discussion:
“How banks respond to negative interest rates: Evidence from the Swiss exemption threshold”

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* Any views expressed are those of the discussant and do not necessarily reflect those of the BIS.
Research Question and Findings

*How does the exposure to negative interest rates impact bank behavior?*

**Find**

Swiss retail banks with *higher* SNB reserves

- *Cut* reserves relatively *more*
- *Lend* more at *higher* margins
- Higher *fee* income

**Identification**

- *Exemption* threshold worth 20 times a bank’s minimum reserve requirement
- *Alternative* treatment intensity
  - Exposed reserves + net interbank position
  - Deposit share
  - Rate on sight deposits-ZLB
  - LCR-exemption threshold
My Overall Impression

How does the exposure to negative interest rates impact bank behavior?

Exciting research question + highly policy relevant.
Rare empirical evidence, here rich, comprehensive microdata!

But
Do you actually analyze the effect of a funding subsidy on retail banks?

Concerns
1. Incomplete sample? Only retail banks?
   Representative of the Swiss banking sector?
   Interbank + swap market are key, no counterparties?
2. Adjustments? treatment is totally static => maybe split SR and LR period
3. No control variables, no interaction
   Do banks manage a balance sheet or one asset class in a isolation?
=> Study in a Vacuum
Sequence of Events

<table>
<thead>
<tr>
<th>Pre 2013Q2-2014Q4</th>
<th>Pre 2015Q1-2016Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNB Announcement: Lower bound -75bps Effective 22 Jan, 2015</td>
<td></td>
</tr>
<tr>
<td>i) Target range (-75 bps, +25 bps) ii) CHF shock</td>
<td></td>
</tr>
</tbody>
</table>

Basel III

CCyB to 2%

Background: Exemption Threshold

Minimum reserve requirement of the reporting period 20 October 2014 to 19 November 2014 times 20 (static component).

\[-/+ \text{Increase/decrease}\] in cash holdings resulting from comparison of cash holdings in current reporting period and corresponding reporting period in given reference period (dynamic component)

= Exemption threshold


⇒ Not static, has a dynamic component
⇒ Transitions/Switchers
   Aren’t those of interest?
   ⇒ Adjustments ... how?
   ⇒ In new “steady state”: What has changed? Who?
Data on Switzerland

**FINMA Supervisory database**

50 retail banks (later + 46 wealth management banks)  
July 2013-Dec 2014  pre  
Jan 2015-June 2016  post

- Balance sheets (monthly)  
- Regulatory measures (quarterly)  
- Income statements (semi-annual)
Empirical setup

\[ Y_{it} = \alpha + \beta ER_{2014m11} + \gamma Post_{2015m1} + \delta(Post_{2015m1}ER_{2014m11}) + \varepsilon_{it} \quad (1) \]

\[ Y_{it} = \alpha + \gamma(Post_{2015m1}ER_{2014m11}) + FE_{b}' + FE_{m}' + \varepsilon_{it} \quad (2) \]

- \( Y_{it} \): balance sheet ratios or log changes
- \( ER_{2014m12} \): excess reserves in \% of TA
  \[ = \left( \frac{Reserves_{i,2014m12} - Exemption_{i,2014m12}}{TA_{i,2014m12}} \right) \]
  time-INvariant
- \( Post_{2015m1} \): treatment period
- \( FE_{b}' \): FE bank, demeaning
- \( FE_{t}' \): FE time, demeaning

really 2014m12, why not 2014m11?
I Incomplete Sample?

Does *any* bank in your sample really *pay* negative rates to the SNB?

Banks in your sample actually *rise* their CB reserves and liquid assets.

=> “Do you analyze how a *funding subsidy* impacts retail banks.”

Banks with *below* median exposure

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs</td>
<td>Banks</td>
<td>Periods</td>
<td>Mean</td>
<td>sd</td>
</tr>
<tr>
<td>All SNB Reserves: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>4.06</td>
</tr>
<tr>
<td>Liquid Assets: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>4.74</td>
</tr>
<tr>
<td>Claims on Banks: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>3.19</td>
</tr>
<tr>
<td>Net Interbank Pos: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>-0.35</td>
</tr>
</tbody>
</table>

Banks with *above* median exposure

<table>
<thead>
<tr>
<th>Panel B: ER &gt;= Median</th>
<th>July 2013 - December 2014</th>
<th>January 2015 - June 2016</th>
<th>Diff</th>
<th>Post-Pre P Val</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs</td>
<td>Banks</td>
<td>Periods</td>
<td>Mean</td>
<td>sd</td>
</tr>
<tr>
<td>All SNB Reserves: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>8.30</td>
</tr>
<tr>
<td>Liquid Assets: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>8.86</td>
</tr>
<tr>
<td>Claims on Banks: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>3.29</td>
</tr>
<tr>
<td>Net Interbank Pos: % of TA</td>
<td>450</td>
<td>25</td>
<td>18</td>
<td>0.16</td>
</tr>
</tbody>
</table>

=> No control group, no counterfactual?
Incomplete Sample? Only retail banks?

Comprehensive analysis needs to incorporate *all banking groups*! Why?

a) Banks *counterparties* on interbank market
   - Repo market
   - Swap market

   - Are your banks only *benefitting* from it, absorbing liquidity on repo market? But who *pays*?

b) Inherent heterogeneity
   - Cantonal banks included? All? => some with government guarantee?
   - Raiffeisen: legal structure, common clearing bank ...

What is the *market share* of all banks you analyze?

Suggestion:
   - Just control for fx exposure.
   - Big banks, Raiffeisen, Wealth Managers, Cantonal Banks => all key for financial stability and MP transmission.
2 No Dynamic Adjustment

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<td>Announcement</td>
<td>i) Implementation neg rates</td>
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<td></td>
<td>ii) CHF shock</td>
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Figure 4: Key policy rates and money market rates

1 The overnight Swiss average rate (SARON) replaced the repo overnight index (SNB) in August 2009. 2 Charged on the portion of sight deposits exceeding the exemption threshold. 3 Shaded corridor represents the SNB target range for the three-month Libor rate.

Sources: Bech and Malkhozov (2016)/ Bloomberg; national data.
No Dynamic Adjustment (Fig 9, your sample)

- In 2015q3 reserves have adjusted, => interbank market mechanisms.

- Do your regressions capture this?

- SR: How to banks \textit{adjust} to the new environment? Transactions => interbank market

3 No Control Variables

- Aren’t balance sheet measures are interconnected? Interactions? Do banks manage a balance sheet or one item in isolation?

- Control variables should absorb changes unrelated to your negative rates.

- **Regulatory** measures also have a more holistic view.

- Phase-in period of Basel III
  => changes in regulatory standards?
Open issues: ...sample, ..missing controls, dynamics, interactions ... or new puzzles?

“Banks’ profitability has thus suffered in the period after Jan 2015, but less so for banks with relatively higher levels of exposed reserves.”

Intuitive?

“banks have shortened balance sheet .... Through relatively larger reductions in wholesale funding than through reduction in deposit funding”

Does this contrasts with the traditional “bank-lending channel”?
Open issues: ...missing controls, dynamics, interactions ... or new puzzles?

Concentration

“Banks focused on more concentrated mortgage markets have managed to increase their interest earned relatively more ...

... Model 2 with fixed effects suggests just the opposite...”

How do you get the market shares for big banks, Raiffeisen etc?
Based on different samples?

Market Power

“... the fact that the bank could not set lower deposit rates ... may signal limited market power in the deposit market”

But at the same time market power in the mortgage market?
Open issues

FX Effect

“Partial substitution of liquid assets in CHF with those denominated in other currencies may have contributed to the SNB’s objective of weakening the Swiss Franc”

- Into which currencies?
- Why? **Cash-in** the fx jump?
- Carry trades, expecting further appreciation? ... but why EUR
Other (minor) issues

- **Different Samples** from risk-taking analysis, the interbank market study, market power
- You do **not** have any bank with **zero exposure** (constant and FE).

Additional Suggestions
- Compare to **IOER** in US!
- Include **seasonal** dummies to address **window** dressing
- Try some **placebo** dates
- Drop 2014m12 and 2015m1?
Conclusions

How does the exposure to negative interest rates impact bank behavior?

Find: Swiss retail banks with higher SNB reserves
- Cut reserves relatively more
- Lend more at higher margins
- Higher fee income

Identification
- Exemption threshold worth 20 times a bank’s minimum reserve requirement and alternatives

But Do you actually analyze the effect of a funding subsidy on retail banks!

Concerns:
1. Only retail banks? Representative?
   Counterparties on the interbank + swap market key
2. No adjustments?
3. No control variables, no interaction. Don’t banks manage a balance sheet?
=> Analysis in a vacuum?
Thank you