HOW BANKS RESPOND TO NEGATIVE INTEREST RATES:
EVIDENCE FROM THE SWISS EXEMPTION THRESHOLD

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We investigate how 50 domestically owned retail banks reacted to Switzerland’s negative interest rate policy (NIRP).

- DiD-analysis with continuous treatment intensity and bank & time FE’s
- rich bank-level data includes monthly balance sheets & reference rates

Since 2014: NIRPs in DNK, SWE, EU, CHE, JPN

- novel monetary policy tool; NIRP designs differ wrt.
  to interest rate & exemption

Adverse NIRP-exposure & non-neg. deposit rates are costly; banks preserve their profitability but become riskier.

- portfolio rebalancing towards riskier assets (loans/mortg./fin.) → credit & market risk
- deleveraging, but regulatory capital decreases
- liabilities are restructured towards shorter maturities → interest rate risk
The Swiss NIRP – Timing

- ECB NIRP started 01/07/13
- SNB announces -0.25% interest on reserves for 22.01
- SNB announces -0.75% interest on reserves for 22.01
- End of CHF–€ peg 15.01.15

- Also: month-by-month effects relative to 07/13
  - Robust to alternative Pre/Post definitions
  - Post from Q1/15 for risk measures & from H1/15 for income variables
THE SWISS NIRP – DESIGN

- banks are charged -0.75% on
  \[ \text{Exposed Reserves} = \text{SNB Reserves} - \text{SNB Exemption} = 20 \times \text{Reserve Requirement (MRR)} \]

- continuous treatment intensity
  \[ ER_i = \frac{\text{Exposed Reserves}_{i,12/14}}{\text{Total Assets}_{i,12/14}} \]
  - \( ER_i \) can be > or < 0, but \( \Delta ER_i > 0 \) always means “more adverse NIRP-exposure”

- exemptions
  - did not target individual banks
  - idea: affect marginal, but insulate total cost (system-wide liquidity = 24 \times \text{sum}[\text{MRR}_i])
MONTH-BY-MONTH EFFECTS (on % of TA)

- parallel pre-treatment trends ✓

SNB Reserves & NIB Position

Deposits & Bonds

Mortg. & Loans
MAIN RESULTS

- **being more adversely exposed to NIRP** \((ER, \uparrow 430bp)\) …
  - induces a **reallocation of reserves** to the IB market (SNB Res/TA \(\downarrow 240\) bp; NIB Position/TA \(\uparrow 112\) bp),
  - **portfolio rebalancing** towards riskier & longer-term assets (Loans/TA \(\uparrow 60\) bp; Mortgages/TA \(\uparrow 69\) bp),
  - and a **restructuring of liabilities** towards ST deposits (Bonds/TA \(\downarrow 60\) bp; Deposits/TA \(\uparrow 95\) bp)

- … **ultimately leads to riskier balance sheets** (Reg. cap. \(\downarrow 30\) bp; IRR \(\uparrow 43-77\) bp)

NIRP creates costs → banks preserve their profitability

1. negative rates on all liquid assets,
2. ZLB on **deposit rates** implies negative liability margin,
3. cutting non-deposit liabilities more means higher avg. funding costs for more adversely exposed banks

- allocate reserves to more attractive assets (e.g., mortgages) & other currencies,
- reduce borrowing,
- higher fee income & **mortgage rates**

- **transmission is different from positive rate environments**
ADDITIONAL RESULTS & CONCLUSION

- **swap use** & market power do not drive up mortgage rates
- **higher pre-treatment deposit rates** mute the effects
- NIRP-effect dominates effect of a generic **rate cut**
- at -0.75% **Reversal Rate** is likely not reached
  - rate cut no less expansionary than 2011; *more* expansionary for weakly cap’ed banks

- **robustness**: alt. treatment, border cantons, foreign owned & Wealth Mngmt banks

- **To take away:**
  - *transmission is different from positive rate environments*
  - more adverse NIRP-exposure → riskier balance sheets
Thank You!