

# Monetary Easing and the Functioning of Money Markets Interest Rates in Modern Financial Markets

Andreas (Andy) Jobst

Adviser to the Managing Director and CFO  
World Bank Group

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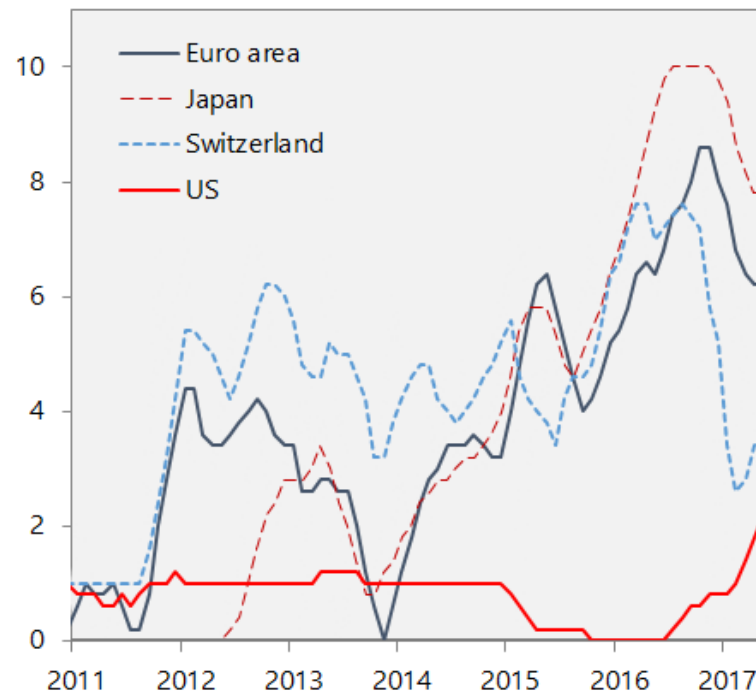
Sopot/Poland

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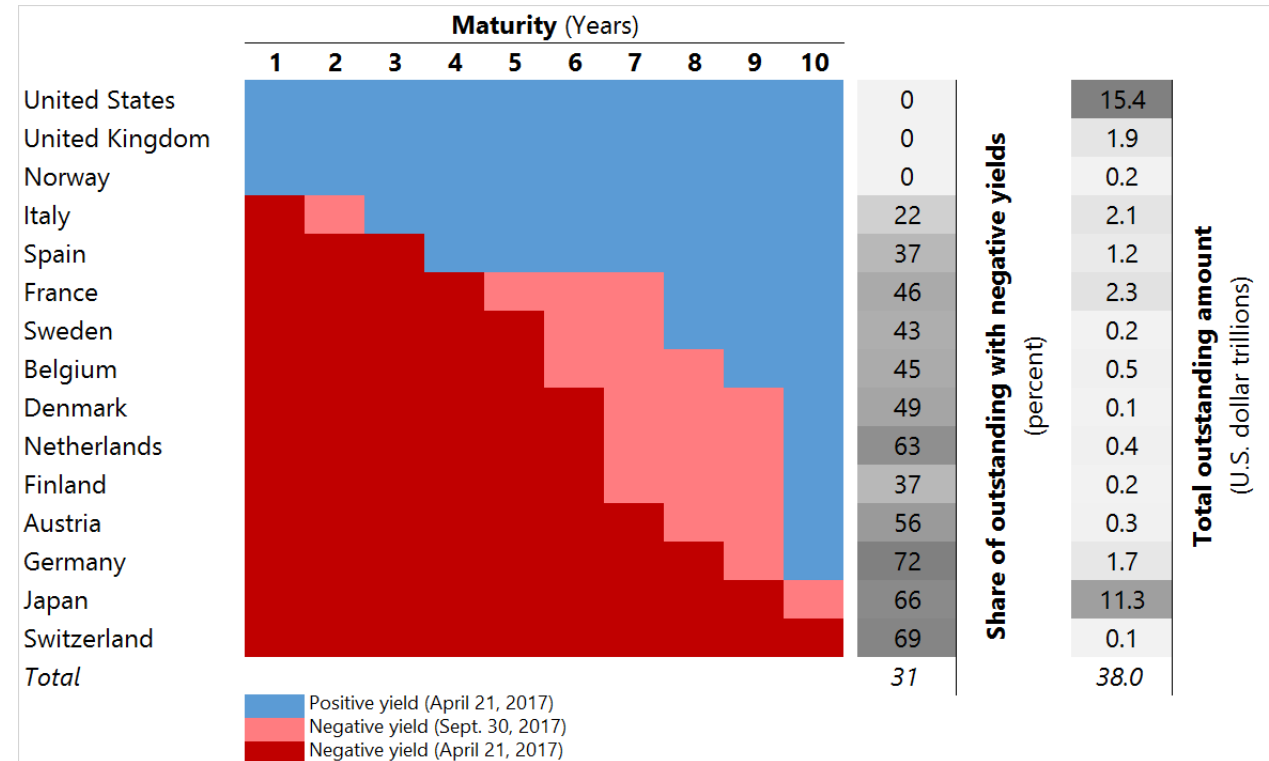
# Structural gaps (inequality, debt overhang, productivity, aging) weigh on aggregate demand and inflation, resulting in secular decline of (nominal and real) interest rates ...

Almost 1/3 of total sovereign debt securities in advanced economies (\$11.6 tn.) trade at negative yields ...

**Equivalency of Nominal Government Bond Yield and Marginal Policy Rate, Jan. 2011-May 2017**  
(Years)



Source: Bloomberg LP and IMF staff calculations. Note: Euro area covers the core economies only; 1/ the "equivalency line" shows the maturity term at which the prevailing government debt yield is no higher than the marginal policy rate in the respective jurisdiction.



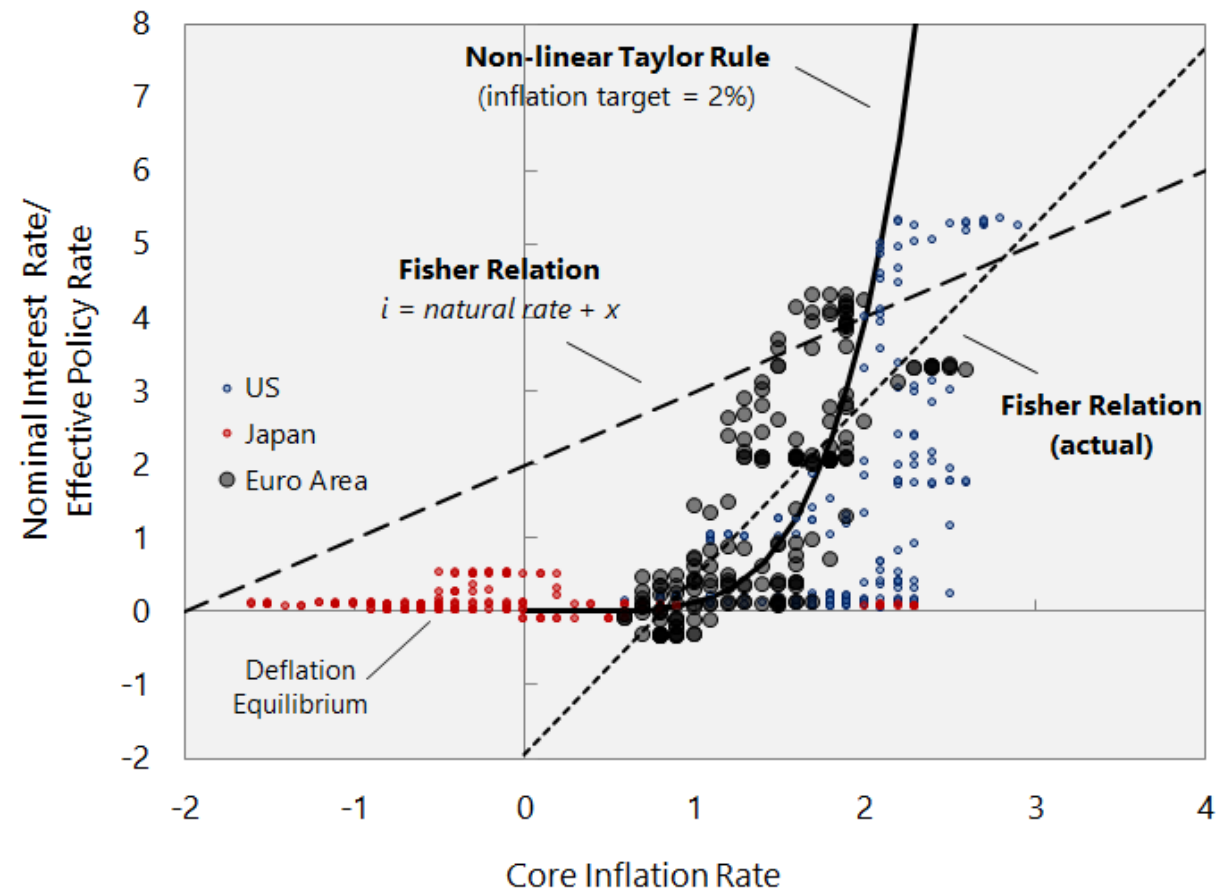
Sources: Bloomberg, WB staff calculations.

# Negative interest rate policy (NIRP) helps reduce the *real rate* required to raise output to its potential level amid disinflationary pressures ...

- Reduce real rates to level consistent with stable inflation and output at potential
  - More difficult if policy rates subject to ZLB
- Negative interest rate policy (NIRP) helps real rate adjust downward, compensating for inflation below target
  - Also restores central bank signaling capacity

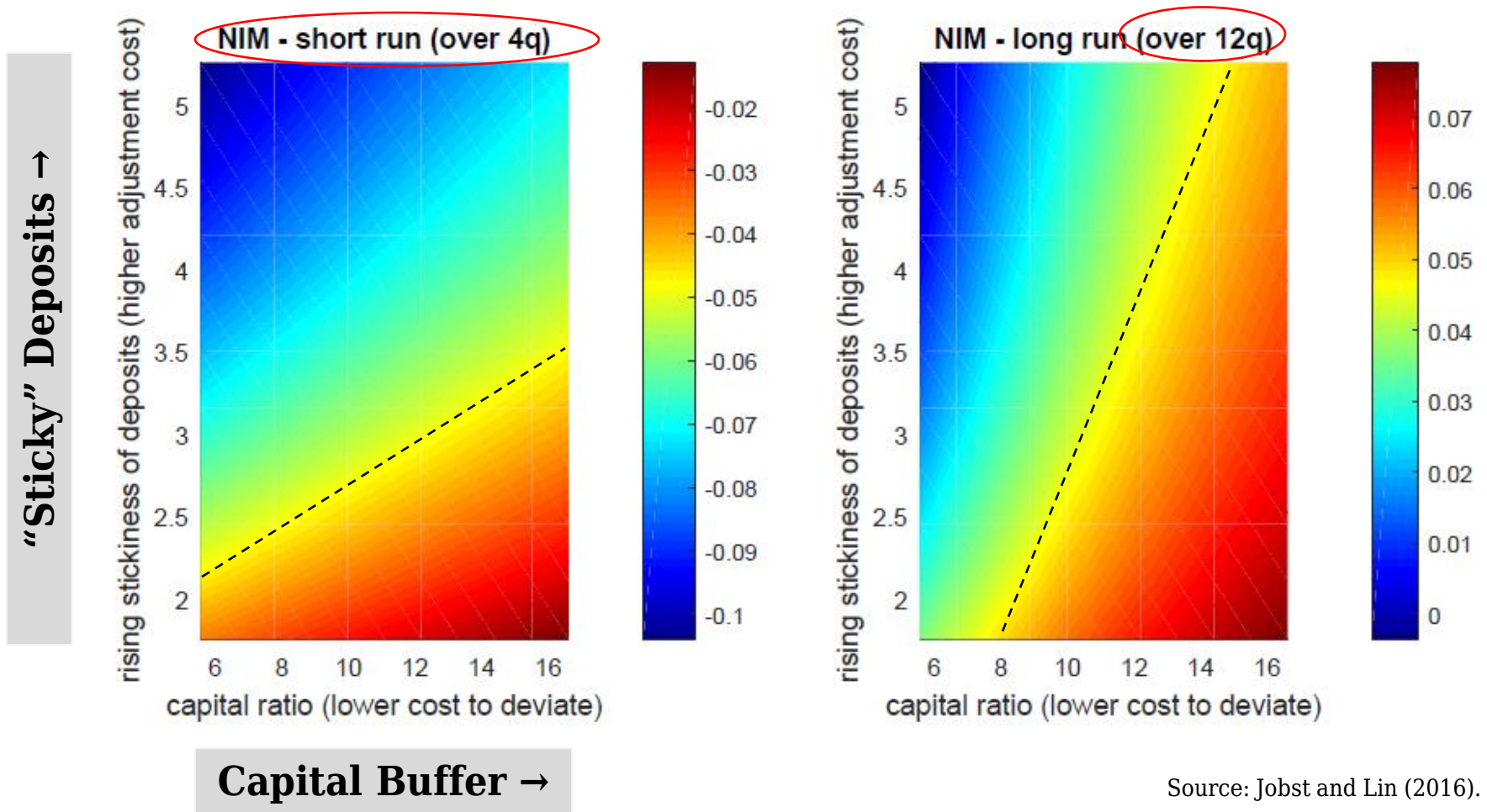
**Inflation and Policy Rates, January 2002-May 2017**

Percent, monthly



Source: Bloomberg, Haver Analytics, and staff calculations.

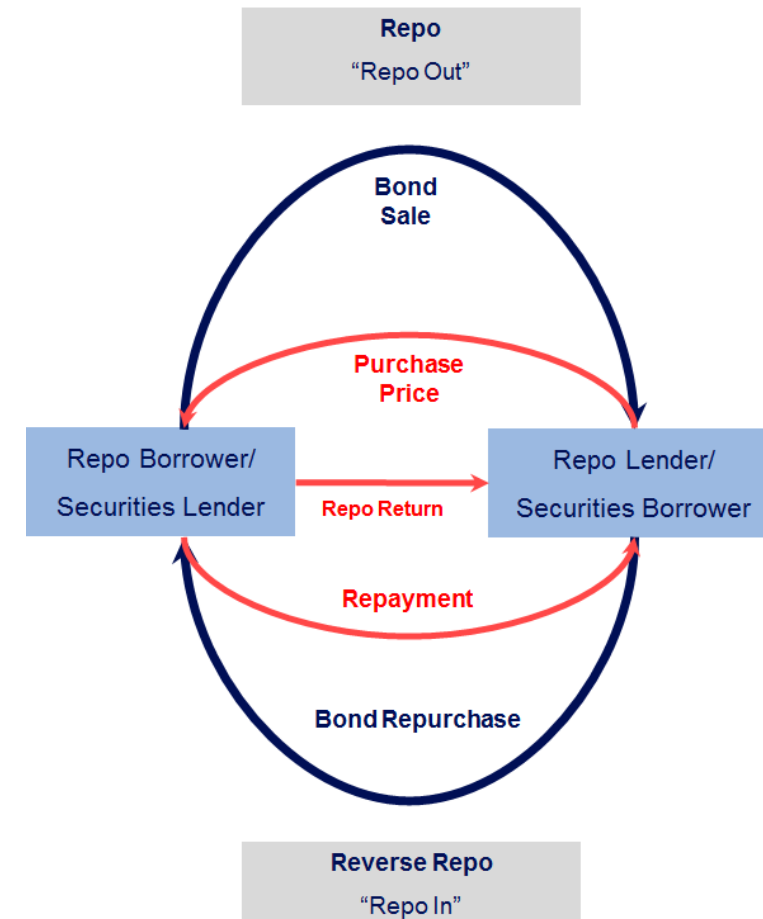
A DSGE model of the euro area shows that NIRP increases the displacement of “sticky” deposits especially for weaker banks struggling to maintain their net interest margin (NIM) ...



Source: Jobst and Lin (2016).

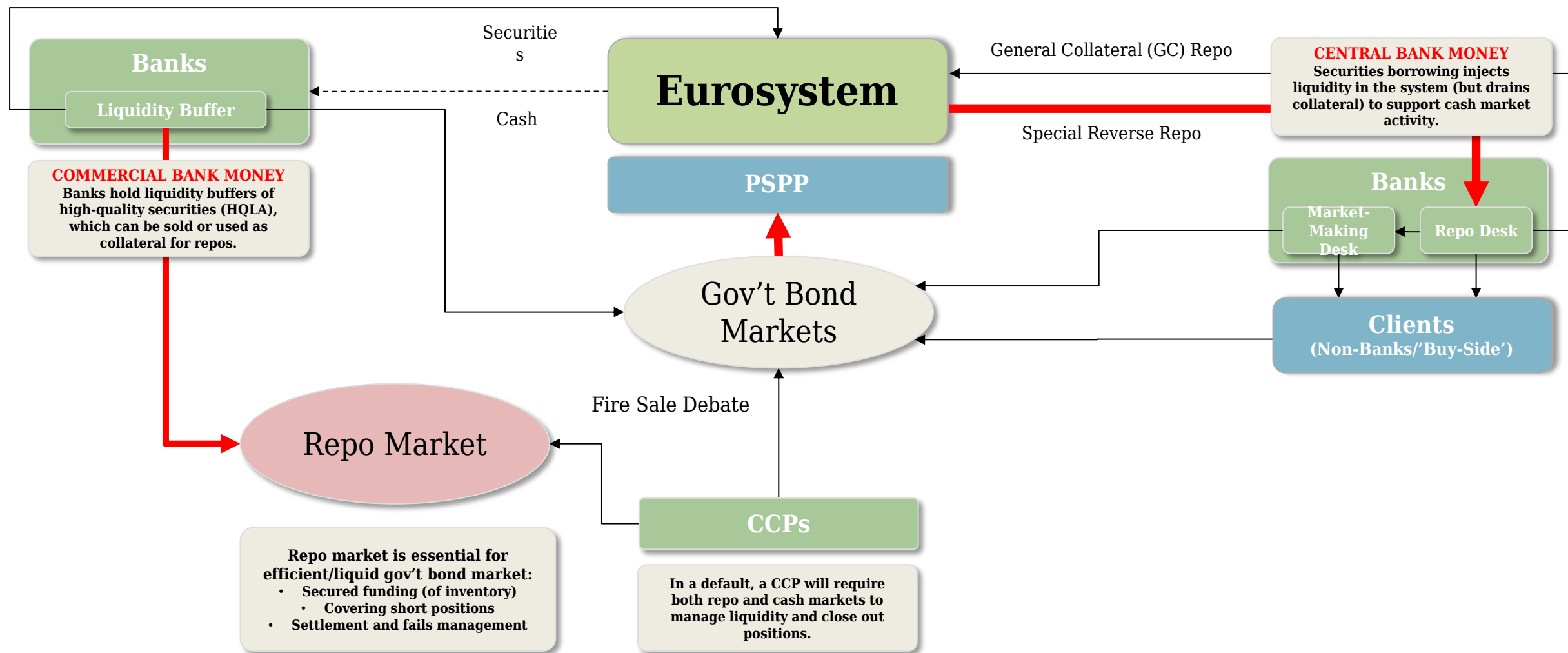
# Greater reliance on secured funding and effective monetary easing require efficient repo markets ...

- **Function**: hub of **collateral fluidity/velocity** (“**financial sector plumbing**”)
  - “**Commercial Bank Money**”: **liquidity/maturity transformation**
    - *Trading infrastructure*—market-making of debt securities and pricing of derivatives (margin requirements) by primary dealers
    - *Secured short-term funding*—mobilizing collateral/liquidity
  - “**Central Bank Money**”: **refinancing operations** for monetary transmission, controlling supply of bank reserves
- **Risks**: marginal funding increases pro-cyclicality, credit extension and leverage; also: maturity mismatch in securities lending.



# Repo Market as Fulcrum of Central Bank and Commercial Bank Money

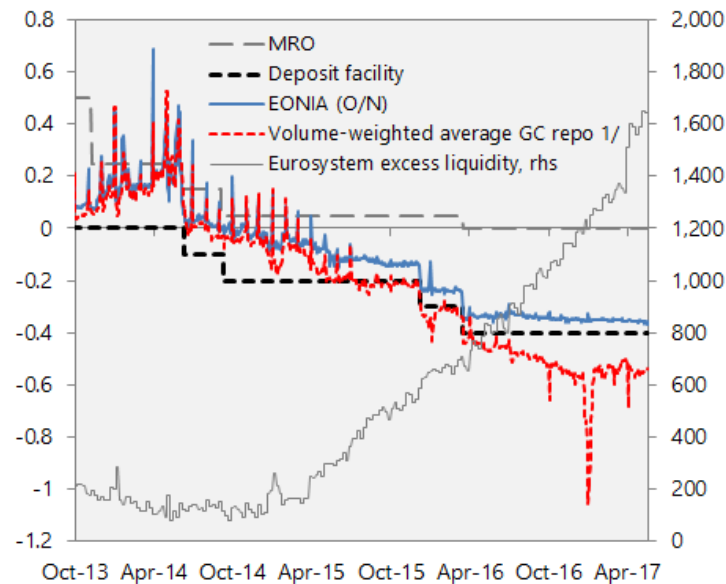
Monetary easing has increased connectivity between banks, central banks and CCPs, impacting cash market liquidity ...



# Prolonged NIRP increases the cost of carry (in derivatives book), which could adversely impact money market functioning ...

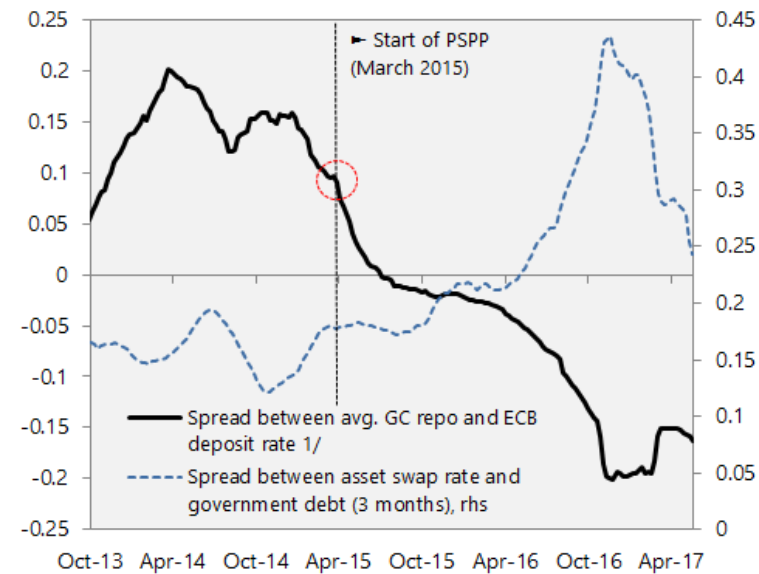
- Scarcity premium implied by GC repo rate below ECB deposit rate (as lower bound to money market rate under excess liquidity)
  - Lower collateral availability (esp. for non-banks but also CCPs) and persistent arbitrage opportunities due to limited balance sheet capacity (e.g., lower basis trading between German Bunds and Bund futures)

**Euro Area: Policy and Money Market Rates and Excess Liquidity**  
(Percent/EUR billions)



Source: Bloomberg L.P., ECB, and author's calculations. Note: 1/ Composite of German, French and Italian GC repo.

**Euro Area: GC Repo and Asset Swap Spreads**  
(Percent, 20-day centered moving average)

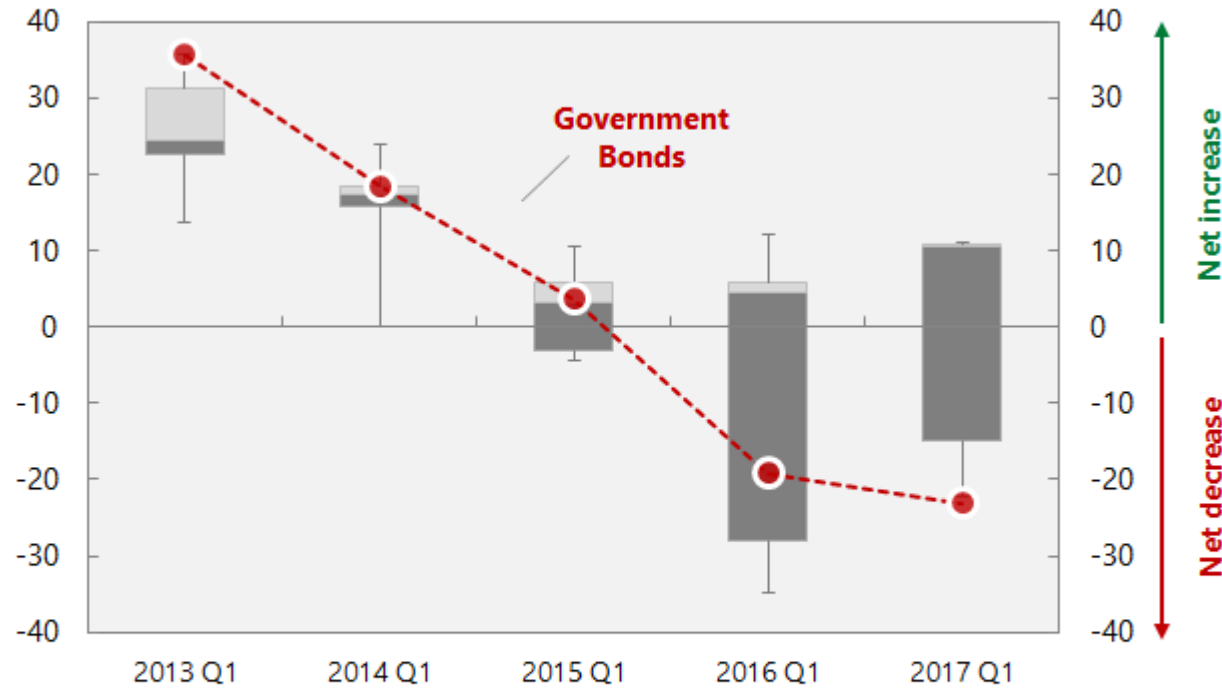


Source: Bloomberg L.P. and author's calculations. Note: PSPP=public sector purchase program; 1/ Composite of German, French and Italian GC repo.

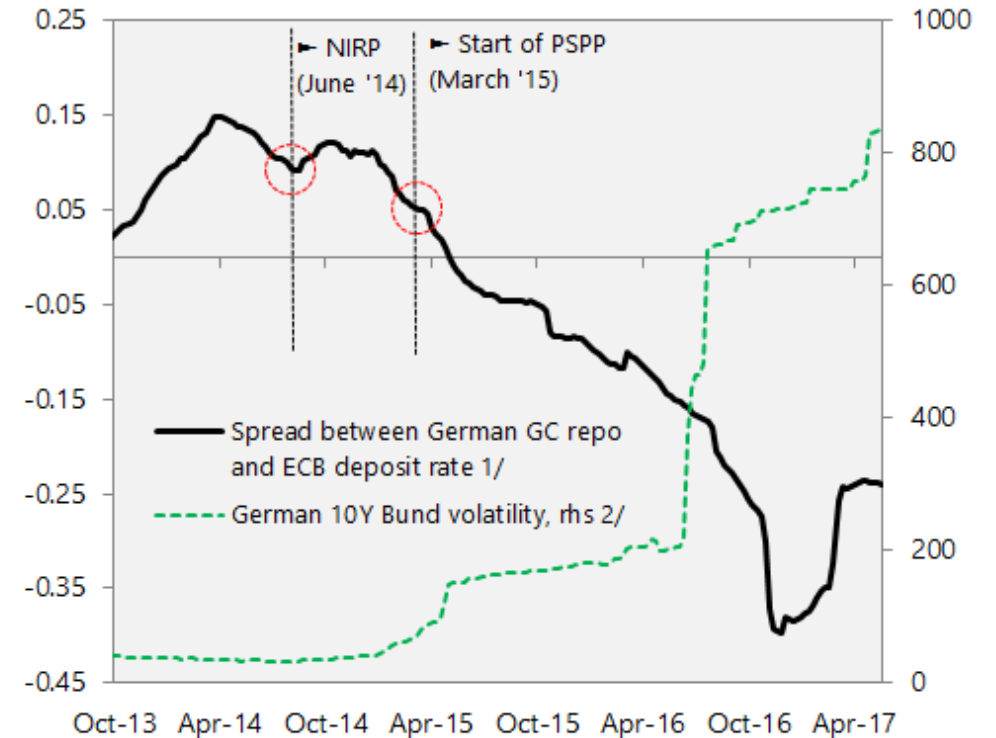
# ... as less market-making by banks via repo increases cash market volatility and likelihood of fails ...

## ECB SESFOD Survey Results: Changes in the Liquidity and Functioning of the Collateral Market

(Percentage change over the last three months) 1/



## Germany: GC Repo Rate and Cash Market Volatility (Percent)



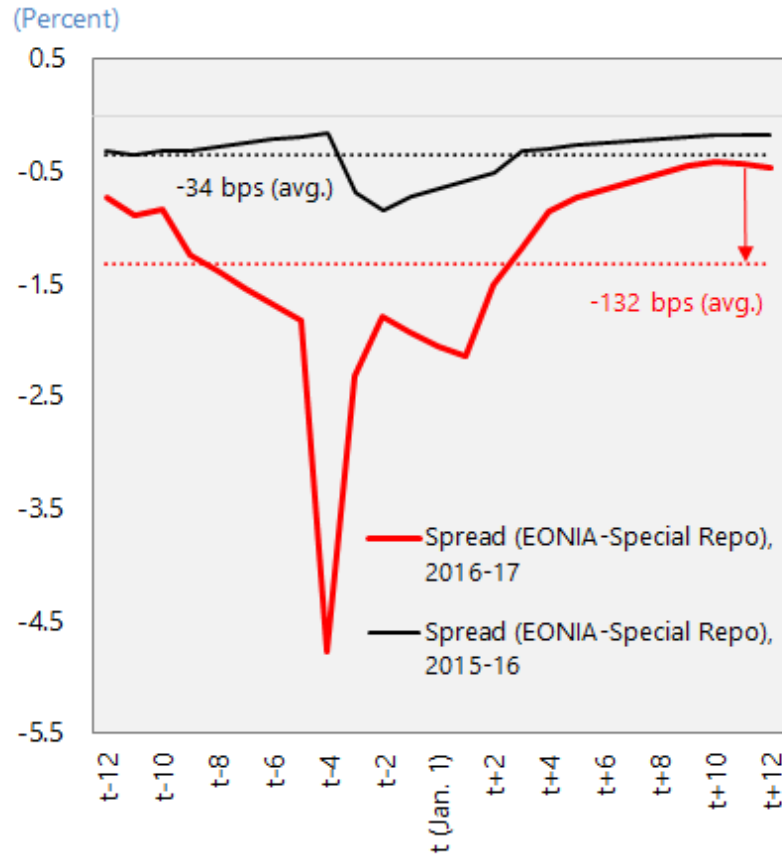
Source: ECB Survey on credit terms and conditions in euro-denominated securities financing and over-the-counter (OTC) derivatives markets (SESFOD) and IMF staff calculations. Note: 1/ boxplots include the mean (black dot), the 25<sup>th</sup> and 75<sup>th</sup> percentiles (grey box, with the change of shade indicating the median), and the maximum and minimum (whiskers). Out of 10 collateral types included in the survey, the following are considered here: domestic government bonds, high-quality and other government/sub-national/supra-national bonds, high-quality financial corporate bonds, high-quality non-financial corporate bonds, and covered bonds.

Source: Bloomberg L.P. and author's calculations. Note: 1/ 20-day centered moving average; 2/ 260-day moving average standard deviation of daily percentage change, annualized.



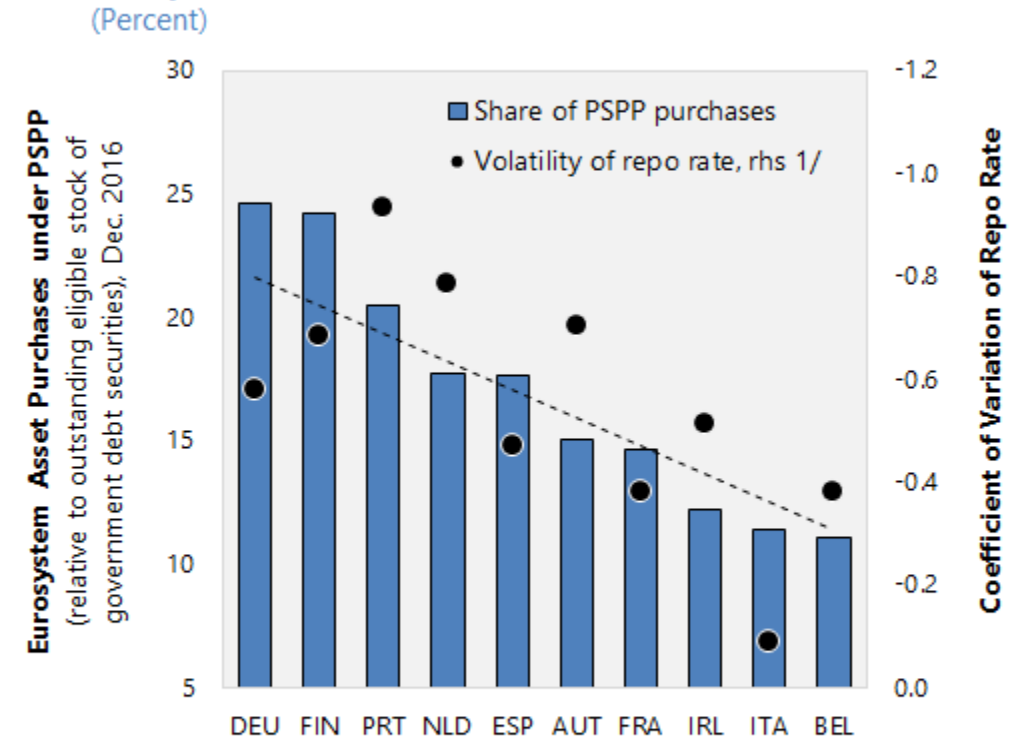
... but deeply negative specials indicate commitment to delivery.

### Germany: Money Market and Special Repo Rates at Year-End



Source: NEX Brokertec and author's calculations.

### Euro Area: Share of PSPP Purchases and Year-end Volatility of Repo Rate (2016-17)



Source: Bloomberg L.P., ECB, NEX Brokertec and author's calculations. Note: 1/ The volatility of the repo rate is based on GC pooling (or the volume-weighted average of special repo if the former is not available), and calculated as the coefficient of variation (std. dev./median) between Dec. 26, 2016 and Jan. 6, 2017.

# Considerations for Functioning Repo Markets through Wider Collateral Availability

- Many years ago, repo markets already traded at negative rates (specials) so NIRP and QE have not caused market disruptions (so far)
- But legacy infrastructure remains challenging ...
  - Develop common active securities lending solution with specialized agents for all (or several) Eurosystem NCBs (esp. if less integrated in custodial network)
    - Reduce competitive distortions through harmonized modalities (e.g., pricing, haircuts, term/counterparty eligibility), higher limits on lending per issue, and minimum fail charge
    - Raise limit on cash collateral (and make “cash neutrality” less binding) without sterilizing liquidity from asset purchases
  - Integrated securities settlement under T2S is not available in “commercial bank money” (with legacy of national CSDs)
- Adverse implications of dysfunctional repo market: (i) less efficient cash markets, (ii) market access by non-banks for hedging, and (iii) monetary policy

normalization

Thank you!  
Questions?



# References

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- \_\_\_\_\_, 2016, “Are We There Yet? Implications of Negative Interest Rates for Monetary Transmission and Bank Profitability,” Zeitschrift für das gesamte Kreditwesen, Vol. 69, No. 22, November 15, pp. 19-21, available at <http://www.kreditwesen.de/kreditwesen/themenschwerpunkte/aufsaeetze/are-we-there-yet-implications-negative-interest-rates-moneta-id36045.html>.