

# Negative Interest Rate Policies: *Sources and Implications*

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*Based on a recently published [CEPR / World Bank Working Paper](#)*



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# A Polarized Debate

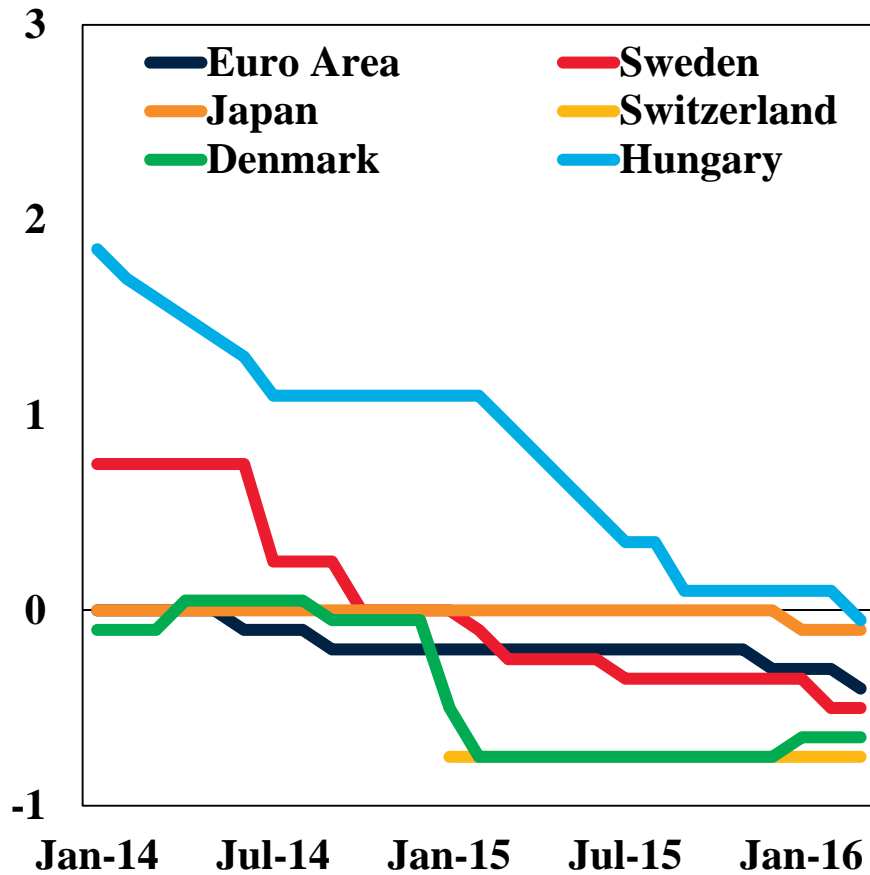
*" [In] the first full year with negative interest rates, [banks' net interest income] went up. [...] So all in all the [NIRP] experience has been positive..."* **Mario Draghi**, April 2016

*"...overall, as a tool of monetary policy, negative interest rates appear to have both modest benefits and manageable costs."* **Ben Bernanke**, March 2016

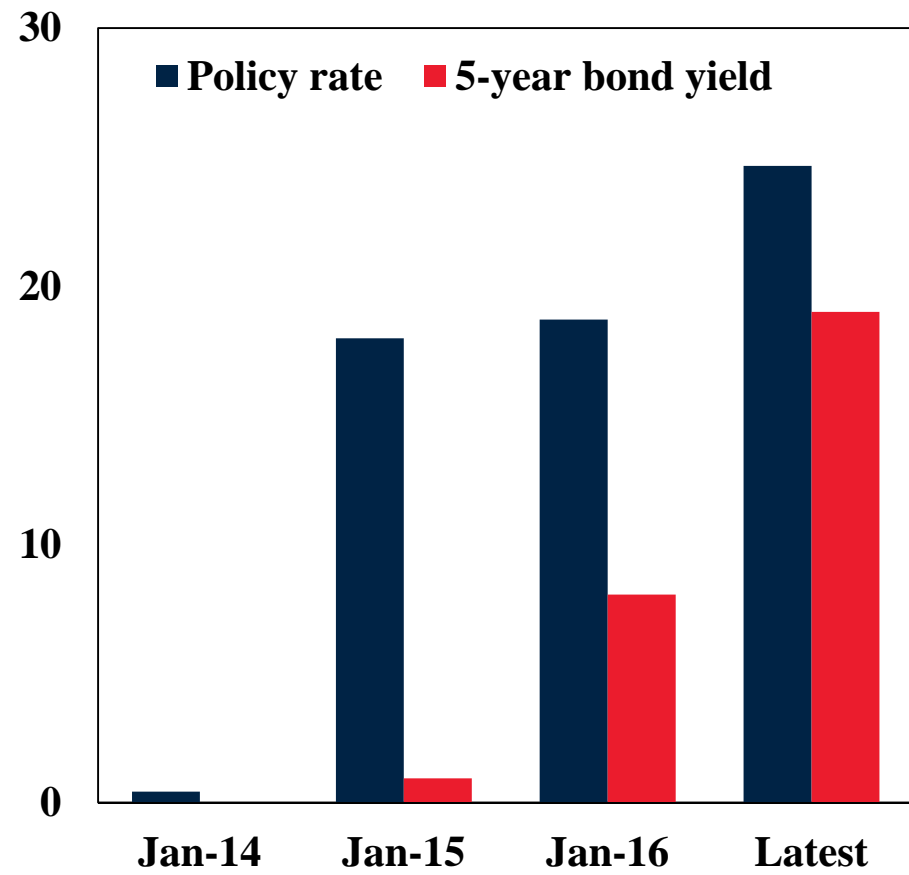
*"Far from encouraging lending and spending, negative interest rates ... might work in the opposite direction."* **William White**, December 2014

# NIRP Countries: *Accounting for 25 % of World GDP*

**Policy Interest Rates**  
(Percent)



**Size of Economies with Negative Rates**  
(Percent of world GDP)



Source: European Central Bank, Haver Analytics, World Bank, national central banks, Federal Reserve Bank of St. Louis.

Left Panel: Policy rates are deposit rates on excess reserves. Last observation is May 2016.

Right Panel: GDP weights are based on 2015Q4 values. Share of world GDP accounted for countries with negative policy rates, five and ten year government bond yields. Monthly averages. Last observation is July 2016.

# Why Negative Interest Rate Policies?

- *Supporting growth and stabilizing inflation.* European Central Bank (ECB), Bank of Japan (BOJ), Swedish Riksbank, and Central Bank of Hungary (MNB)
- *Responding to capital flow and currency pressures.* Swiss National Bank (SNB) and Danish National Bank (DNB)
- *Responding to perceived limits of previous policy measures.*
  - Diminishing pool of assets to purchase
  - Diminishing returns from previous unconventional measures
  - Showing resolve to meet their targets

# Four Questions

1

**How do the transmission channels operate under NIRP?**

*Usual channels but complications. Interest rate, credit, portfolio, and exchange rate channels.*

2

**How have key financial variables evolved since NIRP?**

*Declines in market rates; Mixed movements in currencies, Continued low inflation expectations*

3

**How could NIRP affect financial stability?**

*Erosion of profitability; Excessive risk taking; Mostly contained so far*

4

**What are the implications for EMDEs?**

*Benefits due to funding opportunities; Risks due to domestic challenges and global financial stress*

# Four Questions

1

**How do the transmission channels operate under NIRP?**

*Usual channels but complications. Interest rate, credit, portfolio, and exchange rate channels.*

# Monetary Policy Transmission under NIRP: *Not so Smooth...*

- *Analogous, but complications.* Similar to channels of conventional monetary policy, but:
  - A tax on bank reserves
  - Burden on banks or borrowers?
- *Interest rate channel.* Lower pass-through of NIRP to cost of capital
- *Credit channel.* Bank lending channel vs. balance sheet channel, asset valuation issues
- *Exchange rate channel.* Shifts in risk aversion; beggar-thy-neighbor policies

# Three Questions

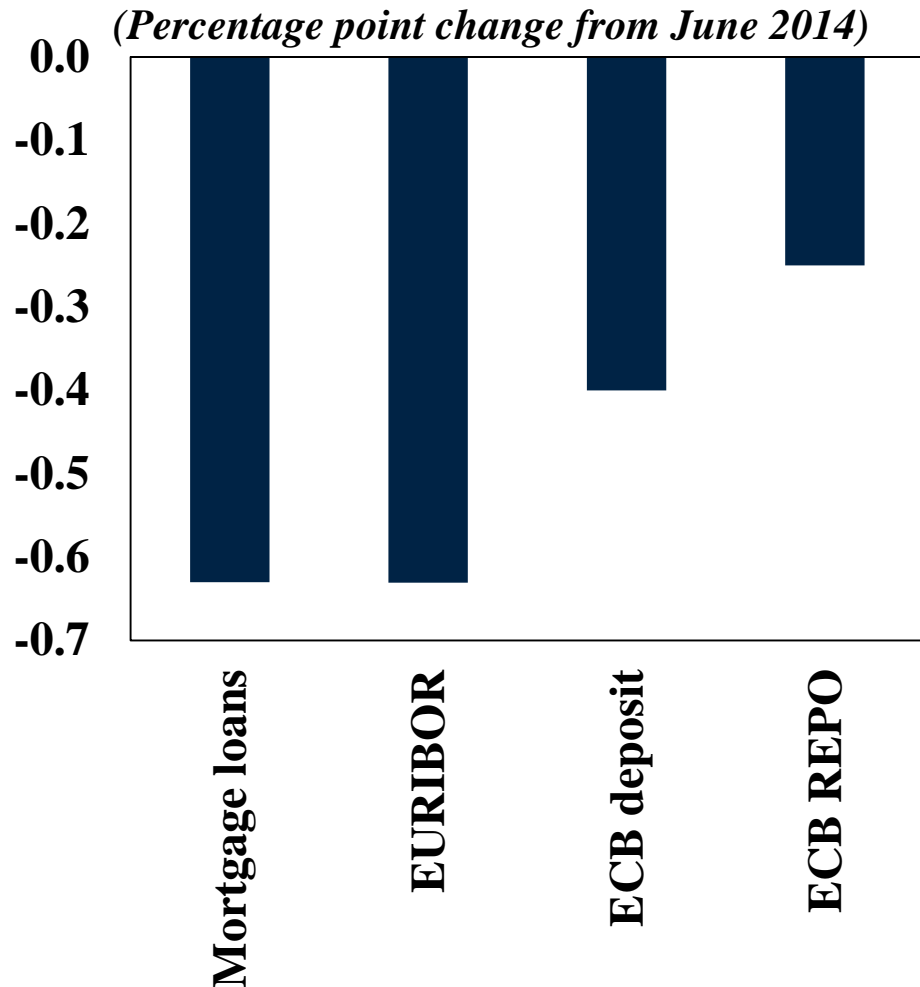
2

How have key financial variables evolved since NIRP? *Declines in market rates; Mixed movements in currencies, Continued low inflation expectations*

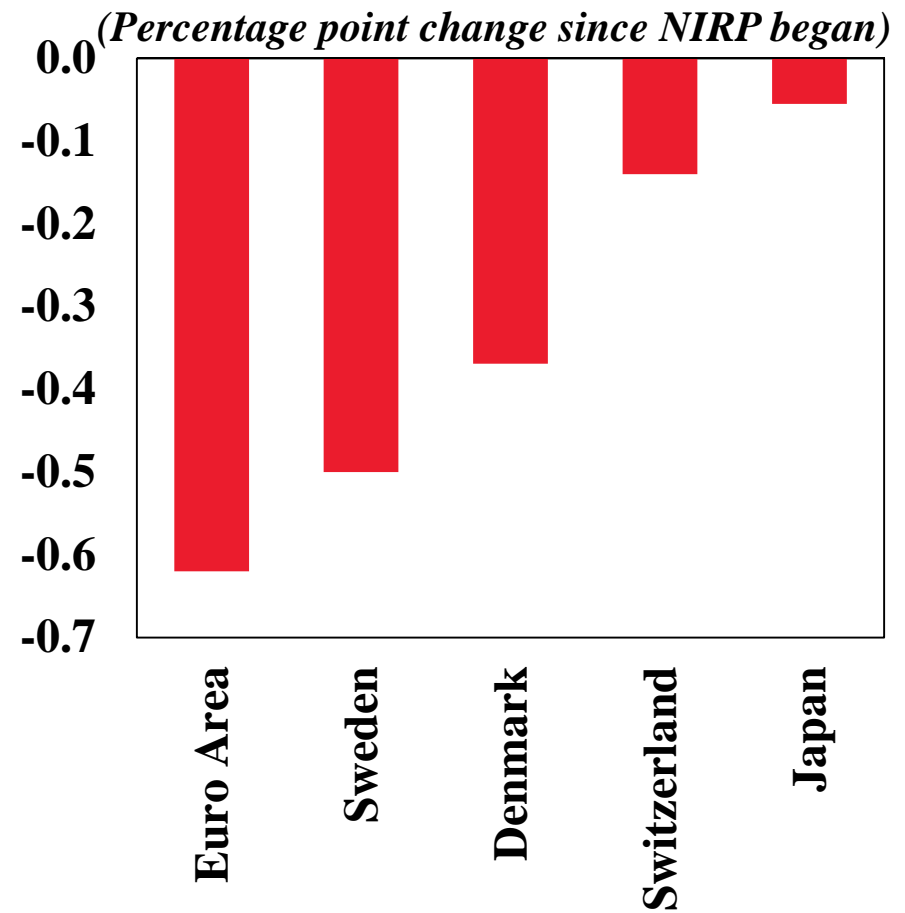


# Falling Interest Rates

## Euro Area interest rates



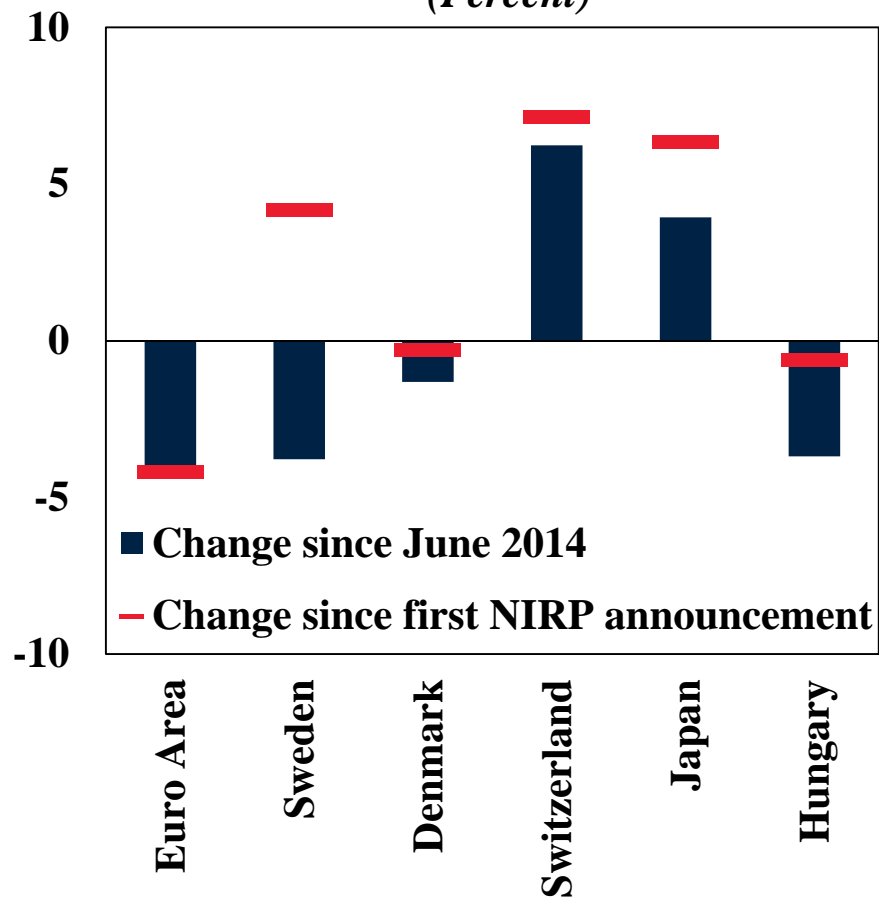
## Mortgage lending rates



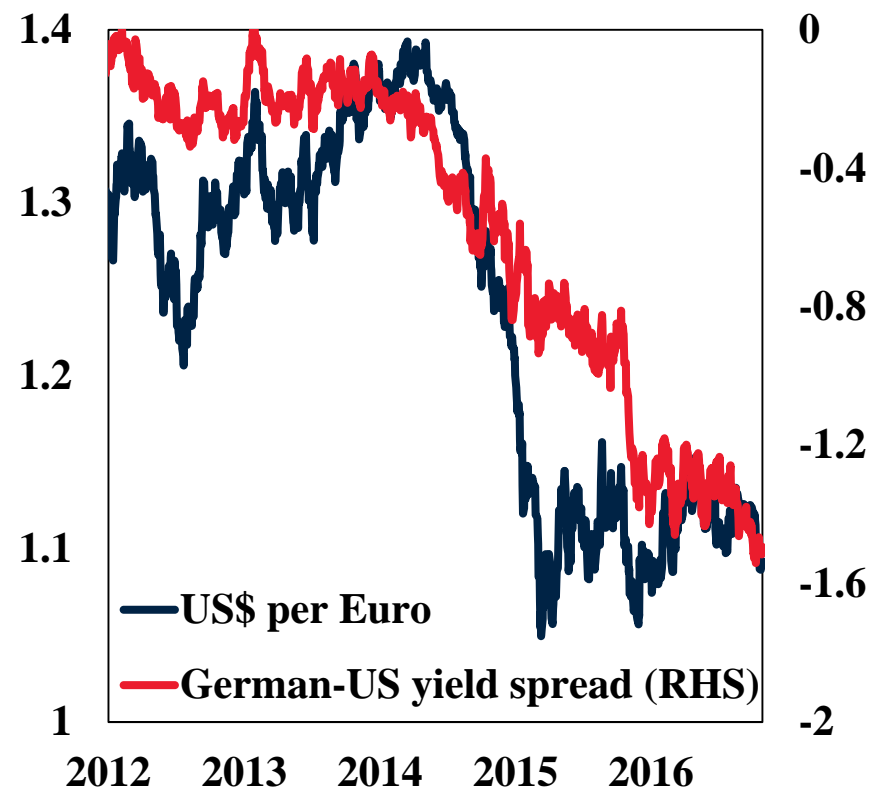
Source: Bloomberg, national central banks, World Bank. Last observation June 2016.

# Mixed Exchange Rate Movements

**Nominal Effective Exchange Rates  
(Percent)**



**Euro and Yield Differential with U.S.  
(Exchange rate) (Percent)**



Sources: JP Morgan, Bloomberg, Haver Analytics, World Bank.

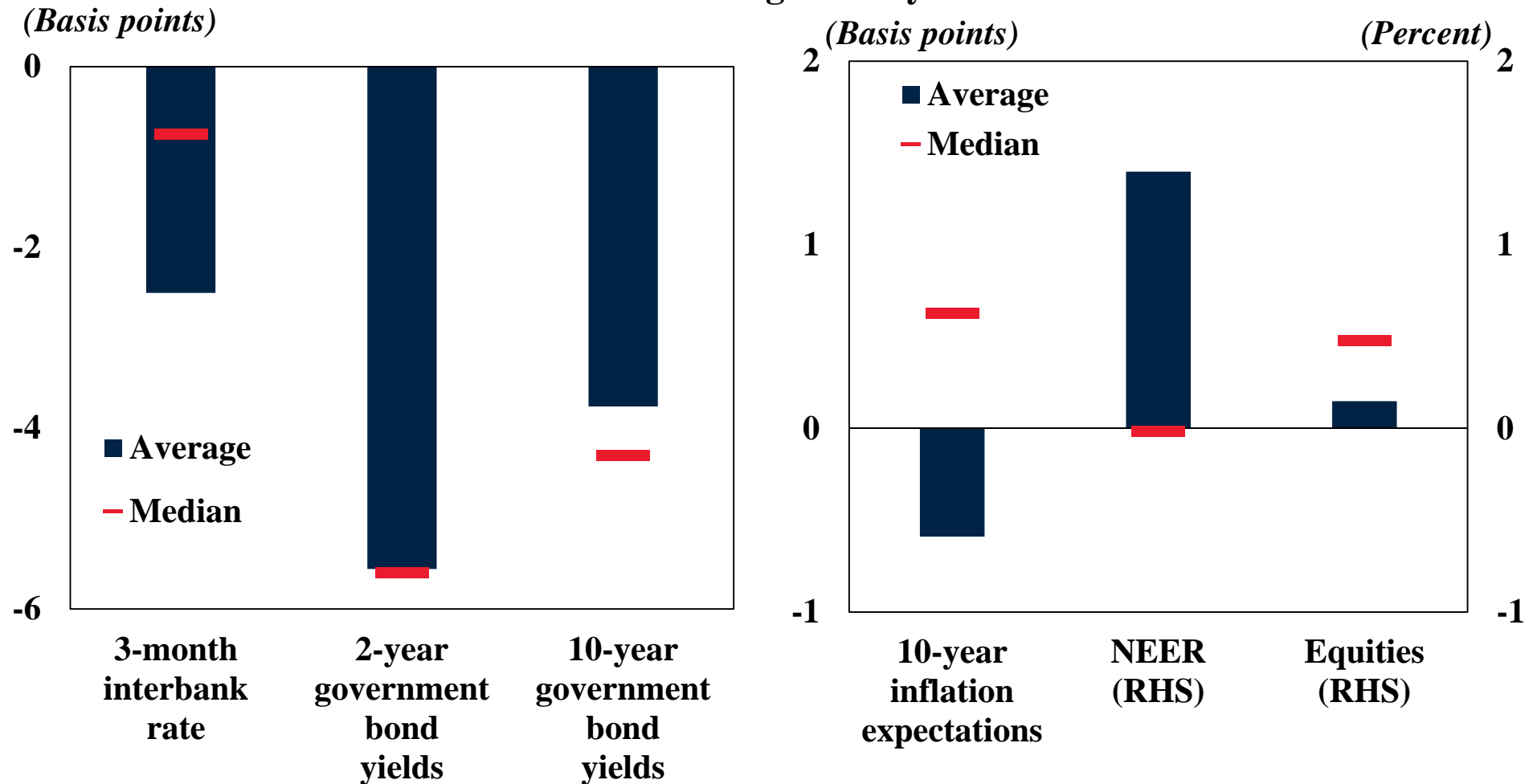
Left Panel. NIRP announcement is June 2014 for Euro Area, February 2015 for Sweden, December 2014 for Switzerland, September 2014 for Denmark, January 2016 for Japan, and March 2016 for Hungary. Negative numbers indicate depreciation. Last observation is May 2016.

Right Panel. German-US yield spread is the percent difference between two-year government bond yields in Germany and the United States. Last observation is May 2016.

# NIRP event study:

## *Declining Rates; Mixed Movements in Inflation and Currency*

**NIRP announcements: changes in key financial variables**

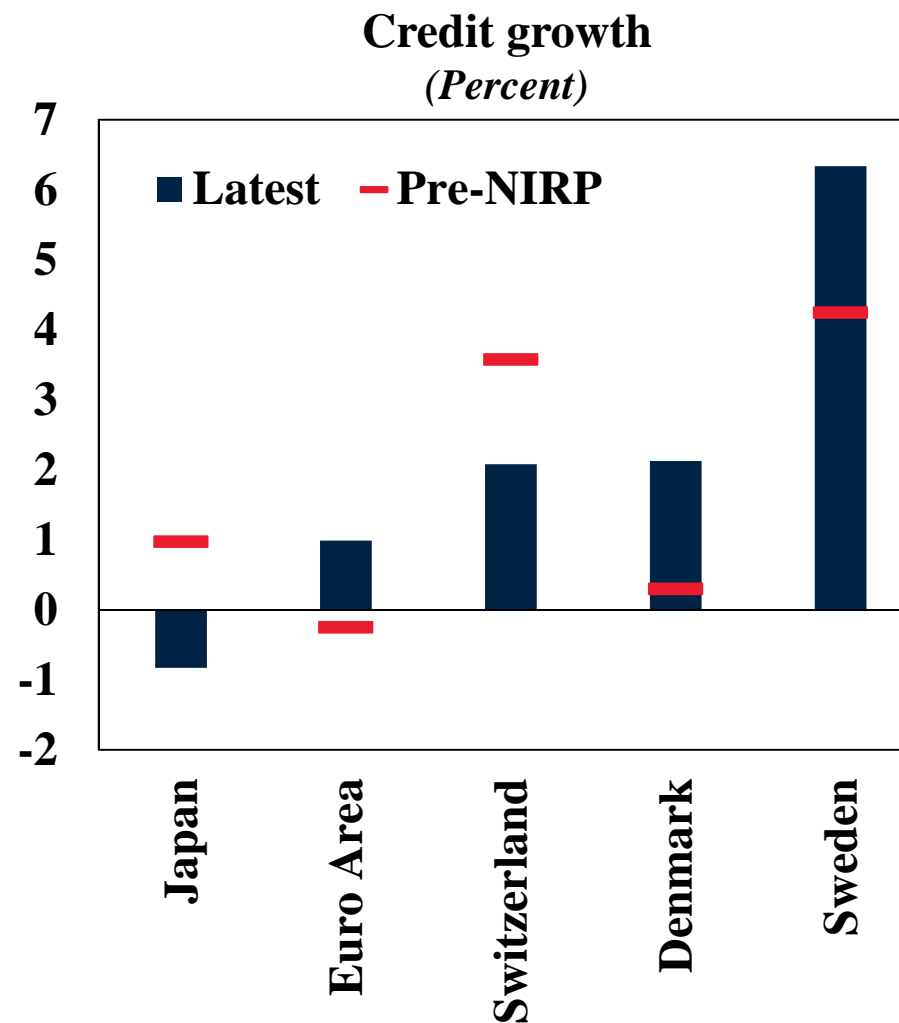
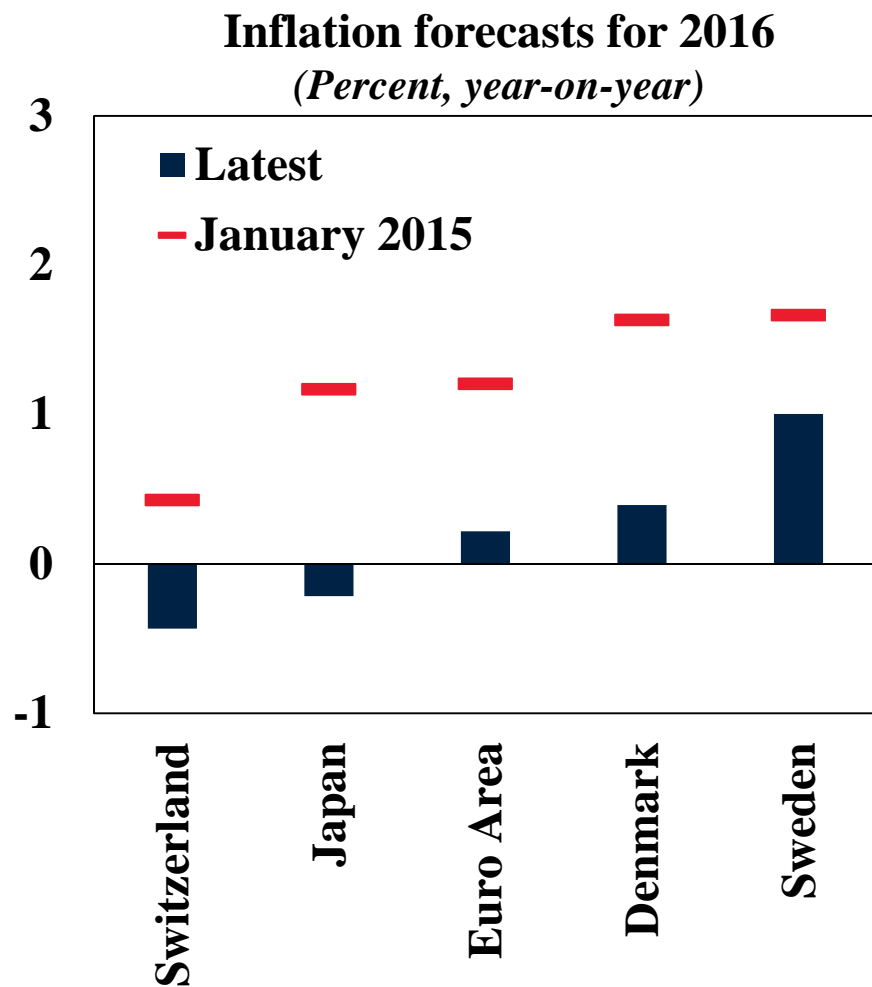


Source: Bloomberg, Haver Analytics, national central banks, World Bank.

Note: Basis points or percent difference between closing values on the day before the NIRP announcement and those at the end of the day of the announcement. Pooled average and median across NIRP announcements by five major central banks: the European Central Bank, the Bank of Japan, the National Bank of Switzerland, the Swedish Riksbank and Denmark's National Bank.

# Inflation and Credit After NIRP:

## *Disappointing Inflation; Mixed Credit Response*



Sources: World Bank, Consensus Economics, national central banks, Haver Analytics.

Left Panel. Reflects 2016 inflation forecasts in January 2015 and in the latest month available (October 2016). Right Panel. NIRP refers to negative interest rate policies. The latest observation is August for Japan and Switzerland, September for all others. 3-month moving averages shown. Pre-NIRP era is from 2010 through June 2014.

# Four Questions

3

**How could NIRP affect financial stability?**

*Erosion of profitability; Excessive risk taking; Mostly contained so far*

# Financial Stability under NIRP: *A Formidable Challenge!*

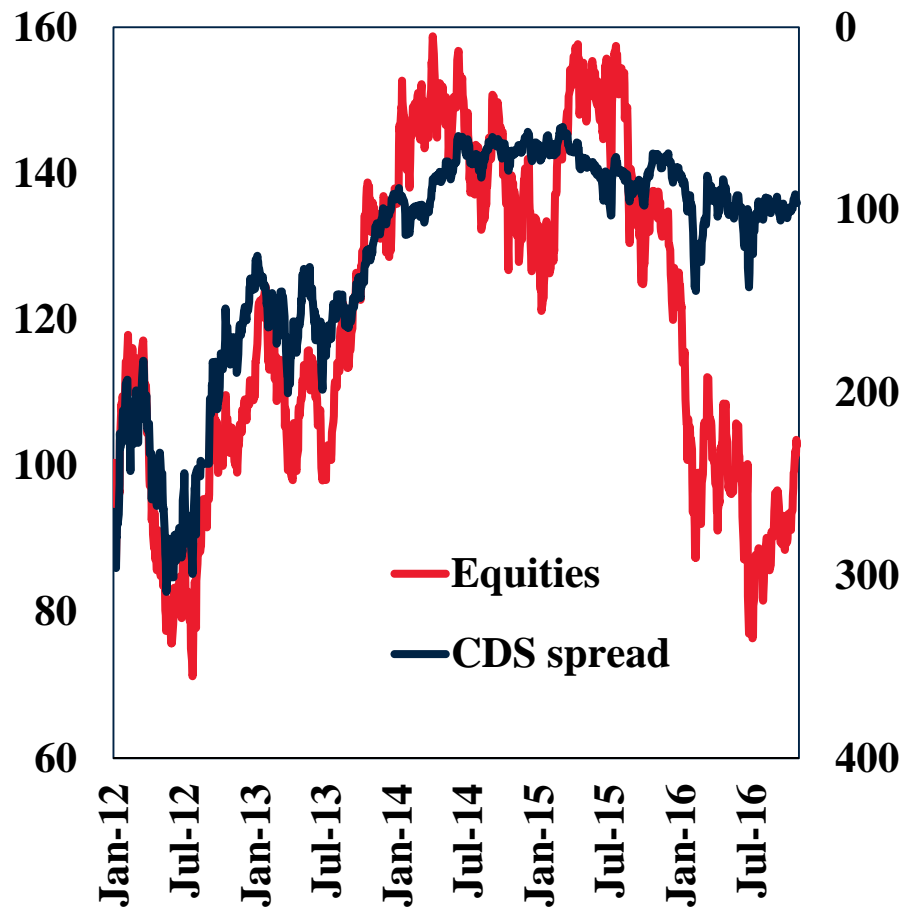
- *Analogous but with substantial risks.* If rates go substantially below zero or if NIRP employed for a protracted period of time.
- *Banks and other financial intermediaries.* Erosion of profitability and reduced incentives to address non-performing assets
- *Pension and life-insurance companies.* Difficulty of generating adequate returns to meet long-term liabilities
- *Excessive risk taking.* Search for yields, potential asset price bubbles

# Euro Area Banks and Insurance Companies: *New Business Model Needed*

## Euro Area bank stocks and CDS spreads

(Index Jan 1, 2012 = 100)

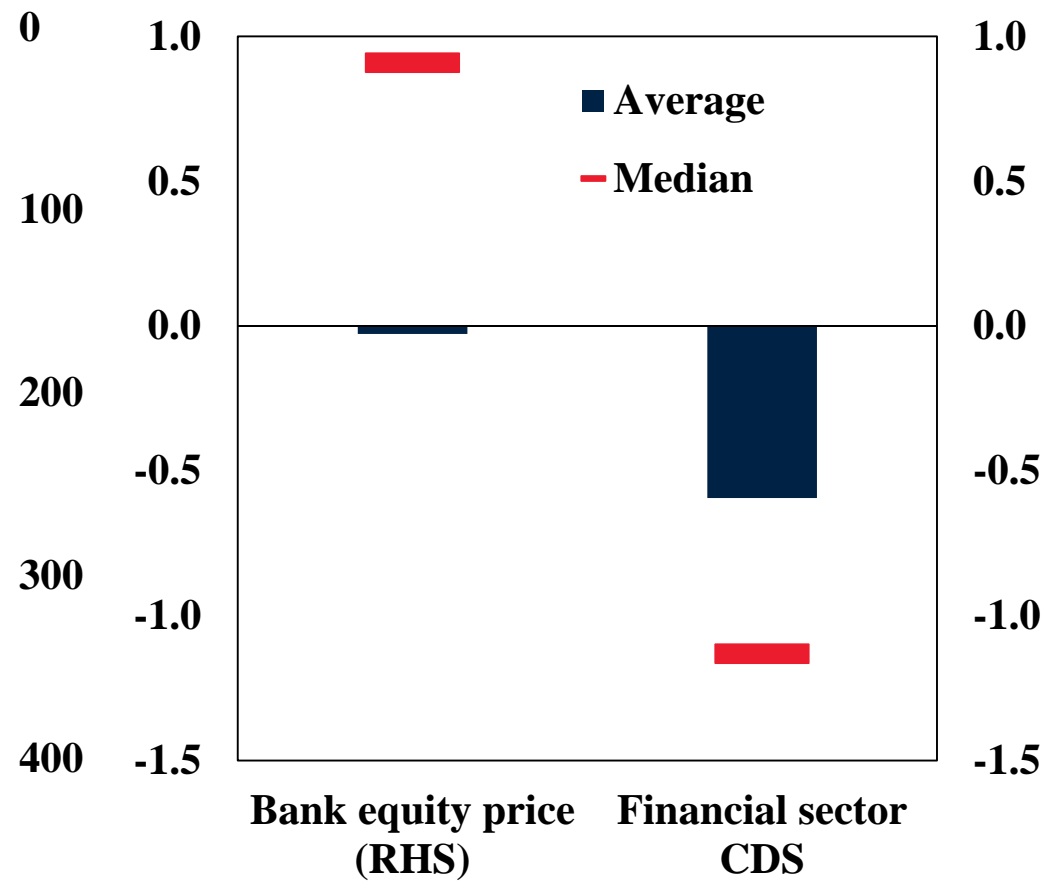
(Basis points)



## Average and median effect over one-day

(Basis points)

(Percentage points)



# Four Questions

4

**What are the implications for EMDEs?**

*Benefits due to funding opportunities; Risks due to domestic challenges and global financial stress*

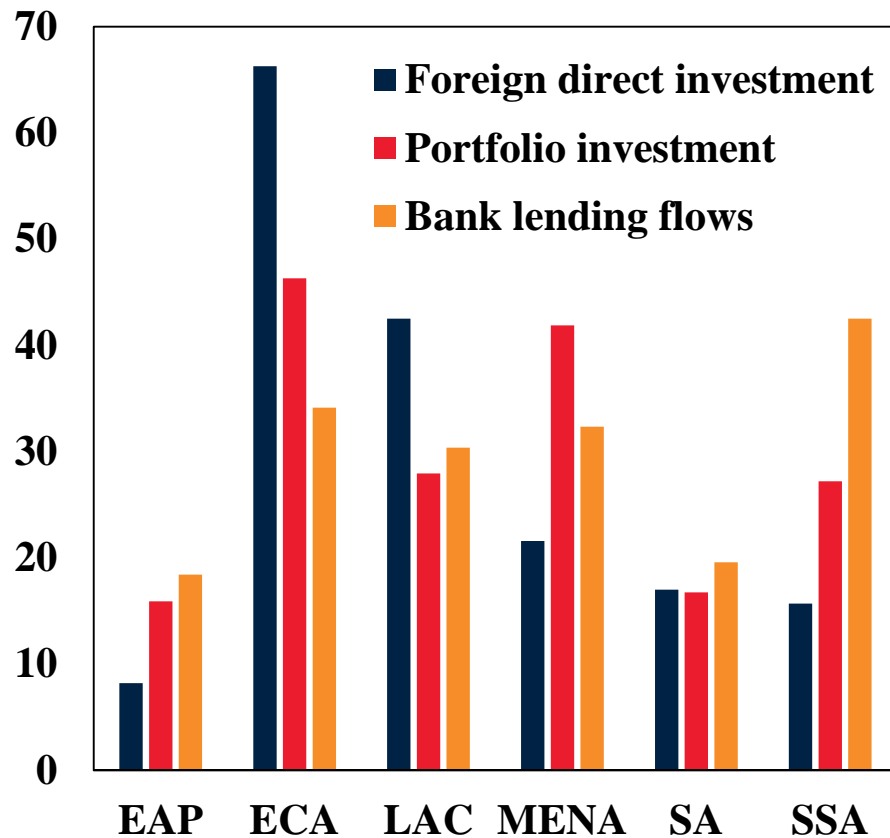


# NIRP: Benefits and Risks for EMDEs

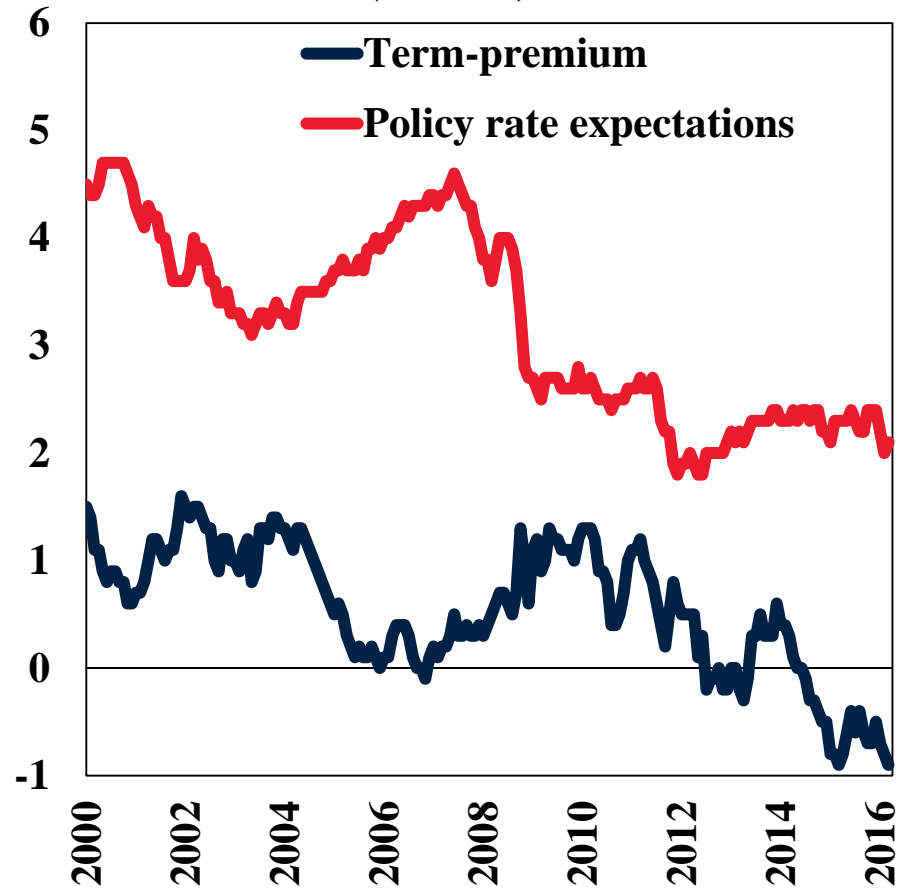
- *Benefits from low rates.* Containing the likely increase in global interest rates and supporting the appetite for EMDE assets.
- *Risks.* Due to dollar appreciation, higher cost of debt servicing and broader balance sheet pressures...
- *Combination of vulnerabilities.* Global financial stress and deteriorating growth prospects
- *Policies.* Need to be able to implement monetary, fiscal and financial sector policies

# Low Rates in Euro Area: *New Funding Opportunities, Global Yield Compression*

**Capital inflows from Euro Area residents**  
*(Percent of regional total)*



**Global term-premium and rate expectations**  
*(Percent)*



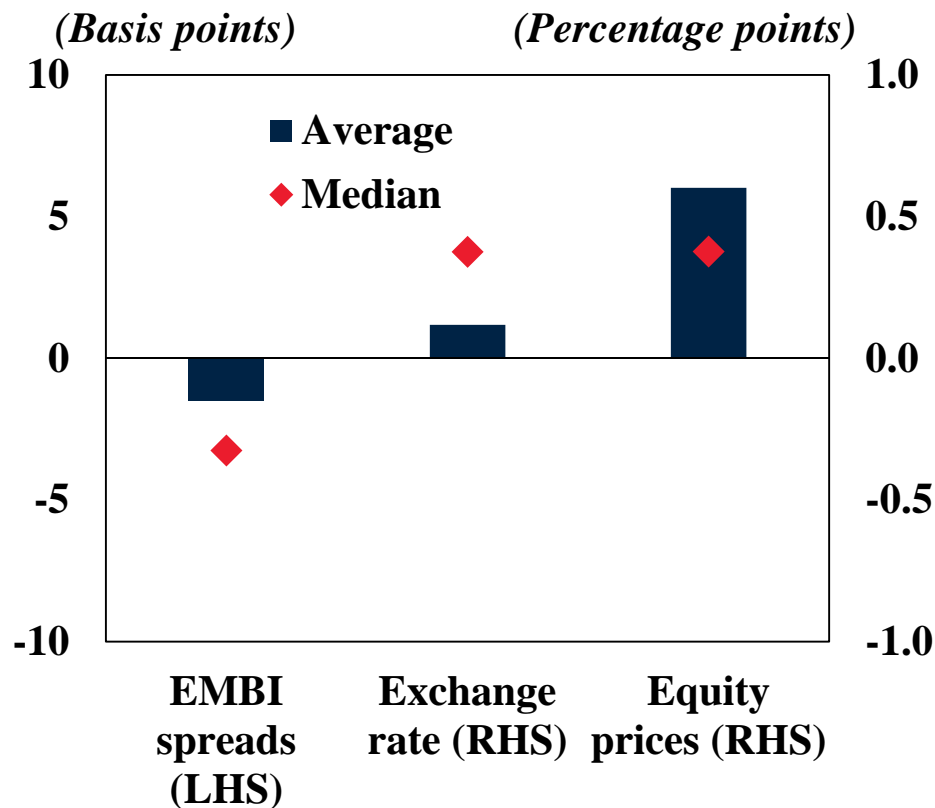
Source: World Bank, Bank for International Settlements.

Left. EAP is East Asia and the Pacific, ECA is Eastern Europe and Central Asia, LAC is Latin America and the Caribbean, MENA is the Middle East and North Africa, SA is South Asia, and SSA is Sub-Saharan Africa. Total portfolio investment data is as of June 2015. Foreign direct investment data is as of December 2014. Bank claims as of December 2015.

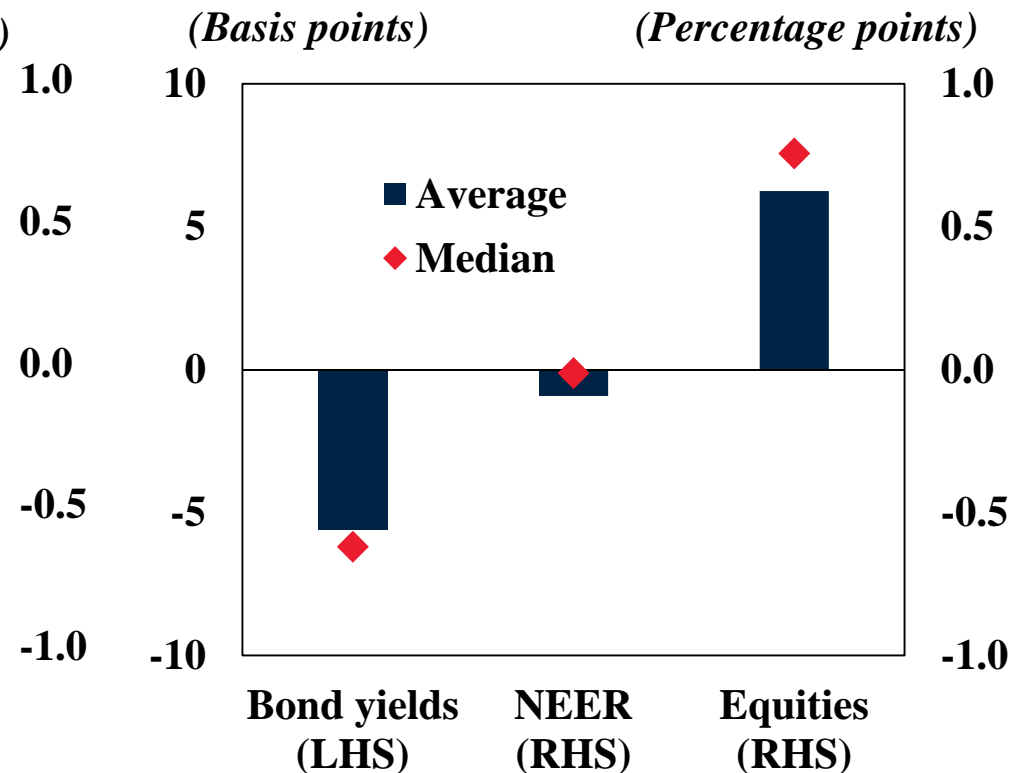
Right: Based on re-scaled first principal components of estimates of nominal expected policy rates and the term premia in the US, UK, and Euro Area. Last observation is March 2016.

# NIRP Announcements: *Falling Spreads, Rising Equities*

### Impact on asset prices in EMDEs



### Impact on asset prices in Turkey



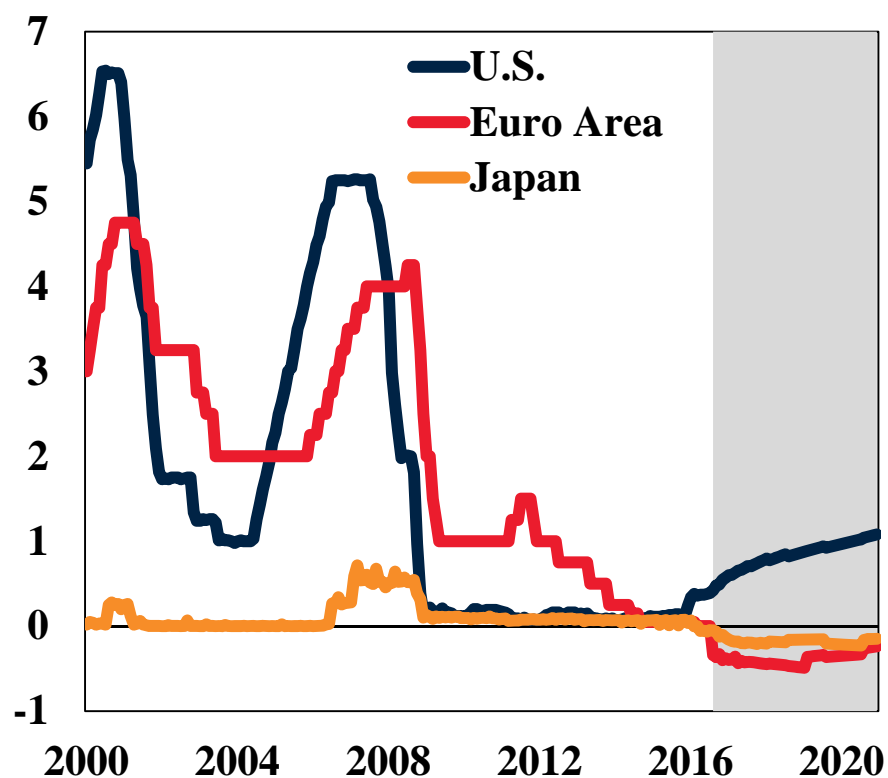
Source: JP Morgan, Bloomberg, Haver Analytics, World Bank

Basis points or percent difference between closing values on the day before the NIRP announcement and those on the day of the announcement. NIRP announcements are those of the European Central Bank, the Bank of Japan, and that coinciding with the Swiss National Bank's decision to abandon the Franc's floor against the Euro. Bond yields are for 10-year government bonds.

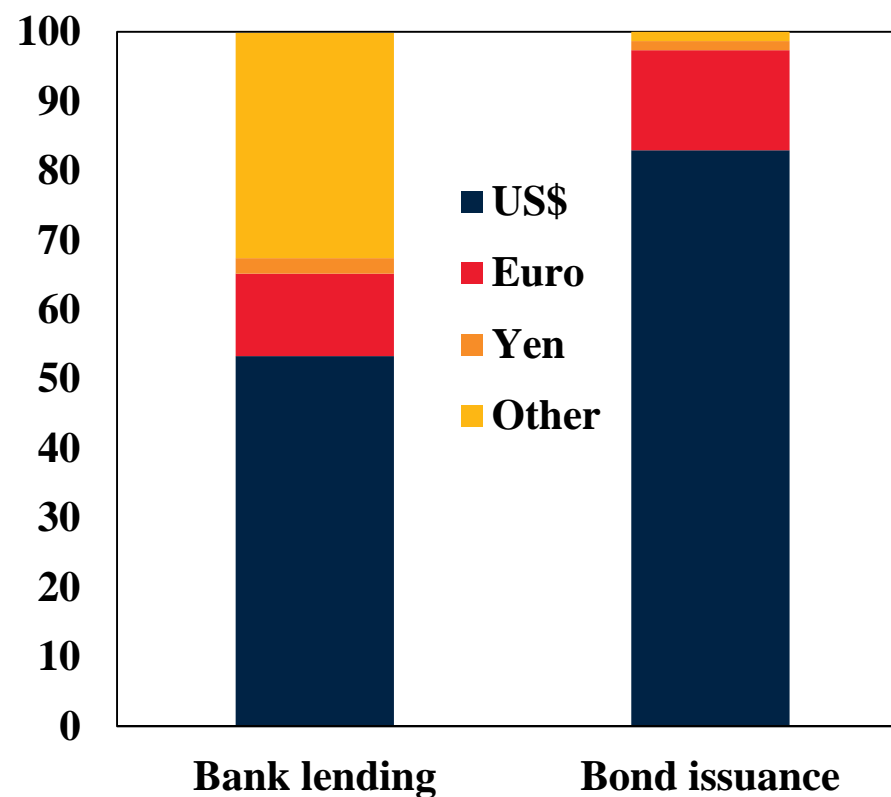
Effective exchange rates are percentage changes in nominal effective exchange rates. For aggregates, exchange rate is the JP Morgan EM Foreign Exchange Index, EMBI spread is calculated as the average premium paid over a U.S. government bond with comparable 10 maturity, and equity prices are the MSCI Emerging and Frontier index.

# Diverging Policies: *Risks Associated with U.S. Dollar Funding*

**Central bank policy rates and expectations**  
(Percent)



**EMDE bond and bank inflows by currency**  
(Percent of total)



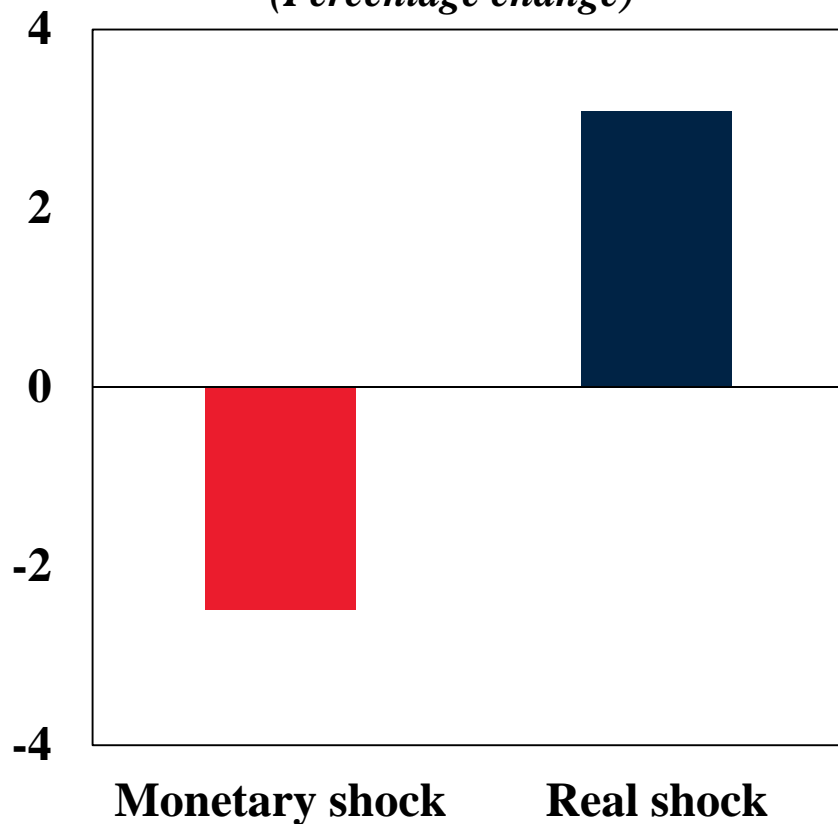
Source: World Bank.

Left: Market expectations are derived from overnight indexed swap rates. Historical policy rates are for the effective fed funds, EONIA, and overnight call rate respectively. Last observation is August 31, 2016.

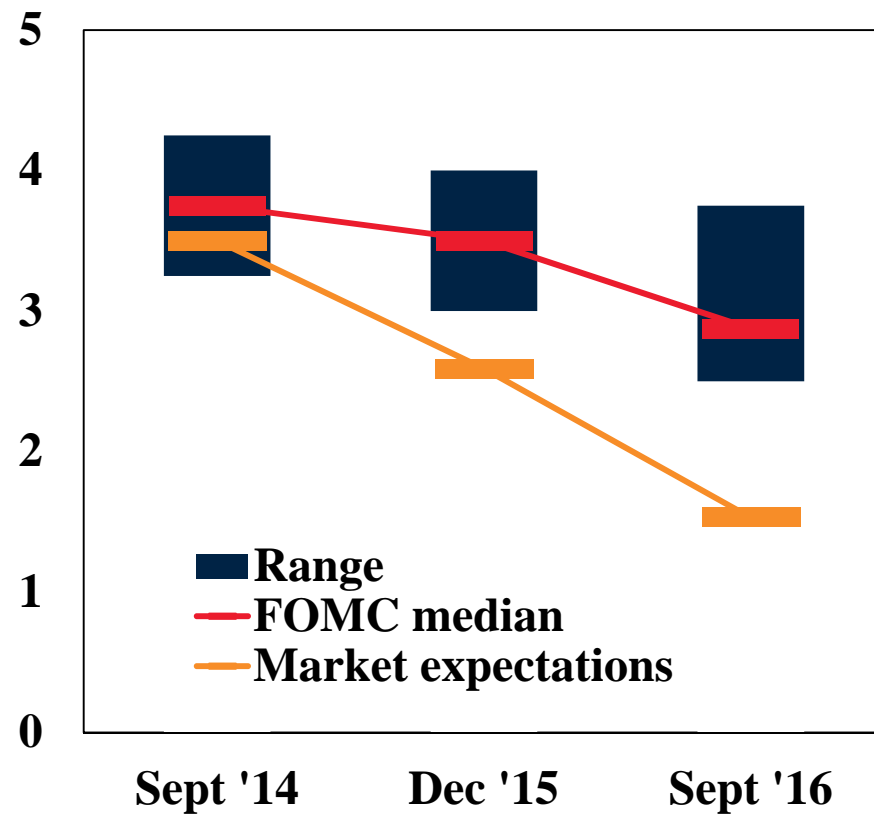
Right: . Currency composition of EMDE bond issuance and cross-border bank lending. Data is for June 2016.

# Monetary Policy: *U.S. normalization, eroding confidence*

**Impact of rising U.S. long-term yields on EMDE equity prices**  
(Percentage change)



**Policy rates and market expectations**  
(Percent)



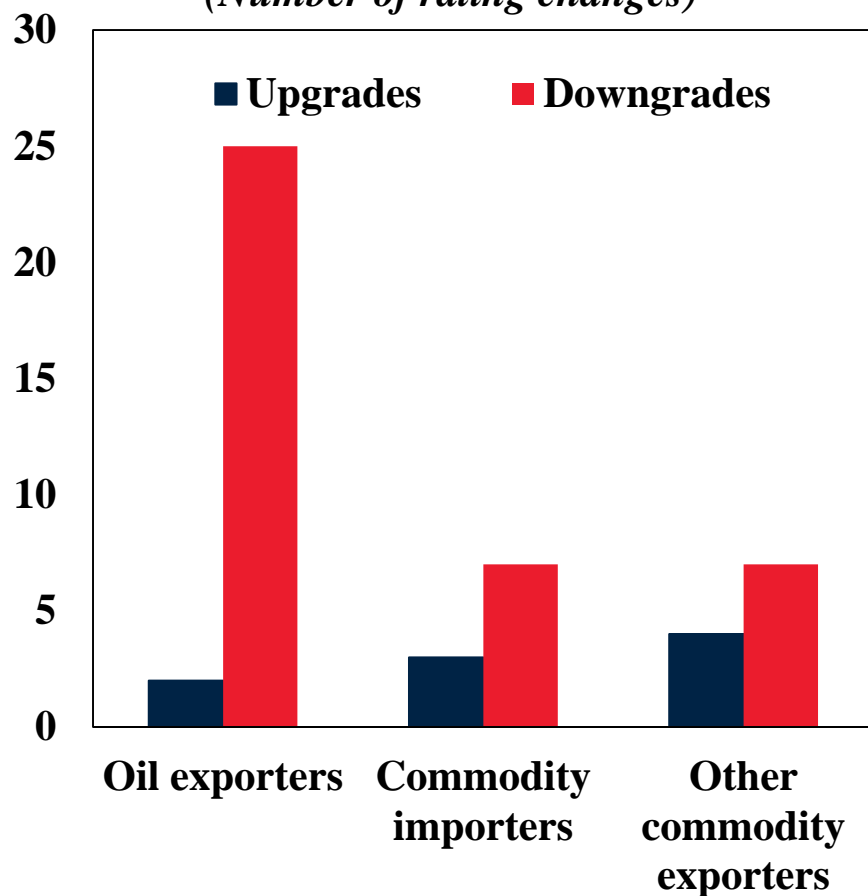
Source: Bloomberg, European Central Bank, J.P. Morgan, World Bank, Haver Analytics.

Left Panel: Impulse responses after 12 months from a PVAR model including EMDE industrial production, long-term bond yields, stock prices, nominal effective exchange rates and bilateral exchange rates against the U.S. dollar, and inflation, with monetary and real shocks (estimated as in the previous section) as exogenous regressors. Right Panel: U.S. Federal Reserve expectations are the median forecast of Federal Reserve Open Market Committee members. Market expectations are derived from OIS forward rates. Longer-term market expectations are 10 year ahead. Right Panel:

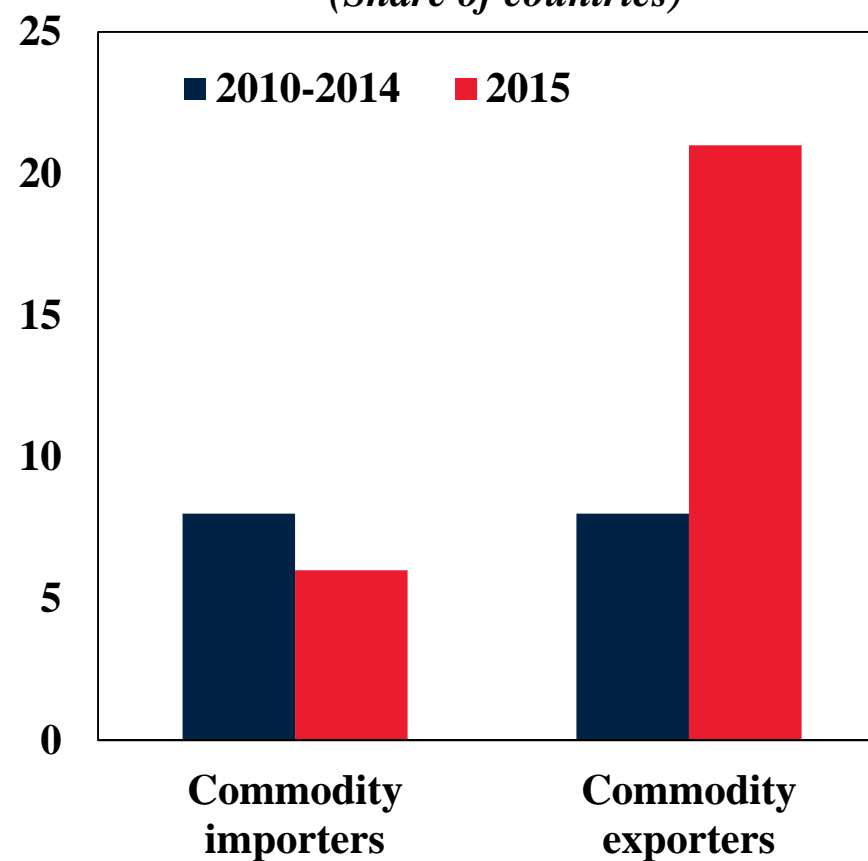
# Creditworthiness in EMDEs:

## *Sovereign Rating Downgrades; Private Sector Leverage*

**EMDE ratings changes in 2016**  
(Number of rating changes)



**EMDEs with post-crisis peak in credit**  
(Share of countries)



# Key Messages

- *NIRP: Part of the toolkit...* Good reasons to undertake NIRP-type policies.
- *Modest benefits possible.* If policy interest rates are slightly negative and they are not employed for too long.
- *Handle with care!* Limited effectiveness due to difficulty in policy transmission. In case of deeper cuts into negative territory and longer use, significant risks to financial stability.
- *Probably not the frontier of unconventional monetary policies.* Given declining growth and inflation expectations, likely more to come...
- *Emerging and developing economies.* Innocent bystanders... *Hope for the best and prepare for the worst!*

*Questions & Comments*  
*Thanks!*