

# The Effects of Unconventional Monetary Policies on Bank Soundness

Frederic Lambert

SUERF/OeNB/BWG Conference

*Asset-liability management with ultra-low interest rates*

Vienna, 11 March 2015



Disclaimer: The views expressed in this presentation do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

# Motivation

“A prolonged period of low interest rates, of the sort we are experiencing today, can create incentives for agents to take on greater duration or credit risks, or to employ additional financial leverage, in an effort to "reach for yield.” – Stein, February 2013

“...very low interest rates, if maintained too long, could undermine financial stability.” – Bernanke, May 2013



# This presentation: two papers

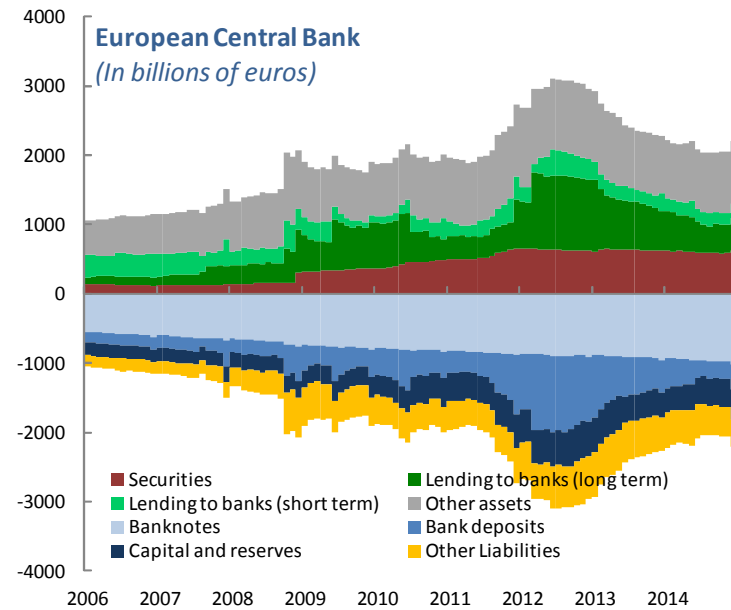
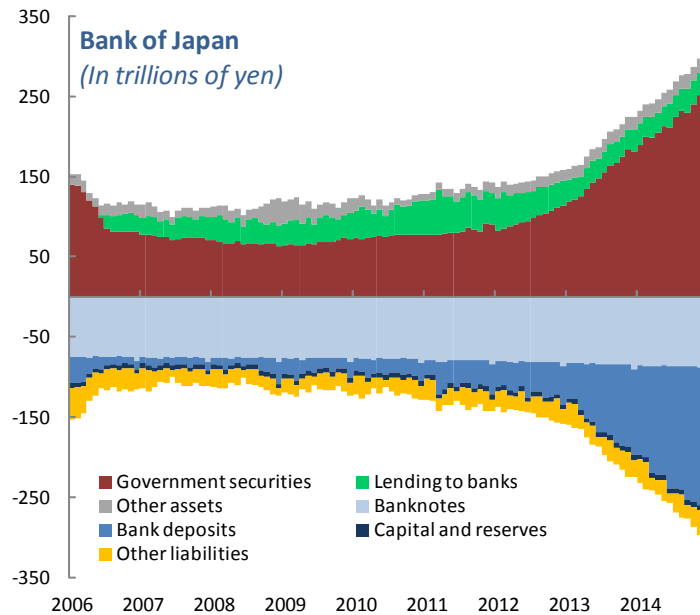
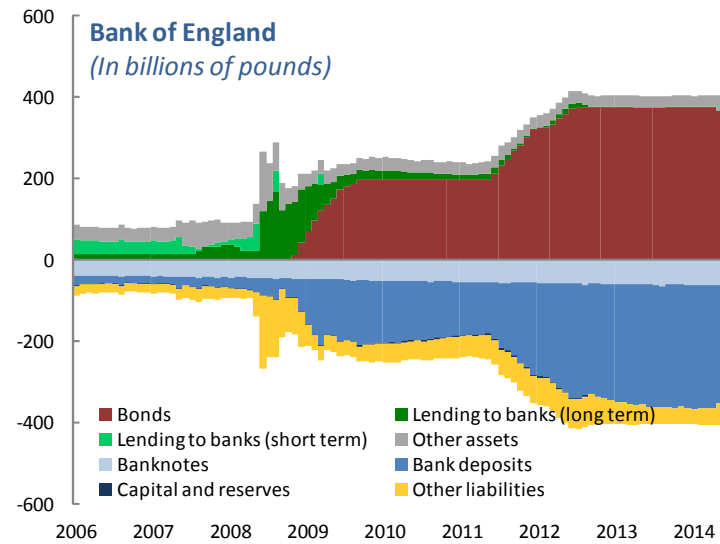
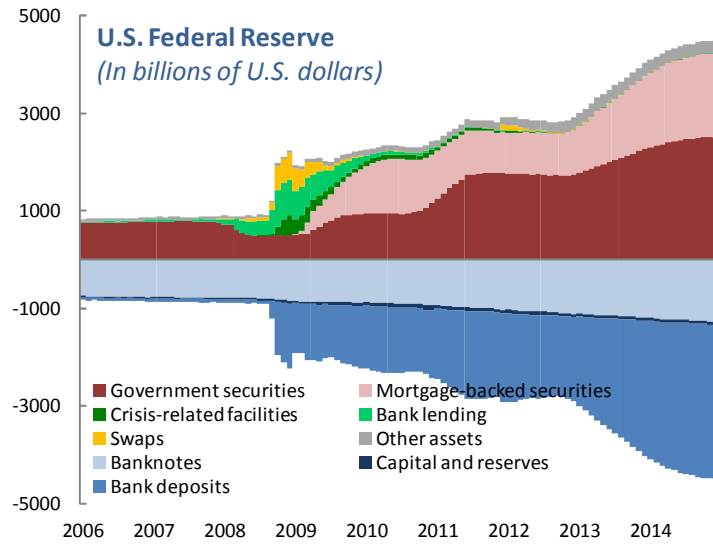
“Do Central Bank Policies Since the Crisis Carry Risk to Financial Stability,” *Global Financial Stability Report*, Chapter 3, April 2013.

Lambert, Frederic, and Kenichi Ueda, “The Effects of Unconventional Monetary Policies on Bank Soundness,” IMF Working Paper WP/14/152.

# Overview of Unconventional Monetary Policies

| Type of policy                         | Examples                                   | Associated potential risks  |
|--|--|---|
| Prolonged period of low interest rates | Fed, BoJ, ECB<br>(forward guidance)        | Pressure on the profitability and solvency of financial institutions<br>Excessive risk taking (“search for yield”)<br>Evergreening, delay in balance sheet repair |
| Quantitative easing                    | Fed<br>BoJ<br>BoE                          | Dependence on central bank financing  |
| Indirect credit easing                 | BoE (FLS)<br>ECB (LTRO)<br>BoJ             | Dependence on central bank financing<br>Delay in balance sheet repair<br>Distortion in credit allocation, possibly weakening underwriting standards               |
| Direct credit easing                   | Fed (MBS)<br>ECB (CBPP)<br>BoJ (ETF, REIT) | Distortion to price and market functioning  |

# Changes in central banks' balance sheets, 2006-14





# Assessing the effects on banks

Three approaches:

1. Event study
2. Panel regressions using bank-level data
3. Look at interest rate risk in banks

# Event study - Method

- Determine effect of UMP announcements on bank stocks and bank bonds.
- Only “surprise” part of announcements have effect on announcement day (anticipated part already priced in).
- Change in future rates and news-based instruments used to measure “surprise.” → Graph
- For all announcement dates between January 2000 and October 2012, we regress
  - bank stock returns on monetary policy surprise
  - change in spread between bank bond yield and government bond yield on monetary policy surprise

# Event study - Results

- No significant effect of monetary policy surprises on bank stock returns in the U.S. Negative effect in the euro area and the U.K.
- **Negative significant effect on bank credit risk** measured by changes in spread between bank bond yields and government bond yields. In the U.S., 1bp of monetary easing increases the credit spread by about 0.1bp.

→ Table



# Panel regressions - Method

- Panel data for 614 U.S. banks, 2007:Q3 – 2012Q3
- Regress indicators of bank profitability, risk and balance sheet repair...
- ... on monetary policy variables (including unconventional)
  - Taylor gap (policy rate – Taylor rate)
  - # of quarters during which policy rate < Taylor rate
  - Central bank assets/GDP

# Effect of UMP on banks' profitability

Expected effects:

- [+] Low interest rates reduce bank funding costs
- [+] Policies supporting asset prices have positive valuation effects
- [-] Prolonged period of low rates and flattening of the yield curve compress bank interest margin

# Effect of UMP on banks' profitability

|  | Net Interest Margin<br>(In percent of<br>average earning) | Return on Assets<br>(In percent) |
|--|---|----------------------------------|
| Sample mean  | 3.750   | 0.615                            |
| <b>1. A 100-basis-point decrease in the Taylor gap</b>             |   |                                  |
| Short-run effect (after a quarter)                                 | ...   | <b>0.088</b>                     |
| Effect after two years   | ...   | <b>0.093</b>                     |
| Long-run effect  | ...   | <b>0.093</b>                     |
| <b>2. More quarters of very loose monetary policy</b>              |   |                                  |
| Effect of one more quarter of very loose policy                    | ...   | <b>-0.105</b>                    |
| Effect of one more year  | ...   | <b>-0.438</b>                    |
| <b>3. An increase in central banks' assets by 1 percent of GDP</b> |   |                                  |
| Short-run effect (after a quarter)                                 | <b>-0.013</b>   | ...                              |
| Effect after two years   | <b>-0.047</b>   | ...                              |
| Long-run effect  | <b>-0.053</b>   | ...                              |

# Effect of UMP on banks' risk

Expected effects:

- [+] Low interest rates increase demand for riskier assets yielding higher returns
- [+] Low interest rate decrease the cost of debt and encourage leverage

# Effect of UMP on banks' risk

|  | Risk Weighted<br>Assets/Total Assets<br>(In percent) | Equity /Total<br>assets<br>(In percent) |
|--|--|---|
| Sample mean  | 73.552   | 9.730                                   |
| <b>1. A 100-basis-point decrease in the Taylor gap</b>             |  |   |
| Short-run effect (after a quarter)                                 | -0.539   | ...                                     |
| Effect after two years   | -2.759   | ...                                     |
| Long-run effect  | -4.053   | ...                                     |
| <b>2. More quarters of very loose monetary policy</b>              |  |   |
| Effect of one more quarter of very loose policy                    | 0.912  | 0.080                                   |
| Effect of one more year  | 7.986  | 0.674                                   |
| <b>3. An increase in central banks' assets by 1 percent of GDP</b> |  |   |
| Short-run effect (after a quarter)                                 | ...  | ...                                     |
| Effect after two years   | ...  | ...                                     |
| Long-run effect  | ...  | ...                                     |

# Effect of UMP on banks' efforts to repair their balance sheets

Expected effects:

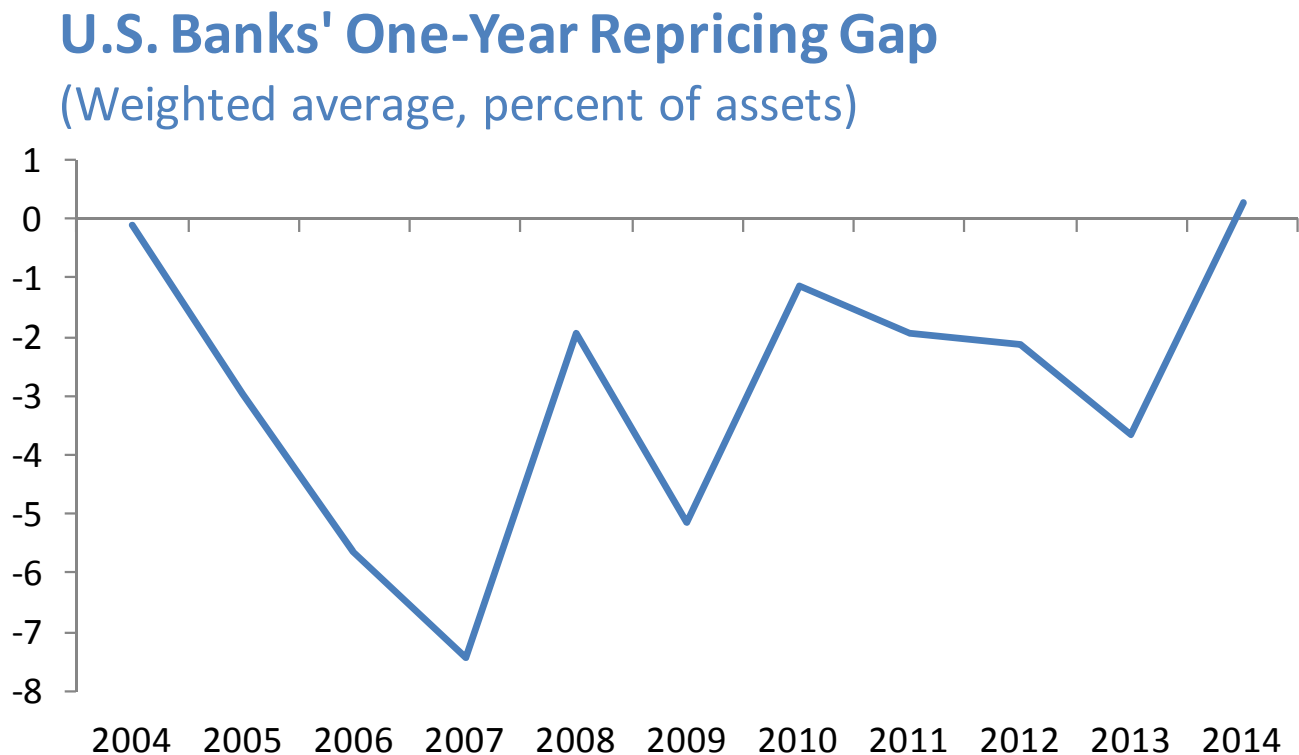
- [-]** Low interest rates reduce the cost of rolling over non-performing loans (evergreening)
- [+]** Banks can take advantage of lower long term interest rates to extend the maturity of their debt and reduce the risk of maturity mismatches.

# Effect of UMP on banks' efforts to repair their balance sheets

|  | Loan Loss Provisions/Total Loans (In percent) | Short-term debt ratio (In percent) |
|--|---|------------------------------------|
| Sample mean  | 0.212   | 3.619                              |
| <b>1. A 100-basis-point decrease in the Taylor gap</b>             |   |                                    |
| Short-run effect (after a quarter)                                 | ...   | ...                                |
| Effect after two years   | ...   | ...                                |
| Long-run effect  | ...   | ...                                |
| <b>2. More quarters of very loose monetary policy</b>              |   |                                    |
| Effect of one more quarter of very loose policy                    | ...   | ...                                |
| Effect of one more year  | ...   | ...                                |
| <b>3. An increase in central banks' assets by 1 percent of GDP</b> |   |                                    |
| Short-run effect (after a quarter)                                 | <b>-0.023</b>                                 | <b>-0.215</b>                      |
| Effect after two years   | <b>-0.067</b>                                 | <b>-0.316</b>                      |
| Long-run effect  | <b>-0.069</b>                                 | <b>-0.316</b>                      |

# Interest-rate risk in banks

Interest rate risk in banks appears contained...



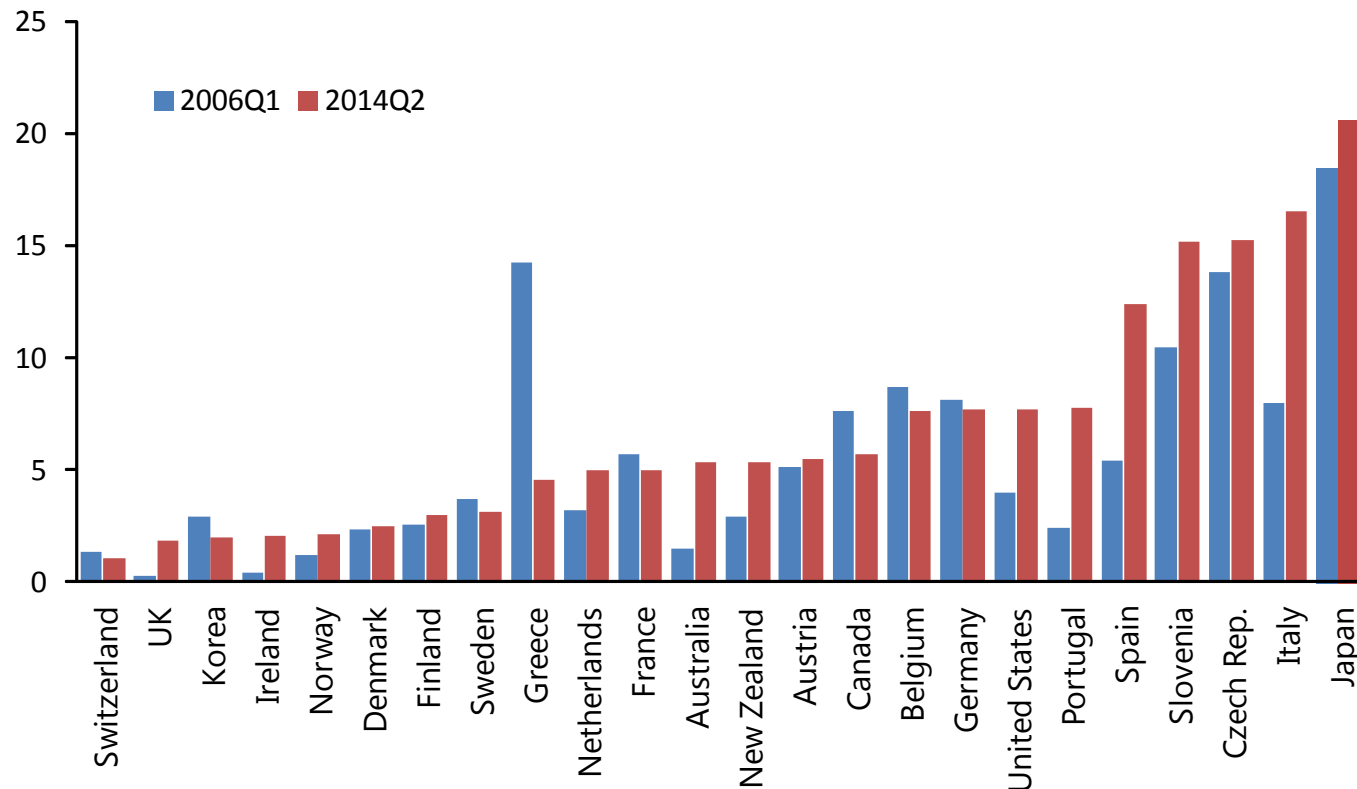


# Interest-rate risk in banks

...but banks in some countries face potential capital losses on large holdings of government securities

**Bank Holdings of Government Debt in Selected Economies**

*(In percent of banking sector assets)*



# Empirical findings – Summary

- No evidence of immediate deterioration of financial stability
  - Policies have generally improved bank soundness
- BUT risks are likely to rise the longer very accommodative policies remain in place, plus challenges for exit
  - Evidence of increased credit risk
  - Negative effect on profitability
  - Large bond holdings by banks in some countries

# Policy implications

- Policymakers should be alert to possible emerging risks in banks going forward
- Policymakers should be alert to risks shifting to other sectors (shadow banks)
- Key is vigorous risk-based supervision, robust data provision
- Targeted micro and macro-prudential policies helpful to contain credit risk and funding challenges for banks

# Policy implications

- Exit from UMP:
  - Avoid missteps in withdrawal from intervened markets
  - Main risk is unexpected or larger-than expected increase in interest rates
  - Exit should be planned carefully and well-communicated

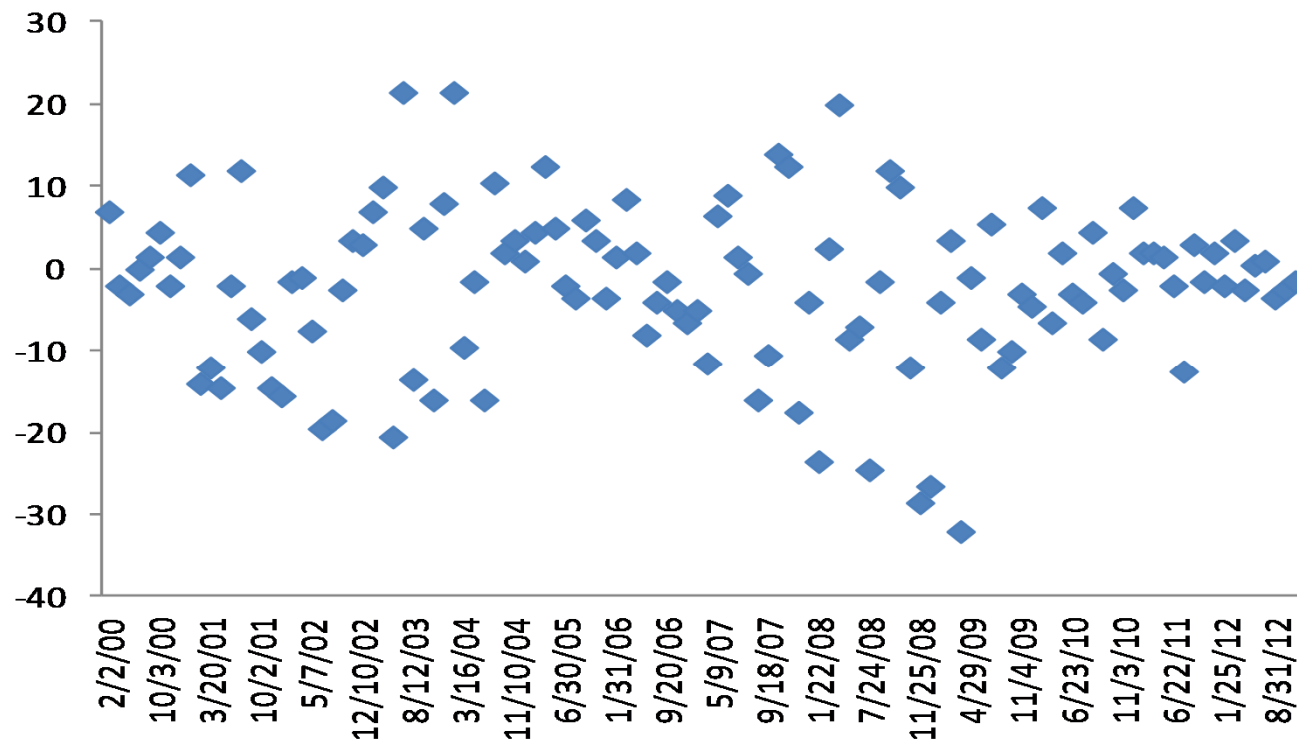
---

# Thank you!

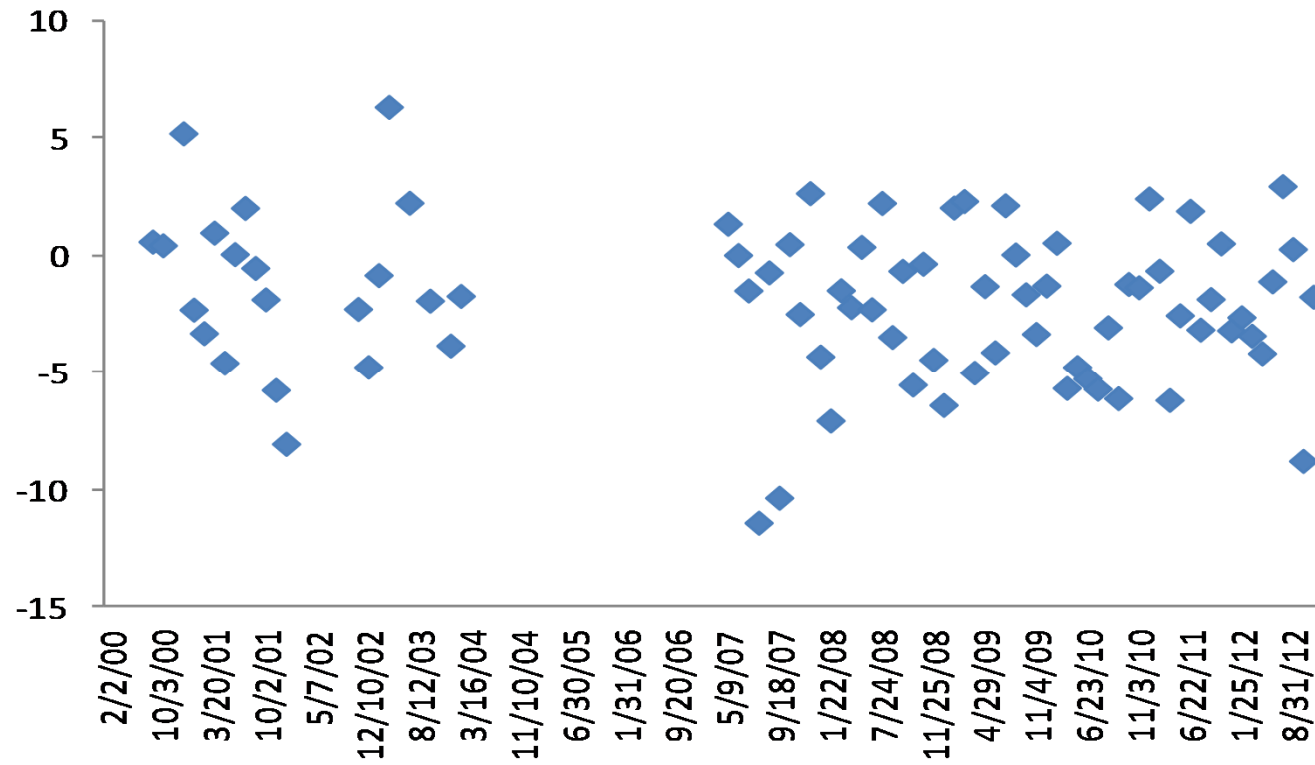


Disclaimer: The views expressed in this presentation do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

# Surprise-Change in One-Year Ahead Three-Month Eurodollar Future



# News-Based Surprise Measure



# Event study – Results

|   | Effect on Bank Stock Return<br>(Daily returns, in percent) | Effect on Financial Sector Credit Risk<br>Financial sector bond - Government bond spread<br>(Daily changes, in basis points) |          |          |
|---|--|--|----------|----------|
|   |  | 1-3 year   | 3-5 year | 5-7 year |
|   |  | <b>United States</b>   |          |          |
| Effect of a surprise monetary easing, per basis point | --   | 0.078***   | 0.087*** | 0.075**  |
| Additional effect of UMP easing, per basis point      | --   | --   | --       | --       |
| <b>Euro Area</b>                                      |  |  |          |          |
| Effect of a surprise monetary easing, per basis point | -0.056**   | 0.126***   | 0.154*** | 0.130*** |
| Additional effect of UMP easing, per basis point      | -0.129**   | 0.156*   | --       | --       |
| <b>United Kingdom</b>                                 |  |  |          |          |
| Effect of a surprise monetary easing, per basis point | -0.066***  | 0.071*** (all maturities)  |          |          |
| Additional effect of UMP easing, per basis point      | --   | --   |          |          |

