# Outside the Box: Unconventional Monetary Policy in the Great Recession and Beyond

by Kenneth N. Kuttner

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# Introduction

**Ken Kuttner's paper:**

☐  Is an excellent review of research on the effects of unconventional monetary policy (UMP)

☐  It will become a staple reference for those wanting to get a synthesis of Fed's UMPs

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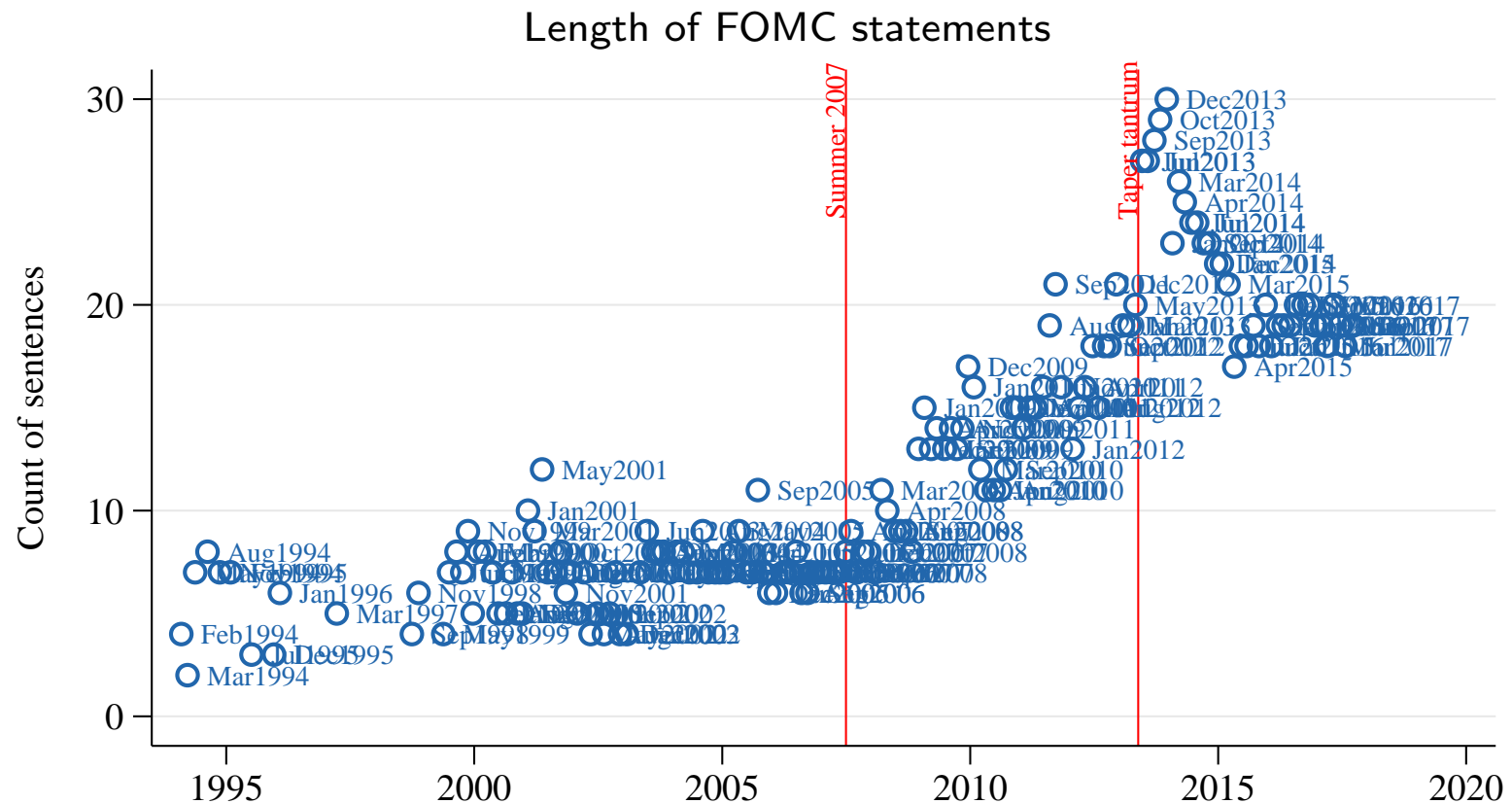
**In my comments:**

- ☐ I will focus on the role of Fed <u>communication</u> during the UMP period, specifically:

- ☐ How does the Fed's communication affect asset prices (and hence broader economy)?

- ☐ What is the <u>main piece of news</u> that market participants gleaned from the Fed's UMP announcements?

# What's the news in Fed's announcements?

☐ News revealed through central bank communication is <u>multidimensional</u>
  Gürkaynak, Sack, Swanson (2005, IJCB)

  – Target shocks ("actions")
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Length of FOMC statements

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– Target shocks ("actions")
– Path shocks ("words")

☐ Not just news about **monetary policy** but also other "<u>information effects</u>"

– News about **fundamentals**
Campbell, Evans, Fisher, Justiniano (2012 Brookings); Nakamura, Steinsson (2018 QJE)
– News affecting **risk premia**
Hanson, Stein (2015 JFE)

# What's the news in Fed's announcements?

☐ Most event studies focus on <u>univariate</u> responses of various asset prices to Fed announcements

☐ To sort out which type of news drives market reactions, I'll argue that it is useful to study the <u>comovement</u> of asset prices around those events

☐ Specifically, I'll discuss what we can learn from the high-frequency comovement between <u>stocks</u> and Treasury <u>yields</u> across maturities

# Predicted effects of economic shocks on stocks and yields

☐ Monetary policy shock → **negative** comovement (weakening in maturity)
  – Slowly mean-reverting real rate

☐ Growth shock → **positive** comovement (weakening or humped in maturity)
  – Taylor rule adjusting less than one-for-one with growth expectations

☐ Risk premium shock → **positive** comovement (strengthening in maturity)
  – Independent price-of-risk shocks; pro-cyclical inflation

| Shock | Yields | | Stocks | Comovement |
|---|---|---|---|---|
| | Short/Med. | Long | | of stocks and yields |
| Monetary policy: $\epsilon_t^m$ ↑ | ↑ | ↑ | ↓ | — |
| Growth: $\epsilon_t^g$ ↑ | ↑ | ↑ | ↑ | + |
| Risk premium: $\epsilon_t^p$ ↑ | ↓ | ↓ | ↓ | + |

# The central bank news classification matrix

In Cieslak and Schrimpf (2018), we propose to classify news revealed by central bank announcements as follows:
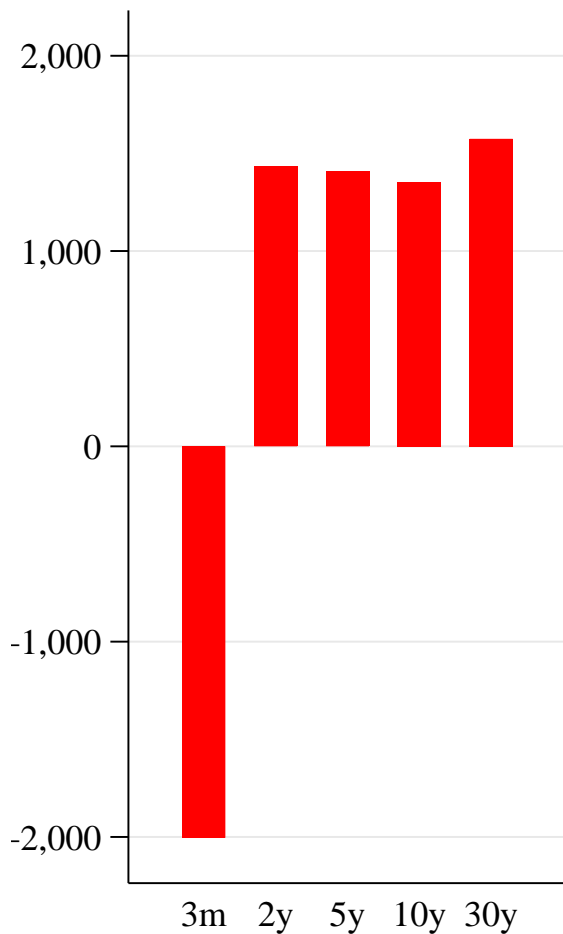
|  | Stock-yield cov $> 0$ | Stock-yield cov $\leq 0$ |
|---|---|---|
| $\mathrm{Var}(y^{\mathrm{Short/Mid}}) > \mathrm{Var}(y^{\mathrm{Long}})$ | (1,1) economic growth | (1,2) monetary policy (conventional, via short-rate expectations) |
| $\mathrm{Var}(y^{\mathrm{Short/Mid}}) \leq \mathrm{Var}(y^{\mathrm{Long}})$ | (2,1) risk premium (risk on/off) | (2,2) monetary policy (unconventional, via long rates/risk premia) |

$\rightarrow$ This classification identifies the <u>dominant</u> piece of news in a communication event
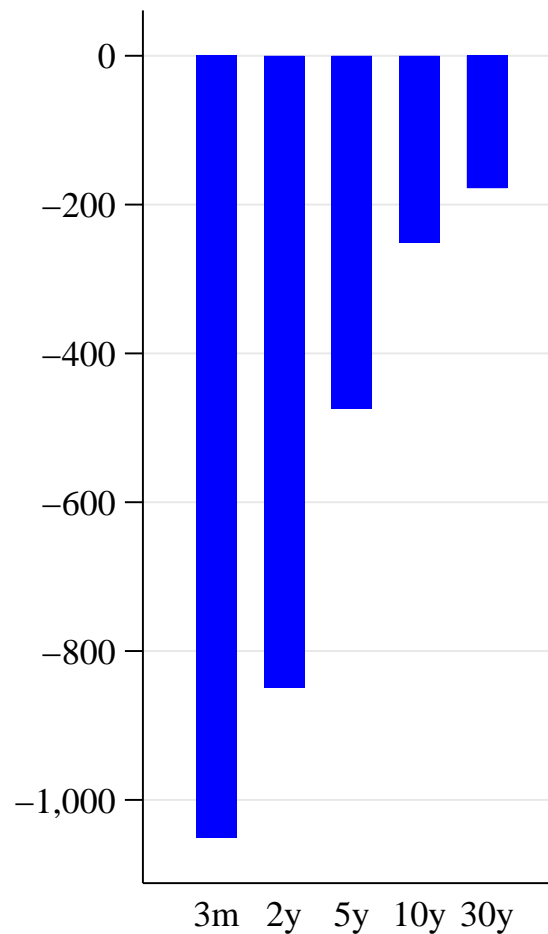
# Stock-yield covariances on selected Fed events

Realized stock-yield covariances in event window (-15,+90) minutes, in bps-squared
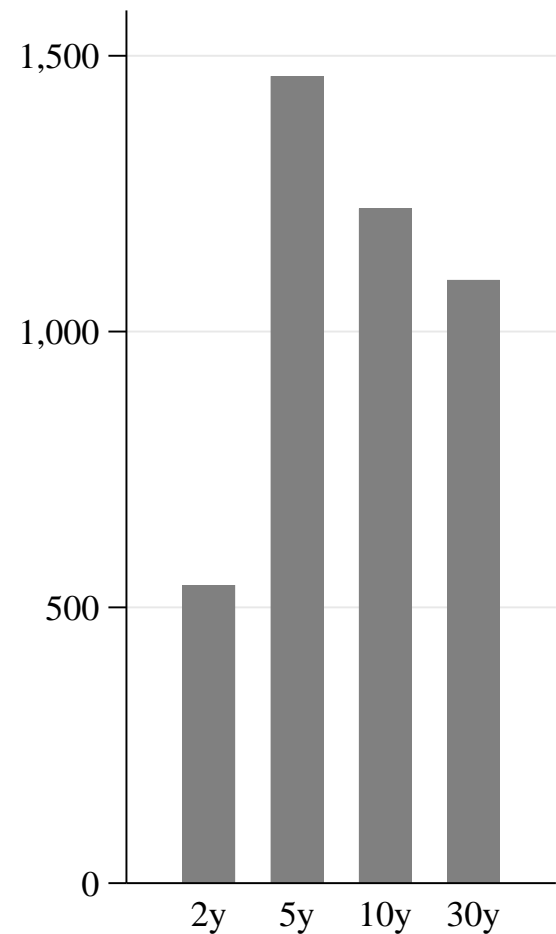


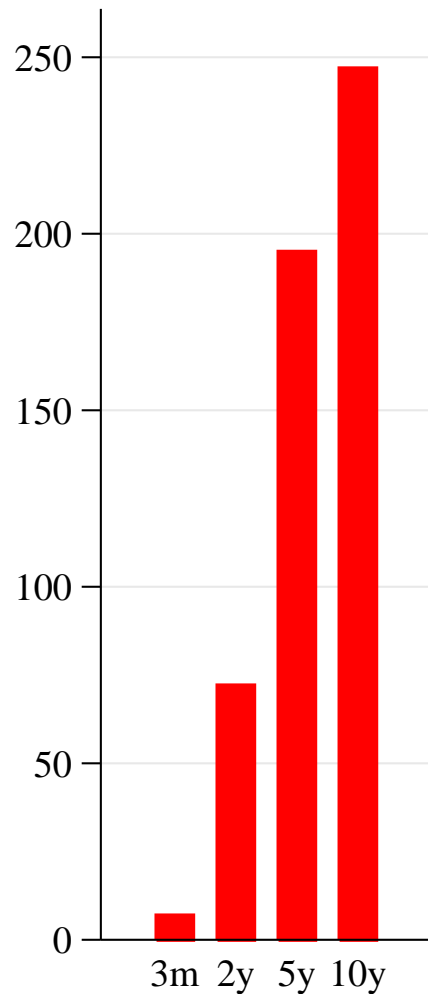A. MPD on 22Jan2008 (unsched.)    B. MPD on 16Dec2008    C. MPD on 09Aug2011

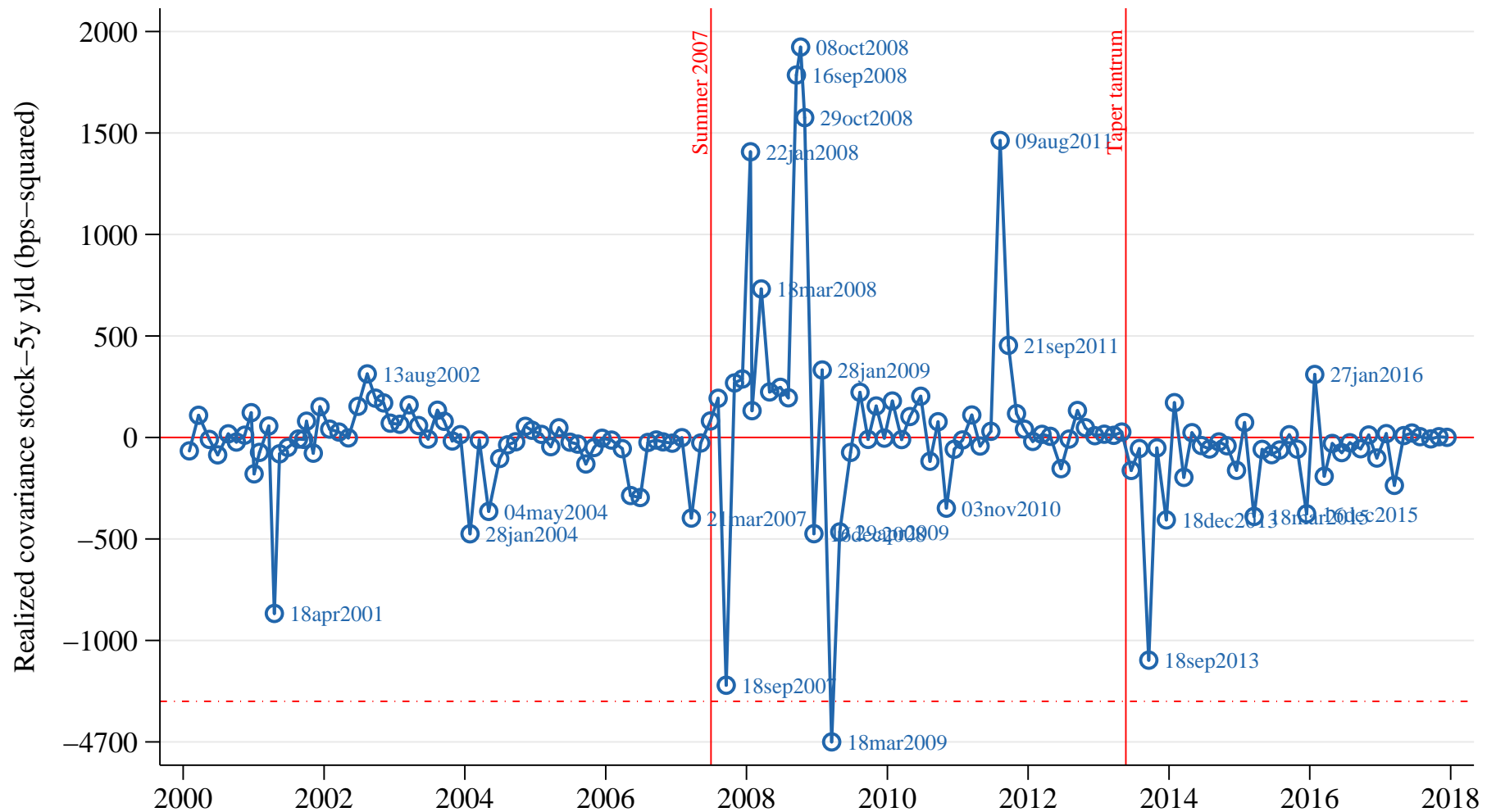# Draghi's "Whatever it takes" speech Jul 26, 2012



D. Speech on 26Jul2012

- Draghi references "risk aversion factor"
- Short end of German yield curve barely changes
- 10y German yield ↑ by 8 bps; DAX futures ↑ 2.3%
- Commonly interpreted as a major "risk-on" event

# Stocks-yield comovement around FOMC decision announcements



Realized covariances of stock returns and 5y yield changes at FOMC decision announcements
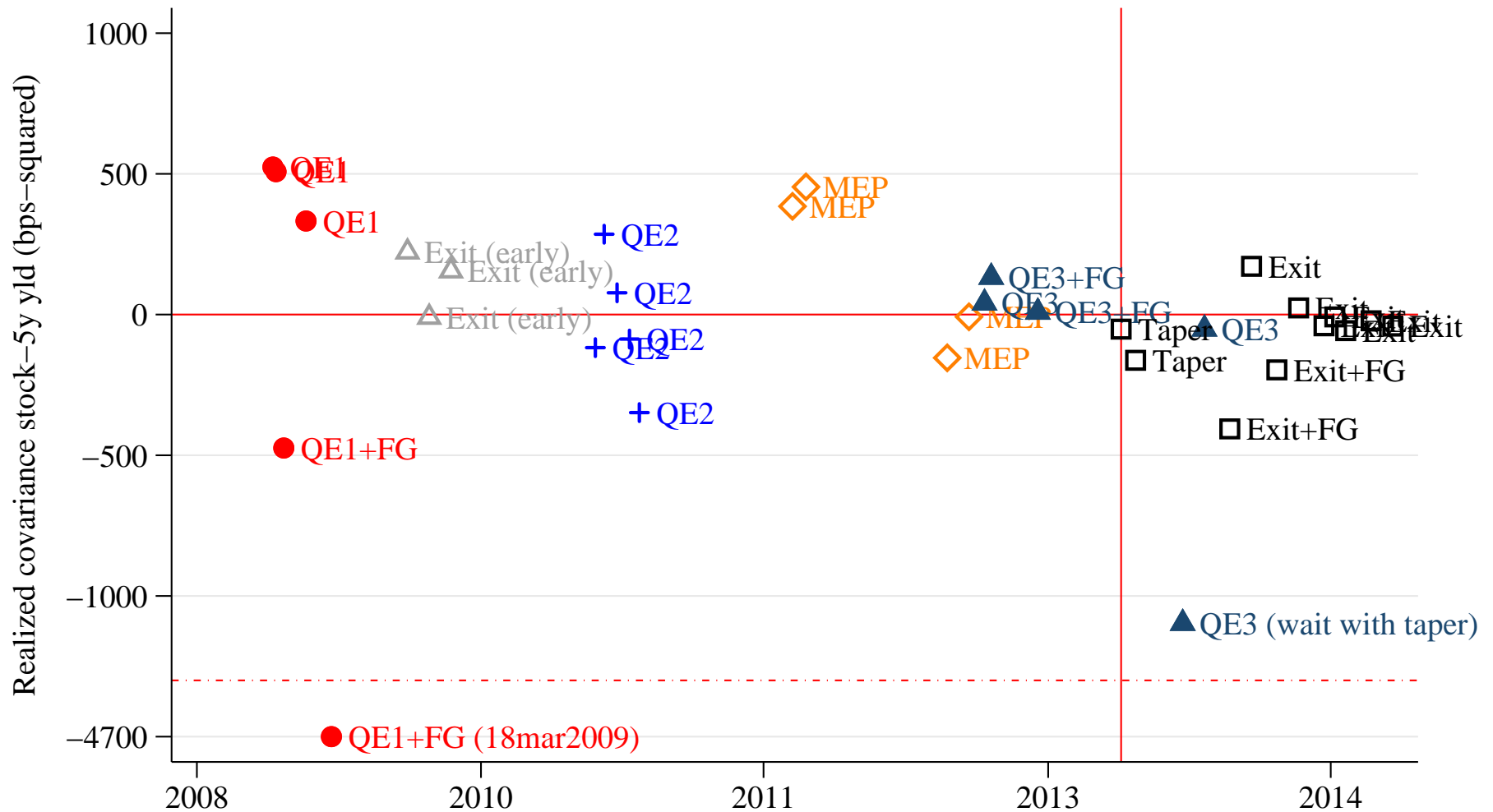Event window: (-15,+90) minutes, bps-squared

# UMP announcements chronology

| | No. annc. | First obs. | Last obs. |
|---|---|---|---|
| UMP | 45 | 12 Dec 2007 | 01 Nov 2017 |
| of which: FG | 9 | 16 Dec 2008 | 18 Mar 2015 |
| Phases: | | | |
| QE1 (quantitative easing phase 1) | 5 | 25 Nov 2008 | 18 Mar 2009 |
| Exit (early) | 3 | 12 Aug 2009 | 04 Nov 2009 |
| QE2 (quantitative easing phase 2) | 5 | 10 Aug 2010 | 03 Nov 2010 |
| MEP (maturity extension program/operation twist) | 4 | 26 Aug 2011 | 01 Aug 2012 |
| QE3 (quantitative easing phase 3) | 3 | 31 Aug 2012 | 30 Oct 2013 |
| Tapering of asset purchases | 2 | 22 May 2013 | 19 Jun 2013 |
| Exit (late) | 9 | 18 Dec 2013 | 29 Oct 2014 |
| Balance sheet wind-down | 3 | 26 Jul 2017 | 01 Nov 2017 |

# Stocks-yield comovement around UMP announcements



Realized covariances of stock returns and 5y yield changes around various UMP programs
Event window: (-15,+90) minutes, bps-squared

# Stocks-yield comovement around UMP announcements

| | 2y | 5y | 10y |
|---|---|---|---|
| QE1 | 251.8*** | 415.5*** | 316.2*** |
| | (3.36) | (8.28) | (6.51) |
| QE1 × FG | -1168.7*** | -3041.8** | -2898.7* |
| | (-14.51) | (-2.03) | (-1.78) |
| Exit (early) | 39.0 | 83.3 | 57.0 |
| | (0.95) | (1.48) | (1.26) |
| QE2 | -24.3 | -12.3 | 7.01 |
| | (-0.45) | (-0.12) | (0.07) |
| QE3 | -7.87*** | 1.53 | 5.51*** |
| | (-6.58) | (1.26) | (5.26) |
| QE3 × FG | 32.1 | 29.8 | 31.4 |
| | (0.91) | (0.68) | (0.82) |
| MEP | -4.80 | 129.8 | 172.2* |
| | (-0.10) | (1.01) | (1.94) |
| MEP × FG | 238.9 | 552.6 | 397.4 |
| | (1.17) | (1.02) | (0.89) |
| Taper asset purch. | -66.6*** | -146.4*** | -148.8*** |
| | (-4.35) | (-3.73) | (-5.12) |
| Exit (late) | -21.5 | -33.5 | -27.8 |
| | (-1.41) | (-1.05) | (-1.02) |
| Exit (late) × FG | -116.6*** | -307.3*** | -248.2** |
| | (-7.62) | (-3.80) | (-2.25) |
| Bal. sheet winddown | -34.9*** | -41.0*** | -41.8*** |
| | (-6.69) | (-10.51) | (-21.65) |
| Constant | 26.3*** | 39.3*** | 36.9*** |
| | (21.97) | (32.31) | (35.23) |
| $R^2$ | 0.03 | 0.15 | 0.18 |

☐ Regressions of realized covariances between stock returns and yield changes on UMP dummies

☐ Largest effects of QE1

☐ <u>Forward guidance</u>

– Positive sign when no FG component

– Negative sign with FG element and on policy normalization
 → monetary news

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☐   Rotate reduced-form shocks $u_t$ into structural shocks $\epsilon_t$

$$
\begin{array}{rcl}
\text{2y yield change} \rightarrow \\
\text{10y yield change} \rightarrow \\
\text{stock return} \rightarrow
\end{array}
\begin{pmatrix} u_{2t} \\ u_{10t} \\ u_{st} \end{pmatrix}
\quad \text{into} \quad
\begin{pmatrix} \epsilon_t^g \\ \epsilon_t^m \\ \epsilon_t^p \end{pmatrix}
\begin{array}{l}
\leftarrow \quad \text{growth shock} \\
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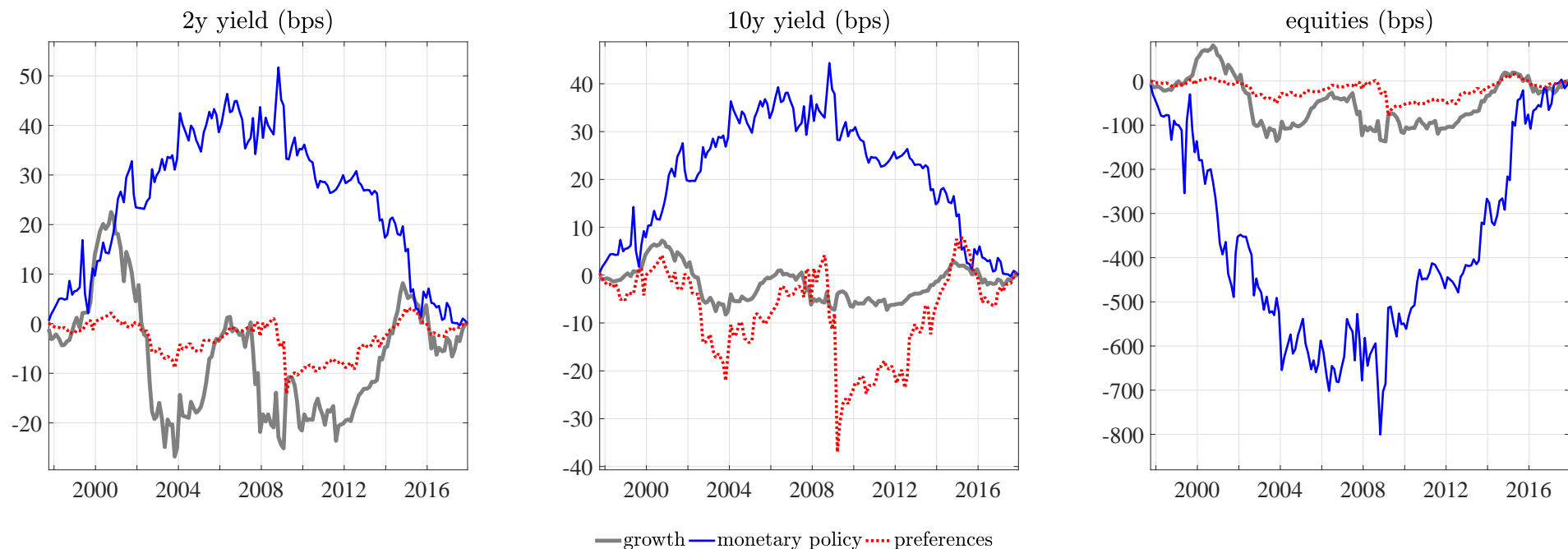\end{array}
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☐ *Approach:* Sign restrictions on stock-yield comovement and monotonicity restrictions along the yield curve

☐ *Application:* Let's focus on decomposing asset price movements in a (-15,+15) minute window around scheduled FOMC decision annoucements

# Decomposing news on scheduled FOMC announcements

Cumulative paths of shocks (shocks are normalized to zero mean)

Fraction of variance due to:

| news → | growth | monetary | premium |
|---|---|---|---|
| 2y yield | 0.49 ( 2.82) | 0.43 ( 2.54) | 0.09 ( 1.22) |
| 10y yield | 0.08 ( 0.89) | 0.35 ( 4.40) | 0.58 ( 6.20) |
| equities | 0.11 ( 0.85) | 0.87 ( 7.33) | 0.03 ( 0.90) |

# Conclusions

☐   Importance of Fed communication has increased significantly over the last decade

☐   UMP announcements have a large non-monetary news content

    – Forward guidance can strengthen communication of monetary news

☐   Non-monetary news frequently dominates in communication that provides context to policy decisions

    – Press conferences, minutes releases, speeches (Cieslak and Schrimpf, 2018)
    – Yet, increasing role of monetary news since 2013

**Questions:**

☐   What markets heard = what the Fed said?

☐   What is the design of optimal central bank communication in general and with UMPs in particular?