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# Central banks' experience on reinvestment of QE programmes

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# Key themes

(1) Theoretical background how re-investment works

(2) Lessons from  other central banks

# Theoretical background how re-investment works

- QE works via the expected amount of central bank holdings relative to the available **stock** (for a discussion on the transmission channels, see Joyce 2011).
- The yield impact should be achieved with the **announcement**, not with the actual flow of purchases (efficient market hypothesis).
- The degree of monetary accommodation remains constant as long as the (expected) share of central bank holdings does not change. Monetary policy still gets more expansionary during the tapering phase. During the re-investment phase where net purchases are zero, the degree of accommodation remains little changed (depending on the **volume/maturity** change in the central bank holdings and outstanding stock).
- When moving into the re-investment phase, the market reaction will depend on how the planned volumes, maturities and timing will differ from prior market **expectations**.
- **Communication** and forward guidance is key!

# Lessons from  other central banks

## Comparison of other major QE programmes

| Who | | When | | Size | What |
|---|---|---|---|---|---|
| | | from | to | in bn LC | |
| **BoE** | QE1 | Mar-09 | Jan-10 | 200 | Mainly gilts plus high-quality private assets |
| | QE2 | Oct-11 | May-12 | 125 | Mainly gilts plus CP and Corporate bonds |
| | QE3 | Jul-12 | Nov-12 | 50 | Gilts |
| | QE4 | Aug-16 | Mar-17 / Mar-18 | 60 / 10 | Gilts / Corporate bonds |
| **Fed** | QE1 | Dec-08 | Mar-10 | 1,250 / 200 / 300 | MBS / Agency debt / US Treasuries |
| | QE2 | Nov-10 | Jun-11 | 600 | US Treasuries |
| | OT | Sep-11 | Dec-12 | 667 | 6-30y US Treasuries |
| | QE3 | Sep-12 | Oct-14 | 950 / 1075 | MBS + Agency debt / US Treasuries |
| **BoJ** | QE1 | Mar-01 | Mar-06 | 50,000 | Mainly JGBs (CA targets) |
| | QE2 | Dec-08 | ongoing | 80,000 p.a. / 6,000 p.a. /90 p.a. | JGBs, ETF, J-REITs (earlier also corporate bonds, CPs) |

→ When drawing comparisons with re-invesmtents of other QE programmes, main differences exist between programmes with fixed end date (or volumes) and open-ended programmes.

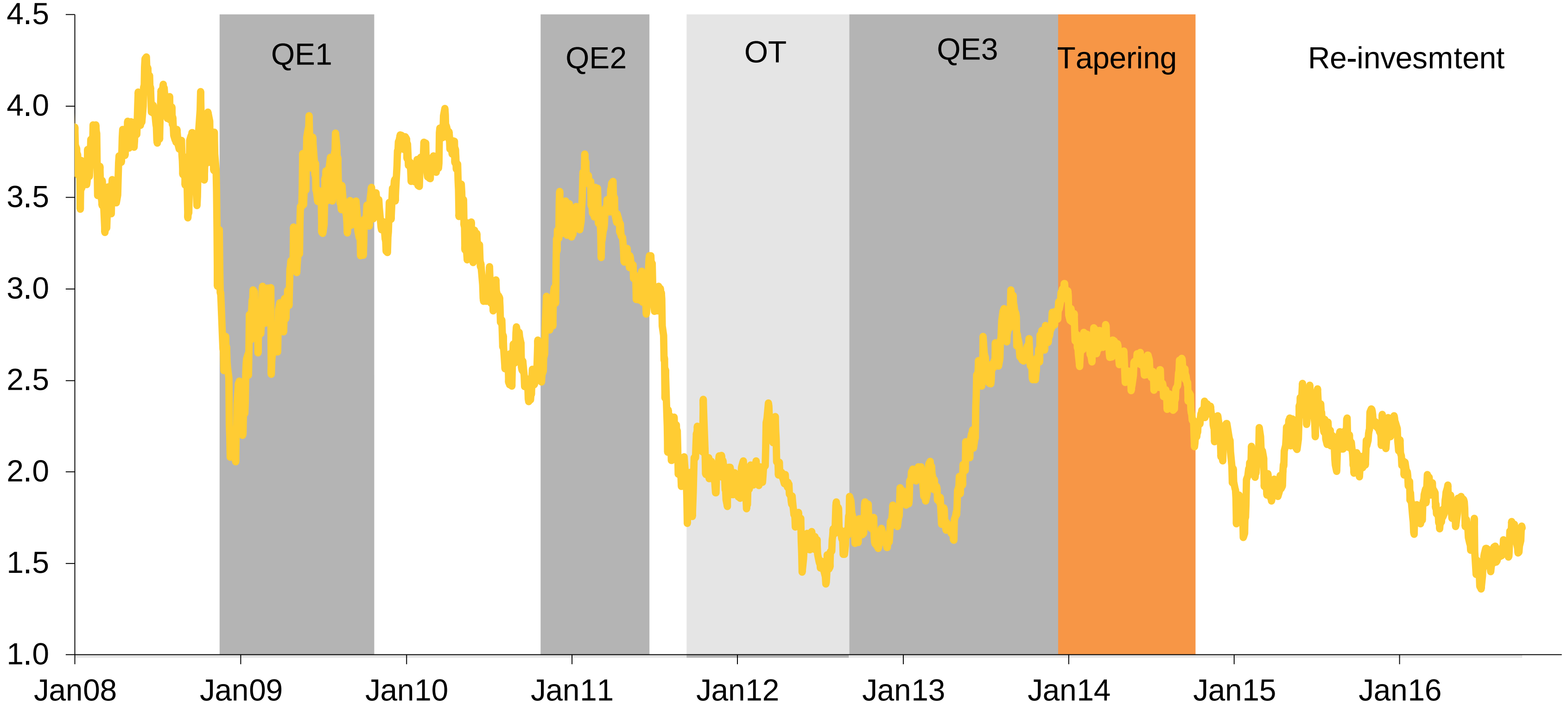
→ Most relevant examples for market implications of the ECB APP should be BoJ QE1 (2003 sell-off) and Fed QE3 (taper tantrum). No larger market reactions were observed when QE ended as scheduled (e.g. Fed QE1 & 2, BoE).

Sources: Columbia University 2016, BoJ 2006, Commerzbank Research

Lessons from other central banks

# Lessons from other central banks

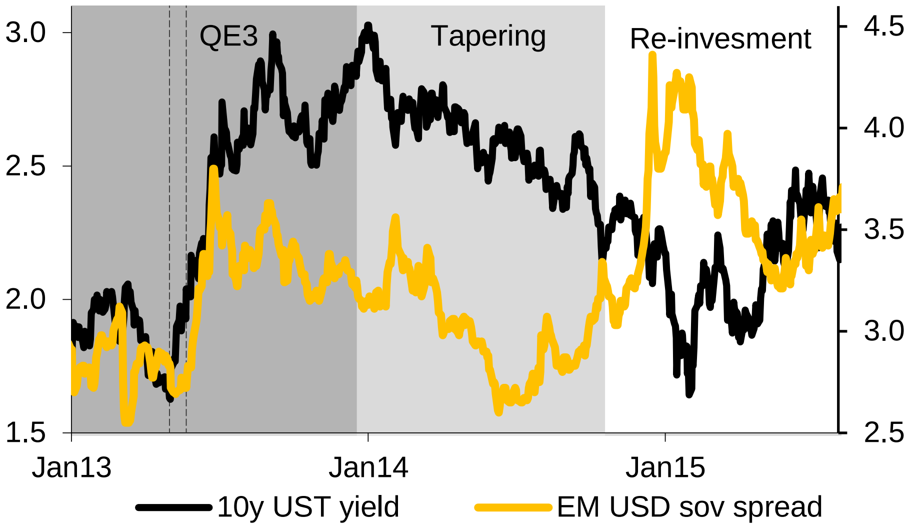
Fed QE and 10y US Treasury yields (in %)




Source: Bloomberg, Commerzbank Research

# Lessons from other central banks
## The Fed "Taper Tantrum"

10y US Treasury yields in % and EM USD sovereign spread in points. Dotted lines denote FOMC statement and Bernanke testimony.




Source: Bloomberg, Commerzbank Research

**FOMC statement change (1May):**
*"The Committee is prepared to increase or reduce the pace of its purchases to maintain appropriate policy accommodation as the outlook for the labor market or inflation changes."*

**Bernanke testimony, Q&A (22May):**
*"If we see continued improvement, and we have confidence that that is going to be sustained, in the next few meetings we could take a step down in our pace of purchases"*

**Tapering announcement (18Dec):**
FOMC decided "to modestly reduce the pace of its asset purchases" by $5bn in both Agencies/MBS and UST and flags further reductions in "measured steps at future meetings". Subsequent meetings saw reductions by same size. Net buying was terminated in October 2014.

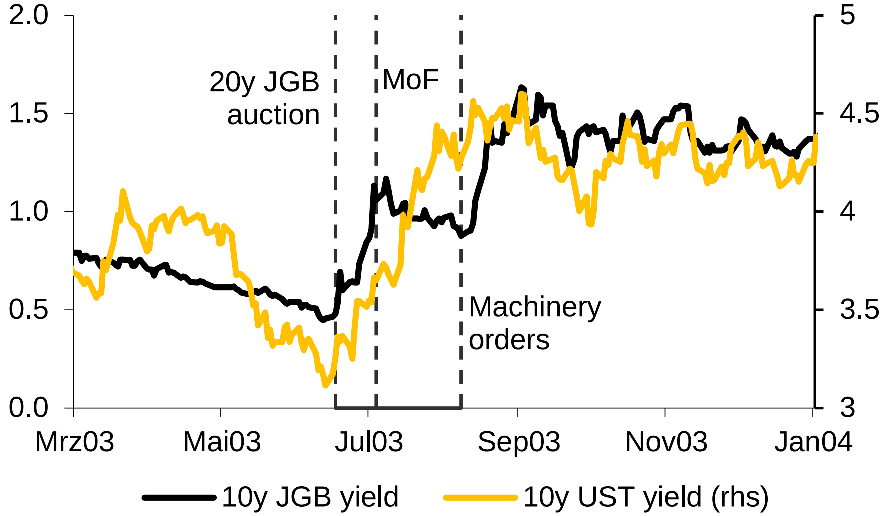
Detailed description of the developments, also see Groen 03/2014 and 12/2014.

Signal of a possible change in US monetary policy led to increase in global risk aversion. Higher US yields and stronger dollar put particular pressure on EM bond and equity markets with large holdings of USD debt.

# Lessons from other central banks

## Japan 2003 bond market sell-off

10y JGB and UST yields in %




Source: Bloomberg, Commerzbank Research

Poorly received 20y JGB auction on 17 June amid strong US data during this week triggered first phase of the sell-off.

Strong Tankan (1 July) and poor 10y JGB auction (3 July) caused extreme intraday volatility.

MoF announced measures on 4 July (introduction of pre-auction trading and repurchases of 5y JGBs), contributing to market stabilisation and weakening of correlation with USTs.

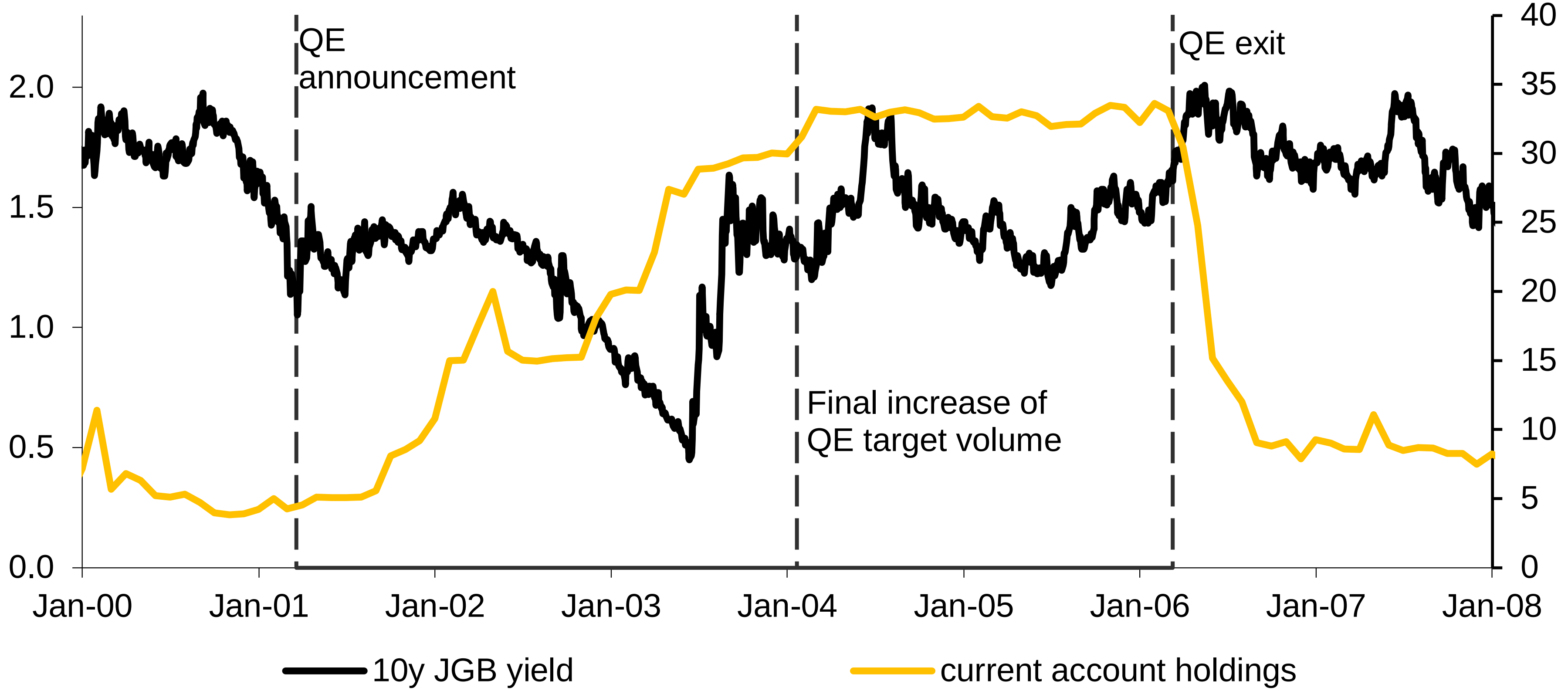
Robust domestic economic data triggers next part of sell-off in August, seemingly acquiesced by policy makers.

Detailed description of the developments, see BIS 2003.

Strong macro data in Japan and the US were responsible for change in monetary policy expectations and sharp market reaction. Termination of net increase of QE in 2004 and reduction in 2006 did not cause noticeable market reaction.

# Lessons from other central banks
## Japan QE1

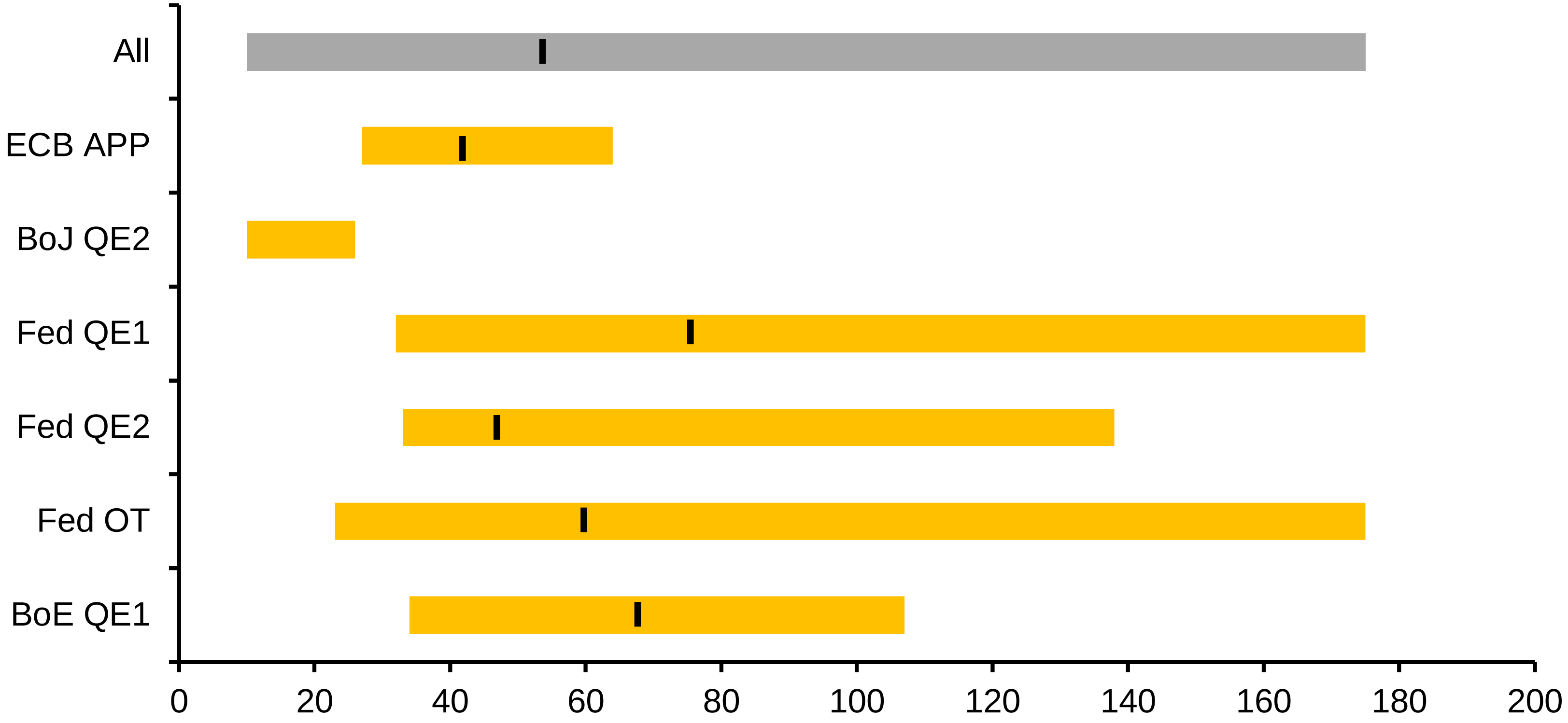
Key BoJ QE dates, 10y JGB yields in % and banks' current account holdings at BoJ in trn yen




Source: Bloomberg, Commerzbank Research

# Impact of QE programmes

Impact of QE programs on 10y government bond yields, expressed in bp standardized to purchases of 10% of GDP. Bars show range, black line denotes median.




Source: ECB WP 1956, Commerzbank Research

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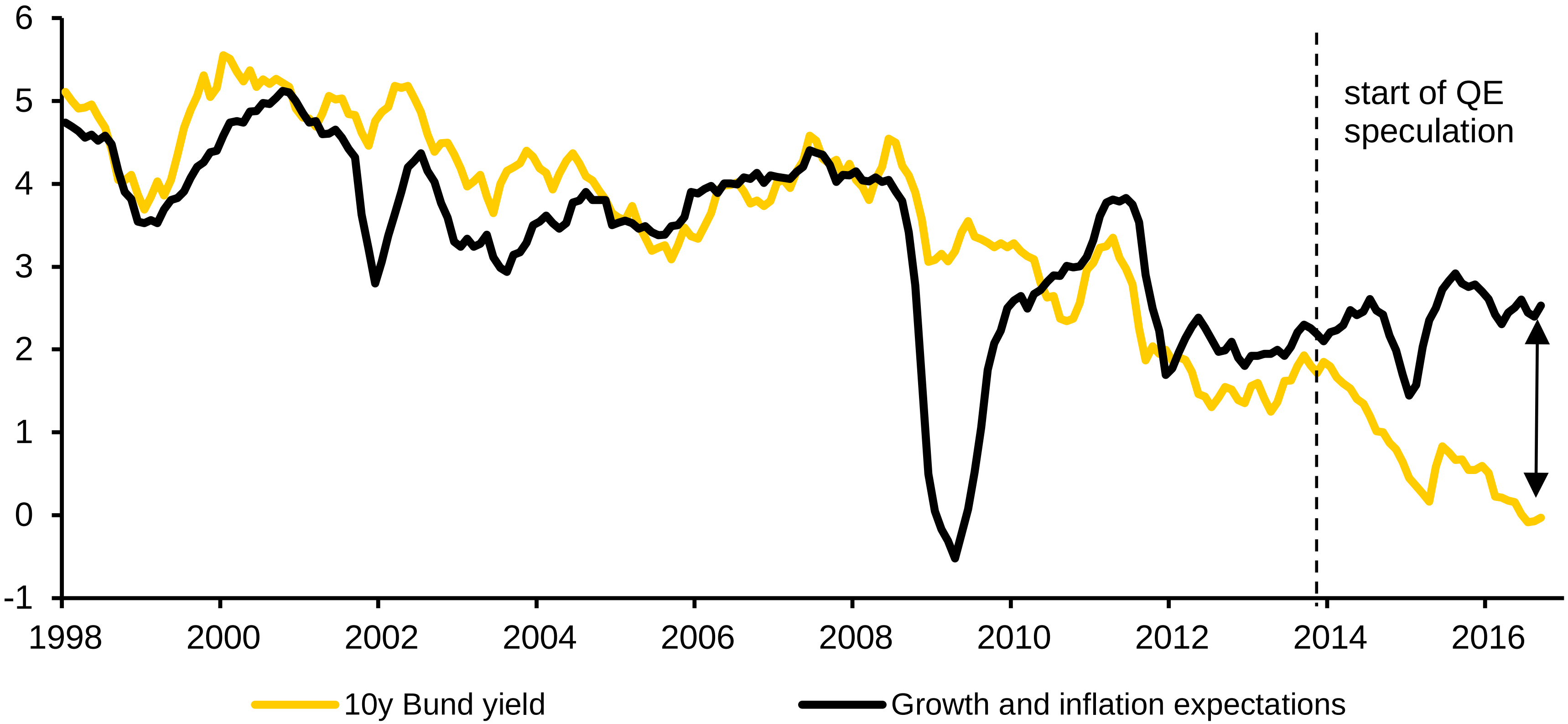
# Impact of QE programmes

German 10y Bund yields in % and sum of weighted average of inflation and growth expectations




Source: Consensus Economics, Bloomberg, Commerzbank Research

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