Central banks’ experience on reinvestment of QE programmes

ECB Bond Market Contact Group
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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

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

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.

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

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

- **QE announcement**
- **Final increase of QE target volume**
- **QE exit**

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
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
References

Michael Joyce, Matthew Tong and Robert Woods: The United Kingdom’s quantitative easing policy: design, operation and Impact, BoE Quarterly Bulletin, Q3 2011 (Joyce 2011).


Jan Groen: Global Asset Prices and the Taper Tantrum Revisited, Liberty Street Economics, 8 December 2014 (Groen 12/2014)


Columbia University School of International and Public Affairs: Comparative Study of Central Bank Quantitative Easing Programs, April 2016 (Columbia University 2016)
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