

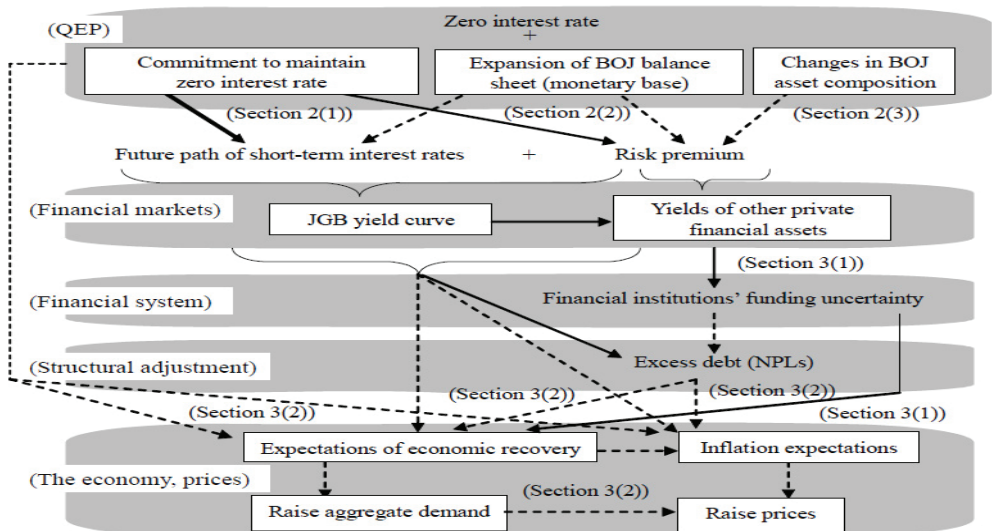
# Banking with ultra-low interest rates – conceptual and related issues

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## 1 Introduction

This presentation examined the theory and practice of the impact of ultra-low interest rates on bank behaviour. First, the conceptual issues, and here the experience of Japan's low interest rate environment in the early to-mid 2000s provides useful insights that tend remarkably to be repeated in the more recent low interest rate environments in the USA, UK and euro area. Chart 1 provides lessons from Japan on the main channels through which an ultra-low interest rate channel impacts banks and the overall financial system. It can be seen that such policy is character-

*Chart 1: Conceptual issues – insights from Japan's 2001–2006 QE*



Source: Ugai (2006).

Note:  $\longrightarrow$  strong effects     $\dashrightarrow$  some effects     $\cdots\cdots\cdots\rightarrow$  uncertain/small effects

ised by 1) a commitment to maintain very low or zero rates into the future; 2) expansion of the central bank balance sheet / monetary base; and 3) changes in the asset composition of the central bank. The strongest impact on the financial sector is found to be via the commitment to low rates which influences the future path of short-term rates and ultimately the government bond yield curve. It also impacts risk premia influencing yields on private financial assets that reduced bank and other financial firms funding risks/uncertainty which boosts expectations of economic growth. A variety of possible influences with the strength of effects are shown in the aforementioned chart, ultimately the impact on the macroeconomy overall is found to be uncertain or small at best.

## 2 Empirical evidence

There is a growing recent empirical literature on the influence of Quantitative Easing (QE) and related low/zero interest policy. One strand of these studies examines the influence of central bank asset purchases on financial markets. Studies on the USA (Gagnon et al., 2011; D'Amico and King, 2013 and Hancock and Passmore, 2014) and the UK (Joyce et al., 2011; Breedon, Chadha and Waters, 2012; D'Amico et al., 2012) find that the impact varies depending on the type of asset the central bank acquires. Typically, purchases of mortgage-backed securities seem to have the largest influence on broader financial markets. Other studies look at the influence of asset purchases on the broader macroeconomy – in the USA (Chung et al., 2012 and Chen, Curdia and Ferrero, 2012); UK (Kapetanios et al., 2012; Bridges and Thomas, 2012 and Pesaran and Smith, 2012); and in Japan (Berkmen, 2012). All these have the common finding that QE has a modest impact on broad economic indicators such as output/growth and inflation.

One area where low or zero interest rate monetary policies have had an impact, however, is on yield curves. The general consensus being that such policies have lowered long-term yields and financial market volatility (see Vissing-Jorgensen and Krishnamurthy, 2011; Gagnon et al., 2011; Swanson et al., 2011; Damico et al., 2012; Wright, 2012; Aksoy and Basso 2014; Wu 2014; Neely 2015 and Steeley and Matyushkin 2015).

There have been very little analyses of the effects of QE/asset purchases on banks. A couple of notable exceptions are by Bowman et al. (2011) who finds that Japan's QE between 2001 and 2009 had a modest positive influence on bank lending, and Joyce and Spaltro (2014) who look at the UK and find a modest impact on bank lending.

Overall, the empirical literature appears to focus more on the influence of financial markets and (via) yield curve effects, as it looks like, this is what policy-makers view as the main channel of QE/alternative monetary policy. So there is

need for more work on the impact of QE on banks, particularly as there is casual evidence that alternative monetary policy can have specific industry effects.

### 3 Industry views

In addition to formal academic study, industry analysts have also been studying prior low-interest rate environments in Japan, the USA and UK to try and gauge the impact of the ECBs EUR 1 trillion QE that was announced in January 2015. Chart 2 illustrates Goldman Sachs (2015) assessment of prior US QE impact on banks and shows that their stock prices were bolstered by three main QE periods in the USA, although bank stocks still lagged broad market indices (S&P 500). Chart 2 also notes that QE tended to squeeze margins because although funding costs declined, yields on interest bearing assets fell more, thus reducing net interest margins and squeezing profits. QE also helped reduce US market volatility which is bad for investment banking securities trading revenues. There were some initial asset revaluation gains, however, due to the lower of rates.

*Chart 2: Impact of QE on US banks*

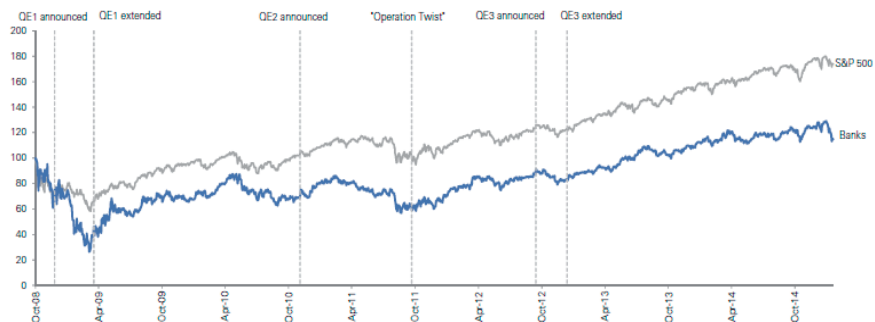
#### **Banks: US QE announcement risk-positive – longer-term P&L effects negative**

In the 1 month following the 6 QE announcements, banks outperformed in 4 cases. Medium term, however, profitability suffered, owing to margin pressure. QE introduced the following moving parts:

- **Margin pressure:** funding cost decline was more than offset by the fall in securities yields. Banks' NIMs were pressured, and profitability impacted, as a consequence.
- **Lower volatility:** By reducing volatility, QE impacted investment banks' securities trading operations.
- **QE-related deposits:** institutional investors placed some of the excess liquidity as deposits. Deposit volumes grew, and bank liquidity positions improved.
- **(Some) book value accretion:** ALM portfolios showed an uplift, owing to unrealised gains.

We note that banks underperformed in the years following QE extension, despite an initial positive reaction on the announcement date. This underperformance is reflective of factors other than QE (litigation, regulation, volume pressures).

**Exhibit 2: Banks outperformed after the extension of QE1, but have consistently lagged the broader market in subsequent years**  
S&P 500 and S&P 500 Banks sub-index (1st Oct 2008 = 100)



*Source: Federal Reserve Board.*

### Chart 3: Impact of QE on euro area banks (1)

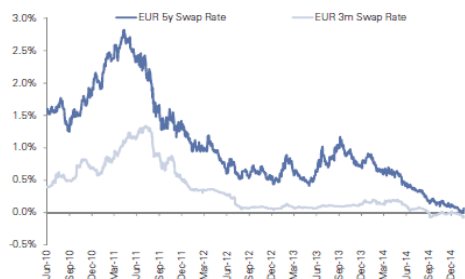
#### Banks: Initial gain, longer-term NIM challenge ...

QE will compress NIM across the Eurozone. In the core, we expect this process to be particularly acute (Sell Commerzbank). On the periphery, the initial impact of asset yield compression could be offset, owing to a fall in liability spreads. Longer term, however, we expect the margin compression (especially through ALM revenue reduction) to offset this benefit.

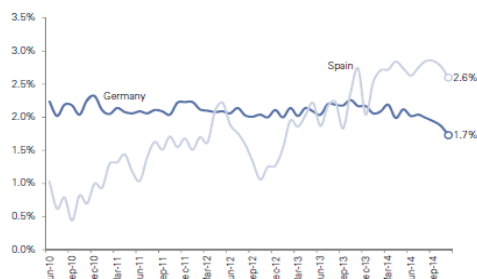
We see Intesa (CL-Buy) as a relative beneficiary in a Euro banks context, while we see Commerzbank (Sell) as exposed to NIM pressure from the onset.

QE should result in: (1) compression in sovereign yields across the Eurozone, thus (2) reducing funding costs for the peripheral banks, (3) and (further) lowering re-investment yields. We expect the medium-term effect of margin compression to be most visible in the core, where the liability cost reduction does not act as an offset. Peripheral banks, therefore, should find the medium-term impacts more manageable, in our view.

**Exhibit 3: As interest rate expectations have continued to fall...**  
EUR 5y swap rate and EUR 3m swap rate, %



**Exhibit 4: ...margins in the core have compressed, with margins in the periphery still somewhat above that level**  
Margins on corporate lending (new business funded by corporate deposits)



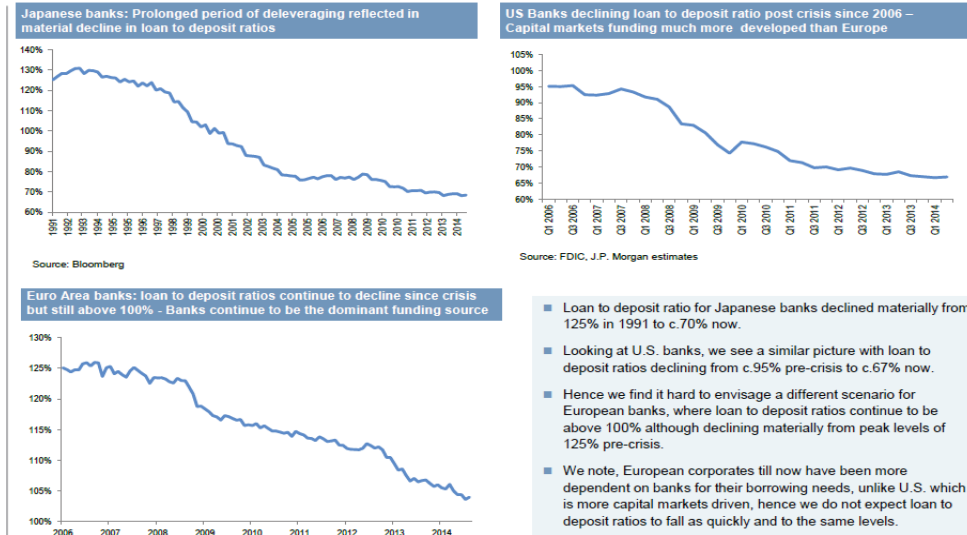
Source: Datastream, ECB, Goldman Sachs Global Investment Research.

Similar experiences are forecast for euro area banks, particularly a compression of margins and this is expected to be particularly acute in Germany and France.

As well as tightening margins there will also be pressure on other revenues. Banks with substantial euro area sovereign debt (and particularly those in the higher risk peripheral countries like Greece and Portugal) will experience a one-off asset revaluation benefit as QE leads to a fall in yields. This gain can be counted as Tier 1 capital under the EU’s CRD IV regulation so it should strengthen thinly capitalised banks. Also, as QE tends to boost stock prices in general this could increase revenues of banks with significant asset management, private banking and related businesses. Also, there could be improvement in growth across the euro area that feeds through into improved banking sector performance. However, on the downside JP Morgan Cazenove (2015) have cautioned that if Japanese and US experiences are to be repeated, we are likely to witness a substantial deleveraging in euro area banking loan-to-deposit ratios are still much higher here at 110% compared with around 70% in the USA and Japan. Although JP Morgan Cazenove (2015) do not expect loan-to-deposit ratios to fall to the same levels they still expect a fall and this, they argue, will put further pressure on bank margins as illustrated in charts 3 and 4.

### Chart 4: Impact of QE on euro area banks (2)

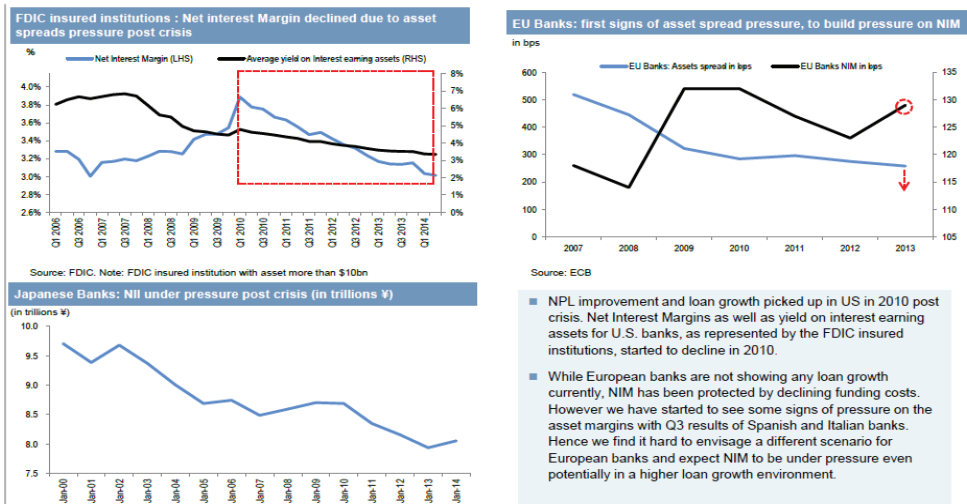
...and B/S deleveraging driving L/D ratio moving to excess funding position as in Japan leading to NIM pressure...



Source: Bloomberg, FDIC, J. P. Morgan estimates.

### Chart 5: Impact of QE on euro area banks (3)

...in addition, NIM remain under pressure with asset margins feeling the pain - U.S. banks tell similar story...



Source: FDIC, ECB, Japanese Bankers Association, Bank of Japan.

## Conclusions

There is increasing academic interest in the impact of QE and alternative monetary policy on the broad macroeconomy and financial markets but little work to date on banks. Academic studies typically focusing on country specific issues whereas analysts are more interested in international comparisons, looking at experiences from Japan, UK and the US and extrapolating for euro area banks.

In short, alternative monetary policy appears to have a substantial impact on yield curves and financial markets, less impact on macroeconomic indicators and a modest influence on bank lending (although evidence here is somewhat limited). Recent analyst work focuses on margin pressures. There is some evidence that bank profits were positively impacted by early US Fed asset purchases but this has not yet been rigorously analysed.

Overall, it is somewhat worrying that previous analysis of the influence of ultra-low interest rates and related QE policy in Japan, the USA, and UK have had such a limited observable impact on broad macroeconomic indicators. This does not augur well for the recent QE measures by the ECB.

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