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SECURITIES DIVISION

Yield Curve Control - Lessons from Japan & the US

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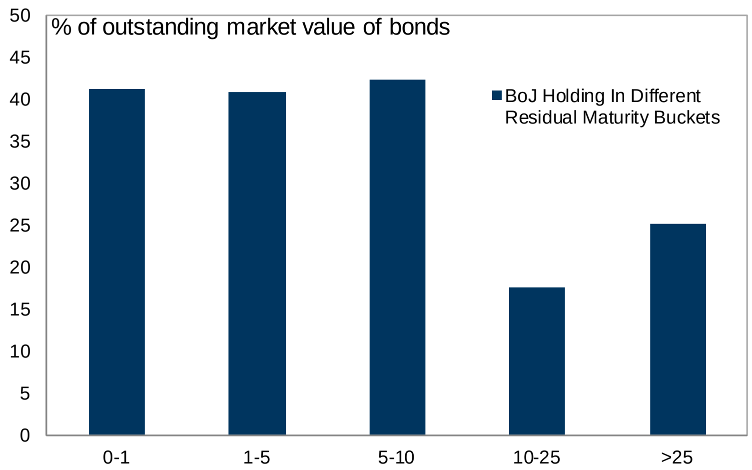
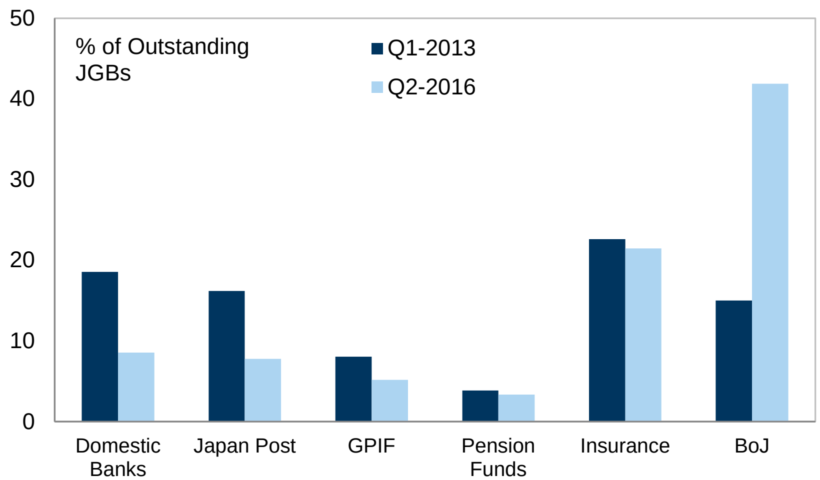
What Led the BoJ to Adopt 'Yield Curve Control'?

BoJ Currently Holds Around 40% of JGBs with Residual Maturity of Less Than 10-yr



Pension and Insurance Companies Are Reluctant to Sell Bonds to the BoJ



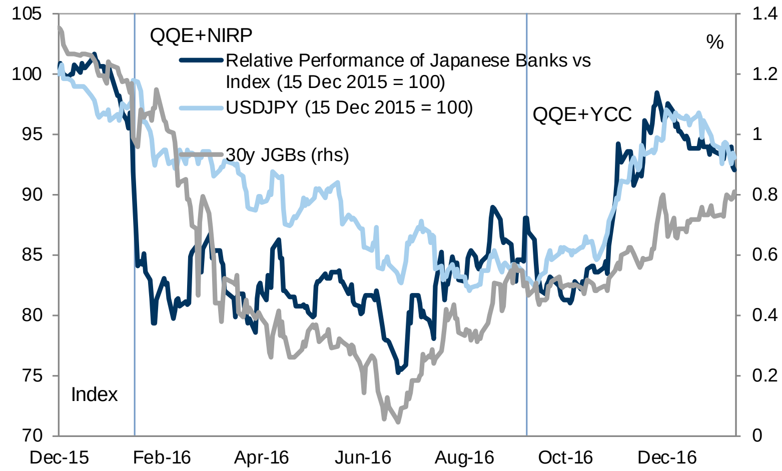
- Under its QQE policy, launched in 2013, the BoJ targets a JPY80trn annual expansion of the monetary base. This requires purchasing JPY120trn-worth of JGBs.
- The BoJ owns a large portion of the government bond market, particularly at short and intermediate maturities. For both policy and operational purposes, purchases have shifted to longer-dated bonds.
- The net sellers into the BoJ's QQE are domestic banks, Japan Post and GPIF. Longer-maturity bonds are mostly held by price-inelastic long-term investors, which have been reluctant to sell into the program.

Source: BoJ, Haver Analytics, Bloomberg, Goldman Sachs Global Investment Research

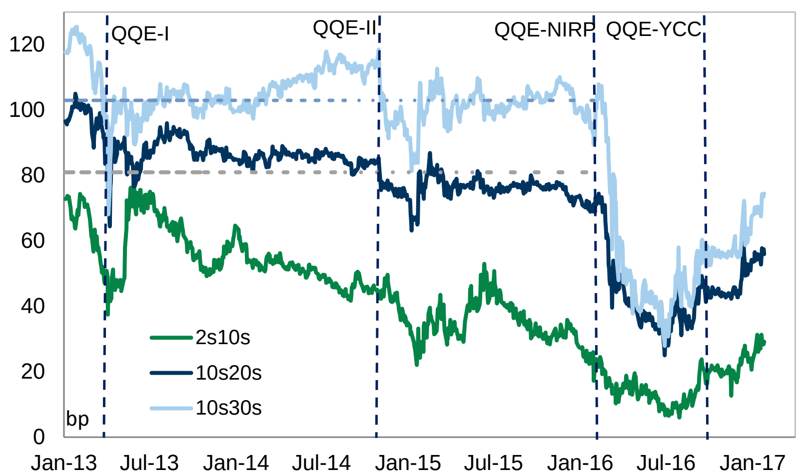
The content of this presentation is sourced from Goldman Sachs Global Investment Research, authored by Francesco Garzarelli

What Led the BoJ to Adopt ‘Yield Curve Control’?

The Introduction of NIRP Alongside QQE Tightened Financial Conditions



By Flooring the Long end, YCC Allowed The Term Structure to Steepen



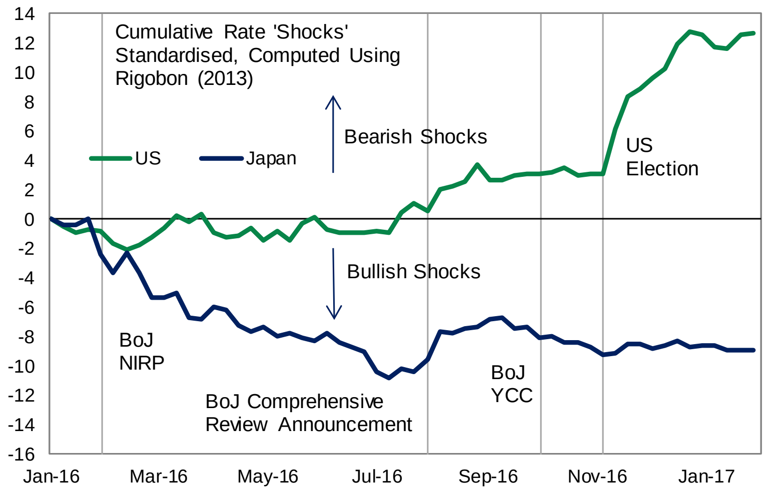
- In January 2016, the BoJ augmented QQE with NIRP. This led to a very pronounced curve flattening led by the long end (with international spill-over effects).
- A low and flat yield curve perversely tightened financial conditions* through a combination of lower equity prices of financial firms, lower inflation expectations, and a stronger Yen.
- In July 2016, the BoJ put its framework under review. In September, it introduced an explicit target range for 10-year rates (‘more or less at zero’).
- The BoJ essentially abandoned its monetary base target in September 2016, shifting back to rate targets (BoJ’s demand for long-bonds shifted from vertical to horizontal), although it preserved the purchase amount of JGBs as a flexible reference, out of concerns about potential negative reactions in the forex market.

Source: BoJ, Haver Analytics, Bloomberg, Goldman Sachs Global Investment Research

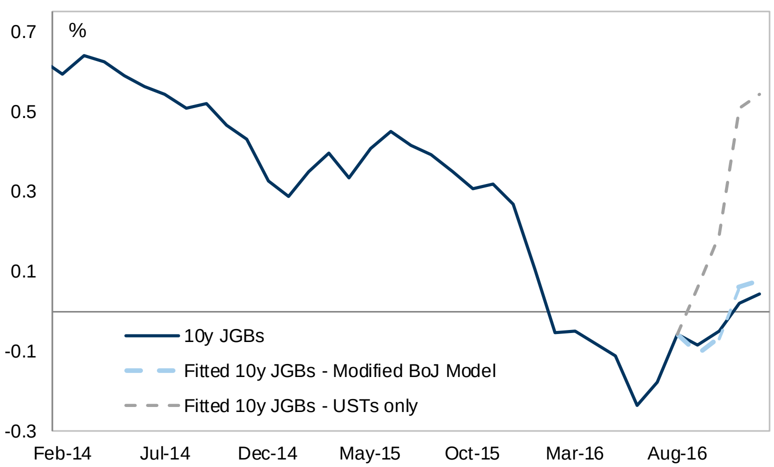
* *BoJ, Sep 2016:* ‘an excessive decline and flattening of the yield curve may have a negative impact on economic activity by leading to a deterioration in people's sentiment, as it can cause uncertainty about the sustainability of financial functioning in a broader sense’.

Is the New Policy Framework Effective?

Tug-Of-War Between US Treasuries and JGBs



The BoJ YCC Has Shielded 10-yr JGBs from the Sell-off in TY10



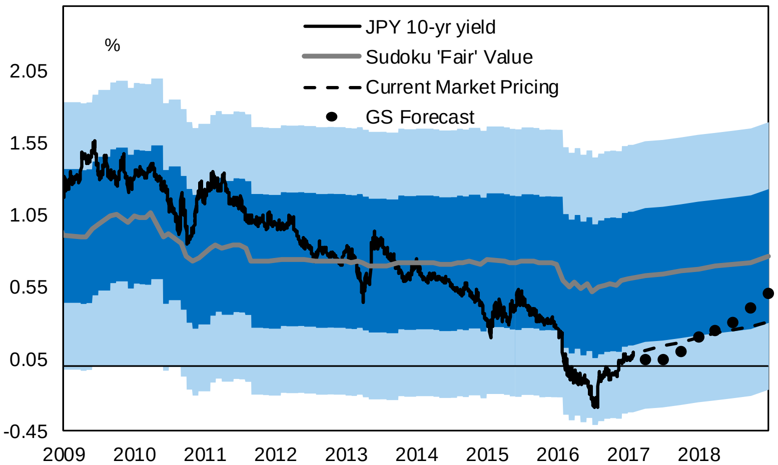
- Since the inception of YCC in the Summer of 2016, JGBs have been sheltered from the global bond sell-off. On the historical beta to US Treasuries, 10-yr JGBs should be close to 60bp. On the BoJ's econometric model, close to 10-15bp*.
- By **flooring** the long end of the yield curve, the BoJ has allayed pressures on financial institutions (optimal yield curve). The **capping** of nominal rates across the curve has promoted a depreciation of the trade-weighted JPY.
- By scrapping a deterministic approach to the maturity of bond purchases, the BoJ has improved the operational **sustainability** of QQE.
- The policy has put the BoJ in a more **submissive** position in its relation to the fiscal authorities. What is the optimal interaction is subject to debate.

Source: BoJ, Haver Analytics, Bloomberg, Goldman Sachs Global Investment Research

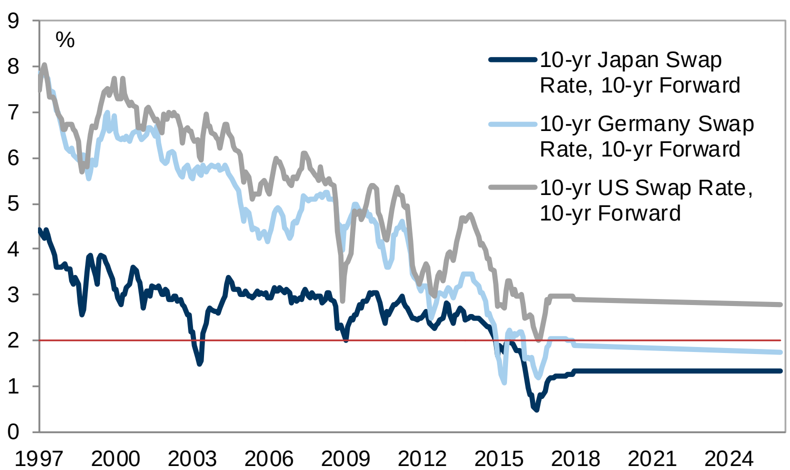
** The BoJ introduced 'fixed-rate unlimited operations' as a measure to keep yield curve in check, on the conviction that emphasizing the unlimited aspect of these operations should convince the market of the BoJ's commitment to defend the YCC.*

What Risks Does YCC Bring With It?

The BoJ Is Keeping JGB Yields Far Below Macro 'Fair Value'



The Forwards Discount Very Flat Long-Dated Term Structures



- In relation to macro factors, JGBs are becoming increasingly 'expensive'. A pick-up in growth and inflation expectations would force the BoJ to purchase more long-dated bonds, widen the fluctuation range, or re-peg.
- As in the experience of the US with YCC (1942-51), the enforcement of long-end rate caps may lead to fiscal dominance and amplify inflationary pressures. In the case of Japan, this is a desired outcome. Some economists (e.g., Sims, Cochrane) argue that raising rates when inflation is increasing is desirable.
- Losses from higher rates would be borne by the BoJ. Financial institutions sit on large unrealized gains. International spill-over effects from a sudden rise in Japanese long-end rates could be material, and amplify the build-up of term premium (slower Fed reinvestment, and ECB QE).

Source: Bloomberg, Goldman Sachs Global Investment Research

Items for Discussion

1. The analysis tentatively concludes that by flooring the long end of the yield curve, the BoJ has allayed pressures on financial institutions (optimal yield curve). Do BMCG members agree?

2. What are in your view the risks that the YCC creates?

3. What would the ‘exit strategy’ from YCC look like?

Source: Haver Analytics, Bloomberg, Goldman Sachs Global Investment Research

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