Liquid Insight

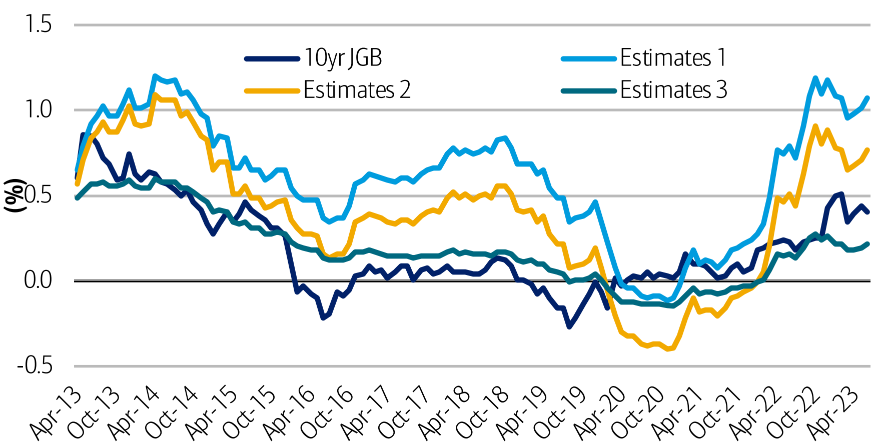
BoJ could act if 10yr JGB yield hits 75bp

Key takeaways

- Governor Ueda stated at July MPM that the BoJ would not intervene to prevent fundamentals-driven yield uptrend.
- We explore fundamentals-based fair value for 10yr JGB yield to draw implications for BoJ's operations.
- BoJ fixed-rate purchases/pooled collateral fund-supplying ops possible if 10yr yield reaches 75bp.

By Tomonobu Yamashita and Shusuke Yamada

Chart of the day: Actual and estimated 10yr JGB yields with three estimation methods
Estimates vary from 0.21% to 1.06%



Source: BoJ, MIC, MHLW, Bloomberg, Bofa Global Research
Note: Estimates 1 are our estimates based on the BoJ's fundamentals-based methodology, from which we subtract our estimated stock effect. Estimates 2 are our estimates based on the BoJ's fundamentals-based methodology, from which we subtract the BoJ's estimated stock effect. Estimates 3 are the results of a linear regression with the 10yr JGB yield as the dependent variable and PCV, the 10yr US Treasury yield, and the BoJ's JGB ownership (%) as the explanatory variables

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Estimate "fair value" for 10yr JGB yield

The BoJ Gov. Kazuo Ueda noted at his post-MPM press conference in July that the Bank would not act to address a fundamentals-driven rise in JGB yields. In this report, we therefore explore fair value for the 10yr JGB yield based on fundamentals. Despite considerable uncertainty, we estimate the fair value at 75-106bp. This suggests the potential for the BoJ to conduct fixed-rate purchase operations for nonconsecutive days and funds-supplying operations against pooled collateral if the 10yr JGB yield approaches 75bp.

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10yr JGB yield implied by fundamentals

At the July press conference, Mr. Ueda stated that theoretically if yields rose based on changes in the fundamentals that determine them (or were likely to do so), it would be a healthy development, while drastic selling by speculators without this justification would not be one. Mr. Ueda's stance is the BoJ will not intervene to drive down yields if their uptrend reflects fundamentals.

Determining fundamentals-based fair value for the 10yr yield allows us to forecast action by the BoJ via its various market operations when the actual yield approaches that level. In this report, we explore fair value for the 10yr JGB yield based on fundamentals and examine the level of long-term rates at which the BoJ could conduct fixed-rate purchase operations and funds-supplying operations against pooled collateral.

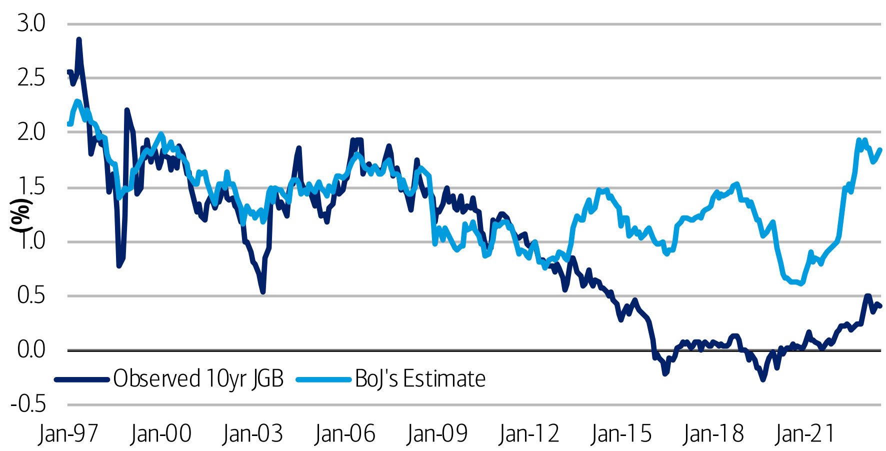
We believe a two-step approach is needed in assessing fundamentals-based fair value for the 10yr yield. This is because the factors affecting yields differ markedly in the periods before and after former Governor Haruhiko Kuroda introduced monetary easing in 2013. After the start of QQE, supply-demand factors, particularly the BoJ's outright purchases, became the key driver of the JGB market, dulling its sensitivity to key economic data.

BoJ's estimates based on fundamentals

The first step of our simulation uses data through March 2013, prior to Governor Kuroda's launch of QQE, when we believe JGB yields moved in line with fundamentals. In its March 2021 report, "Assessment for Further Effective and Sustainable Monetary Easing," the BoJ simulated fair value for the 10yr JGB yield based on a linear regression using the active job openings-to-applicants ratio, Japan-style core CPI (excluding fresh food, YoY), and 10yr Treasury yield as explanatory variables and the 10yr JGB yield as the dependent variable.

Its sample period was from January 1997 through March 2013, and the explanatory variables appear to explain 10yr JGB yield trends to some extent until the start of monetary easing in April 2013. Extending the BoJ's estimates to the present day gives an estimated fair 10yr JGB yield of around 1.85% if QQE had not been introduced (Exhibit 1).

Exhibit 1: Actual and estimated 10yr JGB yields
Estimate fair 10yr JGB yield around 1.85% if no QQE



Source: BoJ, MIC, MHLW, Bloomberg, Bofa Global Research

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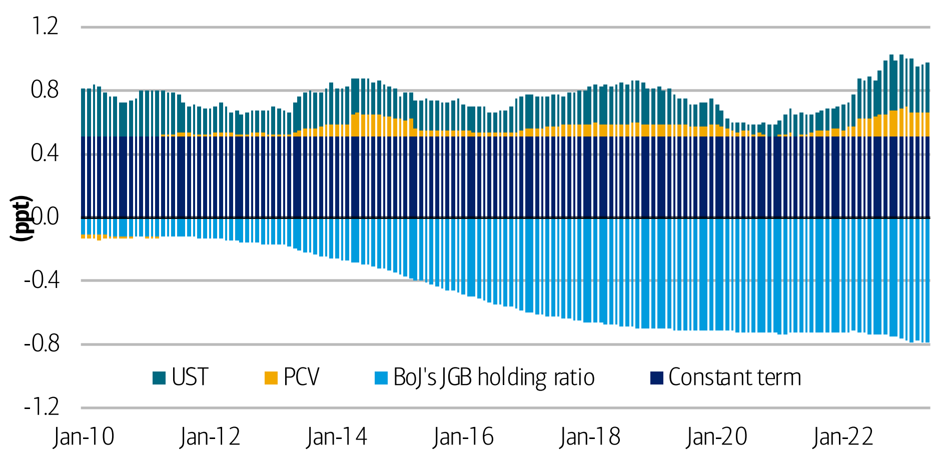
Estimate stock effects

However, we also need to consider the downward impact on the 10yr JGB yield from the stock effects of the BoJ's monetary easing since April 2013 as the BoJ's cumulative bond buying has changed the demand/supply dynamics in the JGB market. Here, we use the two-stage least squares (2SLS) approach. Of the explanatory variables in the BoJ's model, we used the two economic indicators (core CPI/active job openings-to-applicants ratio) in a principal component analysis to simulate the first principal component; we term the result PCV, which we then use as an explanatory variable. We believe adopting PCV instead of directly using the two economic indicators allows us to avoid issues such as overestimation.

We therefore use three explanatory variables: PCV, the 10-year US Treasury yield, and the BoJ's JGB holdings as a percentage of total issuance; the dependent variable is the 10-year JGB yield. For the period from April 2013 through May 2023, we found statistically significant results only for PCV (at 5%), with the other variables giving a value below 1%. R2 was 0.67. The recent stock effect based on the above estimates is around 80bp (Exhibit 2).

We then combine the result of the fair value calculated with fundamentals and the stock effect. We believe this method is more balanced to incorporate both (1) a potential regime shift from a “persistent easing regime” when the market had priced out policy normalization to a more normal monetary policy regime where the rates market may regain sensitivity to fundamentals; and (2) the stock effect, which will remain even after the BoJ exits extraordinary easing policy. The result is a fair value for the 10yr JGB yield of c.100bp based on recent fundamentals (+1.85%) factoring in the stock effect (-0.8%).

Exhibit 2: 10yr JGB yield contribution analysis (BofA simulation)
Stock effect may be depressing 10yr JGB yield by around 80bp



Source: BoJ, MIC, MHLW, Bloomberg, Bofa Global Research
Note: Estimates based on linear regression using PCV, 10-year US Treasury yield, and BoJ's JGB holdings as percentage of total issuance as explanatory variables, 10-year JGB yield as dependent variable

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BoJ’s estimate of stock effect

We note that in its March 2021 report, "Assessment for Further Effective and Sustainable Monetary Easing," the BoJ also simulated the stock effect using the 10yr Treasury yield, expected real GDP growth rate, and the BoJ's JGB ownership ratio as explanatory variables. This gave a roughly 108bp downward impact on the 10yr JGB yield. A simple calculation suggests that the BoJ therefore views the current fair value for the 10yr JGB yield as around 75bp (1.85% - 1.08%).

Estimate fair value in QQE regime

Finally, we estimate the fair value by regressing the 10yr JGB with PCV, the 10yr US Treasury yield, and the BoJ's JGB ownership (%) as the explanatory variables, without taking the two-step approach. This method may be valid if we expect the JGB market will remain as insensitive to fundamentals as it has been for most of the QQE period. We believe it is unlikely but it is a useful exercise to see the downside risk in the JGB yield if a negative price shock hits Japan and we will move back to a persistent monetary easing regime. The estimated fair value is 0.21%.

Summary of our simulations

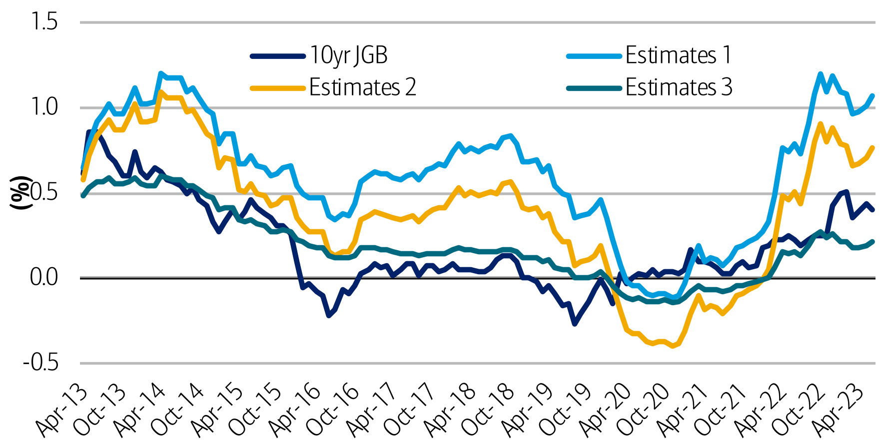
Below, we give an overview of the simulations in this report.

- Estimates 1 (Exhibit 3) are based on the BoJ's fundamentals-based methodology, from which we subtract our estimated stock effect. This implies a recent fair value for the 10yr JGB yield of around 1.06%.
- Estimates 2 combine our estimates based on the BoJ's fundamentals-based methodology with the BoJ's estimate of the stock effect. This gives a recent fair value of around 0.76%.
- Estimates 3 are the results of a linear regression with the 10yr JGB yield as the dependent variable and PCV, the 10yr US Treasury yield, and the BoJ's JGB ownership (%) as the explanatory variables. This implies a recent fair value of around 0.21%.

What our simulations imply

Inflationary conditions in Japan are likely in a transitional phase, and in that sense we believe the 0.76-1.06% levels implied by Estimates 1 and 2 are increasingly likely to be seen as fair value. However, we would caution that the rates market could revert to a QQE footing in case of a deflationary shock that direct impacts the Japanese economy.

Exhibit 3: Actual and simulated 10yr JGB yields
Our simulations likely have some explanatory power



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Implications for BoJ's market operations

At his post-MPM press conference in July, Governor Ueda stated that if the 10yr JGB yield moves above 0.5%, the BoJ would need to respond flexibly depending on yield levels and how fast they were changing. The BoJ does not expect the long-term yield to rise to 1%, but has set a 1% cap as a pre-emptive measure. While far from certain, we believe the BoJ is likely to estimate the current fair value for the 10yr JGB yield at around 75bp based on the estimates it released in March 2021 (Estimates 2, Exhibit 3).

Our simulation also suggests a fair value of around 1%, and assuming the stock effect is still in place, it is unlikely that the BoJ's 1% cap is too low and vulnerable to another YCC attack for the time being. In short, we believe the BoJ will and can continue to defend the 1% cap to its YCC target range for now, absent additional upward pressure on yields from fundamentals or external conditions.

The BoJ Deputy Governor Shinichi Uchida noted in a 2 August speech that the BoJ could conduct fixed-rate purchase operations for nonconsecutive days or funds-supplying operations against pooled collateral at 10yr yields between 0.5% and 1.0%; while far from certain, our analysis in this report suggests that the BoJ could intervene if the 10yr yield reaches 0.75%.

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