

Daiwa's View

YCC observations series (1): What is yield curve control?

- Benefits and side effects

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YCC observations series (1): What is yield curve control?

Benefits and side effects

The Fed is currently considering monetary policy tools to strengthen the economy's recovery from covid-19. It has already lowered rates to the zero lower bound and is using two unconventional monetary policy tools that were first tried during the global financial crisis: forward guidance and quantitative easing (QE). The Fed is also looking at the possibility of using yield curve control (YCC), sometimes referred to as a yield cap.

At his press conference following the June FOMC meeting, Fed Chair Jerome Powell said that in addition to forward guidance and asset purchases, the committee also discussed YCC. Later, in his congressional testimony on 16 June, Mr. Powell said the Fed was still in the initial stages of evaluating YCC and had "made absolutely no decision to go forward on it," but there was undoubtedly "serious discussion" of additional tools, as noted by New York Fed President John Williams. Fed staff also presented a report at the June FOMC meeting on historical examples of YCC, both in the US (the Fed's policy of pegging interest rates in the 1940s) and overseas (the BOJ and RBA). The details will garner attention when the FOMC minutes are released on 1 July.

◆ Fed chair Jerome Powell (post-FOMC press conference on 10 Jun 2020)

• We also reviewed the historical and foreign experience with targeting interest rates along the yield curve. Whether such an approach would usefully complement our main tools remains an open question. We will continue our discussions in upcoming meetings and will evaluate our monetary policy stance and communications as more information about the trajectory of the economy becomes available.

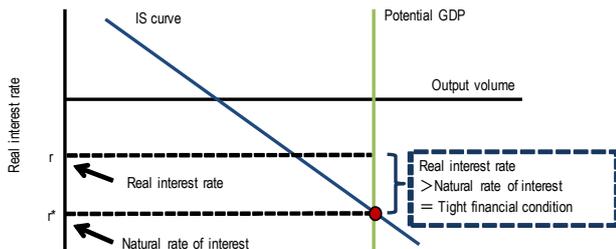
◆ What is YCC? What is its objective?

Under the new Keynesian monetary policy frameworks currently employed by the world's central banks, policy affects can be measured based on whether real rates are above (monetary tightening) or below (monetary easing) the natural rate of interest (the equilibrium real interest rate that equates investment and savings under full employment).

Normally, the Fed adjusts the economy by raising or lowering the Fed funds rate, an extremely short-term interest rate. However, as a result of a global decline in the natural rate of interest, the policy rate is prone to hit the effective lower bound during a recession, limiting the traditional monetary easing tool of short-term rate cuts.

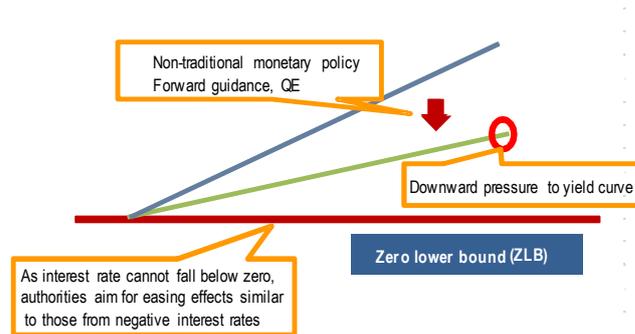
To overcome that limit, central banks can either try to affect the market's expected future path of short-term rates by issuing forward guidance, or it can work on longer-term interest rates with QE, i.e., purchasing government bonds from the market. The YCC policy has the same objective of targeting interest rates but does so by directly targeting longer-term yields so as to affect the real interest rate and obtain the desirable monetary easing results. In practice, the Fed would set a target for the yield of a specific maturity and then commit to purchasing enough long-term government bonds to keep the yield from rising above its target.

Chart: Conceptual Diagram of Natural Rate of Interest in Negative Territory



Source: Compiled by Daiwa Securities.

Chart: Impact of Non-traditional Monetary Policy on Yield Curve



Source: Compiled by Daiwa Securities.

◆ What are YCC's advantages and strengths?

YCC would enable the Fed to strengthen its forward guidance and give it a lower cost alternative to QE. Under YCC, the Fed targets a specific maturity yield and commits to purchasing enough long-term government bonds to keep the yield from exceeding that target. The targeted maturity would strengthen forward guidance through signaling effects. In fact, [a paper](#) published at an international conference sponsored by the Chicago Fed in 2019 suggested that once the effective lower bound is reached, the post-recession economic recovery can be quickened by using forward guidance to fix medium-term rates at low levels. Many FOMC members favor short- to medium-term YCC (yield caps) as a way to enhance the effectiveness of forward guidance leading the market to expect sustained low interest rates.

◆ Fed vice chair Richard Clarida (21 May 2020)

• The possible use of yield curve control will be a subject of Fed study in the future. However, at one level it is a natural complement to calendar-based guidance.

◆ New York Fed president John Williams (27 May 2020)

• Yield curve control is I think a tool that can complement –potentially complement – forward guidance and our other policy actions. So this is something that obviously we're thinking very hard about. We're analyzing not only what's happened in other countries but also how that may work in the United States.

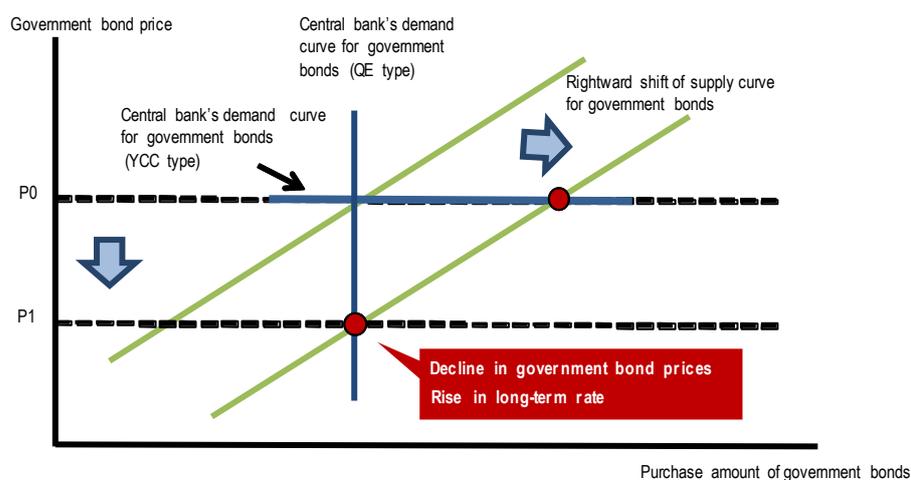
YCC is also a tool that either enhances the effectiveness of QE or replaces it. QE uses government bond purchases to shrink the term premium and lower long-term yields, thereby stimulating the economy. [Published results](#) of an analysis by Fed staff of the QE (LSAP) already implemented by the Fed showed that the unexpected expansion of the Fed's balance sheet during the period of zero interest rates (2008-2015) had large expansionary impacts on the macro economy, effectively boosted economic activity and inflation, and substantially lowered the unemployment rate¹. The YCC policy of targeting yields is quite similar to QE in that it could potentially result in large-scale government bond purchases.

¹ The paper argued that if the QE3 program of 2012-14 had not been implemented, the CPI would have been 1ppt lower, and the unemployment rate 4ppt higher, at end-2015.

The two approaches differ, however, in that QE targets a quantity and YCC targets a price (yield). That is, under QE the Fed purchases a predetermined quantity of Treasuries and the market determines the price (yield). In contrast, under YCC the Fed decides on the yield it wants to achieve, and the quantity of Treasuries that it needs to purchase would ultimately depend on the market's faith in that peg².

Stated differently, as long as the Fed's peg is credible with the market, the Fed can achieve lower interest rates without greatly expanding its balance sheet in what could be termed "strategic attraction" (theoretically, if its commitment were completely credible, the Fed would not have to buy any bonds at all). The BOJ's experience since implementing YCC—it has succeeded in reducing the quantity of its JGB purchases while keeping the 10-year JGB yield low—is one example of how this policy can succeed³.

Chart: Demand/Supply Curves for Government Bonds (comparison of QE with YCC)



Source: Compiled by Daiwa Securities.

◆ What are YCC's risks and shortcomings?

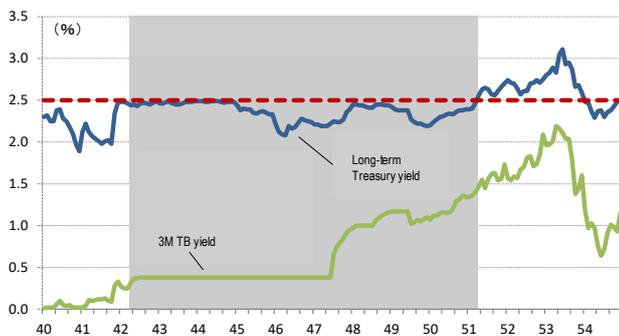
Many of the risk factors of YCC to consider go hand in hand with its advantages; i.e., YCC is a double-edged sword. The most primitive risk is that the Fed could either lose control over its balance sheet or its balance sheet could grow excessively large. As long as the market trusts in its commitment to the peg, the Fed can get by purchasing a small (or zero) amount of Treasuries, but if that trust breaks down the Fed could possibly be forced into making unlimited treasury purchases to maintain the peg (in the extreme circumstance, the Fed would need to purchase the entire supply of marketable Treasuries).

² In the secondary market for long-term Treasuries, the private sector's bond selling curve is an upward sloping supply curve. When a central bank fixes the quantity of its government bond purchases, the bond demand curve is vertical. In this case, an increase in selling pressures in the private sector would put downward pressure on government bond prices (cause yields to rise). In contrast, when the bond price (yield) is fixed using YCC, the demand curve becomes horizontal and control over quantity is lost.

³ This has become a topic recently, one example of which is a paper published by the New York Fed entitled "[Japan's Experience with Yield Curve Control](#)." That paper noted that while the BOJ's YCC did not succeed in boosting inflation, "under the new policy, the BOJ has been able to exert fairly close control over the term structure of interest rates without resorting to large-scale interventions in the JGB market." The paper also noted that "the reduced pace of asset purchases reflects the credibility of the BOJ's commitment to the ten-year yield target." Nevertheless, a further reading of the report suggests that this was a hasty conclusion based on a lack of understanding of Japan's situation. YCC in Japan, which took account of the above-noted side effects (limits) of unconventional monetary policy and shifted the policy variable from quantity back to the interest rate, is also used to raise the yield curve. Another factor to be noted is that the BOJ already controlled a large percentage of marketable JGBs as a result of its QQE policy prior to implementing YCC, and this created strong stock effects along with heavy downward pressure throughout the yield curve from negative interest rates. Also, a very real problem was that YCC failed to lift either inflation or inflation expectations toward 2%, and paradoxically this in some ways gave credibility to the BOJ's commitment. We will provide details on Japan's experience with YCC in a separate report.

This is YCC's underlying dilemma. The actual objective of monetary policy is to stimulate inflation expectations by controlling interest rates, but the greater its success in doing so (i.e., the more that actual and expected inflation rates rise), the more likely it becomes that the market starts doubting the Fed's commitment to its peg. In fact, when it had a policy of pegging interest rates in late 1947, it had to raise the short-term rate to prevent inflation. That later put upward pressure on long-term rates and forced the Fed to buy a large quantity of long-term Treasuries to maintain the peg⁴.

Chart: US Long-term and Short-term Yields (1940-54)



Source: St. Louis Fed; compiled by Daiwa Securities.
Note: Shaded area indicates period of government bond price-supporting policy.

Chart: US Price Level and Inflation Rate (1940-54)



Source: US Department of Labor; compiled by Daiwa Securities.
Note: Shaded area indicates period of government bond price-supporting policy.

YCC can amplify macroeconomic shocks. When a given macroeconomic shock occurs, it can be amplified by the artificial suppression of changes in the natural rate of interest in reaction to the shock. This business cycle amplification effect, which the BOJ calls "tailwind effects," is one of the benefits of YCC⁵. However, when the target is a range with both a ceiling and a floor, as is the BOJ's target, declines in the natural rate of interest from negative economic shocks must also be artificially suppressed, creating difficulties.

This creates the possibility that a YCC policy of targeting interest rates would make the Fed's securities portfolio more volatile and have destabilizing effects on the macroeconomy. This is closely related to the challenge of exiting the policy, which becomes more difficult the farther out on the yield curve the target is.

For example, Fed Governor Lael Brainard, an early supporter of YCC, said in May 2019 that if the short-term rate traditionally targeted by the Fed hits zero, it may target longer-term Treasuries. She gave an example of initially targeting the 1-year yield, then moving that to the 2-year sector of the yield curve if further stimulus is needed. A YCC program targeting the short-term to intermediate zones like this would naturally end over time as Treasuries matured, making for an easy exit.

◆ Fed Governor Lael Brainard (8 May 2019)

• Another idea I would like to hear more about involves targeting the yield on specific securities so that once the short-term interest rates we traditionally target have hit zero, we might turn to targeting slightly longer-term interest rates—initially one-year interest rates, for example, and if more stimulus is needed, perhaps moving out the curve to two-year rates. Under this policy, the Federal Reserve would stand ready to use its balance sheet to hit the targeted interest rate, but unlike the asset purchases that were undertaken in the recent recession, there would be no specific commitments with regard to purchases of Treasury securities.

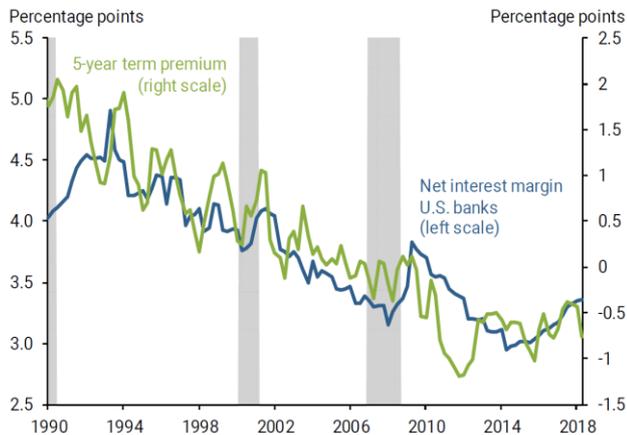
Lastly, one problem is that using YCC to peg interest rates risks side effects on the financial system. We noted above that one propagation channel for unconventional monetary policy is the lowering of interest rates from shrinkage of the term premium, but if this decline extends too far down the curve and/or flattens the curve, it could harm the credit mediation function by suppressing the earnings of banks and other financial institutions.

⁴ We will also provide details on the Fed's use of an interest rate peg in the 1940s in a separate report.

⁵ For example, when overseas yields were rising because of tailwinds outside of Japan, the BOJ's YCC, by fighting against the upward pressure on JGB yields, provides a mechanism that widened the interest rate gap between Japan and overseas and amplified the inflation shock from yen depreciation. This is often discussed now in the context of the fiscal-monetary policy mix.

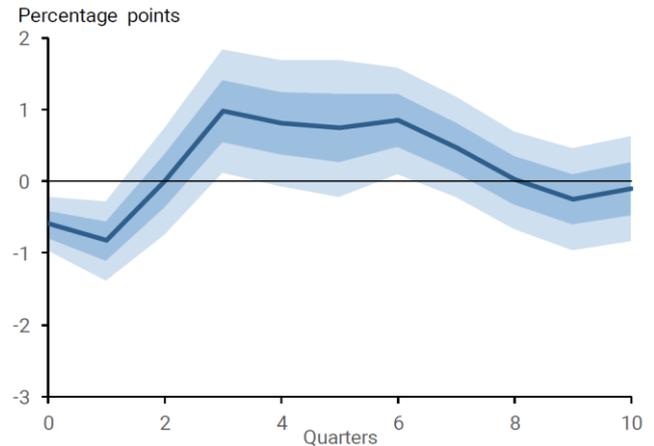
Staff at the San Francisco Fed published [a paper](#) this month analyzing the relationship between bank earnings and the term premium. The graph makes clear that the term premium correlates closely with bank profit margins. That paper also showed that the impulse reaction to a surprise 1ppt increase in the term premium leads to a corresponding change in banks' net interest margins.

Chart: US Banks Net Interest Margin and 5Y Term Premium



Source: Extract from Pascal Paul and Simon W. Zhu (2020). "Are Banks Exposed to Interest Rate Risk?"

Chart: Impulse Response of Bank Net Interest Margins to 1ppt Rise in Term Premium



Source: Extract from Pascal Paul and Simon W. Zhu (2020). "Are Banks Exposed to Interest Rate Risk?"

Of course, as the San Francisco Fed staff noted in their conclusion, it is also necessary to consider the improvement in bank profitability brought by lowering the term premium via other channels. Japan's experience has also shown the negative impacts on the financial system from excessively suppressing the term premium (flattening the yield curve), and that will likely have a major impact on the Fed's debate over YCC. If the Fed does adopt YCC, it will likely weigh these drawbacks to decide on which maturity to target.

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