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Bank of Japan

**"Quantitative and Qualitative Monetary Easing (QQE)
with Yield Curve Control":
New Monetary Policy Framework
for Overcoming Low Inflation**

Speech at the Brookings Institution in Washington, D.C.

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Introduction

It is a great honor to have the opportunity today to speak at the Brookings Institution, a think-tank with a long history and notable achievements.

Since the global financial crisis in 2008, declines in the natural rate of interest and inflation expectations have led to a growing debate about whether monetary policy is becoming less effective. While it is now widely recognized that this is a common challenge for major economies, Japan has faced and addressed such a challenge ahead of other countries. Against this background, it is extremely valuable to share experiences of different countries and to exchange views among academics, market participants, and central bankers during opportunities like this.

In order to overcome deflation that has lasted for 15 years and achieve the 2 percent price stability target, the Bank of Japan has conducted large-scale monetary easing by introducing "Quantitative and Qualitative Monetary Easing (QQE)" in April 2013 and "QQE with a Negative Interest Rate" in January 2016. As a result, corporate profits, measured by the ratio of current profits to sales, have been at a record-high level. The unemployment rate has declined to as low as 3 percent. A practice of base pay rises in annual wage negotiations, which was lost during the period of deflation, returned for the first time in two decades and has continued for three consecutive years. On the price front, a measure of underlying inflation -- the year-on-year rate of change in the consumer price index (CPI) for all items less fresh food and energy -- has remained positive for almost three years. Japan's economy is no longer in deflation, which is commonly defined as a sustained decline in prices. However, the price stability target of 2 percent has not been achieved.

At the Monetary Policy Meeting held in September, the Bank conducted a "Comprehensive Assessment" of the effects of these policy measures and, based on this assessment, introduced a new monetary policy framework. This new framework reflects the Bank's thinking with regard to the challenges that advanced economies have in common. In advance of our discussion later, I would like to talk about the essence of this new framework.

I. Challenges in Japan and the New Monetary Policy Framework

There were two major challenges to monetary policy in Japan.

To start with, despite unprecedentedly large-scale monetary easing, inflation expectation formation in Japan is still adaptive to a large extent. That is, the expectations are formed in a backward-looking manner. In the wake of the substantial decline in crude oil prices since summer 2014, a reduction in the observed inflation has pushed down inflation expectations. The first challenge, therefore, is in terms of how to lift inflation expectations that had fallen once to an undesirably low level and re-anchor them at the target of 2 percent.

The next issue concerns the link between the interest rate level and the effects of monetary easing. When short- and long-term interest rates were well in positive territory, a common understanding was that, so far as the impact on the economy was concerned, the lower the interest rates, the greater the monetary easing effects. However, it is now recognized that, when short-term interest rates are negative and long-term interest rates have fallen to extremely low levels, there could be side effects or costs that weaken the functioning of financial intermediation, which may reduce monetary easing effects. Such observations lead us to the other challenge, which is to explore optimal levels and shapes of the yield curve that can maximize monetary easing effects on the economy and prices.

As solutions to these challenges, the Bank recently introduced the new monetary policy framework "QQE with Yield Curve Control." This consists of two major components: (1) an inflation-overshooting commitment and (2) yield curve control. Let me talk about each of these in turn.

II. Inflation-Overshooting Commitment

I will start by talking about the inflation-overshooting commitment.

There is a widespread consensus that anchoring inflation expectations is very important in achieving a price stability target set by the central bank. However, it has not been fully analysed, either theoretically or empirically, how inflation expectations are formed by the

public and how they can be raised once they have been de-anchored and fallen to an undesirably low level.

QQE introduced by the Bank in 2013 aimed at changing people's perceptions of inflation through a regime shift in monetary policy by combining a strong commitment to achieving the price stability target and the significant expansion of the monetary base. As shown in the "Comprehensive Assessment," this approach has produced positive results.

In light of these achievements, the Bank of Japan further strengthened this approach recently with the introduction of an inflation-overshooting commitment, in which the expansion of the monetary base is linked to the year-on-year rate of change in the observed CPI. By committing to continuing to expand the monetary base until the observed CPI inflation exceeds the price stability target of 2 percent and stays above the target in a stable manner, the Bank aims to work on people's perceptions of inflation in a more forceful manner.

As a possible policy option to address declines in inflation expectations, prominent economists such as Olivier Blanchard, professor emeritus at the Massachusetts Institute of Technology, and John Williams, President of the Federal Reserve Bank of San Francisco, have proposed that a central bank raise its inflation target from the current 2 percent to, say, 4 percent.^{1,2} However, based on Japan's experience,^{1,2} the argument that a central bank can lift inflation expectations of various economic entities simply by raising its inflation target seems a little naïve to me.

In order to re-anchor inflation expectations, I believe it necessary to strengthen a central bank's credibility that it can achieve its price stability target. For this purpose, making use of forward guidance, or a commitment with regard to the future course of monetary policy, is considered effective. However, designing an effective forward guidance is not an easy task. There is nothing to be gained from promising the obvious; on the other hand, promises that impose excessive constraints on future conduct of monetary policy would not be effective

¹ Olivier Blanchard, Giovanni Dell'Ariccia, and Paolo Mauro (2010), "Rethinking Macroeconomic Policy," *Journal of Money, Credit and Banking*, vol.42, issue s1, pp.199-215.

² John C. Williams (2016), "Monetary Policy in a Low R-star World," FRBSF Economic Letter, 2016-23.

either, because people think that a central bank would end up reneging on the commitment. This is a problem of the so-called time inconsistency.

The Bank of Japan's solution to this problem is to make a commitment that is "bold but not excessively binding" by making a commitment to expansion of the monetary base, based on the observed CPI inflation rate, instead of the forecast of them. Given that there is a time lag for monetary policy to have effects on economic activities, it is exceptional for a central bank to make a commitment based on the observed indicators. In the new commitment, the monetary base continues to expand until the condition is fulfilled. That means that the Bank of Japan's holdings of Japanese government bonds (JGBs) keep increasing as well, because they provide a significant portion of the monetary base. By committing to an increase in the core element of monetary easing -- the monetary base -- the Bank demonstrates that the unprecedented monetary easing will be firmly in place until the observed CPI inflation rate exceeds the price stability target of 2 percent and stays above the target in a stable manner. Under our baseline scenario in which the inflation rate increases at a fairly moderate pace, a low-level yield curve will also continue until the condition is met along with an expansion of the monetary base. That said, if inflation were to accelerate suddenly, the Bank would be able to address this by raising the short- and long-term interest rates. Therefore, this commitment can be kept all the time, while giving powerful monetary stimulus.

Some economists raise concern that a higher inflation target, even though originally designed to lift inflation expectations, would end up being long-lasting, creating a new challenge of how high of an inflation rate level would be consistent with the legal mandate to achieve price stability. The Bank of Japan's new policy framework is constructed in such a way that it can avoid this problem while maximizing the monetary easing effects.

The formation of inflation expectations and policy responses to lift inflation expectations are the subject of an ongoing debate. I strongly expect these issues to be further explored.

III. Yield Curve Control

Next, I would like to talk about yield curve control.

With regard to central banks' ability to control interest rates, the conventional view is that they can control short-term rates but not long-term rates. However, since the global financial crisis, major central banks, having faced the zero lower bound on short-term interest rates, have directly exerted influence on long-term interest rates through large-scale asset purchases. This policy is widely referred to as quantitative easing, or QE. In practice, all of the major central banks set the amount of asset purchases as an operating target, and long-term interest rates consequently are endogenously determined.

However, the Bank's analyses in the "Comprehensive Assessment" showed that the impact of government bond purchases by the Bank on long-term interest rates has varied considerably depending on economic circumstances and financial market conditions from time to time. This means that, when the amount of government bond purchases is set as an operating target in advance, actual long-term interest rates could be too high or too low relative to a level considered appropriate by the central bank. Against this background, the Bank of Japan introduced "yield curve control," in which long-term interest rates are explicitly set as an operating target. This is perhaps the first attempt to do so among major central banks.

You may think that yield curve control is an ambitious project for a central bank. Let me remind you, however, that major central banks that have been conducting asset purchases must have already faced the question of what shape and location of the yield curve would be appropriate for their policy goals. Without answering this question, the central bank cannot reasonably specify the amount of asset purchases.

In a recent post in his blog, Ben Bernanke, former Chairman of the Federal Reserve, referring to discussions at the Federal Open Market Committee's meeting in October 2010, compared QE, in which the amount of government bonds to be purchased is decided in advance, with a peg for long-term interest rates.³ In this comparison, Dr. Bernanke pointed out that, if the Federal Reserve pegged long-term interest rates, it might end up having to buy very large amounts of securities, giving rise to the risk of losing control of the balance sheet; for this reason, the Federal Reserve decided to opt for QE rather than rate-pegging.

³ Ben Bernanke (2016), "What tools does the Fed have left? Part 2: Targeting longer-term interest rates," Ben Bernanke's Blog, Brookings Institution, March 24.

While I share such concerns, I have two responses to them. The first is that, in the new framework, the Bank of Japan will set the operating target for long-term interest rates at each Monetary Policy Meeting. That means that it will facilitate the formation of the yield curve that is deemed appropriate by taking account of the economic, price, and financial conditions from time to time so as to provide a sufficient level of monetary accommodation in order to achieve the price stability target. The second is that the Bank has already been conducting very large-scale government bond purchases and, in combination with a negative interest rate policy, has been fairly successful in controlling long-term interest rates. As shown in the "Comprehensive Assessment," this combination has been exerting powerful downward pressure on long-term interest rates. With this in mind, I believe that there will be no significant changes in the management of the Bank's balance sheet going forward under the new framework.

Meanwhile, in a recent book, Professor Kenneth Rogoff of Harvard University argues that a negative interest rate policy is more effective than QE, not least because QE has had uncertain impacts so far compared to the conventional interest rate policy and there is difficulty in its calibration and communication. In this context, he calls for abolishment of cash as it would make further policy room for a negative interest rate.⁴ While I am interested in his argument, the reality is that cash cannot be abolished in the near future. From the viewpoint of policy makers, a negative interest rate policy and asset purchases are not mutually exclusive. Taking account of the existing financial system and financial market structures in Japan, we have come to a conclusion that the Bank of Japan can proceed with more powerful monetary easing by controlling the yield curve through the appropriate combination of a negative interest rate policy and asset purchases.

In conducting yield curve control, more detailed analyses -- both theoretical and empirical -- on the appropriate level of short- and long-term interest rates are required. In particular, the conventional concept of a natural rate of interest and "monetary policy rules" are not sufficient, as they focus exclusively on short-term interest rates. Research and discussion should be extended across the entire yield curve.

⁴ Kenneth S. Rogoff (2016), "The Curse of Cash," Princeton University Press.

These issues are relevant for the Federal Reserve as well, although it already has discontinued asset purchases except for reinvestment. If one stands on the "stock view" of QE, suggesting that what matters for monetary easing effects is the central bank's holdings of assets rather than the amount of asset purchases during a period of time, the Federal Reserve's massive bond holdings is still providing monetary stimulus. If this is the case, the level of the short-term interest rate that is desirable for the Federal Reserve at present must be different from what would have been the case if the Federal Reserve had not held such massive amounts of bonds on its balance sheet.

Moreover, based on the experience in Europe and Japan, it is becoming increasingly evident that an excessively lowered and flattened yield curve could weaken the transmission mechanism of monetary easing by squeezing banks' profit. In addition, a decline in expected rates of returns of insurance and pension products may have an adverse impact on consumers' confidence. These aspects are not only of interest from a macroprudential perspective but also need to be examined in terms of the macroeconomic transmission and influence of monetary easing. In sum, with interest rates at historically low levels, monetary policy design going forward necessitates a new paradigm of monetary economics, by broadening the focus of analysis from short-term interest rates to the entire yield curve.

Conclusion

Today, I was able to discuss only a couple of topics that are covered in the Bank of Japan's "Comprehensive Assessment." In fact, we have conducted in-depth analyses of hotly debated issues in monetary policy, including the impact of large-scale government bond purchases on long-term interest rates, the mechanisms of inflation expectation formation, and the effects and impact of the negative interest rate policy.

As I mentioned at the outset, monetary policy under a low-growth, low-inflation environment is becoming a challenge that major economies around the world have in common. To conclude my remarks, I sincerely hope that the Bank's "Comprehensive Assessment" and the introduction of the new policy framework based on this assessment will contribute to constructive debate in this field.

Thank you very much for your attention.