Summary of Discussion at Financial Markets Panel
(Fortieth Meeting)

February 16, 2017

Topic	Significance of the Bank of Japan's "Comprehensive Assessment"
Dates	January 11, 2017 (3:40pm – 5:10pm)
Participants	**Mr. Kazuto Uchida,** Executive Officer and General Manager, Treasury and Investment Division, Bank of Tokyo-Mitsubishi UFJ **Mr. Takashi Kozu,** President, Ricoh Institute of Sustainability and Business **Mr. Shinichi Fukuda**, Professor, Graduate School of Economics, The University of Tokyo **Mr. Toshiaki Watanabe**, Professor, Institute of Economic Research, Hitotsubashi University **Tetsuya Inoue,** General Manager, Nomura Research Institute (Moderator)

Key Discussion Topics

1. **Bank of Japan's "comprehensive assessment"**
2. **Future policy issues for BOJ**

1. Bank of Japan's "comprehensive assessment"

Inoue (moderator):

・I would like to focus on the points brought up by the BOJ itself in its analysis for the comprehensive assessment. First of all, I would like to ask Mr. Watanabe to discuss why inflation expectations did not move steadily higher under QQE, in light of how inflation expectations are formed in Japan and taking into account the theoretical background. I would then like to ask Mr. Fukuda to discuss the outlook for NIRP, which was adopted as part of QQE, following an assessment of the transmission mechanisms along with the policy's benefits and side effects.

Mr. Watanabe:

・One characteristic that has been revealed by empirical analysis is that inflation expectations are characterized by stickiness and diversity. Stickiness refers to the tendency for inflation expectations not to change over time, while diversity refers to the fact that inflation expectations differ depending on the respective economic agents. There are a number of hypotheses that attempt to explain these properties. One is sticky information, which argues that economic agents tend not to update their information when gathering information involves costs. At the macroeconomic level, this means that some economic agents are always forming their expectations based on old information, which leads to stickiness in observed inflation expectations. Another hypothesis, called noisy information, posits that the noise included in information makes economic agents use the past information as well as the current one to form their expectations, which leads to stickiness. In the former hypothesis, the agents who update information and those who do not update have different expectations, while in the latter hypothesis, the information held by different economic agents contains different kinds of noise that leads them to form different expectations.

・Among the empirical research regarding this phenomenon, one paper analyzes differences in inflation expectation formation by age group. One of the conclusions was that younger generations tend to form their inflation expectations based on more recent inflation rates, while older generations tend to rely more upon inflation they experienced at some point in the past. If we apply this conclusion to Japan, it suggests that it may be difficult to expect households in aggregate to have high inflation expectations since younger people have experienced almost no inflation. Another paper analyzes the impact of economic policy and related announcements on inflation expectations. Hitotsubashi University's Abe and Ueno analyzed the findings of a questionnaire survey administered to the survey monitors of a private research firm. Respondents were first asked how much they expected the price level to change, in percent, over the next year. They were then told that inflation was projected to come in at +1.4% in the next fiscal year and asked the first question once again. This time, they revised their answers to somewhere between their initial responses and 1.4%. In other words, the monitors lowered their inflation projections after being presented with a forecast of 1.4%. Waseda University's Ueda used a VAR model to conclude that inflation expectations react more quickly than observed inflation rates to monetary policy. These findings suggest that changes in monetary policy and the announcement of forecasts can influence inflation expectations. One attempt to directly estimate inflation expectations can be found in a BOJ Working Paper on the trend inflation rate, in which the authors use a regime-switching model to conclude that the trend inflation rate in Japan clearly increased after the adoption of QQE. Australian National University's Okimoto uses a different method to come to the same conclusion, which suggests that an increase in inflation expectations following the introduction of QQE is a relatively robust phenomenon.

・If inflation expectations are in fact sticky, it may be difficult to raise inflation expectations in Japan—which went through a long period of deflation—using monetary policy alone, and monetary policy may have to be complemented with fiscal policy or some kind of growth strategy. Recently attention has tended to focus on fiscal policy, in part because of the renewed spotlight on the fiscal theory of the price level (FTPL), but I place greater emphasis on the growth strategy. I do not think inflation expectations will rise unless the government presents a vision for Japan in which productivity increases and the economy improves.

Mr. Fukuda:

・When considering the outlook for QQE, we need to think about two things: the need for additional monetary accommodation and the tools that should be used. As for the first, we need to determine the output gap and the natural rate of interest and understand the stickiness of inflation expectations. The BOJ views Japan as having a near-zero output gap and almost full employment while arguing that monetary accommodation must be continued because inflation expectations are sticky. However, I think there is still an output gap. Regarding the method of easing, the most commonly noted options are 1) an expansion of QQE, 2) enhanced forward guidance, and 3) further policy rate cuts. As for the first, the BOJ argues that there are no limits to the amount of JGBs it can buy, but I think the policy has physical limitations. Of the remaining two options, forward guidance is an important policy despite having an uncertain impact, while further rate cuts should be considered in the event that additional easing becomes necessary but QQE has run out of road.

・If the BOJ were to lower the short-term policy rate further, it should be very careful to prevent the kind of turmoil seen when NIRP was unveiled. The decision of how far out on the curve to take rates negative is also an important decision. For example, containing the 5y JGB yield is important for stimulating capital investment, but lowering rates beyond the 10y sector would have the side effect of squeezing financial institution earnings. This is because lending rates would fall while retail deposit rates, already stuck at the zero bound, would not change, thereby causing spreads to contract. The BOJ announced the adoption of NIRP a year ago, and I think the fallout for financial institutions would have been smaller if those institutions had been given adequate time to prepare for the new regime.

・The yen fell sharply against other currencies both when QQE was adopted in April 2013 and when it was enhanced in October 2014. That was not the case when NIRP was unveiled in January 2016, however. In the first two cases, the yen weakened further after Japanese markets closed and overseas markets opened for trading, but in the case of NIRP overseas markets largely shrugged off the announcement. Additional research is needed to determine why that happened, but it may be the case that foreign investors' view of BOJ monetary policy was very different from that held by domestic investors.

Inoue (organizer):

・If other panelists have anything they would like to add, please speak up.

Mr. Uchida:

・The two main transmission mechanisms for QQE were the flattening of the yield curve and the decline in real interest rates. Yet while real interest rates fell and stock prices rose, domestic capital investment did not increase. This is something that should have been examined in greater depth in the comprehensive assessment. Large corporations responded in a way that is predicted by Tobin's q, i.e., they took advantage of their increased market capitalizations to engage in more overseas M&A activity. However, this mechanism did not function for the SMEs that make up 90% of Japanese companies. Many of these small businesses face problems related to aging owners and business succession, and until these problems are resolved, these companies will continue to sock away retained earnings, keeping demand for funds stagnant. The government also needs to push ahead with deregulation in order to better utilize the financial assets of senior citizens and channel those funds into growth sectors such as medicine, long-term care, agriculture, and robots. As for growth strategies, the authorities need not only a macroeconomic perspective but also a microeconomic perspective on the sectors in which consumption and investment are likely to expand.

・The 15% appreciation of the yen last year in spite of the adoption of NIRP can be attributed to two main factors, in my view: 1) USD/JPY is susceptible to the influence of US economic trends and monetary policy; 2) USD/JPY basis swap spread widened substantially, boosting overseas demand for the yen.

Mr. Kozu:

・Inflation expectations are formed via 1) a kind of mechanism and/or 2) sentiments, which might be similar to what is called the "framing effect" in behavioral economics. Sentiments could change instantaneously in short battles for example, and if an army is repeatedly victorious soldiers would gladly follow their general. But once the army stops making progress, officers need to present soldiers with an easy-to-understand narrative that tells them why they can win this battle. In other words, the appropriate policy response differs depending on whether the issues being faced are considered a long-term battle or a short-term battle, and policymakers need the wisdom to appropriately make selections between the two alternatives.

・In today's keynote address, it was argued that "traditional" monetary policy is to adjust the policy rate, while monetary easing measures devised *after* the policy rate hits the zero bound represent unconventional monetary policy. With the traditional monetary accommodation, the cost that commercial banks incur when placing reserves with the BOJ is reduced by lowered policy rates. That allows banks to reduce lending rates while maintaining their loan-to-deposit spreads to some extent, thereby enabling borrowers to procure funds at lower cost and increasing the demand for new borrowing. This mechanism continues to function even after short-term interest rates fall to zero, since it is possible to fuel new demands by lowering long-term interest rates. However, it is not clear whether negative interest rates have a net positive or a net negative impact on commercial banks. The market's reaction immediate after NIRP was launched reflected concerns that in Japan, where banks are the dominant channel for financial intermediation, policies that raise banks' net costs might not lead to increased overall demands for funds.

2. Future policy issues for BOJ

Inoue (organizer):

・One issue in the outlook for BOJ policy is its control of long-term interest rates. There are a number of key related points, including the optimal level for interest rates, the central bank's purchase of government bonds, and its response in the event of upward pressure on long-term interest rates. A second issue is the BOJ's communications policy. In the wake of the "comprehensive assessment," many have argued that the BOJ has modified its communications strategy or that its policy response function has changed. At the last Financial Markets Panel conference, in March 2016, some in attendance were skeptical that the markets would smoothly accept a change in the central bank's communications policy, but that was not borne out by subsequent events.

Mr. Uchida:

・A comparison of the actual yield curve with the theoretical curve estimated using the Nelson-Siegel model reveals a substantial divergence between the two, particularly beyond the 10y sector. Accordingly, a key point is whether the BOJ's yield curve control policy is designed to control the entire yield curve or whether it is intended to provide only pinpoint control of the 10y yield and short-term rate. Also important is the decision of where to set the concrete target for the 10y bond yield. A comparison of the actual 10y JGB yield with the theoretical value estimated using such variables as inflation, output, short-term interest rates, and US interest rates shows that the two are relatively closely correlated over the past 20 years. Since QQE was launched in 2013, however, the two have diverged sharply, with the gap recently widening to 60bp. The divergence may widen further if Japanese inflation rises to around 1% in the second half of 2017, or if US long-term interest rates climb further. I think the BOJ needs to decide where it sees the optimal level for long-term interest rates. Attention is also going to focus on the financial impact on the BOJ if NIRP is left in place. Since the central bank is buying JGBs at prices above par, it will incur losses when the bonds are redeemed. Its revenues can be estimated by netting these losses against the interest income from its bond portfolio. If the BOJ continues buying JGBs at average yields of minus 20bp, as is the case at present, it is estimated that losses on redemption would fully offset interest income in FY2020 or FY2021. The BOJ would probably respond by drawing down its loss reserves, but in reality that would signify government compensation for its losses, which would make it difficult to continue this policy over the long run.

・Yield curve control also has an impact on financial intermediation. The JGB curve is nearly flat out to the 10y sector, while the euroarea has succeeded in maintaining a positively sloped curve. Compared with their counterparts in the euroarea, therefore, Japanese financial institutions find it harder to earn interest income from the spread between long- and short-term interest rates. And inasmuch as domestic financial institutions hold a large percentage of outstanding JGBs, a decline in long-term interest rates has a comparatively large impact on their earnings. Furthermore, the remaining maturity that maximizes the Sharpe ratio of a JGB portfolio is 17 years, and the return on that portfolio is 1.7%. In the US, meanwhile, the remaining maturity needed to produce a return of 1.7% on a UST portfolio is just two years. In other words, Japanese investors must extend the duration of their JGB portfolios while still settling for low absolute returns. The assets held by financial institutions that are affected by NIRP and the BOJ's yield curve control policy are JGBs and municipal bonds, loans to government-related bodies, and central bank deposits. These three categories account for 30% of bank assets in Japan, versus figures of 20% for US banks and just 10% for European banks.

・As for winding down the yield curve control policy, a first issue is how the BOJ will manage the risk of a future rise in interest rates, including the role of its bond purchases. Second, if it becomes necessary to alter the guidance target for the 10y JGB yield, the

BOJ needs to communicate its approach to investors beforehand in order to prevent market turmoil. Third, maintaining consistency with the MOF's debt management policy is also important. In the US, the FRB and the Department of the Treasury reached an accord after World War II that separated monetary policy from debt management policy, and a similar agreement may be necessary in Japan when it comes time to wind down the current easing regime. Fourth, there is the question of how to make adjustments to the BOJ's massive balance sheet.

Mr. Kozu:

・I think the reason for the market's smooth acceptance of the shift in the BOJ's communications strategy at the "comprehensive assessment" was that the change intuitively made sense to many market participants. When QQE was first unveiled, people believed more or less in the reasoning behind it, and it did have a certain impact as a result. But once they started to view that it would take time to achieve the 2% inflation target, the BOJ changed its monetary policy strategy.

・Corporate profit margins improved in the early days of Abenomics, and there was also a favorable shift in sentiments that was reflected in the rising business conditions DI in the BOJ's Tankan. Nevertheless, Japan's economy was unable to break out of the extended period of low inflation it has been mired in since the 2000s. While the inflation as to services remained modestly positive, falling goods prices weighed on the overall CPI in the past months. A key reason for the decline in goods prices was a widening global output gap (i.e., an excess of supply over demand), especially in the market for commodities–most of all, crude oil. In its medium-term economic outlook released last October, the IMF projected that global economic growth would recover to the level around the historical average of 3.7% in 2018. However, from 2013 to 2015 the IMF projected that growth would return to that level at around same pace within a year. In other words, the assumption that global growth would quickly recover to approximately 4% prompted a glut in the supply of commodities such as oil, copper, and iron ore. If that was a key reason for the decline in goods prices in Japan, it will take time before such underlying factors can be resolved.

・Japanese inflation exhibits a relatively stable long-term correlation with the domestic output gap. When targeting a 2% inflation, therefore, it is important to make a convincing argument that the output gap will gradually shrink over time. The natural rate of interest at which aggregate demand and aggregate supply are in equilibrium is currently estimated to be less than zero. As the population ages and Japanese economy becomes increasingly globalized, we need to keep in mind here that there have been significant changes in the contents of aggregate demand, typically observed in the transformation of wedding halls into funeral parlors, for example, and the loss of the ability to continue manufacturing certain products with competitive prices domestically. If so, it will be difficult to present a persuading narrative for a shrinking output gap unless the policy focus shifts from artificially boosting demand in unsustainable sectors, in order to achieve a balance with existing supply, to fostering industries capable of supplying the kind of new demand that will be needed in the future.

・The relationship between inflation and long-term interest rates during the 1990s and in the period since the 2000s is completely different. In the 1990s, a 10y JGB yield of 5% was corresponding to an inflation rate of 2% on average. Even if this simple relationship is no longer valid, we would expect the 10y bond yield to come under certain upward pressure once the 2% inflation target is within sight. That would make it difficult for the BOJ to maintain its zero target for the 10y yield over the long run, creating the possibility of a sudden surge in long-term yields, with serious implications for the financial system. Completely prohibiting discussion of an exit strategy because it is still "too early" may work in a short period battle but may not be an appropriate strategy for the current drawn-out battle. I would like to discuss how we could avoid serious financial distortions at future meetings of the Financial Markets Panel.

3. Free discussion

Inoue (organizer):

・Why is the fiscal theory of the price level (FTPL) attracting so much attention in our economy these days?

Mr. Watanabe:

・FTPL, which argues that the level of prices is determined by government budget constraints, has received an attention since it was discussed by Princeton Professor Christopher Sims at the Jackson Hole symposium last August. The growing focus on the limitations of monetary policy in the developed economies may also have prompted greater awareness of the possibility of raising prices via fiscal policy.

Inoue (organizer)

・What would be the preferred tools when the output gap is zero and it is not appropriate to use large-scale monetary accommodation solely to raise inflation expectations?

Mr. Fukuda:

・Within Japan, interest in FTPL is limited to certain groups and has yet to spread throughout academia. It can also be argued that this theory applies to countries in fiscal crises such as Brazil and

Mexico but not to developed economies. We need to keep this in mind when thinking about FTPL.

・If policies are divided into those that raise inflation expectations and those that reduce the output gap, the former must be combined with "shock treatment" and market dialogue. While shock treatment can be an effective way to change the regime of expectations, once that regime changes it is important to patiently implement the policies that were announced in advance. There are two concrete approaches to forward guidance: a time-based approach and a data-based approach. The former involves committing to a specific timetable such as "2% in two years." The latter involves committing to a condition such as "until the inflation rate reaches 2%." The latter approach is preferable in theory, but the former is easier to understand and communicate.

・With QQE, the BOJ painted itself into a corner by declaring that it would raise inflation to 2% in two years. While the BOJ still seems determined to achieve the 2% inflation target within the forecast horizon of its outlook of economy and prices, significance of "two years" portion of that pledge may have lost in effect. Historically the market placed a great deal of confidence in the BOJ's growth and price outlooks, and the central bank helped lead the formation of expectations among market participants. But today a clear divergence exists between the outlooks of the central bank and the market. If the BOJ seeks to modify inflation expectations, it needs to rebuild confidence in the central bank by closing this gap and focusing on its communications strategy.

Inoue (organizer):

・The conference in Jackson Hole attracts a great deal of attention from people involved in the market because it is one of the few places where academics and practitioners are able to exchange opinions and has historically been the venue for the announcement of some major policy changes. I think this is part of the reason why interest in FTPL has picked up.

・While a rise in long-term interest rates would negatively affect the BOJ's balance sheet, market participants are divided in their opinions on what sort of impact that would have on the economy and financial sector.

Mr. Uchida:

・Inasmuch as the BOJ's balance sheet is approaching 100% of nominal GDP, a normalization of interest rate levels would require some special measures to avoid drastic impacts. Some experts have proposed that the JGBs held by the BOJ be transformed into floating-rate instruments, but given the need to maintain confidence in the central bank at a time of rising interest rates, I think the debate over this issue would have to be conducted in full view of the public. This also has a direct bearing on Japan's sovereign rating and on the business of domestic financial institutions and, as such, the national debt management policy needs to include not just newly issued revenue bonds but also the existing stock of outstanding JGBs.

Inoue (organizer):

・Where should long-term interest rates be once the 2% inflation target is achieved? The 1990s and the period from the 2000s to the present are very different not only in terms of fiscal risk premia and potential growth rates, but also in the sense that the BOJ is now a stable holder of government debt.

Mr. Kozu:

・The key is how far interest rate levels can be depressed across the curve at a time when negative real long-term interest rates would not last anymore and, if anything, fiscal risk premiums would be added to JGB yields. No matter how many bonds the BOJ can buy on an ongoing flow basis, if there were a flood of sales by existing JGB holders, even the BOJ could not absorb all of them at some point. This may be an extreme scenario, but it is clear that the 10y JGB yield would come under certain upward pressure if inflation settled around the 2% level. The only way for the central bank to contain this pressure would be to use its discretion in day-to-day operations avoiding too much accumulation of disequilibrium.

Inoue (organizer):

・Inasmuch as holdings of JGBs are much more concentrated to some specific segments of investors than those of US or European government bonds, I suspect that there would be few incentives for holders to engage in the actions that could destabilize the market.

Mr. Kozu:

・As long as Japan continues to run current account surpluses, the JGB market─including new issuance─represents a game basically played by resident investors. All that is needed for the game to continue is that such players remain confident in the outcome. But if Japan were to start consistently running current account deficits, a portion of its debt would have to be held by non-residents, and at that point the rules of the current game would break down. The government has time until then to show convincing prospects for fiscal reconstruction.

Mr. Uchida:

・Despite a huge expansion of the national debt, the domestic investors holding more than 90% of outstanding JGB issuance have been rock-solid in their support of the market, and there was always the expectation that the BOJ would serve as a backstop if there were some sort of shock in the market. Once the central bank starts to wind down QQE, however, the assumptions change dramatically, and if inflation actually rises to 2%, financial institutions' loan-to-deposit ratios will probably climb to close to 100% from the current level around 70%. The markets would wonder who will absorb the government's debt in that case? Japan would probably have to follow in the footsteps of Europe and the US in "internationalizing" its debt and persuading, say, Asian central banks to hold a certain amount of it. National credibility then becomes very important. I think the BOJ needs to consider a business continuity plan for the JGB market with an eye on an eventual exit from QQE in order to prevent a sudden destabilization of the market.

Mr. Watanabe:

・Regarding the FTPL, not only has there been relatively little empirical analysis, but changes in the models—e.g., introducing long-term bonds or expanding the model to include open economies—result in different conclusions on how the price level is determined. On this point as well, examination of FTPL as a policy option needs to proceed carefully. I myself am skeptical of any policy that is intended solely to generate inflation. Improvements in the economy require increases in real wages, and for that reason I will continue to keep a close eye on wage trends. Lately I have been conducting quantitative research on Japanese exports, and one of the things I have found is that exports have grown less sensitive to USD/JPY but more sensitive to global economic conditions. Naturally, exchange rates continue to impact on the economy via asset prices, but we need to keep in mind the possibility that it is no longer possible for Japan to stimulate its economy simply by driving the yen lower in an attempt to boost exports.

Mr. Fukuda:

・The government continues to project that it will achieve a primary fiscal balance by the year 2020, but that is becoming more and more unlikely as fiscal deficits keep growing. In that sense as well, the conditions are increasingly ripe for a rise in long-term interest rates. That they have not done so yet is probably due to the unique structure of JGB holdings. Of course we do not know for sure that this holding structure is rock-solid. In the European debt crisis, for example, Spain's fiscal deficit was not in itself particularly large, but speculation that major fiscal assistance would be needed to address the financial crisis sparked a fiscal crisis. I think we need to be very careful when making assumptions about the fiscal situation in Japan.

Inoue (organizer):

・I would like to thank all of the panelists.

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