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The Effects and Side Effects of Unconventional Monetary Policy

Summary of the First Workshop on the "Review of Monetary Policy from a Broad Perspective"

Bank of Japan

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Abstract

On December 4, 2023, the first workshop on the "Review of Monetary Policy from a Broad Perspective," entitled "The Effects and Side Effects of Unconventional Monetary Policy," was held at the Bank of Japan's Head Office. At the workshop, economists and financial and economic experts participated in a lively discussion on the effects and side effects of monetary policy over the past 25 years, focusing on four topics: financial markets, the financial system, the Bank of Japan's balance sheet, and unconventional monetary policy.

Session 1 provided an overview of domestic financial markets over the past 25 years and the impact of monetary policy on the degree of market functioning. Participants discussed whether it would be possible to assess the impact of monetary policy from a broader perspective, for example by broadening the scope of the analysis. Session 2 focused on the impact of the low interest rate environment on the risk-taking behavior of financial institutions. Participants discussed issues such as developments in the demand for funds and the allocation of funds. Session 3 looked at issues concerning central bank finances. Participants discussed topics such as central banks' external communication. Session 4 examined the impact of unconventional monetary policy on factors such as economic activity and prices. Participants discussed a range of issues, including issues not covered in the presentations at the workshop such as the formation mechanism of inflation expectations and linkages between wages and prices.

The panel discussion in Session 5 mainly covered issues such as methods for analyzing the effects and side effects of monetary policy and the mechanisms underlying price developments. Participants pointed out that it was difficult to assess the effects and side effects of unconventional monetary policy in a comprehensive manner given that multiple

* The views expressed at the workshop and summarized in this paper are those of the individual speakers and do not necessarily represent the views of the organizations to which they belong.

policy tools were used at the same time, and that it was therefore important to gather experts with different backgrounds to discuss a variety of issues, as in this workshop. Furthermore, participants also noted that in assessing the impact of monetary policy, it was necessary to deepen the analysis not only of the formation of inflation expectations but also of firms' behavior and its impact on economic developments and the formation of wages and prices.

Contents

1. Introduction

This paper is a summary of the first workshop on the "Review of Monetary Policy from a Broad Perspective" (the Review hereafter), which was held on December 4, 2023, at the Head Office of the Bank of Japan (BOJ). The workshop, entitled "The Effects and Side Effects of Unconventional Monetary Policy," began with opening remarks by BOJ Deputy Governor Shinichi Uchida. In Sessions 1 to 4, staff members of the BOJ's Financial Markets Department, Financial System and Bank Examination Department, and Monetary Affairs Department gave presentations, followed by comments from discussants and discussions with floor participants, addressing four topics: financial markets, the financial system, the BOJ's balance sheet, and unconventional monetary policy. After a panel discussion in the fifth session, the workshop concluded with closing remarks by BOJ Executive Director Seiichi Shimizu (see Appendix 1 for the program).

The remainder of this paper is a summary of the opening remarks, the four presentation sessions, the panel discussion, and the closing remarks. The affiliations of speakers below are as of the date of the workshop, and their honorific titles are omitted (see Appendix 2 for a list of speakers and their affiliations). Teppei Nagano, Head of the Policy Planning Division, Monetary Affairs Department, BOJ, served as moderator for the entire workshop.

2. Opening Remarks

Uchida stated he would like to highlight two issues in discussing the effects and side effects of monetary policy over the past 25 years at this workshop.

He stated that the first issue was how the BOJ should have responded to developments at home and abroad over the past 25 years, given that the monetary easing measures it could take were limited. He asked what alternative measures the BOJ could have taken in the face of deflation and the zero lower bound on short-term interest rates. He further asked whether, given that major overseas central banks had introduced unconventional monetary policies during the global financial crisis (GFC), other central banks could have not pursued such policies. He noted that if there was absolutely no other option but to pursue monetary easing given the change in circumstances, the only issue that remained was the appropriateness of the measures taken, and that in the Review it was desirable to assess the balance of the effects and side effects with an open mind.

The second issue he highlighted was the question what to make of the phenomenon of deflation. After pointing out that there were various opinions on the link between deflation and economic stagnation, he expressed the view that, at the very least, continued low inflation had eliminated the room for monetary easing and created a situation in which demand had remained insufficient for a long period of time. He added that, however, it was not necessarily obvious how the "norm" that prices would remain unchanged had affected the economy. He also noted the need to clarify whether Japan's experience of "moderate but persistent deflation" could be explained by existing economic theory, and what changing this norm would mean.

He concluded his opening remarks by stating that he would like the process for the Review to be as objective and convincing as possible, and that he expected the workshop to generate a wide range of discussions.

3. Session 1: Financial Markets "A Review of Japan's Financial Markets over the Past 25 Years"

(1) Presentation

Presenter Kohei Maehashi provided an overview of price developments in Japan's bond, foreign exchange, and equity markets over the past 25 years, and discussed the impact of the BOJ's monetary policy on financial markets, with a particular focus on its effects on the functioning of the short-term money market and the Japanese government bond (JGB) market.

He started by discussing price developments in the bond, foreign exchange, and equity markets. He pointed out that as the BOJ gradually increased its influence on market interest rates, its presence in the bond market increased, yields on JGBs declined, the correlation between domestic and overseas interest rates weakened, and the yield curve flattened. As for the foreign exchange and equity markets, he first noted that before the introduction of Quantitative and Qualitative Monetary Easing (QQE), there had been occasions where the yen had sharply appreciated and stock prices had plummeted at times of market turmoil, such as the GFC. He further pointed out that after the introduction of QQE, the yen depreciated and stock prices rose as a trend amid the widening differential between domestic and overseas interest rates.

Next, he discussed changes in trading incentives in the short-term money market. He noted that when the BOJ introduced the Complementary Deposit Facility and started applying an interest rate of 0.1 percent to excess reserves, this provided financial institutions eligible to receive interest with an incentive to raise funds at a rate below 0.1 percent from institutions not eligible to receive interest and deposit these funds in their current accounts at the BOJ. He also noted that the introduction of the "three-tier system" under the negative interest rate policy created an incentive for financial institutions to trade with each other depending on their balances in the three tiers.[1] He further noted that this encouraged trading in the short-term money market, leading to an increase in transaction positions.

He then provided a review of the impact of the BOJ's monetary policy on the functioning of the JGB market based on quantitative data and survey results. He started by noting that, according to survey results, from the late 1990s through the early 2000s, the main factors regarding price fluctuations that market participants paid attention to when trading were the "supply and demand of bonds" and "economic trends"; however, after the introduction of QQE, the main factor was "monetary policy," indicating that attention paid to monetary policy had increased. He also noted that while for some time after the introduction of Yield Curve Control (YCC) in 2016, market participants' interest rate expectations generally remained within the range of yield fluctuations under YCC, from around 2022, their interest rate expectations started to exceed the fluctuation range due to the increase in overseas interest rates and the rise in domestic inflation expectations. He argued that this somewhat distorted the bond market. He showed that, in fact, the trading volume in the bond market had declined, albeit with fluctuations, since the introduction of QQE. He further showed that although bid-ask spreads improved for a while after the introduction of YCC as market participants' interest rate expectations generally remained within the fluctuation range, they deteriorated significantly from 2022 onward. In addition, he reported that the functioning of the JGB cash market had declined in terms of the relative levels of yields of bonds with different maturities. He also pointed out that arbitrage relationships between spot and futures markets had become less stable, and scarcity of certain JGB issues in the repo market had increased. Furthermore, he presented the results of a special survey for the BOJ's Bond Market Survey, which highlighted market participants' view that the functioning of the bond market had remained substantially low since the introduction of QQE. He added that the results of regular surveys for the Bond Market Survey suggested that the functioning of the bond market had recently improved compared to a while ago.

Finally, he reported the results of several regression analyses using JGB-issue level panel data to gauge the impact of the BOJ's monetary policy on the functioning of the JGB market. He started by noting that regression results using the trading volume as the

[1] In the three-tier system, the outstanding balance of each financial institution's current account at the BOJ is divided into three tiers: (1) the "basic balance," to which a positive interest rate of 0.1 percent is applied, (2) the "macro add-on balance," to which zero interest rate is applied, and (3) the "policy-rate balance," to which a negative interest rate of minus 0.1 percent is applied.

dependent variable showed that while an increase in the BOJ's JGB purchases led to a rise in the trading volume, an increase in the BOJ's share of JGB holdings and the conduct of fixed-rate purchase operations brought about a decline in the trading volume. However, he added that when the share of JGBs held by the BOJ exceeded a certain threshold, an increase in the BOJ's JGB purchases was likely to reduce transactions. Next, referring to the results of the analysis using bid-ask spreads as the dependent variable, he stated that an increase in the BOJ's JGB purchases resulted in a narrowing of spreads, while a rise in the BOJ's share of JGB holdings led to a nonlinear widening of spreads. Finally, he presented the results of the analysis using the yield curve distortion as the dependent variable, and highlighted that the increase in the BOJ's share of JGB holdings and the BOJ's conduct of fixed-rate purchase operations for consecutive days may have caused distortions in the yield curve.

(2) Comments from the Discussants

Discussant Kentaro Iwatsubo, after commenting that the analysis in the presentation was rigorously conducted, discussed the difficulty of assessing monetary policies. Specifically, he stated that while cost-benefit analysis required enumerating costs and benefits and comparing their importance, evaluating the relative importance of the costs and benefits of monetary policies was extremely difficult. He also pointed out that the measurement of these benefits and costs required a comparison with an economy under optimal monetary policy, as well as with counterfactuals assuming that specific monetary policies had not been conducted, and that the results of such an assessment would substantially depend on the assumptions of the model used for estimation and on value judgements regarding what monetary policy was optimal. He then argued that, ultimately, it was important to carefully examine the costs and benefits of monetary policies one by one, assess them from a comprehensive perspective, and consider what monetary policies were optimal for the Japanese economy.

Next, he pointed out that the regression results on yield curve distortions in the presentation may have been strongly affected by observations for the period from 2022 onward, when yield curve distortions were particularly pronounced. He then proposed to run the estimation excluding observations for 2022 onward in order to identify whether it was the increase in the BOJ's share of JGB holdings or the rise in overseas interest rates that caused the yield curve distortions. In addition, he noted that absolute values should be used for the indicator of yield curve distortions to avoid the misinterpretation that a positive deviation was desirable.

He then highlighted that, with JGB yields being kept low under monetary easing, the price discovery function may have been impaired in a variety of markets. He pointed out that this could have affected, for example, the relationship between corporate credit ratings and credit spreads in the corporate bond market as well as firms' capital costs in the equity market, since the yield on JGBs, as the risk-free rate, served as a reference rate for various assets. Furthermore, he reported current market conditions, observing that financial institutions' dollar funding costs had increased partly due to monetary easing and investment income had been decreasing not only in domestic bond investments but also in overseas bond investments.

Finally, he gave an example in which the BOJ recorded a loss in its financial statements as a result of one of its measures regarding the Securities Lending Facility (SLF), which were implemented to improve liquidity in the market. This measure under certain conditions allowed financial institutions that had borrowed Japanese government securities (JGSs) under the SLF to request a reduction in the amount of JGSs repurchased by the BOJ. He pointed out that implementing this measure was virtually equivalent to selling JGBs, and that similar cases could occur in the future.

Discussant Izuru Kato first noted that this workshop had attracted a great deal of attention from market participants. He then commented that the panel data analysis in the presentation was carried out in a logical and rigorous manner, and that the results of the analysis were in line with market participants' perceptions.

He also pointed out that, unlike during the period of quantitative easing between 2001 and 2006, the current situation in the short-term money market, which allowed financial institutions to trade funds between tiers under the three-tier structure of the current account system, meant that financial institutions maintained institutional arrangements for financing, providing an environment in which the BOJ could smoothly move toward an exit from the negative interest rate policy. He added, however, that business corporates' CP issuance rates were around 0 percent, indicating that credit risk premiums were compressed, and expressed concern that the side effects of prolonged negative interest rates would materialize in the future. He also argued that the Swiss National Bank's current account system adopted after it had ended negative interest rates could serve as a useful reference for the exit phase.

In addition, with regard to the functioning of the bond market, he commented that the SLF and the BOJ's decisions in July and October 2023 to conduct YCC with greater flexibility had contributed to restoring the functioning of the bond market. He added that overseas investors had shifted their funds from the JGB market to the foreign exchange market to engage in yen selling due to the tightening of the terms and conditions for the SLF and the resultant rise in the cost of short selling JGBs, and that some had expressed the view that a trade-off between stable long-term interest rates and a weaker yen had arisen. He also pointed out the possibility that the continuation of large-scale monetary easing may have impaired the price discovery function in the market and thus distorted resource allocation, bringing about a slackening of fiscal discipline, an excessive depreciation of the yen, and a reduced sense of caution by households about rising interest rates.

Finally, he looked back on how the Federal Reserve at one point considered introducing YCC but eventually abandoned the idea, and highlighted concerns that had been raised about YCC, namely, that (1) setting an unreasonable target for long-term interest rates could distort economic activity, (2) the central bank could become unable to control the size and composition of its balance sheet by putting too much emphasis on maintaining the long-term interest rate target, and (3) the central bank's independence could be undermined if a conflict arises with the government's debt management policy during the exit phase. He then noted that such discussions at other central banks could also be useful in evaluating the BOJ's monetary policy.

(3) General Discussion

Regarding discussant Iwatsubo's comment that the regression results for yield curve distortions might be strongly affected by observations from 2022 onward, presenter Maehashi, while agreeing that this might be possible, stated that the results in the presentation were quite robust, since the coefficient on the BOJ's JGB holding share was significantly negative even when using observations up to 2021 only. He further argued that the effects of an increase in overseas interest rates were captured as a fixed effect in the framework of the regression analysis, and therefore, it could be conjectured that such effects had also contributed to the distortion in the yield curve. In response to Iwatsubo's comment that absolute values should be used for yield curve distortions, he replied that it should be noted that this was not a normative analysis but a descriptive analysis, and that the reason for not using absolute values for yield curve distortions was to properly assess the impact of JGB purchases on the shape of the yield curve, including the direction of changes.

In response to Iwatsubo's comment that the decline in the functioning of the JGB market may have spilled over to other markets, co-presenter Tomiyuki Kitamura stated that while this was possible, the analysis did not address this issue since its focus was the impact of monetary policy on the functioning of the JGB market. He then pointed out that it was important to weigh both the effects and side effects of policy measures in evaluating monetary policy. In response to the comment by discussant Kato expressing concern about the possibility that the adverse effects of the reduction in credit risk premiums induced by QQE and YCC could materialize in the future, he noted, referring to analyses in the Financial System Report, that no major financial imbalances had been observed thus far and added that it was necessary to continue to closely monitor future developments.

From the floor, Kenichi Ueda asked how the BOJ assessed the impact of its ETF purchases on the stock market. Keiichiro Kobayashi suggested the BOJ review in some way the impact of the decline in JGB yields on fiscal discipline and the cooperative relationship between the BOJ and the government. Tsutomu Watanabe raised the following three questions: (1) Through what channel and to what quantitative extent did the decline in the functioning of financial markets shown in the presentation affect economic welfare? (2) What would have happened to the Japanese economy without large-scale monetary easing, and in what sense would that have worsened people's economic welfare? And (3) if the zero lower bound on interest rates could be overcome, how would the discussion in this session and the Review as a whole change? Moreover, Ryutaro Kono argued that in assessing monetary policy, it might be useful to do so also from the perspective of examining the future costs that would be incurred. Mitsumaru Kumagai stated that there was a need to further extend the scope of analysis when examining the side effects of monetary policy in the future. He noted that, in examining its side effects on financial markets, the effects on corporate bond markets, stock markets, and foreign exchange markets were also worth studying. He added that it was important to use - to the greatest extent possible - the same criteria in weighing the costs and benefits of monetary policy, including when evaluating topics not directly related to financial markets such as the loosening of fiscal discipline and the stagnation of potential growth due to a slowdown in the economic metabolism. Takahiro Hattori asked if it would be possible to conduct a quantitative analysis of the impact of the three-tier system under the negative interest rate policy on liquidity in the short-term money market.

Co-presenter Kitamura thanked participants for the wide variety of comments and noted that the presentation did not necessarily cover all the possible issues, since the session focused on financial markets. In response to Watanabe's comment on the relationship between the decline in the functioning of financial markets shown in the presentation and social welfare, he stated that the adverse impact of the decline in market functioning on social welfare may so far have been outweighed by the positive effects of monetary easing on the macro economy, while noting that this was only his personal opinion.

4. Session 2: Financial System "Banks' Risk-Taking Behavior under the Low Interest Rate Environment"

(1) Presentation

Presenter Hiroki Inaba noted that the low interest rate environment of the past 25 years had encouraged banks to take on various risks through the portfolio rebalancing channel. He then stated that this presentation considered the impact of the low interest rate environment on the financial system by examining changes in banks' risk profiles.

He started by noting that, except for brief periods, financial conditions were accommodative on the whole throughout the past 25 years. He added that periods of "severe" lending attitudes as perceived by firms coincided with the period of balance sheet adjustments and the disposal of non-performing loans from the late 1990s and the GFC in the late 2000s – periods in which the BOJ provided ample liquidity. He then noted that examining the financial cycle based on the heat map and the financial gap showed that over the past 25 years no financial imbalances similar to those observed during the bubble period had built up. However, he added that the expansionary phase of the financial cycle, as seen in the financial gap, had already lasted 10 years.

Next, he discussed the increase in lending to middle-risk firms as a notable change in banks' risk-taking behavior under the low interest rate environment. He pointed out that after the bursting of the bubble, the corporate sector started to register excess savings against the backdrop of a decline in growth expectations and a steady decrease in the number of firms, resulting in a decline in the demand for borrowing. He added that structural changes in the economy that lowered the natural rate of interest also contributed to lower lending rates of banks. He then argued that banks turned to lending to middle-risk firms as the next best alternative, which was expected to increase lending volume even if loan profitability was low, and that lending competition among banks also intensified. He noted that while these developments made it easier for firms to raise funds at low interest rates, they also led to a historical decline in loan profitability for banks and a concentration of lending in certain industries, such as the real estate sector.

Further, the expansion of interest rate risk-taking was another noteworthy change in banks' risk-taking behavior. He highlighted that the duration of loans to firms and households had increased, as had the remaining maturity of bonds held by banks. He pointed out that especially at regional banks and *shinkin* banks, the remaining maturity of loans and bonds had increased as a trend. He added that the amount of interest rate risk associated with loans and securities investments had risen to a historical peak. He noted that while this increase in the amount of interest rate risk on the asset side was offset by an increase in core deposits, there was uncertainty about the stickiness of deposit. He argued that factors such as the spread of online banking, competition in deposit markets, and depositor confidence could all affect the stickiness of deposits.

Finally, he examined banks' profitability and loss-absorbing capacity over the past 25 years. He highlighted that banks' overall net interest income had declined by one-third over the past 25 years, and pointed out that the main reason for this decline was the fall in interest margins in the low interest rate environment. He argued that, in addition to the impact of monetary policy, structural factors such as the decline in the natural rate of interest and intensifying lending competition among banks also played a role in the fall in interest margins. However, he noted that low interest rates also stimulated demand for borrowing, which underpinned banks' net interest income to some extent. Regarding banks' loss-absorbing capacity, he noted that although banks had sufficient capital to perform financial intermediation activities, their capital adequacy ratios under stress scenarios had been declining. He added that given the low profitability of the banking sector, it was not easy for banks to restore their capital once damaged, even if they could withstand a major one-off stress event.

Based on the above, he judged that various factors, including the impact of monetary policy and structural changes in the economy and financial system, had contributed to the change in banks' risk-taking behavior in the low interest rate environment. He stated that the BOJ would continue to carefully monitor the risk of a contraction or overheating in the financial system.

(2) Comments from the Discussants

Discussant Kenichi Ueda began by presenting the issues from the perspective of the central bank's role in maintaining the stability of the financial system. He pointed out that while the main objective of monetary policy was price stability, the central bank was required to function as a "lender of last resort" in the event of a liquidity crisis for sound banks. He noted that Japan had experienced various shocks from time to time, such as the burst of the bubble, the Great East Japan Earthquake, the COVID-19 pandemic, and geopolitical risks, and that it was important to distinguish the "firefighting," "recovery," and "prevention" phases during a crisis and conduct policy accordingly. He also argued that a prolonged period of "firefighting" could lead to various side effects. Citing his own research, he also pointed out that low interest rates could distort banks' selection of firms in a nonlinear manner.

Discussant Nobuyoshi Yamori stated that he generally agreed with the presentation. He highlighted that interest margins in regional lending and SME lending had shrunk and that loan competition among banks had intensified. Referring to survey results, he then noted that regional banks had secured profits by increasing loan volumes, increasing non-interest income, reducing expenses, and strengthening relationship banking. He also noted structural weaknesses in the demand for funds reflecting, for example, firms' hesitancy to borrow due to banks' reluctance to lend after the burst of the bubble and a loss of proactive management on the part of managers due to population aging. He further stated that the profitability of banks was also important for maintaining financial system stability. He then argued that even if banks were unable to generate sufficient firm demand for funds, how they could contribute to firm growth was an important issue.

(3) General Discussion

Presenter Inaba noted that the comments by the two discussants had in common that they focused on distortions in the allocation of funds under the low interest rate environment. He reviewed their argument that, in addition to the impact of the low interest rate environment, structural factors such as changes in firms' demand for funds had an impact as reasons for the distortions, which was in line with his presentation. In response to the point made by discussant Kenichi Ueda regarding financial system stability and the role of the central bank, Inaba stated that it was necessary to correctly understand the mechanisms and incentives, and that he would continue to delve deeper into these issues. In response to the point made by discussant Yamori that banks' profitability was important from a financial system perspective, Inaba stated that if low profits persisted for a prolonged period, there was a risk that financial intermediation could move toward either a contraction or overheating.

From the floor, Kosuke Aoki stated that the changes in bank behavior under the low interest rate environment were indeed as described in the presentation, and asked whether the decline in financial market functioning reported in Session 1 had brought about any changes in banks' lending behavior. Hajime Tomura pointed out that it was difficult to assess the total impact of low interest rates on the financial system as a whole without examining the impact of rising interest rates in the future. He also stated that if the only effect of monetary easing was an increase in real estate-related lending, monetary policy may not address the country's overall sluggish demand. Kobayashi asked whether, given that survey results indicated that the Cash Flow DI for small and micro businesses currently remained negative, it was possible to deepen the analysis of such businesses from a social and political perspective. Kato noted that even though monetary policy had pushed down interest rates, it had not necessarily stimulated demand for funds that would lead to future productivity growth, and pointed out that the so-called reversal interest rate may have been reached.

Daisuke Miyakawa, pointing out that amid the low interest rates and low profits banks had been forming alliances and merging, noted that structural changes in the banking industry were also an important topic. Regarding the allocation of funds, Kono wondered whether the concentration on real estate-related lending was desirable in the long run, and whether instead lending that encouraged the creation of value-added through intangible assets should have been promoted. He also pointed out that both of the BOJ's objectives, price stability and financial system stability, were important and should be addressed on a case-by-case basis in response to economic and price conditions. Kumagai noted that other issues to be discussed included where the boundary between fiscal policy and monetary policy was and whether monetary policy should be allowed to be involved in the allocation of private-sector resources. Yasunari Ueno raised the issue of the importance of revising the indicators adopted in the heat map, since imbalances might build up in new ways, such as with the inflow of foreign funds. Kyohei Morita pointed out that under a situation in which the corporate sector had excess savings, monetary policy was less effective and fiscal policy and growth strategies were more important.

In response to these questions, co-presenter Naohisa Hirakata argued that some of the questions were related to the issue of the allocation of funds in a low interest rate environment, and stated that although their presentation also addressed the phenomenon of increased lending to middle-risk firms, it was necessary to continue to deepen the theoretical and empirical analysis. He further explained that the Bank assessed financial imbalances not only based on the colors in the heat map but also monitored the underlying mechanisms and the functioning of financial intermediation from multiple perspectives.

In response to a question from online participant Etsuro Shioji about whether there had been a change in bank behavior during the current phase of rising long-term interest rates, Hirakata noted that while there was some variation in banks' responses, there had been a move among banks to rebalance portfolios to reduce the risk of valuation losses.

5. Session 3: The Bank of Japan's Balance Sheet "Central Bank Finances and Monetary Policy Conduct"

(1) Presentation

Presenter Haruka Yoshimura outlined how the BOJ since the late 1990s as well as major overseas central banks since the outbreak of the GFC had employed unconventional monetary policies, both in terms of quantity and quality. He then noted that such unconventional monetary policies accompanied by large-scale balance sheet expansions could affect central bank profitability during the phase of monetary tightening, and that there had been a debate on the potential impact on central banks' ability to conduct monetary policy and, by extension, confidence in their currencies. Against this background, their paper reviewed the central bank's balance sheet and structure of profits, the mechanisms through which the expansion and contraction of a central bank's balance sheet affected its profits, the debate over central bank finances, and recent developments at overseas central banks. In addition, he summarized the BOJ's basic thinking on central bank finances and monetary policy conduct.

First, regarding the central bank's balance sheet and profit structure, he explained that the central bank earned interest income from government bonds, etc., it had purchased, while current deposits (required reserves) and banknotes, which were liabilities, were not subject to interest, so this structure usually allowed it to generate stable profits (seigniorage).

He then provided an overview of the mechanisms through which the expansion and contraction of the central bank's balance sheet affected its profits. He explained, with reference to the BOJ's financial position, that during the phase of balance sheet expansion, interest income increased in line with the increase in JGB holdings, etc., and overall profits increased. On the other hand, when the BOJ eventually raises interest rates during a phase of monetary policy tightening and the balance sheet shrinks, interest payments initially would increase and profits decline. However, under normal circumstances, profits would recover eventually due to the decrease in interest payments resulting from the decrease in excess reserves and the increase in interest income due to the replacement of JGBs with higher-yielding ones. He also noted that a rise in market interest rates would lead to a decline in the market value of JGB holdings; however, since the BOJ employed the amortized cost method, this would not have a direct impact on the periodic profit/loss unless the JGBs were sold. He concluded that unrealized gains/losses and actual profits/losses therefore needed to be regarded as two different things. He also showed that the degree to which profits fluctuated during a balance sheet contraction phase varied greatly depending on the size of the balance sheet, the extent to which proceeds from the redemption of JGBs at maturity were reinvested, developments in short-term and long-term interest rates, and developments in banknotes in circulation. He also pointed out that simulations of the BOJ's finances published by experts showed a wide range of results depending on how scenarios were set up, and that it was necessary to pay attention to what assumptions were made when looking at those simulations.

Next, he reviewed the debate over central bank finances. He pointed out that it was important to consider decreases in the central bank's profits and capital from the perspective of how they affected the conduct of monetary policy under a fiat currency system. He indicated that there were two schools of thought: one was that they adversely affected monetary policy conduct, and the other was that they did not. He noted that there were also a variety of positions regarding the theoretical reasons underpinning these views. He added that while there had been a number of studies considering central banks' soundness from the perspective of their financial independence from the government as well as empirical research based on econometric techniques, no consensus had been reached.

Moreover, he reviewed recent developments at overseas central banks as case studies. He explained that major overseas central banks had recently been tightening monetary policy rapidly and substantially in response to inflation, leading to decreases in their profits and capital, but that these central banks had emphasized in their external communication that temporary losses or negative equity did not impede their ability to conduct monetary policy. He also pointed out that these central banks argued that assessments of their large-scale easing policies should focus on the positive effects on the economy overall, noting that while profits were currently declining, they had been increasing during the past balance sheet expansion. At the same time, he highlighted that these central banks, in recognition of the importance of central bank capital, had maintained their stance to work on restoring their capital over time in order to avoid adverse effects such as doubts about their ability to conduct monetary policy and a decline in their credibility. Under these circumstances, he observed that no particular impediments had arisen in any of the countries or regions in terms of ensuring confidence in their respective currencies through the appropriate conduct of monetary policy.

Finally, based on the above, he presented the following summary of the relationship between central bank finances and monetary policy conduct:

> "Under a fiat money system, confidence in the currency is not directly ensured by the assets held by the central bank or its financial soundness, but by the appropriate conduct of monetary policy with the aim of achieving price stability. Based on this premise, central banks are generally set up in such a way that they make profits from a somewhat longer-term perspective and, moreover, can supply their own means of payment and settlement. Therefore, even if the central bank temporarily makes losses or has negative equity, this does not impede its ability to conduct monetary policy. That noted, this does not mean that the central bank can run up unlimited losses and negative equity. If the central bank's financial risks become a matter of undue attention and give rise to unnecessary confusion over monetary policy, there is a risk that this

could lead to a decline in its credibility. Therefore, ensuring the soundness of the central bank's finances is important."

He added that central bank finances differed from those of private financial institutions and business corporations in some respects and were not easy for non-experts to understand. On the other hand, he noted, they were an extremely important topic with regard to confidence in a currency and central bank credibility, so it was appropriate to try to explain them carefully.

(2) Comments from the Discussants

Discussant Ikuko Samikawa expressed the view that downward pressure on central bank profits during the exit phase of unconventional monetary policy was a phenomenon observed around the world. She added that when looking at the BOJ's finances, it was necessary to take into account Japan's unique circumstances such as its severe fiscal situation and the BOJ's holdings of ETFs.

She also explained the importance of external communication with regard to the BOJ's finances, and recognized the importance of explaining to the public that while the BOJ's profits would be under downward pressure during the exit, the BOJ's ability to conduct monetary policy would not be impeded by losses or negative equity, as also shown by the example of overseas central banks. She also pointed out that, from this perspective, it was helpful to present simulations of the BOJ's finances before the exit phase, but added that this was not easy. Specifically, she pointed out that the results of such simulations would greatly depend on the assumptions used, and that publishing its simulations could bind the BOJ's policy conduct. Furthermore, she also expressed hope for further theoretical research in academia, given that it had become difficult to determine the optimal size of central banks' balance sheets due to the balance sheet expansion in recent years, and the sensitivity of the demand for banknotes to interest rates was becoming more difficult to gauge due to structural changes in society, such as financial digitization, population aging, and increasing longevity.

In addition, she argued that, given the large increase in the BOJ's profit transfers and tax payments to the government during the balance sheet expansion, it would be a good idea to consider how to deal with losses incurred by the BOJ. With regard to the BOJ's ETF holdings, she stated that, given the amount of market risk involved and the size of dividend receipts, there might be room to use them to underpin the BOJ's financial soundness. She further observed that, in any case, given that ensuring the soundness of the central bank's finances was not the objective of monetary policy, losses incurred as a result of aiming for price stability should be assessed from a comprehensive perspective that included the impact of those policies on the real economy.

Discussant Tomura then examined the social costs of central bank accounting losses that could arise during the exit phase and the importance of confidence in the currency.

To examine the social costs of central bank accounting losses, he started by looking at central bank accounting losses from a flow of funds perspective and classified them as net cash flows to the private sector. He then argued that since such net cash flows were similar to the government deficit of a consolidated government, if output in the economy is given, they could lead to a decrease in the value of the currency. He suggested that, based on this line of reasoning, central bank accounting losses could have social costs apart from those linked to a loss of credibility of the central bank.

However, he pointed out that the social costs discussed here were based on a partial equilibrium perspective taking output as given, and that when evaluating unconventional monetary policies, the total costs and benefits should be compared. He then suggested that given that social benefits did not take the form of cash flows to the central bank as in the private sector, thus making comparisons difficult, an appropriate approach would be to first determine policy objectives and then consider minimizing expected accounting losses when selecting policy tools. He also argued that it would be inappropriate to take policy actions to compensate for these losses as the central bank's accounting losses were the result of past policy actions, and the central bank's finances did not constrain its ability to perform its operations.

Next, regarding confidence in the currency, he highlighted the importance of the specific legal system underpinning the use of a currency. He explained that Article 46, Paragraph 2 of the Bank of Japan Act stipulated that banknotes shall be used as legal tender, that is, they are a legally defined payment instrument, regardless of the BOJ's financial position, and that the BOJ could flexibly supply its own means of payment. He then stated if the public fully understood these characteristics of the central banking system, this would reduce the risk of financial market turmoil even if the BOJ's profits came under downward pressure.

(3) General Discussion

Presenter Yoshimura pointed out that unconventional monetary policies needed to be assessed from multiple dimensions. Specifically, he suggested there were the following three dimensions: the impact on total central bank finances through the balance sheet expansion and contraction pointed out by discussant Samikawa; the impact from a consolidated government perspective as highlighted by discussant Tomura; and, going beyond the impact on the central bank's finances and the consolidated government, the impact on economic activity and prices. He added that it was important to conduct careful analyses, assessments, and discussions taking each of these dimensions into account.

Next, he agreed with the basic thinking outlined by Samikawa and Tomura regarding the soundness of central bank finances. He also agreed with the characteristics of the central banking system pointed out by Tomura, and stated that it was appropriate for the policy authorities to recognize risks and respond appropriately. Noting that the BOJ had taken certain measures in 2015 in the form of expanding measures pertaining to provisions for losses on bond transactions, and that various measures had been taken by overseas central banks, he added that it was important to continue to take appropriate and realistic measures taking the situation in Japan into account.

He also agreed with the importance of external communication regarding central bank finances. Regarding the publication of simulations of the BOJ's finances, he agreed with the advantages and disadvantages pointed out by Samikawa, and highlighted that there was quite some variation in the content and approach of overseas central banks in their external communication.

Finally, he noted that the optimality of central bank balance sheets and developments in banknotes in circulation, issues highlighted by Samikawa, were areas of growing interest as overseas central banks continued to reduce their balance sheets. He stated that these were topics that needed to be further examined going forward, and that suggestions from academics were very important, since it was not possible to simply follow past precedents.

From the floor, Kato, Kono, Morita, and Kenichi Ueda expressed their views on the impact of the government's creditworthiness from a consolidated government perspective and fiscal discipline on confidence in the currency, the autonomy of monetary policy, and the concept of central bank profits. One idea presented by Kono was to treat central bank profits and losses through the cycle of monetary easing and tightening over the years. In response, co-presenter Akira Tsuchikawa stated that fiscal credibility was a prerequisite for confidence in the currency, and as such a prerequisite for the central bank to conduct monetary policy in order to achieve price stability. In addition, Ryo Jinnai highlighted the importance of carefully explaining central bank finances in order to avoid unnecessary confusion over monetary policy due to a focus on risks to the central bank's finances.

Online participant Shioji commented that, given the risks from a political economy perspective, it might be necessary to have a framework for central bank finances that ensures that the conduct of monetary policy is unaffected by the central bank's finances.

Meanwhile, online participants Shigenori Shiratsuka and Yusuke Nakamura asked about the possibility of selling JGB holdings, about the future of the rule – currently suspended – that the BOJ's JGB holdings should not exceed banknotes in circulation, about developments in ETF holdings, and other issues. To these questions, Tsuchikawa responded that future monetary policy conduct would depend on the economic, price, and financial situation at that time and the outlook.

6. Session 4: Unconventional Monetary Policy "The Effects and Side Effects of Unconventional Monetary Policy"

(1) Presentation

Presenter Hiroki Yamamoto gave a presentation on the impact of Japan's unconventional monetary policy since the late 1990s on factors such as long-term interest rates, economic activity, and prices, based on the extant academic literature on unconventional monetary policy in Japan and abroad.

He started by focusing on the natural rate of interest, that is, the real interest rate that is neutral to economic activity in that it neither accelerates nor decelerates economic activity and prices. He pointed out that (1) natural rates abroad had been on a downward trend, (2) the reasons were various structural factors such as demographics and globalization, and (3) estimates of the natural interest rate could differ considerably depending on the estimation method and therefore needed to be viewed with some latitude. He then presented estimates of Japan's natural rate of interest obtained by him and his co-researchers using a variety of methods, and noted this was also on a long-term downward trend. He argued that these results showed that the introduction of unconventional monetary policy in Japan in the late 1990s coincided with a decline in the natural rate of interest and diminishing room for monetary easing.

He went on to observe that government bond purchases, the main policy tool of unconventional monetary policy, lowered long-term interest rates through two transmission channels: the term premium channel and the expected interest rate (expected future short-term interest rate) channel. He also noted that which channel was more important depended on the details of the policy and the structure of financial markets. He then presented the results of an analysis decomposing changes in long-term interest rates in Japan into the contribution of changes in term premiums and expected interest rates using a model for the term structure of interest rates, and examined the determinants of interest rate changes around the time of monetary policy changes. He pointed out that the estimation results indicated that while the decline in long-term interest rates at the time of the introduction of Comprehensive Monetary Easing in 2010 and of QQE in 2013 was mainly due to a decline in term premiums, the decline in long-term interest rates at the time of the introduction of the negative interest rate policy was mainly due to a decline in expected interest rates. He argued that this analysis showed that the BOJ's various unconventional monetary policy measures had been effective in lowering long-term interest rates, but the transmission channels differed during the various phases.

Next, he presented a review of the literature assessing the impact of unconventional monetary policies on economic activity and prices. He observed that many of the studies on the United States, the United Kingdom, and Europe provided evidence of the easing effects of unconventional monetary policies. Further, he noted that among studies on Japan covering the period before the introduction of QQE, along those showing that unconventional monetary policies had easing effects, there were also a fair number showing that the effects were limited or highly uncertain. In contrast, most of the studies covering the period after the introduction of QQE showed that they to some extent had easing effects on economic activity and prices.

He then presented the results of an analysis conducted by him and his colleagues to examine the impact of unconventional monetary policies in Japan on factors such as economic activity and prices. Based on the existing literature, the analysis used shadow rates estimated employing a model for the term structure of interest rates that aggregated information on the entire yield curve as a policy proxy. Specifically, using a factor-augmented vector autoregressive (FAVAR) model – a time-series model capable of analyzing the relationship between monetary policy and a large number of economic variables – they conducted counterfactual simulations in which the effects of unconventional monetary policies were examined by looking at the differences between the actual paths of economic variables and the hypothetical paths in the absence of unconventional monetary policies. The results suggested that the unconventional monetary policies conducted in the early 2000s and after the GFC each raised the year-on-year rate of change in the consumer price index by about 0.3 percentage points, while the introduction of QQE raised it by an additional 0.7 percentage points.

Furthermore, he reviewed the literature suggesting that unconventional monetary policy could have unintended negative effects on factors such as economic activity, prices, and the financial system, and that these negative effects could undermine the overall effectiveness of monetary policy. Using the counterfactual analysis, he provided the following considerations on the impact of unconventional monetary policy on financial institutions' profits, the potential growth rate, and distributional aspects. First, with regard to financial institutions' profits, he noted that while unconventional monetary policy had led to a substantial increase in loans outstanding, it had also resulted in a continuous decline in lending margins, squeezing financial institutions' profits in some respects. Second, with regard to the impact on potential growth, he noted that unconventional monetary policy may have boosted the capital stock and employment, and therefore may have lifted the potential growth rate. Third, with regard to the income distribution, he highlighted that the results of the analysis showed that unconventional monetary policy had improved the employment and income situation and therefore may have to some extent have reduced income inequality. He further added that studies suggested that there was no robust link between monetary policy on the one hand and income and consumption inequality on the other.

Finally, he argued that the literature review and their analysis showed that unconventional monetary policy in Japan had helped to boost economic activity and prices to some extent, and that especially after the introduction of QQE it ensured that Japan did not suffer from deflation. Moreover, while capital accumulation and labor market improvements had clearly made progress, the decline in lending rates had reduced financial institutions' profits. He concluded by observing that it was necessary to delve deeper into, and analyze in a comprehensive manner, issues such as changes in medium- to long-term inflation expectations and wage and price dynamics, which were not explicitly examined in their analysis.

(2) Comments from the Discussants

Discussant Junko Koeda pointed out that given that unconventional monetary policy comprised a variety of policy tools, it was useful to assess its effectiveness using multiple indicators. She noted that the natural rate of interest, which served as a benchmark for assessing the degree of monetary easing, term premiums, which made it possible to directly observe the effects of government bond purchases, and the shadow rate, which comprehensively captured information on the entire yield curve, were all useful indicators, because they captured different aspects of unconventional monetary policy. However, since these indicators could not be observed directly, it was important to estimate them using multiple models and treat them with some latitude, as was done in this presentation. She then argued that while many estimates of the natural rate of interest had in common that they showed a pattern where the natural rate of interest declined in the 1990s and then remained low, movements differed depending on the particular phase and needed to be regarded with caution based on the nature of the model used. Moreover, she highlighted that the fact that term premiums declined as the BOJ purchased JGBs was consistent with theories such as the preferred habitat hypothesis, and that, given this, it was necessary to pay attention to factors such as the supply and demand for government bonds and their maturity composition.

She further pointed out that the shadow rate was a useful indicator to comprehensively assess the impact of unconventional monetary policy and that the approach in the analysis using the shadow rate as a policy proxy to examine the impact of policy on factors such as economic activity and prices was appropriate. She then noted that the positive effects of unconventional monetary policy on inflation found in the analysis were consistent with preceding studies and her own research and therefore seemed plausible. She added that there was room for further discussion on issues such as the persistence of policy effects and the assessment of the benefits of unconventional monetary policy relative to its costs.

Finally, she noted that there were transmission channels of unconventional monetary policy other than those presented in the analysis, and that it was therefore necessary to assess the effects through channels such as the exchange rate channel and the asset price channel. Furthermore, she pointed out that it was also necessary to examine the impact taking factors such as changes in medium- to long-term inflation expectations and wage dynamics into account. She also noted that there was a need for further discussion on the fact that unconventional monetary policy entails a large margin of discretion and was prone to time inconsistency problems. Finally, she touched on the link between the recent level of the shadow rate and the duration of zero interest rates.

Next, discussant Kobayashi focused on the reasons for the need for unconventional monetary policy in Japan. Specifically, he pointed out that in addition to the structural factor of a long-term downward trend in Japan's economic growth rate, another possible reason for the decline in the natural interest rate may have been Japan's banking crisis in the 1990s. He added that, in any case, given the low level of the natural interest rate, there was no room for anything other than an unconventional monetary policy response. He suggested that, on the other hand, from an overall macroeconomic policy perspective, one option might have been to remove downward pressure on the natural interest rate through structural reforms and fiscal policy.

Further, with regard to the transmission channels of unconventional monetary policy, he pointed out that in the literature in the early 2000s it was assumed that one transmission channel was the impact it had on inflation expectations. In contrast, the analysis presented in this session assumed that the main channels were changes in expected interest rates and terms premiums, raising the question whether it should also be examined how the inflation expectations channel operated.

Finally, turning to side effects of unconventional monetary policy, he introduced studies suggesting that while a temporary reduction in nominal interest rates had a stimulative effect on the economy, a prolonged period of low interest rates could actually reduce economic growth by, for example, depressing the rate of productivity growth.

(3) General Discussion

Presenter Yamamoto noted that the possibility pointed out by discussant Kobayashi that the natural interest rate could decline due to factors such as a financial crisis had been mentioned in the literature and that it was possible that such factors may also have contributed to the decline in the natural interest rate in Japan. Next, regarding inflation expectations as a transmission channel, he replied that although the analysis did not address this issue explicitly, one could argue that since the FAVAR model included a large number of variables, the analysis captured the effect of inflation expectations indirectly. Moreover, while he recognized that, as highlighted by discussant Koeda, it was important to estimate the policy effects through each transmission channel, it was difficult in his view to identify the effects of individual policies when multiple policies were pursued simultaneously. Further, with regard to the argument by Kobayashi that monetary may have lowered productivity growth, he responded that monetary policy had likely helped to support economic growth, given the easing effects on factors of production and production itself shown in the presentation in this session. In addition, with regard to Koeda's point that the assessment of monetary policy also needed to take the costs into account, he replied that this was a difficult topic, but one that needed to be better understood.

From the floor, Kazuo Ueda asked Koeda and Kobayashi for their views on the impact of unconventional monetary policy on inflation expectations. Koeda responded that while she agreed that it was important to consider inflation expectations in the analysis of unconventional monetary policy, inflation expectations could not be observed directly, so that it was necessary to use a variety of indicators. Meanwhile, Kobayashi replied that Japan had experienced a fair number of negative economic shocks, such as the GFC and the Great East Japan Earthquake, which may have prevented unconventional policy alone to have the effect on inflation expectations that economic theory might lead one to expect.

Next, Kato asked how the effects and costs of policy could be comprehensively assessed. Co-presenter Sohei Kaihatsu responded that while the BOJ and foreign central banks such as the European Central Bank were also debating this issue, no analytical framework for comprehensively assessing the effects and side effects of policies had yet been developed, so that this was an issue that was not easy to resolve. Meanwhile, Kenichi

Ueda suggested that it was also necessary to take the nature of shocks to the economy such as Japan's banking crisis in the 1990s and the GFC in the late 2000s into account in assessing the impact of unconventional monetary policy. Kaihatsu agreed that in assessing the impact of unconventional monetary policy it was necessary to take the level of economic activity at each point in time into account.

Relating his own experience when he worked at a private bank that firms' demand for funds was sluggish even when lending rates fell, Naoki Tamura observed that he had the impression that the effects of QQE in the analysis seemed to be much larger than his own experience suggested and asked how this could be reconciled. In addition, he expressed the view that it was important to analyze the effects of individual policies, such as the negative interest rate policy, and apply the findings in the conduct of monetary policy in the future. Kaihatsu responded that it might be useful to examine the characteristics of firms and industries that had increased borrowing as a result of monetary easing in order to gain a deeper understanding of unconventional monetary policy. He also noted that there was room for deepening the analysis of individual policy tools such as the negative interest rate policy. Finally, Watanabe noted that the debate over unconventional monetary policy around 2000 among experts such as Michael Woodford highlighted that inflation expectations were a more important transmission channel than the decline in nominal long-term interest rates. He added that he was uncomfortable with the fact that the analysis presented in this session did not discuss inflation expectations as a transmission channel of unconventional monetary policy. In response, Kaihatsu explained that which transmission channels of unconventional monetary policy were more important had changed over time. He also noted that recent studies had focused on the monetary easing effects of government bond purchases through the reduction in term premiums on long-term interest rates.

7. Session 5: Panel Discussion

Moderator: Kosuke Aoki (The University of Tokyo)
Panelists: Mototsugu Shintani (The University of Tokyo)
Taisuke Nakata (The University of Tokyo)
Tomoko Hayashi (Cabinet Office)
Seiichi Shimizu (Bank of Japan)

7.1 Panel Presentations

Moderator Aoki began by asking the panelists if today's discussion on unconventional monetary policy had provided them with any new insights or reconfirmed the importance of certain issues, and each panelist presented their views.

(1) Mototsugu Shintani (The University of Tokyo)

Panelist Shintani, as a researcher involved in the empirical analysis of macroeconomic data, presented his views from this perspective, focusing on the analysis of macroeconomic data. He pointed out that in macroeconomics, where it was difficult to conduct experiments and observational studies were common, it was important to assess policies using counterfactual approaches, and stated that, in terms of statistical methods, the analysis presented in Session 4 was an appropriate evaluation method. He also highlighted the importance of properly recognizing short- and long-term effects in policy evaluations, and that an impulse response function approach, as used in the study presented in the session, was useful for such an analysis. He also pointed out that when evaluating policies, it was necessary to separate the effects of policy changes from the effects of other exogenous factors. With regard to the finding of the analysis presented in Session 4 that unconventional monetary policy had had effects on output and prices, he noted that his own research using high-frequency data to identify monetary policy shocks also showed that monetary easing over the past 25-30 years had had statistically significant effects on output and prices.

He also pointed out that the analysis presented in Session 4 was not based on a structural economic model and thus did not identify the transmission channel of unconventional monetary policy. He further noted that in order to assess individual policies such as forward guidance, quantitative easing, and the negative interest rate policy, it was necessary to conduct analyses using structural models such as general equilibrium models. He added that it should be noted, however, that there was a risk that analyses based on a specific model carried the risk of resulting in incorrect policy assessments if there were errors in the model.

(2) Taisuke Nakata (The University of Tokyo)

Panelist Nakata stated that today's discussion had reminded him that when considering the future conduct of monetary policy, it was important to discuss this not only from the perspective of the effects and side effects of monetary policy, but also with an eye on the objective function (the order of priority of policy objectives) and social welfare, as monetary policy affected a wide range of events. He also argued that it was necessary to avoid focusing only on specific and easily measurable events when examining effects and side effects. He then noted that, given the difficulty in identifying the effects and side effects of monetary policy, a useful approach in considering the future conduct of monetary policy might be to indicate the degree of uncertainty with regard to policy effects.

In addition, he noted that today's discussion had highlighted the difficulty of what criteria to use to evaluate the relative magnitude of policy effects and side effects. He expressed the view that although there were some examples of authorities abroad using structural models to examine what unconventional monetary policy was optimal, the models at present had not yet reached a level where they could be directly applied to policymaking, and policies were ultimately assessed on a judgment basis. He also stated that in the current situation, where a number of unconventional monetary policies were being implemented simultaneously, it was essential to present and discuss a variety of issues with experts from different backgrounds, such as in this workshop, rather than assessing the effects and side effects using only models.

(3) Tomoko Hayashi (Cabinet Office)

Panelist Hayashi prefaced her comments by noting that they were her personal views but were from the perspective of someone who had been involved in the implementation of the government's economic policies. She stated that in considering the effects of unconventional monetary policy, it was necessary to do so taking into account the differences in the conduct of monetary policy before and after the introduction of QQE in 2013, as reflected in the differences in the size of the BOJ's balance sheet. In this regard, she argued that it was also important that in 2013 the BOJ set a price stability target of 2% and adopted a framework to bring inflation closer to this target. She also expressed the view that the relationship between monetary policy and fiscal discipline, which had been mentioned a lot today, was an issue that should be addressed by the government and the Diet. She argued that to ensure fiscal sustainability a medium- to long-term economic and fiscal outlook was essential. For this, in turn, a price outlook was a prerequisite, and from this perspective, the price stability target of 2% was extremely important. In addition, she stressed the importance of the government's growth strategy, referring to the argument that monetary policy had not been sufficiently effective due to sluggish demand for funds.

Finally, she highlighted the importance of deepening the understanding of wage and price developments in relation to labor market conditions, noting that in Japan the growth rates of nominal wages and prices had been around zero percent for a long time while in other countries nominal wage growth on average had been higher than inflation. In this regard, she expressed her view that in the current phase of price increases, the series of efforts by the government, such as creating an environment conductive to price pass-through by small and medium-sized enterprises and encouraging firms to raise wages, had played an important role and had had an impact on prices.

(4) Seiichi Shimizu (Bank of Japan)

Panelist Shimizu raised two points the importance of which the discussion so far had reconfirmed. First, he noted that when considering the effects and side effects of unconventional monetary policy, it was important to understand them in the context of the interaction of monetary policy with economic activity and prices at each point in time. As an example of such interaction, he pointed out that in the early 2000s, when financial intermediation was declining and economic growth was under downward pressure, the large amount of liquidity supplied helped to stop the decline in bank lending. He also argued that, in response to the negative demand shocks following the GFC, monetary policy, by supporting the real economy, may have helped to reduce hysteresis effects that otherwise would have put downward pressure on the potential growth rate.

Second, with regard to monetary policy communication, he noted that the introduction of unconventional monetary policies by central banks increased the impact of monetary policy on financial markets, so that financial markets started to pay more attention to central banks' actions. He added that while a positive aspect of these changes was that they increased the effectiveness of forward guidance, a possible negative aspect was that they may have increased the risk of unexpected price volatility in financial markets as a result of central bank communication.

Next, he highlighted three remaining points for further consideration and discussion. First, he mentioned the importance of discussing how monetary policy should respond to various macroeconomic shocks, including structural shocks and unexpected supply shocks, and the extent to which unconventional monetary policy was effective. Second, he stated that it was important to deepen our understanding of the mechanism of inflation expectations formation and how to capture developments in inflation expectations. Finally, the third point he raised was how to address the issue of central bank finances, including how to explain it to the public.

7.2 Discussion

Following the panelists' presentations, floor participants joined in the discussion.

(On the mechanism of price dynamics and other issues)

Kazuo Ueda introduced the argument that one of the reasons why prices in Japan had a tendency not to rise might be a kind of "coordination failure" in which, for example, people acted on the assumption that prices were unlikely to rise because they believed that many others thought that prices were unlikely to rise. Based on this argument, he pointed out that currently the situation seemed to be changing due to (1) the significant increase in import prices, and (2) the government's encouragement of wage increases and efforts to promote price pass-through by small and medium-sized firms as mentioned by panelist Hayashi. He then asked participants for their opinions.

In response, Watanabe stated that such discussions on expectation formation were important when considering price developments and the transmission channels of monetary policy, and that, in particular, the synchronization of expectation formation among economic agents could have a particularly large impact. He argued that an example of such synchronization occurred in 2014, when prices were raised by more than the consumption tax hike. Toshitaka Sekine pointed out that it was also important to pay attention to labor market conditions and demographic trends when considering changes in the behavior of households and firms triggered by such events.

Panelist Shintani noted that in order to identify the impact of monetary policy on prices through changes in people's expectations and behavior, it was important to exclude the effects of "external shocks" that contributed to higher inflation such as a rise in import prices or government measures.

Kazuo Ueda then raised the question of what made a situation in which wages and prices rose moderately more desirable than one in which they tended not to rise. Noting that, in addition to the traditional argument that moderate inflation provided a "buffer" for monetary policy, a more recent argument was that it had positive impacts in terms of the economic metabolism and resource allocation at the micro-level, he asked participants for their views on these issues.

Panelist Shimizu pointed out that in a situation where wages and prices were rising moderately, there might be positive changes in firms' behavior since, for example, this allowed them greater flexibility in their price-setting. In this regard, he expressed his hope that the large survey of firms currently being conducted as part of the Review might provide some insights.

Panelist Hayashi noted that in a situation where wages and prices were unlikely to rise, firms may have had stronger incentives to cut costs, which may have discouraged firms from innovating. On the other hand, in a situation where wages and prices were rising moderately, firms might be able to set wages and prices flexibly, potentially leading to an improvement in resource allocation.

Panelist Nakata expressed the impression that the argument that a situation in which wages and prices were rising moderately could have a positive impact on the economic metabolism and resource allocation was based on labor market structures and socials norm in Japan, and that similar arguments had not been made overseas. He then pointed out that in order to deepen our knowledge about the effects of moderate increases in wages and prices, even simple analyses, such as of changes in the price change distribution, could offer much to learn, and highlighted the importance of accumulating related research.

From the floor, Watanabe argued that it was important to deepen our understanding of the "cost of deflation" in the sense of whether economic welfare was or was not affected. Kenichi Ueda stated that, given Japan's experience of the burst of the bubble, it was also necessary to consider the cost of deflation by examining developments in inflation in terms of its deviation from expectations. Kobayashi noted that some studies had shown that the efficiency of matching firms and workers was higher when inflation was somewhat higher.

(On issues to be covered in the Review)

Kono and Yoshiyuki Nakazono highlighted the need for further analyses on the impact of monetary policy on exchange rates. Nakazono also noted the need for further study of how unconventional monetary policies, including inflation targeting, affected inflation expectations.

In response to these comments, panelist Shimizu prefaced his remarks by stating that exchange rate policy was the responsibility of the government or the Ministry of Finance, and noted that while he was fully aware of the importance of the "exchange rate channel" as a transmission channel of monetary policy, in the conduct of monetary policy going forward, the BOJ would not set a specific target for the level of the exchange rate, but would rather assess the situation from the perspective of how exchange rate fluctuations would affect economic activity and prices as a whole.

Hibiki Ichiue then pointed out that the impact of ETF purchases may be comparable to that of JGB purchases in terms of how much risk the BOJ had absorbed from the market, and stated that it was necessary to analyze the effects and side effects of ETF purchases as well. Similarly, Kumagai emphasized the importance of deepening our understanding of the effects of ETF purchases, as well as the quantitative and qualitative effects and long-term and short-term interest rate effects of monetary easing.

In response to these comments, Shimizu noted that although some aspects of the effects of risky asset purchases were difficult to examine empirically, it would be desirable to deepen the analysis as much as possible.

In addition, Kumagai highlighted the following points: (1) the effects of monetary easing should be measured in terms of the quantitative and qualitative effects and long-term and short-term interest rate effects, in order to achieve the optimal monetary policy mix; (2) it was possible that the accommodative monetary policy may have contributed to the low metabolism of the Japanese economy; (3) the BOJ could provide more specific information on its balance sheet; and (4) while the BOJ, partly due the way events unfolded, had used a variety of unconventional policy tools, from the viewpoint of clarity, it would be useful to conceptually reorganize these unconventional monetary policy tools. Shimizu replied that although it was difficult to address each specific issue in detail in the Review, he would like the work to proceed keeping these issues in mind.

(On methods for analyzing the effects and side effects of monetary policy)

Watanabe pointed out that, looking back at the BOJ's policy mistakes in the past, the issue was not so much that what it did was a failure but rather that it failed to do what it should have done, i.e., the problems was a failure of omission. He suggested that, in addition to assessing the effects and side effects of monetary policy actually implemented, it would be useful to examine the potential effects on economic activity and prices of actions not taken in evaluating past monetary policy. For example, it would be useful to analyze to what extent difficulties would have been eased if inflation targeting had been introduced earlier. Panelist Shintani noted that while it was technically possible to conduct the kind of investigation suggested by Watanabe through a counterfactual analysis using a structural model, it was important to note that the results could be strongly affected by the choice of model. Meanwhile, Panelist Shimizu noted that while the perspective suggested by Watanabe was important, he thought the Review should focus not so much on assessing the appropriateness of policy decisions at different times in hindsight but rather on assessing the effects and side effects of the unconventional monetary policies actually adopted with a view to preparing for the future.

Online participant Makoto Saito asked panelists Shintani and Nakata for their views on what academics should make of the tendency for discussions on the evaluation of fiscal and monetary policies to move away from general equilibrium and macroeconomic models. In response, Shintani argued that reduced-form models, such as time-series models, had the advantage of providing more robust results when assessing the effects of unconventional monetary policies that involved a combination of different policies. Nakata expressed the view that structural and reduced-form models were complementary, and that it was desirable to use a combination of the two in order to deal with uncertainty and conduct fair policy analyses.

In addition, Kato pointed out that especially in times of increasing economic uncertainty, in addition to conducting analyses using economic models it was important to incorporate a variety of perspectives, including the use of micro-level information from firms. In response, Nakata highlighted that in situations of high uncertainty, it was essential to apply multiple analytical approaches to a single topic and to engage in flexible discussions based on different scenarios. He further suggested that, given that research resources are limited, it would be desirable for central banks, academia, and private think tanks to establish a collaborative framework that played to each of their strengths and conducted analysis from different perspectives in order to deepen our understanding of monetary policy.

(On the relationship between the BOJ and the government)

Kenichi Ueda noted that in Japan, the government was making efforts to take measures against high prices and public utility charges had been kept low for a long time. He then raised the issue that macro price stability was the BOJ's responsibility and asked whether individual price adjustments should not rather be left to the market. Panelist Hayashi expressed her view that the current government's measures against high prices were primarily aimed at mitigating the sudden rise in energy prices. Panelist Nakata expressed the view that while the division of roles between fiscal and monetary policy had undergone various changes in the past, the current situation was not necessarily optimal. He also pointed out that the current government's measures to deal with high prices could be categorized as part of the government's income redistribution function.

Kobayashi pointed to the joint statement by the government and the BOJ that the government would work on structural reform of the economy to enhance competitiveness and growth. He then asked for opinions about the extent of actual coordination between the government and the BOJ, and whether more desirable forms of cooperation might exist. Panelist Shimizu expressed his impression that the government and the BOJ were currently building a relationship of fairly close discussion at a number of different levels. Hayashi agreed with Shimizu and expressed the view that it was important to continue close coordination.

Kato asked Hayashi whether the government's criteria for the definition of "overcoming deflation" could lead to higher inflation. Hayashi explained that the government defines "overcoming deflation" as a situation in which there is no longer a sustained decline in prices and there is no possibility of returning to such a sustained decline in prices and to achieve this, it was crucial to ensure a situation in which wages were rising steadily and to create a virtuous cycle between wages and prices.

7.3 Summaries from Panelists

Finally, the panelists provided a summary of the discussion.

Shimizu noted that the term "prices" had a variety of meanings and could refer to general prices, relative prices, or public utility charges, and that there were different agents and roles involved, such as the central bank, the government, and private economic agents. He added that today's discussions had shown once again that there were various stakeholders in issues surrounding prices.

Hayashi argued that the framework for the conduct of monetary policy was important, and that it was important to clearly communicate any changes in monetary policy within the current framework of a 2% price stability target.

Nakata highlighted that, with low growth becoming an issue in advanced economies, there was a growing need worldwide to examine cost-effective policies, and noted that the lessons from such examinations could be useful for other policymakers.

Shintani stated that, conceptually, the effects and side effects of unconventional monetary policy were not well defined within macroeconomic theory, and stressed the importance of clarifying the effects and side effects of individual policy tools at this stage in order to increase effective policy options in response to future changes in the economic environment.

8. Closing Remarks

In closing, Shimizu reviewed the workshop and thanked participants for a very lively discussion on the effects and side effects of unconventional monetary policy. He then pointed out that while unconventional monetary policy was regarded to have helped the Japanese economy to leave deflation behind, it was also necessary to pay close attention to the side effects of prolonged monetary easing. In addition, he pointed out that the panel discussion highlighted the importance of understanding unconventional monetary policy in the context of its interrelationship with economic activity and prices at each point in time when evaluating past unconventional monetary policies. Furthermore, he noted that the panel discussion highlighted the difficulty of assessing the balance between the effects and side effects of monetary policy.

He then explained that, as part of the Review, the BOJ had been conducting a large survey of a wide range of firms on issues such as their business policies, wage and price-setting policies, and views on the effects of monetary policy since the mid-1990s. He also noted that the BOJ was going to continue to provide opportunities for the exchange of views in the form of interviews at the BOJ's Head Office and branches, as well as meetings with local leaders by members of the Policy Board.

Finally, he concluded the workshop by stating that the BOJ would hold the second workshop around May 2024 and would discuss topics including issues not covered today.

(Appendix 1)

The Effects and Side Effects of Unconventional Monetary Policy
The First Workshop on the "Review of Monetary Policy from a Broad Perspective"

Workshop Date and Time: Monday, December 4, 2023, 9:30-18:00

Venue: Conference Room A, 9F, Bank of Japan

Program			
9:30- 9:35	Opening Remarks	Shinichi Uchida	Bank of Japan
Session 1 Financial Markets			
9:35-10:40	Moderator	Iichiro Uesugi	Hitotsubashi University
	Presenters	Kohei Maehashi	Bank of Japan
		Tomiyuki Kitamura	Bank of Japan
	Discussants	Kentaro Iwatsubo	Kobe University
		Izuru Kato	Totan Research
10:40-10:55	Coffee Break		
Session 2 Financial System			
10:55-12:00	Moderator	Iichiro Uesugi	Hitotsubashi University
	Presenters	Hiroki Inaba	Bank of Japan
		Naohisa Hirakata	Bank of Japan
	Discussants	Kenichi Ueda	The University of Tokyo
		Nobuyoshi Yamori	Kobe University
12:00-13:30	Lunch Break		
Session 3 The Bank of Japan's Balance Sheet			
13:30-14:35	Moderator	Kosuke Aoki	The University of Tokyo
	Presenters	Haruka Yoshimura	Bank of Japan
		Akira Tsuchikawa	Bank of Japan
	Discussants	Ikuko Samikawa	Japan Center for Economic Research
		Hajime Tomura	Waseda University
14:35-14:50	Coffee Break		

Session 4	Unconventional Monetary Policy		
14:50-15:55	Moderator	Kosuke Aoki	The University of Tokyo
	Presenters	Hiroki Yamamoto	Bank of Japan
		Sohei Kaihatsu	Bank of Japan
	Discussants	Junko Koeda	Waseda University
		Keiichiro Kobayashi	Keio University
15:55-16:15	Coffee Break		

Session 5	Panel Discussion		
16:15-17:55	Moderator	Kosuke Aoki	The University of Tokyo
	Panelists	Mototsugu Shintani	The University of Tokyo
		Taisuke Nakata	The University of Tokyo
		Tomoko Hayashi	Cabinet Office
		Seiichi Shimizu	Bank of Japan
17:55-18:00	Closing Remarks	Seiichi Shimizu	Bank of Japan

(Appendix 2)

List of Speakers, Etc.

(in alphabetical order, titles omitted, affiliations as of the date of the workshop)

Name	Affiliation
Kosuke Aoki	The University of Tokyo
Takahiro Hattori	The University of Tokyo
Tomoko Hayashi	Cabinet Office
Naohisa Hirakata	Bank of Japan
Hibiki Ichiue	Keio University
Hiroki Inaba	Bank of Japan
Kentaro Iwatsubo	Kobe University
Ryo Jinnai	Hitotsubashi University
Sohei Kaihatsu	Bank of Japan
Izuru Kato	Totan Research
Tomiyuki Kitamura	Bank of Japan
Keiichiro Kobayashi	Keio University
Junko Koeda	Waseda University
Ryutaro Kono	BNP Paribas Securities (Japan)
Mitsumaru Kumagai	Daiwa Institute of Research
Kohei Maehashi	Bank of Japan
Daisuke Miyakawa	Waseda University
Kyohei Morita	Nomura Securities
Teppei Nagano	Bank of Japan
Yusuke Nakamura	Asset Management One
Taisuke Nakata	The University of Tokyo
Yoshiyuki Nakazono	Yokohama City University
Makoto Saito	Nagoya University
Ikuko Samikawa	Japan Center for Economic Research
Toshitaka Sekine	Hitotsubashi University
Seiichi Shimizu	Bank of Japan
Mototsugu Shintani	The University of Tokyo
Etsuro Shioji	Hitotsubashi University
Shigenori Shiratsuka	Keio University
Naoki Tamura	Bank of Japan
Hajime Tomura	Waseda University
Akira Tsuchikawa	Bank of Japan
Shinichi Uchida	Bank of Japan
Kazuo Ueda	Bank of Japan
Kenichi Ueda	The University of Tokyo
Yasunari Ueno	Mizuho Securities
Iichiro Uesugi	Hitotsubashi University
Tsutomu Watanabe	The University of Tokyo
Hiroki Yamamoto	Bank of Japan
Nobuyoshi Yamori	Kobe University
Haruka Yoshimura	Bank of Japan